

An Overview of Voluntary Carbon Markets for Illinois Farmers



Illinois Sustainable Ag Partnership (June 2023)

Voluntary ecosystem markets, often called “carbon markets,” have expanded in recent years, largely driven by corporations setting climate and sustainability goals. The Illinois Sustainable Ag Partnership (ISAP) believes carbon markets offer the potential to incentivize the increased adoption of soil health systems, and ISAP is leading efforts to increase transparency on various market incentives and facilitate data sharing among farmer networks.

ISAP compiled this document to assist farmers and farm advisors in their evaluation of multiple market opportunities available in Illinois. Some of this information was originally published by ISAP in 2021.¹ This update includes additional carbon market opportunities available to Illinois farmers, a glossary of key terms, and a list of relevant resources.

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Background

Over the past decade, several countries and companies have announced their goals for carbon neutrality (net zero greenhouse gas (GHG) emissions after a certain point in time) and carbon negativity (mitigation of all past and future GHG emissions). Meeting these climate goals will require multiple strategies, ranging from the use of other industries to sequester emitted GHGs to the reduction of GHG emissions associated with the production of food, fuel, and fiber. Row crop farmers are uniquely positioned to support both. Because farmers sell grain into the food, fuel, and fiber value chains, they have the opportunity to reduce the carbon intensity of that grain by implementing conservation practices such as no-till and cover cropping. Those same practices can pull carbon dioxide out of the atmosphere, which can be quantified and sold to other industries as a way to offset their emissions.

In response to the climate goals established by publicly traded companies, the Securities Exchange Commission is reviewing potential rules that companies will need to utilize to account for their emissions and quantify their reduction efforts. Ecosystem service markets (aka carbon markets) have the potential to provide these companies with the data that ensures they have reduced emissions within their supply chain or have paid for the sequestration of GHGs they have released.

According to the US Environmental Protection Agency (EPA), ecosystem service markets allow companies, communities, and other beneficiaries to pay landowners and managers to protect, restore, or mitigate for impacts to ecosystems. While many of the practices that offer the greatest ecosystem benefits are typically encouraged via traditional state and federal financial assistance programs, market payments are generated via outcomes verified at the field level and are

¹ Bruner, E. and Brokish, J. (2021) Ecosystem Market Information: Opportunity and Program Comparison [Fact sheet]. Illinois Sustainable Ag Partnership.

not necessarily practice-specific. Markets currently exist for several ecosystem services including carbon sequestration and GHG reductions, water quality and quantity improvements, and wetland and habitat creation. **This resource focuses on agricultural opportunities for ecosystem service markets, including markets incentivizing carbon and water quality.**

While there continues to be an increasing number of market opportunities available to farmers, they are all voluntary, and typically follow one of two pathways depending on whether it is an offset or an inset market. The below illustration summarizes farmer engagement with voluntary carbon markets.

