

March Newsletter 2022

Hello Colleagues and Friends,

- The Market Corner article by C-FARE Board Member **Roderick “Rod” Rejesus**.
- A new feature to our newsletter titled C-FARE’s Monthly Facts. This month features “**Agriculture and Greenhouse Gases**” by **Gal Hochman**, C-FARE Board Chair.
- C-FARE invites you to our Brandt Forum titled **Agricultural And Environmental Science-Based Policy: US Agriculture And The Environment**. April 6th at 11:20 AM - 1:10 PM ET. [Register here](#).
- New Direction features articles and papers titled:
  - [Cover Crop Trends, Programs, and Practices in the United States](#)
  - [Cover Crops Can Influence Soil Health, Even Within the First Few Years After Adoption.](#)
  - [Optimal environmental taxation in response to an environmentally-unfriendly political challenger.](#)
  - [Recognizing Gravity as a Strong Force in Atmosphere Emissions Markets](#)

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## **Market Corner**

Over the years, there has been increasing awareness about the importance of using environmentally-friendly conservation practices in agriculture. In particular, planting cover crops is now seen as a key strategy for row crop agriculture to increase resilience against climate change and at the same time reduce greenhouse gas emissions (GHG) by increasing carbon sequestration in the soil. As such, the federal government has helped provide incentives for adoption of these practices through its two main conservation payment programs for “working lands” – the Environmental Quality Incentives Program (EQIP) and the Conservation Stewardship Program (CSP). These are cost-share programs that aim to alleviate the financial burden borne by producers when adopting environmental-friendly conservation practices.

Given the large government outlays for these two programs, it is important to understand to what extent these two programs effectively influence the uptake of a key soil health conservation practice like cover crops. I was part of a recent study that examined whether aggregate county-level per acre EQIP and CSP payments help encourage adoption of cover crops as a soil health conservation practice. We found that aggregate EQIP payments are associated with higher county-level cover crop adoption rates, while aggregate CSP payments are associated with lower cover crop adoption rates. Aggregate county-level EQIP payments tend to trickle down and encourage higher cover crop adoption. In contrast, the negative CSP effect supports the anecdotal observation that aggregate CSP payments provide incentives to crowd out adoption of more expensive and more involved conservation practices like cover cropping.

These results suggest that the policy design of EQIP, more narrowly focusing on the initial implementation of new and not previously used conservation practices, strongly contributes to the observed positive effects. With CSP's emphasis on maintaining existing conservation practices (rather than introducing new ones), plus the five-year whole-farm commitment to receive the full CSP payment, it is likely that CSP recipients choose conservation practices that are cheaper and easier to implement over the life of the CSP contract. In light of these main findings, it appears that further support for EQIP is warranted if the policy goal is to further increase use of cover crops for its perceived environmental benefits. Better targeting of EQIP and CSP funds towards "high-environmental-impact" soil health practices (like cover crops) may also help enhance the effectiveness of these programs in encouraging additional uptake of cover crops.

For further details on the study discussed above, the full article can be accessed in the journal [Applied Economic Perspectives and Policy](#). Feel free to reach out to me (rmrejesu@ncsu.edu) if you have any questions.

**Roderick "Rod" M. Rejesus, C-FARE Board Member, NC State University**

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## **C-FARE's Monthly Fact**

### **Agriculture and Greenhouse Gases**

Agriculture and forestry land use (AFLU) is unique since its mitigation potential is the outcome of enhancing the removal of greenhouse gases (GHGs) *and* reducing emissions through management practices of livestock and land.

Since 1990, on average, AFLU resulted in more removal of CO<sub>2</sub> from the atmosphere than emissions. For this reason, the AFLU in the US is considered a carbon sink, not a source of CO<sub>2</sub> emissions.

The y-axis constantly measures CO<sub>2</sub>e in MMT in the following figures, whereas the x-axis is the years. Figure 1 depicts the breakdown of CO<sub>2</sub>e, in MMT, for crop cultivation, livestock, and fuel combustion in the agricultural sector. While Figure 2 presents the breakdown of emissions among the various agricultural activities. Figure 3 plots emissions by inventory sectors to put everything in perspective.

**Gal Hochman, C-FARE Board Chair, Rutgers University**

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ICYMI

- **SAVE THE DATE:** C-FARE is hosting our Brandt Forum on Wednesday, April 6th at 11:20 AM to 1:10 PM ET titled **Agricultural And Environmental Science-Based Policy: US Agriculture And The Environment**. [Register here](#)
- C-FARE hosted a webinar entitled “Socioeconomic Disparities in Pollution Exposure — New Evidence and Arising Issues”. Check out our [website](#) and [YouTube](#) for a recap.
- Check out our third episode of C-FARE’s podcast [Get a Grip with FARE](#) featuring Terry Cosby, Chief of the National Resources Conversation Services (NRCS).

**For more information on our webinar series visit our [webpage](#) or [youtube](#)!**

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## New Directions

- **Cover Crop Trends, Programs, and Practices in the United States.** On U.S. cropland, the use of cover crops increased by 50 percent between 2012 and 2017. Over this same period, Federal and State conservation programs have increased efforts to promote cover crops through financial and technical assistance. Based on a series of farm- and field-level surveys, this report details how cover crops are managed on corn, cotton, soybean, and wheat fields. [Learn More Here](#).
- **Cover Crops Can Influence Soil Health, Even Within the First Few Years After Adoption.** Farmers are often motivated to plant cover crops to improve soil health. However, research on how adjustments in management practices affect soil health often is conducted in controlled, experimental settings, rather than on farms. [Read More Here](#).
- **Optimal environmental taxation in response to an environmentally-unfriendly political challenger.** Different political parties place different values on the environment. In considering a two-party democratic system and capital-intensive technologies, we find that forward-looking governments incorporate the probability of losing power into their policy design. The paper investigates the parameters that affect the magnitude of this gap and assess the effect of the gap on the adoption of clean technologies overtime. [Learn more here](#).
- **Recognizing Gravity as a Strong Force in Atmosphere Emissions Markets.** Environmental economics has made it possible to estimate prices for air pollution externalities. However, these values are rarely observed in emissions trading markets. Moreover, market outcomes show prices persistently remain below expectations and frequently fall over time. Low allowance prices may appear virtuous, but often reflect poor market design that does not anticipate interaction with other policies, and may undermine confidence in market-based approaches to environmental policy. [Read more here](#).

