



THE UNIVERSITY OF ARIZONA
COLLEGE OF SOCIAL & BEHAVIORAL SCIENCES

Center for Regional
Food Studies

STATE OF THE TUCSON FOOD SYSTEM REPORT

*Assessing the impacts of
the COVID-19 pandemic
in Southern Arizona*

2020-2021

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CLIMAS

Climate Assessment for the Southwest
A NOAA PISA TEAM

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The research in this report was supported by the University of Arizona and occurred on the lands of the Pascua Yaqui and Tohono O'odham peoples, whose relationship with this land continues to this day. Some of the oldest known agricultural practices in the United States have roots in the Tucson basin and southern Arizona. The people, culture, and history of this region allow us to live, build community, and grow food on this land today. The authors acknowledge our individual and collective responsibility to address the ongoing legacies of dispossession and exclusion in the region and aim to cultivate a more just present and future.

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SECTION 1. INTRODUCTION

On March 11, 2020, the World Health Organization declared COVID-19 a global pandemic. Shortly thereafter, governmental and consumer responses began to affect food systems at multiple scales. The pandemic and stay-at-home orders across the United States caused widespread panic, driving many consumers to stock up on basic food and home items, like pasta, beans, and toilet paper. These spikes in demand crashed the national supply chain and led to empty shelves at grocery stores. Disruptions to travel, shipping, and various sectors of the economy limited the ability of national supply chains to respond to this heightened demand. At the same time, closures of restaurants, schools, and other institutions led to surplus product that could not be easily shifted to retail distribution, causing increased food waste. COVID-19 outbreaks in meatpacking plants, food processing plants, and agricultural fields halted production and placed employees at severe health and economic risk.

In response to these national food supply issues, many consumers across the U.S. turned to their local food systems to fill these supply gaps. Demand for locally produced fruit, vegetables, dairy, meat, and other food products surged. This growing interest in local foods yielded many benefits, but it also applied pressure to systems that were not built to handle sudden increases in demand. The pandemic tested local and regional food systems and provided an opportunity to evaluate the strengths and weaknesses of these systems during moments of crisis. It is still unknown how the disruptions caused by COVID-19 will impact local food systems in the longer term.

This report developed from the uncertainty and crisis sparked by the pandemic. In the spring of 2020, it was unclear how long businesses and restaurants would stay closed, how long food shortages at grocery stores would last, or how long people would be expected to stay at home. Health experts and scientists were still learning about the virus itself, how to treat it, and best practices to avoid spreading it. A year later, in spring 2021, several COVID-19 vaccines are available, and evidence shows that masks and physical distancing help contain spread. However, at the time of publication, the pandemic is still ongoing and the long-term social, economic, and psychological impacts of the past year are continuing to unfold.

The purpose of this report is to document how the impacts of the COVID-19 pandemic have played out in the local food system in Pima County, Arizona. The evolving crisis highlighted several long-standing issues in the local food system but also revealed strengths and opportunities for growth. Opportunities exist to address these issues while building local food system capacity and resilience. This report synthesizes people's experiences and lessons learned over the past year, in support of building a strong and equitable food system in southern Arizona that is resilient to future environmental, climate, economic, and health risks.

We hope this report will serve as a resource for those working on issues of food and agriculture in our region and that our findings can support the strengthening of southern Arizona's food system.



Photo by Frankie Lopez on Unsplash

How to use this report

This report is designed to support and inform action that addresses long-standing issues in Pima County's local food systems, as well as issues that arose during the COVID-19 crisis. The report is organized in three main sections:

- Section 1 provides an introduction to the research;
- Section 2 documents the local impacts and responses associated with the pandemic;
- Section 3 outlines several challenges facing the local food system and offers ways to address these challenges.

An executive summary of the report is available online on the Center for Regional Food Studies website.

What is a food system?

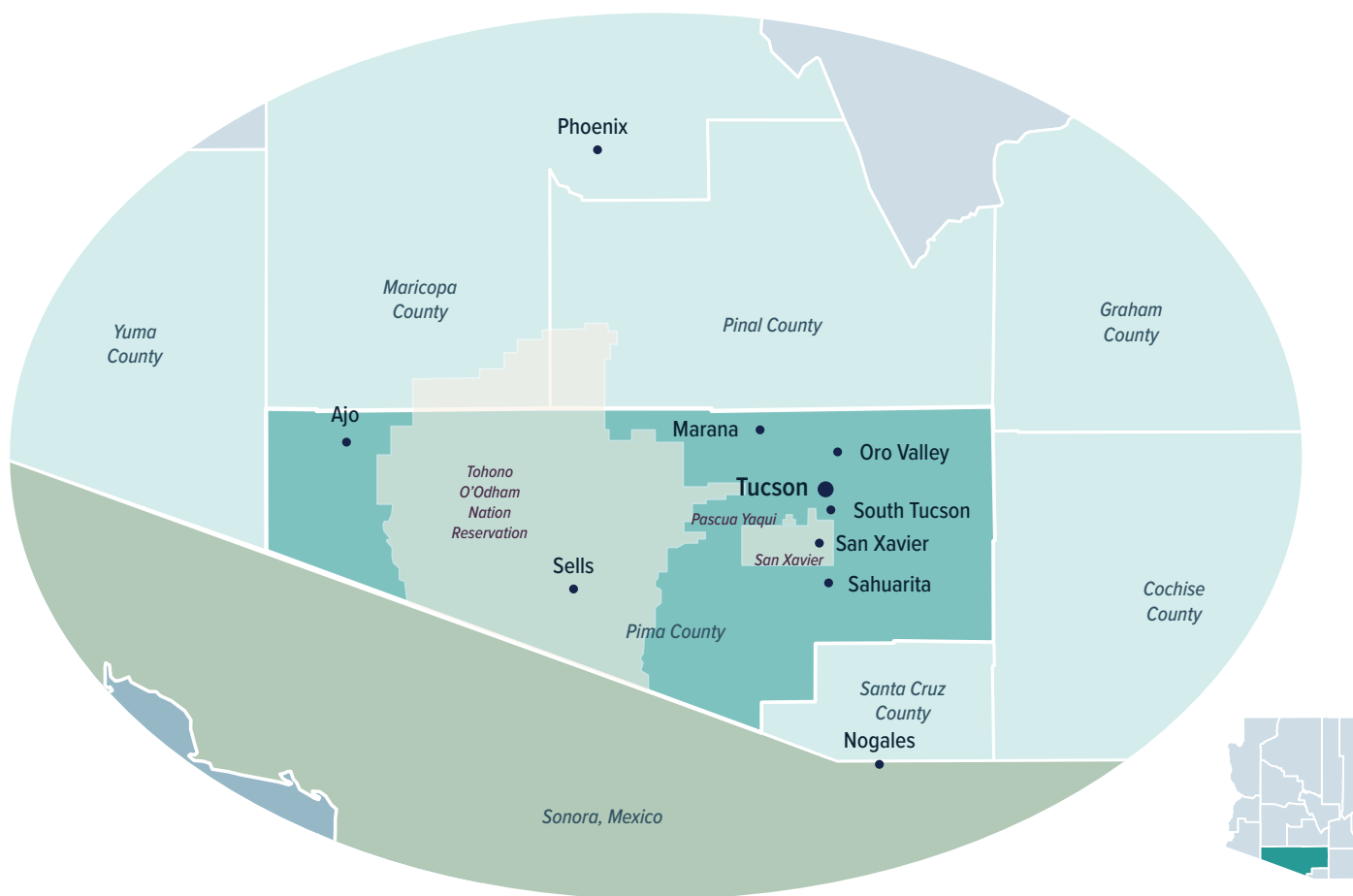
A food system incorporates all components of food and agricultural production, processing, distribution, consumption, and waste. It considers the environmental and material resources needed to grow and distribute food, food access and affordability, and support for people who work in the food system. A local food system aims to provide fresh and affordable food to area residents while supporting local agricultural producers and food businesses. Food systems are also directly implicated in broader global challenges such as climate and environmental change, social inequalities, public health, economic power, and international and domestic politics.

Research Scope and Methodology

This report is part of an ongoing series produced by the University of Arizona's Center for Regional Food Studies that investigates local and regional food system issues and needs in southern Arizona. This year, the report is a collaborative effort with the Climate Assessment for the Southwest (CLIMAS) program housed in Arizona Institutes for Resilience at the University of Arizona. It provides an in-depth, rapid qualitative assessment on the impacts of and responses to the pandemic in the local food system centered in Pima County.

Our work is informed by the experiences and expertise of a variety of people involved in local food in and near Pima County (see Map below). In this report, we focus on a few nodes in the food system, including agricultural producers (farmers and ranchers), distributors, restaurant owners, and representatives from food and agriculture organizations. Between August 2020 and February 2021, our research team conducted semi-structured, in-depth interviews with 37 representatives of the food system (see Table 1). In addition, 19 agricultural producers completed an online survey during fall 2020.

We acknowledge that the local food system is more complex and interconnected than what is represented in this report. While we have endeavored to be thorough in our research, this report is ultimately an initial snapshot of food system experiences and responses during the pandemic. These experiences and responses will continue to emerge over time. We hope our findings will initiate further discussions and collaborations with others in the local food system moving forward.



Map of study region - Pima County and surrounding southern Arizona counties

Table 1. Description of food system nodes included in this research¹

 <p>PRODUCERS</p>	<p>Small- to medium-sized farms, orchards, ranches, dairy farms, or gardens located in or near southern Arizona and pursue direct sales in Pima County.</p>	<p>See Appendix B for more information about the Agricultural Producer Survey Demographics.</p>
 <p>DISTRIBUTORS</p>	<p>Farmers markets, Community Supported Agriculture programs (CSAs), local food retailers, and organizations that distribute food at low to no cost in southern AZ.</p>	<p>19 SURVEY PARTICIPANTS</p> <ul style="list-style-type: none"> • Food Conspiracy Co-op • Gallery of Food Bodega • Heirloom Farmers Markets • Market on the Move • Pivot Produce • Santa Cruz River Farmers Market • South Tucson Community Outreach • Tucson Community Supported Agriculture • Tucson Food Share • University of Arizona Food Safety Laboratory
 <p>RESTAURANTS</p>	<p>Locally owned restaurants in Tucson, AZ that use local sourcing practices.</p>	<p>7 PARTICIPANTS</p> <ul style="list-style-type: none"> • 5 Points Market & Restaurant • Anello • Aravaipa Farms • Carriage House • Feast • Hotel Congress
 <p>FOOD & AGRICULTURE ORGANIZATIONS</p>	<p>A variety of nonprofit organizations and policy groups that advocate for food systems change, hunger relief, and improved support for food system workers in Arizona.</p>	<p>20 PARTICIPANTS</p> <ul style="list-style-type: none"> • Ajo CSA • Arizona Farm Bureau • Arizona Food Bank Network • Arizona Food Systems Network • Arizona Farm to School • Community Food Bank of Southern Arizona • Flowers and Bullets • International Indian Treaty Council • Local First Arizona • Native Seeds/Search • Pima County Food Alliance • Pima County Seed Library • Pinnacle Prevention • San Xavier Co-op Farm • Southern Arizona Young Farmers & Ranchers • Tucson Restaurant Advisory Council • University of Arizona Cooperative Extension

¹ Participation notes: Several of these organizations or businesses fit in multiple categories but are only counted in one category in this list. Some participants wished to remain anonymous in this report and are not included in the organizations or businesses listed. Data from surveys are anonymous.

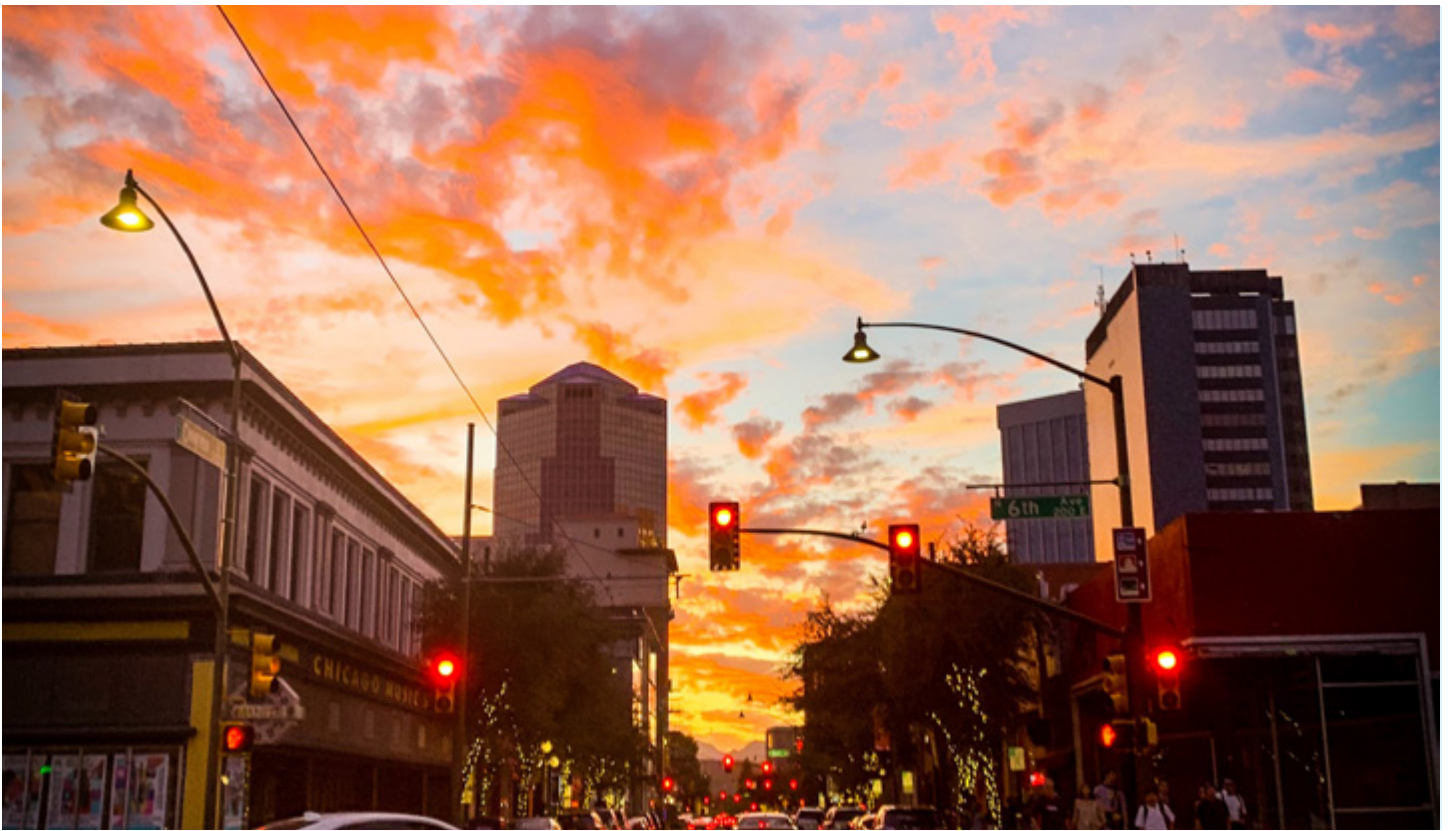


Photo by Frankie Lopez on Unsplash

COVID-19's uneven impacts: A look at food system inequality

To comprehend the impacts of COVID-19 on food systems at any scale, it is necessary to understand how the pandemic has unevenly impacted different communities and how these uneven impacts build upon pre-existing inequalities. While this report focuses specifically on the production, distribution, and consumption of local food, it is crucial to situate this study in the broader context of food system inequality and COVID-19's racially uneven impacts. Addressing broader injustices of the food system is key to building more socially just and resilient food systems at the local scale.

COVID-19 has disproportionately impacted communities of color in the United States. Compared to white non-Hispanic persons, Native, Black, and Hispanic/Latinx people have been more likely to become infected, be hospitalized for complications, and die from the disease (see Figure 1). This heightened risk is due to inequalities in socioeconomic status, access to healthcare, and exposure to the virus at work.² The fact that a high proportion of “essential workers”

and frontline workers (including food system workers) are people of color is a major factor in the uneven distribution of COVID-19 impacts on different racial groups.³

Food systems are embedded within the broader social and economic structures that make some groups more vulnerable to COVID-19's impacts. The economic impacts of the pandemic have worsened food access overall but have had stark impacts on food security in communities of color. Before the pandemic, disparities in food security already existed among racial groups in the United States. In 2019, 10.5% of all U.S. households were food insecure. While 7.9% of white, non-Hispanic households in the U.S. were food insecure in 2019, 19.1% of Black households, 15.6% percent of Hispanic/Latinx households, and 9.5% of other non-white, non-Hispanic households were food insecure (see Figure 2).

2 Centers for Disease Control and Prevention. 2021. [Risk for COVID-19 Infection, Hospitalization, and Death By Race/Ethnicity](#).

3 National Center for Farmworker Health. 2021. [COVID-19 in Rural America: Impact on Farms and Agricultural Workers](#).

From March to August 2020, the percentage of food insecure households in Arizona increased from 25% to 32%.⁴ Of these food insecure households, 10% were newly food insecure while 22% were food insecure before the pandemic (see Figure 3). This increase is unevenly distributed across racial groups, with higher proportions of new and persistent food insecurity reported in Hispanic/Latinx households and non-white households (see Figure 4).

In the state of Arizona, lost or reduced employment during the pandemic disproportionately impacted Hispanic/Latinx and non-white communities and has been linked to increased food insecurity in these communities.⁵ People of color are overrepresented in the low-wage food service sector, placing them at higher risk of job loss due to restaurant and hospitality industry closures.⁶

The farm and food processing labor force in the U.S., which is also disproportionately comprised of people of color, experienced increased vulnerability during the pandemic. The pandemic has exacerbated the precarity of food and farm workers, as areas of high agricultural

production^{7,8} and meat packing plants⁹ became COVID-19 hotspots. Farmworkers have faced higher rates of exposure to COVID-19 due to cramped and unsanitary housing conditions, lack of protective gear, lack of access to healthcare, and fear of reprisal for getting sick, missing work, or making a complaint.¹⁰ Undocumented workers in the food and farming sectors are particularly at risk in this regard.

Examining the impacts of COVID-19 on food systems through the lens of inequality shows how interlocking structures of socioeconomic vulnerability and risk amplify the impacts of COVID-19 for low-income communities and communities of color. These forms of inequality are not unique to the pandemic and have long characterized food systems. Existing inequalities limit the potential of more localized food systems to provide equitable access to food while also ensuring a living wage to local food producers. In working toward a more resilient, sustainable, and just local food system, we must continue to center inequality as a problem and to reshape the food system to address these racial and socio-economic inequalities.

Race and ethnicity are risk markers for other underlying conditions that affect health including socioeconomic status, access to health care, and exposure to the virus related to occupation, e.g., frontline, essential, and critical infrastructure workers.

Rate ratios compared to White, Non-Hispanic persons	American, Indian or Alaska Native, Non-Hispanic persons	Asian, Non-Hispanic persons	Black or African American, Non-Hispanic persons	Hispanic or Latino persons
Cases	1.9x	0.7x	1.1x	1.3x
Hospitalization	3.7x	1.1x	2.9x	3.2x
Death	2.4x	1.0x	1.9x	2.3x

Figure 1: Rates of COVID-19 infection, hospitalization, and death in the U.S. by racial/ethnic group compared to White, Non-Hispanic persons¹¹

4 Acciai, F., et al. 2020. [Impacts of COVID-19 on Food Security in Arizona](#). College of Health Solutions, Arizona State University.

5 Driesen, F., et al. 2020. [Job Disruptions During the First Four Months of the COVID-19 Pandemic and Their Impact on Food Security in Arizona](#). College of Health Solutions, Arizona State University.

6 Alkon, A.H., et al. 2020. [Unequally Vulnerable: A Food Justice Approach to Racial Disparities in COVID-19 Cases](#). *Agriculture and Human Values*, 37, 535-536.

7 Nabhan, G. 2020. [Migrant Farmworkers, Native Ranchers in Border States Hit Hardest by COVID-19](#). *Civil Eats*.

8 Jordan, M. 2021. [America's Salad Bowl Becomes Fertile Ground for COVID-19](#). *New York Times*.

9 Taylor, C., et al. 2020. [Livestock plants and COVID-19 transmission](#). *PNAS*, 117(50), 31706-31715.

10 National Center for Farmworker Health. 2021. [COVID-19 in Rural America: Impact on Farms and Agricultural Workers](#).

