



The Farm Bill and Climate Change: National Policy Reform to Reduce Carbon Emissions

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While some may debate the precise numbers, everyone agrees that the food and agricultural sector in the United States is a major contributor to greenhouse gas (GHG) emissions. At the same time, agriculture can play a significant role in reducing climate change impacts through long-term carbon sequestration and carbohydrate-based alternatives to petroleum-based products.

There are three primary ways in which agriculture impacts the release of climate change gases: the choice of crops and crop varieties, the way crops and animals are grown, and marketing practices. While we do not know as much as we need to from a scientific and technical perspective about the impacts of different practices, we do know the general trends and impact perspectives.

Many factors go into an individual farmer's decisions about practices, crops, and marketing, but by far the single most important is federal farm policy. The Farm Bill is an omnibus bill passed by Congress every four or five years that sets out the general parameters of federal policy for crops, livestock, forestry, and some aspects of fisheries policy as well. Although the bill is literally hundreds of pages long, at its core this legislation does three things – all of which can significantly impact climate change mitigation.

First and foremost, the Farm Bill provides financial assistance to farmers. Sometimes this help is in exchange for some action (or inaction) by the farmers. Sometimes this quid pro quo is environmental, like the soil and water conservation benefits of the Conservation Reserve Program (CRP). Some farmers receive dollars from the government in exchange for converting some of their land into wildlife habitat and making water quality improvements, helping to serve the needs of hunters, photographers, hikers and others. So far none of the farm bill-related payments to farmers have been tied directly to climate change emissions considerations, but they could be. Unfortunately, many of the current farm bill provisions seem to be making matters worse by encouraging petrochemical-intensive methods. For example, U.S. farm policy has historically had a large-farm bias, which increases reliance on tractor use, commercial fertilizers, and other energy-intensive practices.

Second, the Farm Bill provides the direction and money for research and extension activities in the areas of food, agriculture and forestry. In the past, little money was designated or allocated for work on climate change, but this could be changed. Currently the priority is on research designed to replace human or animal power with more gasoline-powered horsepower. This negative direction could be challenged and stopped.

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Third, the Farm Bill includes major sections (and funding) on marketing, processing, and distribution of agriculture products including grants and loans, technical assistance agencies, etc. None of this has been specifically targeted to greenhouse gas reduction, but it could be. In fact, some of the most exciting projects that have been supported through these funds over the past few years have been in the areas of windpower, bio-fuels, organic agriculture, sustainable forestry, and direct marketing — all of which can be very positive from GHG emission reduction perspective. At the same time, funding for processing and distribution that increases GHG emissions has been increasing and needs to be reversed.

In 2002 there will be a new federal Farm Bill. It could reinforce the current negative trend in climate change awareness and affirmative action by “staying the course” in terms of key policies. Or it could be written in such a way as to turn agriculture into a major industry sector talking about and seeing the benefits of reducing climate change gas emissions. We at the Institute for Agriculture and Trade Policy (IATP) believe that this second course of action, working to put positive ideas, rules, regulations, and rewards into the Farm Bill, can reduce GHG emissions while benefiting farmer income.

Review of Published Sequestration Potentials and Carbon Values

SEQUESTRATION POTENTIAL

Source		Sequestration Potential
Lal et al	Total U.S. cropland	75-208 Million Metric Tons (MT) / yr
	No-till	0.3 - 0.5 MT/ha/yr (0.12 - 0.2 MT/acre/yr)
	Conservation Reserve	0.5 - 1 MT/ha/yr (0.2 - 0.4 MT/acre/yr)
USDA	Total U.S. cropland	154 Million MT / yr

CARBON VALUES

	Value (per ton)	Value (per acre)	Source of Values
Lal et al	\$125 / MT	\$15-\$20 / acre	Proposed value per ton. To calculate value per acre, they use a sequestration rate of 0.3 to 0.5 MT/ha/yr (0.12- 0.2 MT/acre/yr).
Bailey and Morris	\$55 / MT	\$11-\$35 / acre	Value per ton based on a \$55/MT (\$50/U.S.ton) carbon tax. To find value per acre, they use Lal's total U.S. sequestration potential and total 1996 cropland area (293.2 million acres).
GEMCo	n/a	\$3-\$15 / acre	Actual value paid per acre by GemCo. Payment level determined by length of time farmers agree to utilize sequestration practices.
McDowell et al	\$14 / MT (full trading)	n/a	Predictions of carbon value based on 3 scenarios of allowable international emissions permit trading.
	\$100 / MT (limited trading)		
	\$200 / MT (no trading)		
Trexler & Associates	\$0.55 to \$3.30 / MT	n/a	Values used in selected actual carbon trading deals.
Farmers at workshop on C seq.	n/a	\$10 / acre	Proposed minimum value suggested by most participants as a fair incentive for adopting sequestration practices.

Sources

Bailey and Morris, 1998. "Taxes, Agriculture, and Climate Change." Institute for Local Self-Reliance report.

Donnelly, Aldyen (for GEMCo), 2000, personal communication.

Lal, Kimble, Follett, Cole, 1998. The potential of U.S. cropland to sequester carbon and mitigate the greenhouse effect. Sleeping Bear Press.

McDowell, Lewandrowski, House, Peters, 1999. Reducing Greenhouse Gas Buildup. Agricultural Outlook, August.

Trexler, Mark, 2000, personal communication.

USDA Fact Sheet, "Soil Carbon Sequestration: FAQ," February, 1999.

