

Food Systems and Pandemic Lessons Learned

Advancing a Food Systems Approach to Prioritize Healthy People and a Healthy Planet



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National Academies of Sciences, Engineering, and Medicine (NASEM)

March 9, 2023

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SCHOOL OF PUBLIC HEALTH

NUTRITIONAL SCIENCES PROGRAM

UNIVERSITY of WASHINGTON



The University of Washington acknowledges the Coast Salish peoples of this land, the land which touches the shared waters of all tribes and bands within the Duwamish, Puyallup, Suquamish, Tulalip and Muckleshoot nations.



**Multiple global crises
are impacting food systems**

Climate change and COVID-19

- **Simultaneous occupational health risks** (e.g., farmworkers masking for both COVID-19 and wildfire smoke)
- Climate-related events have **hindered pandemic responses** ¹
- Climate change implicated in the **emergence and spread** of zoonotic diseases in general ^{2,3,4}

(1) Fromm I et al., Social, environmental, and COVID-19 pandemic-related effects on women's food security and health in Honduras. SN Social Sciences. 2022 Sep;2(9):1-4. (2) Lorentzen HF et al., COVID-19 is possibly a consequence of the anthropogenic biodiversity crisis and climate changes. Dan Med J. 2020 Apr 28;67(5):A205025. (3) Mishra J et al., Linkages between environmental issues and zoonotic diseases: with reference to COVID-19 pandemic. Environmental Sustainability. 2021 Sep;4(3):455- 67. (4) Sachan N et al., Effect of climatic changes on the prevalence of zoonotic diseases. Veterinary World. 2010 Nov 1;3(11):519.

Climate change and conflict

- Potential links between climate change and conflict due to **resource scarcity** (and its social and economic consequences) ¹

Conflict and COVID-19

- The pandemic may have **attenuated or intensified** conflict, depending on the context ^{1,2,3}
- **Health systems infrastructure** is limited in high-conflict settings ⁴
- **Gender-based violence** affected by shifting social & economic dynamics in households ^{5,6}

(1) Bloem JR, Salemi C. COVID-19 and conflict. World development. 2021 Apr 1;140:105294. (2) Ide T. COVID-19 and armed conflict. World development. 2021 Apr 1;140:105355. (3) Lehrs L. Conflict and cooperation in the age of COVID-19: the Israeli–Palestinian case. International Affairs. 2021 Nov;97(6):1843-62. (4) Dhabaan 2020 Dhabaan GN, Al-Soneidar WA, Al-Hebshi NN. Challenges to testing COVID-19 in conflict zones: Yemen as an example. Journal of global health. 2020 Jun;10(1). (5) Caridade SM, Vidal DG, Dinis MA. Climate change and gender-based violence: outcomes, challenges and future perspectives. In: Sustainable Policies and Practices in Energy, Environment and Health Research 2022 (pp. 167-176). Springer, Cham. (6) Okpara UT, Anugwa IQ. Harms to Community Food Security Resulting from Gender-Based Violence. Land 2022, 11, 2335.

**The pandemic has revealed
important connections between
food systems and health equity**

UW School of Public Health: food systems team and collaborators



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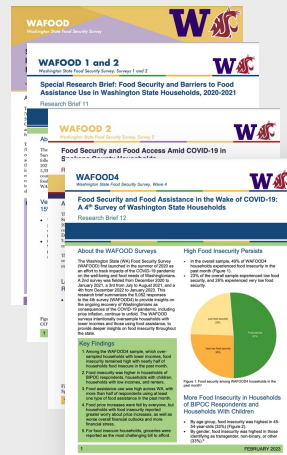


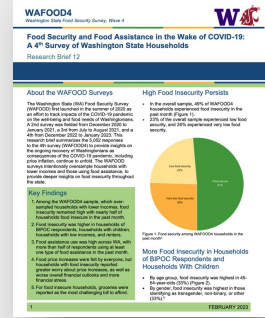


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Food systems lessons from the pandemic: focus on Washington State

Findings from WAFOOD4, a fourth round of household food security surveys fielded among Washington State residents in December 2022 – January 2023 (n=5054 households from all WA counties, oversampling for lower-income households):

- > **High food insecurity persists:** 49% of WAFOOD4 households experienced food insecurity in the past month
- > **Disproportionate impacts:** More food insecurity in households of BIPOC respondents, households with children, renters, and lower-income households
- > **Strong socioeconomic gradients in food assistance use:** Higher among respondents with lower income, less education, and those working in consumer-facing and food-based services
- > More common among households experiencing food insecurity:
 - Reporting **groceries as the hardest bill to afford**
 - **Financial stress**, lower economic wellbeing
 - **Changing where and what they ate** to cope with food price increases
 - **Concern about food price increases** within the next 6 months



