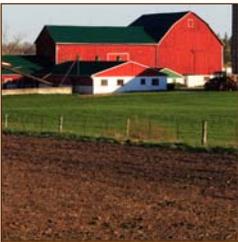


ENERGY TITLE RECOMMENDATIONS FOR 2007 FARM BILL

SOIL CARBON: OUR NATURAL CAPITAL



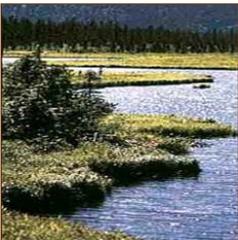
Agricultural, grassland, and forestry practices play an essential role in capturing atmospheric carbon and sequestering it as soil organic matter (SOM). From the perspective of agriculture, grassland, and forest management, soil carbon reduces soil erosion, conserves water, provides microbial habitats and sources of long-term slow-release nutrients, and improves soil structure and productivity.



Studies conducted under the Department of Energy (DOE) Terrestrial Carbon Sequestration Program found that soil carbon is the primary source of relic carbon released into the atmosphere. Released carbon can be captured through improved grassland management, tree planting, forest preservation, and enhanced agronomic and irrigation practices according to the Intergovernmental Panel on Climate Change (IPCC). The IPCC estimates that roughly 100 billion metric tons of carbon over the next 50 years could be sequestered when land management is focused on implementing beneficial practices. This sequestration would offset 10 to 20 percent of the world's projected carbon emissions from the burning of fossil fuels.



American Society of Agronomy, Crop Science Society of America and Soil Science Society of America (ASA/CSSA/SSSA) scientists have identified numerous best management practices (BMPs) including no-till; conservation tillage; cover crops integrated in grain, forage, and agro-forestry systems; and grassland management which offer opportunities for land stewards to play a constructive role in the improved management of soil carbon, enhancing carbon sequestration and ensuring long term productivity. ASA/CSSA/SSSA believe that there is a need for a new joint USDA-DOE ***Soil Carbon: Our Natural Capital Program*** in order to better manage soil carbon. The initiative can be achieved with the following modifications to **Section 9009 Cooperative Research and Extension Projects of the Energy Title within the 2002 Farm Bill**:



In the section title, after "EXTENSION" and before "PROJECTS" insert "**SOIL CARBON**".

Section 9009 of the 2002 Farm Bill (Energy Title) modified the Agriculture Risk Protection Act of 2000 Section 221 (114 Stat. 407). All of the following suggestions will be for Section 221 of the Agriculture Risk Protection Act.



Under Section 221, amend subsection title (d) by placing "AND EXTENSION" after "RESEARCH".

Under Section 221 (d) (1), strike the current text under section "IN GENERAL" and insert "-- The Secretary, in cooperation with appropriate departments and agencies such as the Department of Energy, EPA, Department of Interior, USDA-ARS, USDA-CSREES, and land-grant colleges and universities, may use any of his statutory authorities and with eligible entities, may carry out cooperative research programs to increase and promote understanding of the cycling of carbon (CO₂) and other greenhouse gases such as nitrous oxide and methane in soils and plants and trees to create new, improve existing, or promote current best management practices for soil carbon through programs offered by USDA-NRCS, and extension related activities."



Under Section 221 (d) (2), replace the text adjacent to "ELIGIBLE ENTITIES" with: "Research and extension under this subsection may be carried out through the competitive awarding of grants and cooperative agreements to colleges and universities and USDA agencies."

Under Section 221 (d) (3), insert "AND EXTENSION" directly after "RESEARCH" in the title, and "and extension activities" directly after "Research", and insert "agricultural engineering" after "agronomy" and before "agricultural economics".

Under Section 221 (d) (3), replace all the "focus" areas identified with the following new "focus" areas:

- (A) developing sustainable practices and systems that can supply the goal of 1 billion tons of biomass annually by 2030, while producing food, fiber, and feed needed to support a growing U.S. and world population;
- (B) developing data addressing the carbon balance in soils and plants and trees and the exchange of methane and nitrous oxide from agriculture;
- (C) promoting a better understanding and management of agricultural and forestry practices that directly affect heat loading of the atmosphere and the sequestration of carbon in soils and plants and trees;
- (D) developing technologies that utilize biotechnology and nanotechnology to mitigate the release of greenhouse gases such as carbon dioxide, nitrous oxide and methane;
- (E) developing linkages between federal conservation programs and carbon sequestration;
- (F) utilizing methods, including remote sensing, to measure the exchange and sequestration of carbon dioxide and other greenhouse gases, and to evaluate leakage, performance, and permanence issues;
- (G) assessing the applicability of the results of research conducted under this subsection for developing methods to account for the impact of agricultural activities (including forestry) on the exchange of greenhouse gases;
- (H) providing science-based information that allows agricultural producers to participate in greenhouse gas offsets and carbon trading programs; and
- (I) promoting the trade of carbon credits and creation of an additional income stream for farmers and land managers through "carbon farming."

Under Section 221 (d) (4), strike all text after "AUTHORIZATION OF APPROPRIATION" and insert "\$30,000,000 per year authorized to be appropriated to carry out this subsection for each fiscal year 2008 through 2012."

Under Section 221 (e), "EXTENSION PROJECTS", add "RESEARCH" before "EXTENSION" in the title. Replace the entire (1) "IN GENERAL" subsection with the following; "-- The Secretary, in cooperation with appropriate departments and agencies, and local extension agents, experts from institutions of higher education that offer a curriculum in agricultural and biological sciences, and other local agricultural or conservation organizations, may implement extension projects such as: (a) on-farm projects (with direct involvement of agricultural producers) that combine measurement tools and modeling techniques into integrated packages to monitor the carbon sequestering benefits of conservation practices and (b) the exchange of greenhouse gas emissions from agriculture which demonstrate the feasibility of methods of measuring, monitoring, and verifying (A) changes in carbon content and other carbon pools in soils and plants (including trees); and (B) the exchange of other greenhouse gases."

Under Section 221 (2) strike "EXTENSION" before "PROJECT RESULTS", and insert "--The Secretary may disseminate to farmers, ranchers, private forest landowners, and appropriate State and local agencies in each State information concerning- (A) the results of projects under this subsection; and (B) the manner in which the methods used in the projects might be applicable to the operations of the farmers, ranchers, private forest landowners, and State agencies.

ASA/CSSA/SSSA suggest that these modifications be accompanied by language authorizing appropriations of \$30 million per year from 2008 to 2012. These monies will be designated for a soil carbon program that identifies transferable management technologies for the purpose of increasing soil carbon and carbon sequestration with multiple land use benefits. This level of funding is a portion of the total \$200 million (2006-15') currently authorized annually in the Biomass Research and Development Initiative (BRDI) within the Biomass Research and Development Act of 2000 (section 310(b)) (P.L. 106-224, 7 U.S.C. 8101 note), as modified by the Energy Act of 2005.

Finally, we suggest that both a soil scientist and crop scientist be included as members of the Biomass Research and Development Technical Advisory Committee to advise the Biomass Research and Development Board on these critical areas, ensuring that soil carbon management and sequestration are among the primary objectives of the BDRI.

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