



# Resilience test of the North American food system

David Orden

Global Issues Initiative, Institute for Society, Culture and Environment, Virginia Polytechnic Institute and State University, Blacksburg, Virginia, USA

## Correspondence

David Orden, Global Issues Initiative, Institute for Society, Culture and Environment, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061, USA.  
Email: orden@vt.edu

## Abstract

This article assesses the resilience of the North American food system in the context of the coronavirus pandemic in the immediate, medium, and long run. Focus is on the United States. The immediate consequence is substantial disruption of agricultural markets and falling prices, but systemic breakdown of the system is unlikely. Existing farm programs and emergency legislation will support U.S. farmers. Medium term, supply is likely to be strong, while pandemic-related disruptions in the developing world remain uncertain. Long term, the path forward under the fragility the pandemic has underscored is stronger international institutions and cooperation.

## Abstrait

Cet article évalue la résilience du système alimentaire nord-américain dans le contexte de la pandémie de coronavirus à court, moyen et long terme. L'accent est mis sur les États-Unis. La conséquence immédiate est une perturbation substantielle des marchés agricoles et une baisse des prix, mais une panne systémique du système est peu probable. Les programmes agricoles existants et la législation d'urgence soutiendront les agriculteurs américains. À moyen terme, l'offre devrait être forte, tandis que les perturbations liées à la pandémie dans les pays en développement restent incertaines. À long terme, la voie à suivre dans le cadre de la fragilité que la pandémie a mise en évidence est le renforcement des institutions et de la coopération internationales.

## 1 | INTRODUCTION

The global coronavirus (COVID-19) pandemic and the illness, deaths, and economic devastation it has wrought are the most severe test of the resilience of the North American food system since World War II. At time of this writing, deaths in the United States were projected to possibly reach 80,000 or more, even with almost the entire population under stay-at-home orders. Hospitals are overrun—seemingly unthinkable to Americans but perhaps inevitable given the speed with which the virus spread and the *a priori* uncertainty about if and when such a pandemic might occur. Unlike other recent respiratory viruses, it has not been possible to constrain this coronavirus geographically or in duration. The entire world is at risk—worse effects in the developing world with weaker health and food systems may become unfathomable; it simply cannot be known yet.

This short paper assesses the response capacity of the North American food system to the pandemic in the immediate, medium, and long run. Unlike the zoonotic BSE or poultry-sector HPAI, transmission of the coronavirus, SARS-CoV-2 (the virus that causes COVID-19), is not food-borne. Yet, the challenges the food system faces are enormous. In a special issue with detailed assessments for Canadian agriculture, this paper is oriented toward the situation in the United States. But North America is an appropriate focus—a dynamic sector feeding a wealthy population with diversity and choice and a bread and protein basket for the world. The Canadian and U.S. food systems are highly integrated and export competitively many similar products. Effects of the pandemic and questions of resilience will be similar.

## 2 | IMMEDIATE RUN

So far, the food system has held up well. There have been empty shelves in grocery stores as consumers have stocked up, but grocers have been restocking. There have been no sustained gaps that would quickly raise fears and spark runs on food stores reminiscent of bank runs in the Great Depression. Pandemic news coverage has focused on the health emergency and shortages of urgently-needed medical equipment and supplies. Any detected systemic food shortages would be newsworthy—next to medical supplies and hospital care, no other life-sustaining system is as critical as the food sector. Yet, little news has needed to be devoted to food availability.

This said, there have been challenges. There are concerns about the needs of the poorest Americans—an issue in the closing of schools where many low-income children receive meals. Steps are being taken to protect supermarket workers, and more steps and supplemental wages will be needed to keep retail food markets open. Likewise, bottlenecks could emerge in food manufacturing (including slaughterhouses) or transport (as highlighted for Canada by Mussell, Bilyea, & Hedley, 2020). There have been some supply-chain disruptions, and more are likely, but disruptions large enough for the food system to break down are unlikely. And, if emergency arises, the United States, despite talk of being on wartime footing against the pandemic, has not come close to throwing the resources it has available at a food shortage problem. The National Guard has manpower and trucks if needed—my expectation is that the private-sector food system will prove up to the task.

There are also short-term challenges at the farm level. Specifically, in a diverse and rich consumer food culture (what Orden & Paarlberg, 2001 call the “century of multi-agriculturalism”), dislocations are occurring. A prosperous subsector has emerged around fresh products for restaurants and farmers’ markets. Producers for these outlets are being hard hit. Difficulties have occurred for dairy, pork, and cattle—partly reflecting structural adjustments still taking place within these sectors and partly cyclical effects, both exacerbated by the pandemic and its economic impacts. Most agricultural futures prices dropped 10–30% in March (ethanol, milk, and hogs the most), while wheat and rice prices increased. Eventual price effects are uncertain, but lower output prices in the coming months would put downward pressure on farm incomes (Schnitkey et al., 2020).

The unfolding economic crisis is the second consecutive collapse in which agriculture will not be the hardest hit sector (the deep recession in 2007–2009 saw high farm incomes, whereas agriculture was walloped during the Great Depression and again in the 1980s). Still, the farm policy safety-net will be important to farmers. Differences in farm support between Canada and the United States may emerge as one fissure in the North American food system, but, with integrated supply chains, parts of Canadian agriculture will benefit from U.S. economic stimulus packages.