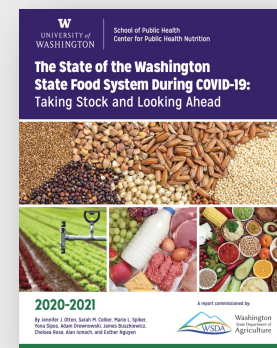
To access all
**Washington State
Food Security Survey
(WAFOOD) briefs**,
scan the QR code with
your phone's camera
or visit:

tinyurl.com/WAFOOD4



Food systems lessons from the pandemic: focus on Washington State

Description of data source	Sector	Timeframe	Participants	Organizations
Washington State Food Security Surveys (WAFOOD)	Food access	June-July 2020 Dec-Jan 2020/21 July-Aug 2021	2,616 3,509 3,982	UW, WSU, TCC
WA State Tribal Food Survey (WATRIBAL)	Food access	Mar-Apr 2021	196*	NWTEC, UW, TCC
Assessing the Impact & Feasibility of WIC Remote Services & Expanded Food Options (WAWIC)	Food access	Mar-Apr 2021	92	UW, WA WIC
Work and Health among Early Care & Education Workers in WA during the COVID-19 pandemic	Food access	Feb-Mar 2021	2,442	UW, WA DCYF, Child Care Aware
COVID-19 Farmworker Study —Food Access in WA	Food access	June-Dec 2020	295	Numerous partners**
WA State Farm COVID-19 Impacts & Adaptations Survey (WAFARM)	Food production	Dec-Jan 2020/21	265*	UW, WSU, WSDA
WA State Agricultural Producer COVID-19 Economic Impact Survey (WSDA EI)	Food production	May 2020	789	WSDA
Interviews with small, direct-marketing farmers in western Washington (WWSDF)	Food production	Aug-Oct 2020	15	UW
Interviews with food supply chain and food system professionals	Supply chains	Sep-Oct 2020 August 2021	17 17	UW, WSU, WSDA



To access the **State of WA Food Systems report**, scan the QR code with your phone's camera or visit:

tinyurl.com/WAFSreport



Abbreviations: University of Washington (UW), Washington State University (WSU), Washington State Department of Agriculture (WSDA), Tacoma Community College (TCC), Northwest Tribal Epidemiology Center (NWTEC). *Surveys with pre-survey stakeholder interview components as well. Participant numbers = survey respondents only.

** UW, Our Valley, Our Future, CIELO, Community to Community Development, Café, El Proyecto Bienestar—NCEC / Radio KDNA

Food systems lessons from the pandemic: focus on Washington State

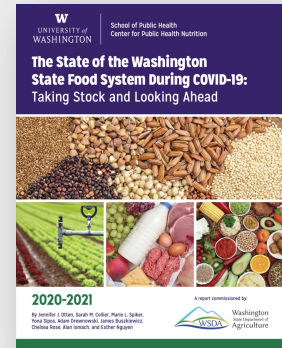
The COVID-19 pandemic
**strained, but did not
break**, Washington
State's food system

Stress points:

- **Major shifts** in consumer demand (away from schools/ restaurants, towards supermarkets)
- **Just-in-time** supply chains
- **Lack of diversification** and flexibility in sales channels
- **Infrastructure limitations** (e.g., packaging, meat processing)

Adaptation enabled by:

- **Diversity and redundancy** → ability to pivot at multiple scales
- Existing and new **relationships** enabled innovation (social capital)
- Strong **public agency** response



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Food systems lessons from the pandemic: focus on Washington State

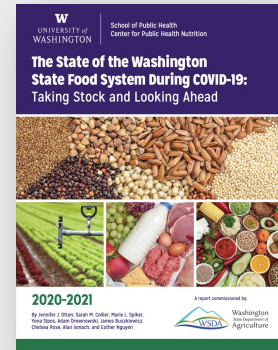
Impacts of the COVID-19 pandemic were **felt unevenly** by Washington State food producers and households

Food production & supply chains:

- Food producers were not impacted evenly. Differing abilities to pivot. **Adaptation is costly!**
- Many permanent restaurant **closures** (2,000+ in WA alone)

Food access and households:

- **Food insecurity and food assistance use** dramatically increased and remained high
- **Disproportionate impacts** among lower income households, renters, families with children, people of color, veterans
- Hunger relief networks under a **myriad of stressors**



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Food systems lessons from the pandemic: focus on Washington State

The pandemic drew much-needed attention to our food and agriculture sectors, which are **under-valued and under-protected**

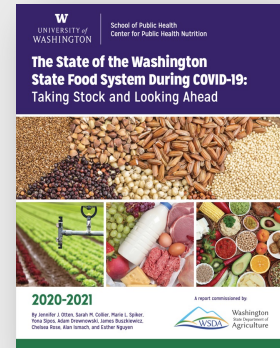
Adaptations across our food production, distribution, and assistance systems were widespread; **some of these adaptations should be maintained**

Examples of adaptations:

- **Food production:** New marketing channels and networks
- **Supply chain:** Increase in online sales and delivery (but not equally accessed by all)
- **Food access and nutrition:** Emergence of new food access and service channels (e.g., mobile food pantries, virtual WIC visits)¹

To maintain these adaptations, we need:

- To know **which ones worked**
- Recognition of regionally-, locally-, and **community-held expertise**
- Investments and **policy change**



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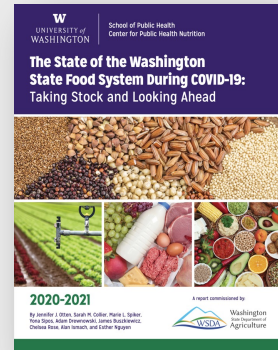
(1) Morris EJ, Quinn EL, Rose CM, Spiker M, O'Leary J, Otten JJ. Insights from Washington State's COVID-19 response: A mixed-methods evaluation of WIC remote services and expanded food options using the RE-AIM framework. Journal of the Academy of Nutrition and Dietetics. 2022 Dec 1;122(12):2228-42.

