



## **Crying Wolf: Climate Change Far Greater Threat to Farmers Than Climate Legislation**

Cost of House ACES Bill is Pocket Change Per Acre for Most Crops

Craig Cox and Andrew Hug  
Environmental Working Group  
[www.ewg.org/agmag](http://www.ewg.org/agmag)

## INTRODUCTION

Leaders of the agricultural community in Congress and in farm organizations are shouting that the wolf is at the door. Climate change legislation is going to be the ruin of U.S. agriculture, they say, causing devastating increases in the costs of production.

### Crying Wolf

Leaders in the agricultural community continue to argue that a climate bill will devastate U.S. agriculture. Here are just a few of claims being made:

“Different studies come up with varying numbers, but they all paint the same picture: Agriculture loses.” Senator Mike Johanns (R-NE) in a speech on the Senate floor.

“No deal can address the devastation this legislation is going to wreak on America’s farms. This agreement does nothing to address the higher input costs that our farmers and ranchers will invariably have to pay... We are still looking at the most dramatic tax increase of all time and the agriculture community will be hit the hardest.” Congressman Frank Lucas (R-OK).

“Producers would be forced to bear increased costs as a result of cap-and-trade legislation and the effects of that would be felt through South Dakota. As the Senate prepares to consider this issue this fall, I will continue working to protect South Dakota farmers and ranchers from the unfair, punitive results of the cap-and-trade bill passed by the House of Representatives.” Senator John Thune (R-SD).

“High energy costs will affect farmers in all sorts of ways. Consider the impact on fertilizer, which requires a large amount of energy to produce. The price of this important commodity will soar. Farmers will have little choice but to pay up.” Dean Kleckner, Chairman, Truth About Trade & Technology.

These claims continue despite the fact that a report from USDA economists clearly shows that the cost of a climate bill *per acre* would be less than the price of a single bushel of corn, soybean or wheat.

Climate change threatens farmers and ranchers far more than the climate bill does. Agricultural leaders should be working for a bill that prevents the worst damages to farm income, our food supply, and our environment damages that scientists are telling us we can expect if we don’t act now to slow global warming.

The wolf at the door is so threatening, they claim, that groundbreaking legislation to slow climate change should be either shelved or loaded up with concessions that send more money to agricultural interests.

Enter into this heated atmosphere the professional economists of the U.S. Department of Agriculture. In a “Preliminary Analysis of the Effects of H.R. 2454 on U.S. Agriculture,”<sup>1</sup> economists from the USDA Office of the Chief Economist and the Economic Research Service paint a very different picture of how much climate change legislation might actually cost U.S. farmers.

Their analysis suggests that the canine at the door is more puppy than wolf.

## **LESS THAN A 1% INCREASE IN COSTS OF PRODUCTION**

The cap-and-trade provisions of the climate bill (H.R. 2454) passed by the House of Representatives requires industries to reduce their emissions of greenhouse gases in order to slow climate change. The bill would result in increases in the price of energy as companies invest in new technology and renewable energy sources to meet the requirements of the cap-and-trade provisions.

Farmers would see the effect of increased energy prices in two ways. First, farmers would be directly affected by increases in the cost of gasoline, diesel fuel, liquid petroleum, natural gas, electricity and other sources of energy they use to produce crops and livestock. Second, farmers would be affected by the indirect effects of higher energy prices through increases in the cost of fertilizers and other inputs that require a lot of energy to produce.

USDA economists estimated the magnitude of both these direct and indirect effects of higher energy prices on the farmers' annual average cost of production in the "near term" (2012-2018), the "medium term" (2027-2030), and the "long term" (2042-2050). USDA focused its analysis on the near-term effects in order to compare their findings to the USDA baseline projections of future farm production costs and revenues in the absence of a climate bill.<sup>2</sup> The current USDA baseline only extends to 2018.

We compared the USDA economists' estimates of the cost of a climate bill to other factors that affect agriculture in order to put the projected costs of a climate bill in context. Our analysis shows that farmers do have things to worry about, but the climate bill isn't one of them.