11 Centers for Disease Control and Prevention. 2021. [Risk for COVID-19 Infection, Hospitalization, and Death By Race/Ethnicity](#).

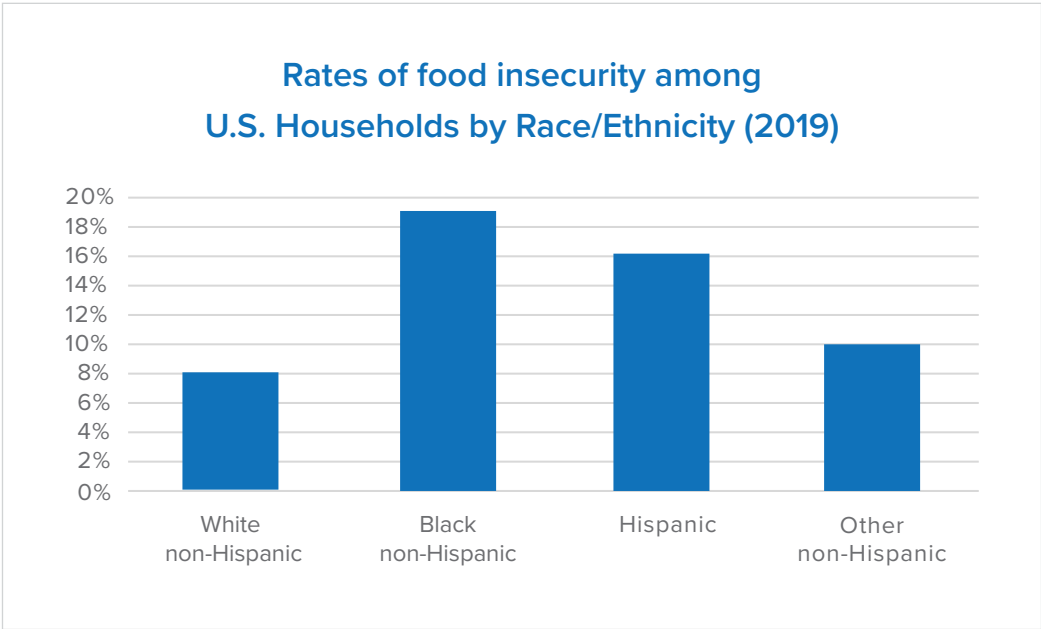


Figure 2: Rates of food insecurity among U.S. households by race/ethnicity in 2019¹²

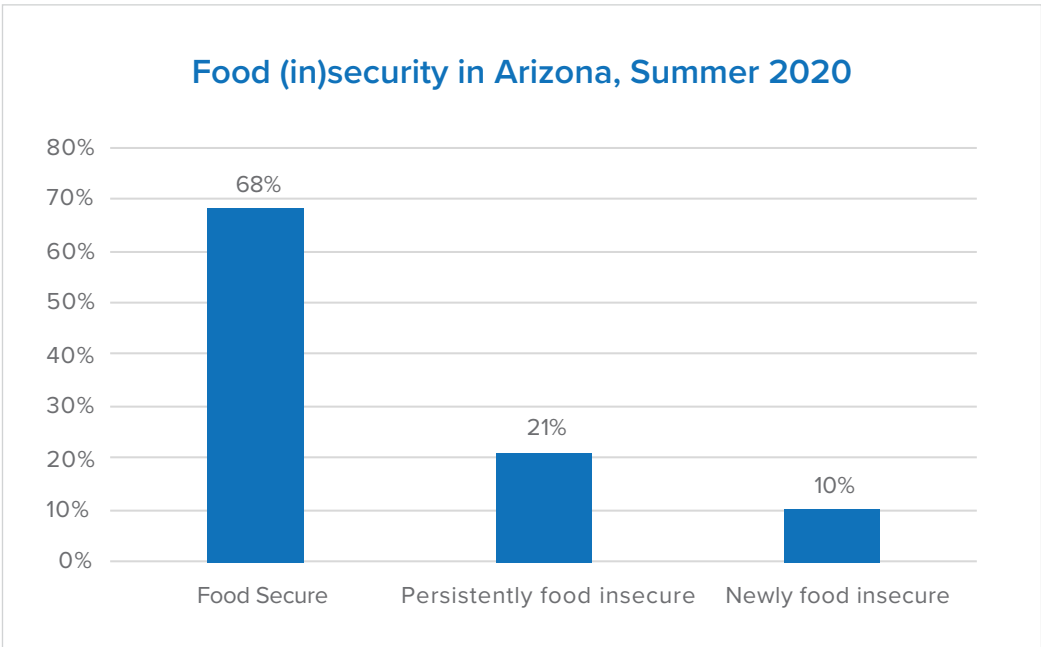


Figure 3: Rates of food security and insecurity in Arizona during COVID-19 in summer 2020.¹³

12 USDA Economic Research Service. [Key Statistics and Graphics.](#)

13 Data sourced from Acciai F., et al. 2020. [Impacts of COVID-19 on Food Security in Arizona.](#) College of Health Solutions, Arizona State University.

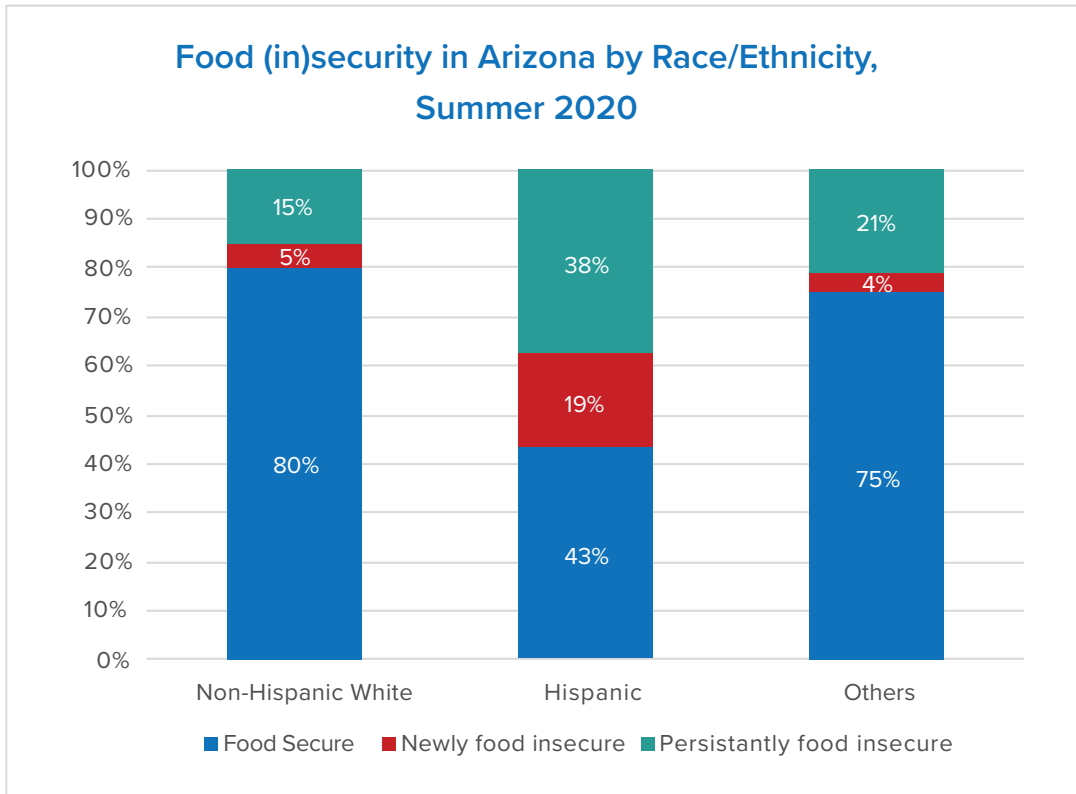


Figure 4: Rates of food security and insecurity in Arizona during COVID-19 by racial/ethnic group.¹⁴



Photo by Brittani Burns on Unsplash

¹⁴ Data sourced from Acciai F., et al. 2020. [Impacts of COVID-19 on Food Security in Arizona](#). College of Health Solutions, Arizona State University.

Timeline of Events Related to the Southern Arizona Food System

March 2020-March 2021

March 30, 2020

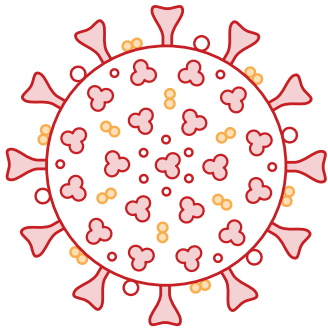
AZ Governor issues 'Stay at Home Orders'

May 12, 2020

AZ Governor rescinds 'Stay at Home Orders'; AZ businesses reopen with varying capacity limits and distancing requirements.

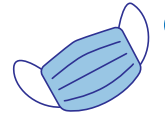
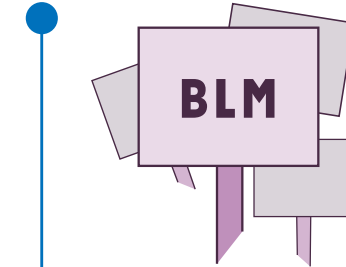
June 30, 2020

City of Tucson mandates the use of face coverings in public places



March 27, 2020

Mayor of Tucson issues Proclamation for 'Stay at Home Orders' for City of Tucson

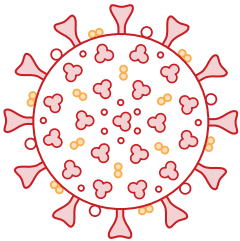


March 25, 2020

Federal CARES Act signed into law. \$2 trillion in economic relief for hardships from COVID-19

May 25, 2020

Death of George Floyd in police custody sparks widespread protests



March 23, 2020

AZ Executive Order: Prohibits closure of essential services, including food production, distribution and sales, extending to farmers markets and food banks

May 31 - June 8, 2020

AZ Governor issues Statewide Curfew in response to protests against police brutality

March 19, 2020

AZ Executive Order: Closes public access to restaurants, bars, and other businesses; pickup, delivery, and drive thru services are permissible



March 16, 2020

Statewide closure of public schools in AZ

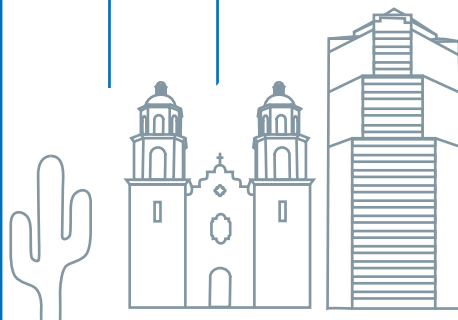
June 5 - July 23, 2020

Bighorn Fire burns 19,978 acres in the Santa Catalina Mountains north of Tucson

March 11, 2020

WHO declares COVID-19 a global pandemic

Governor of AZ issues Declaration of Emergency



July 7, 2020

AZ registers highest COVID-19 infection rates in the world

7-day average: 52.8 cases per 100k population



January 6, 2021

AZ registers highest COVID-19 infection rates in the world for 2nd time

7-day average: 121.8 cases per 100k population

July 9, 2020

AZ Executive Order limits indoor dining to 50% capacity & requires 6 feet of separation

December 2020

Pima County begins COVID-19 vaccination program starting with healthcare workers and long-term care patients

March 5, 2021

Governor rescinds all capacity limits for businesses (including restaurants)

March 11, 2021

Federal American Rescue Plan Act signed into law

\$1.9 trillion in economic relief for hardships from COVID-19

December 31, 2020

2020 marks the 2nd hottest and 2nd driest year on record in AZ

Minimal summer monsoon and dry conditions throughout the year result in drought conditions across the entire state

September 2020

Tucson records the hottest summer temperatures ever

March 11, 2021

One year since WHO officially declared global pandemic

Cases:

- U.S.: 29,297,405 cases, 531,276 deaths
- State of AZ: 830,465 cases, 16,464 deaths
- Pima County: 110,931 cases, 2,285 deaths

SECTION 2. IMPACTS & RESPONSES



Agricultural Producers

In fall 2020, local agricultural producers were invited to take a survey about the impacts of the COVID-19 pandemic on their operations. The following section draws on survey results and interviews to explore the social and economic impacts of the pandemic on local agricultural production and how producers responded to these impacts. A total of 19 local food producers who pursue direct sales in Pima County took the survey. See Survey Demographics in Appendix B for more information about survey participants and methods.

There is no single way to characterize local agricultural production in southern Arizona. Producers grow or raise a variety of commodities and use several types of business models for their operations. Because of this diversity, producers experienced a wide range of impacts connected to the COVID-19 pandemic, from “every aspect of life is difficult,” to “no impact,” to “business is booming!” (from survey responses). However, several trends emerged in the data showing how local producers have adjusted since March 2020 to meet changes in demand, adhere to evolving safety guidelines, and seek new opportunities for customers or financial support.

A majority of respondents (68%) said they were either greatly affected or moderately affected by the pandemic. These impacts included: producers’ ability to sell products; the creation or expansion of online marketing platforms; implementing social distancing in the workplace; loss of demand for products; loss of income; and complying with other safety requirements in the workplace, like acquiring personal protective equipment, hand sanitizer, and masks (see Figure 5).



Photo courtesy of Mission Gardens

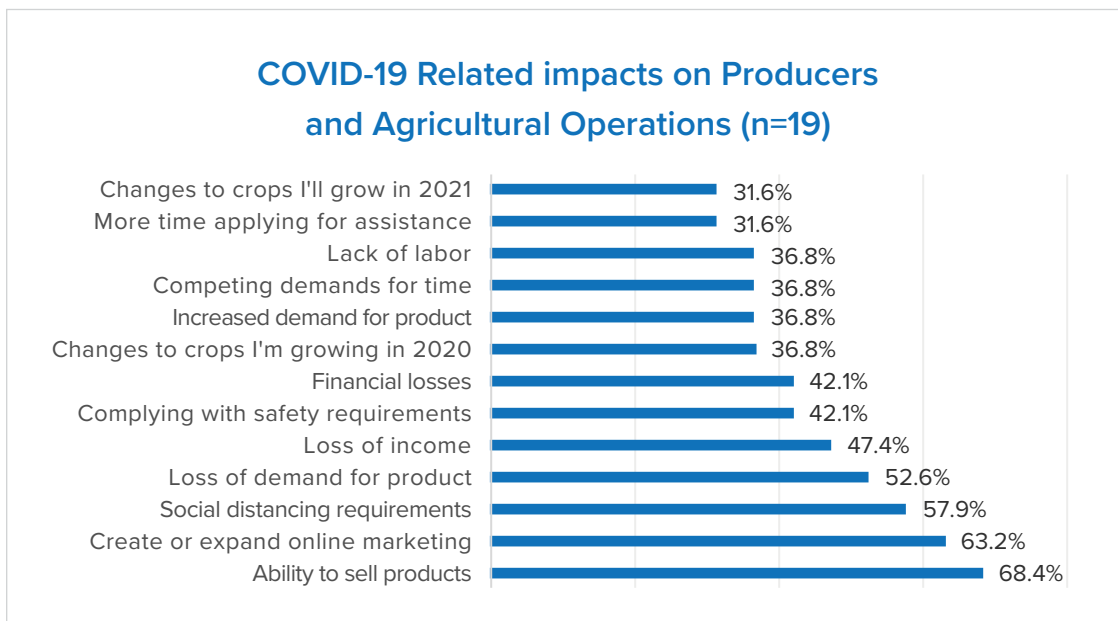


Figure 5: Survey responses about pandemic impacts on agricultural producers and operations.

The following section further explores the major impacts of the pandemic on local agricultural producers and how they have responded.

Closures of market channels

The impacts of market closures and shifting supply chains impacted farmers differently based on their position within those market channels. Producers who sold to buyers that closed due to the pandemic faced greater shifts in their operations than producers whose market channels did not change. For example, agricultural producers who supplied local restaurants, schools, or other institutions were faced with sudden cancelled contracts and excess unsold product. As one survey respondent noted, “COVID closed our schools and restaurants [causing] milk and cheese demand to drop. Prices for those products mean less money paid to dairy farmers.” Shelby Thompson, from the Pima County Food Alliance noted that, “Those who have depended a lot on restaurant accounts are suffering a lot more and have had to rework their system and figure out other options like how to do their own CSA or send more employees to the farmers markets with more product.”

Many producers who sold at farmers markets faced an initial disruption in sales during the early stages of the pandemic. One producer expressed concern about a “potentially reduced customer base at farmers markets, with less...local traffic and folks not comfortable with crowds.” Initially, it was unclear if farmers markets would provide a profitable avenue for producers to sell their goods. Many markets shut down and are still not in operation as of April 2021. Other only re-opened after farmers markets were included as an essential service by the state Governor. Nick Szumowski, the director of Heirloom Farmers Markets said that “Attendance went down that first month. Through about April, we were probably down about 80% of the overall traffic.” However, some farmers market producers also experienced increased demand. “There was a lot of panic buying that happened,” Szumowski explains. “Our beef vendors, for example, their sales went through the roof.” After initial disruptions to regular farmers market operations in March and April, attendance at the market grew and many market vendors have experienced an uptick in sales (see Distributors section).

“ Those who have depended a lot on restaurant accounts are suffering a lot more and have had to rework their system and figure out other options like how to do their own CSA or send more employees to the farmers markets with more product.

**- Shelby Thompson,
the Pima County Food Alliance**

”



Photo courtesy of Heirloom Farmers Market



Photo courtesy of Heirloom Farmers Market

Animal processing

Ranchers and others who raise animals faced particular challenges during the pandemic due to the impacts of COVID-19 on animal processing. Meat processing in the U.S. has become increasingly centralized leaving few options for local processing. To sell meat across state lines, animals must be processed in a USDA-inspected plant, very few of which exist in Arizona. During the pandemic, in-state processing plants accumulated lengthy waitlists. One of the few USDA-inspected meat processing facilities in Arizona is the Food Products and Safety Laboratory at the University of Arizona. Sam Garcia, manager and professor at the Lab said that prior to the pandemic, beef cattle businesses scheduled processing appointments one to two months in advance, but now, “places are scheduling out to a year in advance.” Bottlenecks in processing due to the pandemic caused problems for ranchers needing to process meat and increased the urgency for alternative processing options.

Ashley Wright, a University of Arizona Cooperative Extension agent who works with beef cattle ranchers, said that COVID-19 and other factors affecting the industry led some producers to want to shift to a direct-to-consumer model. Part of this desire was caused by the closure of restaurants (who buy high-end cuts of beef) and part was caused by reduced harvesting capacity due to COVID-19 outbreaks or potential outbreaks in meatpacking and processing plants. According to Wright, ranchers started to ask “Can I get my beef harvested locally, since I can’t sell my calves for that much? Can I switch and start harvesting my own beef locally and selling directly to my consumers?” While there may be increased interest in locally processed meat from both producers and consumers, a lack of local infrastructure and financial capacity continues to limit local meat production and processing.

Shifts in operations

Changes in marketing, communication, and logistical matters like pre-packing produce were common ways that producers responded to the impacts of COVID-19 on their operations. Producers who sold directly to customers through farmers markets had to find new ways to interact with their customers and to deliver their products. Many producers provided “curbside,” on-farm, or delivery services directly to their customers. “Our business model changed,” wrote one participant. “We were only participating in farmers markets. Then we started curbside services, implemented a version of a CSA, and are looking to create an online store to help with the customer ordering process.” 63% of survey respondents said they either created or expanded online markets and sales platforms during the pandemic, where customers can pre-order individual items or sign-up for weekly produce boxes for pick-up.

Several producers also said they used social media and other communication strategies to help convey shifts in operations to their customers. Szumowski (Heirloom Farmers Markets) said, “The vendors that really did the best were those that had a diversified ability to communicate with their customers. Maybe social media, especially an established Facebook or Instagram presence, a newsletter, or even a text blast.” In uncertain times, reliable communications allowed farmers to connect with customers and ensure continued sales.



