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TO: Terry Cosby
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SUBJECT: Request for Public Input about Implementation of the Inflation Reduction Act Funding
(Docket ID: NRCS-2022-0015)

ESMC appreciates the opportunity to comment on the Request for Public Input about Implementation of the Inflation Reduction Act Funding (Docket ID: NRCS-2022-0015).

The Ecosystem Services Market Consortium (ESMC) is a member-based, not-for-profit organization operating a national scale voluntary ecosystem services market for agriculture to recognize and pay farmers and ranchers for their environmental services to society. Over 80 members, funders and additional stakeholder organizations participate and contribute to ESMC's public-private partnership, including a wide range of agricultural businesses, farmer-led organizations, farmer check-offs, farmer cooperatives, conservation organizations, foundations, land-grant universities and research institutes, as well as the U.S. Department of Agriculture (USDA), US Department of Energy (US DOE) and the Environmental Protection Agency (EPA). Our public private partnership also includes a research and innovation program – the Ecosystem Services Research Consortium (ESMRC) -- in which we will invest to continually improve and expand our market program, including to new regions, production systems, producer populations and communities.

ESMC's voluntary market program is the only accredited scope 3 supply chain market program in the United States. In 2022, we received program validation and project verification from independent global certification and verification body SustainCERT. This validation shows ESMC's Eco-Harvest market program adheres to market standards and rules and meets the accounting and reporting requirements of organizations in the agricultural supply chain seeking to show quantified, verified GHG emissions reductions or increased soil carbon removals from scope 3 interventions. Verified outcomes from our program that are sold to buyers with supply chain commitments and demand allow us to pay farmers and ranchers who voluntarily adjust crop and livestock production systems in ways that increase soil carbon sequestration and retention, reduce GHG emissions, improve water quality, conserve water, and provide many additional ecosystem service outcomes, such as enhanced biodiversity and habitat conservation.

Together with our members and funders across the agricultural supply and value chain, we have pilot tested the Eco-Harvest program and invested in critical RDD&D to create a national-scale, digitized ecosystem services market program and infrastructure for the agricultural sector. Our market infrastructure supports buyers with needs in scope 3 supply chain reporting, and agricultural producers who act as sellers. Our public private partnership provides a national scale enabling platform, educational materials, and training programs to create opportunities to engage in markets using advanced and user-friendly tools and technologies.

ESMC applauds USDA for continuing to work with constituents and other stakeholders across the agricultural value chain who are also seeking to scale beneficial climate and natural resource outcomes from agriculture. We are grateful to see USDA working to leverage and not duplicate private sector investments in private voluntary markets and market-based approaches as the agency considers how to best utilize Inflation Reduction Act funding to invest in climate change and natural resource issues. In establishing our agricultural market program, ESMC/ESMRC and our members have given considerable thought to and engaged in extensive dialogues about many of the issues identified in this request for information, including identifying challenges and obstacles that USDA investments could help producers overcome in achieving scaled outcomes in a way that meets buyers needs – allowing producers to participate in voluntary market programs with mutual outcomes desired by USDA and Congress. We appreciate the opportunity to share our responses.

Significant efforts are underway by ESMC/ESMRC and the private sector to fully develop private markets focusing on providing soil carbon sequestration, reduced net GHG, water quality and water quantity, and biodiversity credit sales to recognize and reward farmers and ranchers for their ecosystem services. Private markets operating at scale can do so in a manner that produces scaled, quantified, verified outcomes in a cost-effective, efficient manner that adheres to market standards, rules and accounting and reporting requirements of buyers operating in these markets, while providing additional revenue streams to US farmers and ranchers, and achieving the same outcomes sought by USDA: namely, agricultural GHG mitigation and improved, quantified natural resource conservation.

The following comments reflect the official thoughts and positions of ESMC and do not necessarily represent the positions of ESMC's entire membership. Many of ESMC's member organizations plan to submit separate comments to this solicitation.

- a. Establish national soil carbon inventory to provide accurate model baselines and minimize soil sampling burden for every project

(1) What systems of quantification should NRCS use to measure the carbon sequestration and carbon dioxide, methane, and nitrous oxide emissions outcomes associated with activities funded through IRA?