Farmers, for example, should be very worried about what the global recession is doing to their bottom lines. USDA's Economic Research Service recently predicted that net farm income would fall to \$54 billion in 2009, down 38 percent from the 2008 record high of \$87 billion.<sup>3</sup> The steep drop in farm income is being driven by deteriorating economic conditions worldwide that are causing a drop in demand for our agricultural exports with few options available to expand other markets. USDA economists estimate the climate bill would reduce net farm income by only \$600 million a year a 0.9 percent reduction. The effect of a climate bill, then, pales in comparison to the impact of global economic factors. The \$29.4 billion cut to farm income caused by the current global recession is almost 50 times larger than the \$600 million a year that USDA economists predict a climate bill would cost farmers on average between 2012 and 2018.

Farmers also face the dangers of a highly volatile commodity market, thanks in part to the government subsidies and mandates for ethanol production and use that have linked commodity prices to the price of crude oil. Dan Piller of The Des Moines Register, in an August 30, 2009 story, wrote that "the rocket-like bursts and dives of corn and soybean prices this year have shaken farmers, traders and the agricultural economy."<sup>4</sup> Mr. Piller goes on to report that in the last 14 months, corn prices shot to \$7.99 only to fall to \$3.15. Soybean prices followed suit,

reaching \$16 per bushel in mid-2008 and falling to \$8 per bushel by the end of the year. The price drops from late June to mid-August, according to Mr. Piller, translate, at least on paper, to a loss to Iowa farmers of \$3.8 billion dollars. That loss just in Iowa in one year is six times larger than the \$600 loss the climate bill would cost all farmers in the United States each year.

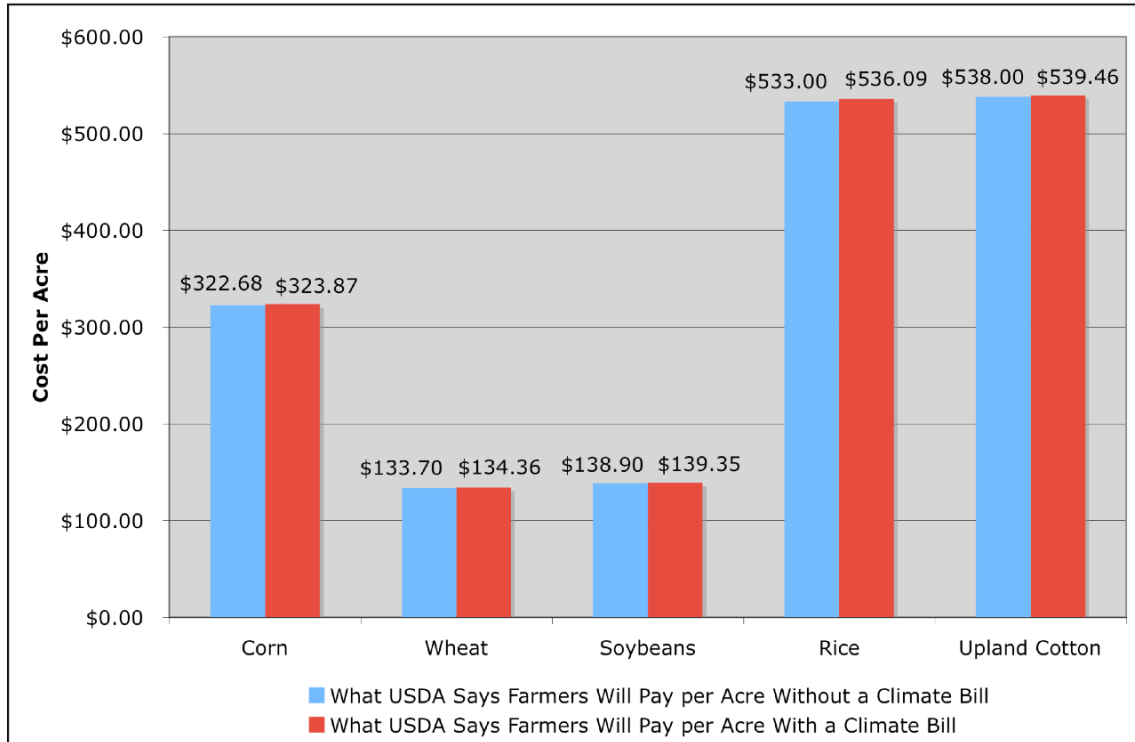
Nationally, statistics compiled by the USDA National Agricultural Statistics Service (NASS) show that the prices farmers get for their crops have been on a wild ride for the last five years.<sup>5</sup> Their index of crop prices rose by 63 percent from January 2004 to July 2008 before falling 20 percent in the last twelve months. That swing in crop prices dwarfs the less than 1 percent effect that USDA economists predict a climate bill have on farm income.

