
Thursday 18 June 2020

Senate Democrats' Special Committee on the Climate Crisis
US Senate Office
Dirksen Senate Office Building, 50 Constitution Ave NE,
Washington, DC 20510

To US Senators of the Senate Democrat's Special Committee on the Climate Crisis:

Thank you for the opportunity to provide comments to the Senate Democrats' Special Committee on the Climate Crisis. Agriculture is positioned to address climate mitigation and implement climate resilient strategies through on-farm conservation practices including systems of practices that sequester carbon, improve water quality and improve water use efficiency. The Ecosystem Service Market Consortium (ESMC) and our members are working to increase agricultural resilience in a manner that is economically beneficial to farmers, allowing individual famers to make the choices that fit best within their farming operation.

ESMC's mission is to advance ecosystem service markets that incentivize farmers and ranchers to improve soil health systems that benefit society. ESMC is a member-based organization launching a national scale ecosystem services market for agriculture to recognize and financially reward farmers and ranchers for their environmental services to society. ESMC members represent the spectrum of the agricultural sector supply chain with whom we are scaling sustainable agricultural sector outcomes, including increased soil carbon, reduced net greenhouse gases (GHG), and improved water quality and water use conservation. ESMC members include:

> **Founding Circle**: ADM, Bunge, Cargill, Corteva, Danone, General Mills, Land O'Lakes Sustain, McDonalds, National Fish and Wildlife Foundation, Nestle, Noble Research Institute, Nutrien Ag Solutions
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> **Legacy Partners**: Almond Board of CA, American Farm Bureau Federation, American Farmland Trust, American Soybean Association, American Sugarbeet Growers Association, Anuvia, Arizona State University, Arva, Bayer, Cornell Atkinson Center for Sustainability, Conservation Technology Innovation Center, Farm Foundation, Farmers Business Network, Farmobile, Field to Market, Il Corn Growers Association, Impact Ag Partners, K-Coe Isom, Low Carbon Prosperity Institute, Mars, National Association of Conservation Districts, National Cattlemen's Beef Association, National Corn Growers Association, National Farmers Union, Native Energy, Newtrient, OpenTEAM, Pivot Bio,

Sand County Foundation, Soil Health Partnership, Sustainable Northwest, Tatanka Resources, the Fertilizer Institute, The Tri Societies, Trust in Food, Tyson, World Wildlife Fund

Together with our members we are investing over $22M in programmatic infrastructure and technologically-advanced tools to develop a science-based, standards-based market that removes the burden of accurate quantification, verification and certification of sustainable agricultural system impacts from farmers and ranchers or buyers, and enables them to come together in one marketplace. ESMC manages the infrastructure development and maintenance and the complex activities, providing ease of participation to suppliers in the market (farmers and ranchers) and to buyers (corporates, municipalities, water treatments facilities, oil and gas companies, and others with quantified environmental impact needs).

ESMC's program will enable farmers and ranchers to voluntarily adjust crop and livestock production systems in ways that increase soil carbon sequestration and retention, improve water quality, conserve water use, and provide many additional ecosystem service outcomes. ESMC's program allows producers to choose only those changes they desire to undertake, and as few or as many as they select, with the understanding that they will be paid based on outcomes, and the more impact change we can quantify each year, the greater their payments for credits generated. The program is currently operating in full piloting and deployment stage prior to official market launch in 2022.

ESMCs innovative market approach quantifies ecosystem services impacts in a verified and soon-to-be certified program and monetizes the impacts as ecosystem services credits or assets of value to demand side buyers. Our program meets multiple, heterogeneous market needs, rather than just one, and creates stacked benefits allowing multiple payments for multiple credits, including for soil carbon, net GHG, water quality and water quantity. Farmers and ranchers are paid for beneficial outcomes, and the attributes or credits are sold in a national ecosystem services market to entities seeking to reduce their indirect environmental impacts.

The ESMC program was designed and conceived exclusively for the agricultural sector, after careful analysis and consideration of challenges in current and past carbon and other ecosystem service markets which have not scaled opportunities for the sector. ESMC is making programmatic and technically advanced investments to scale measurable, verified ecosystem services and climate mitigation improvements based on economically viable farm practices. Practices adopted by farmers must make agronomic sense for farming operations, allow for continued crop and livestock production, and be economically feasible -- not costing farmers more than the potential benefits to them. For ecosystem services markets, understanding which practices reduce GHG or increase sequestration is important, but impacts of any given practice can be variable across different production systems and different geographies and climates in the U.S. In the agriculture sector major challenges have included finding systems-based approaches that can be tailored to the unique needs of farmers and ranchers in highly variable and diverse

geographies and with diverse systems; and ensuring flexibility while encouraging innovation. Addressing the economics and the economic impacts to farmers and ranchers is also challenging given the dearth of data and the difficulty in tracking and analyzing it.

ESMC's full-scale pilot testing now underway will include feedback from farmers and ranc hers to allow us to understand the economics of the farming operations as well as the market pricing for credit/certificate purchasers which all figure to allow for the future success of the program and ability to scale our reach, and impacts.

