

Benton and Washington Counties, Arkansas Food System Resilience

Impact from COVID-19 and severe climactic events

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The snapshot is formatted to give an in-depth analysis of findings related to impacts of the various climactic events over the last decade, as well as COVID-19, on Benton and Washington Counties food system. The study included one focus group (6 participants total); 13 interviews and a survey with 111 responses with IRB¹ approval and informed consent across Benton and Washington Counties. Participants included community advocates, city and county government, farmers and food businesses, non-profits, schools, and state organizations. University of Arkansas Extension supported the project through outreach for participation in surveys, interviews and focus groups.

Overall, community members shared a strong desire for scaling-up agriculture production and options for market development through Farm to School and local food procurement and distribution. This included comments around increased opportunities for local food networks and organizations to work together to better collaborate on efforts.

A special thanks to all the farmers, businesses, organizations, staff, and individuals that met and shared their stories with us throughout the last two years. Thank you for your work and dedication to resilient food systems. We are humbled and grateful for your time.

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Benton and Washington Counties Suggested Priorities

Based on the snapshot, interviews, surveys and focus groups, below are priority projects suggested for Benton and Washington Counties, Arkansas food system. These are broad categories that relate to the ability to prepare and sustain during disaster and build back stronger. The report shares findings from the research conducted in 2021 as well as updated priorities based on the action planning sessions in September 2022. For notes and voting information from the action planning sessions, please see Appendix F.

The priority that will be acted on through funding from the Agricultural Marketing Resource Center will include meetings and investigation into farm to school and local food procurement across the counties. While this was not the top priority from the action planning, the team agreed that this would have the most capacity to move forward at this time. This will include understanding supply and demand aspects related to local food procurement, convening meetings of farmers and food purchasers to identify existing needs and interest for local food purchasing and scaling of agricultural production. The \$10,000 will be allocated to an individual consultant that will work with organizations and farmers throughout Spring 2023.

Additional support for evaluating the success of this initial project will be conducted by the Iowa State University Extension and Outreach Food Systems team.

Suggested Priorities

1. Scale Up farms to meet demand for local food procurement
 - 1.1. Educate on agriculture and food businesses
 - 1.1.1. Understand aspects of agricultural business, including taxes, profitability, liability, etc.
 - 1.1.2. Compare business models and distinction between direct to consumer and wholesale
 - 1.1.3. Increase farmer knowledge and confidence on production capacity/ meeting demand and sale quantities/ quality
 - 1.1.4. Understand insurance needs and distribution practices
 - 1.2. Assess products that can be grown locally, and easily scaled, to source local wholesalers and buyers rather than being exported
 - 1.2.1. Improve existing local food aggregation and distribution for wholesale buyers
 - 1.2.2. Conduct a feasibility study on mobile and permanent structures for fruit and vegetable processing
 - 1.3. Establish new, or identify existing, insurance programs for small to mid-size farmers that will aid in extreme weather conditions
 - 1.4. Create a plan for when markets fail or have barriers with disaster or general business models
 - 1.5. Enhance outreach to underserved, marginalized individuals and organizations, including developing materials in multiple languages
 - 1.6. Increase gardening and subsistence farming
 - 1.6.1. Create a network of gardeners, producers, etc. and understand the desired communication platform for getting in touch
 - 1.6.2. Develop, or partner with existing gardening networks (like Master Gardeners) for seed sharing and gardening techniques
2. Maintain and re-engage existing regional network for communication, planning and implementation of food systems projects, including prevention, response, and recovery for climate-based events.
 - 2.1. Develop roles and clear responsibilities for a network
 - 2.1.1. Create a common space for individuals, farms, and food businesses to turn to for questions around local and regional foods
 - 2.1.2. Identify support organizations, producers, food businesses etc. for comprehensive understanding of existing conditions