Photo courtesy of Heirloom Farmers Market 19

Importance of relationships and social capital

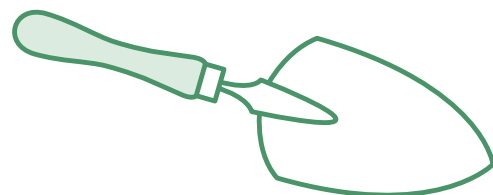
Producers identified several types of relationships, partnerships, and community supports that helped them adjust to pandemic impacts and changing conditions. Local farmers markets were identified as being helpful in the face of uncertainty. For example, one respondent wrote, “Heirloom Farmers Market established requirements for safe operations during COVID and continues to enforce and modify them as needed/required.” Another respondent wrote, “The Community Food Bank of Southern Arizona redesigned their local farmers market into a drive-through style; they also backed up some of the institutional sales” which had been cancelled due to school closures. Some farmers markets also helped facilitate food box orders and pick-up services. “These multiple components helped create some sort of safety net,” said Audra Christophel, who works directly with local producers at the Community Food Bank of Southern Arizona.

Some producers worked together to help each other out. “We partnered with local smaller growers who are in line with how we grow things,” wrote one survey participant. “It helps them and helps us get more variety to our long-time customers.” Community members, customers, and friends also volunteered their support. “Local individuals and friends donated [materials] to us, like drip tape, or let us use tractors at no charge. In other words, we have been blessed with an outpouring of time, equipment and some money in order for us to continue to do what we do – grow great food,” wrote another respondent.

Financial support

Financial support via grants or loans was helpful for producers who were able to access it. Different types of support were available through the USDA’s Coronavirus Food Assistance Programs (CFAP), the Arizona Coronavirus Relief Fund Paycheck Protection Program (PPP), the USDA Farmers to Families Food Box Program, the Friends of the Farm Program (AZ Farm to Food Bank), and CARES Act aid administered through the City of Tucson and other local organizations (see Appendix A). However, only 32% of survey respondents received some type of financial support (see Figure 6). Of producers who did not receive any relief funds, three (16%) said they did not need this funding or seek this type of support. Other producers said they could have benefited from COVID-19 relief funding, but faced barriers in the application process, were not eligible, or did not know about these opportunities.

Local farmers’ lack of access to relief funding confirms concerns voiced by the National Sustainable Agriculture Coalition (NSAC) that federal relief programs administered through the USDA were designed with large-scale growers in mind and were not tailored to the needs of smaller, organic, or farmers with diversified agricultural production. Further, NSAC predicted that a lack of outreach to smaller and local operations, operations with more diverse production, and historically underrepresented farmers would limit the relief funds accessible by these farmers.^{15,16} While some issues about inclusion of diversified and organic growers were addressed in the second round of federal relief funding,¹⁷ the lack of access and perceived ineligibility among local farmers need to be addressed.



15 NSAC. 2020. [USDA COVID Aid Program Raises More Questions Than Answers.](#)

16 NASC. 2020. [USDA's COVID-19 Farmer Relief Will Leave Out Farmers Most Impacted By Crisis.](#)

17 OFA. 2020. [USDA Announces Second Round of Farm Payments for Coronavirus.](#)

Non-pandemic related issues facing local producers:

The majority of survey respondents were greatly or moderately concerned about the impacts of COVID-19 on their operations. However, heat waves, drought, changes in seasonal temperatures, and access to water resources are of greater concern than the pandemic (see Figure 7). In the summer of 2020, southern Arizona experienced record-breaking heat and the second driest monsoon season on record. The extreme summer heat decimated many local crops, making it difficult for some farmers to capitalize on increased demand for locally grown produce. As one respondent noted, “Online ordering helped us while crops were still growing but then it dwindled as the heat reduced our output.” Natural resource constraints and environmental risks affecting food production in southern Arizona continue to represent significant challenges to sustaining or expanding food systems in this region.

COVID-19 Relief Funding Received (n=19)

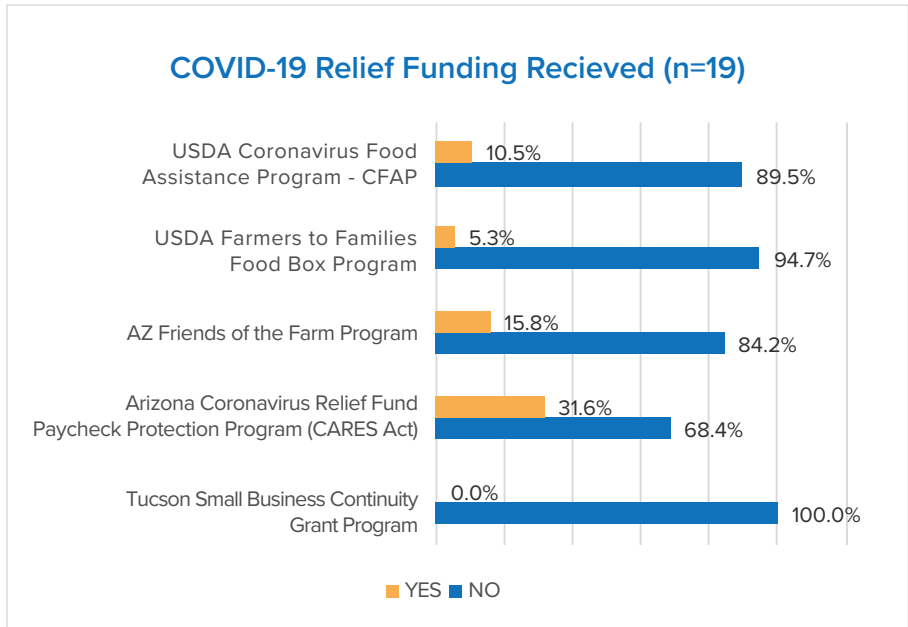


Figure 6: COVID-19 relief funding received by survey respondents.

Concern about Impact on Agricultural Operations (n=19)

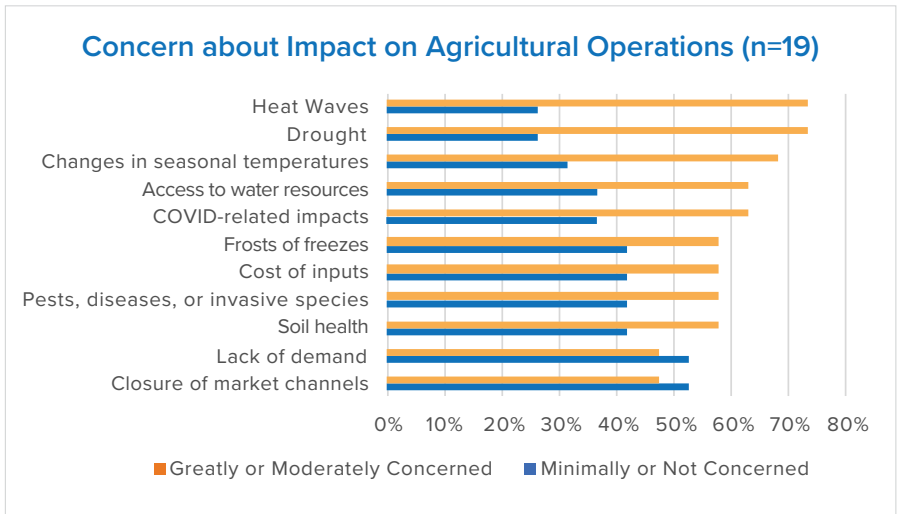


Figure 7: Survey respondents reported their level of concern regarding the effects of various environmental stressors on their agricultural operation.

Lessons Learned

COVID-19 and its ripple effects have created several challenges for agricultural producers in southern Arizona. Producers' capacity to effectively respond has varied. Reliable access to internet services, online sales platforms, and social media or other forms of online communications were necessary to pursue online marketing. Dependable vehicles for deliveries and transport to various pick-up locations or markets and access to refrigeration and other storage were also integral to producers' abilities to shift market channels. Producers often had to acquire new packaging materials to accommodate delivery services or CSA boxes. More labor was necessary to help clean, sort, and package items. Beyond the impacts of the pandemic, agricultural producers face looming environmental problems and lack the long-term support necessary to increase local food system capacity. These challenges necessitate sustained investment in regional food production and strategic planning oriented around the needs of local farmers.

Urban gardening with the Community Gardens of Tucson under COVID-19: A Case Study



Community Garden of Tucson, Blue Moon Garden. Family preparing for Spring gardening. Credit Karina Martinez

Urban gardening offers low-income residents a way to access affordable, healthy produce. Tucson's numerous community gardens provide access to land for urban food production, vegetables and herbs not found in grocery stores, social networks important for knowledge exchange and emotional well-being, and physical exercise.

To better understand the impact of urban food production under disrupted food systems and economic instability, we conducted phone interviews with the non-profit Community Gardens of Tucson (CGT). CGT manages 19 gardens across Tucson for residents to produce vegetables, herbs, and flowers in 3 feet by 20 feet plots. The study was done with 15 gardeners who were low-income or were unemployed or underemployed due to COVID-19. We also interviewed five CGT staff, board, and volunteers.

COVID-19 impacted Tucson residents to varying degrees, depending on their socio-economic status and other factors. People in lower income brackets, whose employment is more likely to be terminated and hours and/or pay reduced during the pandemic, were harder hit than those in higher income brackets.¹⁸ Refugees and asylum seekers have also been

economically impacted more than other groups. Arizona has one of the highest refugee resettlement rates in the U.S., and refugees are often employed in the service sector, one of the worst-affected sectors during the pandemic.

For some low-income and refugee gardeners in Tucson, the uncertainty of the spread of the virus and garden restrictions led to reductions in their own gardening and how much they sell to market. Still, community gardens served as an outdoor public space that was safer during COVID-19. For one gardener, growing produce reduced his risk: "I go to my garden and harvest my things by myself and don't have to go out in public. That helps a lot because I can't get COVID when I am by myself."

Interactions with others in the garden spaces fostered community during the pandemic. As one gardener explained: "I learn about plants in the context of Tucson because gardening here is not like [the country he migrated from], learn what other gardeners think of plants, and share skills. I also get to associate with people from Africa, Cambodia and other places. CGT has been the place we run to escape isolation. It helped me [when my hours were cut] and my wife because she lost her job...Economically, despite COVID we needed food...we were still getting food from the community gardens."

It is important to support community gardens now so that Tucson is prepared for the projected increase of refugees/asylum seekers to come. Community gardens provide spaces for people to meet and communicate with one another which allows them to thrive in their new locations. It also offers refugees and low-income residents a space to gain access to food during crisis periods and beyond. For more information, visit: <https://communitygardensoftucson.org/> For policy recommendations, see this [policy brief](#).

By Stephanie Buechler¹⁹ and Sehdiya Mansaray²⁰

¹⁸ Parker, K., et al. 2020. [Economic Fallout From COVID-19 Continues To Hit Lower-Income Americans the Hardest](#). Pew Research.

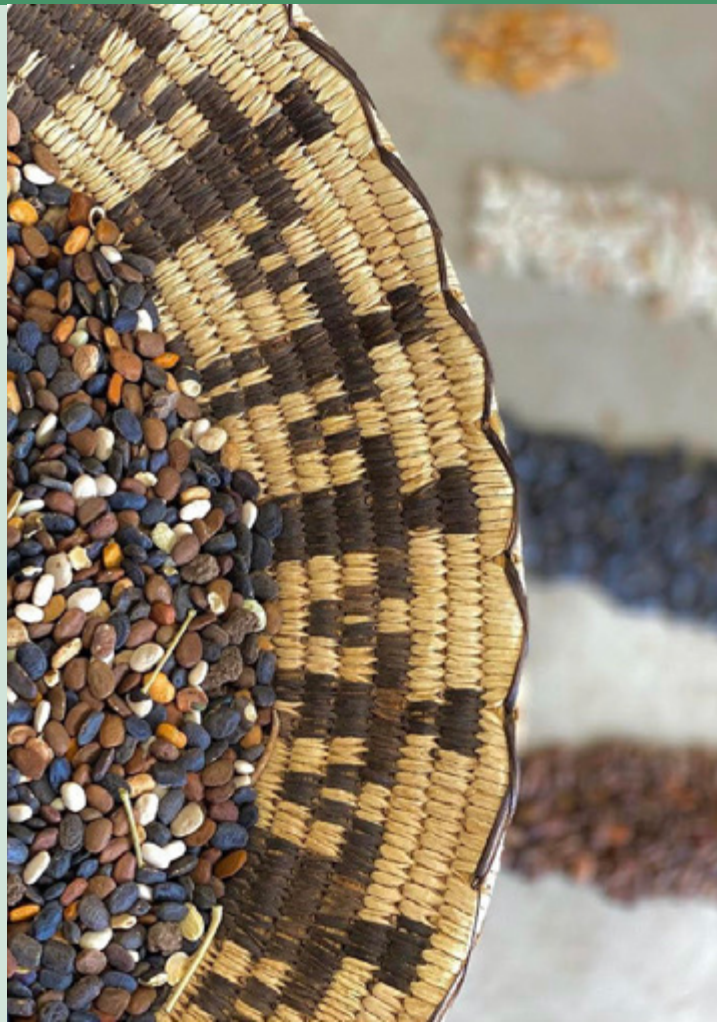
¹⁹ Associate Professor, Udall Center for Studies in Public Policy; School of Geography, Development and Environment, University of Arizona.

²⁰ Graduate Student, School of Geography, Development and Environment, University of Arizona.

Seeds

With the emergence of COVID-19 and fears of food shortages, many people turned to home gardening to try to grow their own food. People began buying seeds – often ordering them from the internet – leading to high volumes of seed sales. In some cases, this newfound enthusiasm for seeds among the general public led to hoarding and seed shortages, which impacted farmers’ access to seeds.²¹ How has this all played out in southern Arizona? Representatives from three organizations discuss seed access and use during the pandemic.

The **Pima County Seed Library (PCSL)** is a service through which residents can “check out” seeds at their local library at no cost. Seed libraries are part of a larger movement to keep seeds in the hands of communities and increase access for all. Betsy Langley of the Pima County Public Library said that during the pandemic, seed checkouts have been lower than average, likely due to the fact that the libraries have been closed and people cannot peruse the physical seed collections. However, there was an uptick in electronic requests for seeds throughout 2020. The PCSL also donated larger quantities of seeds to local organizations, including Food Not Bombs and refugee groups to support community gardens.



Ba:wi (teparty beans). Photo credit to Samuel Lopez of Wa:k (San Xavier District, Tohono O’odham Nation)

Native Seeds/SEARCH is a non-profit organization focused on the preservation of seed varieties of the U.S. Southwest and various regions of Mexico. Like many seed vendors, they faced high volumes of seed orders at the start of the pandemic and had trouble meeting demand. Due to concerns that their seed stocks were dropping at an unsustainable rate, and potentially risking their ability to meet the seed needs of Indigenous farmers, the organization chose to pause selling Native seeds to non-Native customers.

Amy Juan, of the **International Indian Treaty Council**, emphasized that the pandemic prompted conversations about seeds among the Tohono O’odham and further illuminated the need for collective control over seeds. Indigenous communities in southern Arizona are seeking to regain control over their traditional seeds. Access to and community control over seeds is a crucial component of food security, food sovereignty, and a resilient Indigenous food system. According to Amy Juan, Indigenous peoples are fighting for access to their seeds at multiple scales, from local seed banks to global negotiations with the United Nations World Intellectual Property Organization.

21 Cronin, D. 2021. [Seed Companies Struggle to Keep Up With the Demand](#). NPR.



Distributors

Local distributors facilitate the transfer of food and agricultural products to a variety of buyers in southern Arizona, including individual consumers, restaurants, and institutions like schools and hospitals that prepare and serve food. Various organizations and community groups also distribute food for free or at low-cost to increase food access in Tucson and southern Arizona. The distributors interviewed for this report represent farmers markets, Community Supported Agriculture (CSA) programs, local grocery stores, and businesses, as well as organizations like food banks and mutual aid projects that distribute food throughout the community for low-to-no cost.

Pandemic impacts on local food distribution

Food distributors faced numerous impacts stemming from the pandemic. These challenges included business closures, cancelled purchase agreements, heightened standards for customer and employee safety, sudden increased demand for local food, and higher levels of food insecurity. The following section describes these challenges and how local distributors responded to them.



Photo courtesy of Erik Stanford, Pivot Produce



Photo courtesy of Tucson Community Supported Agriculture

Closures and cancelled orders

Farm-to-restaurant and farm-to-institution linkages are crucial markets for locally grown produce and animal products. Although many restaurants remained open for takeout and delivery, reduced restaurant demand and food services led to cancelled agreements and contracts with local agricultural producers and distributors. For example, prior to the pandemic, local food distributor Pivot Produce supplied between 30-40 Tucson restaurants with locally sourced fruits and vegetables each week. Erik Stanford, founder of Pivot Produce, said that “Back in mid-March, we made our regular deliveries [of local produce to restaurants] on a Friday. By the next Monday, the majority of them had decided to close or move to take out only. We were looking at losing 90% of our sales.” Not only did this impact distribution, but it also impacted producers. Stanford explained, “We were managing loose handshake agreements, contracts, with growers that we had set up. They had crops in the ground that they were planning on harvesting through the rest of the season, and now we didn’t have sales for them.”

In southern Arizona, the farm-to-institution network connects about 10 local farms with buyers such as Tucson Medical Center, Tucson Unified School District, Sunnyside Unified School District, University of Arizona, and the Community Food Bank of Southern Arizona (CFB). Farmers in the network plan and coordinate their crops to fulfill contracts with these institutional buyers. During the pandemic, contracts with some of these institutions continued with little disruption. However, on March 15, 2020, when Arizona public schools shut down, school districts had to cancel their orders. Local distributors and producers with farm-to-school contracts had to find other channels for their products.²² Fortunately, other institutional buyers in the network were able to purchase some of the crops already in the ground that were destined for schools. “We bought those products from the farmers to honor the contracts that had been made. Continuing to build trust with farmers and ranchers is the only way to get to mutually beneficial solutions to big issues [in the food system] and to build the farm-to-institution value chain,” said Audra Christophel, the Co-Director of Partnerships and Community Impact at the CFB.

²² The most recent data from 2013-14, show that schools in southern Arizona with farm-to-school programs spent \$70,550 on local food (not including milk) and \$113,050 (including local milk) during that school year. Duval, D., Bickel, A. K., & Frisvold, G. (2019). [Farm-To-School Programs in Southern Arizona: A Case Study on the Economics of Local Foods](#). Making Action Possible for Southern Arizona.

Shifts in distribution models for local food

In response to school and restaurant closures, local distributors adjusted business operations or changed business models to ensure that local producers with restaurant or school district contracts would still have a market for their goods. Pivot Produce, a major distributor of local foods in south and central Arizona, changed overnight from a restaurant supplier to Pivot Direct, a home delivery and pick-up subscription service. “The farmers still needed to harvest vegetables, and people out there needed food,” Stanford explained. “We took one week off from buying vegetables from farmers and then one week later launched Pivot Direct. Subscribers get a weekly bag of produce, harvested in central Arizona, southern Arizona, or northern Sonora.”

Some restaurants that source local food adapted to closures of in-person dining by converting their businesses into food retail outlets. For example, Five Points Market & Restaurant opened an online store for retail of food products alongside their restaurant’s to-go menu (see Restaurants for more detail). These shifts in business models helped businesses stay afloat while providing an outlet for local food producers to sell their products.



Photo courtesy of Pivot Produce

Navigating safety protocols and other operational challenges

Like other businesses and organization, food distributors had to quickly adapt to these changing circumstances while ensuring they were abiding by COVID-19 safety protocols. When Arizona Governor Ducey issued an Executive Order limiting the operations of certain businesses on March 17, 2020, it was unclear whether or not farmers markets, a major distribution channel for local food, would be allowed to operate. On March 23, 2020 farmers markets were deemed as essential businesses. “It gave us a big sigh of relief. Especially for the farmers and the producers...[to know] that it wasn’t going to stop, and they would have an outlet that was familiar,” said Nick Szumowski of Heirloom Farmers Markets.

However, all markets, grocery stores, community supported agriculture operations, and other distributors deemed essential services had to ensure their spaces met minimum safety standards. The Heirloom Farmers Market

reduced the number of vendors who could sell at the weekly markets to allow for more space between vendor tables. The Santa Cruz River Farmers Market immediately switched to a drive-through model where customers could order off a menu of items rather than pick out the products themselves. “Changing distribution models takes a lot more resources. There’s a whole team of folks who are taking in food from growers and re-packing it [in pre-portioned bags] to make it feasible for people to purchase in the drive-through market,” said Christophel (CFB).

