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U.S. Climate Policy and Agriculture

Introduction

The future of our climate is inextricably linked with the future of agriculture. For the bulk of human history, we've grown food and fiber without reconfiguring the atmosphere. But the rise of industrial agriculture changed the equation. Agriculture now emits more greenhouse gases (GHGs) than it absorbs, contributing about six percent of the U.S.'s total GHG emissions, and 13 percent of global emissions—the majority coming from industrial livestock operations.[1] Perhaps more important, however, are the contributions agriculture makes to changes in land use patterns. The destruction of forests, grasslands and other carbon sequestering landscapes to convert them to agricultural uses is a major factor in increased concentrations of GHGs in the atmosphere.

As a GHG emitter, however, agriculture is unique. Unlike coal plants or automobiles, agriculture can sequester carbon. If agriculture-related emissions are reduced—by decreasing nitrogen fertilizer use, reducing methane emissions from livestock, or growing more perennial and cover crops that sequester carbon, for example—farming can be a carbon sink. *(For more, see IATP issue brief: Agriculture and Climate: the Critical Connection)*

It is at this intersection—as a current GHG contributor but with carbon sink potential—that agriculture has entered the climate policy stage, and where the debate over agriculture's role in GHG reductions has grown most heated. The United States, one of the world's largest GHG emitters, has seized upon agriculture and forestry-related sequestration as a mechanism to reduce its overall GHG emissions. U.S. climate policy has defined agriculture's primary role as that of an offset. Recent U.S. cap-and-trade legislation proposals have set no caps for agriculture emissions. Instead, they've proposed agricultural offset schemes that would reward sequestration activities.

Within the U.S., agriculture's role in proposed climate legislation has created fissures. Agriculture interest groups are split over whether to support climate legislation, and environmental groups—many of which believe agriculture should be included in an overall GHG cap—are frustrated by its exemption and critical of some agriculture-based offset schemes.

At heart, however, the U.S. stance on agriculture vis-à-vis climate policy lays bare a general orientation toward reductive, offset-based mechanisms for addressing climate change. Rather than considering agriculture in its entirety—what practices would be best for not only the climate, but also for farmers, consumers, the soil, air and water—U.S. climate policy instead reduces agriculture to a carbon storage coffer, and to an opportunity for avoiding emissions reductions in other sectors.

This paper examines the shaping of agriculture's role in climate policy, and the tensions created by these policies. It considers the role cap-and-trade based legislation in the U.S. may assign to agriculture, and then recommends alternative policy steps that would recognize agriculture's multifunctional role and go beyond climate protection to also enhance our air, water and soil quality, wildlife habitats and food production systems. The best way to make agriculture an effective carbon sink is to pursue the very policies that deliver on all of these goals.

Agriculture and Cap and Trade

In 1980, the White House Council on Environmental Quality presented President Jimmy Carter with a comprehensive survey of environmental trends and predictions through the year 2000.[2] Included were warnings about warming temperatures. Nearly three decades later, the U.S. has taken very few policy steps to address climate change. But over the last decade, the push for

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comprehensive policy reform has gotten much stronger. Concerns about agriculture, along with agriculture interest groups, are increasingly playing a lead role in defining those policies.

Overwhelmingly, recent U.S. climate proposals have favored cap-and-trade-based legislation, as opposed to a carbon tax. Under cap and trade, the law would mandate GHG emissions reductions (20 percent by 2020, increasing to 83 percent by 2050 in the most recent proposed legislation).[3] That's the cap. The trade comes by way of emissions permits (also known as carbon credits or pollution allowances) that would be distributed or auctioned to polluters, including electricity producers, industrial manufacturers, oil refineries and natural gas suppliers. Polluters would either need to stay within emission cap levels or purchase additional permits from other polluters or from a secondary carbon credit market. They would also have the option of buying carbon offsets—the credits another entity receives for sequestering carbon or other GHGs—to reduce their overall emissions.

Agriculture, ranching and forestry have been granted exemptions from the caps proposed in recent bills. Instead, the legislation has defined agriculture's role in climate policy as that of a source of carbon offsets. Farmers and ranchers would have the opportunity to earn emission allowances for practices that ostensibly sequester carbon, reduce GHG emissions or prevent the conversion of land that would increase GHG concentrations. They could then sell the allowances on primary and secondary carbon markets. In the American Clean Energy and Security Act (ACES), a cap-and-trade-based climate bill sponsored by Reps. Henry Waxman, D-Calif.,.and Edward Markey, D-Mass., which passed the U.S. House of Representatives in June 2009, the minimum allowed list of offset-generating activities included no- and reduced-tillage schemes, cover cropping, nitrogen fertilizer reductions, and biogas capture and combustion.[4] (The efficacy of some of these practices in achieving GHG reduction goals is under debate, however. See *Offsets* section.)

