

**STATEMENT OF BRUCE I. KNIGHT
CHIEF, NATURAL RESOURCES CONSERVATION SERVICE
U.S. DEPARTMENT OF AGRICULTURE
BEFORE THE U.S. SENATE SUBCOMMITTEE ON CLEAN AIR, CLIMATE
CHANGE, AND NUCLEAR SAFETY
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Mr. Chairman and Members of the Subcommittee, thank you for the opportunity to discuss the Department of Agriculture's carbon sequestration programs and outline the steps being taken within USDA to address the long-term challenge of global climate change. The issue of climate change cuts broadly across the Department, involving several agencies and mission areas. To provide policy guidance, the Secretary created a climate change working group that is chaired by the Deputy Secretary and includes the Under Secretaries for all of the relevant mission areas: Farm and Foreign Agricultural Service; Natural Resources and the Environment; Research, Education, and Economics; and Rural Development, as well as the General Counsel and Chief Economist. The Department plays an active role in the government's activities to address climate change, including: Scientific research, technology development, international bilateral and multi-lateral cooperation, efforts to encourage actions in the private sector, and policy development and implementation.

Last month, Secretary Veneman announced a series of actions that the Department will take to increase carbon sequestration and reduce greenhouse gas emissions from forests and agriculture. The actions represent a major step for the Department. For the first time, USDA will consider the reduction of greenhouse gases in setting priorities and in allocating resources within the portfolio of conservation programs we administer. The actions build on a foundation of ongoing research and technology development. USDA

researchers and our cooperators are improving our understanding of climate change and its implications for managed and unmanaged natural systems, the potential risks to agriculture and forests, and effective ways to sequester carbon and reduce greenhouse gas emissions from agriculture and forests.

The actions announced by USDA include financial incentives, technical assistance, demonstrations, pilot programs, education, and capacity building. We are also setting out to improve our ability to measure and monitor changes in carbon storage and greenhouse gas emissions so that we can accurately track our progress in implementing these actions.

Coupled with the increases in overall conservation spending, these actions are expected to increase the carbon sequestration and greenhouse gas emissions reductions from the conservation programs by over 12 million tons of carbon equivalent in 2012, which represents approximately 12 percent of President Bush's goal to reduce greenhouse gas intensity of the American economy by 18 percent in the next decade.

USDA's conservation programs were designed to offer assistance and incentives to farmers and other landowners in addressing multiple conservation and environmental challenges. Historically, programs have focused on reducing soil erosion, improving water quality, creating wildlife habitat, reducing air pollution, and protecting sensitive areas. While maintaining these priorities, the programs will now also include explicit consideration of greenhouse gas reductions and carbon sequestration. We can accomplish this without compromising our other objectives because, in many cases, the technologies

and practices that reduce greenhouse gas emissions and increase carbon sequestration also address other conservation priorities. Planting trees and other natural covers can increase above and below-ground carbon. However, cropland does not need to be taken out of production to sequester carbon. For example, conservation tillage (reduced, minimum, or no-till) reduces the extent of soil organic matter oxidation and decomposition by soil microorganisms that occur with plowing and tillage. Thus, more of the organic matter added to the soil remains, leading to increases in soil carbon.

There are many opportunities to apply these practices in the U.S. Most U.S. cropland soils have lost at least a third and some up to 60% of their carbon since they were first converted to crop production beginning about 200 years ago. This diminished carbon pool can be replenished by improvements in land management.

Under the Environmental Quality Incentives Program (EQIP), NRCS provided guidance to states to reward actions that sequester carbon and reduce greenhouse gases within the EQIP ranking system. These practices can include the soil conservation practices already mentioned and technologies to reduce methane emissions from livestock waste.

Last month, we hosted a Summit on one of these promising technologies – anaerobic digesters. Anaerobic digesters can reduce odors and pathogens and methane (a powerful greenhouse gas) from manure. The methane from digesters can be captured and used as fuel for power generation or direct heating. The Summit, held in Raleigh, North Carolina brought together farmers, federal and state conservation officials, representatives from

the power industry, inventors and technology developers, and the conservation and environmental organization representatives.

At the summit, we unveiled three new conservation practice standards specifically for digesters. The performance standards lay out standard expectations for the technology but do not prescribe or endorse a particular vendor's product. One of the standards is for covers for new and existing lagoons; the second standard is for new ambient temperature digesters; and the third standard is for new controlled temperature digesters. These new standards will have two major benefits. They will make it easier for producers to fit anaerobic digesters into their EQIP contracts as part of a comprehensive nutrient management plan. They will also make it easier for producers to use technical service providers to plan and construct digesters.