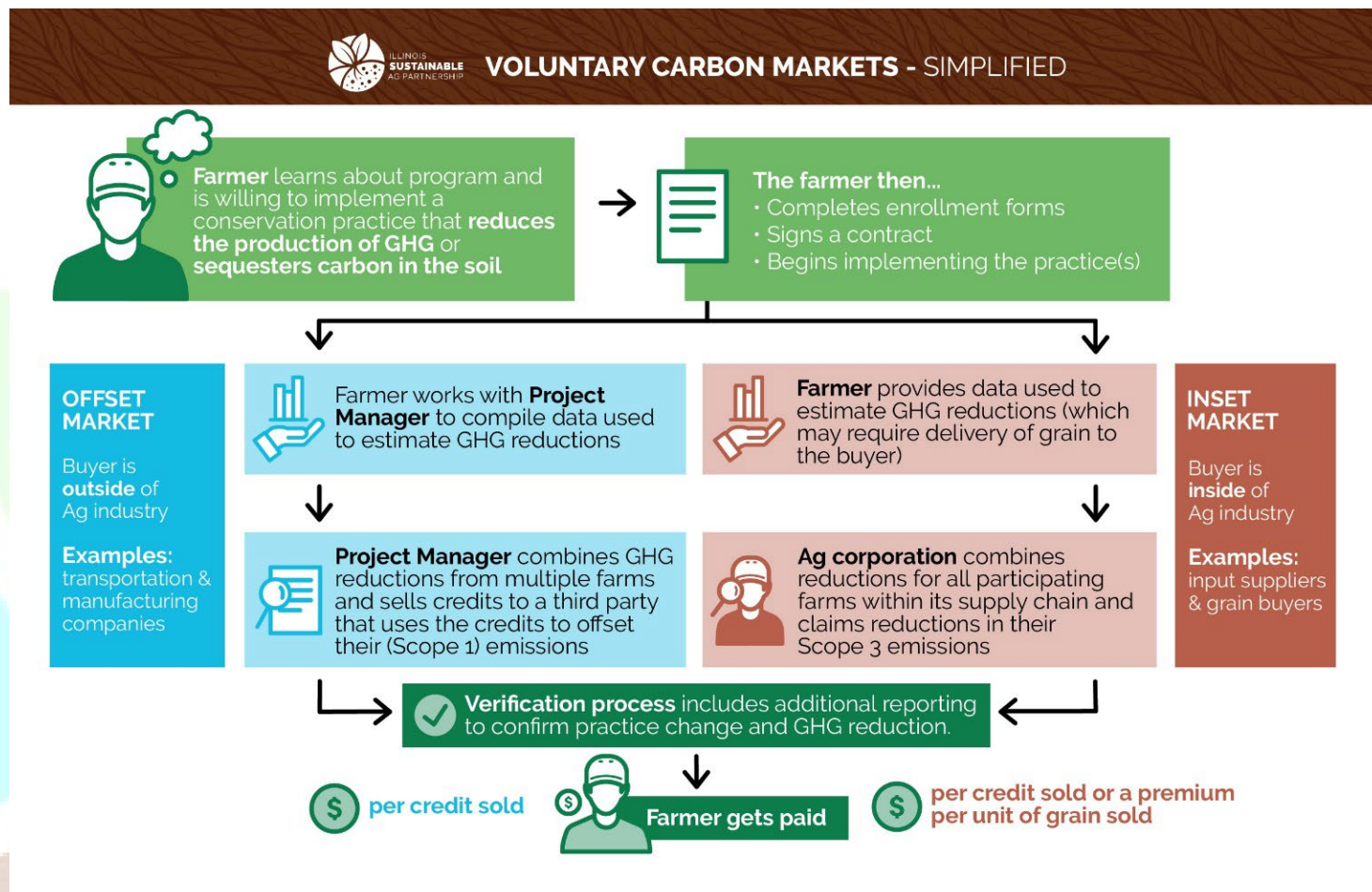


Figure 1: An overview of farmer participation in voluntary carbon markets, with separate pathways for offset and inset market opportunities

Disclaimer

The Illinois Sustainable Ag Partnership interviewed program managers and utilized program websites to build the tables below. While efforts were made to provide correct information, ISAP makes no claims, promises, or guarantees about the accuracy, completeness, or adequacy of information listed, and expressly disclaims liability for errors and omissions.

The information provided here is for informational purposes only and is not intended to provide legal advice to any individual or entity. We urge you to reach out to your legal advisor and individual program representatives before choosing to enroll in any of the programs listed below.

Reference to any specific ecosystem service markets or use of any trade firm or corporation name is for the convenience of the Illinois farm community and does not constitute endorsement or recommendation by the Illinois Sustainable Ag Partnership Board or its directors.

Market Information Tables

The following tables summarize 15 different voluntary carbon market opportunities. **All program information on the following tables was provided and vetted by company representatives** and was current at the time of publication (June 2023). In some cases, market representatives chose not to provide information, or it was not available. These items are noted as “info not provided” or “not available” on the tables. Data inquiries, corrections, or questions can be submitted via email to hello@ilsustainableag.org.

Along with the market entity name, a brief introduction to the market entity is included with a link for more information. The icons in the upper right corner of the table highlight key aspects of each market (see legend), and the remaining information is grouped into categories as described below.



**Inset or Offset
Market**



**Enrollment to date
In Illinois Nationwide**



**Year market
began**

Farm Eligibility

- ❖ Geography – provides a list of states / regions where the market is operating.
- ❖ Min / Max – lists any minimum or maximum acres needed to enroll.
- ❖ Eligible Practices – summarizes practices or management activities that may qualify for incentives.
- ❖ Additionality requirement – indicates whether the practice needs to be new and / or identifies any look back periods.

Money Matters

- ❖ Payment schedule – summarizes common payment terms.
- ❖ Price – lists price paid per credit or per practice.
- ❖ Stackability – whether market incentives can be combined with public funds or other incentives.

Contracting Info

- ❖ Contract length – indicates the length of a typical contract.
- ❖ Data collected at enrollment – summarizes data collection requirements.
- ❖ Enrollment assistance – the type of assistance provided during the enrollment process.
- ❖ Agronomic / technical assistance – the level of agronomic and / or technical assistance provided.
- ❖ Enrollment process – summarizes the enrollment process and the estimated time needed to complete enrollment and reporting requirements.

Technical Info

- ❖ Outcome estimation – indicates how the market entity is quantifying GHG reductions.
- ❖ Verification – process used by the market to verify practice adoption and / or measure GHG reductions.
- ❖ Penalties – summarizes penalties if farmer is unable to implement the required conservation practice(s).

ADM

ADM's re:generations programs provide payment for farmers currently using or adopting regenerative agricultural practices.

LINK: <https://admadvantage.com/regen/programs/>



INSET



390K
ACRES



1.2M ACRES



2022

Farm Eligibility	Money Matters	Contracting Info	Technical Info
<p>Geography: Current enrollment includes: IL, IN, IA, KS, MI, MN, MO, NE, AL, FL, GA, MS, SC</p> <p>Min/Max: None.</p> <p>Eligible practices:</p> <ul style="list-style-type: none"> • Cover crops • No-till • Strip-till • Nutrient management • Living roots year-round <p>Additionality requirement: Not required to enroll in majority of payment opportunities.</p>	<p>Payment schedule: Payments are made in March of the year following enrollment.</p> <p>Price: \$1 to \$16 per acre, depending on practice type and combination</p> <p>Stackability: Must not be part of any private regenerative ag program. Participation in public-funded program is accepted.</p>	<p>Contract length: 1 year</p> <p>Data collected at enrollment: Data is entered into the FBN/Gradable system. Data includes field boundary, identification, planting dates, tillage practices, fertilizer application, cover crop data, harvest information, and other questions around field-level decisions.</p> <p>Enrollment assistance: Provides 30-minute consultation from technical assistance partners or ADM Climate-Smart Origination Managers help guide producers on what is required for a successful execution and the potential rewards. For information on the 2023 program, visit https://admadvantage.com/regen/programs/#section-7</p> <p>Agronomic/technical assistance: Technical assistance is provided by partners unique to each eligible state.</p> <p>Enrollment process: 30-minute consultation and a 5-10 minute survey to enroll. 15-45 minutes for annual reporting.</p>	<p>Outcome estimation: Soil sampling is performed for a small subset of acreage.</p> <p>Verification: FBN performs verification through remote sensing and "other tools," per ADM's website.</p> <p>Penalties: Must meet all requirements of program or will not qualify for final payment.</p>

Agoro Carbon

Agoro Carbon is a company helping to make the carbon market more accessible to farmers and ranchers by providing resources and assistance to interested parties.

