Cotton Incorporated

National Cotton Council OF AMERICA

What cotton growers should ask–and why–when it comes to carbon

February 2022

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Introduction:
context behind the carbon marketplace

Among the top priorities for U.S. farmers is ensuring the land's ability to support crop production from harvest to harvest and to leave the land in better shape for future generations. For most, this means taking action to improve soil health and fertility over time. Adopting new practices or systems requires risks, without any guarantee of success. For U.S. cotton farms, the vast majority of which are family businesses, short-term economic viability is paramount to reach longer-term sustainable crop management goals. This is where the emerging field of carbon markets could play a critical role for cotton farmers as a tool for supporting, implementing, and funding soil health building practices. While carbon markets are being developed to address issues beyond soil health, like corporate greenhouse gas emissions, they may in fact support farmers' own production priorities and improve profitability.

Looking at the broader context, consumers, companies, and countries are increasingly seeking action to increase climate change resilience and reduce greenhouse gas emissions. In recent years, large corporations have begun creating climate goals, and making progress towards these goals through the purchase of carbon offsets. A carbon offset is created through the reduction of greenhouse gas emissions by one party and purchased by another party to compensate for emissions generated elsewhere. For example, in 2021 Microsoft purchased 1.3 million metric tons of carbon removal offsets in an effort to meet their "carbon negative by 2030" goal[1]. Many major tech companies have made carbon neutral or carbon negative commitments, and this trend is expected to continue. Today, the most common offset strategy is via reforestation, although row crop agriculture has untapped potential in this evolving marketplace.

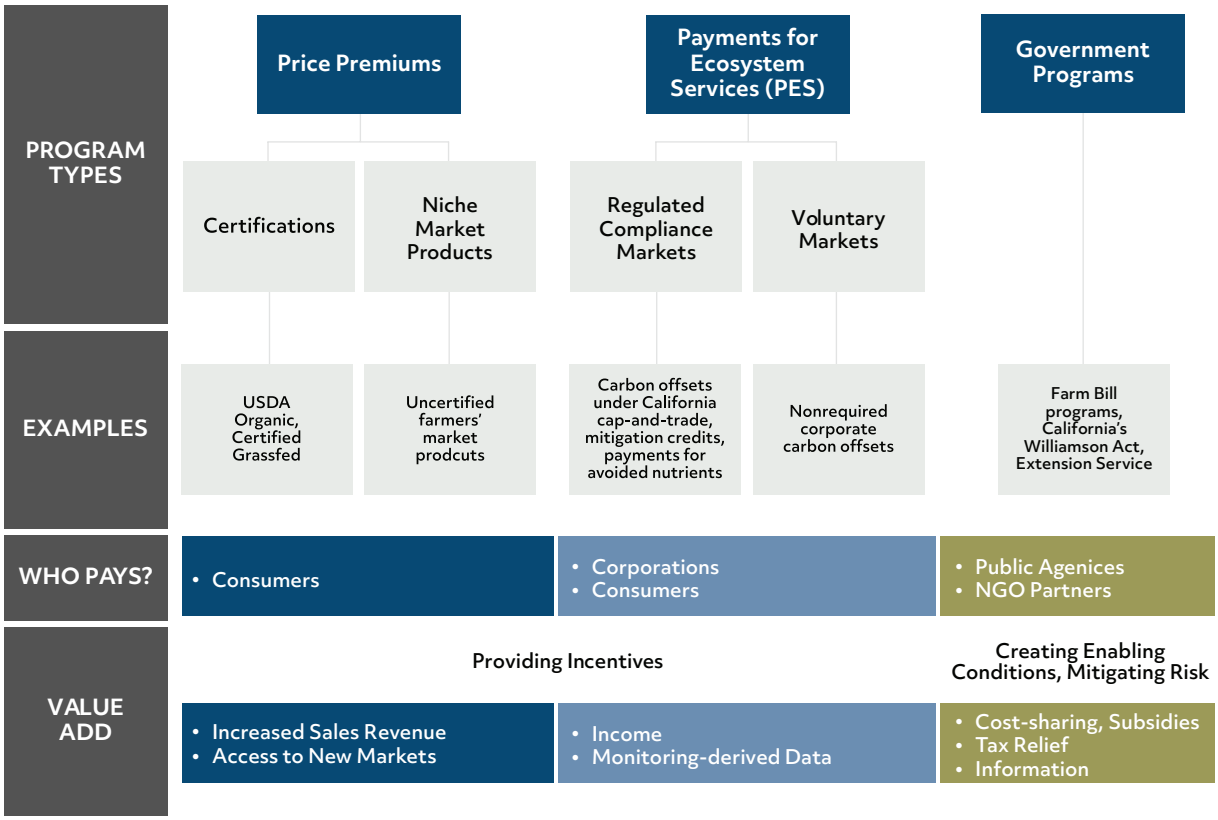
The working lands of the U.S. present a major opportunity for natural climate solutions to help contribute to nationwide greenhouse gas reduction efforts. In particular, policymakers and climate experts have focused on 'climate smart agriculture', a diverse array of practices aimed at reducing greenhouse gas emissions and facilitating carbon sequestration in agricultural soils. The effectiveness of "climate smart agriculture"—often synonymous with soil health, conservation, or regenerative agriculture—depends on an individual operation's cropping systems, geography, soil characteristics, and climate. Climate smart practices include reduced tillage, cover cropping, intercropping, mixed crop-livestock systems, silvopasture, organic soil amendments, variable rate applications, buffer strips, and improved irrigation. These management practices can reduce nutrient loss through runoff and leaching, as well as protect soils from erosion and compaction. Over time, resulting benefits to soil health, water quality and infiltration, pollinator health, and soil biota can improve productivity.

