

National Academies Webinar: Learnings and Progress on Enabling Agricultural Soil Carbon Credits at Scale



JUNE 6, 2022



Our Mission: Harnessing nature to help farmers sustainably feed the planet



We have built a scientifically-rigorous credit generation process that directly transfers value from buyers to growers

GENERATE

VERIFY & MAINTAIN

SELL



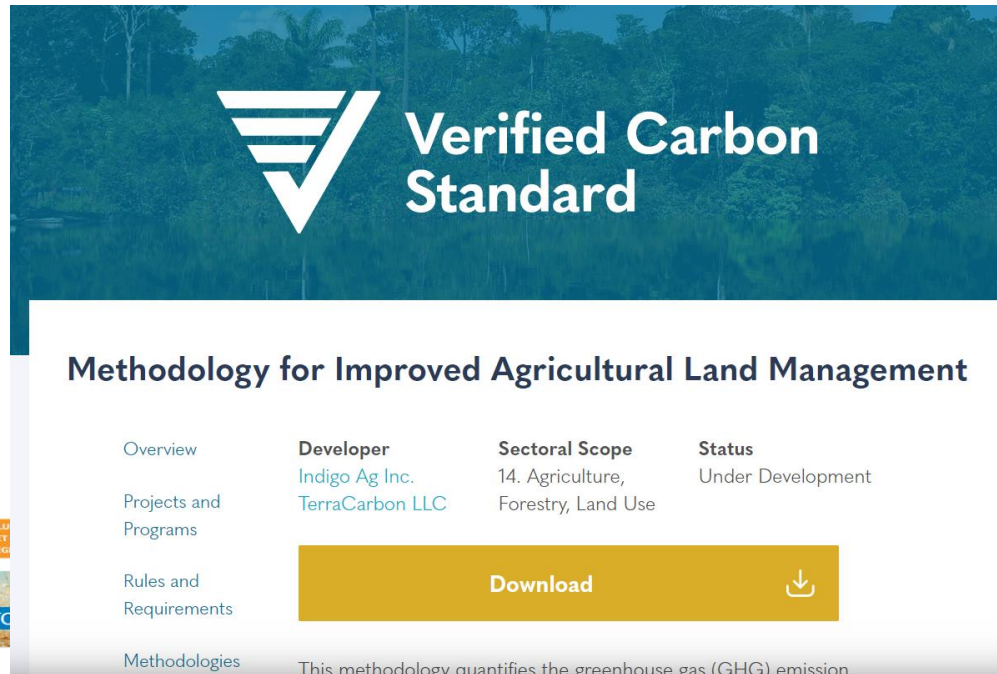
Supplier Ecosystem

Standards & Verification Ecosystem

Buyer Ecosystem



Verra and CAR's latest protocols enable credits at scale



The screenshot shows the 'Verified Carbon Standard' logo at the top. Below it, the title 'Methodology for Improved Agricultural Land Management' is displayed. A navigation menu includes 'Overview', 'Projects and Programs', 'Rules and Requirements', and 'Methodologies'. A 'Download' button with a download icon is prominent. The 'Developer' section lists 'Indigo Ag Inc.' and 'TerraCarbon LLC'. The 'Sectoral Scope' is '14. Agriculture, Forestry, Land Use'. The 'Status' is 'Under Development'. A partial sidebar on the left shows 'CLIMATE ACTION RESERVE' and 'SOIL ENRICHMENT PROTO'.

Key advances¹ of the Soil Enrichment Protocol & VM0042:

1. Flexibility in biogeochemical model use enabled by explicit & rigorous performance requirements
2. A new approach to field-level, modeled baselines that is both dynamic and adaptive
3. A hybrid approach to credit generation using soil measurements, modeling, and default equations
4. Uncertainty quantification that accounts for multiple sources of uncertainty:
 - Sampling design uncertainty
 - Measurement uncertainty
 - Model uncertainty

Soil Enrichment Protocol

The Reserve is developing a Soil Enrichment Protocol (SEP) that will provide guidance on how to quantify, monitor, report, and verify agricultural practices that enhance carbon storage in soils. The primary GHG benefit targeted will be the accrual of additional carbon in agricultural soils, with hopes to incentivize GHG emission reductions from other sources, such as N₂O from fertilizer use.

Protocol development is being generously funded by Indigo Ag.