Businesses and market operators had to enforce mask wearing and physical distancing among employees and customers. The Food Conspiracy Co-op stopped their hot food service for several months. For Andrea Buttrick, the communications director for the Co-op, one of the hardest things about this type of policy enforcement at the store was that it affected the store’s “sense of community and

customer experience. It was a struggle to say, 'You may not shop in the store if you're not wearing a mask.' How can we ever say no to somebody needing food?"

These changes in distribution models took time, labor, materials, and creativity when frontline workers in the food industry were already stretched thin and putting themselves at risk.

Increased consumer interest in local food

Distributors experienced heightened consumer demand for local products as a result of disruptions to national supply chains. In March and April 2020, Tucson Community Supported Agriculture (Tucson CSA), a weekly local produce subscription service, received a record number of subscribers and started a waitlist. When Pivot Produce shifted to their new subscription model – Pivot Direct – they sold out of 350 shares in 24 hours. Farmers market operators noticed that most of their vendors sold out of goods after only a couple of hours at the market. "We surveyed all of our farmers [in fall 2020]," said Doran Hadan from Heirloom Farmers Markets. "I asked them if their business had...been impacted by COVID-19. All of them said that their sales had gone up."

Local distributors like the Tucson CSA, Pivot Produce, and Heirloom Farmers Markets helped farmers, ranchers, and other producers capitalize on increased individual consumer demand, particularly for producers whose other market channels, like restaurants, had closed. For example, the Tucson CSA sold more shares of local specialty products like cheese, sprouts, and mushrooms that had typically gone to restaurants. Sara Jones (Tucson CSA) noted that "the weekly consistency was really important" for these specialty suppliers when restaurants and businesses shut down.

Distributing food to people in need

The pandemic increased food insecurity across Arizona.²³ Many organizations responded to this increase in need through low-cost and no-cost distribution of produce and other food items.

The Market on the Move (MOM) program rescues fresh produce from warehouses in Rio Rico and Nogales, AZ (a major port of entry for produce grown in Mexico).

They offer 60 pounds of produce for \$10 USD at rotating distribution sites throughout Tucson and Phoenix. Pam Boyer, one of the MOM founders, observed an increase in the number of people who purchased low-cost boxes. "We were probably serving 200-300 families a week prior to the pandemic," Boyer estimated. "This last Saturday [in February 2021] was our biggest distribution yet. We had 507 cars come through." Because of the large amount of produce people receive through MOM distribution, many customers redistribute the 60 pounds of produce to family members, friends, and neighbors.

Mutual aid projects also offered crucial support for people needing food. Mutual aid refers to community-based projects that engage community members to build collective strength through sharing and supporting one another. One such group, Tucson Food Share, emerged during the pandemic and offered food for pick-up and delivery at their distribution sites. According to their website, the food share "seek[s] to make resources accessible, prioritizing the needs of our neighbors who are forgotten, ignored, and exploited by those in power. Through this process, we are creating and strengthening community bonds that empower a collective resilience through relationships of trust and care."²⁴ South Tucson Community Outreach, another mutual aid group, provided delivery of groceries and food items to people who requested food online.



Photo courtesy of Food Conspiracy Co-op

23 Acciai F., et al. 2020. [Impacts of COVID-19 on Food Security in Arizona](#). College of Health Solutions, Arizona State University.

24 Tucson Food Share. 2020. [About us](#).

Both of these groups operate under a “no questions asked” approach, which allows anyone to quickly access food. Desiree Guerrero, founder of South Tucson Community Outreach, explained, “We don’t ask questions about income and citizenship or anything like that. We wanted to stick to being a community based mutual aid organization where it’s just neighbors helping each other, people helping each other.” This approach has allowed South Tucson Community Outreach and Tucson Food Share to get food to those most in need.

As of last November 2020, Tucson Food Share estimated they had distributed food to roughly 2,300 people. “It really varies,” said Se Collier, a member of the collective. “If there’s a COVID spike, more people come. Fewer people come at the beginning of the month when other [food] benefits are more plentiful.” Mutual aid projects often share food with populations that other distributors cannot reach, in part because they do not collect personal information, such as employment or citizenship status, from community members. They have been a key resource for undocumented people, unhoused people, and other populations who face food insecurity.

On the Tohono O’odham Nation, the Ajo Center for Sustainable Agriculture coordinated distribution of more than 25,000 boxes of food over the past year, each containing about 15 meals. In April-June 2020, they distributed 1,400-1,600 boxes every week across distribution sites in different districts of the Nation.

The Tucson CSA and Pivot Produce offered discounted and free produce boxes for community members who could not pay full price. These solidarity shares were typically subsidized by other subscribers who paid extra for their share.

Partnerships and coordinating a collective response

Numerous partnerships between local distributors emerged during the pandemic that enabled food distributors to reach vulnerable populations and get food to those in need. For example, local agricultural producers and distributors such as the Food Conspiracy Co-op, Market on the Move, Pivot Produce, and the Tucson CSA, donated produce and equipment to mutual aid organizations like South Tucson Community Outreach and Tucson Food Share who quickly distributed this food

to people in need. Local mutual aid projects have also supported each other by sharing ideas, safety equipment, food, and other resources.

Another partnership involved the Community Food Bank of Southern Arizona (CFB) and Pivot Produce, who developed the Local Produce to Seniors Program. During the pandemic, CFB staff noticed a decline in the number of seniors who came to pick-up food boxes at the food bank. Using local, state, and federal pandemic relief money, the CFB contracted Pivot Produce to purchase produce from local farmers, and aggregate, pack, and deliver local produce bags to 15 senior living facilities across Pima, Santa Cruz, and Cochise counties. Approximately 700 seniors receive a bag each month that includes recipes and information about the produce and the farmers who grew it. Audra Christophel (CFB) emphasized that “We couldn’t have set this program up on such short notice without the solid relationships we already have built with food system and hunger relief partners.” The new project has also allowed Pivot Produce to hire service industry workers who have been unemployed or underemployed due to COVID.



Photo courtesy of Food Conspiracy Co-op

Lessons Learned

Less centralized distribution:

Some of the more effective food distribution services during the pandemic offered flexible models via multiple pick-up locations or delivery. Mutual aid projects offered another. Investing in a broader network of distribution sites, especially during a crisis, could serve more people in an efficient manner. Local distribution sites can also tailor their operations to better fit community needs.

Flexibility and community response:

Quick adjustments to operations, financial assistance, and coordinated efforts among local producers, markets, distributors, and food and agriculture organizations helped many individuals and local food businesses weather the pandemic. The capacity to shift operations, protocols, practices, and business models occurred in large part because of trust and long-standing relationships between local distributors, local producers, and customers. Many distributors relied on community volunteers to help with logistical issues like cleaning, pre-packaging, and delivering produce.

Need to coordinate a strategic plan for local food:

Julie Murphree from the Arizona Farm Bureau observed that “...while the smaller and more nimble local markets were able to shift a little quicker [than large scale food systems], they also had severe pain points.” These shifts in operations cost producers and distributors in time, labor, and money. Cameron Jones, President of the Southern Arizona Young Farmers and Ranchers Coalition (SAYFRC) made a similar point: “There was increased demand, but also increased complexity with getting the food to customers, which increased costs. It wasn’t a strategic increase in capacity.” Moving forward, a strategic plan for local food will help expand the food system in a way that is sustainable for local producers and businesses.

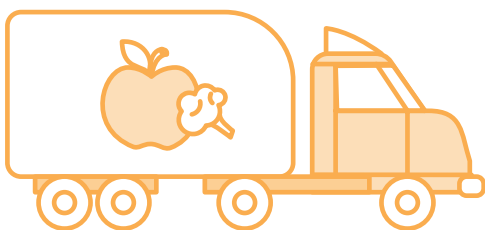
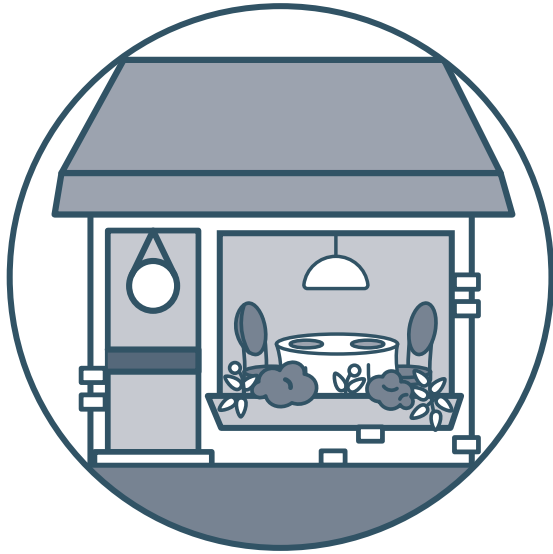


Photo courtesy of Tucson Community Supported Agriculture

Expanding capacity in the local food system:

Interviewees expressed concern that consumer demand for local food may dwindle after the pandemic subsides. Distributors expressed uncertainty about sustained interest in local foods beyond the pandemic. “When a large section of the population all of a sudden wanted a local cucumber instead of one from the grocery store, it put a lot of pressure on our [local] systems,” said Stanford of Pivot Produce. “We’ve had to act quickly to build the infrastructure [to meet that demand]. It’s hard to take that risk, not knowing [if] those folks are going to be around a year from now, when I’m running the three walk-in coolers I needed when customers were excited about us.” Christophel from the CFB made a similar point. “We have to make sure that there’s some amount of stability in this work,” she said, referring to stability for farmers and producers, but also for organizations and businesses that help connect producers to customers.



Restaurants

Impacts of COVID-19 on the restaurant sector

Restaurants, bars, and other food and drink businesses such as catering companies are among the economic sectors that have been most affected by the COVID-19 pandemic. Of the millions of jobs lost in the US during COVID-19, one in four was a restaurant worker.²⁵ In 2020, the US restaurant industry produced \$659 billion in sales (down \$240 billion from expected levels) and employed 12.5 million people (3.1 million fewer than expected).²⁶ More than 25% of workers in the food service industry in the US are Latinx and 51% are women.²⁷ Overall, 45% of restaurant workers are people of color (POC) and research indicates that POCs and women tend to occupy the lowest paid positions within these establishments.²⁸ Ongoing research suggests that people of color have been disproportionately impacted by job loss during COVID-19, driving up food insecurity and economic hardship for these families.^{29, 30} Those who retained their food service jobs during this time have faced reduced hours, lost tips, erratic work schedules, increased workloads due to expanded cleaning protocols, hostile behavior from customers unwilling to abide by COVID-19 safety protocols, and risk of exposure to the virus itself.³¹

25 One Fair Wage. 2021. [One Fair Wage Fact Sheet – National Report](#).

26 National Restaurant Association. 2020. [Restaurant Industry Facts at a Glance](#).

27 Bureau of Labor Statistics. 2020. [Labor Force Statistics from the Current Population Survey](#).

28 One Fair Wage. 2021. [One Fair Wage Fact Sheet – National Report](#).

29 Bahn, Kate and Sanchez Cumming, Carmen. 2021. [Jobs report: a year into the coronavirus recession, employment losses have been greatest for Black women workers and Latinx workers](#). Washington Center for Equitable Growth.

30 Driesen, F., et al. 2020. [Job Disruptions During the First Four Months of the COVID-19 Pandemic and Their Impact on Food Security in Arizona](#). College of Health Solutions, Arizona State University.

31 One Fair Wage. 2020. [Take off your mask so I know how much to tip you: Service Workers' Experience of Health & Harassment During COVID-19](#).

Tucson's food service industry is a strong contributor to the local economy. In 2019, this sector represented 10.2% of all jobs in Tucson and employed 38,200 people at a mean hourly wage of \$14.28.³² Restaurants have been central to the development and revitalization of downtown Tucson, particularly since the economic downturn of 2008. In addition to providing jobs, two-thirds of over 1,200 restaurants are locally owned and operated, compared to the national average of around 40%.³³ Prior to COVID-19, growing consumer interest in local food sourcing drove an increasing number of Tucson restaurants to pursue a farm-to-table approach and many anticipated that this trend would continue to grow. In 2020, the Tucson City of Gastronomy (TCoG) nonprofit organization created a certification program to acknowledge the contributions of these businesses to the local food system. In the second year of the program, 25 locally owned restaurants and 15 local food and beverage artisans received a TCoG certification due to their support of the local food economy, maintenance of food heritage, community-minded business practices, or sustainable, ethical and fair business practices.³⁴

At the same time that fast food consumption has boomed during COVID-19,³⁵ restaurants focused on an indoor dining experience have suffered huge losses due to stay-at-home orders, distancing requirements, and public health guidelines restricting indoor gatherings. Thousands of independently owned restaurants reduced their operations or closed as a result. In Arizona, over 1,000 restaurants have permanently closed since the start of the pandemic³⁶ and as of March 2021, 19 restaurants, 5 bars/breweries, and 1 food truck had closed their doors in Tucson.³⁷



Photo credit Tim Toomey on Unsplash

Restaurant closures include several iconic businesses such as Café Poca Cosa (36 years open), Fronimo's Greek Café (25 years open), and Downtown Kitchen + Cocktails (10 years open). Food businesses have struggled to keep up with rental, utility, and operations costs during the pandemic. Lost income has also made it difficult for many businesses to navigate other challenges. La Indita, for example, a family-run restaurant combining Mexican and Indigenous cuisine since 1983, is being pushed out of their current location and has had to create a GoFundMe campaign to cover the costs of moving to a new location during the pandemic, putting their legacy and business in peril.

Although many restaurants have faced closure and hardship during this time, several food and drink businesses have also opened during the pandemic.³⁸ Despite the opening of new establishments, as of January 2021, the food service and drink sector in Pima County had reported a loss of 4,600 jobs compared to the same period from 2020.³⁹ Of course, the crisis is still ongoing and the full impact on the food and drink sector will be revealed over time as more data becomes available.

32 Bureau of Labor Statistics. 2019. [Databases, Tables & Calculators by Subject: Employment](#).

33 Tucson City of Gastronomy. 2021. [Tucson Restaurants](#).

34 Tucson City of Gastronomy. 2021. [2021 Tucson City of Gastronomy Certified Restaurants and Food and Beverage Artisans](#).

35 McDowell, Erin. 2021. [8 fast-food chains that are thriving during the pandemic](#). Business Insider.

36 Vetnar, Ali. 2020. [Arizona restaurant industry resilient amid 2020 coronavirus impacts](#). KTAR News.

37 Berlin, Andi. 2021. [25 local bars and restaurants that have permanently closed during the coronavirus pandemic](#). #ThisIsTucson.

38 [The Tucson area welcomed these restaurants and bars in 2020](#), Arizona Daily Star (March 2021)

39 Arizona Commerce Authority. 2021. [In-demand Industries and Occupations, Arizona](#).

A closer look at Tucson restaurants

A series of executive orders from Arizona Governor Ducey restricting public access to restaurants since March 2020 and back and forth policies about reopening led to significant uncertainty and loss of income for Tucson restaurants (see Timeline). Most dine-in restaurants operate on very thin profit margins of around 5-10%, and many restaurant owners have struggled to keep up with rent, utilities, and staff costs during the pandemic.

Although nearly all restauranteurs interviewed accessed the federal Paycheck Protection Program (PPP) (see Appendix A) to help cover costs during the initial shutdowns, the length of the COVID-19 crisis eventually led most to lay off 50-75% of their staff. Anello, for example, had to let go of all servers and went from employing 12 cooks to 3. Hotel Congress (a business that includes bars, a concert venue, hotel, and restaurant) reduced from 165 staff to 75. In most cases, the staff that remained employed had their hours cut significantly. At Feast, for example, owner Doug Levy explained, “We’ve been keeping everyone employed, but not nearly at the level at which they were employed. People have really lost a lot of hours. A couple of people have had to take additional work to make up the difference.”

The restaurants that remained open during the pandemic quickly transformed their business models to facilitate online ordering, take-out, curbside pickup, and delivery. For restaurants built around a dine-in experience, this transition was not an easy task. As Janos Wilder, owner of the Carriage House and former owner of Downtown Kitchen, noted, “Some restaurants pivoted to a strong take-out model. In some restaurants, their menus were conducive to that and other restaurants’ menus weren’t.” Restaurants simplified menus, reduced variety, and expanded pre-made specialty items such as desserts to accommodate to-go orders and reduced consumer demand. Levy (Feast) explained the take-out model requires meals that can be boxed and still taste good 20 minutes later versus dine-in plates that are designed to be eaten one-minute after leaving the kitchen.

Even as executive orders limiting public access to restaurants lifted, the need for social distancing and enhanced hygiene protocols meant that restaurants with outdoor seating and take-out options were at an advantage. As a result, many businesses expanded outdoor dining areas and remodeled interior spaces to allow for social distancing. Some restaurants in the downtown received City of Tucson Outdoor Café grants to help fund these changes (see Appendix A). Others have



Photo courtesy of Gallery of Food Bodega

“ *We had tons and tons of product at the Café that we had made and frozen [in preparation] to be super busy. All of a sudden, we had no outlet to sell the product. So, we built an online store, literally in about two days, and started selling all of our products online to our regular clients from the [Botanical] Gardens and from our catering company.* **”**

- Kristine Jenson, Gallery of Food Bodega

had to be more inventive. For example, with no access to outdoor seating on the premises, the owners of Anello built a take-out window to provide easy to-go access for customers, many of whom consume the items at the outdoor seating available at Crooked Tooth Brewery next door.

Some restaurants established new or expanded online retail sales to help compensate for losses of income and to provide more avenues for people to buy groceries. Maynards Market and Kitchen, for example, setup an online grocery store during the initial closures of the pandemic to offset stock shortages at conventional stores. For others, online sales became a new lifeline and business model. Facing shutdown orders right at the peak season for her restaurant and catering business, Kristine Jenson permanently closed the Café Botanica located inside the Tucson Botanical Gardens and opened the Gallery of Food Bodega, an online grocer. Jenson explained: “We had tons and tons of product at the Café that we had made and frozen [in preparation] to be super busy. All of a sudden, we had no outlet to sell the product. So, we built an online store, literally in about two days, and started selling all of our products online to our regular clients from the [Botanical] Gardens and from our catering company.” The owners of 5 Points Restaurant and Market similarly decided to expand their online retail sales for curbside pick-up and delivery and a newly acquired liquor license enabled them to sell natural wines online. Co-owner Brian Haskins explained that prior to COVID-19, retail sales were about 10% of their business, and it rose closer to 30-40% during the pandemic. “It’s been really good [to have retail sales during COVID-19] and a nice way to serve the neighborhood even better,” Haskins said.

Restaurants found creative ways to maintain staff and sales while also serving the community in new ways. The team at Gallery of Food Bodega, for example, devised take-out menus to help people celebrate holidays like Thanksgiving and Valentine’s Day while in isolation at home. Doug Levy of Feast crowdsourced donations from his listserv subscribers to feed frontline workers. This effort not only helped to employ his staff during the worst shutdown periods but also provided food to more than 4,500 hospital staff working on the frontline of the pandemic. In another innovation, Levy recreated wine tastings and cooking classes as online events in which customers picked-up food or wine items beforehand and then participated in



Photo courtesy of Doug Levy, Feast

the events remotely over Zoom. These events were so successful – expanding the number of people who can participate and allowing for winemakers from other regions to “Zoom in” – that Levy anticipates continuing these virtual events after the pandemic has ended.

Policy and other support for restaurants

Several federal, state, and local policies have been integral to keeping restaurants open and staff employed during the pandemic (Appendix A). As mentioned previously, the federal Paycheck Protection Program (PPP) helped pay rent, utilities, and staff wages for many restaurants. However, all of those interviewed who took out PPP loans expressed frustration and concern regarding the confusing and changing terms of the program. The sentiments by Anello’s owner, Scott Girod, were repeated by many others: “It’s just super stressful. As far as I know our [PPP] loan should still all be forgiven because we used it all for those expenses. [But] all the rules changed halfway through after we got it.”

For many, the temporary permission issued by Governor Ducey allowing restaurants and bars to sell alcohol to-



Photo courtesy of Doug Levy, Feast. Cryo Lab

go was key to staying afloat. It allowed for innovations in business models like Feast’s virtual wine tastings mentioned above and new collaborations among businesses. 5 Points Market and Restaurant, for example, partnered with local bartenders to create the “Bridge Bar Program,” offering creative cocktails to-go and donating proceeds to non-profit organizations such as No More Deaths and Emerge. Unfortunately, these offerings were discontinued in early 2021, when a judge ruled that the governor did not have the authority to allow permission of alcohol sales to-go, and it was rescinded until further notice.

