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FEDERAL STRATEGY FOR AGRICULTURE AND FOREST GHG MMRV COMMENTS

August 11, 2023

Chief Economist Seth Meyer
Office of the Chief Economist
U.S. Department of Agriculture
1400 Independence Ave. SW
Washington, DC 20250

Re: Request for Information on Federal Strategy to Advance Measurement and Monitoring Greenhouse Gas Measurement and Monitoring for the Agriculture and Forest Sectors (Document Citation: 88 FR 44251)

Dear Dr. Meyer,

We commend the U.S. Department of Agriculture (USDA) for proposing a framework for measurement, monitoring, reporting, and verification (MMRV) of greenhouse gas (GHG) emissions for the agriculture and forest sectors. The proposed framework and subsequent implementation plan will be critical to advance climate-smart agriculture and soil health while supporting America's farmers.

We appreciate the focus on **direct measurements** of GHG emissions and sinks in grasslands and croplands to better support models, *in situ* testing protocol, and the use of Earth observation data in predictive modeling. We support the implementation strategies that will carry out this work, such as the development of a Soil Carbon Monitoring Network, soil carbon measurement technology evaluation, improving conservation activity data, and Agricultural GHG Research Networks. The following recommendations address what we see as gaps in the proposed framework to adequately use direct measurements to inform broader applications.

Recommendations

To properly collect direct measurements, standards must be set for field collection, sample handling, lab analysis, and data management and reporting. Without this entire spectrum of standard protocol, it will be impossible to properly compare GHG data to calibrate and validate indirect measurements and models.

Lab Calibration:

While standard methodologies for soil sample collection and testing are mentioned several times in the proposed framework, of concern is the lack of reference to lab calibration protocol, nor any indication as to how data quality by individual labs will be assessed to ensure each test is producing an "apples-to-apples" set of data.

An effort to strengthen the public-private partnership between commercial soil test labs, land grant universities, and technical assistance providers is essential to the development and use of a national set of regionally appropriate interpretation functions used for on farm management decision making. Adherence to standardized methods is an important first step, but should incorporate the practice of cross-validating results to limit inter-laboratory variability.¹

We recommend that a standard protocol be established for any labs that want to qualify for the testing of any soil samples associated with USDA's climate-smart investments, and a related certification protocol.

To ensure there is a minimum number of labs available, we further recommend USDA work directly with a select subset of commercial and university analytical labs (to be designated by region) to establish the proposed standards.

We recommend that a standardized training in soil health assessment protocols (as laid out by Soil Health Technical Note No. 450-03)² be provided to these labs and that all technicians associated with these analyses complete an individual training with an NRCS appointed official. Selected labs must, at minimum, have a documented Quality Assurance/Quality Control program, follow ISO 17025 and ISO 9001 protocol, and participate in North American Proficiency Testing.

When conducting analyses, we recommend that each lab utilize the following internal quality control system³:

- Analyze a blank with every set of samples submitted
- Conduct duplicate analysis on at least 10% of samples submitted to ensure precision
- Include at least one reference standard in each set of analyses (must fall inside control limits)
- Analyze at least one fortified sample with each sample set to verify accuracy

Additionally, we recommend that every 75th sample be sent to 2 commercial labs and 2 analytical labs (including designated lab), so as to provide external validation of results.

¹ Wade, Jordon, et al. "Sources of Variability That Compromise Mineralizable Carbon as a Soil Health Indicator." Soil Science Society of America Journal, vol. 82, no. 1, 2018, p. 243., doi:10.2136/sssaj2017.03.0105.

² Stott, D.E. 2019. Recommended Soil Health Indicators and Associated Laboratory Procedures. Soil Health Technical Note No. 450-03. U.S. Department of Agriculture, Natural Resources Conservation Service.

³ Holstege, D. (2010, October 07). UC Davis Analytical Laboratory Quality Manual. Retrieved August 9, 2023, from <https://anlab.ucdavis.edu/media/pdf/qual-manual.pdf>

Having consistent calibration across labs is essential to yielding useful data that can be understood across a wide variety of production types and geographies.

Lab Calibration to Support Market-Based Incentives & Further Research:

Longer term, it's also essential that we generate reliable data that will allow farmers to connect with a variety of market-based economic incentives, such as carbon markets and company supply chain integration. This is also of foundational importance to our research and academic stakeholders, because even the most rigorous standards at the field level will yield inconsistent conclusions if there is variability from lab to lab.

Risk Management Applications:

Generating consistent data is also essential in order to create a predictive model of risk for agriculture and soil, allowing for the creation of preferential financial products like lower interest bank loans or crop insurance programs with lower premiums for farmers with good soil health. ***We believe USDA should also take the opportunity to use the data it is collecting through the GHG MMRV framework to assess the impact of climate-smart practices on insurance loss payout.***

The USDA Risk Management Agency (RMA) and Farm Service Agency (FSA), agencies absent from the current framework proposal, can provide information on climate-smart practices implemented on working lands beyond the scope of conservation programs. By partnering with these agencies, USDA would be in a much better position to adjust crop insurance premiums to better reflect the actual risk of a loss due to differences in practice use, therefore creating better financial opportunities for producers implementing these practices.

We urge USDA to put the data it has available to use to help us all understand the impacts of different cropland practices on resilience, and to make the data it has available to allow others to make these assessments as well.

Many thanks again for your attention on this matter. Please feel free to reach out to us. We'd be delighted to work with you on this matter.

Regards,

Harley Cross
Co-Founder & Director of Strategy
Land Core