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Impacts of Climate-Change Legislation – A Look at Troubling Numbers

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Fifty-nine million!

That's the number of acres the U.S. Department of Agriculture's (USDA) economic analysis shows will be diverted from cropland and pastureland into tree plantings by 2050 if the House-passed version of climate-change legislation (H.R. 2454) becomes law.

Secretary of Agriculture Tom Vilsack initially previewed the USDA study's results the day before they were presented by USDA Chief Economist Joseph Glauber during a Dec. 3 House Agriculture subcommittee hearing. Glauber's 60-page testimony concluded that despite a 14.4 percent reduction in U.S. cropland, U.S. agriculture "on net" would be a "winner" if the House climate-change bill was enacted.

But two weeks later – on Dec. 16 – Vilsack announced from the Copenhagen climate-change summit that he now believes the model used to obtain the estimate is "flawed," and directed USDA to work with the U.S. Environmental

Protection Agency (EPA) to improve it. "The conclusions of that report obviously depend to a certain extent on what model is used and what your starting point is," Vilsack said on USDA Radio. "The model that was used, the EPA model, candidly I think that there are other models more current and more complete that might lead to significantly, and will lead to significantly different conclusions."

Vilsack's about-face caused a bit of an uproar on Capitol Hill, with Sen. Mike Johanns, R-Neb., who served as secretary of agriculture during the latter years of the Bush administration, urging the Senate Agriculture, Nutrition and Forestry Committee to conduct hearings on the matter, and whether USDA was shopping for numbers. Previously, an analysis conducted by the American Farm Bureau Federation estimated that at least 50 million acres of U.S. cropland and rangeland would be diverted to afforestation under the House climate-change bill. Other studies have estimated the impact could be even greater.

Acreage Idling – The Cumulative Impact

USDA already idles nearly 32 million acres of cropland through the Conservation Reserve Program (CRP). And more than doubling that amount through climate-change legislation (*Table 1*) would have dramatic impacts on the long-term viability of U.S. agriculture – potentially decimating the domestic livestock and poultry sector – and

undermine its ability to take advantage of growth opportunities in a hyper-competitive global marketplace.

That reality is evident in the following tables presented in USDA's Dec. 3 testimony:

	2015	2020	2025	2030	2035	2040	2045	2050
Forest	8.3	16.6	20.3	26.6	34.4	43.6	55.4	59.0
Percent Change	2.6	5.2	6.4	8.5	11.1	14.3	18.4	19.7
Cropland	.1	-6.0	-10.2	-14.6	-21.0	-28.3	-32.5	-35.0
Percent Change	.3	-2.3	-4.0	-5.7	-8.3	-11.3	-13.2	-14.4
Pasture	-6.7	-8.5	-9.7	-12.0	-13.3	-15.3	-22.8	-24.0
Percent Change	-2.5	-3.1	-3.5	-4.4	-4.9	-5.6	-8.3	-8.7

While USDA projected that yield increases (Table 2) would mitigate some of the potential adverse impacts of the House Bill’s “cap-and-trade” scheme, it still estimated that corn production would decline by 4 million bushels by 2050 compared to what otherwise would occur without the legislation. Wheat production would decline by 400,000 bushels. More dramatically, USDA projected that soybean production would decline from estimated 2015 levels of 2.518 billion bushels to 2.028 billion bushels by 2050; sorghum production would decline from 588 million bushels in 2015 to 251 million bushels by 2050. [See Table 3.]

	2010	2015	2020	2025	2030	2035	2040	2045	2050
	<i>(Yields – Bushels Per Acre)</i>								
Corn	164.1	174.5	184.7	203.5	224.4	246.8	272.7	300.0	330.0
Soybeans	44.5	45.4	46.3	47.2	48.3	49.3	50.5	51.7	52.8
SWW	68.3	72.7	77.1	81.5	85.6	90.0	93.6	99.4	103.3
HRW	69.0	73.9	78.3	83.7	89.9	94.9	102.2	109.6	117.8
Durum	32.3	35.9	38.1	39.8	41.0	42.5	42.0	44.2	46.8
HRS	38.9	41.2	43.5	46.1	48.6	51.5	52.4	55.9	57.4
Sorghum	59.5	59.5	66.2	66.2	66.9	66.6	63.2	67.3	63.6
Rice (cwt/acre)	72.6	76.6	80.9	86.1	91.7	97.8	104.5	111.1	118.7
Oats	61.8	61.3	62.3	61.2	60.5	58.7	61.2	61.1	60.6
Barley	59.5	60.2	63.1	62.3	61.2	59.6	58.5	59.0	59.0

		2015	2020	2025	2030	2035	2040	2045	2050
		<i>(Million Bushels)</i>							
Corn	USDA Baseline	14222	14619	15585	16520	17536	17547	18274	20627
	House Scenario	14022	14212	14753	15326	15852	16003	15794	16109
	% Change	-1.4	-2.8	-5.5	-7.2	-9.6	-8.8	-13.6	-21.9
Soybeans	USDA Baseline	2609	2671	2734	2777	2888	2818	2861	2848
	House Scenario	2518	2539	2534	2527	2481	2319	2126	2028
	% Change	-3.5	-5.0	-7.3	-9.0	-14.1	-17.7	-25.7	-28.8
Wheat	USDA Baseline	2433	2509	2601	2660	2795	3108	3212	3412
	House Scenario	2433	2498	2563	2611	2724	2988	3059	3065
	% Change	0.0	-0.4	-1.5	-1.8	-2.6	-3.8	-4.8	-10.2
Sorghum	USDA Baseline	522	317	300	289	307	304	315	333
	House Scenario	588	325	304	297	303	262	262	251
	% Change	12.7	2.6	1.3	2.8	-1.4	-13.7	-16.9	-24.5
Rice (cwt)	USDA Baseline	273	346	391	444	484	536	590	632
	House Scenario	237	306	334	359	397	419	440	474
	% Change	-13.1	-11.4	-14.5	-19.2	-18.0	-21.7	-25.3	-25.1
Oats	USDA Baseline	114	96	104	114	134	190	212	217
	House Scenario	127	102	100	108	110	140	154	149
	% Change	11.4	6.0	-3.8	-5.1	-18.1	-26.1	-27.2	-31.5
Barley	USDA Baseline	310	283	296	312	342	398	400	428
	House Scenario	324	285	293	309	314	358	375	363
	% Change	4.8	0.8	-1.1	-1.0	-8.4	-10.1	-6.2	-15.2