For the U.S. cotton industry, the key climate-related opportunities are: maintaining current soil carbon stocks, mitigating greenhouse gas emissions (e.g. nitrous oxide reductions through improved fertility management), rebuilding soil carbon lost from agricultural production, enhancing irrigation water use efficiency, utilizing integrated pest management to mitigate against shifting pest populations, and improving soil water holding capacity. The impact of regenerative practices on soil carbon can vary significantly across regions, soil types, and climate. Research into climate smart agriculture practices like enhanced fertility management,[2,3] cover cropping,[4] and reduced tillage[5] is underway on cotton farms. Beyond carbon-related goals, other regenerative approaches to cotton production include improving the use efficiency of herbicides, insecticides, and fungicides while maintaining or improving yields, and providing habitat for pollinators and other wildlife.[6,7]

1 Microsoft (2021). Microsoft carbon removal: Lessons from an early corporate purchase. https://query.prod.cms.rt.microsoft.com/cms/api/am/binary/RE4MDlc
2 Hons, F. M., McFarland, M. L., Lemon, R. G., Nichols, R. L., Mazac Jr, F. J., Boman, R. K., ... & Stapper, J. R. (2004). Managing nitrogen fertilizer in cotton. Texas FARMER Collection.
3 Taylor, R., & Fulton, J. (2010). Sensor–Based Variable Rate Application for Cotton. Oklahoma Cooperative Extension Service. Oklahoma State University. Stillwater, Oklahoma.
4 Scott Angle, J. (2013, Mar 5). University of Georgia Cooperative Extension - Rolling High Rye for Cotton Success. [Video file]. YouTube. https://youtu.be/03SA0lqXYXs.
5 Cotton Inc. (2021, Oct 14). Conservation Tillage Conferences. https://www.cottoninc.com/cotton-production/ag-research/agronomy/conservation-tillage-conferences/.
6 Stokstad, Erik. (2021, Apr. 12) Butterflies Provide 'Extraordinary' Help Pollinating Cotton Fields. https://www.science.org/content/article/butterflies-provide-extraordinary-help-pollinating-cotton-fields.
7 Muhammad, W., Ahmad, M., & Ahmad, I. (2020). Pollination behavior of cotton crop and its management. Cotton Production and Uses; Springer: Singapore, 163-175.

Unpacking Financial Incentives for Sustainable Land Use

Financial Incentives for Sustainable Land Use



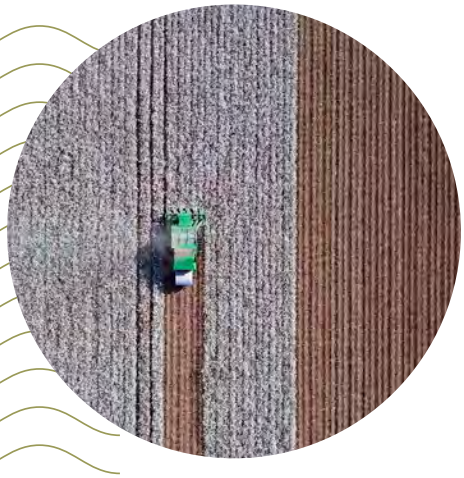
Transition costs to producers for adopting regenerative systems may require additional investments and considerations for short-, mid- and long-term risks (e.g., impact to risk protection programs, operational financing, and relationships for procurement/volume stability). Payments for ecosystem services (PES) programs offer potential for diversified revenue streams that could offset transition costs borne by growers. PES may come in various forms, from certified programs for premium products to carbon markets to Farm Bill programs. The graphic above shows these various categories of PES, with different entities paying for the service in each case.[8]

For example, through the Natural Resource Conservation Service, the USDA invests in helping farmers implement conservation practices through research ag extension programs, financial assistance (e.g., EQIP, AMA, CIG, CSP, WBP), and technical assistance (e.g., conservation/landscape planning, carbon estimation tools). Producers should evaluate any carbon market opportunity in the broader context of this menu of income options available to landowners for improvements in ecosystem services, each with their unique pros and cons, upfront risks, investments, and potential rewards.

