

Building Regional Food System Resilience in Southern Arizona

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End Users: Pima County Food Alliance; University of Arizona – Center for Regional Food Studies; Arizona Food Systems Network; Community Food Bank of Southern Arizona; City of Tucson

Additional Resource Support: Pima County Food Alliance; Community Food Bank of Southern Arizona; Arizona Institute for Resilience, University of Arizona; Vertical Integrated Projects Initiative, University of Arizona; Pinnacle Prevention; Paul D. Coverdell Fellows Program - Peace Corps

Project Dates: 2019 – 2024

Summary of Impact

Assessment of cascading risk: The first part of this project focused on a rapid assessment of Tucson’s food system as it faced overlapping challenges connected to the COVID-19 pandemic, economic disruption, and climate change.

Informing local food policy: Findings from this work provided an overview of real-time local adaptation and were communicated to state and city legislators in support of local food system policy and programs.

Supporting community through research and engagement: Through that assessment, CLIMAS connected with the Pima County Food Alliance (PCFA), a local food policy council, which had been severely impacted by the pandemic. This project helped revitalize the organization through a large-scale community engagement process, rebuilding PCFA's food-system listserv and website, developing new methods – such as collective artmaking – to engage people around food systems research and policy development, and convening community members at monthly PCFA meetings. PCFA used research findings to inform its organizational structure, mission and vision, and policy priorities.

Problem Statement

The COVID-19 pandemic exposed deep-rooted inequities in how people access, produce, and distribute food. To create more equitable food systems, policies and programs should be shaped by the communities they serve.

Research Focus

This project focused on a) analyzing how economic, climatic, and societal risk interact within the local food system over time; b) building partnerships between small local businesses, business development agencies, food policy organizations, and researchers; and c) developing a coordinated strategic plan for building local food system resilience.

Project Activities

Rapid assessment: In-depth analyses on cascading economic, climatic, and societal risks in the local food system, involving 19 surveys and 7 interviews with local agricultural producers, 11 food distributors (e.g., farmers markets and community supported agriculture programs), 7 restaurant owners who source local produce, and 20 non-profit organizations that work to improve the local food system.

Focus groups: Conducted 2 focus groups in 2021, one with farm to institution organizations and one with food access and distribution organizations.

PCFA interviews: Conducted 19 interviews in 2023 with former members of the Pima County Food Alliance to better understand challenges it faced previously and opportunities moving forward.

PCFA community conversations: Conducted 15 focus groups with 85 representatives from local businesses and nonprofits in Pima County’s local food system in 2023, to build relationships, explore challenges and opportunities around food security, farmer support, and climate change.

Public events: Outreach at the Santa Cruz Farmers Market Fall Festival (November 2022), Heirloom Farmers Market Earth Day Event (April 2023), and Flowers and Bullets 10 Year Anniversary Festival (May 2023).

Present findings for co-analysis: Co-sponsored and planned PCFA’s Community Kickoff Event (December 2023). Presented focus group and interview findings to participants and provided opportunities for them to respond to findings and inform the final report.

On community support:

Being able to work with somebody who is funded to do work like this was really crucial to the success of the project and to getting PCFA to where it’s at now. I don’t think that PCFA would exist if it wasn’t for CLIMAS, and [Gigi Owen] specifically and all the work she’s done on this project. My main takeaway is just a lot of gratitude for all the energy and work that’s been put into it

Shelby Thompson, Pima County Food Alliance

Collective artmaking: Developed new arts-based research methodology to explore community perceptions on nourishment, community resilience, and connections to the local food system.

Project Outputs

Meetings and Workshops:

Pima County Food Alliance Workshop: May 2022. Facilitated discussion about PCFA's future, and opportunities and challenges.

Pima County Food Alliance, Community Kickoff Event. December 2, 2023, Las Milpitas, Tucson, AZ. Engage with Tucson community members to share data analysis conducted over the past year, provide opportunities for community response/participation in analysis (see Figure 1), and invite people to join PCFA.

Pima County Food Alliance meetings: Jan, Feb, Mar 2024. Presented research findings and facilitated discussion on how to rebuild and structure PCFA to interested community members.

Arizona Food Systems Network meetings. Attend bi-monthly meetings of the Climate Smart Foodways subcommittee in support of the Arizona Statewide Food Action Plan.

Museum of Contemporary Art - Third Thursday Event. May 16, 2024. Engaged 25+ community members in drawing and discussions about nourishment, place, and the food system. Tucson, AZ.

