# Ag Ecosystem Credit Markets

**Key Takeaways**

- The demand for carbon offsets from agriculture has grown significantly in recent years, but the process is still confusing and cumbersome, which then limits farmer and forester participation.
- There are a few common themes throughout all ecosystem credit markets; chief among them is they are all voluntary, incentive-based markets connecting buyers and sellers of ecosystem services credits. Typically, farmers are the sellers.
- Ecosystem credit markets are market platforms being developed to help farmers generate agricultural ecosystem asset: most commonly carbon, but there are also efforts to quantify net greenhouse gas credits, water quality credits, water quantity credits, other soil nutrient credits and more.
- Many of the corporations, such as General Mills, Nestle and McDonald's; are focusing on the public goodwill they could earn as consumers see them as playing a part in improving conservation and biodiversity, as well as pollinator/wildlife habitats.
- NRCS conservation practices are commonly utilized in agricultural ecosystem credit market contracts.
- Farm Bureau is working closely with industry partners and lawmakers to identify solutions to ensure these markets are voluntary and economically viable for farmers and go with climate-smart practices in place on the farm.

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**Background**

Agriculture can also play a role in offsetting emissions beyond the farm gate. With climate-smart farming practices and voluntary management of forests, grasslands, wetlands and croplands, farmers are not only reducing their footprint, but also are actively absorbing carbon from the atmosphere. **According to the EPA, land management practices alone removed 764 million metric tons of CO2 from the atmosphere in 2018. This is equal to taking 165 million vehicles off the road for a year.**

**The demand for carbon offsets from agriculture has grown significantly in recent years, but the process is still confusing and cumbersome, which then limits farmer and forester participation.** Often, farmers who want to participate hire private parties to help them adopt the right conservation practices and verify certain processes and protocols were followed in implementing those practices.

It is important to note these credit markets are constantly evolving, and many are still under development or being refined in pilot stages. Information provided here should be used as background information only; there is much more to explore, company-by-company and asset-by-asset, before making any decisions.

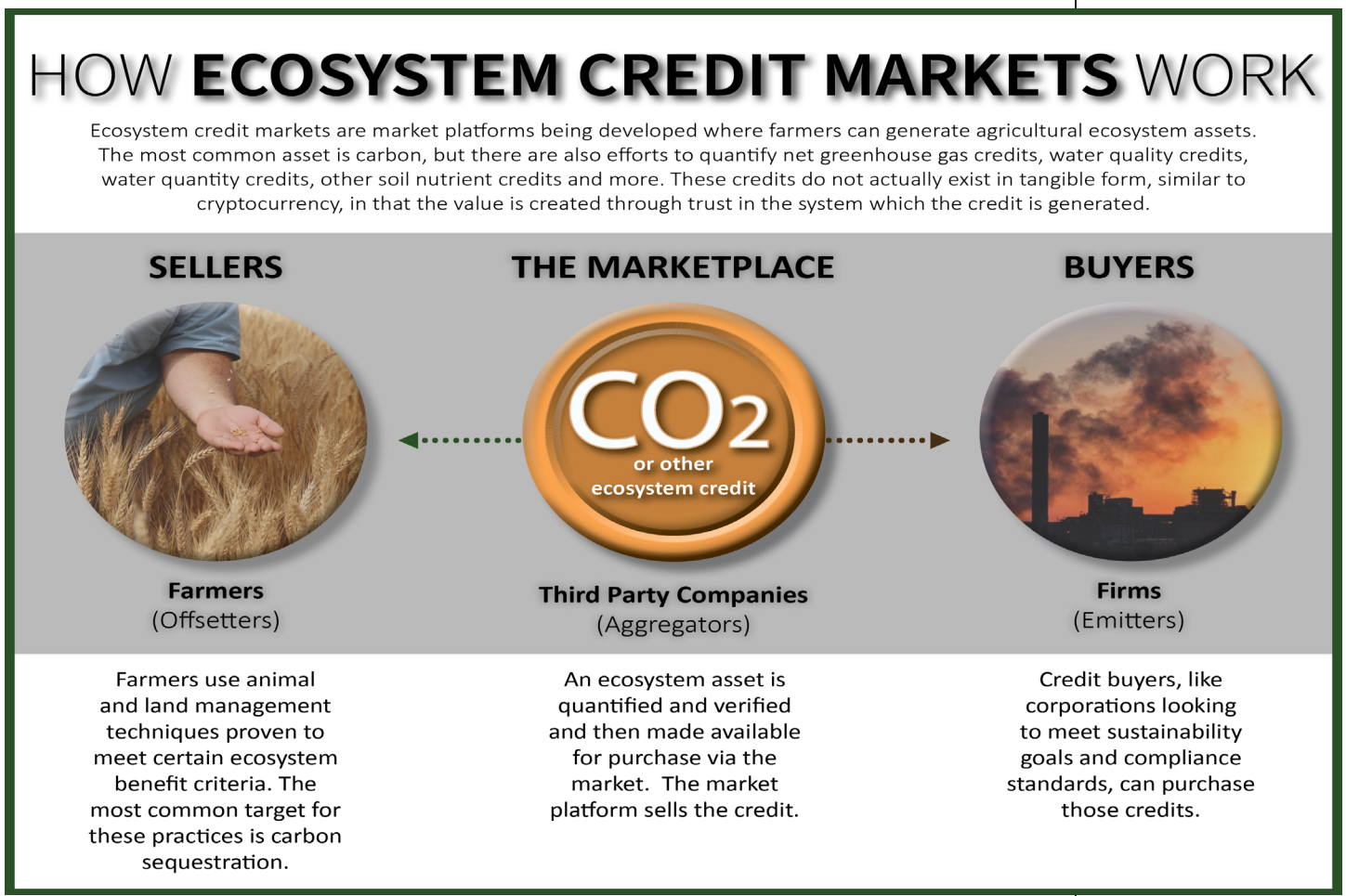
**Regardless of the stage of development, there are a few common themes throughout all ecosystem credit markets; chief among them is they are all voluntary, incentive-based markets connecting buyers and sellers of ecosystem services credits. Typically, farmers are the sellers.**