The Conservation Reserve Program (CRP) and Wetlands Reserve Program (WRP) can provide significant amounts of carbon sequestration. Conversion of cultivated lands back into forests, grasslands or wetlands, which occurs on CRP and WRP lands, fosters the accumulation of carbon in soils and vegetation. On Earth Day, Secretary Veneman announced that the Farm Services Agency (FSA) will target 500,000 acres of continuous signup enrollment toward bottomland hardwood trees, an action that will increase the amount of carbon stored by the CRP. Bottomland hardwoods are among the most productive ecosystems for carbon sequestration in the United States. In another step to provide incentives for carbon sequestration, FSA modified the environmental benefits index (EBI) used to score and rank bids into the program. The revised EBI will give

points specifically for practices that sequester carbon, giving these practices a higher priority under the program than they otherwise would have.

The Forest Service also has responsibilities for implementing actions announced by the Secretary. Using new authority established under the Farm Security and Rural Investment Act of 2002, carbon sequestration will be one of the formal objectives of the Forest Land Enhancement Program (also known as FLEP). Through FLEP, the Forest Service, working with States, can promote carbon sequestration with tree planting, forest stand improvements, and agroforestry practices.

Forests and agriculture can also be the source of domestic, renewable energy. USDA recently announced the availability of \$44 million in grants for energy efficiency, biomass energy, and biomass products development. Twenty-three million dollars of this will be available from USDA's Rural Development for the Renewable Energy Systems and Energy Efficiency Improvements program to assist farmers, ranchers, and rural small businesses to develop renewable energy systems and make energy efficiency improvements to their operations. Farmers and ranchers are eligible for loan guarantees for renewable energy systems, including anaerobic digesters under the Rural Business and Industry Programs administered by Rural Development.

Through the Biomass Research and Development Initiative, in cooperation with the Department of Energy, \$21 million in grants are available to carry out research, development and demonstration of biomass energy, biobased products, biofuels and

biopower processes. USDA also recently announced key revisions to the Commodity Credit Corporation Bioenergy Program to expand industrial consumption of agricultural commodities by promoting their use in the production of ethanol and biodiesel.

USDA is also working with partners in the private sector. This February, Secretary Veneman announced commitments from two industry groups with strong natural resource ties. The members of the American Forest and Paper Association have committed to actions that they expect will improve their greenhouse gas intensity by 12% by 2012. The members of the National Rural Electric Cooperative Association agreed to work with USDA to break down the barriers that farmers and ranchers face in generating renewable power. America's rural landowners can be a source of solar, wind, and biomass power. These opportunities can be win-win partnerships for the rural utilities and farmers.

Companies and industrial sectors are making commitments under the Administration's Climate VISION program. Companies with an interest in forest and agricultural carbon sequestration are looking to USDA to give them the tools they need to measure and report on their actions.

Last year, USDA was directed to develop new accounting rules and guidelines for reporting greenhouse gas activities on forests and agricultural lands. The new accounting rules and guidelines will be used by companies and individuals to report their activities to the Department of Energy under their voluntary greenhouse gas reporting system. The DOE reporting program is undergoing revisions that are expected to be completed by

January 2004. The Forest Service and NRCS have taken the respective leads for the forest and agriculture components of the guidelines. USDA has undertaken an extensive public comment process including two well-attended workshops in January 2003. We solicited written comments from the public on our process and will provide additional opportunities for public input before the accounting rules and guidelines are finalized.

USDA's research program plays an important role in the government's efforts to understand climate change. The budget for USDA's participation in the US Global Change Research Program (USGCRP) and Climate Change Research Initiative (CCRI) has increased in each of the last two years. The USDA Fiscal Year (FY) 2003 budget for CCRI and USGCRP combined is \$63 million, up from \$57 million in FY 2002. In FY 2004, USDA is requesting an additional \$7.1 million for the President's CCRI priorities. The increases requested for FY 2004 fall primarily in the following areas:

- Improving the methods for measuring and estimating above and below-ground carbon storage on forest and agriculture systems;
- Collecting carbon flux measurement data at specific locations that can be scaled to regional and national statistics;
- Developing management practices and techniques for increasing carbon sequestration and reducing greenhouse gas emissions;
- Demonstration projects to facilitate the incorporation of carbon sequestration into USDA programs;

- Finalizing the new accounting rules and guidelines for estimating and reporting carbon sequestration and greenhouse gas emissions from forest and agricultural activities.

Finally, USDA continues to invest in research to improve our understanding of how crops, livestock, trees, pests, and other facets of ecosystems will respond, either positively or negatively, to higher levels of greenhouse gases in the atmosphere. We are seeking cost-effective ways to make agriculture and forests more adaptable to any changes in climate and weather, should they occur. We are pursuing an improved understanding of the role of natural and managed ecosystems in the global carbon cycle. We are developing technologies and practices to reduce emissions of greenhouse gases and increase carbon sequestration. We are now harnessing the portfolio of conservation programs to build carbon back into the soil and vegetation, integrating greenhouse gas considerations in our conservation efforts.

Thank you again for the opportunity to address this Subcommittee. I am now available to answer your questions.