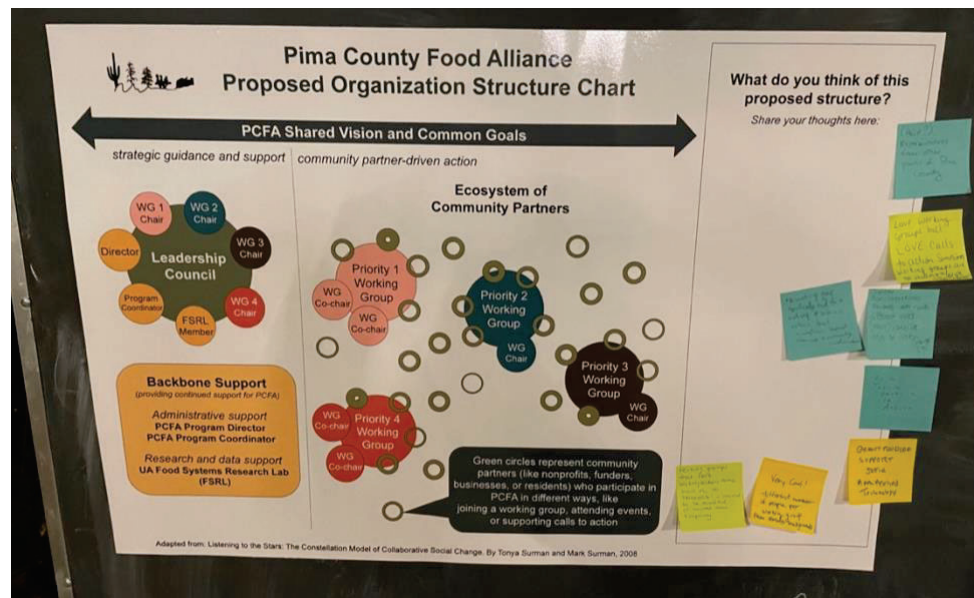


Figure 1. At the 2023 PCFA Kickoff Event, community members were asked to respond to findings from interviews and focus groups. These findings were then incorporated into final report analyses.

Reports:

Bellante, L., M. Carney, G. Owen. 2022. Leveraging university resources to build awareness, support regional food policy, and disrupt dominant narratives guiding food-based

- development: Examples from University of Arizona’s Center for Regional Food Studies. *Journal of Agriculture, Food Systems, and Community Development* 11(3):9–11.
- Bhakta, A., K. Bartels, R. Gildersleeve, G. Owen, R. Leih, S. Thompson, L. Bellante, A. Hilton. 2024. [Community Priorities for Food System Action in Pima County, Arizona: Report of Interview and Focus Group Findings](#). Food Systems Research Lab and Climate Assessment for the Southwest, University of Arizona.
- Bhakta, A. 2023. Update on methods, findings from pilot study, and evaluation process - Interim Report. Prepared by Anvi Bhakta.
- Gildersleeve, R., R. Leih. 2023. Pima County Food Alliance (PCFA) Actor Mapping Session Summary Report. Community Research, Evaluation, and Development (CRED) Team.
- Leih, R., R. Gildersleeve. 2024. [Considerations for a More Sustainable and Equitable Organizational Structure](#). Pima County Food Alliance.
- Leih, R., R. Gildersleeve. 2023. [Cultivating Equitable Food Policy in Pima County](#). Fall 2023 Research Brief. Pima County Food Alliance.
- Owen, G., E. Kinkaid, L. Bellante, S. Maccabe. 2021. [State of the Tucson Food System Report: Assessing the impacts of the COVID-19 pandemic in southern Arizona 2020-2021](#). Center for Regional Food Studies, University of Arizona.
- Owen, G., E. Kinkaid, L. Bellante, S. Maccabe. 2021. Executive Summary: State of the Tucson Food System Report, Assessing the impacts of the COVID-19 pandemic in southern Arizona, 2020-2021. University of Arizona.

Presentations:

- Building Regional Food System Resilience in Southern Arizona – Learning from COVID-19. 2020. Tucson Meet Yourself, University of Arizona Museum of Art, & Center for Regional Food Studies.
- The State of State and Local Food Systems during COVID-19: Lessons Learned and Opportunities for Growth in Stakeholders, Governance, and Community Engagement. 2021. Annual Meeting of the Agriculture, Food, and Human Values Society and the Association for the Study of Food and Society.
- State of the Tucson Food System Report. 2021. Center for Regional Food Studies.
- The state of the Tucson food system in the time of COVID-19. 2021. Annual Meeting of the Association of American Geographers.
- Impacts of COVID-19 on Pima County's Food System. 2022. Pima County Cooperative Extension Advisory Board. Tucson, AZ.
- Best Practices in Research and Engagement for Advancing Equitable Climate Adaptation Alongside Frontline Communities – Town Hall Panel. 2023. American Geophysical Union Annual Meeting, San Francisco, CA. (Co-present with Pima County Food Alliance)
- Building Resilience in Southern Arizona’s Local Food System. 2023. NOAA CAP/RISA and NIST portfolio on Small and Medium Business Disruption and Resilience to Complex Climate Events.