- 2.1.3. Focus on marginalized individuals in the area—with understanding that numerous groups are doing this, so connect across organizations
- 2.1.4. Understand who is currently doing work, what roles need to be filled, and redundancies in place for supporting the local food system
- 2.2. Hold regular network meetings, with a focus on trust and reciprocity to share updates, problems, resource needs, etc.
 - 2.2.1. Identify administrative entity and point of contact for the network
 - 2.2.2. Create a cohesive communication strategy for sharing insights – both internal and to public
 - 2.2.3. Create space for deep dives in specific areas of focus
 - 2.2.4. Accountability for partners and showing up – could show up in roles and responsibilities
 - 2.2.5. Understand network’s policies, structure, and purpose
- 2.3. Create blueprints for case studies on prevention, response, and recovery, expanding across and within all cities in the County, including multilingual communication materials, and text and phone platforms
 - 2.3.1. Showcase what others have done and pre-package the information
- 2.4. Include food policy components and funding recommendations to support purchasing of local foods within schools and larger institutions
 - 2.4.1. In addition to the 20% local procurement—incorporate additional suggestions on practices
 - 2.4.2. Offer grants program specific to capital and infrastructure improvement for farming, processing, and distribution
- 2.5. Enhance outreach to underserved, marginalized individuals and organizations, including developing materials in multiple languages
- 3. Commit to and increase local food purchasing within institutions and businesses
 - 3.1. Identify champion and documenting process for local food procurement
 - 3.1.1. Create case study and identify mentors to model behavior through other institutions
 - 3.2. Develop matching program for growers and institutions (farmer-buyer events)
 - 3.3. Create contract language for buyers and institutions with preference for local food purchases and supporting of local food act reporting
 - 3.3.1. Improved labeling and understanding of local food
 - 3.4. Improve awareness of Arkansas Grown database
- 4. Increase interest and labor support on farms, schools, and other food-based businesses
 - 4.1. Plan for H2A workers and support
 - 4.2. Educational courses and incentives for dining and procurement professionals in early care, schools, and other institutions
- 5. Establish peer-to-peer networks and mentorship with existing and new farmers
 - 5.1. Research and decide types of peer-to-peer farmer networks that are successful and would work in NW Arkansas
 - 5.2. Identify existing resources
 - 5.2.1. Identify producers that are within existing networks and groups that could be mentors
 - 5.3. Identify specific needs for producers
 - 5.3.1. Develop relationships, communication and outreach plan for all producers, markets, and food businesses
- 6. Improve land zoning and development considerations
 - 6.1. Improve land access and understand gaps and challenges related to land tenure
 - 6.2. Provide best practices on urban and rural zoning, comprehensive plans, and ordinances
 - 6.3. Improve water drainage systems for both hardscapes and natural swales through bio-retention options and rainwater catchment
- 7. Develop awareness campaign about the impact of climate change on purchasing from local farms and food businesses as well as the community at large, including:

- 7.1. Showcase the fragility of the food system through narratives
- 7.2. Highlight how local farms, food businesses, organizations and networks were able to respond to COVID-19 and the need for continued support as we get back to “normal”
- 7.3. Discuss how this support can provide financial sustainability for the local economy and community at large
8. Create a sustainability “score card” and ways of assessing existing conditions and future needs
 - 8.1. Connect to current work going on with Dr. Patussi and case study on what is the most resilient growing medium
 - 8.2. Develop plan for protecting natural spaces and agricultural land around the counties
 - 8.3. Identify pollution streams and prevention strategies
 - 8.4. Understand hazard mitigation and response best practices; put in place a checklist for farms and food businesses
 - 8.5. Educate on regionally adapted production practices

Community Overview

This section reviews values and ways that community members participate and connect in community. Within the survey, questions on individual values and community participation were asked. Within interviews and focus groups, open-ended questions were asked about their community, like “how would you describe your community to someone else,” “what are the best parts about your community,” and “what are the worst aspects of your community.” Responses are reflected in the following pages.

Benton and Washington Counties are in the most northwestern corner of Arkansas. Benton County encompasses 884 square miles and Washington County encompasses 952 square miles. Both counties have an estimated growth in their population since 2020 of between 1.7 and 3.3 percent.

- Benton County: estimated population of 293,692 in 2021 (United States Census Bureau, 2021)
- Washington County: estimated population of 250,057 in 2021 (United States Census Bureau, 2021)

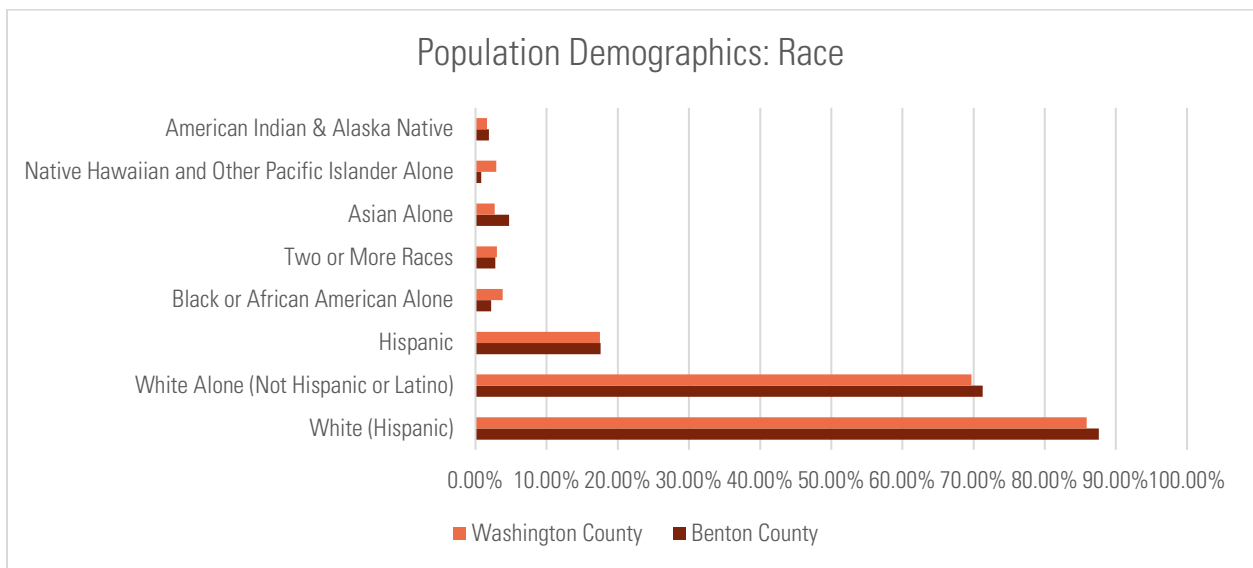


Figure 1: Population Demographics by Race (United States Census Bureau, 2021)

For information on the demographics of those that participated in the survey, see Appendix A.