Funded by Yara International.

LINK: <https://agorocarbonalliance.com/>



OFFSET



40K ACRES



1.7M ACRES



2021

Farm Eligibility	Money Matters	Contracting Info	Technical Info
<p>Geography: US and Brazil</p> <p>Min/Max: 500 acres min; no max</p> <p>Eligible practices:</p> <ul style="list-style-type: none"> • Cover crops (legume addition) • Tillage management • Nitrogen efficiency • Improved grazing • Biodiversity • Fertilization <p>Additionality requirement: Yes, with a look-back of 3 years.</p>	<p>Payment schedule: Two options are available:</p> <p>Carbon Performance Based Payments: payments years 5 and 11 based on credit issuance.</p> <p>Carbon Prepayments: annual payments in addition to payments years 5 and 11 based on credit issuance. Annual payments are deducted from issuance payments.</p> <p>Price:</p> <p>Option A floor prices are at \$18/ton at year 5 and \$20/ton at year 11. Option B floor prices at year 5 price is \$16.50/ton and \$20/ton in year 11.</p> <p>Stackability: Yes, some programs are able to stack with Agoro Carbon enrollment.</p>	<p>Contract length: 10 years</p> <p>Data collected at enrollment: 3-year historical data summary, including information on tillage, planting, harvest, chemical and fertilizer applications, and irrigation if applicable.</p> <p>Enrollment assistance: Assistance from an Agoro Carbon Grower Success Team Member and Sales Manager throughout the enrollment process and the length of the contract.</p> <p>Agronomic/technical assistance: Agoro Carbon promises a free consultation with an agronomist throughout the duration of the contract. Agoro Carbon helps collect data and handles administration activities, including auditing and certification. They also provide the soil sampling as part of the verification process, secure buyers for credits, and provide a local contact to correspond with.</p>	<p>Outcome estimation: Soil sampling in years 0, 5, and 10 provided by Agoro Carbon.</p> <p>Verification: Verified by a third party. Uses the Verra platform to generate credits.</p> <p>Penalties: Per the Verra Agricultural Land Management Methodology (VM0042), ~20% of credits are kept in a buffer pool to account for reversals. Credits would be retired from this pool.</p>

Bayer

The Bayer Carbon Program, part of ForGround by Bayer, is a program that pays for practices on a per acre basis, regardless of soil carbon measurements.

LINK: <https://bayerforground.com/farmers/carbon-initiative>



OFFSET



Info Not
Provided



Info Not
Provided



2022

Farm Eligibility	Money Matters	Contracting Info	Technical Info
<p>Geography: Available in 16 states: AL, AR, IL, IN, IA, KS, KY, LA, MI, MN, MS, MO, NE, OH, TN, WI</p> <p>Min/Max: 10 acre per field min; no max</p> <p>Eligible practices:</p> <ul style="list-style-type: none"> • Cover crops • No-till • Strip-till <p>Additionality requirement: New eligible practices adopted continuously since October 1, 2020 are eligible for up to 2 years of historical payback in addition to the current year payment.</p>	<p>Payment schedule: Payments are issued after the farmer completes necessary documentation and Bayer can verify that the practices took place. For practices completed in Fall 2022/Spring 2023, payments should be expected within 30 days of completing practice verification, estimated to be Q4 of 2023.</p> <p>Price: \$5 to \$6 per acre for reduced tillage; \$6 per acre for cover crop adoption</p> <p>Stackability: Growers can participate in state and federal programs if they do not generate greenhouse gas reduction assets.</p>	<p>Contract length: 10-year (minus 1 year if farmer was paid for historical practices) plus additional 10-year retention of practices</p> <p>Data collected at enrollment: Fields shared via Climate FieldView and select practices used and when they were adopted. 3 years of historical data is required.</p> <p>Enrollment assistance: Customer Success team available to answer questions via carbonprogram@bayer.com or 833-877-7934</p> <p>Agronomic/technical assistance:</p> <ul style="list-style-type: none"> • Year-round support from agronomists • Access to a library of resources with the latest industry research and insights • Discounts on a variety of inputs and tools <p>Enrollment process: Enroll into The Bayer Carbon Program through bayerforground.com/carbon</p>	<p>Outcome estimation: Soil sampling every 5 years with carbon sequestration modeled on a yearly basis via external peer-reviewed models. Payment is on a per acre basis vs. tones sequestered.</p> <p>Verification: Growers provide historical farm management data through Climate FieldView (R) and field photos of practices implemented</p> <p>Penalties: Payment would not be made for years when practices were not implemented; payments resume upon practice verification.</p>

CarbonNOW

Locus AG's CarbonNOW program uses yield-boosting biological products as an approved practice change, which allows legacy regenerative agriculture farmers to join.

Funded by Locus Agricultural Solutions (LocusAG) and Anew Climate.