8 Buckley Biggs, N., Hafner, J., Mashiri, F., Huntsinger, L., & Lambin, E. (2021). Payments for ecosystem services within the hybrid governance model: evaluating policy alignment and complementarity on California rangelands. *Ecology and Society, 26*(1). The above graphic is reproduced in its original format and is unaltered. The graphic is reproduced pursuant to a Creative Commons Attribution-NonCommercial 4.0 International License.

Unpacking Financial Incentives for Sustainable Land Use

The Growing Climate Solutions Act, which recently passed the U.S. Senate and is under consideration by the U.S. House, would grant the USDA the ability to help private landowners generate carbon credits through a variety of agriculture and forestry related practices. This bipartisan bill is designed to encourage voluntary carbon sequestration practices in agriculture and forestry. The legislation would establish a certification program that would lend transparency and legitimacy to third-party verifiers and technical assistance providers, ensuring that they have expertise in agriculture and forestry. This certification is intended to lower barriers to entry into carbon markets, improve information on practices that reduce greenhouse gas emissions, and increase soil health. If passed, the bill would also create an advisory council to "ensure that the certification program remains relevant, credible, and responsive to the needs of farmers, forest landowners, and carbon market participants alike." In this case, the USDA would also administer a "one stop shop" website of resources for producers and foresters interested in participating in carbon markets.



Beyond these government, price premiums, and Payment for Ecosystem Services (PES) market interventions, insurance products are also being introduced to reduce risks for climate smart agriculture. One example is a pilot program by the American Farmland Trust paying $5/cover crop. There is also activity from savvy farm real estate investors seeking to increase the value of their assets by adopting climate smart agriculture practices that improve soil health.

Terminology

Carbon Market Players

- Carbon offset **registries** track offset projects and issue carbon offset credits for each unit of emission reduction or removal that is verified and certified. They establish the enforcement systems to address project risks, the terms by which offsets can be issued, and rules to monitor, report, and verify project activity. They are also referred to as certification or standards bodies.
- A **regulator** establishes the rules and guidance that can be used by registries to issue carbon offsets. Regulators may be part of a voluntary carbon market or part of a government entity, such as the California Air Resources Board or Environmental Protection Agency.
- A **project** represents a parcel(s) of land that can reduce or remove carbon from entering the atmosphere and enroll into a carbon market. Projects create supply in carbon markets.
- A **project developer** is an individual or entity who originates, qualifies, commercializes, and enrolls projects in carbon marketplaces. Project developers can also aggregate multiple projects into one project to reduce enrollment costs.
- A **data platform** is software used by registries, projects, project developers, and verifiers to facilitate the monitoring, reporting, and verification of ecosystem services.
- A **broker** is an individual or entity that serves as an intermediary between the carbon credit buyer and the project; brokers charge commission as compensation for facilitating a transaction in the marketplace. They can also be project developers.
- A **buyer** is an entity who purchases carbon offsets to meet voluntary or mandated climate commitments to reduce net carbon emissions.
- A **verifier** is an entity accredited by a registry that applies specific protocols for evaluating the amount of greenhouse gases avoided or sequestered in a project. climate smart agriculture practices that improve soil health.

Concepts

- The term **regenerative agriculture** encompasses a wide variety of agricultural practices intended to improve the land and the environment while improving farm profitability and worker wellbeing.[9] Over time, regenerative practices can increase production and naturally reduce the need for external inputs.[10] When regenerative practices are implemented successfully, the health of the agriculture ecosystem and farmer economic stability can be improved. Common regenerative practices include cover crops, reduced tillage, and precision agriculture. The efficacy of regenerative agriculture activities can be evaluated based on change over time in target outcomes of interest to the landowner, including improvements in biodiversity, soil health, and soil carbon.
- **Climate smart agriculture** is a sustainable approach to agriculture that employs climate mitigation and adaptation strategies to strengthen the resilience of food and agricultural systems with strategies relevant to a specific area. This approach assesses potential climate risks and establishes methods of resilience in both short- and long-term scales, reduces emissions in the production process with carbon mitigation strategies and input reduction strategies, and increases crop productivity and incomes of growers.
- **Ecosystem services** are the multitude of benefits that natural and working lands provide society, including but not limited to sequestering and storing carbon, providing habitat for wildlife, filtering and regulating the flow of water, and critical services like food production and recreation. Many of these services are fostered by the landowner and provided to society without compensation; however, there are increasing opportunities for landowners to be paid for activities that improve ecosystem services, and these payments are called payments for **ecosystem services (PES)**.