It is estimated that Washington County has a poverty rate of 13.2% and Benton County has a 9.1% (United States Census Bureau, 2021). More detailed data about poverty in Benton and Washington County can be found in Appendix B.

Livability

Personal health status is shown to be impacted by where one lives, works, and plays. According to the AARP Livability Index, [Benton County](#) and [Washington County](#) have an overall ranking of 49.5 (out of 100) for livability. This ranking is developed based on housing, neighborhood, transportation, environment, health, engagement, and opportunity. Table 1 showcases both counties’ rankings in each livability category.

Table 1: Livability Index Rankings; all definitions from AARP (AARP, 2022)

Livability Definition	Benton County Livability Ranking: 49	Washington County Livability Ranking: 50
Housing: measured by metrics and policies that promote affordability, availability, and accessibility.	50	56
Neighborhood: measured by metrics and policies focused on proximity to key destinations, safety, and supporting mixed-use development.	43	45
Transportation: measured by metrics and policies related to convenience, safety, and options.	45	47
Environment: measured by metrics and policies related to air and water quality, as well as energy efficiency, and hazard mitigation plans.	56	55
Health: measured by metrics and policies that promote healthy behaviors including smoking cessation, and exercise opportunities.	47	47
Engagement: measured by metrics and policies that include voting rights, human rights, and cultural engagement.	53	51
Opportunity: measured by metrics and policies that capture job availability, government creditworthiness, and graduation rates.	51	48

Overall, each county compares to the average ranking of the United States communities (50). One of the lower rankings for both counties fell within neighborhood and access to amenities such as parks, libraries, jobs, and diversity of destinations. Washington County (251) also has a higher rate of crime per 10,000 people, compared to Benton (199) and median U.S. score (217.4). Transportation had a lower score due to ADA accessible stations and vehicles availability, walkability, and transportation costs (AARP, 2022).

Values

Individuals were asked to share their select their top three societal values from a pre-created list; if they had additional values, they could add in options in "other." Environment, education, and trust rank as the highest values, with 52% agreeing that environment is a top personal value (See Figure 2).

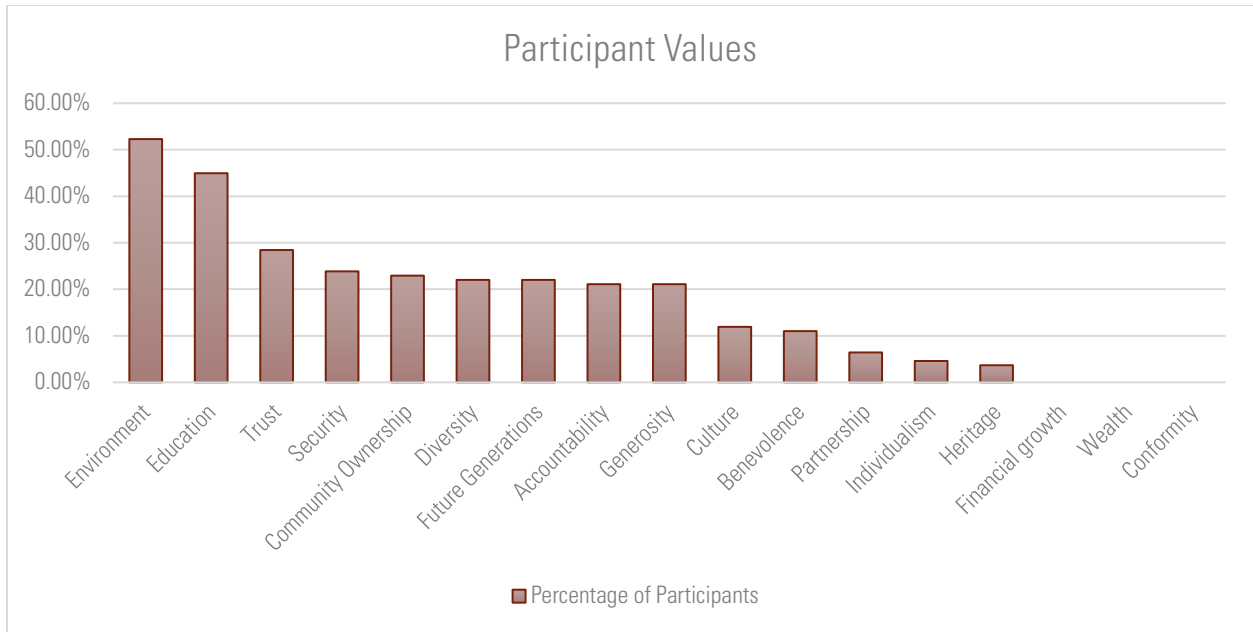


Figure 2: Participant Values (N=109)

In addition to the values shown in Figure 2, individuals also shared “faith,” “compassion,” and “openness to others who aren’t like you” as values.