Cultivating Equitable Food Policy in Southern Arizona. 2023. Water Justice Knowledge Exchange. University of Arizona. (Co-present with Pima County Food Alliance)

Valuing Urban Farmers: How urban small farmers contribute to Tucson's resilience. 2023. [Presentation to Tucson Mayor and Council](#). Tucson, AZ.

Op-ed: Kinkaid, E., G. Owen, L. Bellante. 2021. [Tucson Opinion: COVID-19 impacts demonstrate why Southern Arizona needs more farmers](#). *Arizona Daily Star*.

Media Coverage:

[Food Systems: Pandemics, Equity, and the Future](#). 2022. Mrs. Green's World Podcast.

[UArizona research shows perseverance in Tucson food industry](#). 2021, KGUN 9 News.

[Estudio: pandemia impactó en el sistema alimenticio de hispanos en Arizona](#). 2021. Telemundo.

[State of the food system: The pandemic impacts restaurants, food security](#). 2021. KOLD News 13.

Selected Scientific Findings:

Rapid Assessment: The COVID-19 pandemic highlighted the need for strong and resilient local food systems across the U.S., including in southern Arizona. The local food system filled in gaps left by the conventional food system supply chain. Local adaptation to risk includes building relationships and creating community-based alternatives when conventional systems breakdown. Compounding local risks included:

- *Public Health:* Arizona experienced significant COVID-19 surges, with the highest number of cases globally in Summer 2020 and January 2021. The state's peak infection rate occurred in Winter 2022.
- *Economy:* The closure of businesses and institutions in Tucson and Arizona during the early stages of the pandemic led to a surge in unemployment and increased demand for food assistance (like SNAP benefits). However, this increased demand coincided with rising food prices, making it even harder for people to afford necessities even with government aid. Despite some easing of inflation, food prices remained high in 2024.
- *Heat:* Southern Arizona experienced extreme heat in 2020, with record high temperatures impacting people who work outdoors, lack access to air-conditioned transportation, and rely on public transport for food access. Extreme heat also posed challenges to food transportation and safe storage.
- *Drought:* Pima County experienced a severe drought in 2020-2021 due to record low rainfall and high temperatures, which devastated local crops at a time when demand for local food was at its peak.

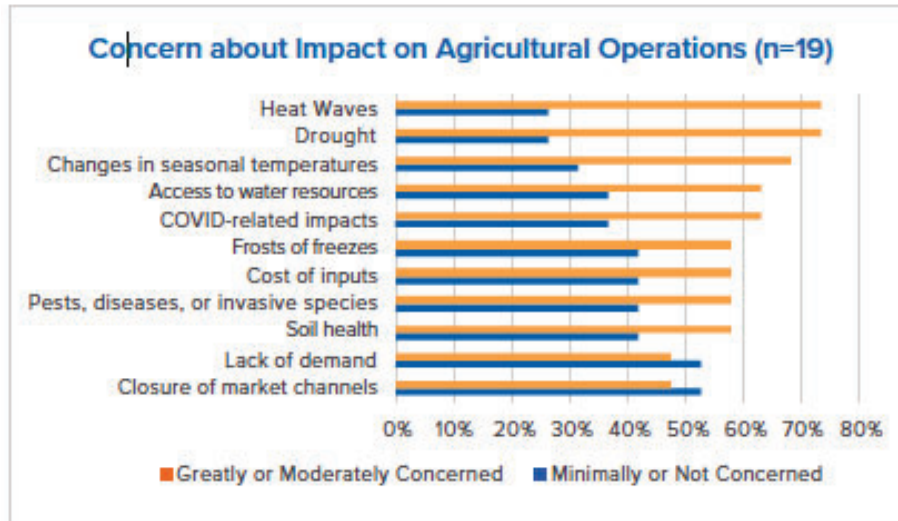


Figure 2: Survey respondents reported their level of concern regarding stressors on their agricultural operation.

