

Leading with Soil

SCALING SOIL CARBON STORAGE IN AGRICULTURE

Soil carbon storage offers significant economic and environmental opportunities for farmers and ranchers. Agricultural practices that store carbon in the soil can help fight climate change at a low cost. Those same practices can also improve overall soil health, build resilience to extreme weather, and improve the bottom lines of farmers and ranchers.

Despite these significant opportunities, practices that increase soil carbon have been slow to gain traction at a meaningful scale. Simultaneously, existing federal programs that support soil health practices cannot meet growing demand and do not track carbon outcomes. **Today's agricultural systems need new, robust federal policy in order to implement soil carbon storage at a meaningful scale and unlock its potential as a powerful climate solution.**

Barriers to Scale

Through Carbon180's Leading with Soil initiative, we worked on the ground with farmers and ranchers in the Rocky Mountain states to accelerate the adoption of practices that increase soil carbon. Our stakeholder engagement led to the discovery of three key barriers that significantly hinder the implementation of soil carbon practices today:

EDUCATION

Technical assistance and education resources are critical for farmers and ranchers to implement new practices and capitalize on the value of soil health.

SCIENCE

Practices need to be linked with soil health and soil carbon outcomes in an accessible and reproducible way.

INCENTIVES

New financial incentives and tweaks to existing incentives can reduce barriers to adoption and encourage durable carbon storage.

THE SOIL HEALTH CONNECTION

Healthy soils are, by definition, carbon-rich. This is because carbon is an essential resource that drives soil fertility by improving soil structure, increasing water filtration, and helping release nutrients for plant growth. Practices that promote soil health also help sequester carbon into the soil.

EXTENDED READING

For more information, please read our [Soil Carbon Storage fact sheet](#).



Policy Recommendations

Despite the growing interest and action at the local and state level, significant gaps remain and current adoption rates continue to fall short. Federal policy is pivotal to alleviate barriers ranchers and farmers face. We present our policy recommendations at a high-level below:



EDUCATION

ISSUE

Agricultural producers rely on technical assistance providers like the Natural Resource Conservation Service (NRCS) to support decision-making and practice adoption. Despite increasing demand, technical assistance providers are often short-staffed and lack specific knowledge of soil carbon storage.

SOLUTION

Ample funding is needed to expand the types and quality of technical assistance farmers and ranchers can access. The Federal Government can support producer education through peer learning, demonstration projects, and bolstering the NRCS's capacity to provide technical expertise.



SCIENCE

ISSUE

Producers lack accessible scientific information to inform decision-making for their operations. Additionally, soil carbon quantification methodologies can be inconsistent, onerous, and expensive.

SOLUTION

Significant federally funded research is needed to develop improved soil carbon assessment methodology, prove out soil carbon practices in neglected agricultural contexts and geographies, and better understand the economic costs and benefits of practice implementation. The USDA is well-positioned to execute this research, and can pave the way for science-based incentives in the future.



INCENTIVES

ISSUE

The benefits of soil carbon storage vary across operations and often take time to manifest. And with no robust financial payoff explicitly for soil carbon storage, farmers struggle to absorb the upfront costs of transition practices.

SOLUTION

Bring these practices to scale by subsidizing necessary infrastructure, expanding and adjusting existing financing support, and creating new, durable market incentives.

For greater detail on our policy recommendations and on-the-ground work, access the full report at www.carbon180.org/reports.