Food systems lessons from the pandemic: focus on Washington State

We can leverage the rebuilding process by being open to change and recognizing the **importance of systems**

Strategies:

- Deliberately transition from a patchwork of short-term fixes to systems that address **root causes**
- Strategic investments in food systems **infrastructure**, paying special attention to equity
- Cultivate **networks** that leverage **community-held expertise**
- Recognize that **one size does not fit all**; there's resilience in diversity
- Document and build on successes *and* failures. **Invest in data** collection, visualization, and critical conversations on how data can represent and support affected communities



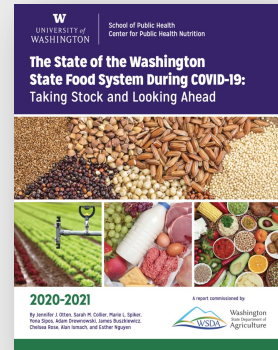
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Food systems lessons from the pandemic: focus on Washington State

- > The COVID-19 pandemic **strained, but did not break**, Washington State's food system
- > Impacts of the COVID-19 pandemic were **felt unevenly** by Washington State food producers and households
- > The pandemic drew much-needed attention to our food and agriculture sectors, which are **under-valued and under-protected**
- > Adaptations across our food production, distribution, and assistance systems were widespread; **some of these adaptations should be maintained**
- > We can leverage the rebuilding process by being open to change and recognizing the **importance of systems**



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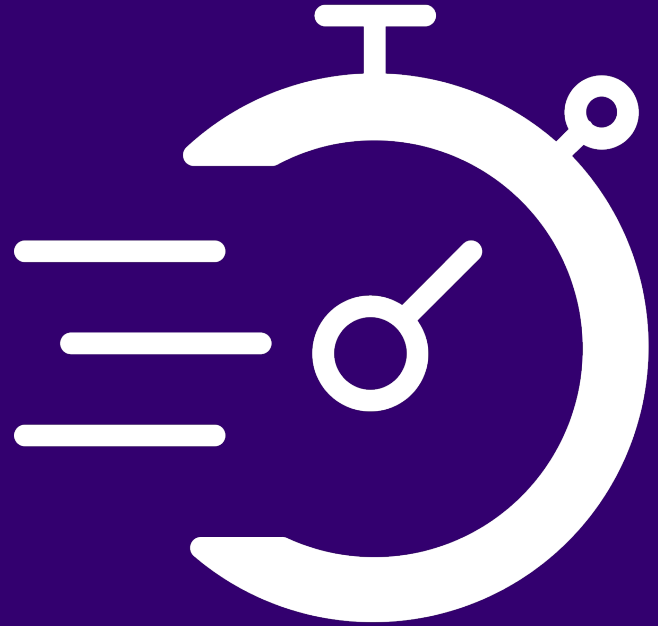


How might we leverage what we're learning locally to **build resilient food systems across the US and globally?**

How do **resilient food systems**
support health equity?

How might we **support and conduct research** to cultivate food systems that promote health equity?

We need to grow funding mechanisms that allow us to build long-term capacity while also being **agile and responsive**.



We need to focus both downstream **and upstream**, and get more comfortable with a long and indirect causal chain.



We need to build on the potential of big data by **triangulating with qualitative methods** that help us better understand complex systems.



We need to **use all the tools in our toolbox**, including research that tells us about:

The big picture: What are the tradeoffs and uncertainties? (e.g., trans-disciplinary research)

The details: What's the reality, the lived experience, the nuance? (e.g., social sciences)

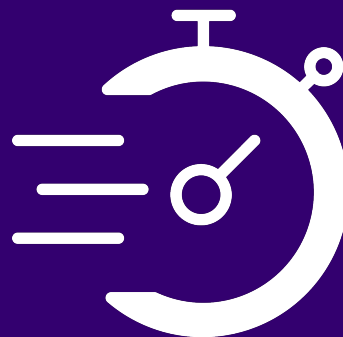
The connections: How do system components affect each other? (e.g., systems modeling)

Ourselves: As an ecosystem of decision-makers, how can we be more effective? (e.g., implementation science, decision science)



How might we **support and conduct research** to cultivate food systems that promote health equity?

- > We need funding mechanisms that allow us to build long-term capacity while also being **agile & responsive**.
- > We need to focus downstream **and upstream**, and get more comfortable with a long and indirect causal chain.
- > We need to build on the potential of big data by **triangulating with qualitative methods** that help us better understand complex systems.
- > We need to **use all the tools in our toolbox**, including research that tells us about the big picture, the details, the connections, and ourselves.



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