



Summary Report

Fraser Valley Food System Vulnerability Workshop

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November 2021

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Project Background

Food system impacts resulting from COVID 19

In 2021, the University of Fraser Valley (UFV) and the Fraser Valley Regional District (FVRD), in collaboration with Royal Roads University (RRU), began a community-based participatory research effort^{1,2} to explore food systems vulnerabilities, resiliency, and approaches to integrated planning in the Fraser Valley. The FVRD identified a need for long-term planning to develop resilient and sustainable food systems. Accordingly, the premise of this research project is to identify and map food system vulnerabilities and impacts, alongside local and regional efforts, that arose during the COVID-19 pandemic (from January 2020 to present). This project employs integrated planning and systems perspectives to (1) reflect upon the challenges and vulnerabilities that the COVID-19 pandemic has revealed about local and regional food and farming systems, and (2) explore ways of increasing local/regional resilience to future shocks (e.g. climate change impacts, economic recessions, mass migration).

The COVID-19 pandemic has revealed multiple vulnerabilities and gaps in food systems, including those related to supply chains, centralized food systems, labour needs, and just-in-time inventory management³. This has resulted in food security impacts ranging from restricted access to affordable nutritious food, the collapse of small and medium food enterprises, loss of employment and stable income, poor mental health, and increased substance abuse^{4,5,6,7,8}. Such issues present planners and decision-makers with the significant challenge of developing communities in ways that increase local food resilience and sustainability. These vulnerabilities however

¹ Newell, R., Picketts, I.M., & Dale, A. (2020). Community systems models and development scenarios for integrated planning: Lessons learned from a participatory approach. *Community Development*. doi: 10.1080/15575330.2020.1772334

² Hacker, K., Tendulkar, S. A., Rideout, C., Bhuiya, N., Trinh-Shevrin, C., Savage, C. P., Grullon, M., Strelnick, H., Leung, C., and DiGirolamo, A. (2012). Community capacity building and sustainability: outcomes of community-based participatory research. *Progress in Community Health Partnerships*, 6(3), 349-360.

³ Hobbs, J. (2020). Food supply chains during the COVID-19 pandemic. *Canadian Journal of Agricultural Economics*, 1-6. doi: 10.1111/cjag.12237

⁴ Henry, R. (2020). Innovations in agriculture and food supply in response to the COVID-19 pandemic. *Mol. Plant* 13, 1095–1097. doi: 10.1016/j.molp.2020.07.011

⁵ Holland, K. L. (2020). Canada's food security during the COVID-19 pandemic (SPP Research paper 13:13). Calgary, AB: University of Calgary, School of Public Policy. <http://dx.doi.org/10.11575/sppp.v13i0.70350>

⁶ Statistics Canada. (2020). Food insecurity during the COVID-19 pandemic, May 2020. Ottawa: Statistics Canada. <https://www150.statcan.gc.ca/n1/pub/45-28-0001/2020001/article/00039-eng.htm>

⁷ Holloway, I. W., Spaulding, A. C., Ochoa, A. M., Randall, L. A., King, A. R., The HBOU Study Team, & Frew, P. M. (2020). COVID-19 vulnerability among people who use drugs: Recommendations for global public health programmes and policies. *Journal of the International AIDS Society*, 23, 1–3. <https://doi.org/10.1002/jia2.25551>

⁸ Torales, J., O'Higgins, M., Castaldelli-Maia, J. M., & Ventriglio, A. (2020). The outbreak of COVID-19 coronavirus and its impact on global mental health. *International Journal of Social Psychiatry*, 66(4), 317–320. <https://doi.org/10.1177/0020764020915212>

are not exclusive to pandemic impacts, and the crisis elucidates a broader need for resilience to a range of disturbances, both natural and man-made.

Defining food system vulnerability

Food systems can be described as complex networks of people, processes, and infrastructure required to produce, process, distribute, access, and consume food. These systems also include the ecological, social, and political factors that influence and shape these networks. Although some commonalities exist among food systems features and issues from place-to-place, these systems vary depending on the social, cultural, economic, governance, and environmental characteristics in which they are situated. Thus, there is no 'one size fits all solution' for improving local and regional food system resilience, and identifying and addressing vulnerabilities require place-based approaches.

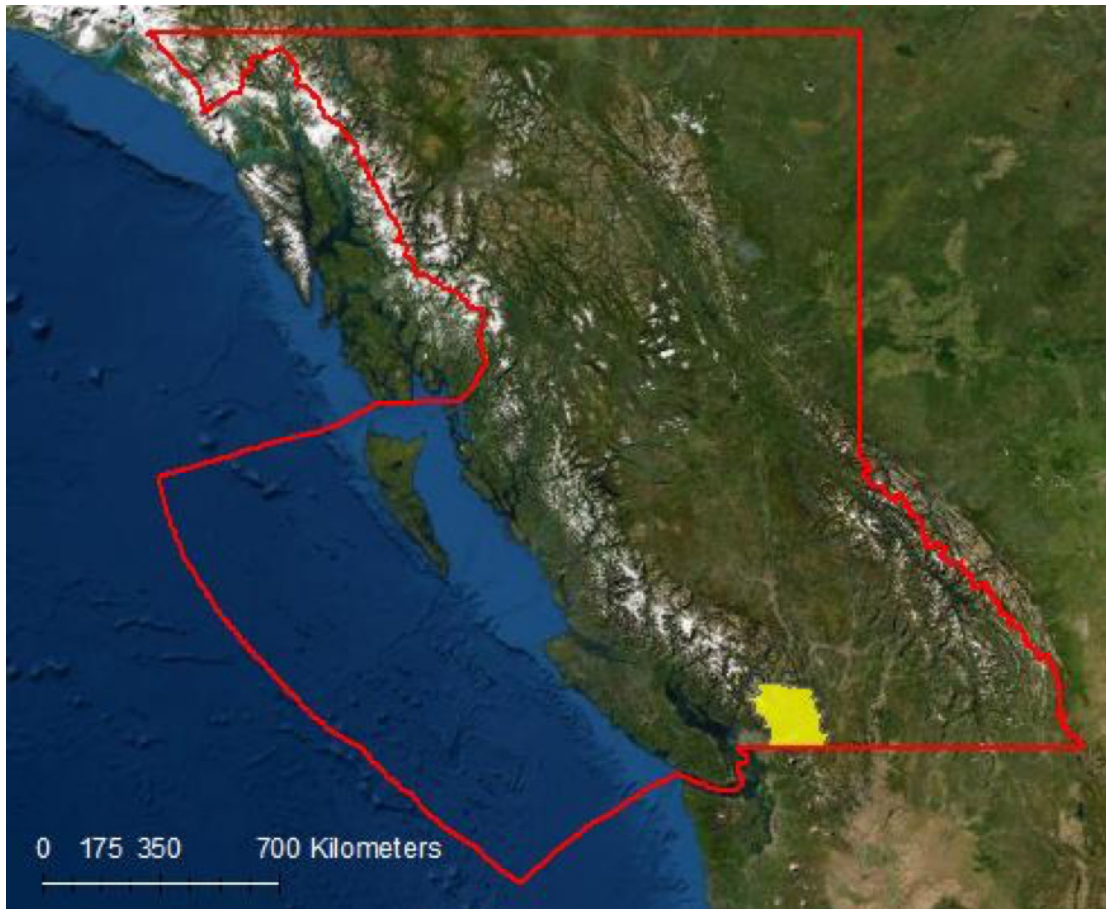
Food system vulnerability can be described as the susceptibility of the food system, including people, infrastructure, processes, and resources to the impacts associated with hazard events. Assessing the vulnerability of the FVRD food system is a key outcome of this project as it ties directly to long-term resiliency planning efforts. Understanding food systems vulnerability requires examining the state of different system components, particularly food access and affordability, food supply chains (production to distribution), the conditions that make foods acceptable (nutrition, safety, cultural appropriateness), and the governance, social networks and capital available in the FVRD. Examining these various states and relationships within the food system reveals how different shocks, or events, can negatively impact food system functioning. Populations that are currently food insecure are particularly vulnerable and can be further affected by these shocks/events.

