

PolicyPennings by Daryll E. Ray & Harwood D. Schaffer

Risky Business report: “Right or wrong, is it time to take on a climate change ‘insurance policy’?”

Another new report, “Risky Business: The Economic Risks of Climate Change in the United States” (<http://riskybusiness.org/>) takes a look at the range of consequences that could result from climate change. The differences between this report and the two publications we have reviewed in the past 5 weeks (<http://tinyurl.com/nm9sr4y>), columns 722-726, include its exclusive focus on the US, and the level of climate modeling undertaken by the study which allow it to examine regional and county-level impacts of climate change.

Funding for the report was provided by Michael R. Bloomberg, former Mayor of New York City; Henry M. Paulsen, former Secretary of the Treasury under George W. Bush; and Thomas F. Steyer, retired founder, Farallon Capital Management LLC. The Risk Committee for the report included Republicans and Democrats, as well as academics and business executives.

Another difference between “Risky Business” and the Chicago Council on Global Affairs’ publication “Advancing Global Food Security in the Face of a Changing Climate” is that it is descriptive while the latter is both descriptive and prescriptive. Readers will not find a list of recommendations in “Risky Business.”

The brief ‘Conclusion’ to “Risky Business” sums up its perspective: “When Risk Committee member George Shultz was serving as President Reagan’s Secretary of State in 1987, he urged the President to take action on that decade’s hotly-contested scientific issue: the ozone layer. As Shultz later said in an interview with Scientific American, ‘Rather than go and confront the people who were doubting it and have a big argument with them, we’d say to them: Look,

there must be, in the back of your mind, at least a little doubt. You might be wrong, so let’s all get together on an insurance policy.’ That insurance policy became the Montreal Protocol on Substances that Deplete the Ozone Layer, an international treaty still in effect to this day.

“Our goal with the Risky Business Project is not to confront the doubters. Rather, it is to bring American business and government [with no mention of civil society and individuals]—doubters and believers alike—together to look squarely at the potential risks posed by climate change, and to consider whether it’s time to take out an insurance policy of our own.”

The closest the report comes to the public policy arena is when it says, “our assessment finds that, if we act now, the U.S. can still avoid most of the worst impacts and significantly reduce the odds of costly climate outcomes—but only if we start changing our business and public policy practices today.”

Though “Risky Business” reports on a number of consequences of climate change, our goal in this analysis is to focus on the various impacts of climate change on agriculture at the regional level.

One critical issue identified in the report is the change in the number of days per year that are over 95°F. Human beings “must maintain a skin temperature below 95°F in order to effectively cool down and avoid fatal heat stroke.” In addition, an increase in the number of higher temperature days affects the crops that farmers can grow and when they grow them.

Figure 1 shows two maps of the US, one for the 1981-2010 period that is historical and the second for the 2080-2099 period. In the first map (1981-2010), only areas in the desert Southwest and Texas plus a

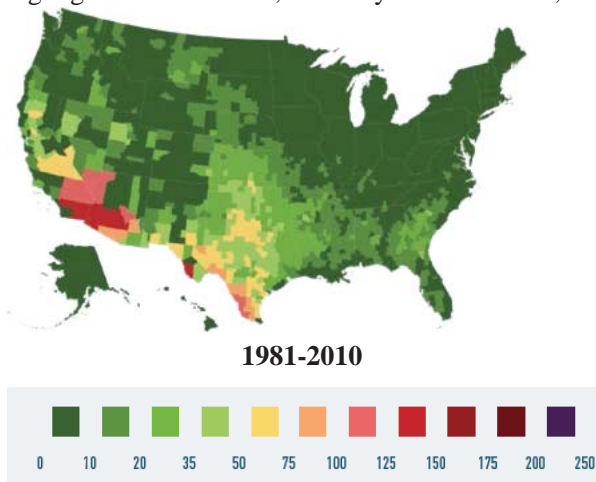


Figure 1. Average days per year over 95°F. Source: “Risky Business”

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few counties in Oklahoma and along the state line with Kansas have an average of 50 days per year or more with temperatures above 95°F.

A century later, in the 2080-2099 period, the counties with an average of 50 days per year or more with temperatures above 95°F covers a wide swath of the Central and Southern US and includes a few counties in Washington and Montana along the Canadian border. The 2080-2099 projection assumes that we take no actions to mitigate the release of greenhouse gases into the atmosphere—the "business as usual" scenario.

While farmers are always adapting to changing conditions, for farmers in the southern Great Plains, if we continue on a "business as usual" path, yields would decline and some crops would no longer be feasible at the projected higher temperature levels. With greater levels of water evaporation and transpiration from plants, the cost of adaptation to the new conditions may be greater than some farmers can bear. With more days with temperatures above 95°F, farmers in this region may see a reduction in labor productivity for tasks that are conducted without some protection from heat.

In the northern Great Plains, crops that once were too risky to grow because of cold weather and a short growing season would become common as the corn-soybean belt moves northward—we are already seeing more corn growing in these areas than ever before. Yields in this region would also increase as long as rainfall patterns do not change—the report does not discuss general changes in rainfall (as opposed to storm). To make these changes farmers would have to invest in new equipment and learn how to grow new crops.

Farmers in Midwestern states "like Missouri and Illinois, [would] face up to a 15% likely average yield loss in the next 5 to 25 years, and up to a 73% likely average yield loss by the end of the century. Assuming no adaptation, the region as a whole faces likely yield declines of up to 19% by mid-century and 63% by the end of the century. Adaptation strategies for these farmers could include "double- and triple-cropping, seed modification, [and] crop switching."

Farmers in coastal Northeast states like Delaware and New Jersey who farm in low-lying areas could be affected by rising sea levels as well as an increase in the number and severity of storms and storm surges. They will also see an increase in the number of hot days that may change the period during which some cool season vegetable crops can be grown.

Under the "business as usual" scenario, farmers in the Southeast will see a dramatic increase in the

number of high temperature days that may affect the crops varieties that are grown. In addition, "extreme heat will likely lead to a decrease in labor productivity in high-risk sectors like...agriculture."

"The average Northwest resident [under the 'business as usual' scenario] will likely go from experiencing only 5 days of 95°F or warmer temperatures per year on average for the past 30 years to an additional 7 to 15 extremely hot days by mid-century, and to an additional 18 to 41 extremely hot days by the end of the century." Forests will see an increased risk of wildfires while pests that are currently controlled by cold weather may increase. Though the report does not mention it, the regions orchards will undoubtedly be affected and spring wheat growing areas may be able to grow warmer season crops if adequate moisture is available.

The Southwest will simply get hotter and hotter leading to increased water evaporation from reservoirs. As we see that kind of change it appears to us that irrigated crops would be negatively impacted and dairy, which depends upon the production of irrigated hay, could lose its current production cost advantage over dairy farms in the upper Midwest and Great Plains.

Alaska is likely to see a significant decrease in "the number of extremely cold days." The impact on Alaskan fisheries is not discussed in the report. Hawaii will be affected by an increase in sea levels and the risk of extreme weather events. If crop prices on the US mainland increase, that will negatively affect the residents of Hawaii who import most of their food.

Is the assessment reported in "Risky Business" likely to be leaning heavily toward the worst-case scenario?

Could be, but suppose the temperature changes are 75 percent of what are reported in the study, or 50 percent, or even 25 percent, agriculture would still face daunting challenges in the years ahead.

Temperature changes of those magnitudes might not occur either, some would say.

Even so, it may be that the riskiest strategy of all is to presume no significant changes in average US regional temperatures over the next century.

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