9 Newton, P., Civita, N., Frankel-Goldwater, L., Bartel, K., & Johns, C. (2020). What is regenerative agriculture? A review of scholar and practitioner definitions based on processes and outcomes. Frontiers in Sustainable Food Systems, 4, 194.
10 Al-Kaisi, M. M., & Lal, R. (2020). Aligning science and policy of regenerative agriculture. Soil Science Society of America Journal, 84(6), 1808-1820.

Terminology

- **Payment for ecosystem services** is the name given to a variety of arrangements through which the beneficiaries of environmental services, including watershed protection, forest conservation, carbon sequestration, and landscape beauty, reward those whose lands provide these services with subsidies, market premiums, or market payments (e.g., carbon offset).

- Climate change **mitigation** refers to efforts to reduce or prevent emission of greenhouse gases. Mitigation can mean using new technologies and renewable energies, making older equipment more energy efficient, or changing management practices or consumer behavior.

- A **carbon market** is a form of a payment for ecosystem services that incentivizes the reduction of carbon emissions in an effort to financially motivate activity that eliminates carbon from the atmosphere. A carbon market is where carbon assets, such as carbon offsets, are exchanged between buyers and sellers. By establishing carbon as an asset, financial incentive motivates participation in carbon reduction activities.

- A **metric ton of carbon dioxide equivalent ($MTCO_2e$)** is the unit of measurement for issuing carbon offsets. It denotes an amount of greenhouse gas equivalent and/or relative to the mass of 1 ton of CO_2 in terms of its atmospheric impact. Quantities of greenhouse gases beyond CO_2 (e.g., nitrous oxide (N_2O), methane (CH_4) can be expressed in terms of their atmospheric impact relative to CO_2 using this $MTCO_2e$ unit of measurement.[11]

- One **carbon credit** is a permit to emit 1 $MTCO_2e$ under a regulated cap-and-trade emissions trading system. If regulated companies reduce greenhouse gas emissions under a cap, these savings can be sold to others in the form of carbon credits.

- A **carbon offset** refers to a reduction in GHG emissions denoted by $MTCO_2e$ generated by a project. It is a transferable instrument certified by a carbon credit registry. The purchaser of an offset credit can "retire" it to claim the underlying reduction towards their own GHG reduction goals.

- Unlike carbon offsets, where tradable assets are created and sold to others, **carbon insetting** is a proactive approach to reducing carbon directly and reporting those reductions within a corporation's own carbon footprint.

- Carbon offset buyers want to ensure **permanence**, or the longevity of a carbon sink, whereby carbon remains sequestered for a long enough period to be considered permanent. Soil carbon permanence (sometimes referred to as **durability**) depends on a variety of factors including: soil type, soil mineral composition, soil hydrology, microbial activity, carbon and nitrogen cycles, climate, plant species composition, and land management over time. Depending on these factors, soil carbon may stay sequestered from one to thousands of years. Sequestered carbon is considered permanent if it is expected to remain in the soil and/or carbon reservoir for one hundred years.

- Carbon offset buyers seek **additionality**, which means that the activity in a project would not have occurred in the absence of the payment from the offset. Additionality does not apply to practices that are mandated by law, paid for elsewhere, or have already occurred.