Notably, the agriculture and ranching portions of ACES' offset program would be administered by the USDA, *not* the EPA, as the bill originally intended. This was just one of several alterations the bill's authors conceded to farm-state legislators, a group that has had significant influence over climate legislation.

Climate Politics and the Farm-State Lobby

Two months before ACES went to a vote on the House floor, House Agriculture Committee Chair Collin Peterson, D-Minn., demanded the right to a full mark-up by his committee. He had the clout to do it: Peterson warned that unless the Agriculture Committee was handed the bill for alterations, he would align the 26 Democratic committee members against it—a move that would have virtually guaranteed the bill's failure.[5]

Peterson's influence over the development of the Waxman-Markey bill was a prime example of the pressure farm-state legislators are able to exert over climate and other energy legislation. Heavily lobbied by agribusiness interests, Peterson and other farm-state legislators have worked hard to not only maintain cap exemptions for their constituent industries, but to also define agriculture's role under cap-and-trade as a provider of offsets and maintain the status quo.

Peterson's committee got what it wanted, and set a precedent for future climate legislation. Along with ensuring the USDA's jurisdiction over offsets (an agency, Peterson argues, that better understands farmland issues and can more ably implement the program than the EPA) the amendment also silenced—or, more appropriately, postponed—one of the biggest recent debates in agriculture: the issue of indirect land use change (ILUC) calculations in biofuel lifecycle accounting.

Land Use Change

The question of ILUC is this: when American farmers sell their corn to ethanol plants and bypass the traditional food and feed markets, do rainforests and grasslands around the world get cut down and plowed up to fill the gap in the food and feed markets? If so, this would mean not only the destruction of critical ecosystems, but also the release of large quantities of GHGs.

In 2008, California decided to include ILUC in its accounting of biofuel-associated GHGs for its low carbon fuel standard (the first in the nation).[6] The move made it difficult for corn ethanol to qualify as a *low-carbon fuel*, generating ire in the biofuels industry.

Similarly, the second iteration of the federal Renewable Fuel Standard (RFS2) goes beyond the production mandates of the original RFS to also include parameters for greenhouse gas emissions. RFS2 required the EPA to use lifecycle accounting to determine which biofuels would qualify as actually reducing greenhouse gas emissions and include ILUC in those calculations. Again, the biofuels industry and farm state legislators were deeply displeased.

Peterson's amendment, therefore, was considered nothing short of a coup by those who oppose ILUC inclusion in lifecycle accounting of biofuel-related GHG emissions. If the ACES bill is passed, the EPA will be prohibited from including the indirect GHG emissions in both RFS and climate legislation calculations for five years, to allow further study of the issue by the USDA, EPA, Energy Department and Congress.

Many environmental groups considered Peterson's embargo on ILUC inclusion in the RFS2 a significant setback in their work to increase biofuels' environmental sustainability, and resented Peterson's holding the climate bill hostage in order to manipulate

biofuels policy. These tensions bring to the forefront an inherent dilemma caused by offset schemes: a diffusion of responsibility away from the highest GHG emitters, and resulting squabbles between groups not at the heart of the problem.

Offsets

A great deal of the political fragmentation generated by climate policy negotiations has revolved around offsets. While many agriculture interest groups would prefer to have agriculture stricken from discussion when it comes to climate policy (and made untouchable by the EPA and other regulating bodies), others have pushed hard to ensure that any successful U.S. climate legislation will generate income for farmers and ranchers, mainly through offsets. But that hasn't been an easy sell to most farmers and farm groups, many of whom have expressed concerns about the legislation's potential to raise on-farm costs—fuel, electricity, and fossil fuel–based fertilizers and chemicals. The USDA has zealously pitched the income potential of offsets to farmers, estimating annual net returns to farmers from climate offsets ranging from $1 billion per year in 2015–20 to $15–20 billion USD per year in 2040–50 (by way of comparison, the USDA paid out a total of $13.4 billion in commodity subsidies in 2006).[7,8]

The politically influential American Farm Bureau (AFB) has been at the forefront of the movement against climate legislation. AFB President Bob Stallman recently wrote, "The consequences of climate legislation far outweigh the benefits and aren't worth capping America's future."[9]

