

September Newsletter 2022

Hello Colleagues and Friends,

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

- The Market Corner article Understanding Supply Chains by David Zilberman, C-FARE Board Member.
- This month's Director in the Spotlight features C-FARE Board Member Yoko Kusunose.
- C-FARE will be hosting a webinar entitled “**Building the Capacity to Invest in Rural Prosperity through Cross-sector Collaboration**“ on October 6 at 12 PM ET. [Register here](#).
- New Direction features articles and papers titled:
 - [Supply chain responsibility in agriculture and its integration with rural community development: A review of issues and perspectives](#)
 - [Weather, Climate, and Technology Adoption: An Application to Drought-Tolerant Corn in the United States](#)
 - [Which schools receive state-level support for local food purchases? Evidence from reimbursement incentive programs in Michigan and Oregon](#)

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Market Corner

Understanding Supply Chains

The modern economy has high rates of innovation, resulting in new products and services. Each innovation is implemented through a supply chain. Understanding how supply chains work and how they are affected by policies is becoming a growing area of economic research. The economy consists of numerous supply chains constantly modified and have symbiotic relationships. For example, innovation supply chains consist of research in universities or companies that may result in new products or services, developed by extension or by dedicated firms, and then commercialized by firms that develop a product service supply chain. So, the supply chain to produce a food item (bread) consists of seed and other farm input suppliers, farmers, processors, wholesalers, and retailers. Whoever controls the introduction of a product or service has to design the supply chain. They may select the product within a firm vertically integrated way or purchase input from markets or contracts. As agricultural products become more differentiated and designed to meet precise specifications, there is more emphasis on contracting. Supply chains may rely on multiple suppliers and produce multiple products. For example, wineries may grow their own grapes, buy from other farmers, and have multiple wines they may sell in their stores, ship to restaurants, or sell to supermarkets. There is a growing emphasis on understanding choices by supply chains, their implications for product pricing and consumer wellbeing, and assessing their resilience and vulnerability to shock. Conducting this

research requires more data collection on supply chain structure and behavior, likely expanding the range of information assembled by the USDA.

The pandemic and other recent crises have emphasized how vulnerable our supply chains are and the importance of having agile supply chains. Indeed, supply chains were able to reinvent themselves during the pandemic. Social distancing drastically reduced demand for restaurants and shopping in stores, which led to a drastic expansion of the food delivery section and shifted much of the supply directed to institutions toward households. Similarly, farmers and processors had to adjust their production practices to overcome shortages of labor and other inputs. The capacity of US food systems to adapt to the pandemic demonstrated resilience, but at the same time, the pandemic provided some lessons that will make the system even better. The war in Ukraine is another shock to the global supply chains of food, fuel, and energy. The disruption of the natural gas and oil flow to Europe raised fuel prices and inflation. Constraints on shipping Ukrainian grain increase food insecurity, especially in middle east Africa, and challenge the global food supply system. This crisis may lead to increased efficiency of use of fuel, and modification of the fuel supply chain, perhaps providing new opportunities for renewable and reliable biofuels. It may lead to an emphasis on increased productivity of grains worldwide, possibly taking advantage of modern production practices to reduce dependence on vulnerable grain providers.

The structure and performance of supply chains have a significant impact on prices. When there are restrictions on input sources and changes in the cost of transportation, it may require a modification of the supply chain and increase costs. The tsunami and earthquake in Japan in 2011 reduced parts availability for the automobile sector worldwide. The lockdown in China during the pandemic reduced production in the semiconductor industry. Adaptation to shortages tends to be costly and raise prices. The war in Ukraine drastically is drastically increasing the price of natural gas and the inputs of the chemical industry throughout the world, affecting the cost of agricultural inputs and prices. Reduction in the availability and increase in the use of transportation vessels tends to increase the price. For example, last year container price index rose eight times compared to two years ago.

The ongoing climatic changes, growing demand for food, and increased demand for carbon sequestration and sustainable production practices pose new challenges to agriculture and natural resource systems. Economists and policymakers need to understand better how the supply chain operates and design policies and institutions that will lead to the emergence of creative innovation and supply chains that implement them.

David Zilberman, C-FARE Board Member, University of California, Berkley

Director in the Spotlight

Yoko Kusunose

SHORT BIO

Yoko Kusunose is an Associate Professor Agricultural Economics at the University of Kentucky. For the first decade of her career there, her research centered on decisions made by smallholder farm families in developing countries (e.g., what crops to grow, whether to grow or rent out land, whether to pursue work off of the farm, whether to use soil-conserving management practices). Recently, she has shifted her focus to a topic that is closer to home: the role that land-grant universities play in modern US agriculture.

Why land-grant universities? The research infrastructure and extension model of land-grant universities (LGUs) are unique and have large impacts not just on US (and global) agriculture, but also rural areas and the environment generally. Therefore, it's important to be able to articulate what roles LGIUs play right now, and what roles they could play in the future. I know that LGUs can potentially play a huge role in helping the nation deal with the effects of climate change.

Kentucky tends to have many small- and mid-size farming operations. For many of these farms (and the communities supporting them), the University of Kentucky's research and extension are a big deal. I feel proud to be a part of that.

Interests

Having grown up with parents who experienced childhood hunger and having observed-- as a Peace Corps Volunteer--extreme poverty and malnutrition in rural Panama, I have always gravitated toward the topic of food. How should food be produced? How do we define good food? Why is it that so many Americans cannot access and eat good food? As a (working) mom tasked with feeding two young children, I think of these questions on a daily basis.

ICYMI

- **Save the Date!** C-FARE will be hosting a webinar entitled “**Building the Capacity to Invest in Rural Prosperity through Cross-sector Collaboration**“ on October 6 at 12 PM ET. [Register here](#).
 - C-FARE hosted a webinar entitled “Building the Capacity to Invest in Rural Prosperity Part II”. Check out our [website](#) and [YouTube](#) for a recap.
 - In case you missed it, the recording of C-FARE's Brandt Forum on “Agricultural And Environmental Science-Based Policy” is now available on our [website](#) and through this [replay](#).
 - 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

- **Supply chain responsibility in agriculture and its integration with rural community development: A review of issues and perspectives.** Agri-food supply chains involve the transfer of products through a chain of actors from the site of production to consumers. Actors include farmers, collectors, wholesalers, retailers, and consumers. Supply chains include not just the sale of produce, but also the exchange of information, value-adding, logistics, collaboration and social relationships. [Learn More Here](#).
- **Weather, Climate, and Technology Adoption: An Application to Drought-Tolerant Corn in the United States.** Crop farmers have few short-run options for reducing downside production risk from changes in drought frequency and intensity due to ongoing climate change. However, one recently available option is drought-tolerant (DT) varieties. This article determine how recent drought exposure, drought risk, and other climatic features have influenced adoption of DT corn—a water-intensive crop of particular economic importance due to its large share of U.S. agricultural value. [Read More Here](#).
- **Which schools receive state-level support for local food purchases? Evidence from reimbursement incentive programs in Michigan and Oregon.** State-level reimbursement programs are increasingly being used to incentivize procurement of local foods by US K-12 school food authorities (SFAs), which are schools or school districts that administer a food service program. However, few studies have explored the characteristics of SFAs that are associated with applying for and receiving reimbursement incentives. [Learn more here](#).