Advancing Towards Next-Generation Soil Carbon Measurement

Recommendations for the upcoming Farm Bill

TITLE VII: RESEARCH

Accurate, cost-effective, and scalable monitoring, reporting and verification (MRV) remains the biggest challenge for soil carbon.

Taking physical soil samples is arduous and expensive, and predictive models lack the source data required for precise estimates. To expand the acreage of accurately tracked soil carbon storage and understand the factors that influence soil carbon outcomes, farmers and ranchers need easy-to-use, accessible, and affordable MRV methods, tools, and models.

SOIL CARBON MRV CHALLENGES

- Soil carbon stocks are measured inconsistently and inaccurately, risking that we overcount the climate benefits of practice adoption.
- Current tools for measurement are difficult and expensive for farmers and ranchers to implement, preventing them from effectively managing their operations to maximize carbon storage and access new sources of revenue.

THE FARM BILL OPPORTUNITY

- Set a universal, science-based standard for soil carbon measurement and tracking.
- Provide farmers and ranchers with easy-to-use, accessible, and affordable soil carbon measurement tools.
- Improve soil carbon models such as DayCent and COMET-Farm and -Planner through robust data collection.

Develop and improve MRV methods and tools for agricultural soil carbon.

Accurate MRV is critical to effectively and durably implementing practices that store carbon and designing science-based incentives. Currently, MRV methods are unstandardized and tools and technologies are complicated and expensive.

Congress should authorize and increase funding for the **Long-Term Agroecosystem Research (LTAR) Network** and **Climate Hubs** to establish uniform soil carbon sampling methods, develop new and improved existing soil carbon measurement tools, and communicate advancements with producers on the ground.

The LTAR Network

The LTAR Network is made up of 18 research sites that coordinate research, collect and manage long-term data, develop new management techniques and technologies, and pursue agricultural innovation partnerships. Despite its invaluable contributions to soil carbon data, the LTAR Network is not authorized in statute and therefore risks discontinuation and insufficient funding support.

- **Formally authorize the LTAR Network** and provide an additional $25 million per year.
- **Direct the LTAR Network to create standard methods** for soil carbon data collection at federal agencies to ensure uniformity across efforts.
- **Direct the LTAR Network to develop new tools** for soil carbon measurement and remote sensing.
- **Direct the LTAR Network to develop partnerships** to improve soil carbon models and support farmer implementation of new MRV tools and methods.

The Climate Hubs

The Climate Hubs deliver science-based information and technology to land managers to help reduce agricultural risk in the face of climate change. The Climate Hubs are not authorized in statute and are therefore at risk of discontinuity and insufficient funding support.

- **Formally authorize the Climate Hubs** and increase funding by $6 million per year.
- **Direct the Climate Hubs to develop and share public resources** on soil carbon sampling and MRV tools with farmers and ranchers.

PROGRAM	2018 FARM BILL AUTHORIZATION	FY22 MANDATORY FUNDING	FY22 DISCRETIONARY FUNDING	RECOMMENDED ANNUAL FUNDING	
LTAR Network	N/A	N/A	$17,000,000	$42,000,000	Distributed evenly across sites
Climate Hubs	N/A	N/A	$23,326,000	$30,000,000	

For more information on Carbon180's Farm Bill platform, please visit our web page and let us know what you think at policy@carbon180.org.