LINK: <http://www.locusag.com/carbonnow>



OFFSET



6K ACRES



>300K
ACRES



2021

Farm Eligibility	Money Matters	Contracting Info	Technical Info
<p>Geography: Nationwide</p> <p>Min/Max: 500 acres min; no max</p> <p>Eligible practices: The use of Locus AG's yield and ROI boosting biologicals. Can be combined with cover cropping, tillage reduction, and nitrogen reduction.</p> <p>Additionality requirement: Yes. However, if already utilizing regenerative agricultural practices, using Locus AG's product qualifies as a new practice change.</p>	<p>Payment schedule: Two annual disbursements: \$12/acre per year guaranteed. \$9/acre paid at completion of soil sampling. \$3/acre paid at end of year with year-end data collected.</p> <p>Price: Annual payments of \$12/acre, with annual performance bonuses based on carbon sequestered.</p> <p>Stackability: Can be stacked with other governmental programs.</p>	<p>Contract length: 4 year minimum, renewable</p> <p>Data collected at enrollment: 3-5 years of historical management data, field areas, and information on regenerative practice changes.</p> <p>Enrollment assistance: To check eligibility, visit https://locusag.com/eligibility. A CarbonNOW expert will be in touch within 2 business days to answer questions, check eligibility, and begin data collection process.</p> <p>Agronomic/technical assistance: Participants are assigned a program steward that provides full program management, plus continuing consultation to boost on-farm ROI.</p> <p>Enrollment process: Spring and fall enrollment periods. Data collection by Locus AG with minimal farmer time required.</p>	<p>Outcome estimation: Annual testing of soil carbon, paid for by LocusAG.</p> <p>Verification: Third-party verification is performed by an impartial verifier certified by the Registries.</p> <p>Penalties: Contract includes details for reversal, dependent upon severity and purpose.</p>

Cargill

Cargill RegenConnect provides farmers a financial incentive for positive environmental outcomes through the adoption of regenerative agriculture practices, while helping to decarbonize the agriculture supply chain. They use Regrow to quantify, monitor, and verify outcomes.

LINK: <https://www.cargillag.com/regen-ag>



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Info Not
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2021

Farm Eligibility	Money Matters	Contracting Info	Technical Info
<p>Geography: Available in 24 states: ND, SD, MI, MN, NE, WI, IA, IL, IN, OH, CO, KS, MO, KY, TX, OK, AR, TN, NC, LA, MS, AL, GA, SC</p> <p>Min/Max: None</p> <p>Eligible practices:</p> <ul style="list-style-type: none"> • Cover crops • Zero tillage • Reduced tillage <p>Additionality requirement: Yes</p>	<p>Payment schedule: First payment issued after signup, implementation of selected practice(s), and completion of data entry. Second and final payment issued at end of contract period after verification of practices and outcomes.</p> <p>Stackability: Fields enrolled in the Cargill program cannot be dual-enrolled in other privately funded programs. However, this program can be stacked with public/government program payments if eligible.</p>	<p>Contract length: 1 year</p> <p>Data collected at enrollment: Info not provided</p> <p>Enrollment assistance: Must be or become a Cargill member. To enroll, visit https://www.cargillag.com/locations to find contact information for your local team or contact us at regenconnect@cargill.com.</p> <p>Agronomic/technical assistance: One-on-one support from a Cargill Conservation Agronomist.</p> <p>Enrollment process: Less than 1 hour to enroll and less than 1 hour for annual reporting.</p>	<p>Outcome estimation: Farmers use Regrow to perform soil modeling with remote sensing data to quantify emissions reductions.</p> <p>Verification: A combination of remote monitoring, primary and secondary data, and soil sampling at program level.</p>

CIBO

CIBO Impact is an advanced platform technology that runs many kinds of carbon, sustainability, regenerative and scope 3 programs, serving different geographies, requiring different practices, and delivering different outcomes, for public, private, and non-profit organizations.

Founded by Flagship Pioneering.

LINK: <https://www.cibotechnologies.com>



COMBO



Info Not
Provided



Info Not
Provided



2016

Farm Eligibility	Money Matters	Contracting Info	Technical Info
<p>Geography: North America</p> <p>Min/Max: None</p> <p>Eligible practices: Varies by program. Focus is on regenerative ag, GHG emissions reduction, carbon sequestration, biodiversity, and soil health. Other programs may have different combinations of eligible practices.</p> <p>Additionality requirement: Varies by program. Verra-verified carbon credit programs have strict additionality requirements. Other programs have fewer or no additionality requirements.</p>	<p>Payment schedule: Payments currently dispersed on a quarterly basis after credits sell.</p> <p>Price: Varies by program.</p> <p>Stackability: Generally, yes. Many programs on the CIBO Impact platform are stackable with other incentives. Some programs are not stackable.</p>	<p>Contract length: Varies by program.</p> <p>Data collected at enrollment: Varies by program.</p> <p>Enrollment assistance: Varies by program.</p> <p>Agronomic/technical assistance: provided by program sponsors and CIBO's network of grower representatives, coops, and associations.</p> <p>Enrollment process: Enrollment may be initiated by a grower's trusted advisor, agronomist, crop consultant, or program sponsor. Growers must be in the loop for any contractual agreement. Technical and platform support is provided by CIBO's Customer Success team.</p>	<p>Outcome estimation: Ensemble of advanced crop, carbon, and ecosystems models that quantify the impact of agricultural practices in-real-time.</p> <p>Verification: Conducted ML/AI-driven computer vision, supplemented by API or manually entered data attested by growers, their agents, and advisors.</p> <p>Penalties: Varies by program.</p>

Corteva

Corteva helps farmers get carbon credits for regenerative agricultural projects by producing credits through Indigo Ag, certified by the Climate Action Reserve. Founded by Dow, DuPont, and Pioneer.