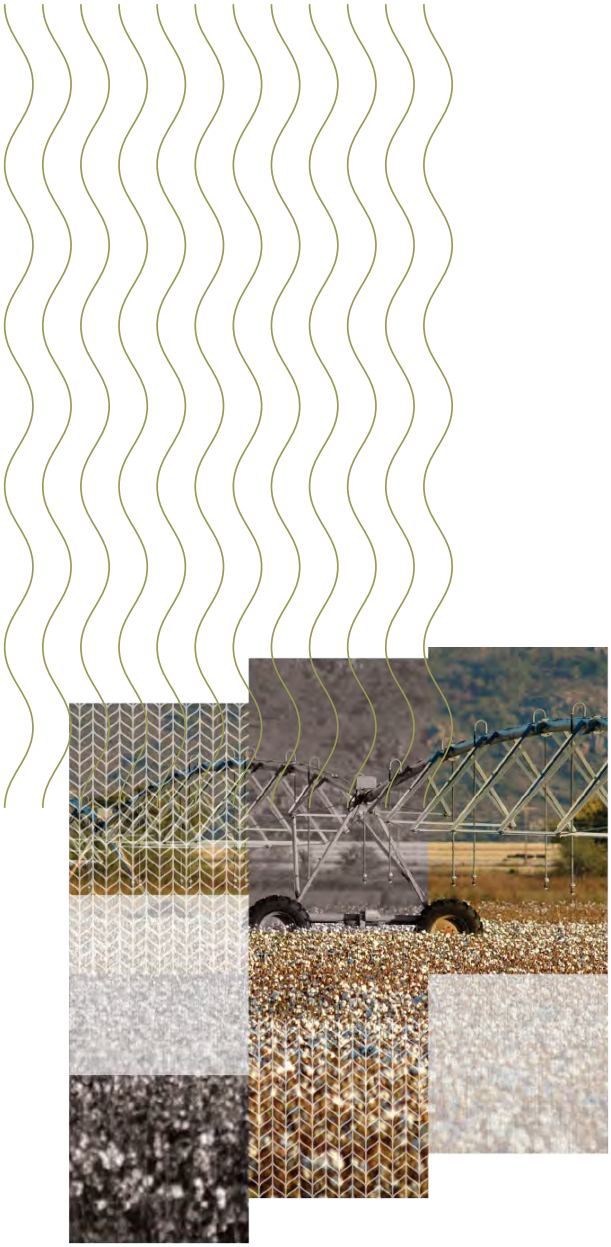
- **Validation** is an assessment of the project design by a project or project developer to ensure that it meets the requirements of the standard, and correctly calculates and monitors future greenhouse gas reductions and removals through accepted methods. The validation step provides an estimate of potential carbon offsets to be generated.

- **Monitoring, Reporting, and Verification** are activities that occur in carbon markets once a project has undergone validation and is actively enrolled in a program. Projects submit monitoring and reporting plans to the appropriate registry.

11 1 ton N_2O = 298 ton of CO_2

Who are the current players in soil carbon markets?

Carbon and PES markets in the U.S. have generally been set up for commodity crops, and those are mainly in the Midwest since that is where a lot of impact can be made. At this point in time, only a few programs are operating in cotton-growing regions.



Active Programs – Fully Launched

- Bayer Carbon, broker, ag inputs provider
- Corteva Carbon Initiative, broker, inputs provider
- Indigo Ag, project developer, data platform, inputs provider
- LocusAg, broker, ag retailer
- Nori, registry
- Soil and Water Outcomes Fund, project developer
- TruCarbon, from Truterra of Land O'Lakes, broker, ag retailer

Programs in Development – Pilot Phase

- Agoro, ag retailer, ag input provider
- Arva Intelligence data platform, broker, platform & service provider
- BCarbon, registry
- CIBO Impact, data platform, registry
- Ecosystem Services Market Consortium (ESMC), registry
- Gradable Carbon, data platform, input provider
- Nutrien, broker, ag retailer
- ReGrow, data platform