Tucson’s Restaurant Advisory Council (RAC) housed in the Metro Chamber of Commerce has been an important advocate for restauranteurs during COVID-19. RAC worked with city, county, and state officials to ensure health guidelines, public messaging, and other policies considered the particular needs and challenges of restaurants. RAC successfully worked with the City of Tucson (CoT) to shift citywide curfews to 10 pm instead of 8 pm. RAC also worked with CoT to create a 15% cap on fees charged by third party food delivery services and to prevent them from delivering food without an agreement. Prior to this shift, small restaurants were charged with fees up to 35% of costs for delivery services.⁴⁰ Some restaurants were unaware that these services were delivering their food, which led to lawsuits and new ordinances around the country to help control these services.⁴¹ Other local groups such as the Tucson City of Gastronomy organization and #ThisIsTucson media have spread the word to advocate for and support local restaurants throughout the pandemic.

40 Demers, J. 2020. [Small Tucson restaurants to get a break on fees they pay delivery services](#). Arizona Daily Star.

41 Pershan, C. 2020. [‘We Don’t Even Do Takeout’: Why, Then, Is This Restaurant on Seamless?](#) Eater.



Photo courtesy of Doug Levy, Feast. Meals for TMC

Beyond helpful policies and advocacy, community connections have been instrumental to local restaurants. As Girod (Anello) explains: “The community here has been so great to us. You connect on a different level because you see some people...showing up regularly, week to week. It makes you grateful because people [are] sticking by you and [are] excited to come and eat even though it’s not the best as take out.”

“ *The community here has been so great to us. You connect on a different level because you see some people...showing up regularly, week to week. It makes you grateful because people [are] sticking by you and [are] excited to come and eat even though it’s not the best as take out.* **”**

- Scott Girod, Anello

Lessons Learned

The COVID-19 pandemic revealed the vulnerability of dine-in restaurants and the importance of flexibility, creativity, and community to sustaining locally owned businesses during times of crisis. Restaurants relied heavily on pre-established relationships in the community and online communication channels to weather the impacts. Social media networks and email listservs were integral to many restaurants' abilities to communicate with clientele about shifting hours, menu changes, and calls to action. As Levy (Feast), explains: "Feast had the advantage of being 19 years old, and we've spent 19 years developing relationships with our guests." All interviewees anticipate these virtual communication channels to continue and possibly expand after the pandemic ends. In addition, many restaurateurs predict that online ordering and retail, delivery, take-out, and more specialized menus will become permanent features of their business.

Several interviewees expect that dine-in restaurants will recover. As Levy said, "Ultimately, when the pandemic finally ends, I think people will be so desperate for human connection. There's always going to be a space for a traditional restaurant because that's how people like to interact with one another. They break bread together; they sit down at a table together. I think that's still going to be there." In the meantime, however, many restaurant owners are using this time of crisis to assess their business models and create changes. In fact, several interviewees suggested that an important upside of the pandemic has been the opportunity to slow down and reflect in an industry that is typically fast paced and stressful. As Jensen (Gallery of Food) notes: "We were going 100 miles an hour and I'm probably working just as hard as I was, but I work differently than I did. I'm okay with leaving at six o'clock and not having things done." Similarly, Haskins (5 Points Market & Restaurant) explains: "I kind of feel good about being forced to slow down and reevaluate how we do business... to realize what we really want to do and how we want to get food to people's plates."

This time of reflection has brought renewed interest in cultivating more of a local consumer base and local sourcing practices. Nearly all interviewees explained that a positive outcome of the pandemic has been people's recognition of the importance of local food systems

and a growing willingness to support these systems. As Haskins (5 Points Market & Restaurant) noted, "Perhaps our giant food systems need to be rethought." While all the restaurants interviewed had some component of local sourcing prior to the pandemic, several articulated intentions to further expand these practices in the future. In addition, several owners articulated an interest in increasing the use of native and desert-adapted foods in response to ongoing issues of climate change and drought.

One challenge for restaurant owners is how the local food system will scale up to meet growing demand. Prior to the pandemic, there was a growing sense that local food production was hitting capacity, and some noted that increased competition for local foods was driving up costs. There is need for better policies and support to expand local agriculture in a way that accounts for the true cost of food, pays employees a living wage, and maintains affordability for consumers and businesses. As Haskins (5 Points Market & Restaurant) explained: "I see more of my peers looking to source things locally. A lot of it might still be in the idea stage and the pandemic slowed down some of that progress, but I see an appreciation of local food producers by restaurateurs. I would rather see the local folks getting more money and the big folks getting less because people have to work, and people have to eat."



Photo credit Nicolas Nieves on Unsplash



Local Food & Agriculture Organizations

The work of non-profit organizations, community groups, and food policy networks in southern Arizona has been vital in responding to COVID-19 impacts on the local food system. Through policy work, advocacy, and communication, these organizations worked to address pandemic impacts and develop visions for more resilient and equitable food systems. This section highlights some of the key contributions of food and agriculture organizations in Tucson and Arizona.

Policy work

Food assistance and benefit programs have been a lifeline for Arizona families facing unemployment and the closure of school feeding programs during the pandemic. While these programs are administered by the federal government, regional food policy organizations have further expanded food assistance programs and advocated for pandemic-related provisions to continue beyond the pandemic to address hunger in the state. Key advocacy work included the following:

Pandemic EBT and SNAP Benefits

Federal food assistance programs expanded food benefits in response to COVID-19. In March 2020, as part of the Families First Coronavirus Response Act, the USDA Food and Nutrition Service (USDA-FNS) launched a pandemic Electronic Benefits Transfer (P-EBT) program. This program provided additional food benefits for low-income families and children who missed meals due to school and childcare closures. In January 2021, President Biden increased P-EBT funds by 15%.

The USDA-FNS also expanded benefits in their Supplemental Nutrition Assistance Program (SNAP)⁴² and eased eligibility criteria. In Arizona, federal SNAP benefits are administered through the Arizona Department of Economic Security. While the amount of SNAP benefits administered in Arizona shifted each month, 27% more families received SNAP benefits in February 2021 than in February 2020, and the average amount issued per case was 57% more. More than \$189 million USD was distributed through SNAP in Arizona in February 2021.⁴³

42 SNAP offers benefits to supplement the food budgets of low-income individuals and families. SNAP is redeemable at approved retail stores and farmers markets.

43 AZ Department of Economic Security. 2021. [Statistical Bulletin February 2021](#).

Food system organizations and anti-hunger advocates, like the Arizona Food Bank Network, hope that some of these federal policy changes and funding for food assistance will outlast the pandemic and continue to support hunger relief efforts.

Double Up Food Bucks Arizona

Pinnacle Prevention and The Community Food Bank of Southern Arizona worked to extend food assistance benefits through the Double Up Food Bucks program, which doubles the purchasing power of SNAP benefits for Arizona-grown fruits and vegetables at farmers markets and other locations. Arizonans using SNAP receive a \$1 match from the State for each dollar of SNAP benefits which they can spend on Arizona-grown fruits and vegetables. This program preexisted the pandemic with a match limit up to \$20 per day. In June 2020, the Double Up Food Bucks program began providing an unlimited match. The monetary value of SNAP and Double Up Bucks benefits redeemed at area farmers markets has risen significantly during the pandemic (see Figure 8).

Support for this program was expanded in Arizona’s first COVID-19 Response budget agreement and is now moving through state legislature to become a permanent program (see Policies and Programs for more information). With continued support, this program would simultaneously benefit Arizonans facing food insecurity and Arizona farmers.

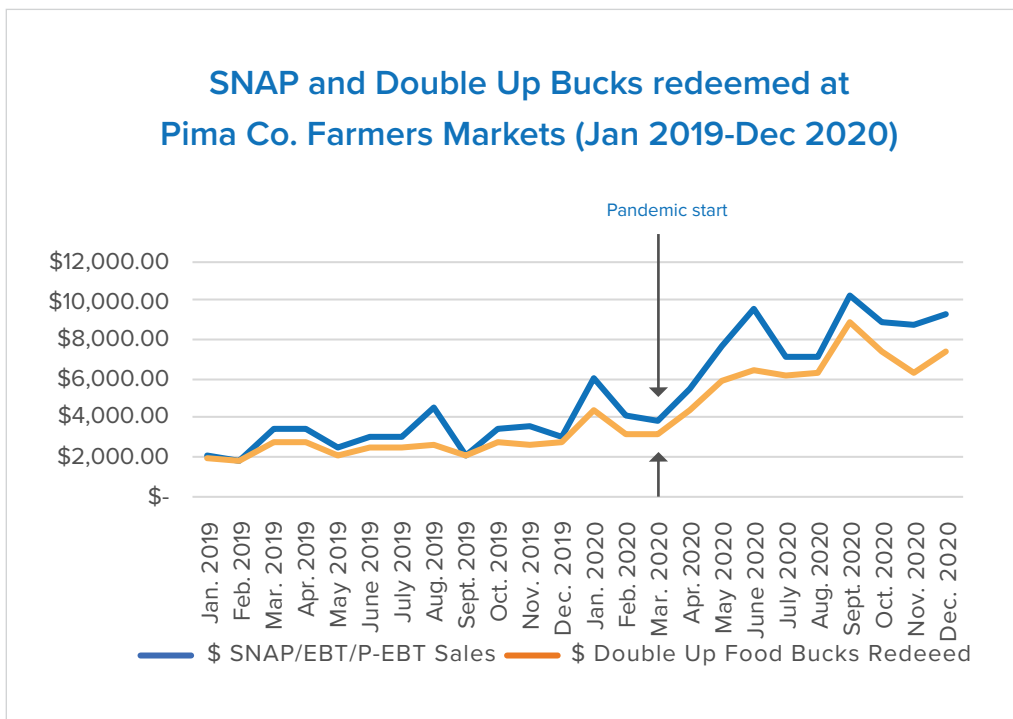


Figure 8: SNAP and Double Up Bucks redeemed at Pima County Farmers Markets
 Note the steady rise after the start of the pandemic in March 2020.

The Farmers Market Nutrition Program

This federal program is administered through the state of Arizona for qualifying seniors (through the USDA Commodity Supplemental Food Program) and families (through the USDA Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)). Participants receive \$30/year in vouchers to spend at approved farmers markets for Arizona grown produce. This year, the Community Food Bank of Southern Arizona leveraged CARES Act funding that they received from the City of Tucson, to provide a match to the amount of produce purchased using these vouchers.

Friends of the Farm Program

Operated by the Arizona Food Bank Network (AZFBN), the Friends of the Farm Program has worked to address food security while supporting small-scale farmers (see Policies and Projects section for more details). The program allows food banks to purchase produce, dairy products, and meat directly from small-scale producers who generate less than \$250,000/year. A pilot program began in 2019 and has continued throughout the pandemic. It provided a crucial safety net for the farmers enrolled who lost their markets due to the closure of schools and restaurants.

Advocacy work

Farmers markets as essential businesses

Food and agricultural organizations, coalitions, and networks advocated for local food systems during the pandemic. In the early stages of the pandemic, it was not clear if farmers markets would be considered “essential businesses” and allowed to operate. As Adrienne Udarbe of Pinnacle Prevention describes, “when the pandemic first hit, many of the markets faced potential closure because they were perceived as events or large gatherings.” Pinnacle advocated on behalf of the markets with the Arizona Governor’s Office and with municipalities. In Tucson and Pima County, farmers markets were allowed to continue operation. But as Udarbe notes, “some cities and towns still ended up closing some markets...Sierra Vista in Cochise County, and Flagstaff [in Coconino County].... That happened because those markets were operating on city property....and all city properties were going to be closed for a period of time. That’s kind of the gray area we were trying to help markets navigate.”

Tucson’s Restaurant Advisory Council (RAC) and the Tucson City of Gastronomy (TCoG) nonprofit organization also played an advocacy role for local restaurants during the pandemic, advocating for federal assistance to independent restaurants, the capping of third-party restaurant delivery fees, and supporting a regulatory waiver that allowed local restaurants to operate as groceries for food and household essentials (see Restaurants for more details).

Communicating and connecting: sharing information and resources

Communication has been crucial throughout the pandemic. Food and agriculture organizations played key communication roles by sharing information, convening people virtually to develop strategies and problem-solve, and connecting people to resources. Below are some specific examples of the communication roles played by food system organizations during the pandemic:

Arizona Farm Bureau called all of their agricultural members to check in on them and direct them to relief resources.

Arizona Food Systems Network and the Community Food Bank of Southern Arizona hosted weekly phone calls to provide updates on COVID-19 responses and strategies. Several organizations developed websites and other electronic communications about food assistance and pandemic-related resources.

An Arizona-wide coalition of farmers market directors shared best practices for operating farmers markets during the pandemic.

The Heirloom Farmers Market added up-to-date information to their websites to inform customers about how to continue purchasing from local farmers via CSAs, pre-orders, or pick-ups.

Tucson Restaurant Advisory Council formed to advocate for the needs of restaurants during COVID-19.



Photo courtesy of Tucson Community Supported Agriculture

Redistribution of federal relief funds and other resources

In addition to serving as communicators and conveners during the pandemic, food systems organizations were instrumental in accessing and redistributing federal relief funds to community partners. For example, the Community Food Bank of Southern Arizona redistributed CARES Act funding into grants for smaller and more grassroots food system organizations and mutual aid projects. Similarly, The International Indian Treaty Council received grant funds to support free meal distribution at San Xavier Cooperative Farm. Organizations with access to grant funds were thus an important part of responding to the impacts of COVID-19 throughout the food system.



Photo courtesy of Tucson Community Supported Agriculture

Lessons Learned

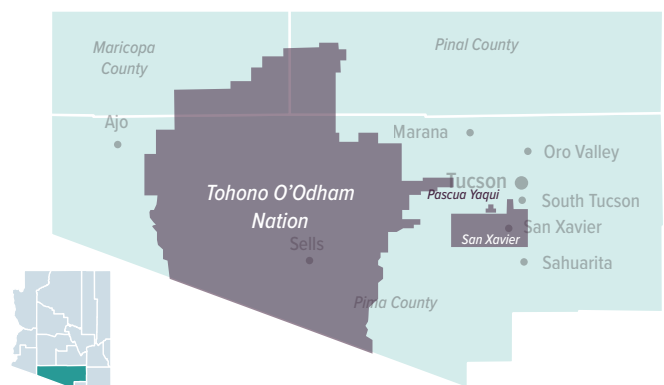
The contingencies and challenges posed by the pandemic prompted food and agricultural organizations into action. In the process, new partnerships, connections, and modes of communication emerged to address the needs of the moment. Existing relationships, partnerships, networks, and knowledge of food system issues enabled a quick response to COVID-19's impacts on the regional food system. For many working within the regional food and agriculture system, the pandemic highlighted existing gaps in ongoing work and reoriented individual and collective perspectives in small and significant ways. Existing food system inequalities became more obvious during the pandemic, calling for reflection and concerted action on these problems. The lessons learned from the pandemic are likely to shape the work of these organizations going forward.

COVID-19 and Food Systems on the Tohono O’odham Nation



Photo courtesy of San Xavier Coop Farm

The pandemic has had different impacts and implications across communities in southern Arizona. This section explores how the pandemic has affected food and agriculture on the Tohono O’odham Nation. Representatives from Ajo Center for Sustainable Agriculture, a Native-governed food and agricultural organization, San Xavier Cooperative Farm, a Tohono O’odham operated farm, and the International Indian Treaty Council discussed how the pandemic has impacted their work and the Tohono O’odham Nation more broadly. Their accounts describe the particular challenges facing the Tohono O’odham during the pandemic, including lack of access to food. They also share opportunities and potential for developing O’odham agriculture and food systems to be more accessible, robust, and resilient in the years to come.



The Tohono O’odham Nation

The Tohono O’odham Nation is a sovereign nation located in southern Arizona. The Nation is composed of four pieces of land that total 2.8 million acres. The Nation extends to the U.S.-Mexico border to the South. The Nation is composed of approximately 28,000 members.⁴⁴

44 Tohono O’odham Nation website. [About Tohono O’odham Nation.](#)

A look at Tohono O’odham food and agriculture with Amy Juan of the International Indian Treaty Council

Amy Juan currently serves as the Office Manager of the International Indian Treaty Council (IITC) in Tucson, Arizona. The IITC is an international organization working for the sovereignty and self-determination of Indigenous peoples and the protection of Indigenous knowledges, land, cultures, and rights. As a member of the Tohono O’odham Nation, Amy has been learning about O’odham farming and foodways for much of her life. She has worked in various capacities to foster appreciation of, education about, and action around O’odham traditional foods and farming, through Tohono O’odham Community Action (TOCA), the New Generation of O’odham Farmers project, and her involvement with San Xavier Co-op Farm.

An interview with Amy, excerpts of which appear below, covered a wide range of topics. Amy described how the pandemic has brought many issues affecting the Tohono O’odham to the fore and has led to more community dialogue around issues of food and agriculture. Along the way, Amy describes efforts to revitalize O’odham food and farming and the ongoing exclusion of O’odham and other Indigenous people from dialogues and decision-making in and beyond the regional food system.

COVID-19

The pandemic illuminated many preexisting food system issues. Amy described the impacts of COVID-19 on food access and how that prompted broader reflection about food on the Tohono O’odham Nation.

Amy: The Tohono O’odham Nation is 2.8 million acres, about the size of Connecticut, and we only have one grocery store. We’ve always had just one grocery store. There are little convenience stores, but they have mostly processed foods. When the pandemic hit off, we noticed a big impact at Basha’s, the only grocery store in Sells. If you consider the different socio-economic circles on the Tohono O’odham Nation – many elders still live at home who wait for their social security checks [to buy food]. They live on a different time scale as far as food. And then for families, especially big families, a lot of people aren’t able to grocery shop until the first of the month.

So, when the pandemic hit off, there was hoarding but we didn’t really see an impact until later on when the hoarding started to happen in the cities. People from outside the Tohono O’odham Nation, coming from Three Points, or Ajo, or even Casa Grande, came to Basha’s to buy their food. That left a lot of our shelves empty. And with community members who didn’t have the ability to purchase the food until a certain time, it was just really hard, it was a challenge, it was a hardship. And even just transportation general... like I said, this is the size of Connecticut, villages are pretty spread out. Sells is kind of more towards Tucson, so for communities to the north, you know they’re going to Casa Grande or to Ajo.

A lot of the work that Ajo CSA [Center for Sustainable Agriculture] has been doing has been really awesome. They’re covering the side of the nation and the population that isn’t close to Sells. The Nation as a government has provided food relief, but it’s all food that is sourced from outside of the Nation, which is a concern. A lot of times it is processed food and dry goods and things like that. But not so much fresh food.

[The pandemic] really opened our eyes. In the work we were doing with TOCA, especially with young people, when we go into the classrooms, we ask them, “If something happened tomorrow where would you get your food? Where would you get your water?” And as a joke, some of the young people will say, “Well, I’d just go rob Basha’s or something.” But we say “Okay, but if it’s the only grocery store, how many people are thinking the same thing? And if the food comes from somewhere else, it’s going to run out.” Then we go into conversations about well, at what time of the year do you get mesquite beans or prickly pear or saguaro fruit or wild spinach? When can you go hunt? Where can you find water? It turned conversations into how we are able to be self-resilient.

We all had that knowledge and experience, but it wasn’t until the pandemic hit off where we really started to take a closer look at our food systems. We’re definitely in a better place than we were pre-pandemic in terms of the conversations that we are having around our food.

Revitalizing O’odham food and farming

Throughout the conversation, Amy described various changes in O’odham food and farming that she and other O’odham people had witnessed in their lifetimes. She learned from an elder farmer, Clifford Pablo, that “in the 1920s...we were growing about a million pounds of tepary beans and then by the early 2000s we were only growing about 100 pounds of tepary beans.” Supporting O’odham youth with the knowledge, skills, and resources they need to bring back traditional farming and foods has been a major emphasis of Amy’s work. She described a “renaissance” in traditional food and farming that continues to build.

Amy: [Learning about the decrease in O’odham food production] made us look at our history and all the things that have happened for us to get away from that lifestyle. And for us to be producing so much less food for ourselves, coming from our own community. We developed a program called the New Generation of O’odham Farmers, which included older, more experienced farmers who were out at the farms every day. We also had an internship for about 10 to 12 young people. We spent a lot of time developing their leadership and knowledge and teaching them how to grow food from beginning to end – planting, caring for, harvesting and then providing that food back to the community.