- How should NRCS design a scientifically-based framework for field-based quantification and analysis that can integrate into USDA's Greenhouse Gas Inventory and Assessment Program?
- What sources of information should NRCS consider in developing protocols or what preexisting, standardized protocols should be used to support field-based data collection and analysis?
- What types of field-based data should be collected and analyzed to assess carbon sequestration and reduction in carbon dioxide, methane, and nitrous oxide emissions outcomes associated with agricultural and conservation activities?
- How should USDA monitor and track carbon sequestration and greenhouse gas emissions trends and the effects of NRCS supported activities?
- How or should the framework developed by NRCS to provide field-based quantification integrate with satellite data to provide a comprehensive picture of GHG emissions and removals from agricultural activities and conservation practice implementation?

A scientifically based framework, protocols, field-based data, and monitoring program for field-based quantification and analysis should leverage the existing global frameworks required by the private sector to account for and report their GHG inventories and annual changes in inventories. The US Securities and Exchange Commission (SEC) is contemplating requiring companies to file these reports (using the standards described below), and the ability to leverage private sector investments and to utilize the same accounting and reporting requirements, protocols, data sets, and monitoring requirements and approaches should be the primary goal of USDA in establishing such a framework. Creating new or different or incompatible frameworks will prevent integration and possible sow confusion.

Corporate and jurisdictional GHG accounting share many similarities, but also some important differences. Whereas national GHG inventory accounting allows for coarser estimates of GHG baselines and changes to baselines, corporate and market GHG accounting is more aligned with project-based accounting (with variability depending on the use of the quantified outcomes). The globally agreed corporate GHG accounting and reporting standards are the International Organization for Standardization (ISO) 14064 standards, established in 2006. ISO 14064 details internationally agreed requirements on *what* needs to be done in GHG accounting and verification efforts, while the GHG Protocol outlines what needs to be done, but also *how* to undertake GHG accounting and reporting. ISO 14064 standards are consistent and compatible with the GHG Protocol (GHGP), published by the World Resources Institute (WRI) and the World Business Council on Sustainable Development (WBCSD) in 2004, and further developed since then, that also provide required and additional guidance for how corporates account for and report GHG inventories and changes to inventories annually based on interventions they undertake to reduce their GHG footprint. Finally, most corporations with serious and public commitments to follow these accounting and reporting standards also make commitments under the Science Based Targets Initiative (SBTi) that provide further guidance on how to account for and achieve science-based emissions reductions commensurate with the Paris Accord. SBTi is also aligned with and compatible with ISO and GHGP accounting and reporting standards and seeking further alignment as these standards continue to evolve. We urge USDA to use these same standards in any framework contemplated.

Food and beverage companies and companies in the agricultural supply chain that follow these standards to establish their GHG inventories and to document annual changes based on projects or interventions they undertake in their supply chains - whether under their Science Based Targets initiative (SBTi) or separately – follow these accounting and reporting rules. USDA programs or policies that were different would not only not leverage this extensive work and investments already underway but quite possibly undermine these activities, sow confusion, and perhaps create expectations that a USDA approach could or should be utilized, when in reality corporations must adhere to the existing standards.

ESMC's program has been designed specifically to meet and be consistent with corporate needs, including alignment with ISO 14064 standards, the GHG Protocol, SBTi, and the evolving Science Based Target Network standards as well.

The types of field data required to quantify outcomes for protocols that meet these standards and that utilize methodologies indicated below is largely determined by the model utilized to quantify outcomes; though in general, they require the same or largely similar field data.