Regional Context

The project is based in the Fraser Valley in South Western British Columbia, one of the most agriculturally productive areas in Canada and a region with strong economic and cultural ties between urban and agricultural communities (Figure 1). The project builds upon existing efforts based out of government, industry, and civil society organizations aimed at improving food resilience in the region (e.g. Climate & Agriculture Initiative, BC - Fraser Valley Adaptation Strategies Plan, FVRD and FoodMesh eat away at food waste, FVRD Clean Economy in the Fraser Valley Resource Guide). The region has multiple food assets - ranging from food banks, community meals, food retailers, food processors & distributors, and farmers.

⁹While resilience has multiple definitions, it can be defined as: "the capacity of a system to deal with change and continue to develop."

Figure 1. Location of Fraser Valley Regional District (yellow) within British Columbia (red). *Data sources:* BC Data Catalogue, Esri, DigitalGlobe, GeoEye, Earthstar Geographies, CNES/Airbus DS, USDA, USGS, AeroGRID, and ISN



The FVRD comprises eight electoral areas (A through H), six municipalities, and 31 First Nations communities^{10,11}. Multiple agricultural organizations and resources are located within the region, including Pacific Agri-Food Research Centre (AAFC), Abbotsford Agriculture Centre (BC Ministry of Agriculture), the UBC Dairy Education and Research Centre, and the University of the Fraser Valley's Agriculture Centre of Excellence. Additionally, the BC Agriculture Council is based in the Fraser Valley, which is a network organization representing multiple agricultural industries, and several commodity-specific industry associations and organizations¹².

Economically, the Fraser Valley capitalizes on the proximity of nearby large markets, highways and other transportation (rail and air), resulting in the highest gross farm

¹⁰ FVRD website. <http://www.fvrd.bc.ca/AboutUs/Pages/DistrictStatistics.aspx>

¹¹ Fraser Valley Aboriginal Relations Committee. (2012). First Nations Relations: Resource Guide. http://leo.fvrd.bc.ca/arcgisoutput/First_Nations/Reports/First%20Nations%20Resource%20Guide.pdf

¹² British Columbia Agriculture Council <https://www.bcac.bc.ca/>

¹³ Fraser Valley Regional District. (2011). Regional Snapshot Series: Agriculture. Agricultural Economy in the Fraser Valley Regional District. <http://www.fvrd.bc.ca/AboutUs/Documents/AgricultureSnapshot.pdf>

receipts across the province, with over \$1.1 billion in 2010¹³. Agricultural production occurs across 5.1% of the region's land base (71,780 hectares in the ALR in 2012)¹⁴. This includes roughly 2,700 farms producing a variety of crops: berries, dairy, poultry, forage, mushrooms, and greenhouse vegetables^{15,16}.

Methods/Data collection and analysis approach

This project consists of three workshops held over the course of 2021 to 2022. The first workshop explores food system vulnerabilities and impacts in the FVRD. The second spatially maps and assesses food system vulnerabilities from multiple human and non-human hazard events. Finally, the third workshop identifies ways of leveraging existing (and needs for developing new) food system initiatives, programs, and assets to initiate long-term integrated resiliency planning. This final workshop aims to identify gaps and potential strategies to build local capacity. Project activities employ an emergent approach, allowing for flexibility between community concerns and needs as they arise over the course of the project.