A really successful part of our work was to create a community garden that we did in partnership with the Indian Health Services. That turned into a farmers market that was really kicking off at the time [2010/2011] and provided food to the Desert Rain Café [a café on the Tohono O’odham Nation]. It also brought our traditional foods into our local school lunch programs because there wasn’t any kind of traditional food in the schools. Part of our work was going into schools, helping the cooks develop recipes and then, providing that as an option to every student.

A big philosophy of our work with TOCA was based on nine points that consider the question, “What does a healthy O’odham community look like?” We tried to make sure that all or some of those points were covered in anything that we did. For those us who started that work, after leaving TOCA our question became how do we continue to make that vision happen?

Exclusion

A strong and recurring theme in the conversation was the exclusion of Indigenous people from dialogues about regional food system. Amy described how Indigenous knowledges, cultures, and foodways do not receive the recognition they deserve. Indigenous people are often not invited into dialogues around these issues, and when they are, there are often sidelined, not heard, or their contributions are not valued. Both the Tohono O’odham and Pascua Yaqui are currently in a process of regaining access to their own native seeds, which have been under the control of non-Indigenous people for decades. These issues are not unique to southern Arizona’s local food system – as Amy described, Indigenous people are fighting at all scales, local to global, for recognition and rights. Yet Amy remains hopeful that all of the people of this region can come together to solve pressing issues and ensure healthy land, food, and basic needs for all people.

Amy: I’m O’odham, so I know the history, I know the land, and I know a lot of the food producers. Within these later years – especially doing all the community work then coming into Tucson and coming into these other circles of food – it is really upsetting to know that we are being left out of conversations or are not there to be able to speak for ourselves. And also learning about how African American food experiences and Asian American food experiences are not included, but how we’re all interrelated, especially within our food histories here in Tucson.

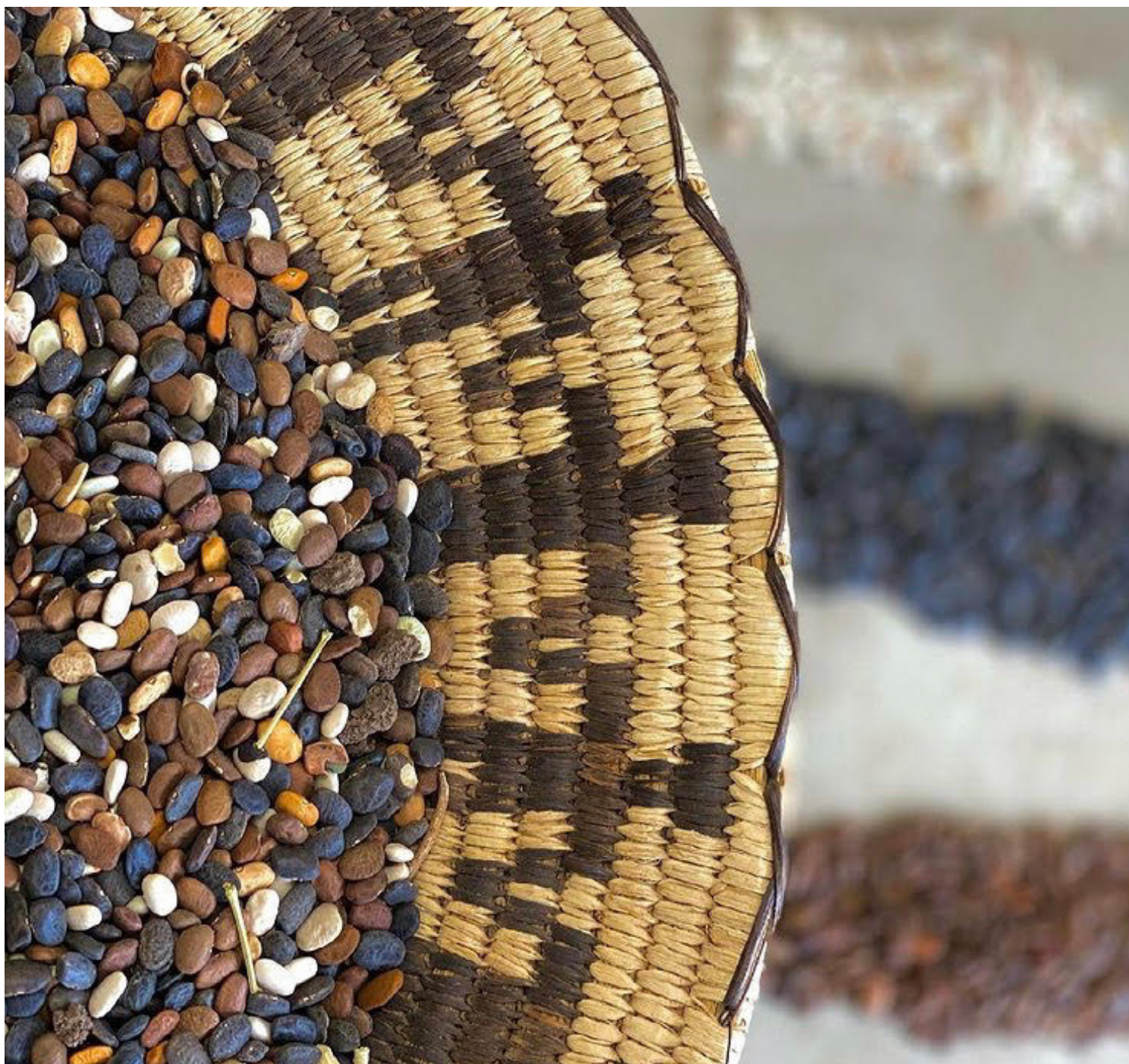
[One of the] biggest things grinding my gears was Tucson having the City of Gastronomy title. A lot of our foods and Indigenous foods are the reason why it is so special. But we’re not given the opportunity to speak to...we’re being spoken for. And [sometimes] Indigenous foods are identified as fry bread or other things that aren’t Indigenous but are colonial foods.

Those things have been floating around for a while, which is really unfortunate. We all share the same desert. We all share the same weather. Looking at things like climate change, we’re all going to be affected in the same way. In connecting with Indigenous communities on the other side of the world and seeing desertification happen in their communities, they’re looking to people like us, desert people, to help them learn how to grow food with very little water. That’s where tepary beans come in. We want to be protective, we want to have those connections

and accessibility to our food, but not at the expense of them being co-opted or us not being included in the conversation. Especially about how our food is growing or how they're taken care of because it's not just the food it's also... you know, we pray for rain to grow this food and that has a lot of meaning behind it.

This is the type of knowledge that Indigenous peoples have and can contribute, not just to Indigenous peoples' communities, but to the whole world. How can we do

that if we're not being included? We are not waiting to be included, we're just doing our work. But we recognize that if we're not included, there will be some gaps there. I think things like this – this conversation [about] the knowledge that we have here in our community and in other parts of the community – is so important. I hope that this conversation opens some eyes and ears and creates potential for other opportunities to build. That's my hope, that's our hope.



Ba:wi (tepariy beans). Photo credit to Samuel Lopez of Wa:k (San Xavier District, Tohono O'odham Nation)

Ajo Center for Sustainable Agriculture

The Ajo Center for Sustainable Agriculture (Ajo CSA) is an organization based in Ajo, Arizona focused on issues of sustainable agriculture and food justice. Ajo CSA works with communities in Ajo and the Tohono O'odham Nation to promote local food economies, agricultural education, and food access. Ajo CSA was founded in 2008 by Nina Sajovec as a community supported agriculture program and became a 501c3 organization in December 2013. It has since developed into a Native-governed non-profit with a mission to develop a sustainable and just food system in Ajo and the Tohono O'odham Nation. Ajo CSA's current areas of work include agricultural internships and trainings, education about food and agriculture, as well as microbusiness and workforce development. Ajo CSA also operates a farmers market store, a commercial kitchen, and a new e-commerce site featuring Tohono O'odham-produced products.

In the last year, the pandemic caused Ajo CSA to change gears to address issues of emergency food access in the region, particularly on the Tohono O'odham Nation. Nina Sajovec describes how COVID-19 has impacted Ajo CSA's work, some lessons learned from the last year, and what is needed to advance local food economies and food access in Ajo and the Tohono O'odham Nation.

COVID-19 impacts and responses

When the pandemic hit, Ajo CSA quickly pivoted from its typical programming to launch a COVID-19 Emergency Food Response to address hunger in Ajo and the Tohono O'odham Nation. Nina describes "at the end of March and then really April, for the first time in a lot of people's lives...they saw the shelves in the only grocery store here empty, literally empty, so there was no food. Imagine living in a place where you know you have to drive an hour and a half if your store doesn't have food." In Tucson and other large cities, grocery store shortages prompted an uptick in demand for locally produced food; however, this increased demand for local food did not occur on the Tohono O'odham Nation. Nina described: "Not here. Basically, that's another one of those structural injustices. Local food has always been inaccessible to people of low income. I hear from farmers in Tucson and Phoenix that farmers markets have never been better. We cannot sell any local food at this point because the same people who might have bought it before are now standing in line at the food pantry."

Food shortages at the single grocery store on the Tohono O'odham Nation, and a lack of food donations coming from Tucson and other cities created difficult circumstances. Nina explained: "[with the pandemic] we are now balancing health, we are balancing isolation, and lack of access and lack of ability to access, we're balancing poverty. Our region is already way above the average levels of poverty and unemployment.

With the pandemic everything just stepped straight into a really dire situation."

With the support of various partners, Ajo CSA shifted from their normal programming and converted the Ajo Food Pantry into a space to receive, store, and process food donations for distribution to address this growing need. This program distributed around 375,000 meals in the last year, totaling around a million pounds of food. "Last April, May, and June we were doing about 1,400-1,600 boxes every week," Nina described. "We had four locations for distribution and on any given week we would give out food to three to four districts. In total, we've worked with seven mostly western districts -- so the ones that are further away from Tucson -- and now in March 2021, it's almost a year later, we still work with three districts." As emergency food distributors, Ajo CSA played a pivotal role addressing food scarcity and insecurity in Ajo and the Tohono O'odham Nation.



Photo courtesy of San Xavier Coop Farm



Photo courtesy of San Xavier Coop Farm

Lessons learned

While food insecurity on the Tohono O’odham Nation predated COVID-19, and the pandemic’s impacts are still being felt, Nina is hopeful that the community is beginning to emerge from the long emergency of the last year. For Ajo CSA, the pandemic further clarified the need for a resilient food system in Ajo and the Tohono O’odham Nation. Nina said that the pandemic “stressed that we need to invest in supporting...those who are growing food or raising cattle or gathering wild foods.” Even small gardens made a big difference in the pandemic – access to greens from neighbors provided some access to fresh and nutritious food. Multiplying the number of producers and other players in the local food system is a key step in strengthening local food access. For Nina, the events of the last year demonstrated the need to invest in food production and local food systems, specifically on the Tohono O’odham Nation. Rather than depend on metropolitan emergency food distribution, local community capacity is required to respond to the pandemic and other future emergencies. Investing in the youth and their skills is also a crucial piece of the puzzle. Building local food economies and multiplying the nodes of the food system in Ajo and the Tohono O’odham Nation is a major emphasis for Ajo CSA moving forward.



Photo courtesy of San Xavier Coop Farm

Developing local food economies

The pandemic has made clear the need for getting more people involved in food production and food economies, especially on the Tohono O’odham Nation. Even before the pandemic, Ajo CSA understood the importance of workforce development and skills-based training for expanding local food economies. For the last four years, Ajo CSA has been operating an agricultural workforce development program. This program includes paid apprenticeships for adults (mostly Tohono O’odham) wanting to work in food and agriculture. These apprentices receive mentorship and hands-on training, both within and outside of the Tohono O’odham Nation. The organization also runs a microbusiness incubator and are currently setting up an e-commerce site for O’odham producers. In 2018, Ajo CSA convened the Arizona Workforce Coalition to bring these issues up at a state-wide level. A bill currently being reviewed in the Arizona legislature would provide state funds to train new farmers and expand the skilled agricultural workforce across the state (see Policies and projects for more details).

Nina hopes these programs will set the groundwork for local food economies that benefit Tohono O’odham producers, consumers, and communities. Nina described this larger vision for an O’odham-centered food economy: “Most of the people spend their money on food and other products that are not produced by O’odham and it leaves the reservation. We’re thinking about who produces food, who distributes it and where does that money go. And then [in terms of the food] who prepares it, who consumes it, and how does the cycle turn back? It’s more about tying those knots together or those nodules in a network together and making sure that the cycles return back to the people, in our case, the Tohono O’odham.”

San Xavier Cooperative Farm

The San Xavier Cooperative Farm is a community farm run by members of the Tohono O’odham Nation that is located in the San Xavier District.



Photo courtesy of San Xavier Coop Farm

The history of San Xavier Cooperative Farm

The history of the SXCF demonstrates various challenges that the Tohono O’odham have encountered in relation to agriculture in recent times. O’odham agriculture has historically been dependent on irrigation from the Santa Cruz River. In recent history, water overexploitation by the city of Tucson and mining corporations has resulted in the loss of surface flow on the Santa Cruz and has depleted groundwater underlying the San Xavier District. Decisions made by the U.S. Congress in the late 1800s divided collectively held tribal lands into private allotments, thus fragmenting landholdings and undermining cooperative agriculture.⁴⁵ Over time, these environmental impacts and various forms of intervention by non-Native people have led to a decline in Tohono O’odham farming.

SXCF was founded in 1971 to respond to these impacts. As the SXCF website describes, “Once surface flow along the Santa Cruz disappeared because of down cutting⁴⁶ and groundwater pumping, O’odham agriculture in San Xavier became a thing of the past. In 1971 a group of Allottees in San Xavier got together and formed a cooperative of land-owners in order to piece some

of the lands back together and find a way to farm it as a whole.” In 1975 this group succeeded in pressuring the federal government to stop mining operations from extracting water from the San Xavier District and the San Xavier Cooperative Farm gained access to water rights through the Central Arizona Project, allowing for steady agricultural production.

Today SXCF continues to operate as a cooperative farm that works to promote economic development, healthy farming practices, and cultural and environmental values consistent with the Tohono O’odham Himdag, or way of life.⁴⁷ The farm also operates a catering service, community gardens, and a shop selling traditional foods and arts. In an interview, SXCF described how COVID-19 has impacted their work and their broader role in our regional food system.

⁴⁵ San Xavier Coop Farm. [Our mission.](#)

⁴⁶ Down cutting refers to the erosion of a riverbed that deepens the channel of a river.

⁴⁷ San Xavier Coop Farm. [Our mission.](#)



Photo courtesy of San Xavier Coop Farm

COVID-19 impacts and response

Like many farms, SXCF's operations were impacted by the pandemic. Staffing and operating hours were adjusted to maintain safe working conditions. While hay sales remained steady, sales of traditional foods and other products in the shop were down, likely due to the lack of visitors traveling to San Xavier Mission and reduced hours. Other outlets who typically buy traditional foods, like retailers, restaurants, and local distributors, also reduced the volume of their orders.

SXCF shifted their operations to respond to increased need for food due to the pandemic. The farm operated a meal distribution service through their catering

department. With the support of the Community Food Bank of Southern Arizona and the International Indian Treaty Council, the farm distributed free meals to anyone in need during their once-a-week distribution. However, after the Tohono O'odham Nation issued a ban on hot food sales to discourage congregating in public, this work was discontinued. They instead shifted to distributing packaged food. For SXCF, the events and challenges of the last year served as a reminder of the farm's importance to the local community. As one staff member reflected, "it just kind of reinforced for us our need to be here, the farm's need to be here. And that gives us more reason to keep doing the work and building on it."

SECTION 3. LOOKING FORWARD

Looking ahead – challenges to building a resilient and socially just regional food system

While the past year has created new opportunities for local food and farming, the capacity to seize this moment and grow the regional food system is constrained by a set of ongoing challenges facing small- to medium-scale agricultural producers and the food system more broadly. This section highlights ongoing problems that limit the expansion and strengthening of southern Arizona’s regional food system.

Local food supply and capacity

For many people working in the regional agricultural and food system, the pandemic has raised questions about the capacity of local producers to meet increased demand for local food. While the growing interest in local food presents an exciting opportunity to expand production, it has also highlighted shortcomings and challenges. Cameron Jones, president of the Southern Arizona Young Farmers and Rancher Coalition (SAYFRC) reflects, “Even if there’s a huge increase in demand, like there was over the summer, it doesn’t seem like we currently have the capacity.... We’re a long way from where we need to be.”

The question of capacity is linked to several longstanding issues, such as land access, labor availability, and workforce development in Arizona agriculture. The Southwest is a locus for economic and population growth. Arizona’s population increased by more than 41% between 2000-2019⁴⁸ and continues to expand, causing mounting competition for land and water resources between urban development, agriculture, and environmental uses. The co-occurrence of the pandemic and a particularly hot and dry summer foreshadows how climate change and decreased water availability will impact local food supply. To strategically build capacity in local food depends on investments at all levels of the food system, addressing issues of access to resources, and acknowledging systemic inequalities.

48 U.S. Census Bureau. n.d. [Population and Housing Unit Estimation Tables](#).

49 Totiyapungprasert, P. [Is this Phoenix Farm Being Relocated to Make Way for a Sewage Plant? Here’s What We Know](#). AZ Central.

50 Local First Arizona. n.d. [Urgent: Community Farm at Risk](#).

Land

Access to land is a major obstacle for existing and new producers in Arizona. Small- and medium-scale growers selling through local markets need to be close to larger cities to access markets and labor, yet this land is increasingly coveted for commercial and residential development. Given the central role of real estate in Arizona’s economy, it is often not feasible for small- or medium-sized farms to compete with developers for land.

In the last year, two major organic farms in Maricopa County were impacted by these pressures. Part of the land leased by Crooked Sky Farms, a major supplier of produce for Tucson CSA, is being purchased by the city from owner and developed into a water treatment facility.⁴⁹ Blue Sky Organic Farm, a supplier for Pivot Produce, operates on leased farmland in Litchfield Park, AZ. Fulton Homes recently purchased 60% of Blue Sky’s leased land and begin construction in summer 2021. In their search for new farmland, the owners have found that any viable options are high-priced, and often sold quickly and off-market⁵⁰

The Coalition for Farmland Preservation is working to keep Arizona farmland under agricultural production. [Learn more about Local First Arizona’s effort to Preserve Farmland in Maricopa County and join the effort.](#)

Access to land is a major obstacle for existing and new producers in Arizona. Small- and medium-scale growers selling through local markets need to be close to larger cities to access markets and labor, yet this land is increasingly coveted for commercial and residential development.

In Tucson, land issues have also affected Flowers & Bullets' Midtown Farm. Flowers & Bullets is a collective that addresses systemic economic and environmental racism through art, sustainability, and community empowerment. As part of their work, Flowers & Bullets transformed a vacant elementary school campus into productive gardens and a community space. However, the future of the farm remains uncertain because they lease land from the Tucson Unified School District. The uncertainty caused by leasing land and the prohibitive capital costs of buying land work to undermine the lasting sustainability of these initiatives.

Get in touch with Flowers & Bullets if you are interested in supporting or participating in their efforts at www.flowersandbullets.com, @flowers_and_bullets on Instagram, or @flowersbullets on Facebook.

The fate of urban and peri-urban farmers near Arizona's cities is under threat with little protection from development pressures. As these farms are destroyed for urban and residential development, prime agricultural land cultivated by farmers over time is lost. Besides food, these farms and gardens provide other benefits to urban communities, such as greenspace, habitat for desert pollinators, and mitigation of urban heat island effects. A recent analysis of Las Milpitas de Cottonwood, a 5.5-acre community farm managed by the Community Food Bank of Southern Arizona, describes the social and environmental services it provides.⁵¹ Social benefits include community

cohesion, access to fresh food, supplemental revenue from selling food from the farm, and environmental education. Environmental benefits include mitigation of greenhouse gases, increased pollination, and reduced air pollution. This study suggests that over a 40-year timespan, the farm would generate a positive net present value of \$0.9 million in community benefits. More public and private support is needed to ensure that these land uses are valued and protected within and beyond our city limits.

See the Policies and Projects section (page 54) to learn about how local organizations are working to acquire land for new farmers.