Because carbon offsets generate emissions reductions and increased soil removals which allow for increases in GHG emissions elsewhere (hence the term “offset”, in which they simply offset the increased emissions of other orgs), offsets do not and will not get us to carbon neutral or net GHG neutral. Additionally, offsets cross jurisdictional and often sectoral boundaries and thus do not count towards sectoral or jurisdictional boundaries in which they are generated. This means that agricultural offsets sold to the oil and gas or another sector will no longer count towards emissions reductions or increased sequestration achieved in the agricultural sector – but rather they will count in the sector whose emissions

they were offset. ***Due to these reasons and others ESMC/ESMRC strongly advocates that USDA not provide funds for activities, programs or outcomes that are sold as agricultural offsets.*** If by so doing the credits leave the sector, USDA funds expended for the offsets will not count towards emissions reductions achieved in the agricultural sector – which would seem to violate funds utilized for this purpose. Therefore, ***ESMC/ESMRC advocates that USDA funds for climate mitigation only be utilized for increased soil carbon or reduced GHG emissions that occur within and are counted within scope 3 supply chains.*** Scope 3 supply chain ‘credits’ or impact units remain within the agricultural supply chain (by definition) and cannot be sold into different jurisdictions (e.g. outside the supply shed from which they are generated) or into different sectors. Additionally, scope 3 supply chain impact units are absolute – they do not allow for emissions to increase elsewhere – and thus unlike offsets are the only way to achieve true net neutrality in climate change mitigation opportunities.

USDA should establish a robust soil carbon monitoring network that remains up-to-date and that provides soil carbon baselines across the country for all major agricultural production systems (crop and livestock). The monitoring system should be transparent, utilize consistent data collection methodologies that are mutually agreed by the sector, and provide quantification to 60 cm or more in deep-rooted systems, but also other systems to monitor what is happening below the globally accepted soil sampling standard to 30 cm.

- **What methods should NRCS use to quantify carbon sequestration and carbon dioxide, methane, and nitrous oxide emissions?**

Methods that align with the above standards and accounting and reporting requirements, and that allow for calculations of certainty and uncertainty associated with the quantification methods are needed. That could include:

- the use of any biogeochemical process models (not any one specific model, but *any* model) that can accurately report changes in GHG associated with agricultural practices that has been calibrated and validated for different eco-regions and agricultural production systems across the US);
- the use of soil sampling (with appropriate stratification) methodologies that are standardized, accurate and repeatable;
- the use of new and advanced tools or technologies, including remote or satellite imagery technologies, that have been appropriately ground-truthed for us in any eco-region and production system for which they will be utilized, and which can account for uncertainty in utilization.

(2) How can NRCS engage the private sector and private philanthropy to leverage the IRA investments, including for systems of quantification?

ESMC/ESMRC is a non-profit public private partnership operating pre-competitively as a non-profit enabling consortium across the agricultural supply chain and value chains. NRCS can provide support to ESMC and our public private partnership to help scale outcomes from our tested and accredited program. Our consortium tested and built our programmatic infrastructure with the input of organizations in our membership as a means to preclude others having to make the same, redundant investments. Additionally, ESMC/ESMRC built our program to include USDA conservation program investments as a means of valid and preferable up-front financing to help farmers and ranchers achieve valid outcomes required from corporates in the food and agricultural supply chain and value chain.

Such support will ensure any USDA efforts utilize the same accounting and reporting frameworks required by the private sector, leverage public conservation program spending to do so, and ensure integrated and not redundant data collection efforts and infrastructure utilization.

Programs can report aggregated outcomes to Congress and USDA simultaneously, including accuracy and uncertainty associated with quantification of outcomes.

USDA could use its significant research agency scientific expertise and its convening power to develop common criteria and methodologies for soil carbon sampling and stratification methodologies to establish soil carbon baselines and changes in soil carbon over time that can be utilized for market programs and other incentive-based programs, including specific criteria for how sampling and laboratory analysis is completed.

Additionally, USDA should share publicly collected data on soil carbon and GHG removals with ESMC/ESMRC and others in this space to allow calibration and validation of different biogeochemical GHG models than the one utilized by USDA.

USDA should financially support and house at the ARS National Agricultural Library an open source, national research data set repository(ies) to enable calibration and validation of all process-based GHG models. To this end, the technical guidelines should set transparent, standardized, and harmonized criteria and methodologies for future data collection, formatting, storage, and access to ensure that modelers have access to consistent, harmonized, high-quality data to improve the performance of all relevant process-based models. These criteria and methodologies 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.