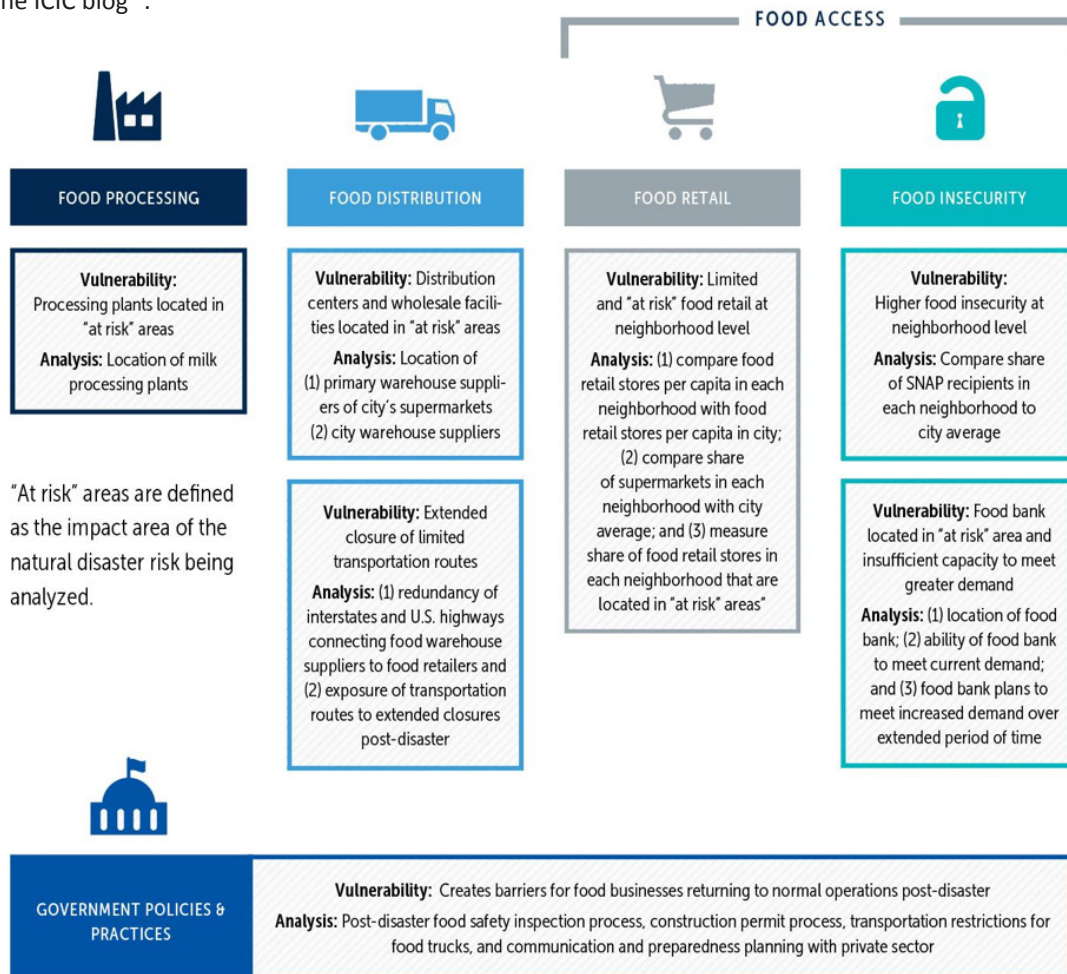
The first workshop on food system vulnerabilities and impacts in the Fraser Valley Region, was run twice, spanning 1.5 to 2 hours, using the virtual Zoom platform, over the summer of 2021 (July 29th and September 2nd), and it engaged a total of 25 participants from non-profit organizations, food businesses, local government staff and elected officials, and health authority staff (Appendix A for list of attendee organizations). The workshops were organized around the Initiative for a Competitive Inner City (ICIC) framework (Figure 2) which categorizes the food system into five different areas: food production, food processing, food distribution, food access, and government responses. The framework was modified to explore how COVID-19 impacts emerged and vulnerabilities were revealed over different time-scales as the pandemic progressed and how different adaptations and issues occurred. Each food system category was mapped across three different time-scales: short (0-3 months), medium (3-12 months), and long-term (>12 months).

¹⁴ Fraser Valley Regional District. (2011). Regional Snapshot Series: Agriculture. Agricultural Economy in the Fraser Valley Regional District. <http://www.fvrd.bc.ca/AboutUs/Documents/AgricultureSnapshot.pdf>

¹⁵ Statistics Canada, Census of Agriculture and BC Ministry of Agriculture Fast Stats, Agriculture, Aquaculture & Food, 2014

¹⁶ Statistics Canada. (2012). 2011 Census of Agriculture, Farm and Farm Operator Data, catalogue no. 95-640-XWE.

Figure 2. Initiative for a Competitive Inner City (ICIC) food system resilience frame work. Taken from the ICIC blog¹⁷.