Photo credit: Dulecy Lima on Unsplash

51 Pima County Office of Sustainability & Conservation. 2020. [Las Milpitas Autocase Project: A triple-bottom-line analysis report of Las Milpitas de Cottonwood Community Farm.](#)

Labor and workforce

Issues of labor availability and workforce development present major obstacles to the survival and growth of small and medium-sized farms in Arizona. Access to skilled and committed labor is particularly difficult for small farms in more rural areas. Smaller operations have relied on volunteers, interns and programs like Worldwide Opportunities on Organic Farms (WOOF). However, some farmers report that these opportunities have become less common, leaving labor needs unmet. COVID-19 and other changes in marketing trends and consumer behavior (e.g., online shopping) have also created a need for new kinds of labor, including packaging, delivery, and internet marketing.

Another labor problem facing the agricultural sector in Arizona is an aging agricultural workforce. As farmers grow older and approach retirement, younger farmers are not taking their place. In Arizona, producers over the age of 65 outnumber producers under 35 by 5 to 1, making Arizona's replacement rate of retiring farmers among the worst in the country.⁵² Part of this issue connects to the land access issues described above. As the American Farmland Trust reports, "Success for a new generation of farmers and ranchers depends on their ability to secure suitable and affordable land to start and expand their operations. In the past, land usually transferred from generation to generation within a farm family.... Today most producers do not inherit their land, making land access a major challenge."⁵³ Because new farmers are often starting from scratch, they face steep odds in acquiring the resources to start and maintain a successful agricultural operation. This is particularly true for young farmers and farmers of color. As Cameron Jones (SAYFRC) pointed out, "We need to lower the barrier to entry. The reality is that a lot of kids who grew up on farms don't want to farm and some kids that grew up in cities do. We need to create pathways from rural-to-urban but also urban-to-rural if we're actually going to replenish this aging agricultural workforce. The time to start was 10 years ago and we're behind already."

In southern Arizona, various groups have drawn attention to this matter and built programs to bring young farmers into the agricultural workforce. The New Generation of O'odham Farmers program and Ajo Center for Sustainable Agriculture's workforce development programs are developing the skills of O'odham youth and adults with an interest in agriculture. A coalition of southern Arizona organizations convened by Ajo CSA has been advocating for a state-wide agricultural workforce development bill to create state support for training new farmers. SAYFRC is also proposing to turn county-owned and trust lands into cooperative farms for young farmers who cannot enter the field on their own due to high upfront costs for land and facilities (see Policies and Projects to learn more about these efforts).

“We need to lower the barrier to entry. The reality is that a lot of kids who grew up on farms don't want to farm and some kids that grew up in cities do. We need to create pathways from rural-to-urban but also urban-to-rural if we're actually going to replenish this aging agricultural workforce. The time to start was 10 years ago and we're behind already.”

- Cameron Jones, SAYFRC

52 Freedgood, J., et al. 2020. [Farms Under Threat: The State of the States](#). American Farmland Trust.

53 Freedgood, J., et al. 2020. [Farms Under Threat: The State of the States](#). American Farmland Trust.

Changes in weather and climate

Average temperatures have increased about 1.5° F across the Southwest region since 1901.⁵⁴ Pima County has been in constant drought since 2002 and has experienced above average temperatures since 1999. By 2030, annual average temperatures could increase another 2° F above average temperatures from 2000.⁵⁵ Summer monsoon storms, which bring southern Arizona half of its annual precipitation, have changed. Because of increased heat, monsoon storms have become more intense, but also less frequent, and the average amount of precipitation they bring has decreased.⁵⁶ The average number of days between precipitation events in the Southwest has increased by 50% over the last 45 years, from 30 average days to 45.⁵⁷

The impacts of increased temperature and changing precipitation patterns are already becoming evident. As Erik Stanford of Pivot Produce noted, “We’re seeing harvest dates like three weeks later or a month earlier. Crops that growers put in the ground every year at a certain time are frying up before they are viable. That changes things a lot.” Sara Jones (Tucson CSA) echoed these concerns: “Having COVID juxtaposed with this horrible summer has been startling. We lost crops and it was a rough summer for produce. Things were just beaten by the heat and the wind.”

Trends toward a hotter and drier climate and reduced or delayed monsoon rains is an acute problem for agriculture, especially for O’odham farmers and others practicing dryland farming. Extreme heat events and an increasing number of days above 100° F create health issues for agricultural workers who spend time outdoors.⁵⁸ Extended periods of drought lead to dry soil, deteriorated soil



Photo credit NOAA on Unsplash

health, and increased evapotranspiration from crop plants, which affects crop yields.⁵⁹ Temperature and precipitation changes affect the storage and transportation of goods, such as the need for adequate cold storage and cooling during transport to ensure food safety⁶⁰ as well as climate-related damages to paved roads that can impact human safety while driving.⁶¹

These impacts also extend to the livestock industry and may result in reduced feed supply and forage quality, and increased heat stress on animals. Ranchers and dairy farmers in the region rely on rain-fed grazelands and/or forage from irrigated alfalfa or hay crops. Supplemental feeding and herd reduction are two strategies ranchers and dairy farmers have used during multi-year droughts. Severity, duration, and timing of drought may impact how and when these strategies are employed. Some ranchers have received disaster relief funding to sustain operations during intense drought years.⁶²

Responding to these impacts will take collaboration and concerted effort. Cameron Jones (SAYFRC) reflects that responding to climate change is “going to involve collaborating with scientists and collaborating with a whole range of people from many different disciplines and backgrounds to figure out how to grow food in this area in the long term.”

54 Southwest Climate Alliance. 2013. [Assessment of Climate Change in the Southwest United States: A Report Prepared for the National Climate Assessment.](#)

55 Climate Assessment for the Southwest. 2019. [Climate Profile for The Highlands at Dove Mountain.](#)

56 Luong, T.M., et al. 2017. [The More Extreme Nature of North American Monsoon Precipitation in the Southwestern United States as Revealed by a Historical Climatology of Simulated Severe Weather Events.](#) *Journal of Applied Meteorology and Climatology* 56(9): 2509–2529.

57 Zhang F., et al. 2021. [Five Decades of Observed Daily Precipitation Reveal Longer and More Variable Drought Events Across Much of the Western United States.](#) *Geophysical Research Letters* 48: e2020GL092293.

58 Wilder, M., et al. 2016. [Southwest climate gap: poverty and environmental justice in the US Southwest.](#) *Local Environment* 21(11): 1332-1353.

59 Berardy, A. & Chester, M.V. 2017. [Climate change vulnerability in the food, energy, and water nexus: concerns for agricultural production in Arizona and its urban export supply.](#) *Environmental Research Letters* 12(3): 035004.

60 James, S.J. & James, C. 2010. [The food cold-chain and climate change.](#) *Food Research International* 43: 1944-1956.

61 National Climate Assessment. 2018. [Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II.](#)

62 Southwest Climate Alliance. 2013. [Assessment of Climate Change in the Southwest United States: A Report Prepared for the National Climate Assessment.](#)



Photo credit Frankie Lopez on Unsplash

Water use and availability

Access to and availability of water is among the greatest constraints of sustainable agricultural production in southern Arizona. One interviewee described it as “the elephant in the room” in discussions of sustainable local food production. In Arizona, irrigated agriculture uses approximately 74% of the water supply, comprised mostly of groundwater and surface water.⁶³

Many producers in the state have invested in more efficient irrigation systems to conserve water, such as subsurface drip irrigation systems, monitoring soil moisture levels to avoid overwatering, and rainwater harvesting.⁶⁴ However, with long-term drought, competing demands for water, and increasing temperatures, more actions are needed to reduce agricultural water use. Potential actions include: incentivizing water-saving irrigation technologies, reusing agricultural runoff, investigating water rates and market options such as leasing or selling water rights, and shifting to crops that require less water.⁶⁵

Irrigated agriculture in southern Arizona greatly depends on Central Arizona Project (CAP) water from the Colorado

River. Water rights from the Colorado River are shared between seven U.S. states and two Mexican states through a complex set of legal agreements. Future water supply from the Colorado River is uncertain, due to changes in climate and environments, increased water demand, and rapidly developing urban areas. Decreases in water supply will impact some people and industries more than others. For example, central Arizona growers will lose irrigation rights earlier than others because they have junior water rights. Groundwater, pumped from underground aquifers that are typically recharged by rainfall, could help fill these supply gaps in case of CAP cuts for Tucson.⁶⁶ In the long-term, however, reduced precipitation and warmer temperatures due to climate change, may limit the natural recharge of these aquifers.

To successfully farm in an arid climate varies depending on producers’ access to water. Finding affordable land with a sustainable water source is a major obstacle for new farmers. For farmers and gardeners hoping to grow in the city, urban rates for water create major obstacles (see Policies and Projects).

63 AZ Department of Water Resources. 2021. [Conservation.](#)

64 AZ Department of Environmental Quality. n.d. [Irrigation Reduction in Agriculture.](#)

65 Southwest Climate Alliance. 2013. [Assessment of Climate Change in the Southwest United States: A Report Prepared for the National Climate Assessment.](#)

66 Davis, T. 2021. [Tucson’s water supply can survive ‘worst case’ CAP cuts, city official says](#)

Need for investment

The challenges facing small and medium-sized agriculture in Arizona require significant and sustained investment. Small- and medium-scale agriculture and local food provide regional and statewide benefits, yet these agricultural operations lack adequate support to sustain farmers' livelihoods. It is increasingly difficult for small- and medium-scale farmers to make a living, given that financial and policy support for agriculture tends to skew toward larger, often corporate, farms. Erik Stanford of Pivot Produce remarked, "Farming is a public service. It's a non-profitable business and has been non-profitable across the country for decades. So, let's recognize that...and come up with a solution for that." For local food to thrive in Arizona, financial support for small- and medium-scale agricultural operations is a must.

Food system organizations face funding issues of their own. Many organizations rely on volunteer labor and operate on grants, meaning that funding streams are uncertain and function on fixed timeframes. This uncertainty creates problems for sustaining programs long-term, especially for organizations working directly with farmers. For example, if an organization purchases produce from farmers, uncertain funding, delayed funding, or mismatches between growing seasons and funding cycles become obstacles in building long-term and stable partnerships with farmers. Supporting key programs, such as Friends of the Farm (see Policies and Projects), through annual state appropriations rather than one-time discretionary funds or grants could help build trust, commitment, and greater efficiency between local farmers and food system organizations.

“

Farming is a public service. It's a non-profitable business and has been non-profitable across the country for decades. So, let's recognize that...and come up with a solution for that.

-Erik Stanford, Pivot Produce

”

Investing in local food may lead to positive gains in the broader local economy as dollars spent locally creates more income, wealth, and jobs within that region.⁶⁷ In Detroit, for example, economist Michael Shuman estimates that shifting 20% of food spending to local sources would lead to increased annual output of roughly \$500 million, create more than 4,700 new jobs, and generate an additional \$20 million in annual business taxes.⁶⁸ In the context of southern Arizona, it is important to consider the scale at which the local food system currently operates, the economic tradeoffs associated with increased local sourcing, and explore barriers to future growth. Local organizations, like the Community Food Bank of Southern Arizona are aiming to make strategic investments throughout the local food system to support robust local food economies, in part by gradually shifting an annual percentage of procurement toward local producers.

Investments are crucial for the future of local food production in our region. Kate Radosevic of the Arizona Food Bank Network reflected, "I think we, collectively as a society, need to decide if local food production is something that we want to prioritize and if it's something that is important to us." It is crucial to act quickly on these priorities, given the steep challenges facing the local food system, including loss of farmland and the aging of the agricultural workforce.

67 Shidler, D. and Watson, P. 2019. [Making change through local food production: Calculating the economic impact of your local food project](#). *Journal of Agriculture, Food Systems, and Community Development* 8: 165-177.

68 Shuman, M. [Economic Impact of Localizing Detroit's Food System](#).

Inequality

Food system inequality remains highly visible in southern Arizona's food system and must be addressed if we are to build an equitable and resilient food system for all Arizonans. Inequalities exist in every node of the food and farming system. In agriculture, Latinx,⁶⁹ Black⁷⁰ and Native American farmers⁷¹ have been historically discriminated against by the USDA, making agricultural livelihoods more difficult for these groups. This discrimination was echoed in pandemic-related agricultural relief programs. According to Agriculture Secretary Tom Vilsack, only 1% of the \$26 billion available in the first two rounds of the Coronavirus Food Assistance Program (CFAP and CFAP2) was distributed to socially disadvantaged producers (defined by the USDA as farmers and ranchers who have experienced barriers to service due to racial or ethnic prejudice). Black farmers received only 0.1% of this relief funding. "Look at it another way: The top 10 percent of farmers in the country received 60 percent of the value of the COVID payments. And the bottom 10 percent received 0.26 percent" Vilsack said in an interview with the Washington Post.⁷² Current appropriations for agriculture in the 2021 American Rescue Plan aim to start addressing systemic racism in US agricultural production (see Appendix A).

These inequalities in the agricultural sector continue to play out locally. Household food insecurity occurs disproportionately in Latinx, Black, and Native American households (see Uneven Impacts). In 2016, Wallendorf and Godfrey (2016) mapped Tucson's farmers markets, a major source of local, fresh produce. They found that markets operated in higher-income neighborhoods with proportionately larger white populations and did not operate in neighborhoods with proportionately larger Latinx populations.⁷³ Issues of affordability and access often make local food out of reach for low-income households. However, the incorporation of SNAP and Double Up programs at local farmers markets has helped to expand local food access to a larger proportion of the local population.

These forms of inequality undermine the sustainability and resilience of the local food system. Those working in the food system need to work collectively to identify and address how inequality shapes our local food system, listen to excluded perspectives, direct resources to communities with less access, and build a resilient food system for all.



Photo credit Zoe Schaeffer on Unsplash

69 USDA. 2014. [USDA Announces Claims Process for Hispanic and Women Farmers.](#)

70 Congressional Research Service. 2005. [The Pigford Cases: USDA Settlement of Discrimination Suits by Black Farmers.](#)

71 USDA. 2011. [Native American Farmer and Rancher Class Action Settlement: Keepseagle v. Vilsack.](#)

72 Reiley, L. 2021. [Agriculture Secretary Tom Vilsack says only 0.1 percent of Trump administration's covid farm relief went to Black farmers.](#)

73 Wallendorf, M. and Godfrey, M. 2016. [Food Accessibility in Southern Arizona: Mapping the Growth, Trajectory, and Market Base of Tucson Farmers' Markets.](#)

POLICIES AND PROJECTS

Various efforts are underway to strengthen and expand the local food system and address the challenges facing local food and agriculture. Below are a few of these policies and projects:

HB2668/SB1176 Arizona Fruit and Vegetable Incentive Bill

This bill will fund the ongoing Double Up program which provides additional funds to SNAP beneficiaries for the purchase of Arizona-grown fruits and vegetables. Since 2015, spending with SNAP benefits has increased by more than 290% at Arizona farmers markets. If this bill is passed, Arizonans enrolled in SNAP will continue to receive additional funds that they can use at participating farmers markets, CSAs, farm stands, grocery stores, and convenience stores to buy Arizona-grown products. The program stands to benefit food insecure households and Arizona farmers. According to Let's Grow Arizona, 84% of those using Double Up Bucks report eating a greater diversity of fruits and vegetables. SNAP and Double Up programs have been crucial during the pandemic and will be key to both addressing food insecurity and supporting Arizona agriculture in the years to come.

This bill proposes an allocation of \$1,000,000 from the State General Fund to the Department of Economic Security and is currently being reviewed in the Arizona Senate.

Track the status of the bill and learn how to signal your support by visiting <https://www.azfsn.org/advocacy.html>

Expansion of SNAP online for small producers and businesses

The use of SNAP benefits at online retailers is being piloted across the U.S. In Arizona, the SNAP Online Purchasing Pilot program is currently limited to large retailers including Amazon, Aldi, and Walmart.⁷⁴ It is crucial that SNAP online infrastructure be expanded to small retailers and independently owned businesses to benefit the local economy. \$25 million in funding to improve SNAP online purchasing technology and provide assistance for local businesses to implement SNAP online was included in the American Rescue Plan passed in March 2021.

Learn more about Reach out to AZ Senators [Mark Kelly](#) and [Kyrsten Sinema](#) to offer support for the expansion of SNAP online, emphasizing the importance of supporting independent retailers and expanding food access in our state.

HB2142/SB1150 Agricultural Workforce Development Bill

The Agricultural Workforce Development Bill seeks to establish state funding for farming and ranching internships to support the development of the agricultural workforce and new farmers. A coalition of food and agricultural organizations convened by Ajo CSA have advocated for the program to address Arizona's aging agricultural workforce and to create new opportunities for young farmers and ranchers. The bill would allocate \$1,000,000 to pilot a program to train young and beginning farmers, specifically in rural areas, tribal communities, and historically underserved communities. The bill passed in the State Senate in February 2020 but was derailed due to COVID-19. Advocates are hopeful that it will pass with bipartisan support in 2021.

Track the status of the bill and learn how to signal your support by visiting <https://www.azfsn.org/advocacy.html>

74 USDA Food and Nutrition Service. [FNS Launches the Online Purchasing Pilot](#)

Friends of the Farm

On November 26, 2019, Governor Doug Ducey announced the Friends of the Farm program, a pilot project designed to support Arizona farmers and food insecure households. Friends of the Farm is a farm-to-foodbank pilot program that enables Arizona food banks to purchase fresh produce, dairy, and meats from small-scale farmers for distribution in regional food banks. According to the Arizona Food Bank Network, “to date, AZFBN and our member food banks have worked with more than 20 farms in 5 counties to acquire and distribute over 275,000 pounds of fresh, Arizona-grown food to families in need—with planned purchases in additional counties and tribal communities to come.”⁷⁵

While the Friends of the Farm program started before the pandemic, it provided a lifeline for the small-scale farmers who were part of the program. As restaurants and school districts shut down, many small-scale producers were suddenly without buyers. The Friends of the Farm program provided a market for locally-grown products while also feeding Arizona’s food insecure households. Beyond the pandemic, Friends of the Farm will continue to be an important program for addressing food insecurity in Arizona and for offering small farmers a market for their products. The program has great potential to support our regional food economy, especially if the pilot is developed into a larger program that becomes part of the state’s annual budget. Institutionalizing the program will allow for a reliable stream of funding that will allow for better planning with food producers.

Building cooperative farms and farm incubators in Southern Arizona

Members of the Southern Arizona Young Farmers & Ranchers Coalition (SAYFRC) are pursuing the possibility of starting a cooperative farm and farm incubator project. As Cameron Jones (SAYFRC) explains, “It could serve dual purposes of giving people who are ready to farm access to land as well as shared infrastructure and equipment to lower their upfront capital costs and it would be an incubator where people starting out farming can gain some experience and mentorship before they take the plunge of buying land or committing themselves to farming.”

Currently there are two promising land options for a cooperative/incubator farm in southern Arizona. One is Buckelew Farm, which was purchased by Pima County as part of a conservation effort and continues to be farmed by the Buckelew family. Their lease ends in 2021 and currently there is no clear vision for what will happen with the farm. A second opportunity exists with a 300-acre piece of farmland near Amado, part of larger ranch property. The land is being purchased by the Arizona Land & Water Trust to keep it from being developed. The fact that this farmland is off the speculative housing market has created a unique opportunity for new and small-scale farmers who cannot afford to compete with development interests for land near cities. SAYFRC envisions working with land managers to transition these properties, and others, to become cooperatively farmed enterprises that increase local food production, create jobs and business ownership opportunities, and maintain them in the public interest as green spaces, carbon sinks, and demonstrations of ecological farming.

Get in touch with SAYFRC if you are interested in supporting or participating in these efforts at sayfrc@gmail.com or [@sayfrc](#) on Instagram.

Water rates for urban farms in Tucson

Representatives from the Community Food Bank of Southern Arizona, Pivot Produce, Pima County Food Alliance (PCFA), and Tucson-based agricultural producers have been developing proposals for an urban water rate, which would reduce water costs and fees for urban farms. An urban water rate would increase the viability of farms in Tucson. Prior to the pandemic, representatives were in conversation with Tucson Water, the City of Tucson Department of Economic Development, and Tucson council members. Conversations and funding to develop these water proposals were derailed in early 2020 by the COVID-19 pandemic. PCFA intends to move forward with proposal development this year.

Contact the PCFA at info@pimafoodalliance.org if you are interested in learning more about a potential water rate for urban farms. For policy recommendations related to community gardens and nonprofits, see this [policy brief](#).

⁷⁵ Arizona Food Bank Network. n.d. [Friends of the Farm](#).