Several studies, however, have shown that farmers' fears of increased costs may be unfounded. Economist Bruce Babcock at Iowa State University's Center for Agricultural and Rural Development predicts that cap-and-trade policies like ACES will have relatively small negative impacts on agriculture, and warns that climate changes such as increased droughts would have a much greater impact on farm livelihoods than carbon prices.[10] The USDA says ACES would create a less than 1 percent decrease in net farm income in the short term, and 3.5 and 7.2 percent decreases in the medium to long term, respectively. Benefits from offsets, they predict, would make up for income losses.[11]

The National Farmers' Union (NFU), quite opposite from the AFB, strongly supports climate legislation that includes income-generating agriculture offsets. NFU president Roger Johnson told the Senate Agriculture Committee, "Failure to reduce GHG emissions poses significant economic impacts on agriculture and populations whose welfare is of special interest to the agricultural community. To state it simply, the cost of no action must become a legitimate part of the ongoing debate."[12]

While we don't disagree with voluntary offset programs, such as the Chicago Climate Exchange, and heartily acknowledge the real contributions that agriculture can provide in addressing global warming, IATP finds U.S. climate policy's orientation around agriculture offsets troubling for several reasons. First, carbon offset projects are notoriously difficult to measure and verify. Research on the world's largest carbon offset program, the UNFCCC's Clean Development Mechanism (CDM), uncovered the near impossibility of determining whether credits are issued for activities that would have occurred anyway (an issue known as *additionality*). A November 2008 GAO study of the CDM and the European Union's allowance for offsets in its cap-and-trade system shows a failure to certify net GHG reductions resulting from offset projects.[13,14] In 2008, the United Nations suspended Europe's largest offset verification and certification firm after spot checks showed deficient internal auditing systems and lack of documentation.[15]

Second, even if reliable verification mechanisms are developed for agricultural offsets, making the incentive for on-farm carbon practice improvements subject to the whims of a speculative market dominated by Wall Street banks would make it exceedingly difficult to ensure that offsets will be a long-term, reliable solution to climate change [For more, see "whatever the title of Steve's article will be."]. An up-and-down carbon market stemming from offset credits could not only fail to generate emissions reductions (falling carbon offset prices would be poor incentives for farmers to switch to climate friendly agriculture practices), but could also leave farmers—and our agriculture systems—even more vulnerable to speculative forces than they are already. It is hard to envision this having much of a positive impact either for farmers or the planet. *(For more, see IATP issue brief: Speculating on Carbon: The Next Toxic Asset.)* Analysts estimate that no-till offsets will be among the cheapest, at $5–8 USD per ton.[16] Under that scenario, polluting industries will be able to very cheaply avoid reducing their emissions, while promoting an agricultural practice of questionable carbon sequestration benefit (no-till practices do nothing to shift crops away from high-input monocultures).[17]

Valuing Agriculture's Multifunctionality

As we develop agriculture policies in the context of climate change, we must ask ourselves whether we are interested in agriculture as merely a mechanism for banking carbon, or if we are interested in creating multifunctional agricultural systems that both protect the climate, soil, water, and air—and provide food, fiber and fuel.

If the latter is what we want, we must move away from agricultural offsets, and from attempts to define farming's role in our society narrowly through climate policy. Instead, we should begin a separate, equally urgent process to develop and enact policies that best promote agricultural systems that provide us with the kind of farms, rivers, livelihoods, and climate we value as a society, based on the following guidelines:

1. ESTABLISH THAT AGRICULTURE IS A MULTIFUNCTIONAL ENTERPRISE First and foremost agriculture supplies our food, but it also provides animal feed, fiber, energy and other materials, helps manage ecosystems, including water, and is a vital part of our rural economy. Our agriculture system and farmers' cropping decisions—not to mention the nation's food security—should not be compromised or subverted to the goals of industrial polluters or volatile carbon markets.

2. PROVIDE PREDICTABLE AND SUFFICIENT PAYMENTS TO FARMERS FOR CLIMATE-FRIENDLY PRACTICES Predictable payments will encourage a switch to farming systems that reduce GHG emissions more consistently and reliably than a volatile carbon offset program. Payments to farmers for climate-friendly agricultural practices should be set at the appropriate level that incentivizes participation without overwhelming other production and conservation priorities. This requires that payment levels are not set by a fluctuating market, but through a government-led process that is transparent and inclusive of farmers, land owners and other stakeholders. Such payments would be incorporated within existing farm programs such as the Conservation Stewardship Program and would constitute a climate program for agriculture.[18]

3. ENSURE FLEXIBILITY FOR FARMERS The science around best agricultural practices for carbon reduction is still evolving, and we need to retain some flexibility for farmers to shift without penalty if different practices are discovered that would result in greater carbon reductions. At the same time, making a farmer liable for carbon emissions that are caused by natural disasters or other events outside of his or her control is likely to reduce farmer interest in participating in a carbon reduction program. Rewards for carbon reduction practices must provide room for flexibility of practices.