Echoed within focus groups and interviews was the value of the natural environment. Many interviewees spoke about their appreciation for park systems and shared sentiments like “the land trust that is doing great work” to protect the natural amenities. Education was also mentioned as a value and strength of the community due to access to University of Arkansas Medical and the University of Arkansas being in close proximity within the two counties. Several educational resources for farming and gardening – both youth- and adult-based resources – were brought up as strong assets.

While trust was listed as the third highest value, only 28% of individuals agreed on this within the survey. Throughout the focus group, participants also discussed the need to build stronger trust among organizations and have transparency on work being done.

Within interviews and surveys, many also commented on the double-edged sword of growth occurring throughout the community due to expansion from large organizations such as Walmart and Tyson. On one hand, this was seen as a benefit because population and diversity of cultures were being seen across the community. Several participants shared that the resources, financial support, and collaboration from these entities helped create innovation and philanthropic opportunities. However, on the other hand, individuals spoke that this was leading to increased housing and land costs and creating class disparities. One individual described it as there being a “big gap between ‘haves’ and ‘have nots;’ [the] income disparity is pretty large.”

Participation

There are many ways to participate and support the local community. Individuals were asked to share how they support their community from a pre-created list and could also type in “other” responses. Over 93% of individuals shared that they purchase from local businesses, and just over 90% stated they vote in local elections. Many individuals are engaged in several aspects of the community, ranging from participation in church, city council, and general concern for the environment.

Participants owning, managing, or working for a local business or organization was the lowest aspect of participation, with only 29% of participants participating in this activity. The largest challenge that was shared regarding community participation was lack of leadership within the cities as well as interconnections and communication across Benton and Washington Counties.

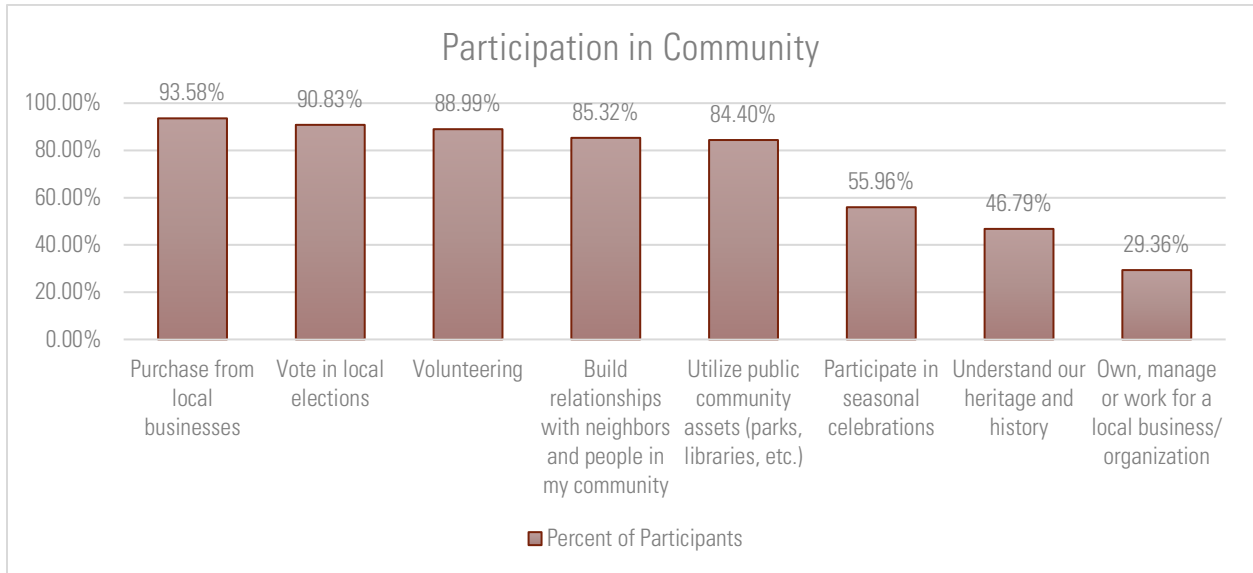


Figure 3: Community Participation (N=109)

In addition to the community participation shown in Figure 3, individuals also shared that they participated in “church” (3), “care for the environment” (2), and “city council.”

Business and Industry

While the first section of the report took a broad look at community engagement and values, the next portion focuses on the business and industry, specifically related to food systems.

According to the Small Business Administration, there is a size standard that is used to understand the size of a business, therefore, leading to the definition of “small” changing by industry and business type (U.S. Small Business Administration, 2022). Standards are based on average annual receipts and the number of employees (ranging from 100 to over 1,500 employees) (U.S. Census Bureau, 2021). Table 2 displays employee numbers for businesses in Benton and Washington Counties.