They get paid for using animal and land management techniques proven to meet certain ecosystem benefit criteria. The most common target for these practices is carbon sequestration. Some common practices include cover crops, livestock grazing, crop rotation, no-till/ strip-till, anaerobic digesters, nutrient management, buffer strips, tree establishment, etc. As outlined in a contract, participating farmers opt into some version of data monitoring and measurement procedures. Once enrolled, farmers will typically be paid based on measured outcomes, either on a per-acre basis or by asset generated.

Once an ecosystem asset is quantified and verified, it can be made available for purchase via the market. Credit buyers, like corporations looking to meet sustainability goals and compliance standards, can purchase those credits.

**Farm Bureau has been very vocal about the markets remaining voluntary and economically viable for farmers.** The figure below shows how agricultural ecosystem credit markets could potentially operate.

The markets must remain voluntary and economically viable for farmers.




**Ecosystem credit markets are market platforms being developed to help farmers generate agricultural ecosystem assets. The most common asset is carbon, but there are also efforts to quantify net greenhouse gas credits, water quality credits, water quantity credits, other soil nutrient credits and more.** These credits are attracting corporate buyers like General Mills, Nestle and McDonald's, as well as agribusinesses such as Cargill, Syngenta, and Corteva and even government entities. Farmers are being compensated for a generated asset in different ways, including cash payments or input credit discounts.

From public to nonprofit to private, there are already several markets in various stages of development allowing farmers to generate agriculture ecosystem credits and sell them to a variety of buyers.

On track to be the largest credit exchange platform in the U.S. when it launches in 2022, the Ecosystem Services Market Consortium, which AFBF is a member, is an example of a nonprofit platform. Private markets have been launched by companies including Indigo Ag, Nori, and Farmers Business Network. Private agribusinesses which have developed carbon market programs include Bayer and Nutrien.

Markets are at different stages of operation and development, with some already enrolling farmers into programs with committed acres and others operating pilot projects on specific crop and grazing systems to research scientific methods of quantifying assets.

Many market developers still in the early stages are looking for farmer partners. Some companies are developing protocols for working agricultural lands which will go on to be reviewed and certified by third-party verifiers. This could be particularly important in establishing widely accepted standards for agricultural ecosystem asset credits. A significant amount of research is being done to quantify and verify the assets to ensure they hold value for buyers. Much of the research testing and refinement is being done through pilot projects in cropping systems across the U.S.

Many of the corporations involved are focusing on the public goodwill they could earn.

There are many reasons companies and organizations are jumping into the development of these markets. As previously mentioned, the number one theme is the voluntary, incentive-based structure which comes with launching independent markets. While the markets vary in shape and size, as well as stages of development, a common driver for their development is to foster healthy soils and ecosystems and reduce emissions. **Many of the corporations involved are focusing on the public goodwill they could earn as consumers see them as playing a part in improving conservation and biodiversity, as well as pollinator/wildlife habitats.**