LINK: <https://www.corteva.us/products-and-solutions/digital-solutions/carbon.html>



OFFSET



80.979K
ACRES



1M ACRES



2018

Farm Eligibility	Money Matters	Contracting Info	Technical Info
<p>Geography: Available in 30 states: AL, AR, NC, SC, CO, ND, SD, DE, GA, IL, IN, IA, KS, KY, LA, MD, MI, MN, MS, MO, NE, NY, OH, OK, PA, TN, TX, VT, VA, WI</p> <p>Min/Max: None</p> <p>Eligible practices:</p> <ul style="list-style-type: none"> Cover crops Reduced tillage Nitrogen efficiency improvement Increased biodiversity <p>Additionality requirement: Yes</p>	<p>Payment schedule: Payments are made after practices are verified and sold.</p> <p>Price: \$5 to \$20 per acre by introducing cover crops and/or reduced tillage. Minimum \$20 per credit/tonne CO₂e.</p> <p>Stackability: Farmers can participate in federal and state conservation programs.</p>	<p>Contract length: 5-year; option to opt out at any time</p> <p>Data collected at enrollment: Current crop year plus 3-5 years of historical field data including:</p> <ul style="list-style-type: none"> Crop type Nitrogen applications Tillage data Harvest data Cover cropping data <p>Enrollment assistance: Enroll fields through late summer for the crop year that practice changes occurred. Onboarding to payment assistance provided by Corteva Carbon Sales and Support. https://www.corteva.us/products-and-solutions/digital-solutions/carbon.html#anchor_5</p> <p>Agronomic/technical assistance: Free agronomic recommendations on practice changes and implementation provided by local Pioneer Seed Agents or other Corteva Advisors.</p>	<p>Outcome estimation: Practice changes are logged in the Granular Insights platform. This data is shared with Indigo Ag, who will quantify farmers' soil carbon storage and certify their credits.</p> <p>Verification: Soil sampling by Corteva, with additional quantification and verification conducted by Indigo Ag.</p> <p>Penalties: Payments will be paused until you resume the practice(s) and demonstrate net-new carbon sequestration above your established baseline.</p>

ESMC

ESMC's Eco-Harvest program focuses on ecosystem services with the integrated approach of improved carbon, water quality, water quantity, biodiversity.

LINK: <https://ecosystems-services-market.org/>



INSET



Info Not
Provided



>100K
ACRES



2022

Farm Eligibility	Money Matters	Contracting Info	Technical Info
<p>Geography: Available in 4 regions: Northern Great Plains, Southern Great Plains, Midwest Soy and Corn Belt, and Great Lakes.</p> <p>Min/Max: None</p> <p>Eligible practices:</p> <ul style="list-style-type: none"> • Cover crops • Tillage reduction • Nutrient management • All eligibility information available at https://ecosystems-services-market.org/eco-harvest/eco-harvest-resources <p>Additionality requirement: Yes, with a 10-year look-back period</p>	<p>Payment schedule: A 5-year payment period, with payments beginning in the year after the credits are generated.</p> <p>Price: \$15/tonne CO2 eq. No payment for practices; all payments are outcomes-based.</p> <p>Average 0.5 tonne per acre = \$7.50/acre. But dependent on the practices enacted, soil type, prior management etc.</p> <p>Stackability: Stackable with cost-share program.</p>	<p>Contract length: 5-year, renewable 3 additional times, totaling 20 years maximum</p> <p>Data collected at enrollment:</p> <ul style="list-style-type: none"> • Field boundaries • Practice changes • Planned crop • Signed producer agreement • Field level management data <p>Enrollment assistance: ESMC partners support producers with enrollment and data entry.</p> <p>Agronomic/technical assistance: Provided by ESMC's member organizations and partners.</p> <p>Enrollment process: Estimated 1 hour of initial data entry and 30 minutes annually per field.</p>	<p>Outcome estimation: Modeling and soil sampling. ESMC assumes costs and includes in credit price to buyers. The quantification approach is aligned to SustainCERT's Value Change Initiative (VCI) Guidance.</p> <p>Verification: Random site visits and remote sensing</p> <p>Penalties: Stall in soil carbon gains requires initial gains to be realized before additional credit issuance/payment.</p>

Indigo Ag: Carbon by Indigo

A comprehensive carbon offsetting program, grouping together farmers across the US and connecting them with carbon revenues based on their carbon reduction and removal performance.

Funding from Indigo Ag and a diverse group of corporate buyers.