Within Benton County, it is estimated that there are 7,046 small businesses, with an annual payroll of \$8,037,680,000 (U.S. Census Bureau, 2020). Within Washington County, there are an estimated 5,752 small business with an annual payroll of \$4,208,741,000 (U.S. Census Bureau, 2020).

Table 2: Employee numbers based on Business Patterns in Benton County and Washington County (United States Census Bureau, 2021)

	Benton County	Washington County
Less than 5 employees	3,548	2,984
5-9 employees	1,293	1,065
10-19 employees	924	775
20-49 employees	806	594
50-59 employees	278	198
100-249 employees	139	100
250-499 employees	35	18
500-999 employees	13	11
1000 or more employees	10	7
Total	7,046	5,752

Agriculture

According to the USDA, a farm is defined as “any place from which \$1,000 or more of agricultural products were produced and sold, or normally would have been sold during the census year” (2017, pp. Introduction, VIII). The definitions of terms used in Tables 3-5 can be found in the 2017 Census of Agriculture, [Appendix B](#) (USDA, National Agricultural Statistics Service, 2017)

There are 4,215 farms in Benton and Washington Counties and 560,491 acres of farms; 113 farms participate in variable government programs, with receipts of \$1,152,000 (USDA , 2017).

The median size of a farm in Benton County is 52 acres and 62 acres in Washington County (USDA National Agriculture Statistics Service, 2017). Tables 3-5 detail information on the number of farms by product type, farm value, and average number of acres. According to the USDA NASS statistics, 3,155 farms are making less than \$24,999 per year, which is close to 75% of the farms), and just 1,907 are less than 50 acres.

Of the sales by commodity (designated in light red), primary human food consumption farms account for 3,750 of the farms, accounting for \$1,089,182,000 in sales. Additional farms may also engage in the local food and farm system, by providing feed and other inputs for farmers.

Table 3: Sales by Commodity (USDA NASS, 2017)

	Benton County		Washington County	
	Total # of Farms	Total Sales	Total # of Farms	Total Sales
Crops	562	\$7,562,000	724	\$7,722,000
Grain	22	\$1,564,000	4	\$275,000
Corn	9	\$429,000	1	
Wheat	7	\$124,000	1	
Soybeans	14	\$1,012,000	2	
Sorghum	N/A		2	
Vegetables (including seeds and transplants)	37	N/A	77	\$598,000
Fruit and Tree Nuts	27	\$351,000	66	\$602,000
Berry	17	\$146,000	50	\$394,000
Horticulture	10	\$1,830,000	40	\$2,035,000
Cut Christmas Trees and Woody Crops	1			
Field Crops, other, hay	496	\$3,343,000	599	\$4,212,000
Poultry, including eggs	318	\$536,033,000	319	\$456,508,000
Cattle, including calves	1,114	\$41,596,000	1,299	\$42,300,000
Milk	10	\$4,071,000	3	\$747,000
Hogs	52	N/A	36	
Sheep and Goats	116	\$298,000	133	\$177,000
Equine	68	\$346,000	95	\$578,000
Aquaculture	2			
Specialty Animals	28	\$198,000	39	
Commodity Totals (including value added)	98	\$321,000	137	\$745,000

Table 4: Farms by Value (USDA NASS, 2017)

	Benton	Washington
	# of Farms	
Less than \$2,500	676	751
\$2,500 - 4,999	168	275
\$5,000 - \$9,999	251	322
\$10,000 - \$24,999	303	409
\$25,000 - \$49,999	188	160
\$50,000 - \$99,999	71	121
\$100,000 or more	297	241

Table 5: Size of Farms by County (USDA NASS, 2017)

	Benton	Washington
	# of Farms	
Acres	# of Farms	
1.0 -9.9	235	239
10-49.9	699	734
50-179	637	813
180-499	275	365
500-999	62	104
1000 or more	28	24
Total # of Farms	1,936	2,279

From interviews and focus groups, participants shared that the production sector is heavily focused on commodity agriculture, and much of the production throughout the state is going into exports. Within the local food scene, production is relatively small scale and serving direct-to-consumer markets. While there are numerous support organizations and educational resources, many interviewee participants shared their concern that the food production industry is not growing or scaling to meet demands of local restaurants, schools, or other institutions. The predominant market is through farmers market or direct sales on the farm or virtually.

Arkansas has a unique local food purchasing policy that seeks to promote local food procurement. The Arkansas Department of Agriculture enacted the [Local Food, Farms, and Jobs Act](#) in 2017, which requires institutions to set a goal of allocating at least 20% of their food purchasing to local foods (2022). While this goal is encouraged, institutions are not mandated to source 20% local if they are unable. Additionally, many times the products they source are from the larger commodity farms; as one individual shared, we are “really only seeing Tyson chicken as the type of local products that schools buy...or rice.” Another interviewee shared that “all the districts try to purchase local food,” and another shared, “there is a question around the [ability for farms] to scale up; once there is success to sell local, are [farmers] ready to become wholesale ready?” This example of farm to school supply and demand challenges is one hurdle to increasing the capacity of the local food system within Washington and Benton Counties.