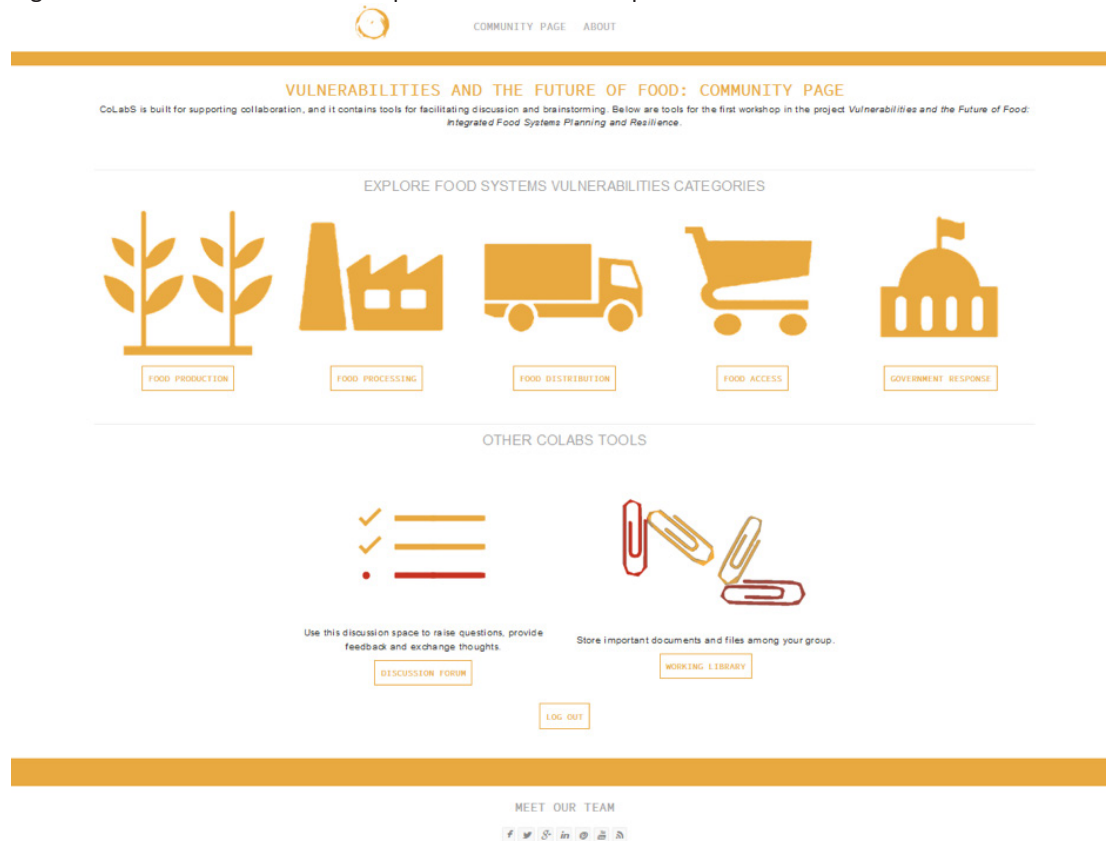


The workshop began with the facilitators introducing the agenda (Table 1) and the purpose of the workshop, which was (1) to identify food system vulnerabilities arising in the Fraser Valley region, (2) to explore how these vulnerabilities link to specific places and occurred over time, and (3) to explore research needs/gaps identifying vulnerabilities and resiliency planning approaches. Workshop participants were then organized into breakout rooms by their preference for exploring vulnerabilities in a particular food system category, and these activities were supported by the CoLabS platform¹⁸ that provided Padlet-based, digital 'working tables' for providing thoughts and comments on food systems vulnerabilities and impacts (Figure 3). Two rounds were structured so each participant could contribute thoughts to two different food system categories. Each round lasted approximately 20 minutes where participants identified and mapped food system vulnerabilities across the time series.

¹⁷Zeuli, K., & Whalen, R. (2017, January). Resilient cities require resilient food systems. ICIC Blog. <https://icic.org/blog/resilient-cities-require-resilient-food-systems/>

¹⁸Jost, F., Newell, R., & Dale, A. (2021). CoLabS: A collaborative space for transdisciplinary work in sustainable community development. *Heliyon*, 7(2), e05997. <https://doi.org/10.1016/j.heliyon.2021.e05997>

Figure 3. Screenshot of the CoLabS platform and workshop tools.



The workshop concluded with a plenary discussion, approximately 20-30 minutes, which involved a deeper dive into the impacts and vulnerabilities identified in the mapping activity. Additionally, participants were asked to identify research questions or needs that could be fulfilled over the project timeline. The discussion was organized around a series of questions/prompts that participants could answer in any order they chose (see Appendix B for discussion questions/prompts). The workshop closed with a synthesis of participants' responses, identification of next steps, including future workshops and topics, and additional proposed research activities.

Table 1. Fraser Valley Food System Vulnerability workshop agenda.

Order	Activity type	Description
1	Researcher presentation	Introductions to the project and workshop objectives
2	Researcher presentation	Food System vulnerabilities concepts and Framework
3	Researcher presentation	Demonstration of the CoLabS platform
4	Participant input	Food systems vulnerabilities timeline mapping activity, based on lessons learned from COVID-19 pandemic
5	Participant input	Discussion on food system vulnerabilities, information gaps, and research questions and needs
6	Researcher presentation	Closing and next steps

Analytical Approach

Analyzing vulnerability in the FVRD food system required identification of the impacts experienced by participants during the COVID-19 pandemic. While other vulnerability and resiliency assessments rely on historical data, what is unique about this approach is it draws from lived experiences of community members and their fellow community members during a shock event. Participant responses were organized across food system components and then mapped across a simple timeline. We then looked at the characteristics of people, places, infrastructure, resources, programs, and governance networks to assess susceptibility to the pandemic and its impacts.

Fraser Valley Region Food System Vulnerabilities & Impacts Identified

The vulnerabilities and impacts identified across the FVRD are organized below into five different categories: food production, food distribution, food processing, food access, and government responses. For each section, participant responses are synthesized and mapped across a timeline ranging from short-term (0-3 months), medium-term (3-12 months), and long-term (over 12 months). Two caveats are mentioned here in looking at responses, (1) the workshops occurred over the summer months so recruitment of farmers and food processors was limited, and (2) participants struggled to identify medium-term impacts for some of the categories, this could be due to an inability to recall events during that time or an extension of short-term and/or long-term impacts (i.e. impacts that continued from the beginning of the pandemic to present).

Food Production

The discussion on food production primarily focused on labour issues, in particular with disruptions in obtaining temporary seasonal farmworkers from the Seasonal Agricultural Workers Program (SAWP). Additionally, this attention to labour supply raised public awareness of the social issues associated with the SAWP. Supply chain disruptions, shifts in demand, and lack of coordination were also noted to contribute to over-supply of some products resulting in food waste.

Participant Quotes:

“...we often rely on, not necessarily well paid labor to provide our food products, I think is something we need to look at more seriously from a food justice lens and a health equity lens and just a human rights lens. It’s really not something we should be proud of.”

“Cross border travel restrictions highlight the complexity of labour regulation issues farms and agricultural workers face concerning; cash economies, minimum wage, self-contracted workers, income tax evasion, workers compensation, unemployment insurance, business licenses, work permit requirement and immigration.”

Table 2: Fraser Valley Food Production and Impacts Mapped Across Time.

Short Term (0-3 months)	Medium Term (3-12 months)	Long term (>1 year)
<p>Labour supply issues with the temporary farmers through SAWP.</p> <p>Farm disruptions with COVID-19 outbreaks among workers, inability to support farmers/labourers, creating shortages of some foods.</p> <p>Upstream supply chain disruptions resulting in oversupply in some cases (e.g. milk).</p>	<p>Continued issues with labour supply with SAWP and among South Asian-Canadian farmworkers, and harvesting in Fraser Valley. Drew attention to complex interplay of labour regulation issues with farms and agricultural workers.</p> <p>Consumers supporting restaurants with eating in – impacted healthy eating behaviours.</p> <p>Shifts in demand (restaurants and institutions) contributed to ongoing food waste with oversupply.</p>	<p>Continue to experience labour impacts and shortages resulting from issues with temporary housing, continuation of closed/restricted borders, and outbreaks on farms/food processors.</p> <p>There is an increasing public awareness of poor labour conditions in food production.</p> <p>Increasing concerns about climate change and ability to supply food to health facilities that meets existing infrastructure and needs.</p> <p>Food system is uncoordinated and is perceived to be getting worse.</p>

Food Processing

Participant Quotes:

“Land supply – space needed for processing local farm products. Competition with other industrial uses.”

“Many food programs want to process ingredients (for example, school lunch programs) and this can be difficult because it is never clear what will be available when.”

Food Access

Participant Quotes:

“I would say the pandemic really revealed the disproportion of how our marginalized communities, affected in the Fraser Valley, specifically with

the indigenous and South Asian community. Specifically for Abbotsford. Having those access to services was really hard getting the food.”

