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Carbon Emissions the Problem: Carbon Storage the Solution?

Gary D. Lynne

University of Nebraska-Lincoln

Colby Kruse

University of Nebraska-Lincoln

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Cornhusker Economics

Cooperative Extension

Institute of Agriculture & Natural Resources
Department of Agricultural Economics
University of Nebraska – Lincoln

Carbon Emissions the Problem: Carbon Storage the Solution?

Market Report	Yr Ago	4 Wks Ago	7/27/01
<u>Livestock and Products,</u>			
<u>Average Prices for Week Ending</u>			
Slaughter Steers, Ch. 204, 1100-1300 lb Omaha, cwt	\$65.66	\$ *	\$ *
Feeder Steers, Med. Frame, 600-650 lb Dodge City, KS, cwt	94.50	97.70	94.75
Feeder Steers, Med. Frame 600-650 lb, Nebraska Auction Wght. Avg	107.12	109.44	108.20
Carcass Price, Ch. 1-3, 550-700 lb Cent. US, Equiv. Index Value, cwt	103.30	111.89	112.69
Hogs, US 1-2, 220-230 lb Sioux Falls, SD, cwt	47.50	53.50	50.25
Feeder Pigs, US 1-2, 40-45 lb Sioux Falls, SD, hd	40.60	48.00	42.33
Vacuum Packed Pork Loins, Wholesale, 13-19 lb, 1/4" Trim, Cent. US, cwt	126.70	126.75	121.50
Slaughter Lambs, Ch. & Pr., 115-125 lb Sioux Falls, SD, cwt	82.75	62.37	55.87
Carcass Lambs, Ch. & Pr., 1-4, 55-65 lb FOB Midwest, cwt	185.00	164.90	157.28
<u>Crops,</u>			
<u>Cash Truck Prices for Date Shown</u>			
Wheat, No. 1, H.W. Omaha, bu	2.82	2.99	2.55
Corn, No. 2, Yellow Omaha, bu	1.42	1.66	2.04
Soybeans, No. 1, Yellow Omaha, bu	4.27	4.59	5.20
Grain Sorghum, No. 2, Yellow Kansas City, cwt	2.79	3.19	3.68
Oats, No. 2, Heavy **Minneapolis, MN, bu	1.26	1.50	1.62
<u>Hay,</u>			
<u>First Day of Week Pile Prices</u>			
Alfalfa, Sm. Square, RFV 150 or better Platte Valley, ton	125.00	102.50	102.50
Alfalfa, Lg. Round, Good Northeast Nebraska, ton	67.50	75.00	75.00
Prairie, Sm. Square, Good Northeast Nebraska, ton	75.00	105.00	105.00
* No market.			
**The Sioux City portion of the report has been discontinued - we will be getting oat prices from Minneapolis, MN.			

A recent newspaper story line reads "178 Nations Reach Climate Accord; U.S. Only Looks On" (New York Times Interactive Edition, July 24, 2001). The underlying Press Release from the United Nations Framework Convention on Climate Change (UNFCCC) affirms that indeed many governments have adopted an agreement on Kyoto Protocol rules, including economic powers represented in Japan and the European Union, as well as our neighbors in spirit as well as proximity, Australia and Canada. The UNFCCC is the entity that organizes the meetings of the Conference of the Parties (COP), with 4,500 participants representing 180 nations at the recent July 2001 event, during which time the Accord was reached. It was the COP that originally agreed in 1997 to bring the Kyoto Protocol home in order to ask the people (at least in the countries that have democracies) whether we should ratify the Protocol. At that time in the U.S., our representatives in Congress said "No" we should not be a party to the 1997 Protocol. The current Administration has also recently said "No" to being a part of the now substantively revised 1997 Protocol as represented in the 2001 Accord. The issue is currently being debated among members of Congress, with the outcome not clear.

What is this all about? Well, in simplest of terms, we have come to believe that the blanket over the earth that keeps some of the heat of the sun from returning to outer space has become denser. This blanket is composed of the greenhouse gases. We essentially live in a greenhouse, with the roof of this house becoming denser as we add more carbon dioxide, nitrous oxide, methane and such things as refrigerants, propellants and cleaners. Most importantly, the blanket has been just dense enough for a very long time, making the planet habitable in contrast to the other planets. The atmosphere on Mars is not dense enough. Venus on the other hand, has far too dense a blanket of carbon dioxide and experiences a super-greenhouse effect, with temperatures in the hundreds of degrees, along with the constant sound of thunder claps (*Galaxy*, July 28, 2001, television documentary).

So the problem is, we on Earth continue to move away from having a nearly ideal climate. We tread on the risky path of moving toward a climate more like Venus, with more than 90% of the scientific community believing we will see substantial global warming. In fact, the probability is quite high that without



change in the way we live, or the technological change to sustain the way we live, we will face rapid warming even during this century. The question is: How do we keep the blanket from becoming denser; or, would it even be possible to bring about a lighter blanket for our planet, like we do on our own beds every spring in Nebraska?