Given the swings in farm income and costs that farmers already experience, the impact of a climate bill is barely detectable.

### **Cost of the Climate Bill is Negligible Compared to Total Production Costs**

The reason the effect of the climate bill on farmers is so small, when looked at in the proper context, is that a climate bill would increase what it costs farmers to produce a crop by less than one percent per acre, the USDA economists concluded. They estimated that the increase in average annual production costs between 2012 and 2018, would range from 45 cents per acre for soybean producers to \$3.09 per acre for rice. Figure 1 shows just how small those cost increases would be compared to what it will cost farmers to produce crops without a climate bill in place, according to USDA baseline projections.

**Figure 1: Climate Bill Increases Farmers Costs by Far Less Than 1% Between 2012 and 2018**



**Climate Bill Costs Farmers Less *Per Acre* Than the Price of a Single Bushel of Corn, Wheat, or Soybeans.**

USDA estimated that the climate bill would increase the cost of crop production by at most a few dollars per acre: \$1.19 per acre for corn, \$1.26 per acre for sorghum, \$0.70 per acre for barley, \$0.57 per acre for oats, \$0.66 per acre for wheat, and \$0.45 per acre for soybeans (Table 1). The climate bill, in other words, would cause cost increases *per acre* that are far less than what USDA in their 2009 baseline, predicts farmers will get for a single bushel of these 6 crops.

**Table 1: Losing one bushel of grain would cost farmers more than the climate bill.**

Crop	What the Climate Bill Costs <i>Per Acre</i>	What Farmers Get For <i>One Bushel</i>	Yield Increase Needed to Compensate for Cost Increase
Corn	\$1.19	\$3.72	0.2%
Sorghum	\$1.26	\$3.32	0.6%
Barley	\$0.70	\$3.92	0.3%
Oats	\$0.57	\$2.34	0.4%
Wheat	\$0.66	\$5.41	0.3%
Soybeans	\$0.45	\$8.72	0.1%

Cotton farmers are predicted to see an increase of \$1.46 per acre to produce 920 pounds of cotton per acre about the same as the price of 2.5 pounds of cotton. Rice farmers' costs would increase by \$3.09 per acre on average to produce about 7,500 pounds of rice per acre about the same as the price of 28 pounds of rice.

Indeed, a per acre yield increase of much less than 1 percent would compensate for what the climate bill would cost producers of any of the 8 crops USDA analyzed (Table 1). USDA's 2009 baseline projects yield increases ranging from 0 percent for sorghum to 7 percent for corn and cotton between 2012 and 2018. With the exception of sorghum, the projected yield increases range from 9 to 52 times greater than the yield increases needed to compensate for the cost of the climate bill.

One reason the costs estimated by USDA economists are low is that the current version of the climate bill includes provisions that shelter the fertilizer industry from increased energy costs and farmers from increased fertilizer prices. Even without those protections, USDA estimates that the climate bill would increase farmers' costs of production by less than 2 percent between 2012 and 2018. The cost increases range from 0.7 percent for upland cotton to 1.9 percent for corn and wheat.