“...schools were severely impacted with covid, with the very immediate kind of shutdowns, so a ton of students were without maybe potentially their only meal of the day, definitely, maybe one of the few, if they come from a lower income region.”

Table 5: Fraser Valley Food Access and Impacts Mapped Across Time.

Short Term (0-3 months)	Medium Term (3-12 months)	Long term (>1 year)
<p>Generally noted an increase in new clients and users of food programs with marginalized populations less able to access food banks (e.g. contactless pickup, limited hours, physical isolation requirements).</p> <p>Additionally, seniors and people with mobility challenges experienced increased challenges with food access due to unfamiliarity or inability to use digital platforms/devices.</p> <p>Disruption in labour supply with volunteers in food banks and programming with the general age of volunteers and risk of illness.</p> <p>Funding for increased demand was a challenge identified by participants.</p> <p>As noted earlier, lack of food supply in food retailers impacted food access.</p>	<p>Participants noted an increase in individuals growing their own food; however, this was coupled with an increase in demand for community garden plots where plots are unavailable and many gardens have long waitlists.</p> <p>Continued loss of volunteers through two pathways: i) many volunteers are seniors who are vulnerable to the pandemic and were more at risk/concerns for safety, and ii) school district, and other institutions, protocols around outside organization and community volunteer access to schools. This loss of volunteers led to increased strain on school/organization staff and increasing costs.</p> <p>Participants noted the inability to social distance on public transportation and transit disruptions reduced residents' access to food retail.</p> <p>Folks observed an increase in prepared/take away foods and an associated increase in unhealthy eating (e.g. more processed foods).</p>	<p>As the pandemic continued, participants noted the increase in food prices.</p> <p>For FV residents without access to the internet, the ongoing closure of libraries limited access to information exacerbated by a lack of knowledge of where to find information.</p> <p>Ongoing demand for funding school lunch programs (via private charity funding), these requests increased during the pandemic.</p>

Government Responses

Participant Quotes:

“...school staff were, in my experience, from what I heard from my youth workers and teachers that I work with on a day to day basis, that they're

“kind of left in the dark and they’re just left to figure it out on their own.”

“Flood of fiscal funding to be spent by the end of fiscal year – pre-pandemic, the federal government grants to Food Bank Canada contributed <2% of their running costs (Food Banks Canada, 2019). During the pandemic Food Bank Canada visit rates increased in some areas by 25% in March 2020. AAFC Funding was over 200 million with the requirement to be spent in a year was probably not the most strategic response.”

“CERB – negatively affected the workforce re part time and casual positions could make more money not working which in turn may have impacted food production facilities”

Table 6: Fraser Valley Government Responses and Impacts Mapped Across Time.

Short Term (0-3 months)	Medium Term (3-12 months)	Long term (>1 year)
Supply chain impacts from lack of farm workers arriving from SAWP and food shortages in food retailers.	As income supports continued, food production/retailers were negatively impacted as part-time/casual positions could not be filled.	Government funding for food access programs has ended.
Food security impacts around food shortages, job loss, and school closures (impacting children/youth).	Associated impacts on financial stability from unemployment and reduced working hours.	Food businesses across the supply chain continue to experience labour shortages.
Gap in timing of federal income supports and immediate needs of the recently unemployed and most vulnerable (people experiencing poverty, seniors).	Further impacts associated with increased cost of food. Funding to non-profit/ charitable organizations had restrictions and deadlines impacting delivery of food programming. Falsely assumed that organizations had the capacity and support to create/scale programs.	

Perspectives on Fraser Valley Region Food System Vulnerabilities & Impacts

1. What has the COVID-19 pandemic revealed about the vulnerabilities in the Fraser Valley Region?

Participants noted that food insecurity impacts were higher among South Asian, Indigenous communities, seniors, and youth. For instance, South Asian community

members confronted a lack of culturally appropriate foods when accessing food bank services (e.g. halal meats). Youth were identified as experiencing more acute food access issues early on in the pandemic. For those accessing meal programs through schools, children and youth relying on these programs were described as particularly vulnerable to food access impacts from school closures. In addition, unemployment for youth was discussed in the context of how many youth work in food services in entry-level positions with precarious employment.

For seniors, challenges arose with providing food and medication to socially and physically isolated people. This additional workload often fell on social workers, exerting stress on social infrastructure. Additionally, as many seniors are volunteers at food banks and meal programs, and are considered at greater risk of illness, the pandemic reduced the capacity of food banks to meet an increased demand for food services. Similarly, people living with disabilities were described as experiencing additional fears of the pandemic, misinformation, and limited ability to access and make sense of information. Often, people living with disabilities would rely on social workers and non-profit staff to physically check-in and drop off food and other basic needs. However, it was noted that staff would frequently be challenged by capacity issues, sometimes only being able to meet a person once per week. Participants also identified that the pandemic exacerbated mental health issues, particularly for those with complex disabilities.

Participants observed that peoples' eating habits shifted during the pandemic, with a lower emphasis on nutrition, particularly among food bank users. They noted an increase in demand for ready-made or pre-packaged foods. This led to a discussion on the concerns around the relationship between affordability and nutrition, with participants noting the growing divide in socio-economic status (e.g., wage gap) and that less nutritional foods tend to be less expensive. These characteristics are anticipated to lead to long-term impacts on health as the community ages.

Underemployment and unemployment impacted many families and individuals. This was identified as exacerbating pre-existing stressors for low-income families and individuals, with an increase in barriers to accessing food and social services. Small businesses and family operated producers and retailers were impacted, with closures and diminished hours of operation being commonplace. Environmental health officers noted that a drop in capacity has impacted the ability of food businesses in meeting their health and safety standards.

For agricultural producers, participants noted that there was an increased cost for agricultural inputs (equipment, technology, building materials). Such comments relate to the aforementioned impacts of the pandemic on labour force availability, challenges in bringing in workers internationally, and the reliance on international labour for agricultural production. Some participants identified that farmers were

unsure if they were going to plant for the season given the uncertainty around supply chains.

