Carbon Credits and Markets for Agriculture: Considerations for Producers

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Taking Stock: What Are “Carbon Credits?”

• Credits are payments of some type financial advantage provided for provision of an amenity
  • Payments per acre of adoption of services—cover crops, limited tillage, etc.
  • Credits for other activities such as crop insurance premiums
  • Rebates on inputs, etc.

• Could be public (subsidies; not yet but being considered) or private (payments for services)
Companies (known) with Active Carbon Programs (at least acting as a broker)

- Bayer
- Cargill
- Corteva
- Elanco Animal Health
- Indigo Agriculture
- Land O’ Lakes
- Nutrien
- Syngenta
Private Example--Bayer

Up to $9
per acre, per year

No-till/strip-till and cover cropping are powerful ways to support your yield potential and nutrient management over time, leaving healthier soil for future generations. With the Bayer Carbon Program, you may be able to get paid for climate-smart practices you've already implemented or plan to implement.

- No-till/strip-till: $3 per acre, per year
- Cover crops: $6 per acre, per year
- Both: $9 per acre, per year

ARE MY FIELDS ELIGIBLE?  CREATE FARMER ACCOUNT
Conservation Tillage Offset Map
Carbon Sequestration—A “Credence” Good

• It is difficult and/or expensive to measure the marginal impacts on soil carbon of different practices (Katie can tell you more)
  • Focus is on practices we believe to sequester carbon
• Any credence good requires some sort of verification process
  • Data provision
  • Monitoring by either government or third parties…but who??
What Happens if I “Sell” Credits

• You are committed to the contractual terms you signed:
  • Contract length
  • Requirements
  • Penalties for non-performance
  • Etc.
Who Buys Credits and Why?

• Credits are purchased by aggregators who “bank” those credits to sell to other businesses to “offset” carbon emissions
  • “Fancy” version of cap-and-trade, but with the goal to reduce overall CO$_2$ by reducing the need for offsets—but eventually, doesn’t that mean the credits will go away??
Questions to Consider Before Entering

• Who do I work with?
  • Aggregator—farmer sells everything to an aggregator who has complete control over credits, when to sell, data, etc.
  • Data manager—farmer pays data manager to assist with decisions and marketplace entry

A good summary of these types of questions can be found on farmdoc daily with the publication: Sellars et al., “Weekly Farm Economics: What Questions Should Farmers Ask About Selling Carbon Credits.”
Questions to Consider Before Entering

• Of course, how much do I get paid? But also for what am I being paid??
  • How do I get paid? How long will it take?

• Who owns my data?
  • AKA, why is Google free?

• Can I get payment for previous practice adoption?
Questions to Consider Before Entering

• What if the land changes hands? Who needs to be involved in the decision if land is owned/rented?

• Do I need to invest in new technologies or techniques?
  • This is a big one...
Costs and Benefits

• Conventional farmer considering no-till and cover crops with Bayer
  • $9/ac/yr payment from Bayer
  • Does this cover the cost of no-till/cover crops
    • Must consider the discounted value of the payment to match initial costs with future benefits

• Obviously, if the move is not profitable, why do it?
Soil Health Benefits

• Increasing soil carbon (organic matter) is not easy (nor consistent across soil types), but it can have valuable impacts.
  • In paper by Ale et al., we found that improving soil health (different measures of health and combinations) not only significantly increased average revenue but reduced the probability of crop failure for dryland cotton on the THP.
  • But at what cost??
Protecting 30 percent of the U.S. by 2030 would require 440 million more acres to be set aside.

2020: 12%
289 million acres protected for biodiversity

Goal by 2030: 30%
729 million acres

Source: USGS; Defenders of Wildlife
Courtesy: NatGeo
USDA Climate Priorities

CLIMATE 21 PROJECT
Transition Memo

Department of Agriculture

KEY PROGRAM RECOMMENDATIONS AND OPPORTUNITIES

- Issue a Secretarial Order on Climate Change and Rural Investment to signal climate change as a top priority of the department, frame USDA’s interest in investing in agriculture, forestry, technology, innovation, and rural economies, and to set agendas for policy and programmatic actions needed to act on climate. (Day 1)

- Invest in natural climate solutions by establishing a Carbon Bank using the Commodity Credit Corporation to finance large-scale investments in climate smart land management practices; prioritizing climate smart practices in implementation of Farm Bill conservation programs; and identifying opportunities to invest in natural infrastructure. (Day 100)

- Incentivize Climate Smart Agriculture and Rural Investment through financial tools including crop insurance, rural development grants and loans, and USDA procurement. (Day 100)

- Decarbonize rural energy and promote green energy and smart grids through the vast reach of rural development grants and loans to rural utilities and by dramatically increasing use of methane digesters, biofuels and wind energy, and wood product innovation. (Day 100)

- Prioritize federal investment to address wildfire by establishing a Wildfire Commission, co-chaired by the Secretaries of Agriculture and Interior and a Democratic and Republican governor, to offer recommendations to increase the pace and scale of ecologically sound forest restoration on federal, state, tribal and private forest lands; modernize firefighting response in the US; address development in the wildland-urban interface; and increase the use of prescribed fire. (Day 100)

KEY ORGANIZATIONAL RECOMMENDATIONS AND OPPORTUNITIES

- Rebuild and restore staff capacity and morale by re-investing in science capacity, especially in the National Institute of Food and Agriculture (NIFA) and the Economic Research Service (ERS), and addressing workforce and performance protocols that reward staff for climate change innovation. (Day 1)

- Reset the narrative of agriculture and forestry as climate change solutions with rural stakeholders by emphasizing producers’ and landowners’ historic commitment to stewardship, and economic opportunities presented by investments in climate mitigation and resilience. (Day 1)
Conclusions

• Soil carbon markets are a reality, and will likely continue grow as long as there is a corporate focus on CO$_2$ reductions.

• Be wary...ask lots of questions before engaging in carbon markets; you may be locking yourself into something you don’t understand

• DO NOT undertake activities to chase subsidies unless those activities fit into your management plan and/or have some benefits for you over-and-above the payment