



Keeping up with the fast-moving world of crisis management

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If a perfect storm were in the making, could the nation's food and agricultural system have even contemplated it and planned for a response?

In early March of 2020, when the implications of the COVID-19 crisis were beginning to sink into the anxious American psyche, the nation's reliable food and agricultural system was a comforting touchstone: Even if toilet paper couldn't be found, the grocery stores still had plenty of meat, milk, fruit and vegetables. In the weeks that followed, however, the country's notably stable supply chain has been set back on its heels. Stories of dairy producers dumping milk

and Florida farmers plowing under fields of squash—the very picture of food waste—has been jarring and incongruous when juxtaposed with scenes of the newly unemployed, lining up at food banks, those operations now scrambling to find food to restock.

Not long after, a pork processing plant in South Dakota was 'asked' to close by the state's governor, in part because half of the state's cases of COVID-19 were plant workers. Like dominos falling, pork and beef packing plants across the country have become the latest hotspots for coronavirus outbreaks, forcing closures in Colorado, Wisconsin, Iowa,

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Indiana, Missouri, Pennsylvania, and likely more to come. In Tennessee, a poultry processing facility closed after finding that 120 of the plant's 1600 workers tested positive for the virus. Corporate leaders and USDA, like states and hospitals, are now scrambling to obtain test kits and protective gear from overseas for their workers here in the US. Animal producers predict big losses and economists are predicting higher prices for consumers. And in Kansas, authorities are looking to find space at junior colleges and other facilities to provide affected workers from these plants—some of the most economically vulnerable people in the country—with places to ride out their quarantine time.

Meanwhile, in early April, USDA quickly depopulated turkeys from a commercial plant in South Carolina after confirming the detection of highly pathogenic avian influenza (H7N3), which it said posed no public health risk and had apparently mutated from a low pathogenic strain found recently in the area. Flashback to 2015, when the disease forced the destruction of 48 million birds. And flash forward to today, as we speculate on the wet markets from which COVID-19 is said to have emerged.

All these issues beg the question of resilience in the food system. Perhaps it is because on an average day, the supply chain runs so smoothly that we do not think about the worst-case scenario. Even as we learn how to react more quickly to individual shocks like outbreaks of food-borne illness or feed contaminants, there is seldom a reflection on the food system's collective capacity to manage emergency situations coming from multiple directions. In our current situation, for example, it would not be too far-fetched to think that an extreme event—a flood, a hurricane, a power outage—could “pile on” to further disrupt production, processing, and transportation. The point is not that we can predict all that can go wrong but rather that a low-key, continuous contemplation of the vulnerabilities that evolve out of our very dynamic system is needed.

In public health, the term One Health is used to describe important but somewhat amorphous interconnections between humans and our surrounding ecosystem, both humanmade and natural. The current emergency provides a laboratory in which to better explore and understand the term One Health and those connections, including the tradeoffs that might come with proposed interventions. For example, models of 'local production' could reduce some risks, but also tend to be less productive and higher cost. Diversification—of crops, landscapes, farms, supply chains, and diets—might be a principle to guide efforts to build greater resilience, recognizing the last half-century of growth in the system has been built on specialization, efficiency, and just-in-time logistics, that have advantages, albeit controlled by a few actors. Finding our way forward will require useful data, thoughtful reflection, and engagement of all participants in the food supply, including scientists, extension personnel,

industry, policymakers, funding agencies, and the public, on how to make our system productive, robust and resilient.

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