This may be one reason that many support organizations have shared interest in further education, peer-to-peer networks, and mentorship for new and existing farmers. The opportunity for developing the next generation of farmers that will grow local and regional foods was mentioned regularly in interviews and focus groups. In addition to this discussion was the caveat that business models needed to be understood for farmers to be financially viable. One farmer shared that they did not see the food business being profitable and that “nursery is the way to make money, not the food.” This could showcase the need for diversified farming practices. However, it should also be noted that an additional hurdle for beginning farmers is land access. As mentioned previously, due to growth in population and growing urban development, land prices are becoming expensive. One participant shared, “it’s really tough for beginning farmers because land is so expensive;” while another mentioned that “the lack of farmland, and inability to scale up [is challenging].” Farmers also shared that “selling to schools is not always profitable” and there is a need to determine the value in how and why a farmer chooses which market to pursue.

Food System

The intent of this research is to understand the interest and ability to have a resilient food system. Primarily, the research seeks to understand the community’s interest in local and regional foods, and the community’s willingness to participate and purchase from farm and food businesses that operate within a local or regional geography.

Eighty-eight percent believe that supporting local food and farm business is very or extremely important (see Figure 4).

When asked to think about and describe the community food system, several

individuals focused on food access, farmers markets, and opportunities around farm to school and scaling-up

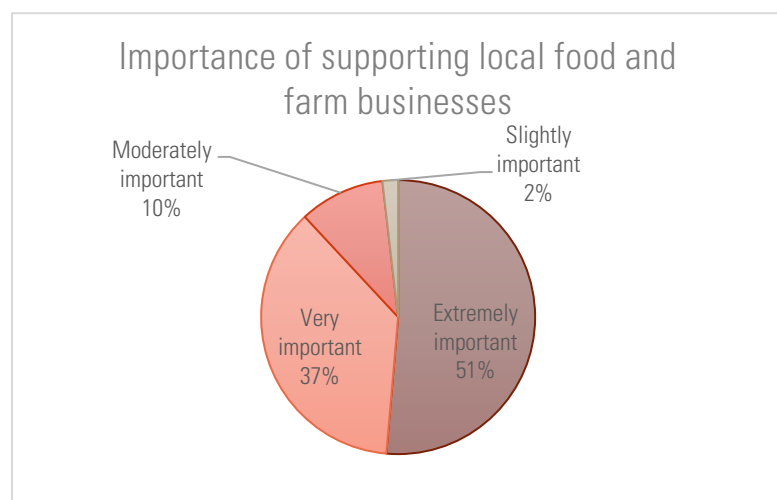


Figure 4: Extent of importance for supporting local food and farm businesses (N=101)

production. Sixty percent of the interviewees spoke to their change in purchasing habits due to COVID-19 and seeing their colleagues and communities shift to purchasing from local farm and food businesses.

When asked specifically about how important it was to support local farm and food businesses, 91 percent agreed that it was either extremely important or very important.

Shopping Patterns

There is a clear focus on sourcing local through farmers markets and having personal gardens or farms. Comparisons of Figure 4, perspectives of the importance of supporting local food and farmers, and Figure 5, local food purchasing locations, showcase how individuals are making intentional decisions to shop at local and regional locations as well as growing their own food. While many individuals still shop at department stores (64%), growing their own food (70%), shopping at farmers markets (71%) and shopping at local or regional groceries (74%) is the top frequented locations for food purchases. Additionally, over 50% of participants share they utilize roadside stands and independently owned grocery stores for food products.