LINK: <https://www.indigoag.com/carbon/for-farmers>



OFFSET



**Info Not
Provided**



**>5.5M
ACRES**



2019

Farm Eligibility	Money Matters	Contracting Info	Technical Info
<p>Geography: Available in 30 states: AL, AR, CO, DE, GA, IA, IL, IN, KS, KY, LA, MD, MI, MN, MO, MS, NC, ND, NE, NY, OH, OK, PA, SC, SD, TN, TX, VA, VT, WI</p> <p>Min/Max: 150 acres min; no max</p> <p>Eligible practices:</p> <ul style="list-style-type: none"> • Cover crops • Increase cover crop diversity or growth period • Reduced or delayed tillage • Lower disturbance class of tillable implement • Diversifying crop rotation • Nitrogen timing improvement <p>Additionality requirement: Yes. At least one eligible, new practice must be adopted, and the field must be enrolled prior to the harvest of the cash crop related to the initial practice change.</p>	<p>Payment schedule:</p> <p>50% year 1</p> <p>20% year 2</p> <p>10% each in year 3, 4, & 5</p> <p>Price: \$30 per credit to farmers in last carbon issuance</p> <p>Stackability: Designed to stack as long as other incentives do not include payments for carbon credits or related assets.</p>	<p>Contract length:</p> <p>5 years</p> <p>Data collected at enrollment: Basic farmer information, field boundaries, and commitment to new practice(s).</p> <p>Enrollment assistance: Enrollment is performed through a partner or via Indigo's software platform, and personalized support is available to assist growers.</p> <p>Agronomic/technical assistance:</p> <ul style="list-style-type: none"> • Digital agronomic and profitability decision tools • Agronomic support for practice change decisions • Customer support for the software and program • Free sustainable farming learning resources 	<p>Outcome estimation: Indigo sustainability programs are powered by a proprietary measurement, reporting, and verification (MRV) engine, which allows the company to measure and quantify outcomes across millions of geographic, crop input, and agronomic practice combinations.</p> <p>Verification: Data validation, random site visits and evidence checks</p> <p>Penalties: Payments are based on actual performance. Without continued practice implementation credit generation will cease.</p>

Indigo Ag: Market+ Source

Indigo's Market+ Source program pays farmers a premium for producing crops with practices that reduce on-farm emissions and conserve natural resources, while generating new revenue for the agribusinesses who procure and process those crops.

Funding from Indigo Ag, with revenue coming from specific consumer goods companies and agribusinesses.

LINK: <https://www.indigoag.com/marketplus/for-farmers/source>



INSET



Info Not
Provided



Info Not
Provided



2019

Farm Eligibility	Money Matters	Contracting Info	Technical Info
<p>Geography: Available in 19 states: AL, AR, GA, IA, IL, IN, KS, KY, LA, MN, MS, NC, ND, NE, OH, OK, SC, TN, TX</p> <p>Min/Max: Depends on the available volume left in the program.</p> <p>Eligible practices:</p> <ul style="list-style-type: none"> Varies by the specific needs of each program. Cover crops Minimal or no-till Fertilizer management Other crop-specific management practices <p>Additionality requirement: None</p>	<p>Payment schedule: After grain delivery and data collection</p> <p>Price: Premium price per unit of commodity (e.g., bushel), depending on specific buyer.</p> <p>Farmers in previous programs earned \$15 to \$30 more per acre.</p> <p>Stackability: Cannot enroll field(s) in another carbon or ecosystem benefit monetization program for the same season.</p>	<p>Contract length: Single season</p> <p>Data collected at enrollment: Basic farmer information, field boundaries, and commitment to using specific farming practices (pre-existing practice adoption okay).</p> <p>Enrollment assistance: Enrollment is performed through a partner, with help from Indigo as needed, and personalized support is available to assist growers.</p> <p>Agronomic/technical assistance:</p> <ul style="list-style-type: none"> Digital agronomic and profitability decision tools Agronomic support for practice change decisions Customer support for the software and program Free sustainable farming learning resources 	<p>Outcome estimation: Indigo sustainability programs are powered by a proprietary measurement, reporting, and verification (MRV) engine, which allows the company to measure and quantify outcomes across millions of geographic, crop input, and agronomic practice combinations.</p> <p>Penalties: If an agreed upon practice is not used to grow the specific crop, the grower does not make the agreed upon premium.</p>

Nori

A carbon removal marketplace with a focus on transparency and farmer flexibility.

LINK: <https://nori.com/>



OFFSET



Info Not
Provided



41,015
ACRES



2018

Farm Eligibility	Money Matters	Contracting Info	Technical Info
<p>Geography: Continental US</p> <p>Min/Max: None</p> <p>Eligible practices:</p> <ul style="list-style-type: none"> • Change or expand crop rotations and intensity • Cover crops • Annuals to perennials • Reduced tillage • Organic fertilizers <p>Additionality requirement: Yes, accepts practice changes within 10 years that have 3 years of pre-switch practice evidence.</p>	<p>Payment schedule: Suppliers receive USDC (stablecoin) in their crypto wallet immediately after NRTs are sold, with the option to convert to USD.</p> <p>Price: \$20 per credit</p> <p>Stackability: Designed to stack as long as carbon asset is not double counted in other programs/markets.</p>	<p>Contract length: 10 years renewable</p> <p>Data collected at enrollment: From year 2000 to 10 years post switch, plus some historical land management.</p> <p>Enrollment assistance: Nori account managers or trusted data managers</p> <p>Agronomic/technical assistance: None</p> <p>Enrollment process: Update data annually by March 31st</p>	<p>Outcome estimation: Soil sample referenced process-based modeling (Soil Metrics)</p> <p>Verification: Once every 3 years</p> <p>Penalties:</p> <ul style="list-style-type: none"> • Farmer commits to make best effort to retain C stocks • Not bound to any practice plan • Not liable for force majeure C losses

Nutrien

As a crop inputs producer, Nutrien is focused on nitrogen management programs in both the US and Canada.

