
The Challenges Facing the Food Supply Chain

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The COVID-19 pandemic has disrupted the delivery of what many consider to be basic human rights – education, health care and, of course, access to food.

A new survey commissioned by National 4-H Council, the largest youth development organization in the U.S., found that 88% of U.S. teens believe having access to healthy food is a basic human right.

According to the nonprofit Feeding America, 37 million Americans, including 11 million children, didn't have enough food in 2018. And before the pandemic, the United Nations World Food Programme estimated that 135 million people worldwide were at risk for acute hunger. Now, that number has risen to 265 million. "Many young people and their families don't know where their next meal is coming from, especially during this current global crisis, and choosing healthy options that are cost effective only becomes that much more difficult for economically challenged communities across the country," said Jennifer Sirangelo, CEO of National 4-H Council.

Farmers Dumping Milk

But how can this be? We've all heard the stories about food-production excesses. In Idaho, farmer Ryan Cranney piled up 2 million potatoes he couldn't sell during the coronavirus pandemic and gave them away. In Minnesota, contract farmers Kerry and Barb Mergen watched helplessly as a company crew euthanized 61,000 egg-laying hens because the demand for liquid eggs used by restaurants evaporated. And across the country, supermarket chains are limiting customers to two packs of meat, pork or chicken because processing plants have ramped down production as workers fall sick with the novel virus.

The news of farmers dumping milk and plowing over produce are hard to reconcile with the equally heartbreaking stories of desperate families waiting in long lines at food banks. The conflicting images have many people wondering why unsold food cannot be redistributed to charities that help the needy, and whether empty grocery store shelves mean America should also brace for a hunger pandemic in some regions.

"I think a lot of the increase in starvation is going to come from income problems, not a food supply problem." — Senthil Veeraraghavan, Wharton Professor

As the pandemic endures, what do food production and distribution look like in America – and will it result in more people struggling to find their next meal?

According to recent interviews on the Sirius XM Wharton Business Daily radio show and in *Knowledge@Wharton*, the online journal of research and analysis from the Wharton School of the University of Pennsylvania, the answer is as complex as the food supply chain.

"I don't think we are going to starve at an aggregate level. There is enough food to feed everyone," said Senthil Veeraraghavan, Wharton professor of operations, information and decisions. "But at the individual level, there is definitely going to be difficulty to access food in some places, for some people."

The fact that farmers are destroying millions of pounds of perishables is evidence that there is plenty of food in production. It's the breakdown of supply chains that has left store shelves barren, driving up costs for consumers. Prices

for groceries jumped 2.6% in April, the largest monthly increase since 1974, according to the U.S. Department of Labor. Meats, poultry, fish and eggs rose 4.3%; fruits and vegetables climbed 1.5%; and cereals and bakery products moved 2.9%.

“We are roughly in balance at the aggregate level, but [there are] incredible disruptions at the micro level,” said Marshall Fisher, Wharton’s UPS professor of operations and information management, during a segment of the [Wharton Business Daily radio show on Sirius XM](#). “That’s why you see this paradox of farmers throwing away milk and shelves empty of milk. My wife went to Costco this morning to do the shopping, and there was lots of milk and no toilet paper. We see micro disruptions when we go to the store every day, and that’s because the supply chain is very complicated.”

Supply Chain Disruptions

Suppliers that sell mostly to commercial buyers (think, big companies buying in bulk) cannot easily repackage items for residential use (families living at home). That means industrial-sized rolls of toilet paper designed for use in office buildings, for example, can’t quickly be switched out to sell in retail stores.

Shoppers panic-buying and hoarding toilet paper is “an easy, fun explanation. But that’s generally wrong,” Veeraraghavan said. “Industrial supply chains had to switch for household supply chains. That’s a huge switch, and you see this shock for companies that have had to change this.” The switch can be especially difficult for large operations like commercial farms because many of their processes are automated, designed for maximum efficiency and minimum human intervention.

The professors outlined three main factors that contribute to supply chain disruptions:

- **The supply chain is highly decentralized.** There are many players at many levels – producers, wholesale buyers, retail buyers — each making decisions about where the food ends up.
- **Perishable foods have a short shelf life.** The route from farm to table for milk, for example, can’t take too long or the beverage expires. Meanwhile, agricultural products are subject to numerous safety and quality checks that also take time.
- **Distribution must be a well-oiled machine.** Getting goods to their final destinations takes a lot of planning, so any deviation – like ports closing during the pandemic – can throw a wrench into the gears, bringing the entire process to a halt. Logistics require deep connections and longstanding commitments, which is also why it’s hard for farmers who sell to commercial vendors to suddenly reroute their potatoes to a food bank, for example.

“At some level, people are familiar with wasted food. We all know there are Michelin three-star restaurants throwing away food while there are starving kids,” Veeraraghavan said. “We understand that there are inequities that exist. Even if you want to solve it, there are going to be constraints...it’s true for every system that has many parts that make decisions.”

And food insecurity – not having enough for your table — is more a function of demographics rather than the worldwide food supply, Veeraraghavan said. It depends on where you live and your income level. Obtaining food will be more challenging, obviously, for those who have lost their jobs during the pandemic or who live in areas where the distribution system has collapsed.

“You are seeing huge income shocks and less access to buy food,” Veeraraghavan said. “I think a lot of the increase in starvation is going to come from income problems, not a food supply problem. That’s why we’re talking about income payments and transfer of wealth.”