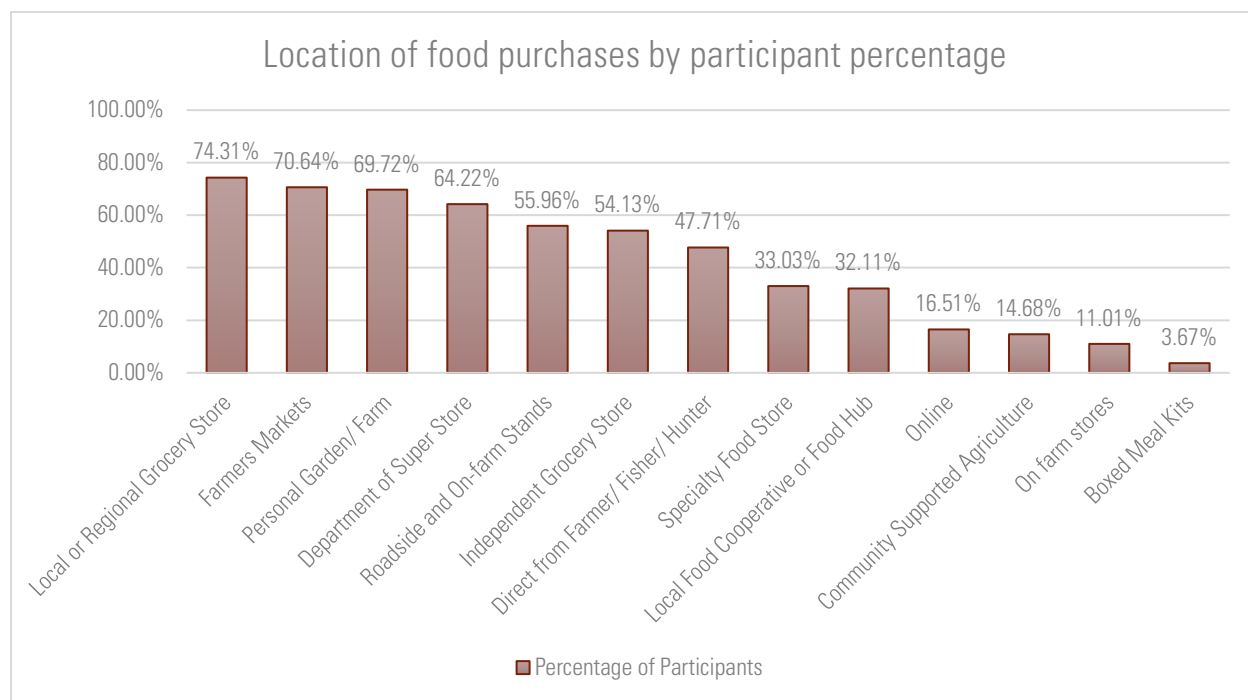


Figure 5: Location of food purchasing by participant percentage (N=109)

Attributes for food purchasing

To further understand purchasing habits, survey participants were asked about the level of importance for attributes for purchasing food. Based on average rankings (with extremely important equaling 5 and not at all important equaling 1), freshness (4.31) and grown locally (3.85) were ranked highest; organic (2.77) and a relationship with the producer, seller, or business owner (2.76) were ranked lowest (see Table 6 for all averages). Figure 6 details the percentage of individuals who ranked each attribute by level of ranking. In addition to the attribute options provided, “non-GMO” and “not Walmart” were shared in “other” as extremely important. “Small quantity to cook for one that

is NOT wrapped in plastic” and “clean and nourishing foods” were also listed; however, the participants did not share an importance level.

Table 6: Averages for importance of food purchasing attributes

	Grown Local	Affordability	Relationship with producer, seller, etc.	Location	Convenience	Organic	Fresh	Food Safety Practices
Average Scores	3.85	3.62	2.76	3.50	3.62	2.77	4.31	3.58

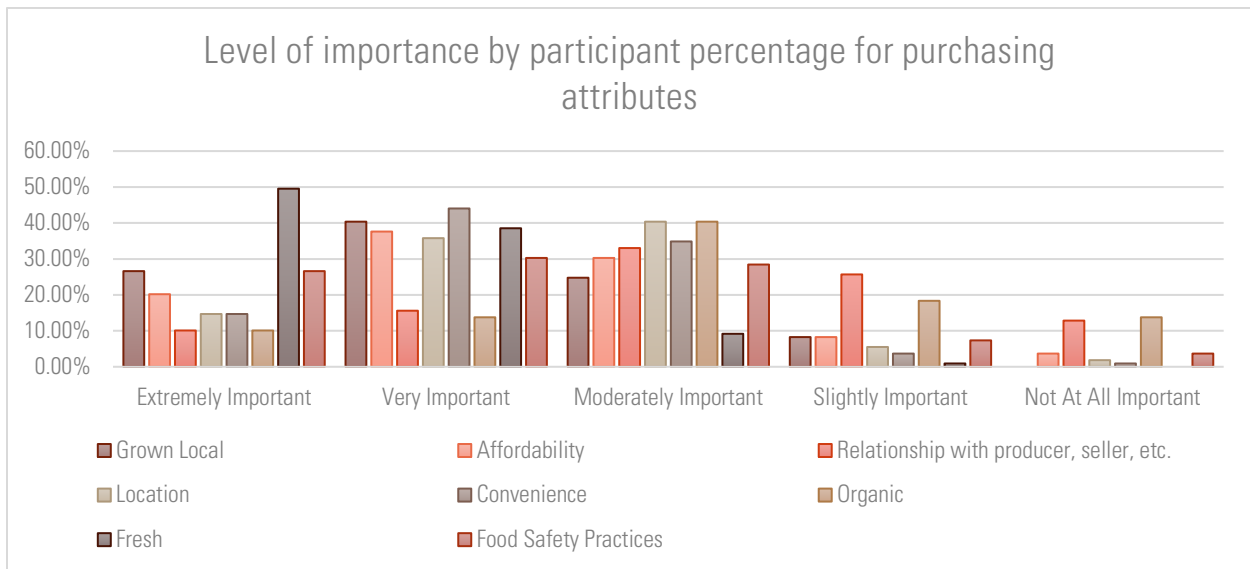


Figure 6: Importance of food attributes by percentage (N=107, except N=109 for grown local and affordability; N=106 for relationships with producer; and N=105 for organic and food safety); for full data spreadsheet on level of importance of attributes, see Appendix D)