The USDA estimates of how much a climate bill would increase farmers' costs without the fertilizer price protections are similar to estimates made by three other economic research institutions. An analysis by Dr. Bruce Babcock at the Center for Agricultural and Rural Development predicted that costs for Iowa corn and soybean producers would increase by \$4.52 per acre above the variable cost of production per acre of about \$300.<sup>6</sup> An analysis of representative farms in Missouri completed by the Food and Agricultural Policy Research Institute estimated the climate bill would increase annual operating costs by 1.6 percent for soybeans, 3.2 percent for dryland corn, 3.5 percent for irrigated corn, and 4.1 percent for soft red wheat.<sup>7</sup>

More recently, a study by Dr. Justin Baker and colleagues published by the Nicholas Institute for Environmental Policy Solutions at Duke University and by AgriLife Research and Extension at Texas A&M University estimated that costs of production would increase by 0.85 percent, 2.94 percent, and 5.65 percent under three different price scenarios for carbon under a cap-and-trade policy.<sup>8</sup> Baker et al. note that their results "...are in line with those forecast in the USDA 2009 analysis," which we are using as the basis of this report. A study by Dr. Joe Outlaw published by the Agricultural and Food Policy Center at Texas A&M University estimated the impact of a climate bill on 98 representative farms across the United States.<sup>9</sup> Their estimates of cost increases varied greatly among representative farms but on average were in line with the previously cited estimates for producers of feedgrains and oilseeds (3.1 percent), wheat (2.8 percent), and cotton (4.4 percent). The cost increase predicted for rice producers averaged over 14 representative farms was 6.7 percent.

## **USDA Cost Estimates Are an “Upper Bound”**

USDA economists are clear that their already low estimates of increased costs to farmers caused by climate change legislation are likely too high. Their estimates are “likely an upper bound...because they fail to account for farmers’ ability to fully respond to change in market conditions.”

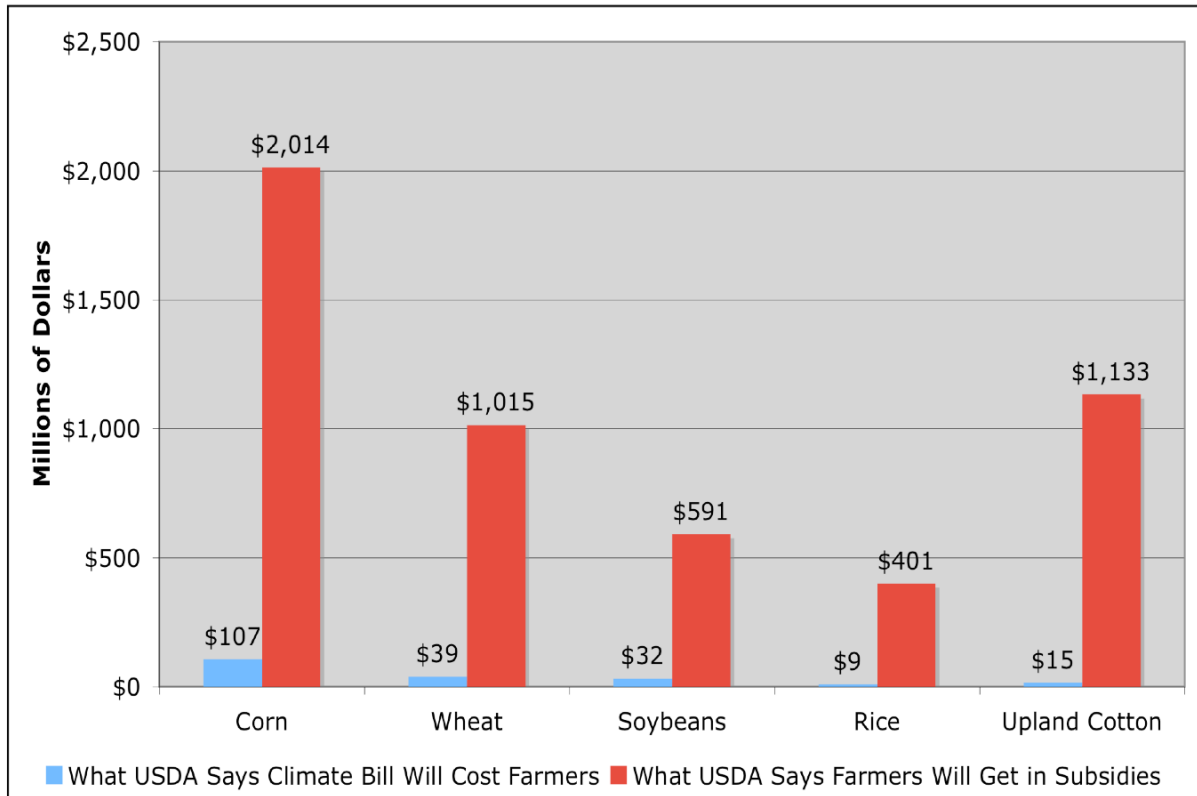
Specifically, the USDA economists note that their analysis “assumes no technological change, no alteration of inputs in agriculture, and no increase in demand for bio-energy as a result of higher energy prices,” and that therefore their analysis “overstates the impact of the climate change legislation on agriculture costs...” But clearly farmers will adjust their practices to reduce the effect of cost increases on their bottom lines, as they always do. Indeed, the USDA study refers to a study that found farm income would actually increase if a climate bill passed as farmers adjust their production practices and include bio-energy crops in their operations.<sup>10</sup>