4. HOLD AGRICULTURE RESPONSIBLE FOR ITS GHG EMISSIONS, AND RECOGNIZE ITS MITIGATION ROLE Agriculture has a responsibility to reduce its GHG emissions, but achieving reductions needs to be based upon both farm scale and operations. On most U.S. farms, emissions are difficult to measure and allocate, making farm policy perhaps a better mechanism for emissions reductions than a cap. But on some larger industrial farms—such as concentrated animal feed operations (CAFOs), which have both significant and readily measurable GHG emissions—a regulatory approach such as that applied to other industries may be the best way to reduce emissions.

5. STRENGTHEN RURAL RESILIENCE Rural communities will be among those hardest hit by the effects of climate change. Policies must support rural communities' transitions to climate-friendly economies, and the development of infrastructure to build more localized food and energy systems to help create jobs and strengthen the resilience of rural communities.

When we choose to circumvent real emissions reductions in exchange for offsets, we hinder not only our ability to cool the planet, but also to reap the multitude of benefits—ecological, economic and social—that well-managed working landscapes can provide. And if recent debates are any indication, we risk pitting groups that share common interests (e.g., farmers vs. environmentalists) against one another, making it doubly difficult to meet our climate goals.

References

1. U.S. Environmental Protection Agency, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2007, (Washington, DC, April 15, 2009).

2. Gerald Barney, The Global 2000 Report to the President, White House Council on Environmental Quality, (Government Publishing Office, 1980).

3. Clean Energy And Security Act, S. 1733, 111th Cong., (2009). GovTrack.us (database of federal legislation), http://www.govtrack.us/congress/bill.xpd?bill=s111-1733 (accessed November 3, 2009).

4. American Clean Energy and Security Act of 2009, H.R. 2454, 111th Cong., (2009). GovTrack.us (database of federal legislation), http://www.govtrack.us/congress/bill.xpd?bill=h111-2454 (accessed November 3, 2009).

5. Mark Steil, "Rep. Peterson Brawling Over Ethanol Expansion," MPR.org, June 18, 2009, http://minnesota.publicradio.org/display/web/2009/06/18/peterson/ (accessed October 19, 2009).

6. Executive Order S-1-07, Calif. Governor Arnold Schwarzenegger, Low Carbon Fuel Standard, (2007), CA.gov (CA government Web site), http://www.arb.ca.gov/fuels/lcfs/eos0107.pdf (accessed October 14, 2009)

7. United States Department of Agriculture, Economic Research Service, Office of the Chief Economist, A Preliminary Analysis of the Effects of HR 2454 on U.S. Agriculture, (Washington, DC, 2009).

8. Environmental Working Group. EWG Farm Subsidy Database, April 14, 2008, http://farm.ewg.org/farm/summary.php (accessed October 19, 2009).

9. Bob Stallman, "Don't Cap Our Future," American Farm Bureau, November, 2009. http://fb.org/index.php?fuseaction=newsroom.agenda (accessed November 2, 2009).

10. Bruce Babcock, "Costs and Benefits to Agriculture from Climate Change Policy," Iowa Ag Review 15, No. 3 (June 2009): 1–3, 11.

11. United States Department of Agriculture, Economic Research Service, Office of the Chief Economist. A Preliminary Analysis of the Effects of HR 2454 on U.S. Agriculture, (Washington, DC: 2009).

12. U.S. Senate Committee on Agriculture, Nutrition and Forestry "The Role of Agriculture and Forestry in Global Warming Legislation," Roger Johnson (Washington, DC: July 22, 2009).

13. Michael Wara, "Is the Global Carbon Market Working?" Nature 445 (2007): 595.

14. Government Accountability Office, International Climate Change Programs: Lessons Learned from the European Union's Emissions Trading Scheme and the Kyoto Protocol's Clean Development Mechanism, GAO-09-151 (Washington DC: November 18, 2008).

15. Quirin Schiermeier, "UN Suspends Leading Climate Offset Firm," Nature 456 (2008): 686-687

16. Kim Moore, "Kerry-Boxer Creates Low Offset Demand at Outset," PointCarbon.com, 12 October 2009, http://www.pointcarbon.com/news/1.1249435 (accessed October 18, 2009).

17. J.M. Baker, et al., "Tillage and Soil Carbon Sequestration–What do we really know?" Agriculture, Ecosystems and Environment 118 (2007) 1–5.

18. Natural Resource Conservation Service, "Conservation Stewardship Program," United States Department of Agriculture, http://www.nrcs.usda.gov/new_csp/ (accessed November 3, 2009).