LINK: <https://info.nutrienagsolutions.com/sno>



OFFSET



**Info Not
Provided**



685K
acres in pilot



2022

Farm Eligibility	Money Matters	Contracting Info	Technical Info
<p>Geography: Available in all North America</p> <p>Min/Max: None</p> <p>Eligible practices:</p> <ul style="list-style-type: none"> Improved nitrogen management <p>Additionality requirement: Yes</p>	<p>Payment schedule: At crop year end after practice implementation is verified.</p> <p>Price: Minimum of \$1.50 per acre, with averages of \$3 to \$4 per acre</p>	<p>Contract length: 1-year; renewable up to 10 years</p> <p>Data collected at enrollment: Grower enters all field activities in a crop season and any required baseline data for generating the change in nitrogen rates.</p> <p>Enrollment assistance: Contact Nutrien at sustainableag@nutrien.com</p> <p>Agronomic/technical assistance: Free technical assistance from a variety of Nutrien staff.</p>	<p>Outcome estimation: Combination of modeling and sampling of both water and soil.</p> <p>Verification: Nutrien Ag Solutions provides all verification, validation, and project ownership and management.</p> <p>Penalties: Not required, as payment is based solely on if the practice change was implemented.</p>

PepsiCo-PCM

The Soil Health Incentive for PCM Farmers, funded by PepsiCo, provides incentive payments for existing and new acres for No-till, Strip-till, Cover Crops, and Nitrogen reduction.

LINK: <https://www.precisionconservation.org/new-pepsico-incentive-payment-program/>



INSET



~250K
acres in 2023



**Info Not
Provided**



2022

Farm Eligibility	Money Matters	Contracting Info	Technical Info
<p>Geography: Existing PCM Regions in IL and NE.</p> <p>Min/Max: None</p> <p>Eligible practices:</p> <ul style="list-style-type: none"> • Cover crops • No-till • Strip-till • Nitrogen reduction <p>Additionality requirement: None</p>	<p>Payment schedule: Payments made annually in the Spring.</p> <p>Price:</p> <p>Single Practices on an Acre:</p> <ul style="list-style-type: none"> • Cover crops - \$15/A (1st and 2nd yr), \$10/A (3+yr old); • No-Till or Strip-Till - \$10/A (1st and 2nd yr), \$5/A (3+yr old); • N-Reduction to MRTN - \$10/A. <p>Multiple Practices on an Acre:</p> <ul style="list-style-type: none"> • Cover Crops w/ No-Till/Strip-Till - \$20/A (1st and 2nd yr), \$15/A (3+yr old); • N-Reduction w/ No-Till/Strip-Till - \$15/A (1st and 2nd yr) • N-Reduction w/ No-Till/Strip-Till and Cover Crops - \$25/A (1st and 2nd yr), \$15/A (3+yr old) <p>Stackability: Yes, with funding not making a claim on assets. Not stackable with markets making claims on assets.</p>	<p>Contract length: 1 year</p> <p>Data collected at enrollment: Yes</p> <p>Enrollment assistance: Yes</p> <p>Agronomic/technical assistance: Yes</p> <p>Enrollment process: Estimate of 2 hours annually</p>	<p>Outcome estimation: Model based. FieldPrint Platform and Cool Farm Tool are used.</p> <p>Verification: Self reporting</p> <p>Penalties: No</p>

SWOF

An ecosystem service program that provides payment to farmers adopting new regenerative farming practices. The focus is on CO2e inseting and water quality outcomes.

Managed by AgOutcomes Inc.

LINK: <https://www.theoutcomesfund.com/>



INSET



Info Not
Provided



241K
acres



2020

Farm Eligibility	Money Matters	Contracting Info	Technical Info
<p>Geography: Available in 14 states: IA, IL, IN, KS, MI, MN, MO, NC, ND, NE, NY, OH, SD, WI</p> <p>Min/Max: None</p> <p>Eligible practices:</p> <ul style="list-style-type: none"> • Reduced tillage or no-till • Cover Crops • Extended crop rotations <p>Additionality requirement: Yes</p>	<p>Payment schedule:</p> <p>50% upon contract signature</p> <p>50% after verification</p> <p>Price: Average payment of \$34 per acre</p> <p>Stackability: Not compatible with government cost-share programs unless otherwise noted.</p>	<p>Contract length: One-year renewable</p> <p>Data collected at enrollment: Farm operational data: 3 years historical baseline plus 2-3 years of proposed practice change(s)</p> <p>Enrollment assistance: Yes, with a team of program representatives.</p> <p>Agronomic/technical assistance: Free assistance provided by staff.</p> <p>Enrollment process: Estimated 4 hours of initial data entry. Annual reporting only required if field visits identify an issue.</p>	<p>Outcome estimation: Modeling, with 10% of fields subject to in-field soil and water sampling at no cost to farmer.</p> <p>Verification:</p> <ul style="list-style-type: none"> • Yearly field visits • Remote sensing <p>Penalties:</p> <p>Breach of contract, farmer would not receive payment.</p>

Truterra

Truterra helps farmers unlock, sustain, and build upon the potential of their soil. Its sustainability programs are built to meet farmers where they are - whether they are taking a first look at changing management practices to address a specific challenge, are concerned about the overall health of soil, or are hoping to reduce some of the costs of sustainable practices.



COMBO



**Info Not
Provided**



\$9M paid



2016

Funding from Land O'Lakes.