ESMC works closely with federal partners as members of our Public Private Partnership, as well as we work to advance the science, methodologies, measurement and adoption of agricultural conservation practices and their ability to mitigate GHG and increase soil carbon storage. A few examples of how ESMC and members are utilizing the programs and policies and potential areas for improvement are as follows:

- U.S. Department of Agriculture's (USDA) voluntary, incentive-based Farm Bill conservation programs provide conservation technical and financial assistance that supports individual farmer adoption of conservation practices. The Agricultural Conservation Easement Program, Conservation Stewardship Program, the Environmental Quality Incentives Program and the Regional Conservation Partnership Program each provide tools to farmers, including financial cost sharing and technical assistance to expand adoption of conservation practices that sequester carbon, reduce greenhouse gases and improve water quality and water use efficiency. These programs require farmers to share in the cost of the practice with USDA financial assistance covering a portion of the practice cost. Continued and improved tracking and reporting by USDA of practices and management systems utilized by farmers and ranchers in different geographies would benefit ESMC and all outcomes-based monitoring approaches by allowing the creating and tracking of baselines and changes in adoption and rates of adoption that can impact change at scale.
- USDA and the Foundation for Food and Agriculture Research (FFAR) are providing research funding which is being matched dollar for dollar with private sector funding to advance innovative research and understanding of agricultural systems to enable viable ecosystem service markets built specifically to reward and recognize the impacts of sustainable farming and ranching.
    - USDA grants, leveraging private matching funds, enable wide ranging research, development, demonstration and deployment of technologies and applications to scale U.S. based carbon sequestration efforts. FFAR-funded research will help development, demonstration and deployment of technologies to better quantify, monitor and verify the environmental impacts of agricultural producers' conservation efforts to recognize and pay them through an ecosystem services marketplace.
    - ESMC was awarded a $10.3 million Foundation for Food and Agriculture Research (FFAR) to invest in R&D to develop an innovative, technologically

advanced national environmental credit marketplace designed exclusively for the agricultural sector. ESMC and its members are matching the grant over three years to fund research and development projects in this public-private partnership for a total investment of $20.6 million. Through the grant, the Ecosystem Services Market Research Consortium (ESMRC), the research arm of the ESMC, is developing tools and technologies to assure the validity of the credits cost-effectively, and at-scale, in a national market built exclusively to reward farmers and ranchers for delivering critical GHG mitigation and agricultural resiliency for society.

- USDA leadership is needed to organize the modeling community to standardize criteria to improve rigor and outcomes for all GHG models. Process-based GHG quantification models should be used as the basis and the key to advanced, cost-effective quantification at scale. These models can be improved if the modeling community unifies behind standardized criteria for data to populate and run such models, including criteria for sampling and data collection, formatting, processing, sharing, and centralized and accessible storage. ESMC recommends that USDA not select specific tools or models to utilize in estimating or measuring GHG emissions and emissions reductions and increased sequestration from agriculture, but instead work to provide leadership and consensus to generate or standardize criteria that are applicable to the accurate and appropriate use of models or tools.
- USDA leadership should encourage and perhaps support the development of an open-source, national research data set repository(ies) to enable calibration and validation of all processed-based GHG models. To this end, the technical guidelines should set transparent, standardized, and flexible criteria and protocols for data collection, formatting, storage, and access to ensure that modelers have access to consistent, harmonized, high-quality data to improve process-based models. These criteria and protocols should include, among other things, criteria and guidelines for soil sampling frequency, depth increments, and analysis requirements; for soil chamber placement, deployment timing, and measurement frequencies; and for data collection, formatting, entry, and quality control, including automation wherever and whenever possible to remove human error.
- Access to federal Government research and data, especially data and research conducted by the U.S. Department of Agriculture, can be instrumental to help facilitate development of a science-based, transparent system to scale GHG mitigation within the agricultural sector. Research and development of soil-based sensors to track changes in GHG in soils underway at the Department of Energy / ARPA-E should also continue, since it can help to cost-effectively scale GHG mitigation in agriculture at a faster pace than has been possible to date.
- NRCS recognition of external private, voluntary environmental market opportunities operating in concert with or complimentary to NRCS as a means of supporting and scaling agricultural conservation goals and generating beneficial environmental outcomes should be supported and continued. Such recognition allows programs like ESMC's to work together cooperatively and symbiotically with federal support programs. ESMC

foresees opportunities to work together or build upon successful NRCS and partner projects that lay the groundwork to further conservation activities by interested producers.

Within the agriculture sector, there is great need for more scientific data on GHG impacts of various agricultural production systems in varied geographies to provide technical assistance and advice to farmers and ranchers to achieve desired outcomes cost effectively. As policies and programs are reviewed, ESMC encourages the Senate to consider funding and structure of programs to collect and report data in an aggregated manner that allows for continued improvement in understanding agricultural production systems, environmental outcomes and economics of incorporating practices and changes to management systems.

As Congress assesses legislative action on climate issues, these proposals should seek to avoid any provisions that would adversely impact private, voluntary market-based activities advancing carbon sequestration and GHG sequestration from the agricultural sector. Significant efforts are underway by ESMC and the private sector to further develop a private market focusing on carbon sequestration, water quality and water quantity credit sales to recognize and reward farmers for their services  Private markets operating at scale can do so in a manner that produces the highest carbon sequestration in a cost effective, efficient manner.  Any policy that Congress develops must allow for and recognize the existing private markets and not adversely interfere or duplicate private sector efforts. Private sector markets can operate at a lower cost than Federal Government programs.

Thank you for the opportunity to provide comments.  ESMC looks forward to ongoing discussions about the agriculture's role in sequestering carbon and climate resilient strategies.

Sincerely,

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