All of these potential reductions would have significant ramifications for exports and the environment. USDA’s analysis showed that as agricultural production declines, “lower domestic crop production and higher prices could spur increases in agricultural production abroad as producers make up for reductions in U.S. exports.”

U.S. corn exports would decline by 50 percent by 2050, USDA projected, while soybean exports would decline to zero and wheat exports would fall by nearly 12 percent over the same time frame. USDA’s analysis noted that decimating U.S. exports could moderate the expected increase in crop prices, as well as lessen the environmental benefit as other countries increase production to take up the slack. Land taken out of production in the United States, which represents the most technologically advanced and conservation-minded form of production, likely would be more than compensated by competitors that do not use the same conservation techniques or are not subject to the same environmental regulations.

This growing acreage imbalance would be expected to occur during what otherwise would be promising years for U.S. agricultural growth, given growing demand from new sources, such as biofuels, and continued growth in traditional markets for feed and food as diets improve and the middle class expands globally.

USDA’s analysis also found that U.S. livestock and poultry production would be hit hard, with the impact becoming even more severe as the price for carbon increases and competes more directly for land against feed, food and energy production. USDA projected that hog production would decline by 22.7 percent by 2050 as a result of the House climate-change bill compared to USDA’s baseline projections, while fed beef production would fall by 9.6 percent and milk production would decline by 16.9 percent. Meanwhile, broiler and turkey production also would decline by 7.3 and 7.6 percent, respectively. [See Table 4.]

		2015	2020	2025	2030	2035	2040	2045	2050
		<i>(Million Hundredweight)</i>							
Fed Beef	USDA Baseline	510	525	547	555	560	614	640	649
	House Scenario	508	507	523	536	546	576	591	587
	% Change	-4	-3.5	-4.4	-3.4	-2.6	-6.1	-7.7	-9.6
Hogs	USDA Baseline	453	474	518	555	615	647	674	699
	House Scenario	427	437	481	500	525	547	557	541
	% Change	-5.7	-7.9	-7.2	-9.9	-14.6	-15.3	-17.3	-22.7
Milk	USDA Baseline	2017	2153	2243	2420	2547	2654	2773	2911
	House Scenario	2005	2095	2181	2255	2329	2427	2410	2418
	% Change	-6	-2.7	-2.8	-6.8	-8.6	-8.6	-13.1	-16.9
Broilers	USDA Baseline	471	484	514	540	568	596	618	643
	House Scenario	466	481	506	531	557	579	593	596
	% Change	-1.0	-7	-1.6	-1.6	-1.8	-2.8	-4.1	-7.3
Turkeys	USDA Baseline	92	105	111	124	130	137	146	154
	House Scenario	92	102	109	114	122	133	136	142
	% Change	.1	-3.1	-2.1	-8.2	-6.3	-2.7	-6.9	-7.6

Conclusion

While world grain production currently is at record levels, the production levels for grains and oilseeds have fallen short of actual use in seven of the past 10 years. That makes the potential impact of idling even more cropland even more disconcerting, as it only will exacerbate these shortfalls and drive global consumers to competitors as they take advantage

of the United States’ self-imposed limits on agricultural production. This also could adversely affect the United States’ drive to be more self-sufficient in renewable energy, as opportunities for biofuels production decline given grain availability and rising costs.

USDA's analysis shows that the House-passed climate-change bill would run the risk of either contributing to significant shortfalls in supplies of basic commodities needed in multiple sectors of the food, feed, energy and export sectors, or cede any future growth in agricultural markets to producers in other countries. Both could occur if agricultural production further is disrupted by weather, disease or transportation-capacity constraints that could occur over the next 40 years. And acres planted to trees can't be restored to crop production overnight to meet supply shortages.

It also likely would have an adverse impact – as has the CRP – on the ability of tenant farmers or other agricultural producers to expand tillable acreage as they compete against the U.S. government and a carbon market for available cropland.

Converting and idling cropland also seems certain to damage rural economies, as land kept idle or dedicated to trees provides no need for seed sales, tractor sales and servicing, custom harvesting crews, fertilizer and chemical dealers and hired help.

The end result is that land idling/converting programs that put the government and/or artificial markets in direct

competition with commercial farmers in bidding for land cause more people to lose jobs and leave rural communities, while prices for energy and food increase for all consumers.

Little wonder, then, that a subsequent USDA statement quoted Vilsack as saying that he understood that the results of the USDA analysis "have caused considerable concern within the farm and ranch community....If landowners plant trees to the extent the model suggests, this would be disruptive to agriculture in some regions of the country." In announcing that he had directed Chief Economist Glauber to work with EPA to review the assumptions in the model, he said he also asked for "options on how best to avoid unintended consequences for agriculture that might result from climate-change legislation."

These reviews are ongoing, and further analyses are expected in the future.

But USDA's initial analysis has had the benefit of putting a spotlight on the impacts climate-change legislation could have in idling large tracts of cropland and significantly impairing U.S. agriculture's ability to compete globally and continue to provide a safe, abundant and high quality supply of food, feed and fuel.