



## 1. **CLIMATE:** Farmlands could play significant role in Obama admin's GHG reduction scheme (02/19/2009)

Scott Streater, special to E&E

A program created in the final weeks of the Bush administration could become one of President Obama's most effective tools to expand the reach of carbon dioxide reduction programs from the industrial sector to the agricultural heartland.

USDA's Office of Ecosystem Services and Markets, initiated last October, seeks to engage farmers, ranchers and forest managers in efforts to maximize agricultural lands' ability to soak up more atmospheric CO<sub>2</sub> -- the chief man-made contributor to climate change.

Among other things, the office will work to create financial incentives for landowners to rotate grazing lands or to convert marginal cropland to forests or grasslands in the name of enhancing CO<sub>2</sub> capture. Scientists have long noted that large agricultural tracts -- whether planted in trees, crops or grasses -- can soak up millions of tons of CO<sub>2</sub> from the atmosphere as part of photosynthesis.

"Private lands could be a real engine for the better in the fight against climate change," said Steve Moyer, vice president of government affairs for Trout Unlimited, a national conservation group. "We're hopeful this is another sign the federal agencies, including ones that have not been at the forefront of resource conservation and dealing with global warming in the past, including the USDA, are now really committed to doing their part on climate change."



USDA's recently created Office of Ecosystem Services and Markets will encourage farmers and ranchers to manage their lands to enhance their carbon-storing ability. Such practices include conservation tilling, regular crop rotations and allowing marginal croplands to convert to forests and grasslands. Photo courtesy of NASA.

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But some key details, including how the program might affect logging activity on the nation's 188 million acres of national forests, are still being worked out, a USDA spokeswoman said.

Nevertheless, some economists and environmentalists see efforts like the Office of Ecosystem Services and Markets as important building blocks toward an eventual federal carbon cap-and-trade program in which large polluting industries pay rural landowners to offset their own emissions.

Obama has pledged to seek broad CO<sub>2</sub> cuts across all sectors of the economy to meet an 80 percent greenhouse gas reduction target by 2050. And with like-minded Democrats holding majorities in both the House and Senate, Congress is expected this year to take the first steps toward building a framework for regulating carbon, experts say ([Land Letter](#),

Already the Obama administration has signaled a new approach. It has begun reviewing the Bush EPA's denial of the California waiver to regulate greenhouse gas emissions from automobiles. And it appears ready to reverse a memorandum issued last December by former U.S. EPA Administrator Stephen Johnson outlining why the regulators should not use the Clean Air Act's existing programs to control CO<sub>2</sub> emissions from industrial sources ([Greenwire](#), Feb. 9).

But some worry that USDA's new climate program adheres too closely to the Bush administration's view that voluntary CO2 reduction measures are more effective than regulatory approaches. Moreover, they say, the program could provide leverage to lawmakers resistant to adopt tougher policies aimed at large-emitting sources like coal-fired power plants and automobiles.

"You can reduce carbon and get there a lot quicker, with greater efficiency and less cost to society, with better, stronger regulations," said Ray Rasker, an environmental economist and executive director of Headwaters Economics, a Bozeman, Mont.-based group that focuses on Western land management.

"I would hope we've learned from this past era, starting with the Reagan administration, which listened to that certain brand of economist who says if you let the free market run its course we'll all be better off," Rasker added. "I'm hoping that argument doesn't carry much weight anymore. Regulations, when adopted and enforced, by and large have worked."

Supporters of the USDA effort say critics are not seeing the big picture, namely that convincing the owners of nearly 900 million acres of croplands, pastures and forests to create vast carbon sinks is a simple, cheap and effective way to reduce greenhouse gases.

"I think the very title of the office suggests a step in the right direction, namely harnessing markets to make the environment an asset rather than a liability," said Terry Anderson, executive director of the Property and Environment Research Center, which favors financial incentives over regulation. "Markets in general offer the Obama administration real change on environmental regulation. Rather than throwing out more regulations, harnessing market forces could really be the significant change he's promised."

## Natural carbon traps

While automobiles and industrial plants spew billions of tons of carbon dioxide into the atmosphere each year, the nation's forests, farms and ranchlands quietly go about absorbing fugitive carbon, thus offsetting some of society's negative effects to the climate system, according to scientists.

But farming and forestry practices do not always aid in the CO2 capture process.

When trees are harvested, when rangeland is overgrazed, and when soils are exhausted from overuse, such landscapes do not absorb as much carbon as they could. Experts say that encouraging forest managers, ranchers and farmers to enhance their lands' carbon-absorbing capacity through careful management of trees, native grasses and crops is among the most effective ways to offset the negative effects of climate change.

Exactly how much agriculture can contribute to climate solutions, however, remains a subject of debate.

Michael Wara, an assistant environmental law professor at Stanford University who has studied carbon-offset programs, said last month that efforts to change land-management practices on forests, farmland and rangeland are worthy. But he cautioned they are not likely to produce huge reductions of CO2 relative to the country's total carbon emissions.

