

## June 2023 Newsletter

Hello Colleagues and Friends,

Welcome to our monthly newsletter! This month's features are:

- The Market Corner article How Do You Hit A Moving Target by C-FARE Board Member, Yoko Kusunose
- New Direction features articles and papers titled:
  - [100 years of data sovereignty: Cooperative data governance and innovation in US dairy](#)
  - [Consumer spending patterns for plant-based meat alternatives](#)
  - [Data on data: An analysis of data usage and analytics in the agricultural supply chain](#)

Keep reading to learn more,

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### Market Corner

#### How Do You Hit A Moving Target

Climate change is a huge challenge for agriculture, and rightly so. I cannot think of another industry (other than ski resorts) that depends more on the 'right' environmental conditions happening at the right time. Compounding to the challenge is the difficulty of predicting local-environment manifestations of climate change and knowing how to address these.

Let's start with the difficulty of predicting the effects of climate change at the local level. As we are all aware, humans have released unprecedented amounts of greenhouse gasses into the atmosphere, which have increased its average surface and atmospheric temperatures. This effect has been consistently documented since the 1970s, and the process is clearly understood.

However, as temperatures rise, the air holds more moisture. And different parts of Earth warm more than others, changing the global circulation patterns of air. This means that global rainfall patterns (where, when, and how much precipitation occurs) change, too. As any meteorologist will tell you, predicting the 'where, when, and how much' of precipitation is far more difficult than predicting these for temperature. Add to this the fact that some types of plants--including crops--are evolved to better incorporate CO<sub>2</sub> into their biomass and/or grain. The interactions of these multiple knock-on effects greatly complicate our ability to predict yields, product quality (e.g., protein content in wheat), and—ultimately—profitability of different crops in different locales. This does not mean that we shouldn't try. In fact, many teams of researchers around the world put forth their best predictions of how agricultural production, food prices, and human nutrition will be affected, as witnessed by the Agricultural Model Intercomparison and Improvement Project ([AgMIP](#)).

But as G.I. Joe always said, ‘knowing is half the battle.’ It’s only half. Obviously, we must continue to develop technologies and policies that put us on the path to zero greenhouse gas emissions. We also desperately need to prepare to deal with the present- and near-term effects of the greenhouse gasses already in our atmosphere. But how do we hit a moving target?

I believe the only sure bet is to make sure that we have the networks, institutions, and policies in place today, so that they may rapidly develop and deploy technologies and initiatives as they are needed. When torrential rains in the spring of 2022 destroyed farmers’ crops and washed away fields in Eastern Kentucky, a handful of communities were able to quickly aid affected farmers and ensure that community members did not go hungry. As my graduate student advisee found, these communities responded nimbly and effectively because of their existing community champions and strong networks. At the federal level, a nascent example is the USDA’s Climate Hubs, a result of the agency’s 2021 [Action Plan for Climate Adaptation and Resilience](#). We’ll need even more networks at all scales, county-level to global-level. Now is the time to be building as many of these nimble networks as we can.

**Yoko Kusunose, C-FARE Board Member and Professor at the University of Kentucky**

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## ICYMI

- Join us at the next C-FARE webinar, **The Challenge of Providing Safe and Accessible Food for a Healthy Life**, on Friday, June 30 at 12 p.m. EST on Registration is available [here](#).
  - C-FARE’s Webinar on “**Food Security in the U.S. and Worldwide: What the Data Tell Us About Hunger and Policy**” is now available on our [website](#) and through this [recording](#).
  - Check out our fourth episode of C-FARE’s podcast [Get a Grip with FARE](#) featuring Peyton Ferrier and Steve Neff from the USDA Economists Group.
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## New Directions

- **100 years of data sovereignty: Cooperative data governance and innovation in US dairy.** Digital agriculture presents new challenges and opportunities for data-driven innovation in the agricultural sector. An emerging issue in the economy of data is *data governance*, which is the way a firm or country manages the use and storage of data. One specific friction in the market for data is between the goals of those firms that collect data and those that produce the data. [Learn more here](#).
- **Consumer spending patterns for plant-based meat alternatives.** This paper uses Nielsen Homescan data from 2014 to 2019 to investigate consumer spending on plant-based meat alternative (PBMA) products. First, we measure determinants of different PBMA spending levels and summarize spending on PBMA and other food

products. We then examine spending over time on PBMA and other food items when a household first purchases a PBMA product. [Learn more here.](#)

- **Data on data: An analysis of data usage and analytics in the agricultural supply chain.** The amount of data being collected throughout the agricultural supply chain has increased in both volume and velocity. All signs indicate that this will only increase as data collection technologies become more cost effective and prevalent throughout the supply chain. Previous work in this area has focused on data collection at the farm level. [Read more here.](#)