Among non-profit and charitable organizations impacts arose from the loss of volunteers coupled with higher rates of staff burnout and fatigue. Social workers identified compounding impacts from the ongoing fentanyl crisis, climate change, the residential school findings, and the pandemic. Participants described being unprepared for these multiple compounding effects and in many ways, the nature, complexity, and challenges of their jobs have changed enough that they feel as if current circumstances have required 'learning a different job'. These impacts were also felt by school staff as they struggled to figure out how to serve meals while meeting district-level and health protocols. Information flows between students and teachers were more challenging with limited physical access to schools. This led to participants identifying a general disconnect between front-line workers and collaboration between various community organizations across the region and bringing timely information for developing appropriate government policy and advocacy responses.

Participant Quotes:

"We have a growing divide in terms of socioeconomic status in our community...what I see happening is that cheap food is the food that is the least nutritional.... I anticipate, down the road, that it will have systemic effects on the morbidity of people as they get older. And that will cost us more in terms of our systems. So I'm really concerned about the relationship between affordability and nutrition."

"...highlight the fentanyl poisoning crisis...preceding the pandemic, and then climate change, and then thinking about what's going on currently in terms of bodies being uncovered related to residential schools. All of those are interconnected and it's compounding impacts. Yeah, I think the COVID pandemic has had a massive impact on folks providing the kind of service I provide. But I think the biggest burden continues to always be on our client base."

"...a lot of fear and information came so quickly about the pandemic and what was happening and when you should leave and when you can't, what you should do. I still have a couple of people that have still not exited their home in almost 17 months. They have not left their home because they're too afraid. And I would get them to tell me what was in their cupboard, or did they have any food, and the amount of times we would drive by and just drop off something at the doorstep..."

“Emergency preparedness is something that we need to work a little bit more. So education through how much food is required for one week to survive, or two weeks, basically, because most of the cases were put into 10 days. Isolation for 14 days is the context.”

2. Who is minimally impacted? What was minimally impacted?

Participants identified various factors where the corporate food sector (e.g. Costco, Walmart) may have benefited from the pandemic with their global supply chains and that low/fixed income folks are the main consumers for these retailers. This is coupled with additional ideological challenges where, generally, people do not understand food sovereignty and do not see food as a human right. Participants note that this lack of understanding is a barrier to food system change and is coupled with those who are benefiting most from the current food system. Additionally, participants identified people as less impacted who have economic privilege, with stable internet access, credit card to purchase online, transportation to the grocery store, and able to afford take-away food retailers.

Participant Quotes:

“...the corporate food distribution centers like Wal-Mart and Costco, I don't see they were hurt at all. I think they actually benefited from the global food supply chain. And that's sad because if you look at a lot of consumers that shop at Wal-Mart, there are marginalized people and they're the ones who had to pay more.”

Fraser Valley Community Research Needs and Gaps

We asked participants what kinds of information was needed, with respect to various questions, tools, practices, policies, plans, etc., for best supporting long-term food systems resiliency planning in the region. Discussions were facilitated on missing voices and research needs/gaps. Participants highlighted the absence of people with lived experience, especially those facing poverty and food insecurity both in identifying the impacts and vulnerabilities, the strategies employed during the pandemic, and also in identifying what is needed to change. Participants emphasized the importance of ‘bottom up’ approaches to achieve resiliency, and highlight issues around the absence of participants representing food producers and foreign workers (temporary foreign workers in food retail and processing and seasonal agricultural workers in production). Based on these comments, there appears to be a clear need to employ a social justice lens when addressing issues of food justice, health equity, and human rights.

Questions that were raised by participants ranged from examining barriers to integrating local food production with distribution/retail. Participants also challenged the persistence of food charity as a long-term solution to hunger. These participants identified a need for exploring questions around ways for raising income and how to include the government in food security discussions. Similarly, participants sought research examining how to increase consumption of nutritional foods among low/ fixed income folks, with strategies addressing the affordability of food and the reliance on employment for food access. Others noted the importance of examining other initiatives and practices. They identified a need for a database, or resource library, where similar issues have been addressed across British Columbia and in similar contexts nationally and internationally.

Participant Quotes:

“What’s preventing our locally grown food from entering the food banks, local supply chain, and the national supply chain? What’s stopping [local producers and manufacturers] from scaling up and replacing imports on the grocery shelves?”

“...incorporating the people that live day to day with poverty and food insecurity, you know, what is it that they feel would help or change? Instead of the top down approach that we’ve been seeing I really feel like a resilient food system is a connected bottom up food system.”

Conclusions, Implications & Next Steps

The Fraser Valley Region Food System Vulnerabilities & Impacts workshops demonstrated a range of impacts and vulnerabilities arising from the COVID-19 pandemic, from disruptions to food supply chains, disproportionate food insecurity impacts among seniors, youth, South Asians, and First Nations’ communities. Throughout the workshops, participants emphasized the importance of linking food production and processing to local food access opportunities, both retail (e.g. restaurants, catering, institutional procurement, and markets) and charitable (e.g. food banks, community meals). Participants also discussed additional, compounding shocks and how they might exacerbate vulnerability and impacts. For example, the region experienced multiple extreme heat days and wildfires impacts in 2021, coupled with the discovery of mass graves on residential school sites, along with the ongoing effects of the pandemic.

Participants noted the need for government intervention in emergency preparedness and in resiliency. Greater efforts at cross-sectoral collaborations are needed across the FVRD and also with higher levels of government and with neighbouring regions.

The food system is revealed to be disjointed and disconnected, which worsened over the pandemic, impacting those who are already experiencing hardship and exclusion from decision-making spaces. Questions are raised around the role of different levels of government, in particular with incentives and funding provided to producers, health authorities, and food suppliers (e.g. non-profits/charities).

Next steps for the project will focus on building on this workshop by delivering a survey to Fraser Valley community members to broaden participation in the food systems vulnerability exploration and to address key questions around gaps and needs for developing a more resilient food system. A follow-up workshop will be conducted that will dive deeper into the characteristics that render different aspects of the food system (people, places, infrastructure) vulnerable. It will spatially map these vulnerabilities across the region to show where targeted areas for intervention are needed and where key gaps may exist. Additionally, the workshop will synthesize and identify where current efforts are occurring and where these efforts might be scaled up and out across the region. Part of this work will include a resiliency assessment: i) pre-pandemic functioning (how well, or not, was the food system performing pre-pandemic); ii) how pandemic impacts were amplified by social, economic, and physical vulnerabilities; iii) level of preparedness and perceived effectiveness of responses for the pandemic and future shock events; and iv) the adaptive capacity (e.g. strategies, programs, people) of the Fraser Valley food system to recover from these human and non-human hazard events.

