



Ecosystem Market Information

Background and Comparison Table 3



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According to the US Environmental Protection Agency (EPA), ecosystem services 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 not necessarily practice-specific. Current active and pilot markets exist for several ecosystem services including carbon sequestration and greenhouse gas (GHG) reductions, water quality and quantity improvements, as well as wetland and habitat creation, among others. This resource focuses on agricultural opportunities for carbon and water quality markets.

What is a carbon offset – According to the [US Government Accountability Office](#), 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).

What is a 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 water quality market information can be found on EPA's [Water Quality Trading Basics and Policy Resources Page](#).

Planning Resources to Assist in Moving from Practices to Outcomes

[COMET-Planner](#) 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.

American Farmland Trust's (AFT) [CaRPE Tool](#) expands the utility of the data reported by COMET-Planner by integrating cropland and grazing land acreages and data from the 2017 Census of Agriculture. AFT's recent [Combating Climate Change on US Cropland](#) Report highlights an application of this tool along with a summary of the technical capacity of cover cropping and no-till to sequester carbon and reduce GHG emissions.

Additionally, AFT's [Guide to Water Quality, Climate, Social and Economic Outcomes Estimation Tools](#) features 14 outcome estimation tools and two methods.

Note – While this resource list is not intended to be exhaustive or comprehensive, the above referenced project pages and reports provide extensive reference lists that can serve as a great starting point for anyone interested in digging deeper into these topics.

Background on Featured Entities

CIBO – CIBO offers carbon sellers and buyers an innovative, efficient carbon market. CIBO calculates the Regenerative Potential for all parcels in the US so farmers can understand the potential of a parcel to generate carbon credits. CIBO then provides the tools that enable a user to calculate Carbon Credits, based on their actual or future practices. **Current enrollment in [CIBO Impact](#) is open to any corn or soybean grower in the US.**

FBN / Gradable – Gradable, launched by Farmer's Business Network, Inc. (FBN), provides new technology and services that facilitate the scoring, sourcing, and pricing of Low-Carbon Grain. Gradable is active in carbon credit markets as well as supply chain programs in food, feed, and fuel and offers crop nutrition services, including soil health sampling and agronomic recommendations through Gradable Plan. **[Gradable Carbon](#) launched in Spring of 2021 and is available throughout the US.**

Truterra – Truterra is a farmer-owned, retailer-driven sustainability platform built to help growers measure and track their on-farm stewardship journey via the [Truterra™ Insights Engine](#). The data and insights within Truterra enable participation in ecosystem markets such as Carbon. **The next TruCarbon offer is set to launch in late 2021/early 2022 and will be available nationally.**

	CIBO	FBN / Gradable	Truterra
Acreage Min/Max	None	Minimum of 250 acres	No minimum enrollment acreage, but minimum field size is 2.5 acres
Contract Length	1, 5 and 10-year terms	5 years	Durability period of 20 years with initial program; future terms subject to change based on buyer preference.
New Practice Requirement	Yes. 2 types of credits offered - one for new adopters with credits issued through a major credit registry and one for ongoing practices with credits issued by CIBO.	Yes, 2-year look-back period	Eligibility criteria will vary by program-specific offering; spring 2021 offer had a 5-year look back.
Payment Schedule	Farmers get paid after their credits sell. Payments currently dispersed on a quarterly basis.	Through the ability to “bank” credits farmers control when they offer their credits for sale. Farms enrolled in Spring 2021 are eligible to begin selling credits in Spring 2022.	Spring 2021 offer has full payout in summer 2021; future programs may involve different terms.
Ability to Enroll Same Fields in Gov’t Programs/ Other Markets	Growers can enroll in other programs if those programs are not paying for emissions reduction claims. For example, Gov’t conservation programs are allowed, enrollment in additional credit markets is not allowed.	Can enroll in other programs if paid claims are not being made. Fields cannot be enrolled in other carbon credit markets for the duration of the contract.	Participation in conservation cost-share programs does not disqualify participation.
Outcome Estimation	GHG and carbon sequestration impact are quantified via academically validated modeling. Audit soil sampling of a subset of farms is conducted every 5 years.	Environmental outcomes are measured and modeled using best in class sampling techniques and process-based modeling.	A combination of soil sampling and carbon modeling.
Practice Verification	Satellite imagery is used to verify cover crops, crop rotation and tillage. Application maps, receipts, and other evidence as available are used to verify N-application.	On farm verification for a small percentage of farmers each year. Gradable cover all sampling and verification costs.	3rd party verification, organized and paid for by Truterra.
Data Collected on Enrollment	Crop rotation, cover cropping, and tillage type, field boundaries, and N-applied for the growing season for which the grower is enrolling.	Crop production data including planting, applications, practice information (e.g., cover cropping and tillage), and harvest.	Field management data including planting, fertility, in-season applications, harvest, cover crop and tillage information.
Penalty for Temporary Break in Practice Implementation	None. The grower would not generate credits for that practice for that year.	Evaluated on a case-by-case basis. In some instances, credit generation and future program participation could be impacted.	Will vary based on program offering, some program flexibility to accommodate a reasonable number of naturally occurring variances and extreme weather events.
Technical / Agronomic Assistance	Technical software support provided during the enrollment process. Agronomic recommendations not provided.	Gradable Plan starts at \$3.50/acre and provides soil sampling and agronomy support to help farmers plan their crop nutrition needs for each growing season.	One-on-one technical assistance and support.



Matrix information was provided and vetted by company representatives. Questions regarding this document can be sent to ebruner@farmland.org or jbrokish@farmland.org.

Suggested citation: Bruner, E. and Brokish, J. (2021) *Ecosystem Market Information: Background and Comparison Table 3* [Fact sheet]. Illinois Sustainable Ag Partnership.