So far, studies attempting to document agricultural lands' capacity to absorb CO2 have been mixed.

According to a 2006 EPA analysis, the nation's 800 million acres of cropland, pasture and rangeland -- an area accounting for more than half of the U.S. landmass -- sequester an estimated 12.4 million metric tons of carbon a year, less than 1 percent of the country's total CO2 emissions.

But a more recent EPA analysis of domestic GHG emissions between 1990 and 2006 concluded that enhancing soils and vegetation on farms and rangelands could offset as much as 150 million metric tons of a CO2, reflecting a storage capacity 12 times higher than what the agency found in 2006. USDA studies, meanwhile, suggest carbon storage on the nation's agricultural lands could reach as high as 318 million metric tons a year under improved management conditions.

"Doing these things is not going to solve all our problems, but it's a significant step," said Richard Conant, an ecologist at Colorado State University who has studied the effects of land-management practices on carbon loading. "Anything that takes CO2 out of the atmosphere is good. If that's your goal, then this is a good idea."

Another reason to target timbering, farming and rangeland activities is that such operations can emit greenhouse gases of their own. According to USDA, farms and ranches alone accounted for about 8 percent of total U.S. greenhouse gas emissions in 2008. While that amount is modest compared to industrial and auto

sector emissions, Conant said there is no reason to delay taking action.

"Reducing that number is something we can do now that's not very expensive," Conant said.

Of particular concern are tilling practices that overwork the land and allow carbon stored in soils to escape. In ranching and livestock settings, lax management of manure allows millions of tons of methane -- a highly volatile greenhouse gas -- to enter the atmosphere, where it adds to the heat-trapping effect.

A 2008 USDA report examining market approaches to increase private sector investment in environmental stewardship found that agriculture "can improve air quality by reducing the release of [greenhouse gases] through changes in soil, water, chemical, and manure management."



Permanent grasslands and forests are among the most effective natural carbon sinks in the United States, according to climate experts. Photo courtesy of NASA.

## An ongoing effort

The idea of the federal government working with rural landowners to achieve environmental benefits is not new.

Since 2007, USDA has spent more than \$4.5 billion per year to provide financial and technical incentives to agricultural producers to retire land, adopt management practices that protect and enhance environmental quality, or preserve farmland, according to the agency's Economic Research Service.

And a number of volunteer carbon-trading programs are already in place that include farmers and ranchers.

Chief among them is the 5-year-old Chicago Climate Exchange -- a voluntary, market-based system where CO<sub>2</sub> emitters, including some of the nation's largest companies like Ford Motor Co. and IBM Corp. -- can buy and sell credits to offset CO<sub>2</sub> emissions.

The Chicago exchange last year began trading carbon credits generated from agricultural lands under a program spearheaded by USDA. Joel Brown, a rangeland ecologist with the Natural Resources Conservation Service in Las Cruces, N.M., said NRCS has worked on the exchange's behalf to identify and map agricultural areas across the country that provide high potential for storing carbon.

To date, carbon offsets from at least 2.1 million acres of Western agricultural lands have traded on the Chicago exchange, representing about 600,000 metric tons of carbon dioxide, according to exchange officials. Through 2008, the exchange had facilitated trades of 69 million credits -- one for each ton of carbon -- with most trades tied to projects such as planting trees or investing in renewable energy projects.

States, too, are adopting their own CO<sub>2</sub> regulations and trading programs, which could bring additional agricultural lands into play.

Last year, 10 Northeastern and mid-Atlantic states formed the Regional Greenhouse Gas Initiative, a mandatory cap-and-trade program limiting the amount of CO<sub>2</sub> that can be released from power plants into the region's air, with the ultimate goal of reducing such emissions by 10 percent by 2018. And in February 2007, five Western states -- Arizona, California, New Mexico, Oregon and Washington -- formed the Western Climate Initiative, which like RGGI will focus on implementing a cap-and-trade system for CO<sub>2</sub>. The states of Montana and Utah have since joined the Western initiative, as have four Canadian provinces.

All of these are clear signs that nationwide carbon regulation is just around the corner, said Ted Dodge, executive director of the National Carbon Offset Coalition, a Montana-based group that works to involve ranchers in the Chicago exchange's CO<sub>2</sub> trading program.

"We've felt for the last few years it was not a matter of 'if' but 'when,'" said Dodge. "What we need at the federal level is protocols, and it makes sense that the USDA would put those standards in place."

Others say they are encouraged that the Obama administration is building on the success of the Bush program

but that the president is advancing voluntary climate solutions in conjunction with tougher regulatory approaches.

"Everything I've heard so far from the Obama administration, and from the president himself, says to me there's a real commitment to getting to the heart of the problem in a swift, regulatory way," said Moyer, the Trout Unlimited vice president of government affairs. "But there's plenty of room for other approaches, too."

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