Promoting increased nutrient use efficiency through carbon markets: Lessons learned and next steps

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**Lead:** The Fertilizer Institute - NRCS awarded TFI and TCT a one year extension.

**Objectives:**

1. Attract additional nutrient management data to test the existing protocols.
2. Produce a “credit generation and commercialization report” of the known barriers to successful carbon crediting for nutrient management practice changes.
Lessons from Protocol Road Test

- Targeting farmers doing VRT for nitrogen application wasn’t a successful way to identify farmers to enroll in a program; should have targeted agronomy experts.
- “Zoning” fields for precision agriculture presents challenges for project developers; data needs to be normalized before protocols are applicable.
- Should data collection drive protocol use or should the availability of protocols drive the type of data collected? Do we want to drive practice change or reward farmers for practice changes they have already undertaken?
Lessons from the Credit Generation and Commercialization Report

Landowner enrollment is key to unlocking the scalability potential of the nutrient carbon crediting sector. Main challenges are:

- Uncertainty in credits per acre farms can expect from their fields – only one project has made it through verification.
- A farmer’s willingness to participate is dependent on profitability – carbon price that meshes with commodity and input prices needs to be determined.
- Agricultural data is still very fragmented – farmers not likely to enroll until it is proven that cost to verify is less that the credit is worth.
- Very small market for these credits now – Need voluntary buyers or to move nutrient management to the compliance market.
Biggest Challenges

Enrollment efforts continue to be unsuccessful because (through no fault of the aggregators):
- Data are fragmented
- The rigor required by carbon protocols makes credit production expensive
- No tangible market exists for the credits

TCT has determined we can not purchase nutrient management offsets yet because our CIMO model relies on a guaranteed volume of credits.

- We learned much through this CIG! We need streamlined data, proven credits/acre from field verifications, and clear buyers.
Biggest Successes

Understanding barriers at every stage in credit generation and possible solutions.

- Describing methods to improve agricultural data collection and implications for interaction between producers and carbon markets
- Better definition of roles for carbon market participants
- Interactions between all barriers that ultimately impact enrollment
Next Steps for Breaking Down Barriers

*(TCT’s recommendations-not TFI’s!)*

Â Press for compliance protocols in nutrient management to provide a steady market incentive.

Â Enhance connections between protocol writers, USDA’s agricultural data platforms, and precision ag/software companies – regional rate tables for participation!

Â Refined, long term data storage- most stakeholders don’t need long term storage but carbon markets do.
Financing Tool #1: Upfront Investment

- Guarantee minimum carbon value.
- Revenue share rewards project developers as carbon prices increase.

Investment

- The Climate Trust “pre-purchases” ten years of the carbon offsets a project is anticipated to generate.
- Capital is made available upfront for the construction of new projects.

Active management

- The Climate Trust will work with a project to develop a carbon monitoring plan and commercialize credits.

Revenue share

- After carbon sales have repaid the pre-purchase, 50% of future carbon revenues are paid to the project and 50% are paid to The Climate Trust and its investors.
Financing Tool #2: Advance Market Commitment

- Guarantee minimum carbon value.
- Revenue share rewards project developers as carbon prices increase.

**Forward contract**

- The Climate Trust agrees to a minimum purchase price to purchase offsets as they are delivered over a ten year period from a project.

**Active management**

- The Climate Trust will work with a project to develop a carbon monitoring plan and commercialize credits.

**Revenue share**

- If The Climate Trust is successful in selling credits for more than the minimum purchase price, The Climate Trust will share revenues with the project developer.
Value Proposition: Manage the execution and market risks associated with carbon markets.
**Value Proposition:** The Climate Trust manages the execution and market risks associated with nascent carbon markets.

**Market Risk Mitigation.** All structures guarantee a minimum value for carbon credits over the 10 year crediting period of a project.

- Allows projects to leverage The Climate Trust’s existing programs, which have $22 million under management and must purchase and retire credits regardless of what happens in emerging markets.

**Delivery Risk Mitigation.** The Climate Trust develops a carbon monitoring plan that sets up the methods for data collection, data aggregation and verification. The Climate Trust then works to commercialize credits on behalf of the project in the compliance and voluntary markets.

- Monitoring plan allows projects to benefit from The Climate Trust’s 18 years of experience investing in and managing offset projects.
- Commercialization gives project developers access to The Climate Trust’s buyers network. Projects benefit from The Climate Trust’s portfolio of projects, which allow The Climate Trust to aggregate offsets and mitigate the risks which buyers face.
THANK YOU!

To discuss nutrient management, please contact:
Liz Hardee, Senior Analyst
ehardee@climatetrust.org
503-238-1915 x209

To discuss a project opportunity, please contact:
Peter Weisberg, Program Manager
pweisberg@climatetrust.org
503-238-1915 x207