

# Report finds nation unprepared to meet climate change, other environmental challenges

**Amanda Peterka, Environment and Energy Publishing, 12-7-12**

U.S. agricultural research is ill-equipped to meet several environmental challenges, including climate change, a White House report released today finds.

The report by the President's Council of Advisors on Science and Technology recommends that the government increase investments in agricultural research and create six institutes across the country to address challenges. Those challenges include water use, pests and pathogens, agriculture's environmental footprint, the production of bioenergy, and the ability to grow food amid climate change.

"Meeting these challenges will require a renewed commitment to research, innovation and technology development in agriculture," Daniel Schrag, an author of the report, said in a statement today. "If we act strategically today we will gain invaluable benefits tomorrow, including enhanced food security, better nutrition, greener sources of energy and healthier lives, while we grow the rural economy."

The council, an advisory group of leading scientists and engineers appointed by the president, did the analysis at the request of Agriculture Secretary Tom Vilsack. A working group co-chaired by Schrag, the director of Harvard University's Center for Environment, and Barbara Schaal, vice president at the National Academy of Sciences, carried out the research and made recommendations to the full council.

The report identifies seven challenges facing agriculture today. Among those is climate change, which the report says is gradually raising summer temperatures and leading to weather extremes. Climate change, the report says, will also change the life cycle and range of pests, cause weeds to emerge earlier, and reduce soil moisture, affecting farmers' ability to grow food.

"The United States must develop greater resilience to a changing climate through a broad research program aimed at new agricultural strategies to adapt to shifts in weather and climate," the report says.

Other environmental challenges include managing new pests, pathogens and invasive species; reducing agricultural water use through designing better irrigation systems and plant varieties; reducing agriculture's use of fertilizers, pesticides and other polluting products; and producing next-generation biofuels.

Today, the proportion of federal agricultural research dollars that are given out through competitive means is "far below" that of other agencies, the report says, and federal research overlaps with private-sector dollars in some areas while underfunding others. Over the past two decades, federal agricultural research, for example, has focused on increasing the yields of corn, other major grains and livestock, an area of research that is also being carried out in the private sector.

In 2009, the government provided \$3.8 billion in agricultural research compared with \$8.7 billion provided by the private sector.

"Private industry has an essential role to play in agricultural research, especially when it comes to scaling up and commercializing new agricultural developments and commodities," Schaal said in a statement. "But many of the challenges we face today, including long-term water security and the need for better integrated pest

The report recommends that the government increase investments in agricultural research by \$700 million a year through expanding competitive programs within the Department of Agriculture, increasing the National Science Foundation budget for agricultural research, and awarding more fellowships for graduate and post-doctoral researchers.

There should also be an internal review of federal agricultural regulations, as well as the creation of a permanent science advisory committee within USDA, the report recommends.

The report also calls for investing \$150 million a year for at least five years to create six multidisciplinary institutes that are focused on the challenges identified in the report.

"There is no overarching structure in the United States that supports sustained, interactive research between public and private scientists interested in agricultural challenges as there is in fields such as nanotechnology and biofuels," the report says.

In a speech today in Washington, D.C., President's Council co-Chairman John Holdren said that the council was not simply asking for funding from Congress but also a restructuring of USDA's research portfolio to direct more funds toward the challenges, rather than toward commodity crop research.

"Happily, they are not insurmountable challenges," Holdren said.