Arizona Statewide Food Action Plan

Prior to the COVID-19 pandemic, several representatives from food systems across Arizona were developing a statewide food plan, led by Pinnacle Prevention and the Arizona Food Systems Network (AzFSN) advisory team. COVID-19 put a pause on this work, but planning has resumed as of March 2021. The AzFSN will be soliciting knowledge and experiences of those working in northern, central, and southern Arizona food systems, as well as lessons learned during the pandemic. This information will inform a long-term plan for Arizona's food systems. Regional meetings will be held throughout April, May, and June 2021.

Visit the Arizona Food Systems Network website to learn more and contact Jessie Gruner at jessiegruner@pinnacleprevention.org to participate in the regional meetings.

Federal food and agricultural policies and funding programs

Several recent federal policies aim to support small- to medium-scale agricultural operations and locally owned food businesses, including:

• American Rescue Plan Act of 2021

This \$1.9 trillion federal relief bill includes several programs that may apply to local food and agricultural operations. The Small Business Administration will distribute \$28.6 billion in grants to eligible bars and restaurants that lost revenue during the pandemic. Another \$12 billion is allocated for food assistance to extend SNAP benefits through September 2021, expand online options for using SNAP and WIC benefits online, and to continue Pandemic-EBT through summer of 2021. The USDA plans to allocate \$1.01 billion for training, outreach, and land access for Black, Indigenous, Hispanic or Latinx, and Asian American or Pacific Islander producers. The Act also allocates another \$4 billion for the USDA to purchase agricultural commodities to distribute in food boxes to those in need and to address issues in the national food supply chain.

• FEMA Empowering Essential Deliveries (FEED) Act

The FEED Act provides federal funding for state, local, or tribal governments to establish contracts with local agricultural producers, restaurants, and non-profit organizations to prepare and distribute meals for people in need during the COVID-19 pandemic through September 2021.

• Federal debt relief for farmers

An estimated \$4 billion in debt relief from the Secretary of Agriculture will be available for Black, Indigenous, Hispanic or Latinx, and Asian American or Pacific Islander producers. Payments could amount up to 120% of a farmer's or rancher's outstanding debt as of January 1, 2021.



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CONCLUSION

COVID-19 presented major challenges and significant opportunities for those working within local food systems in southern Arizona. An increased interest in and demand for local food presents opportunities to strengthen local food economies and support local farmers. At the same time, economic disruptions, ongoing forms of food inequality and food insecurity, and barriers to local capacity limit the ability of southern Arizona’s food system to take strategic advantage of these opportunities. In order to strengthen the southern Arizona food system and prepare it for future disruptions and crises, strategic and systems-wide investment is required in all nodes of the food system, including food producers, distributors, processors, food and agricultural organizations, consumers, and organizations dealing with food waste. Addressing the barriers to greater food system capacity and resilience in this region—including issues of land access, water and climate, workforce development—is a crucial aspect of this work. Finding ways to strengthen local production while addressing persistent forms of food system inequality, such as food access and food insecurity, will help build a more resilient and equitable food system for all people in southern Arizona.

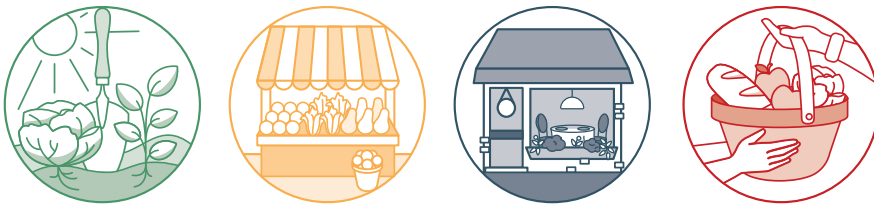




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APPENDICES

Appendix A.

POLICIES and PROGRAMS IN RESPONSE TO COVID-19

Federal:

- **Coronavirus Aid, Relief, and Economic Security Act (CARES Act)**: Signed into law on March 27, 2020 in response to the COVID-19 outbreak. Provides \$2.2 trillion in funding support to state and local governments, individuals, and businesses with economic and public health programs through the Coronavirus Relief Fund (CRF), including the Paycheck Protection Program (PPP).
- **Paycheck Protection Program (PPP)**: A loan for small businesses to keep workers on payroll, administered through the US Small Business Administration. Borrowers may be eligible for PPP loan forgiveness. Applications were open for various periods of time through March 31, 2021.
- **USDA Coronavirus Food Assistance Program (CFAP)**: In April 2020 Congress authorized USDA to distribute \$19 billion in aid to farmers through multiple programs including the Farmers to Families Food Box Program and Direct Payments to Farmers and Ranchers. In March and April 2021, the USDA announced an expansion of CFAP with additional funding for existing and new programs including Pandemic Assistance for Producers.
- **American Rescue Plan Act**: An extensive relief bill signed into law on March 11, 2021 with \$1.9 trillion in funding dedicated to programs such as agricultural and nutritional assistance, public health, emergency response, education and employment. Related to food, this act includes: Over \$12 billion for food assistance programs (SNAP, P-EBT, WIC); \$4 billion appropriated to food supply chain and agriculture pandemic response; a farm loan assistance program and \$1.01 billion in USDA assistance and support for socially disadvantaged farmers and ranchers; and \$28.6 billion for the Restaurant Revitalization Fund.
- **Supplemental Nutrition Assistance Program (SNAP)**: Provides nutrition benefits to supplement the food budget of needy families so they can purchase healthy food and move towards self-sufficiency. Extended and amended program through the American Rescue Plan to provide additional funding through September 30, 2021
- **Pandemic Electronic Benefits Transfer (P-EBT)**: Part of The Families First Coronavirus Response Act of 2020, as amended by the Continuing Appropriations Act, 2021 and Other Extensions Act passed in March 2020. Provides additional emergency support to EBT program. On January 22, 2021 the USDA announced that it will be increasing P-EBT benefit by approximately 15%
- **Healthy Food Financing Initiative**: Established by the Farm Bill, the 2020 HFFI round significantly increased the available funding compared to the previous round, making \$3 million in grant funds available for food retail and food enterprises working to improve access to healthy foods in underserved areas, to create and preserve quality jobs , and to revitalize low-income communities.
- **FEMA Empowering Essential Deliveries (FEED Act)**: Introduced in both the U.S. Senate and House of Representatives in January 2021. Approved by President Biden via Executive Order on February 3. Provides federal funding for state, local, or tribal governments to establish contracts with local agricultural producers, restaurants, and non-profit organizations to prepare and distribute meals for people in need during the COVID-19 pandemic. Aims to provide food for people in need, while also supporting local growers and businesses.

State Level:

- **AZ Friends of the Farm Program:** A pilot program funded with federal dollars by the state of AZ and run by the AZ Food Bank Network that purchases food from small farms for distribution by community food banks. Initially a 1-year program announced in November 2019 with an initial infusion of \$250,000, the program has extended for an additional year through June 30, 2021 with additional funding of \$250,000.

Pima County:

- **Pima County Eviction Prevention Program:** Provides rental assistance through the Coronavirus Relief Fund. Can pay up to 12 months back and 3 months forward. Both landlords/property managers and tenants living in Pima County qualify to apply.
- **Ready for You Program:** Gives a 'Ready for You' emblem to businesses that comply with the minimum COVID-19 safety guidelines set by the Pima County Health Department. As of March 2021 – 1,436 businesses have received this emblem
- **Pima County CARES for Small Business Grant Program:** From September 25, 2020 - October 9, 2020, provided grants for up to \$10,000 to cover costs associated with utilities, rent, lease or mortgage, limited to 50% of eligible expenses. Limited to businesses with less than 30 employees
- **Downtown Outdoor Café Grant:** Grant program from the Downtown Tucson Partnership and Pima County to help downtown businesses expand outdoor dining areas. Provided reimbursements for up to \$5,000 in expenses related to materials and costs of expanding outdoor dining space incurred between May 1 and October 15, 2020. Businesses were able to apply until October 30, 2020.
- **Downtown Rebound Grant:** Grant program from the Downtown Partnership and Pima County to help downtown businesses cover costs of interior renovations to comply with physical distance rules, exterior property improvements and rent/mortgage. Provided reimbursements for up to \$2,000 incurred between May 1, 2020 and October 15, 2020. Businesses were able to apply until October 30, 2020.

City of Tucson:

- **Coronavirus Relief Fund (CRF), CARES Act:** Aid allocated to states and local governments, to be used for expenses directly related to COVID-19 and incurred in the 2020 calendar year. City of Tucson was eligible for a direct payment of \$95.6 million, the mayor and council allocated this funding between three main categories with surplus allocations diverted to expand and support community testing.
 - \$51.6 million to Community Investment and Support, with \$22 million provided to more than 10,000 grant recipients. Funds were allocated based across eight community priorities including small business and nonprofit continuity grants, rent and utility assistance, and food delivery.
 - \$41.1 million to Continuity of City Operations and Services
 - \$2.8 million to City Manager Allocate/Committed Funds
- **We Are One/Somos Uno Resiliency Fund:** Funding provided through the CARES Act, Coronavirus Relief Fund
 - Small Business Continuity Grants (SBCG): Provided grants for up to \$20,000 to small businesses residing in the City of Tucson and the City of South Tucson negatively affected by COVID-19
 - SBCG – Rio Nuevo Business District: Provided grants for up to \$50,000 to small businesses residing in the Rio Nuevo Business District negatively affected by COVID-19.
 - Small Business Utility Assistance Grants: Provided grants for up to \$10,000 for three months of rent, water, sewer and trash, electric and natural gas utility expenses to small businesses residing in the City of Tucson and the City of South Tucson.
- **Mortgage Assistance Grants:** Funding provided through the CARES Act, Coronavirus Relief Fund, allocated with approval from the mayor and council of Tucson
- **Free Meals for Children:** Tucson area School Districts provided free meals to children under age 18 through a federal meal program regardless of enrollment. Grab-n-Go Pick-ups conducted at specified bus stops have continued throughout the pandemic for the school year 2020-21.

Appendix B.

Agricultural Producer Survey Demographics

From October – December 2020, producers were invited to participate in a survey about the impacts of COVID-19 on their agricultural operation. The survey was distributed to producers who managed or operated any type of agricultural operation (such as farms, orchards, ranches, dairy farms, backyard gardens) based in or near Arizona, and who sell any portion of their products to distributors, processors, or consumers in Pima County. In total, 19 eligible respondents completed the survey. While the dataset is small, it represents a wide range of agricultural operations and points to trends in local agricultural production.

Most survey respondents operate out of Pima, Cochise, and Pinal Counties. Several respondents characterized their operation as either a farm or as a market or backyard garden. A few respondents characterized their operation as a ranch or hog farm or dairy farm. Most respondents run small-scale operations with 5 acres or less in production. However, the size of respondents' operations ranged from less than 1 acre to 1000 total acres and from less than 1 acre to 300 acres in production (see Figure 12).

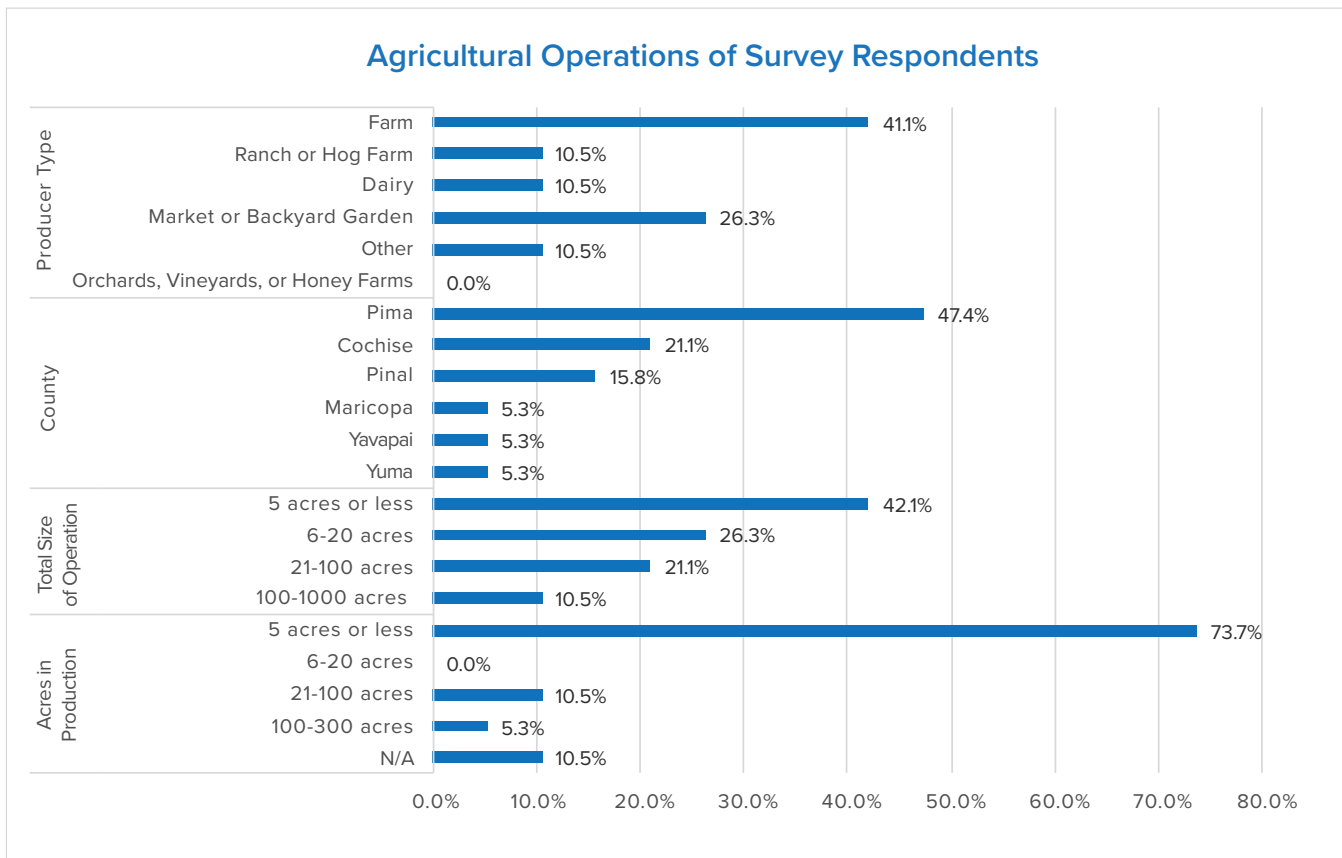


Figure 12:

Background information about the agricultural operations of survey respondents, including location, type, and size of operations.

The majority of respondents identified themselves as white or Caucasian; one respondent identified as Black, and one identified as mixed race. Half of the participants identified as male and half as female (one survey response indicated that they were a male and female team). Producers were split fairly evenly across 10-year age ranges. No participants were under 25 or over 75 years old (see Figure 13).

Demographics of survey respondents

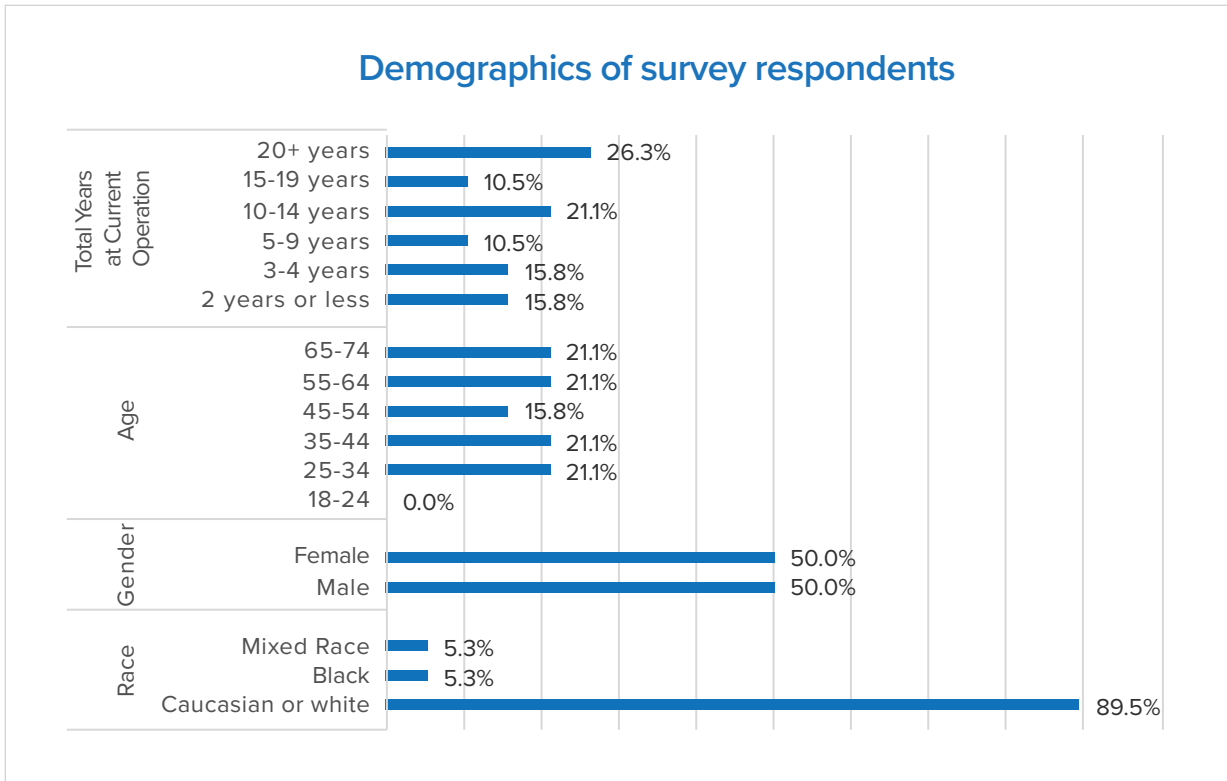


Figure 13: Demographics of survey respondents, including age, gender, race, and time at current operation.

Participants produce a diverse array of agricultural commodities. Vegetable crops were identified most frequently, such as various kinds of squash, greens, and tomatoes. Animals and animal products, such as eggs, milk, and meat, were the next most frequently identified commodities, closely followed by fruit and tree nuts, such as citrus and berries. Field crops, including wheat grain and seed, were less frequently identified (see Figure 14).

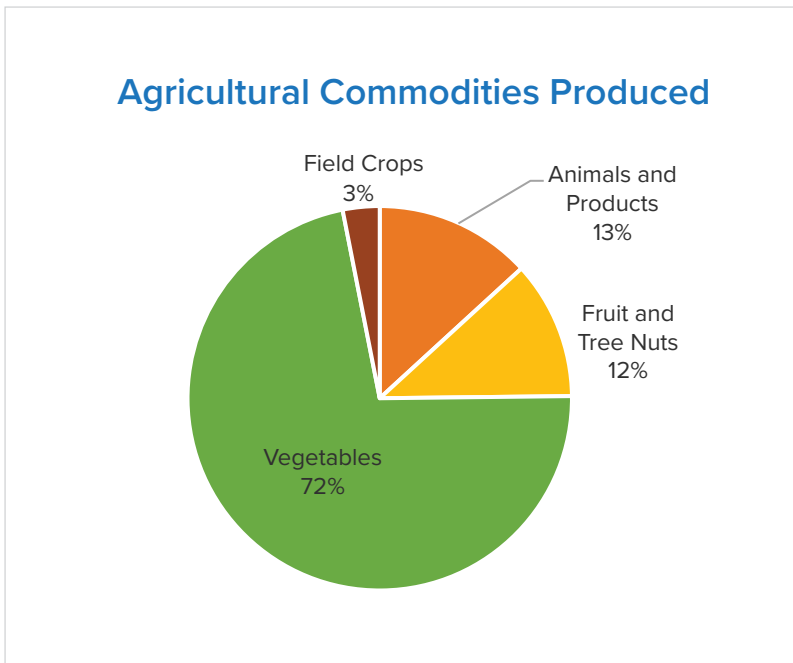


Figure 14. Agricultural commodities produced by survey respondents. Categories determined using USDA-NASS commodity definitions

THE MISSION OF THE CENTER FOR REGIONAL FOOD STUDIES

To integrate social, behavioral, and life sciences into interdisciplinary studies and community dialogue regarding change in regional food systems. We involve students and faculty in the design, implementation, and evaluation of pilot interventions and participatory community-based research in the Arizona-Sonora borderlands foodshed surrounding Tucson, a UNESCO-designated City of Gastronomy, in a manner that can be replicated, scaled up, and applied to other regions globally.



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