Carbon markets explained

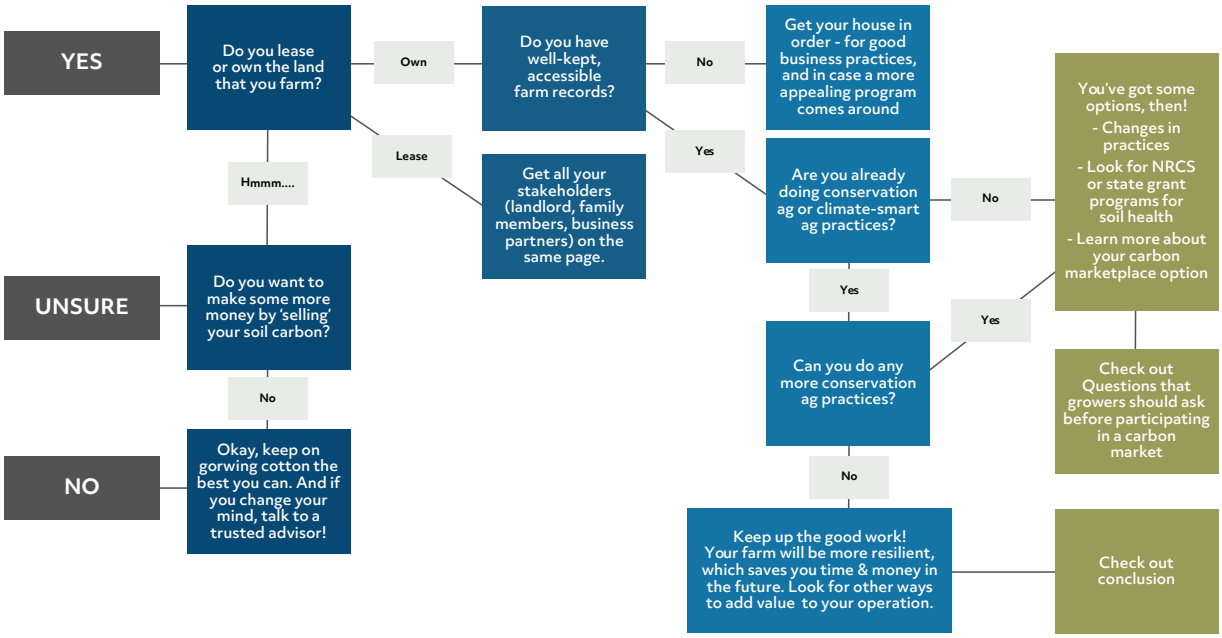
To know if a carbon program is a good fit for any agricultural operation, it is important to understand what is expected of the producer and the farm. The world of voluntary carbon markets, or payments for ecosystem services, is complicated and can be even more so for agriculture.

Who should participate in a carbon market?

There are numerous opportunities for growers to participate in carbon markets today, but it's important to find the best fit for a particular operation. Because these market-based mechanisms are relatively new, they often lack standardization, lending confusion to the techniques of climate smart agriculture. Participating in a carbon program typically involves rigorous scientific techniques to quantify improved outcomes ranging from lab analysis of soil samples, to creating models, to remote sensing with satellite images.[12]

The agricultural carbon market space is rapidly expanding and evolving. Uncertainty in the markets, science, and policy pipelines make it more important than ever to develop a solid strategy to mitigate the operational risks and to maximize the potential benefits. Before committing to any carbon market opportunity, it is important to be prepared for the next few steps in the process.

Interested in participating in a carbon market?



Participation in any new program or system can bring risks to any cotton farm. Best business management practices for adoption of new technology, processes, or financial arrangements can help limit risk and maximize successful transitions in cotton production and marketing. As an example, on-farm trialing and scale-up processes (i.e., not shifting 100% of acres in the first year or trialing/renting a new tractor before purchase) are commonly used to evaluate new crop protection products, new cotton varieties, change in tillage practice, and other management practices on a farm. Participation in a carbon market should follow similar best business management practices for trialing (starting with limited acreage to assess fit/success), risk management (consult trusted experts and legal counsel), and scale-up (establishing clear go/no-go decision criteria and points).

12 Mandal, A., Majumder, A., Dhaliwal, S. S., Toor, A. S., Mani, P. K., Naresh, R. K., ... & Mitran, T. (2020). Impact of agricultural management practices on soil carbon sequestration and its monitoring through simulation models and remote sensing techniques: A review. Critical Reviews in Environmental Science and Technology, 1-49.

How do carbon markets work?

Below is a life cycle that a project would undergo:

Qualification	Validation	Monitoring Period	Verification	Payment

• Determine whether any of your fields quality for a carbon farming project
• Choose program
• Get rough estimate of carbon potential
	• Follow the protocol
	• Initiate project
		• Report on data required by the chosen methodology (seeding dates, harvesting dates, yields, etc.)	• Undergo third-party assessment to verify that standards are met	• Carbon assets can be solid:
				  • over the counter
				  • in third party exchanges
				  • OR through a broker

Key players: Project, Project Developer, Registry	**Key players:** Project Developers, Verifier	**Key players:** Project Developer, Registry	**Key players:** Verifier	**Key players:** Registry, Broker

Farmers can work through project developers or programs that follow a standard to enroll their project into a carbon market. The standard sets the terms under which a carbon-backed asset can be created and often plays the role of a market operator. These standards include Verified Carbon Standard, Climate Action Reserve, Gold Standard, American Carbon Registry, and newcomers like Nori, Regen Network, and the Ecosystem Service Market Consortium. Verifiers provide third-party assurance that the project is complying with the chosen standard. Buyers— such as large corporations looking to offset their carbon footprints—can purchase carbon offsets through brokers, project developers, or exchanges.