## **SUBSIDIES FARMERS GET WILL BE FAR LARGER THAN ANY LOSSES A CLIMATE BILL MIGHT CAUSE**

Those crying wolf over the costs a climate bill might impose neglect to acknowledge that the payments farmers get from taxpayers every year far outweigh the potential cost of a climate bill (Figure 4).<sup>11</sup> Corn producers, for example, will get over \$2 billion a year in subsidies 19 times the estimated additional cost they will face because of the climate bill. Wheat producers will get 26 times more, soybean producers 18 times more, rice producers 45 times more, and cotton producers 76 times more in subsidies each year than the additional costs predicted by USDA economists.

Taxpayers currently subsidize corn, soybean, wheat, rice, and cotton producers through a host of federal government programs. Most of them pay farmers when market prices and/or revenue from crop sales fall below levels set in the farm bill. Currently, the so-called direct payment program is the most important subsidy to farmers. Farmers are guaranteed the same amount of direct payments each year regardless of whether crop prices or sales are low or high. The amount farmers will receive in subsidies on average between 2012 and 2018 ranges from \$401 million a year for rice to over \$2 billion a year for corn.

**Figure 4: Farm Subsidies Dwarf the Cost of a Climate Bill Each Year Between 2012 and 2018**



**CLIMATE CHANGE MORE THREATENING THAN A CLIMATE BILL**

Lost in the shouting match over what a climate *bill* might cost is the most important point climate *change* will be devastating for U.S. farmers and our agricultural economy. Instead of wringing our hands about the small, if not negligible, amounts that a climate bill might cost farmers, we should be very worried about how much the experts are telling us climate change will cost them.

Farmers’ biggest worry year-in and year-out is bad weather. Indeed, a presentation by Dr. Eugene S. Takle, Professor of Atmospheric Science and Agricultural Meteorology and the Director of the Climate Science Initiative at Iowa State University indicated that bad weather accounts for 90 percent of insured crop losses in Iowa.<sup>12</sup> Drought accounts for 35.5 percent, excess moisture accounts for 38.4 percent, hail accounts for 7.2 percent, and high winds for 5.0 percent.

Data compiled by the USDA Risk Management Agency reveal that federal crop insurance payments to U.S. farmers for crop losses in the last five years averaged \$4.3 billion each year, seven times what a climate bill might cost farmers.<sup>13</sup> Payments for crop losses just to the states represented on the U.S. Senate Agriculture Committee averaged \$3.0 billion a year, five times the cost of

a climate bill. These losses ranged from \$1.3 billion to \$6.5 billion a year, compared to the estimated \$600 million a year cost to farmers of a climate bill, according to USDA economists.

Inaction will be far more costly for agriculture than the climate bill passed by the House of Representatives. Unless action is taken now to slow global warming, farmers can expect to see an acceleration of the extreme weather patterns heavy rains, flooding, droughts and higher temperatures that have already taken a heavy toll over the past two decades. According to 2007 testimony to Congress from the Government Accountability Office, farmers suffered at least \$44 billion in total weather-related crop and livestock losses between 1980 and 2005.<sup>14</sup> Increasing frequency of severe weather such as drought and heavy precipitation will lead to greater crop damage, lower yields or even total crop failure. These impacts were all apparent during the major Midwest flood of 2008, when the federal crop insurance program paid out nearly \$8.6 billion in damages. One study found that by 2030, changes in soil moisture content linked to global warming could cost corn farmers alone as much as \$3 billion a year in crop damage.<sup>15</sup>