This is what the 1997 Kyoto Protocol and the Accord are all about: limiting the density of the blanket on the bed. In fact, it calls for reducing the density of the blanket back to a level less than what it was in 1990. We, the residents on this kind of spaceship Earth, all live in this giant greenhouse together. We were recently represented by 4,500 of our fellow passengers with the purpose of trying to decide together what we, indeed, need to and should do about this blanket. We have some options: First, we could do nothing, which seems imprudent. Second, we could take severe action at national and global levels to try and stop the rise in temperature, which could be dramatic in that these gases are produced by modern living. We drive cars, heat and cool our homes, cook, build tractors, cars, television sets and computers. We eat, take in carbon dioxide and emit carbon dioxide; in fact, we are organic (carbon) material. Animals produce methane. The fertilizer we place on our crops, lawns and gardens release nitrous oxides, as does any plant or animal material that is decomposing and returning to nature. We cool our houses, businesses and cars; cool and freeze our food; push the buttons on spray cans using propellants; and keep our surroundings clean with chemicals. Changing the pace of global warming is to change the pace of our lives. It applies to everyone. We are both the problem and the solution.

What can be done? The most direct solution is: drive less; turn the thermostat down in the winter and up in the summer; live a less material lifestyle; reduce the output of carbon (and other greenhouse gases) by reducing the use of the hydrocarbons represented in oil, coal and natural gas. In the words of the Protocol and the Accord: Reduce and limit emissions of carbon dioxide (and other greenhouse gases, although the Protocol focuses on carbon) at least to no more than that released in 1990, and to perhaps a 5 - 7% level less than in 1990. A less direct solution may be to find ways to capture and store the carbon we release, perhaps finding a use for it later. Here is where carbon storage (sequestered carbon, potentially a new commodity for agriculture) enters into the thinking. Intriguingly, in a kind of breakthrough in thinking for the COP, this is exactly what could happen.

The U.S. asked for allowing storage of carbon in cropland, forest and grazing land to count in offsetting emissions during the COP meeting in November 2000. The European Union prevailed and carbon storage was not recognized. At the recent July 2001 COP meeting, Japan asked for essentially what the U.S. had asked for last year. Japan prevailed to a certain extent, and carbon storage induced by human action since 1990, through cropland, forest and grazing land management, as well as through revegetation (e.g., reforestation or afforestation) is now recognized as part of the Accord. Only reforestation and afforestation, however, will be counted in applying the clean development mechanism (i.e., projects funded in developing countries that reduce or store emissions).

This is definitely a positive step, for the U.S. in particular. Perhaps the next step will be acknowledging and crediting the

substantial amounts of carbon stored in U.S. land due to conservation management practices in place before 1990. Also, we need to view storage only as part of the solution, as we already know that storing carbon this way will not solve the greenhouse gas problem. In addition, the UNFCCC Press Release states that each country will be given only a quota, "Individual quotas were set; the result is that sinks will account for only a fraction of the emissions reductions that can be counted towards the Kyoto targets." As always, the devil is in the details. Lifestyles will likely also have to change; we will have to find ways to reduce emissions.

While we still face substantive uncertainty, many private companies, as well as local groups acting with the help of state government are taking action and positioning themselves to be active players in any subsequent carbon storage mechanisms that may emerge. The Nebraska Unicameral, e.g., created the Carbon Sequestration Advisory Committee with LB957 during the year 2000 session. This Committee is charged with reporting to the Unicameral by December 1, 2001 on two fronts, that of the potential for markets evolving in carbon and the physical potential for storing carbon in Nebraska. Several state and federal agencies, as well as the Public Policy Center at the University of Nebraska are involved in various phases of helping the Committee write these two reports. Funding has been provided not only by government sources but also through the Nebraska Environmental Trust. The Institute of Agriculture and Natural Resources at the University is also engaged in an intensive Carbon Sequestration Program of research, with experiments underway at the Mead, Nebraska research center, as well as studies of approaches being taken on actual Nebraska farms and ranches. Private companies, both nationally and internationally are also moving beyond just positioning themselves for future action to actually offering carbon certification and brokering services. Some creative public and private partnerships are also at work, such as the Montana Coalition. This coalition is funded by action of the Montana Legislature but actually contracts with landowners through Montana Watersheds, Inc., a private corporation. Recently, the Coalition, by working through Environmental Financial Products, LLC, Chicago found a buyer for carbon stored in burned-out forest land controlled by the Confederated Salish and Kootenai Indian Tribes of Northwestern Montana. Payments will be made by an organization named the Sustainable Forestry Management Group, through their London, England office. The price paid for storage will cover the costs and provide a profit to the Tribes for replanting the trees and managing the forest for carbon storage over the next 100 years.

Nebraskans and others in the farming, ranching, forestry, rural and urban communities of this nation will want to move quickly in building the paths that we may need to tread as the result of the 2001 Accord on climate change. See the Website <http://www.carbon.unl.edu> for more details.

Gary D. Lynne, (402) 472-8281
Professor, Dept. of Agricultural Economics
<http://agecon.unl.edu/lynne>

Colby Kruse
Graduate Research Assistant
Dept. of Agricultural Economics