Business management practices

Participating in a carbon program necessitates collecting data for a project's monitoring period. Whether you enroll in a carbon program or not, it is useful to keep data that may be requested. For example, some programs require three to five years of historical field data, plus data for the current crop year and subsequent crop years. Common record requirements include (but are not limited to) the following:

- As-planted data by crop type, date
- Fertilizer application data covering products, rates, type, application method, and date
- Tillage data (if applicable) by type/implement and date
- Harvest data covering yield, date, and harvest product
- Cover cropping (if applicable) by type, planting and termination date, and termination type, crop rotation

Other best practices include:

- Use digital recordkeeping and tools to collect and organize data
- Keep receipts, fertilizer records, equipment purchases, etc.
- Take pictures
- Talk to extension agents about opportunities to benefit from technical and financial assistance
- Participate in research with land-grant universities, agricultural industry professionals or other institutions on climate smart agriculture practices
- Join industry-wide data collecting initiatives such as the U.S. Cotton Trust Protocol
- Talk to banks or lenders about preferred financing options
- Talk to a lawyer about any legal or property related issues
- Talk to the landowner or anyone with a controlling interest in the property about carbon ownership
- Work with trusted individuals and sources to help guide crop marketing decisions

Considerations

1 Participation in these markets will require that you keep records

- Collect and store data in a way that you and the project developer can access
- Record keeping is useful for agronomic decisions even if you're not participating in a PES program
- Grower data are valuable to companies in aggregate

2 It is easier to participate if you are the landowner

- The landowner will often be the carbon "owner"
- Renters can participate but will need contracts/agreements with the landowners
- Understand monitoring requirements as it pertains to farm succession planning and operational management several years into the future

3 It may take up to three years to start getting paid

- Payment will depend on the start date of your new practices and the terms of the contract

4 Understand the basic contract terms (seek legal counsel if you don't)

5 Different marketplaces have different methods of collecting soil carbon data

- Soil samples analyzed in a lab
- Remote sensing using satellite imagery
- Modeling using algorithms built from decades of data
- Soil sampling + remote sensing + modeling

6 Different marketplaces have different methods of collecting soil carbon data

- Public and private policy initiatives are investing to standardize methodologies and approaches
- Several protocols are in their first or very early versions - expect these to be modified with changes to implementation of projects using the protocols

Understanding Additionally and Getting Paid for Climate Smart Agriculture

Hypothetical Scenario	Is it additional?	Am I getting paid?
You plant cotton/corn/wheat rotation on a few fields to see how it does and to diversify income, and your soil increases organic carbon stocks.	Yes	Yes, for carbon farming
A hypothetical state regulation requires that farms decrease stormwater runoff to lower nutrients in streams. You use erosion control best management practices, and tweak the timing on your fertilizer applications, and your soil increase in oraganic carbon.	No	No, even though you are carbon farming

Questions that growers should ask before participating in a carbon market

Adapted from "What Questions Should Farmers Ask about Selling Carbon Credits?"[13]

Payments

- How much will I be paid?
- Can I be paid for carbon sequestering practices that I previously adopted?
- What is the portion I get, and the portion the aggregator or other intermediaries get?
- How much will it cost to verify and sell my carbon credits? Who will pay for these costs?
- What management practices does the company pay for?
- What currency is the payment in (e.g., cash, cryptocurrency)?

Operations

- Do I need to show a carbon farm plan?
- Is there other software I need to use? If so, who pays for the software?

Data and Records

- What types of data are required?
- Who owns my data, and what can the aggregator or data manager do with my data? Will they share my data with anyone?
- How often will reporting be required?
- Is there a penalty fee if the land changes ownership or is rented?
- Will my input costs change if I join this program?

Crop Rotation and Practices

- Does the program include all our rotational crops?
- Are my current practices eligible under the program? What practices do not meet additionality requirements?
- Can I stack practices to meet program requirements? Will this change my payments or contract terms?
- How much carbon can I sequester? How much can I reduce emissions?
- Can I stack payments with other cost-share programs (NRCS, state programs, etc.)?
- What happens if I am forced to revert on my practices (weather, labor, financial hardship, etc.)?

13 Sellars, S., G. Schnitkey, C. Zulauf, K. Swanson and N. Paulson. (2021, Apr 13). What Questions Should Farmers Ask about Selling Carbon Credits? farmdoc daily, 11(59).

Questions that growers should ask before participating in a carbon market

- What information is needed in year 1, year 2, etc. to verify my carbon/emission reductions?
- Will this program restrict my technology choices next year or over the contract term (tillage, planting, fertilizer, crop protection, harvest, data management/ownership)?