Climate change threatens to reduce crop yields and cut deep into farmers' bottom lines. A recent report from the U.S. Global Change Research Program (USGCRP) warned that "Even moderate increases in temperature will decrease yields of corn, wheat, sorghum, beans, rice, cotton, and peanut crops... Further, as temperatures continue to rise and drought periods increase, crops will be more frequently exposed to temperature thresholds at which pollination and grain-set processes begin to fail and quality of vegetable crops decreases."<sup>16</sup> A new report published in the Proceedings of the National Academy of Sciences predicts that yields of corn and soybeans will decrease by between 30 percent and 63 percent by the end of the century because of higher temperatures.<sup>17</sup>

Even very small reductions in yield far smaller than those scientists are predicting if we don't slow climate change would cause farmers more harm than any increase in costs caused by the climate bill. If climate change caused yields to drop only one-half of one percent per acre, those losses would cost farmers more than the climate bill. Climate change will cost farmers more than a climate bill if it causes yields to fall more than 0.19 percent for corn, 0.11 percent for soybeans, 0.27 percent for wheat, 0.36 percent for rice, and 0.26 percent for upland cotton, given the fertilizer price protections in the House climate bill. Even without the fertilizer price protections, yield losses from climate change of 1 percent or less would do more to hurt farm income than the climate bill.

Indeed, the *per acre* costs of the climate bill are projected to be far less than the farm price of a *single bushel* of corn sorghum, barley, oats, wheat and soybeans. In other words, losing a single bushel per acre because of bad weather induced by climate change would hurt farmers more than the climate bill (Table 1).

Even if farmers manage to maintain yields in the face of climate change, the cost of doing so may be quite large. The USGCRP report points out that “weeds, diseases and insect pests benefit from warming...increasing stress on crop plants and requiring more attention to pest and weed control.” According to the study, controlling weeds in the United States already costs more than \$11 billion a year and rising temperatures and carbon dioxide levels will require farmers to spend even more. Just a five percent increase in the cost of weed control alone would reduce farm income more than the climate bill would.

Insect pests and crop diseases also thrive in a warming climate. Pest and disease organisms are likely to expand northward and increase their numbers by surviving over winter, causing farmers to spend more money to control crop and livestock damage. The USGCRP report noted that “...spraying is already much more common in warmer areas than in cooler areas. For example, Florida sweet corn growers spray their fields 15 to 32 times a year to fight pests such as corn borer and corn earworm, while New York farmers average zero to five times.”

Climate change may threaten the very existence of irrigated agriculture as competition for water becomes extreme. In the Southwestern United States, for example, the USGCRP report states that “the combined effects of natural climate variability and human-induced climate change could turn out to be a devastating ‘one-two-punch’ for the region.” Because agriculture is the largest user of water in region, shifting water from agriculture to meet urban needs during droughts and tapping non-renewable groundwater supplies is a likely scenario, according to the report. But either option comes “at the cost of current or future agricultural production.”

Livestock productivity is also expected to decrease and livestock deaths will become more frequent in a warmer and more volatile climate. It will also very likely bring increased soil erosion and declining pasture, forage and soil quality.

Each new scientific assessment confirms that doing nothing to slow global warming and the build-up of greenhouse gases in our atmosphere will cause serious economic losses to US agriculture.

## **A STRONG CLIMATE BILL HELPS FARMERS**

Climate change threatens farmers far more than does the climate bill. Agricultural leaders should be working for a bill that prevents the worst damages to farm income, our food supply, and our environment that scientists are telling us we can expect from global warming.

The right climate bill could spur farmers to do more to reduce their own greenhouse gas emissions and sequester more carbon while building soil productivity, cleaning up streams and rivers, protecting their bottom lines and securing our food supply. Farmers can earn money doing that if a climate bill passes, which allows them to sell “offset credits” to power plants and other industrial facilities that have to reduce their own emissions.