Acknowledgments

We gratefully acknowledge the contributions of the workshop participants and project collaborators. The research was supported by a Social Sciences Humanities Research Council (SSHRC) Partnership Engage Grant, and the work was conducted in territory of the Stó:lō Nation.

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Appendices

Appendix A: Attendee Organizations Represented at the Fraser Valley Food System Vulnerability Workshop

Food System Organization Name
University of the Fraser Valley
Fraser Valley Regional District
Archway Community Services
Breakfast Club of Canada
City of Abbotsford
City of Mission
Community Futures/FRESH Network
Fraser Health Authority
Fraser House Society
Hope Community Services
Mission Community Foundation
Mission Community Skills Centre Society
Mission Food Coalition/FRESH Network

Appendix B: Fraser Valley Food System Vulnerability Workshop - Discussion Questions

- **What has the COVID-19 pandemic revealed about the vulnerabilities in the Fraser Valley Region?**
- **Who is minimally impacted? What was minimally impacted?**
- **Who is most vulnerable/impacted? What is most vulnerable/impacted?**
- **What gaps in information about food system impacts are revealed? What are the drivers of these impacts? Whose voices are missing?**
- **What gaps in information about food system resilience are needed? Whose voices are missing?**
- **What kinds of questions and research needs might you need to contribute to long-term/integrated food system resiliency planning?**

Appendix C: Fraser Valley Food System Vulnerability Workshop - Padlet Responses from COLABS Platform

Food Production

Vulnerabilities and the Future of Food Workshop #1

Short Term (0-3 months)

Systems implementation – can we implement system quickly to reduce spoilage? (e.g. heat dome, over-supply). Also, response to other challenges, such as

quarantine and loss of employment/livelihood?

Supply – over-supply when supply chains are disrupted; how do we re-route this over-supply to places in need?

Farm/processors COVID-19 outbreaks resulted in closures of workplaces – likely created shortages of some foods

Labour pool – Temporary Foreign Workers (as an example) unable to travel to BC (and beyond) to participate in food growing/farming. Later on, challenges managing COVID outbreaks in this population. Revealed dependence on this population in farming, socio-economic vulnerabilities within this group. Beyond just short term.

Medium Term (3-12 months)

Systems shocks for piece labour harvesting – preventing cross-border travel halted the Seasonal Agricultural Worker Program (about 6000- Mexican workers to BC); halted the South Asian harvesters in the Fraser Valley (Taylor K, 2019); labour shocks like this put immediate strains on the business model of farms and businesses that developed in concert to government programs

The pandemic highlighted inherent food system sustainability issues with specific fruit crops. For example, blueberries have the lowest piece pay-rate (Taylor K, 2019) and was faced with increased vulnerability of crop share waste

Cross border travel restrictions highlight the complexity of labour regulation issues farms and agricultural workers face concerning; cash economies, minimum wage, self-contracted workers, income tax evasion, workers compensation, unemployment insurance, business licenses, work permit requirement and immigration.

It is a catch 22 with the consumers helping out with the restaurant industry that suffered the most through the pandemic, ordering in, instead of eating in. It will take some time for the consumers to revisit their eating habits as well as eating healthy.

Supply 2 – mismatches in supply and demand due to reduce supply from earlier shocks

Challenges adapting to rapid supply and demand changes – changes in consumption patterns during the pandemic – for example, initially less restaurant consumption or school-based (cafeteria) consumption led to dumping of products/waste instead of adaptability to send products elsewhere.

Long term (>1 year)

Labour impacts – temporary housing (crowded, inadequate, etc.); continued closed borders; outbreaks on farms and food processors

Public awareness of conditions – wide-spread understanding of poor labour conditions

Labour shortages & compounding factors – concerns about economic viability and labour shortages

Supply to health system – ability to provide local food and reliable supply to health facilities (particularly in the face of climate change); barriers – food items are coded to provide right food to right patients (e.g. allergies, heart problem, diabetes, etc.), good from safety perspective, but lack of flexibility, how do we link/align this with local supply? (currently exploring this option)

Freshet and impacts to farms – climate change related concerns

Connecting institutions to food supply – addressing barriers – no easy links; streamlining; need for a networking platform; need for waste-to-food platforms for farm supply (e.g. Food Mesh).

Cross sectoral collaborations and relationships – decline in these collaborations like justice system, health system, social service system, our food system is already disjointed and unconnected, just getting stronger.

Supplying health authorities – apparently Alberta Health has a process

Food Processing Vulnerabilities and the Future of Food Workshop #1

Short Term (0-3 months)

Government payouts – if they took the kids who were getting \$2K per month to stay home and put them in the field, we'd have a lot more groceries.

Food prices increases

Medium term (3-12 months)

Long term (>1 year)

Global supply chain – when we are so heavily connected to the global supply chain, it hinders our local food chain.

Effect standards – we need local or provincial standards so local farmers and processors can be part of a larger chain

Value-add food processing on farm – more supportive government policies (all levels)

Local food distribution – difficult to distribute food locally

Land supply – space needed for processing local farm products. Competition with other industrial uses.

Many food programs want to process ingredients (for example, school lunch programs) and this can be difficult because it is never clear what will be available when.

Serviced land – consider servicing needs for food processing

Distribution – intercepting excess food from landfill – food mesh is an example

Cooperative selling – rules around collective selling prevent innovation, partnership and ease for the consumer.

Food for processing - Many food programs want to process ingredients (for example, school lunch programs) and this can be difficult because it is never clear what will be available when.

Food Distribution Vulnerabilities and the Future of Food Workshop #1

Short term (0-3 months)

Physical distribution - Foods dropped off at loading dock, workers not willing to go further into hospital due to pandemic

Restaurant Closures - At the start of covid caused some food shortages when food distribution centres stopped carrying inventory of some items due to restaurants no longer requiring particular food items, which in turn caused food item substitutes needing to be sources for healthcare.

Inflexibility - Challenges with connecting diverse local supply to institutional demand (see Production)

Supply chain issues - Food stuck on trucks; Lack of drivers; Stuck at border

Medium term (3-12 months)

Long term (>1 year)

Challenges procuring local - Health care procurement policy; Lack of specific/ needed supply (need for diversity of food production); challenges with seasonality and consistency; need for flexible policies

High expenses for local foods- [Link with Government Response - incentives; need for reducing silos; locked-into contracts, need for local BC contract; need for timely responses (slow moving turtles!)]