Existing legislated farm support (price loss coverage, agriculture risk coverage, and revenue insurance) will cushion U.S. farmers if there are lower prices this year. The administratively established Market Facilitation Program (MFP) pumped more than an additional USD 24 billion into farm incomes over the past 2 years. The MFP expenditures have pushed the United States up toward, or possibly over, its WTO limit on support (Glauber, 2019). The MFP was to offset self-inflicted farmer losses due to unilateral U.S. trade policies that pose a serious challenge to the multilateral trading system (Orden, 2020). This challenge to multilateralism becomes more ominous with the pandemic.

The two trillion-dollar Coronavirus Aid, Relief, and Economic Security (CARES) Act signed into law March 27, 2020 provides USD 24.8 billion for low-income food assistance and similar new support to agriculture. USD 9.5 billion is provided in disaster relief for coronavirus-related financial losses, including for fruit and vegetable, dairy and livestock, and local food producers (Hagstrom, 2020). This law also replenishes Commodity Credit Corporation borrowing authority by USD 14 billion. The stage is set for pandemic relief to replace trade-policy relief at the Trump administration’s discretion if Congress does not act first through anticipated additional stimulus legislation. Agricultural support might have been higher in the CARES Act if bipartisan agreement had been reached on more food assistance.

## 3 | MEDIUM RUN

In the medium run, disruption of the North American food system can hopefully be managed and contained. Grain and livestock inventories were at reasonably high levels going into the crisis. With relatively short supply chains, integration of Canadian and U.S. food systems will have a competitive advantage and may be strengthened.

Again, some delivery bottlenecks can be expected, particularly for long international export supply chains, which could worsen downward pressure on grain and other prices at the farm level. The next issue then is this spring’s planting. The March 31 planting intentions projected corn, soybeans, and wheat acreage to increase by 14.5 million acres above last year’s 211 million acres. Production in 2019 was limited by a record 20 million total acres not being planted due to extreme weather.

COVID-19-related input supply and labor availability problems at the farm level that could limit production in 2020 would be less visible than shortages at the retail level, but have to be considered a downside risk to the medium-term food supply. This is a substantial issue for fruit and vegetable producers dependent on H2A guest workers (mostly from Mexico and some from Canada).

The greater risk in the medium term is pandemic-based disruption in the developing world. Supply chain disruptions or production shortfalls abroad could raise international prices. After initial delay, China moved effectively to bring COVID-19 under control in 4 months, although secondary outbreaks remain a threat. India and many other developing countries were under lockdowns in March–April and have limited health system capacity. The world anxiously hopes the pandemic does not spread widely in these countries, which could cause untold deaths and economic and political crises, including for—indeed, especially for—their food systems. These countries do not have the economic safety-net and stimulus capacity of the United States, Canada, or Europe. A weakened international community rising to their massive aid seems unlikely. Supplemental international assistance funding in the CARES Act is less than 1 billion dollars.

If there are adverse international developments, there is also the risk of adverse food policy responses. The 2007 global food price increases showed how unilateral decisions to restrict exports or subsidize imports are domestically appealing and internationally damaging (Martin & Anderson, 2011). There are significant concerns about what one observer has called “sicken-thy-neighbor” export restrictions and import hoarding for medical equipment and supplies (Evenett, 2020), but less so, so far, for agricultural products. There have also been calls for international cooperation to lessen trade barriers for crisis-related goods.

## 4 | LONG RUN

Pragmatism is the essential need from government and the private sector in the immediate and medium run. I am optimistic that there will be a lot of it—dire necessity is the mother of level-headed decisions. In the longer term, there is a risk of responses that are not beneficial or benign. The pandemic has underscored inherent fragility of an integrated world. Already, this fragility is being called upon by conflicting views of globalization. Calls for reshoring economic activity will be loud. To the extent that international economic chains, including the North American food system, prove resilient to the COVID-19 challenge, these circle-the-wagons views may be dampened. But, depending on who occupies the White House in the coming 4 years, trade policies could get dark. Shuttering and barriers are not the answer in long term; stronger international institutions and cooperation are, including for contagious disease detection and containment and food security. This, however, is an argument for tomorrow, not for today.

## REFERENCES

- Evenett, S. J., & Global Trade Alert Team. (2020). Tackling Covid-19 together: The trade policy dimension. Global Trade Alert. University of St. Gallen.
- Glauber, J. (2019). *Agricultural trade aid: Implications and consequences for US global trade relationships in the context of the World Trade Organization*. American Enterprise Institute.
- Hagstrom, J. (2020). *Stabenow releases summary of ag, food provisions*. The Hagstrom Report. Retrieved from <https://www.tsln.com/news/stabenow-releases-summary-of-ag-food-provisions/>
- Martin, W., & Anderson, K. (2011). *Export restrictions and price insulation during commodity price booms*. The World Bank.
- Mussell, A., Bilyea, T., & Hedley, D. (2020). Agri-food supply chains and Covid-19: Balancing resilience and vulnerability. *Agri-Food Economic Systems*. Retrieved from <http://www.agrifoodecon.ca>
- Orden, D. (2020). Multilateral rules for food and agricultural trade. In D. Blandford & S. Tangermann (Eds.), *Current issues in global agricultural and trade policy: A tribute to the work of Timothy Josling*. World Scientific Publishing Co.
- Orden, D., & Paarlberg, R. (2001). The new century of multi-agriculturalism. *Applied Economic Perspectives and Policy*, 23(2), 289–301.
- Schnitkey, G., Swanson, K., Paulson, N., Zulauf, C., Coppess, J., & Zulauf, C. (2020). What we know about income outlook for crop farms given COVID-19. *Farmdoc Daily*, 54, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign.

**How to cite this article:** Orden D. Resilience test of the North American food system. *Can J Agr Econ*. 2020;1-3. <https://doi.org/10.1111/cjag.12238>