The House climate bill allows such facilities to achieve their emissions reduction targets by instead paying farmers and ranchers to use conservation practices that reduce the amount of greenhouse gases in the atmosphere. In the terminology of the climate bill this approach is called an "offset program." Industries buy "credits" from farmers who implement conservation practices. The resulting reduction in pollution "offsets" part or all of the reductions the industry is required to make.

USDA economists estimated that selling such offset credits could generate gross sales for farmers of "\$2 billion per year in real 2005 dollars in the near term, rising to about \$28 billion per year in real 2005 dollars in the long-term." Farmers would incur some costs to implement the practices needed to produce offset credits, so their net revenue would be lower than the gross sales figures cited above. The USDA economists did not try to estimate what the net revenue might be but did conclude that their analysis "strongly suggests that revenue from agricultural offsets (afforestation, soil carbon, methane reduction, nitrous oxide reductions) rise faster than costs to the agriculture from cap-and-trade legislation" and that "it appears that in the medium to long term, net revenue from offsets will likely overtake net costs from HR 2454 perhaps substantially."

Other studies that have attempted to estimate how much farmers could profit if a climate bill passed have concluded that on average, they would be better off, but the picture is not uniform. The Center for Agricultural and Rural Development study found that Iowa corn and soybean farmers could earn about \$8.00 per acre by adopting no-till methods.<sup>6</sup> The Outlaw et al. study found that most feedgrain, oil seed, and wheat producers would be better off under a climate bill, as measured by "average ending cash reserves."<sup>9</sup> Most rice and cotton producers, dairies, and ranches would be worse off. However, the study shows that most cotton producers, nearly all feedgrain/oil seed producers, dairies, and ranchers, and all wheat producers would do better under a climate bill as measured by "average ending real net worth." Most rice producers would be worse off, primarily because the authors assumed rice producers will have no opportunity to participate in carbon markets.

The Outlaw et al. study included only two practices no-till and methane digesters in the set of practices they assumed the representative farms could use to earn carbon credits. They also assumed that ranches and rice producers had no options for generating carbon credits. Agronomic studies strongly suggest that both ranches and rice producers have significant options for generating carbon credits.<sup>18, 19, 20, 21, 22, 23</sup> The Baker et al. study allowed for a broader set of practices that farmers, including rice and livestock producers, could use. Baker et al. concluded that "despite the fact that production costs are rising, both from the higher costs of inputs as well as the cost of emissions, indirect and direct revenues more than compensate." Moreover, the authors conclude that "overall the gain in net income could be substantial" and that "producer surplus, which

reflects net producer income (converted to an annual annuity at 4%), increases \$12-\$54 billion.”

A well-structured agricultural offset program could and should be a way to provide (1) incentives to farmers to increase conservation, (2) a means for polluters to lower the cost of reducing their emissions, and (3) an effective way for the nation to slow climate change. Unfortunately and ironically, the provisions being added to the climate bill to accommodate agricultural interest groups are more likely to undercut the opportunities most farmers would have to benefit from selling offset credits.<sup>24</sup> The most damaging provisions open a large loophole by letting polluting industries take credit for practices farmers have already been using. That provision lets polluters off the hook, blunts incentives for producers to protect their operations and our environment from the effects of climate change, and likely reduces the amount farmers will be paid for the emissions they reduce or the carbon they sequester.

The threat that climate change poses to our food supply, our agricultural economy, our soil, water, and wildlife resources, and our children’s future requires more leadership and less hyperventilation. The leadership of the United States Senate must ensure that its version of the climate bill:

1. sets us on a path that slows global warming and reduces our dependence on fossil fuels soon enough to avoid the most damaging consequences of climate change for agriculture and our environment
2. creates an effective and credible agricultural offset program that actually reduces the amount of greenhouse gases in the atmosphere by creating incentives for farmers to further reduce their own emissions and sequester more carbon
3. puts in place an aggressive climate conservation initiative by using allowance revenue or other means to dramatically ramp up funding for the programs already in the conservation title of the farm bill. The initiative should spur cooperative projects at the local level to reduce the amount of greenhouse gases in the atmosphere, protect soil, water, and wildlife, and help farmers armor their farms and ranches against climate change.

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