Networks and connectivity - institutional systems do not have direct relationships with individual farmers; supporting local agriculture and farmers; long-term contracts

Awareness and Orientation - Many people aren't aware of their options regarding low-cost or free food programs. This lack of knowledge was particularly prominent in people who were suddenly unemployed and found themselves struggling.

Consumer access to resources- Children, youth, and elders often struggle to access public food programs and sources. Rising fuel and transit costs make this even more challenging and affect more people.

Surplus distribution - Large food producers and retailers (e.g. Saputo and Save-On Foods) often had surplus food to distribute. They save on disposal costs and also help their communities, but there are real capacity issues (esp. cold storage) in our food banks. They often need to divide up the surplus food, but that is hard to do in real time because there is no quick way to connect with everyone.

Food Access Vulnerabilities and the Future of Food Workshop #1

Short Term (0-3 months)

Funding - Very rushed process, can't make sustainable decisions when so rushed.

Increased capacity - organizations have large influx of new clients

Marginalized populations less able to access food banks

Changes in policies for food banks, limited hours, contactless pick-up and need for quick adaptation made it more challenging for some marginalized folks to access. Their need to socially isolate exacerbated this.

Volunteers - COVID caused a disruption in the volunteers. This may be a long term concern if available volunteers have found other areas to give their time

Funding - Hard for grassroots organizations to get funding during pandemic

Access for seniors - Seniors and people with mobility challenges has difficulty with access to food - particularly with being unfamiliar with using digital platforms

Availability of food - Grocery store shelves were bare, difficult to get food to those where the availability of food wasn't there during the pandemic

Medium term (3-12 months)

COVID -19's Impact on School Breakfast Programs - School districts being very strict on allowing outside organizations into schools, leaving some programs unable to rely on community volunteers to prep & deliver food, bringing strain on the school staff & increasing costs. Program attendance was also lower across the board due to students learning from home, meaning they have lost their access

to at least 1 free meal per day.

Lack of Volunteers

Seniors - Lack of mobility; Lack of knowledge for online ordering

Safety of volunteers - Seniors who are vulnerable to disease were not able to or it was not safe for them to volunteer during the pandemic

Impacts to public transportation - Reduced access to food due to disruptions to or fear of using public transportation systems

School Lunch Programs - Covid protocols have impacted the delivery of food to students. Money that was dedicated to food had to be spent on approved containers.

Local Fresh food markets - Supply and demand concerns

Costs associated with making ends meet for the farmers

Increase in community gardening

Community garden availability - Increase in demand in community garden space, full or waitlists for plots

Food preparation habits - It is a catch 22 with the consumers helping out with the restaurant industry that suffered the most through the pandemic, ordering in, instead of eating in. It will take some time for the consumers to revisit their eating habits as well as eating healthy.

Cooking habits - Habits changing during COVID; People eating at restaurants and pre-packaged foods; People supporting restaurants decreasing home cooking habits; People changing preferences when accessing food banks (pre-packaged, instant meals)

Long term (>1 year)

Cost - Price increase and I expect that when the costs level out, the price will not decrease

Digital Literacy

Libraries closed - Lack of knowledge to find resources when they are on-line; Lack of technology; Access to internet

Transportation routes - Keeping transportation routes open to rural communities was very valuable

Extended Food Programs - We've noticed an increase in the requests for funding for school lunch programs; pre-pandemic but increased during pandemic. Long

term: perhaps start educating them in early school years on domestic planning. Home/life skills are no longer stressed, it should be.

Government Responses Vulnerabilities and the Future of Food Workshop #1

Short Term (0-3 months)

Closing of borders negatively impacted availability of farm workers for planting and harvesting

Recognition by Federal government to support food access programs (i.e. Food banks)

Shortage of food coming to our community. So, when we tried to order food for our food bank, our stores could not provide it. Not sure if this is government issue but may be related to border closure

It took some time from the Income Stabilization supports to transfer into actual cheques into the hands of those laid off and most vulnerable

School closures increased food insecurity for children who access meal programs

Awareness – awakening of the Canadian consumer around food insecurity and food sovereignty and we are wanting to see a pro-local supply chain developed

Community fridges as a scalable response – due to the lack of volunteers

Medium Term (3-12 months)

Employment programs – the government supported the purchasing of chrome books to allow youth at risk to participate in employment services from home

CERB – negatively affected the workforce re part time and casual positions could make more money not working which in turn may have impacted food production facilities

Changes to financial stability with reduced hours of work and job loss

Government funding felt rushed – increase in federal funding, however it felt rushed as we needed to spend the money within a couple of months

Seniors – it took too long for government to get the \$500 into the hands of our seniors given the cost of food increases at the grocery stores and the \$500 wasn't enough

Food has become expensive – because of our dependence on global supply chains, the cost of food skyrocketed, and we became victims of profiteers (there were no controls on price or supply) i.e. milk couldn't be found on shelves, but local farmers were told they didn't have a market. Someone made money and it

wasn't the farmer

Funding distribution from government through non-profits – more time to be strategic and determine the logistics about how to support. Strict timelines for fund delivery. 1st priority was schools, 2nd was food programs. Many received funding but no capacity building or support in creating tailored programs.

Flood of fiscal funding to be spent by the end of fiscal year – pre-pandemic, the federal government grants to Food Bank Canada contributed <2% of their running costs (Food Banks Canada, 2019). During the pandemic Food Bank Canada visit rates increased in some areas by 25% in March 2020. AAFC Funding was over 200 million with the requirement to be spent in a year was probably not the most strategic response.

Long term (>1 year)

Support from government to food access programs has pretty much ceased

Still difficulty in securing labour

Food processor typically hire our most vulnerable and government supports systems withdrew them from the labour pool – thereby stress the supply chain

Government intervention – will government incentives be provided to producers, health authorities and suppliers (particularly non-profits/charity)?

Best before dates – government needs to do better at informing consumers that 'best before' dates are not expiration dates. More food would be kept from the waste stream if they did so.

Informing community about liability – most people/business don't realize that they can donate food without concern for being sued. This information needs to be widely published

Incentives – more incentivization is needed to encourage donations of food/low cost food sharing/ in-kind contributions (e.g. storage space; trucking capacity; marketing; capacity). The marketplace already has the infrastructure to respond quickly if there are incentives to do so.