Additionally:

- Data sharing from USDA agricultural research that can help to calibrate and validate models used to quantify carbon and GHG impacts needed to generate environmental credits;
- Financial assistance to support soil sampling to quantify soil carbon removals which can lead to the generation of GHG removal credits in scope 3 supply chain markets and programs;
- Data collection and sharing on agricultural practices used by producers at a granular scale (e.g. by county) to enable more accurate creation of common practice baselines in market programs;
- Information on new practice adoption and adoption rates across all agriculture production systems to enable market programs and project developers to identify areas of greatest potential to promote adoption of CSAF practices; and
- Additional funding for place-based and system-specific conservation technical assistance for both crop and livestock production systems.

(3) How should NRCS target IRA funding to maximize improvements to soil carbon, reductions in nitrogen losses, and the reduction, capture, avoidance, or sequestration of carbon dioxide, methane, or nitrous oxide emissions, associated with agricultural production?

(4) How should NRCS streamline and improve program delivery to increase efficiencies and expand access to IRA funded programs and projects for producers, particularly underserved producers?

(5) How can NRCS expand capacity among partners to assist in providing outreach and technical assistance to support the implementation of IRA funding?

[NOTE: the following responses pertain to items 3, 4 and 5 above.]

Utilize accredited programs to expand USDA conservation efforts and leverage non-profit and private sector investments. USDA programs are a promoted form of upfront financing in ESMC/ESMRC's program (and some other programs as well) as one means of leveraging public investments and private sector investments to help scale outcomes. USDA should create provisions by which accredited programs of delivery that support and incentivize improvements to soil carbon, reductions in nitrogen losses, and the reduction, capture, avoidance, or sequestration of carbon dioxide, methane, or nitrous oxide emissions associated with agricultural production can serve as pathways to achieve quantified and verified outcomes that can be sold in scope 3 supply chain market programs (and thus remain in the agricultural supply chain). ESMC's program has been developed to work with organizations as partners in technical assistance delivery, including but not limited to: NRCS staff, National Associations of Conservation Districts (NACD), conservation NGO's such as The Nature Conservancy (TNC), Pheasants Forever and Quail Forever, Ducks Unlimited, National Fish and Wildlife Federation (NFWF), and Certified Crop Advisors (CCAs).

In addition to adding more NRCS technical assistance staff nationwide, USDA should provide simple yet credible funding pathways to these organizations to scale, streamline and improve program delivery for producers – in particular technical assistance across all crop and livestock production systems – and for under-represented, underserved and Black, Indigenous and People of Color (BIPOC) farmers and ranchers and their communities and technical support systems. USDA should also specifically work with 1890's land grant universities and Historically Black Colleges and Universities (HBCU), the Latino Farmers and Ranchers (LFR), Native American organizations, and their extension services or similar programs of operation to provide much needed and historically limited funding for capacity building to provide technical assistance and other forms of support to the producers and communities they represent and work with.

Protect Existing Soil Carbon Stocks. Carbon markets and other programs, including federal and state programs, typically do not focus on protecting and retaining existing soil carbon stocks. USDA should develop a program to compensate early adopters who do not qualify for carbon markets due to additionality rules. The federal government could provide new incentives and tweak existing programs to encourage early adopters, who are often not eligible for voluntary carbon markets due to additionality rules, to manage their land in ways that protect existing soil carbon stocks and continue to build soil organic carbon in their land. Once carbon is released from working soils, it is much harder and more costly to recapture. Government conservation programs that help farmers generate beneficial environmental outcomes could also help maintain those outcomes at scale.

USDA Conservation programs should be landscape-based, systems-based, and with long-term views to climate mitigation and natural resource conservation and improvements. USDA conservation financing should also take a longer-term view than current programs with limited timescales and provide landscape-based and system-based financing to achieve multiple natural resource and climate mitigation outcomes. Integrated data collection and quantification programs to account for these outcomes are necessary to assess all natural resource outcomes and to prioritize local resource concerns and needs while also mitigation climate change. Current conversation programs should start to morph towards these approaches and away from separate or specific outcomes. An environmental benefits index (EBI) could be applied to a broadly arrayed program that allowed producers to tailor their efforts towards longer-term, landscape-based approaches, and to expand them over time rather than to apply to different programs with short timeframes for execution.