Research and Policy priorities: Based on focus group and other community engagement efforts in 2022-2023, the top priorities for local food policy in Pima County are:

- Increasing support for local farmers and producers through workforce development, infrastructure, financial support, farm-to-institution channels, and increased access to local seed.
- Increasing food access through expansion of local markets and distribution hubs, assistance in applying for benefits like SNAP, and support for local businesses to accept SNAP as a form of payment.
- Promoting sustainable water and land use through a lower water rate for small local farms, exploring community ownership models for small-scale agriculture, combining efforts with city and county sustainability and climate initiatives, and incentivizing passive water harvesting.
- Reducing food waste through education and financial incentives and promoting large scale composting.
- Identifying reasonable food safety regulations by building partnerships with the county health department, farms, and small-scale businesses.

Leveraged Funding:

Supporting this project:

- NOAA Climate Program Office: Business Disruption and Resilience in the Context of Complex Climate Events (\$85,000)
- Community Food Bank of Southern Arizona – Thriving Communities (\$60,000)
- Arizona Institute for Resilience, University of Arizona (\$11,625)
- Pinnacle Prevention (\$4,000)

Supporting new initiatives beyond this project:

- U.S. Department of Agriculture - Regional Food Business Center, University of California Agriculture and Natural Resources (lead) with twelve other organizations across CA, NV, UT, AZ, to establish Regional Food Centers (\$35,000,000)

Societal Impacts by Category

Conceptual:

- Pinnacle Prevention, a nonprofit organization, used State of the Tucson Food System report findings research findings in their conversations with Arizona legislators in support of local food system policy.

On value of local information:

We've already shared your report findings in our conversations with legislators! To have this level of hyperlocal information is just priceless, we cannot thank you enough.

—
Adrienne Udarbe, Pinnacle Prevention

Connectivity:

- This project brought together more than 100 individuals representing multiple organizations across southern Arizona's food system. Spaces forged during focus groups, community meetings, and networking events allowed individuals to connect and learn from one another.
- PCFA connected the research team to multiple community partners, food system organizations, and local farmers and food producers.
- The relationship building component of this work helped support an instrumental policy outcome. Local relationships are critical to building in-roads for change at the local level.
- The Food Bank of Southern Arizona and the Pima County Health Department contacted the research team to conduct additional related research projects.

Capacity Building:

- This project led to creation of the [Food Systems Research Lab](#), a rotating team of interdisciplinary researchers and students. The lab supported 9 graduate and 2 undergraduate students who received training and experience in community-based research. They participated in research development, partner meetings, data collection and analysis, presenting findings, and community event planning.
- Gigi Owen and Shelby Thompson (PCFA) co-wrote a funding proposal from the Community Food Bank of Southern Arizona to revitalize the food policy council. The grant was awarded in 2022.

- CLIMAS invited PCFA members to collaborate using technical resources unavailable to them, such as a Teams channel, Zoom meetings, and Box to aid in regular communication and information management.
- The research team helped PCFA design and develop a new website. Students working in the lab provided written content and photos for the website.
- The team helped PCFA create and manage a new list-serv through participant sign ups from focus groups, interviews, and public events. Students developed list-serv content and sent out periodic newsletters.

Instrumental:

- PCFA used findings from reports developed in May 2024 to inform its organizational structure; to develop its mission, vision, and roles in the community moving forward; and to set priorities for events and working groups.
- Gigi Owen was invited to present research results to Tucson Mayor and Council, in support of a reduced water rate for small-scale urban farmers (invited by Pima County Food Alliance, Community Food Bank of Southern AZ, and Tucson Ward 3). The mechanism of how this reduced rate would function and how it would be monitored and implemented went under development. In November 2023, results were cited by the Community Food Bank of Southern AZ to support a 1-year pilot project for the water rate program, which was approved by Mayor and Council. The policy aims to improve local economic livelihood, reduce water consumption, and increase food security. CLIMAS will continue to monitor progress on this water rate to measure those outcomes.

On partnership:

CLIMAS brings expertise that I don't have. It allowed this project to flourish in a way that just wouldn't have been possible otherwise. And it was a real partnership as opposed to an extractive research project. As somebody who has been at the grassroots level in the community for a long time, I was able to provide connections and help deepen relationships. But I didn't have all the knowledge and expertise around research. Gigi helped us develop fantastic discussion guides for our focus groups and to understand how to ask questions that would result in what we wanted to know from community members. If we hadn't had that partnership, it wouldn't have happened with the same level of precision and thoroughness. And we had a lot of fun, which is not something you always get to experience on a project.

—
Shelby Thompson, Pima County Food Alliance