***USDA NRCS and Ag Ecosystem Credits***

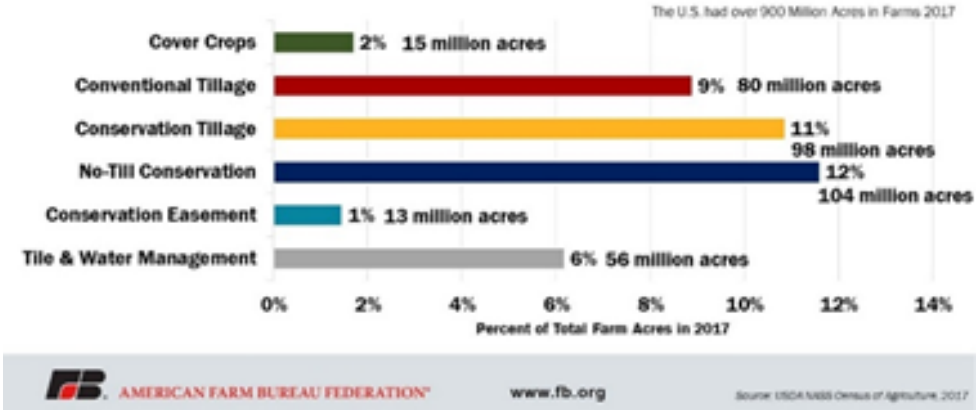
**Natural Resources Conservation Service's (NRCS) conservation practices are commonly utilized in agricultural ecosystem credit market contracts and their current adoption rates.** To maintain basic soil health, NRCS calls on farmers to keep the soil covered, disturb the soil minimally, keep a living cover feeding the soil throughout the year, diversify crop systems on the soil through crop rotations and cover crops and incorporate livestock into the cropping system. Many of these practices contribute to carbon sequestration, as well as nutrient reduction and water quality/water quantity improvements. **These practices include cover crops, crop rotation, no-till/ strip-till/ conservation tillage, anaerobic digesters, nutrient management, buffer strips, and tree/shrub establishment.**

Available data regarding conservation adoption and the practices used on farms is limited due to the privacy of individual farmers and the limited resources USDA has for conducting surveys. The 2017 USDA Census of Agriculture shows there were over 900 million acres in farmland.

Of the 900 million acres, 366 million acres, or 41%, used tile and water management, conservation easement, no-till conservation, conservation tillage, conventional tillage or cover crops, which is an increase of 3% from the number of acres utilizing these practices in 2012. Figure 1 displays the percent of cropland acres utilizing each of the surveyed land-use conservation practices.

**Figure 1. Percent of Total U.S. Cropland Acres Using Land-Use Conservation Practices in 2017**

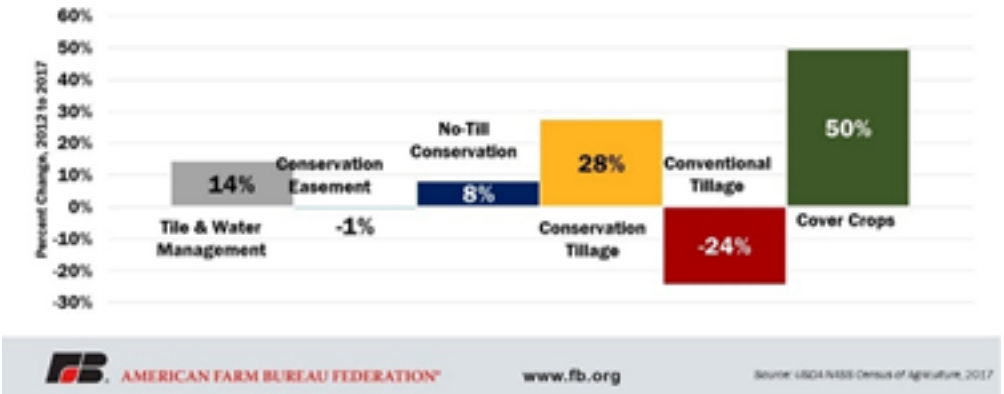
In 2017, 41% of All Cropland Acres in the U.S. Utilized Land-Use Conservation Practices, up 3% from 2012.




When compared to the 2012 Census of Agriculture, the land-use practices aligned with the NRCS conservation practices improve soil health, reduce soil erosion, improve water quality and provide other natural resource benefits through increased adoption. Conventional tillage was reduced by 24% from 2012 to 2017, while no-till conservation and conservation tillage increased by 8% and 28%, respectively. Cover crops increased by 50%. Figure 2 shows the percent change of U.S. cropland acres utilizing certain land-use practices from 2012 to 2017.

**Figure 2. Percent Change of U.S. Cropland Acres Using Land-Use Conservation Practices from 2012 to 2017**

Despite the 2% decrease in the total number of cropland acres from 2012 to 2017, there was a 3% increase in the number of U.S. cropland acres using land-use conservation practices.




**As these markets are being developed, Farm Bureau is working closely with industry partners and lawmakers to identify solutions to ensure these markets are voluntary and economically viable for farmers and they go with climate-smart practices in place on the farm.** The markets also provide diversified revenue potential for farmers who want to participate. However, before any contracts are signed, farmers should consult their trusted advisors to determine if enrolling in a market is truly the best thing for their farm.

As these markets are being developed, Farm Bureau is working closely with industry partners and lawmakers to identify solutions to ensure these markets are voluntary and economically viable for farmers.