Public Comment Period

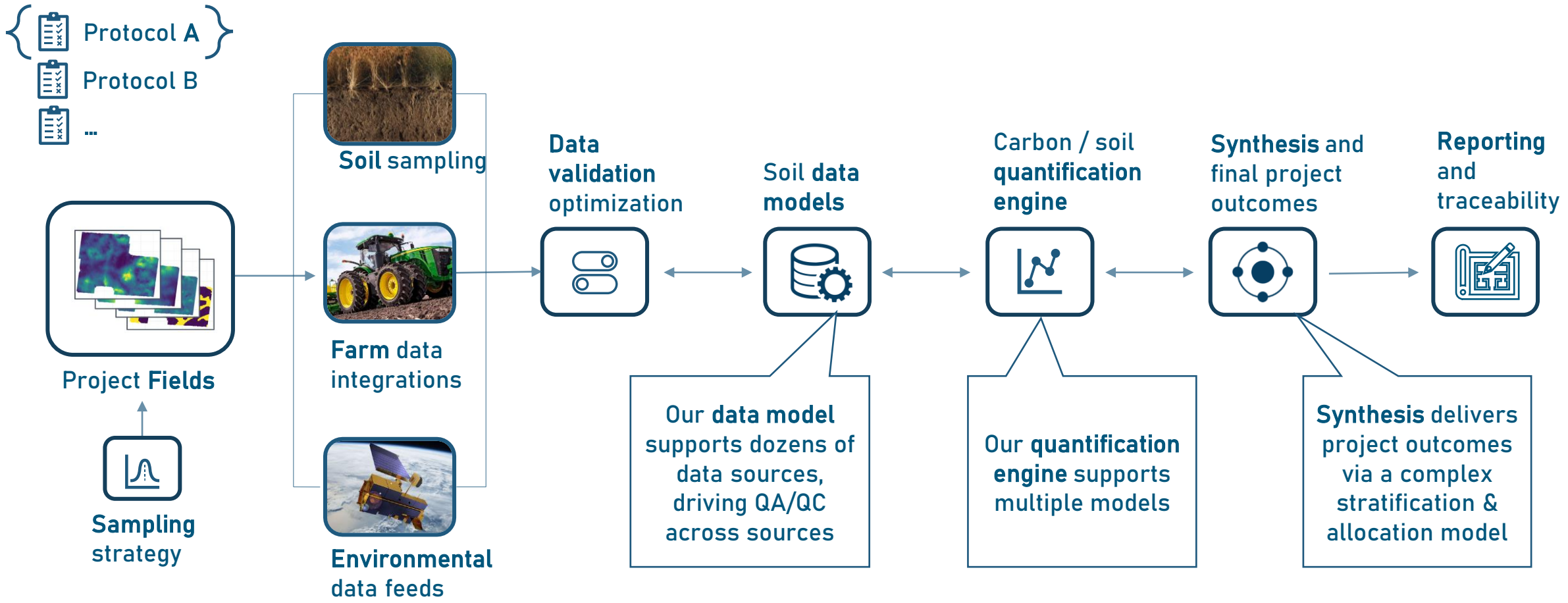
The draft protocol is available for public review below. The 30-day public comment period ended on May 18, 2020.

The Reserve anticipates hosting a second public comment period and webinar this summer before seeking Board adoption. See the protocol development timeline at the bottom of this page and stay tuned for updates.

- Soil Enrichment Protocol Version 1.0 – Draft for Public Comment (April 17, 2020)
- Model Calibration, Validation, and Verification Guidance for Soil Enrichment Projects (April 17, 2020)