LINK: <https://www.truterraag.com/Carbon>

Farm Eligibility	Money Matters	Contracting Info	Technical Info
<p>Geography: Most programs open to all geographies. Soil Health Assessment & Plan only available to IA, IL, IN, KS, MI, MN, MO, NE, and WI</p> <p>Min/Max: None</p> <p>Eligible practices:</p> <ul style="list-style-type: none"> • Cover crops • Reduced tillage <p>Additionality requirement: May have started practices as early as 2019</p>	<p>Payment schedule: Payment upon verification.</p> <p>Price:</p> <p>\$2 per acre for practices implemented in 2023+</p> <p>\$15 to \$30 per tonne for practices implemented in 2019-2022</p> <p>Stackability: Participation in conservation cost-share programs does not disqualify participation.</p>	<p>Contract length: Annual contract with 5-year reporting commitment</p> <p>Data collected at enrollment: Field management data going back 3 years prior to practice change. Includes:</p> <ul style="list-style-type: none"> • Planting • Fertility • In-season applications • Harvest • Cover crop and tillage information <p>Enrollment assistance: To take a survey on where to start, visit https://www.truterraag.com/SurveyTool?Path=/Carbon</p> <p>Agronomic/technical assistance: One-on-one technical assistance and support. Free Soil Health Assessment & Plan for select states.</p> <p>Enrollment process: Information not provided</p>	<p>Outcome estimation: A combination of soil sampling and carbon modeling.</p> <p>Verification: 3rd party verification, organized and paid for by Truterra.</p> <p>Penalties: Will vary based on program offering, some program flexibility to accommodate a reasonable number of naturally occurring variances and extreme weather events.</p>

Glossary

Below are common terms and definitions associated with ecosystem service markets

Additionality – “In the context of crediting mechanisms, emission reductions or removals from a carbon sequestration activity are additional if the sequestration activity would not have taken place in the absence of the added incentive created by the carbon credits.” [World Wildlife Foundation - 2020](#)

Carbon Credit – An emissions unit that is issued by a carbon crediting program and represents an emission reduction or removal of greenhouse gases. [World Wildlife Foundation - 2020](#)

Carbon Market – Carbon markets are trading systems in which carbon credits are sold and bought. Companies or individuals can use carbon markets to compensate for their greenhouse gas emissions by purchasing carbon credits from entities that remove or reduce greenhouse gas emissions. [United Nations Development Programme - 2022](#)

Inset Credit – A credit generated to reduce emissions a company causes indirectly via its supply chain - [GHG Protocol](#). For row crop farmers, this would be food, fuel, and fiber end users of grain accounting for emissions in the production of corn and soybeans.

Offset Credit – A carbon offset is defined as a measurable reduction of GHG emissions from an activity or project in one location that is used to compensate for emissions occurring elsewhere. Carbon offsets are typically measured in metric tonnes (2,205 pounds) of carbon dioxide equivalent (CO₂e) - [US - Governmental Accountability Office Report](#). For row crop farmers, this would be selling carbon credits to transportation and manufacturing companies, for example, which are outside of the agricultural value chain.

Water Quality Credit – The [EPA defines a water quality credit](#) as a unit of pollutant reduction usually measured in pounds equivalent. Credits can be generated by industrial and municipal point sources implementing new treatment technologies or via implementation of management practices that improve water quality above an established baseline. General information can be found on EPA’s Water Quality Trading Basics and Policy Resources Page.

Resources

The following list of resources is provided for individuals seeking more information on carbon markets. This is not a comprehensive list. Many of the below resources include reference lists that provide additional information. These and additional resources are included in ISAP’s resource library: <https://ilsustainableag.org/resource-category/ecosystem-markets/>.

Carbon & Data Guidebook

Published by the Illinois Soybean Association, this resource can be used to help farmers gather and manage the data needed for ecosystem service market enrollment.

Conservation and Carbon Funding for Farmers

Watch a presentation discussing carbon and conservation funding for farmers by Megan Miller, Agronomic Program Manager at the Illinois Soybean Association; delivered as part of Soy Summit (March 2023).

Making Sense of Carbon Markets

A presentation introducing carbon markets by Jean Brokish, Deputy Director for American Farmland Trust; delivered as part of the [Soil Health Stewards](#) Program (April 2022).

Combating Climate Change on US Cropland

This report, produced by American Farmland Trust, highlights potential for US cropland to sequester carbon and reduce GHG emission through the adoption of cover cropping and no-till. Values are based on analysis conducted in CaRPE.

Illinois Farmers and Farmland and Part of the Climate Solution

This 2-page document recaps findings from a report titled “Potential for Conservation Practices to Reduce Greenhouse Gas Emissions and Sequester Carbon on Croplands and Grazing Lands in Illinois” which provides an overview of county-level GHG emission estimates for croplands and grazing lands in Illinois and highlights the significant potential for Illinois cropland to reduce GHG emissions and sequester carbon. The full report and information for additional states are available from the [Farmland Information Center](#).

COMET-Planner

This online tool provides general estimates of the GHG impacts of certain NRCS conservation practices. Estimates can be supplied in tonnes of CO₂e reduction potential per acre per year.

Carbon Reduction Potential Evaluation (CaRPE) Tool

American Farmland Trust expanded the utility of COMET-Planner by integrating cropland and grazing land acreages and data from the 2017 Census of Agriculture.

Guide to Water Quality, Climate, Social and Economic Outcomes Estimation Tools

The guide features multiple approaches, methods, and tools available to quantify environmental, social, and economic outcomes associated with farm conservation practices. All of the tools can be used by farm conservation project managers without the need for complex computer modeling.

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