Insurance and Financing

- What could this mean for crop insurance? Will leakage be counted against my actual production history?
- What could this mean for financing/personal guarantees on operating notes/other lending mechanisms?
- What does this income mean for farm taxes?
- Will this affect any of the NRCS conservation programs that I am currently enrolled in?

Contract Terms

- How long is the contract?
- Can I sign on as a landowner? As an operator?
- Can I sell credits directly myself, or do I need a broker or an aggregator?
- Can the carbon credits be banked? If so, for how long?
- Is the contract field-specific, or are farm-level emissions considered in the program?
- Who owns my data, and what are they able to do with it?
- What happens if your carbon company goes out of business?

Conclusion

Key Takeaways

- Carbon markets are still an early-stage industry.
- Run the numbers for investment and potential ROI before you commit.
- Engagement with carbon markets can provide side benefits to farm operations besides carbon credit income, including financing access, premium pricing, and data-informed business management.
- While the financial benefit of carbon markets can be delayed, the management practices that carbon markets seek often drive lower costs, greater resilience, and higher yields.

Carbon markets are still emerging, and the rules to participate in them remain unclear and inconsistent. It is important to know what you're getting when you sign on: don't be hesitant about asking questions, especially when it comes to your farm's data ownership, privacy, use and licensing. Start small, get the lowest-hanging fruit, and consider what effects a change in management practices could have down the road. Ask how this practice or system change will relate to other decisions you're making on your operation. Will additional labor be needed, and will that timing work out with inputs? Can you handle not receiving payments until after the offset is validated, verified, and sold? And later on: if carbon payments don't pencil out, will the other benefits be worth keeping up the practices? On the other end, what if you've been no-till and cover cropping for years? Hopefully your reward is your healthy soil and productive land, but if there is a need for more compensation, there are other possible offsets for which you may qualify. For example, payments for variable rate nitrogen applications and other forms fertilizer use efficiency may count as qualifying practices towards emission abatement in some emerging carbon credit frameworks.

Even if you don't enter into a carbon marketplace, it may still be worth it to invest in climate smart agriculture on your operation. Climate-smart agriculture can make an operation more resilient, which means it has a better chance of carrying through or bouncing back after an extreme weather event. On-farm resilience can take years to develop and can become apparent in the event of a disaster. If what you're currently doing is working out for you and your farm, carbon markets are a great opportunity to think about how to align your production to amplify more of what's working, and if not, carbon markets present an opportunity for transition.

Resources & Links

Supplement A: A snapshot of Payments for Ecosystem Services (PES) markets available to U.S. farmers as of August 2021.

Eckelkamp, M. (2021, June 23). Farmer Shares Top 10 Considerations with Carbon Markets. Retrieved from https://www.agweb.com/news/business/conservation/farmer-shares-top-10-considerations-carbon-markets

Farmer Perspectives and Top 10 Considerations with Carbon Markets Summarized Below:

10. There will be winners and losers
9. Get your information/records in order
8. Check out EQIP & watershed programs w/ NRCS; they can vary, and you can do that right now
7. Start w/ lowest hanging fruit (small changes at first)
6. Don't try to double dip (you cannot get paid twice for selling the same thing)
5. Understand what is expected of you (what data is needed, what work will be done)
4. Understand your privacy rights
3. Decide what matters most - your time or payments - to help you decide on a program
2. Become a supplier of choice - the one everyone wants to talk to
1. Don't be a cynic! carbon credits are a good thing

SAFSF Fibers roadmap: The Sustainable Agriculture and Food Systems Funders (a nonprofit working to strengthen connections, foster collaboration, and build capacity in the sustainable food and ag community) wrote this roadmap report to examine the impacts of the current textile industry, in order to help funders and investors be part of revitalizing the U.S. textile industry.

Fibershed Annual Report 2020:
"Textile brands do not own, nor are they financially invested in, the mills that make the goods they sell. Instead, they issue purchase orders to the top of the supply chain (usually the cut & sew facility), who then place purchase orders to knitting and weaving mills, who then place purchase orders with the spinner, who then place orders with distributors of raw fiber. Within this purchase order issuance process, finances are not typically exchanged until a finished garment is ready to ship. The farmers and the ranchers are the last to be paid. Fiber is only understood through the number on a bale within a classing system that gives no recognition for the nuances of land stewardship, soil carbon, drought, fire, crop failure, or biodiversity protection. A ranching or farming family can go years without being paid for their wool clip or cotton harvest—forcing a series of decisions that make it nearly impossible to incentivize enhancements to ecosystem function on open range and cropland systems."
- Rebecca Burgess, Fibershed Executive Director