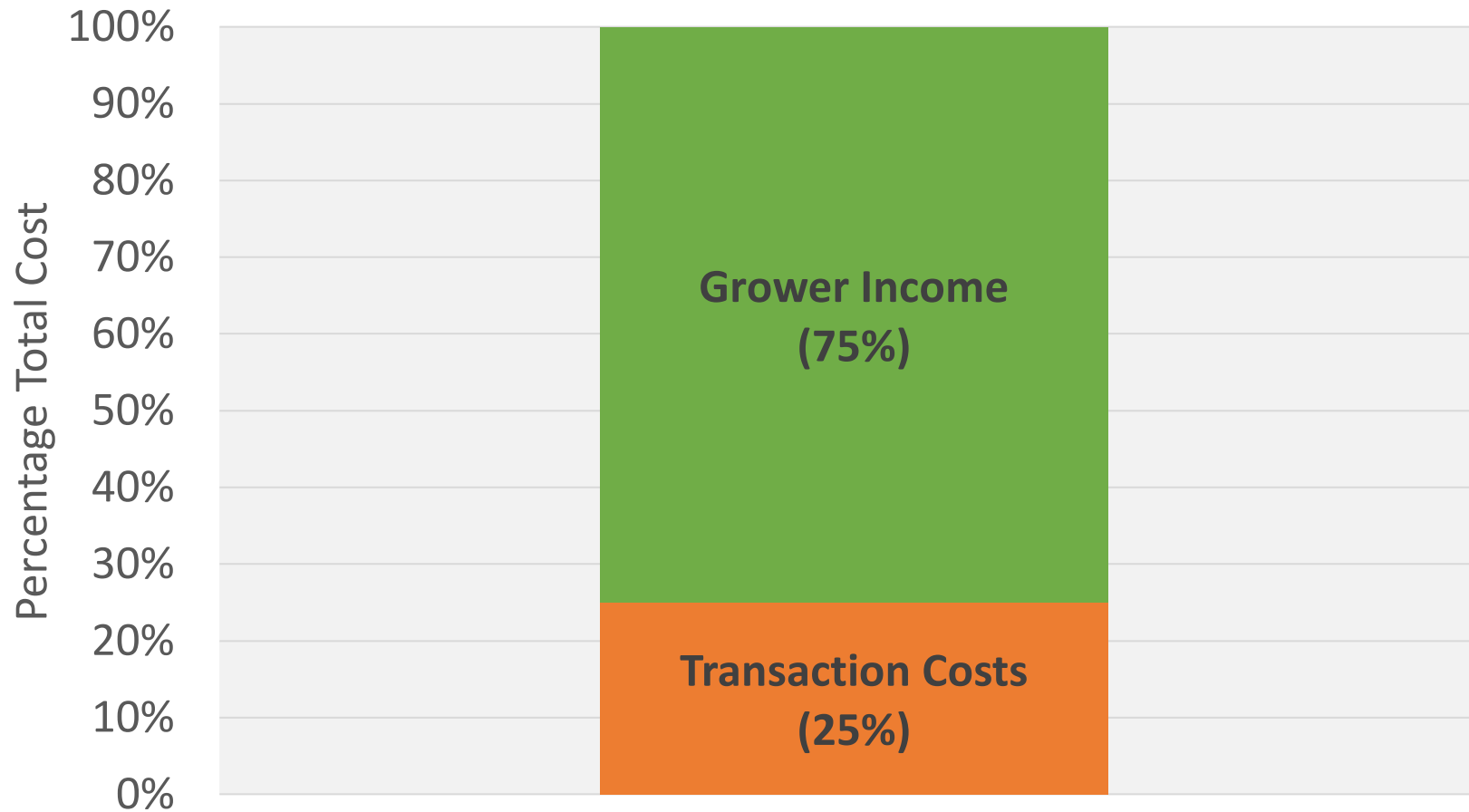
1. Jackson Hammond AA, Motew M, Brummitt CD, DuBuisson ML, Pinjuv G, Harburg DV, Campbell EE and Kumar AA (2021) Implementing the Soil Enrichment Protocol at Scale: Opportunities for an Agricultural Carbon Market. *Front. Clim.* 3:686440. doi: 10.3389/fclim.2021.686440 <https://doi.org/10.3389/fclim.2021.686440>

MRV - Our technology for soil carbon quantification is a robust foundation for implementing various protocols and models



Our MRV technology was designed as a flexible, multi-protocol stack

Carbon by Indigo reduces transaction costs with technology and maximize high-quality outcomes





OPPORTUNITIES FOR FEDERAL SUPPORT

- Invest in validation datasets
 - Especially on those with less existing evidence with SOC and GHG emissions data like grazing management and specialty crops
- Invest in innovative technologies and pilots to increase accuracy and reduce costs
 - Continue or expand the USDA CIG program, ARPA-E SMARTFARM, USDA Climate Smart Commodities program, and others
- Educate growers and public on rigorous quality criteria and which programs meet them

Key Takeaways: Science and Technology are the Foundation of Agricultural Carbon Markets

1

Scientifically rigorous and **scalable** greenhouse gas quantification is possible with VM42 and CAR SEP

2

Advances in technology **reduce transaction costs**

3

Investments in science and technology are critical to realize the full potential of agriculture