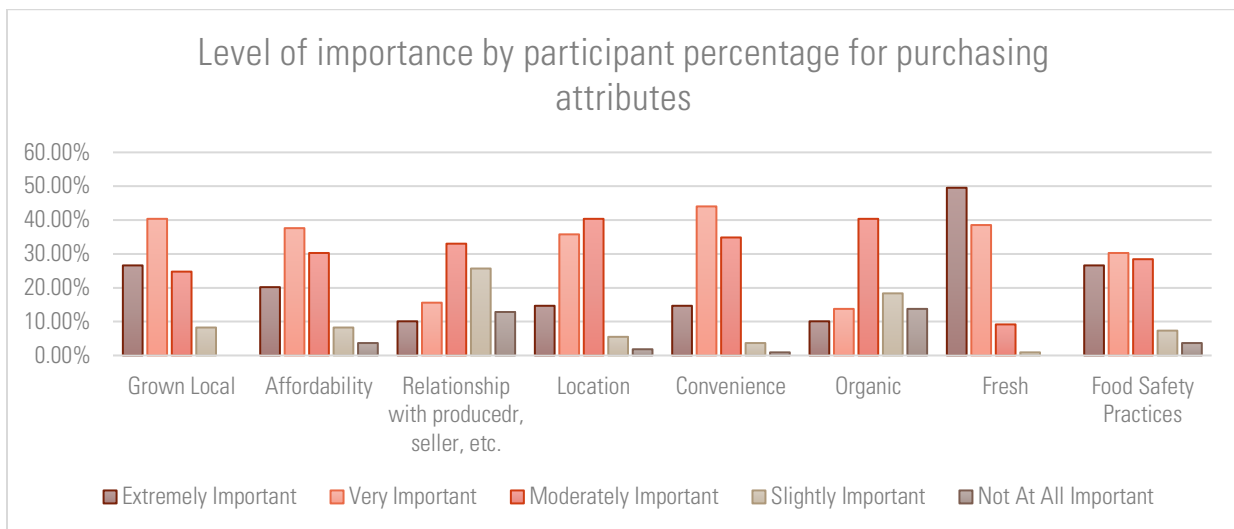


Figure 7: Importance of food attributes by level of importance (N=107, except N=109 for grown local and affordability; N=106 for relationships with producer; and N=105 for organic and food safety); for full data spreadsheet on level of importance of attributes, see Appendix D)

From the survey, it is evident that individuals have an interest in fresh and locally grown foods. However, when they are not available, consumers will choose what is most convenient. One interviewee shared their perspective that, “customers are definitely interested in local foods; however, [this is a] small subset in the population, and that farmers market [aren’t] very large [with] 10-15 vendors.” They believed that customers are more likely to seek out cheap food. To this end, another participant shared that “Outside of farmers markets, [I’m] not happy with the products available.”

Communities across the United States saw an uptick in purchases for local foods during COVID-19, and then immediately when things became more open, individuals went back to their previous purchasing habits. How can the community ensure support of local, even when not in a crisis, so businesses can continue? The following sections will dig into the response of natural disasters and COVID-19 to help showcase the impacts and potential shifts.

A primary concern that was mentioned related to the surging interest in local foods. In order to support and meet the increasing demand, farmers and food businesses need to be able to scale up either in individual production or through establishing additional farmers to the environment in Northwest Arkansas. This also connects to a conversation around cognitive dissonance, which is considered inconsistency between what a person says and how they act. For example, a person might state they find something like local foods important, but their behavior does not reflect that value because they do not purchase local foods when given the opportunity. One interviewee shared that they have been discussing the “speculation market” and are trying to understand exactly what the demand for local is. With the breadth of direct-to-consumer markets, it is difficult to fully understand the opportunity that would be available to farmers for scaling up and selling in a farm-to-school or broader wholesale market.

When considering wholesale markets and increasing the opportunity to scale local food access, one participant shared, “[wholesale markets] are underdeveloped; there is a new food hub that has been around for a year or so, which leads to opportunity for growth.” However, another shared that “most farmers are not quite to the scale needed.”

Natural Disasters

Disasters impact all of community life, ranging from mild challenges for transportation and access to devastating loss of infrastructure and life. Benton and Washington Counties have been involved in six designated disaster areas since 2011 according to FEMA (2022); Table 7 details each of these disasters that have impacted the counties.

The funding allotment is shown for the entire region of impact, as specific county level data is not available. Each line details the name of the disaster, date, type of assistance and total amount allotted. Within the assistance type column, only the assistance that was provided to Benton and Washington Counties is included, and if only one of the counties was impacted, that is specified. While federally proclaimed disasters do not showcase the full extent of extreme weather on the region, this is one way to understand impacts from disaster, such as infrastructure damage, debris, and damage to shelter and community areas. Types of disaster declarations include:

- DR: Major disaster declared
- FM: Fire Management
- EM: Emergency Declaration

Table 7: Natural Disaster Declarations (FEMA, 2022)

Disaster Declaration	Date	Assistance Type	Funding allotted (full region)
Arkansas Severe Storms, Tornadoes, and Associated Flooding DR-1975-AR	Apr 14, 2011 – Jun 3, 2011	Individual Assistance Housing + Other	\$24,301,705 4,291 applications approved
		Public Assistance PA- A-B Emergency and PA C-G Permanent work	\$49,972,685
Arkansas Severe Storms and Flooding DR-4143-AR	Aug 8, 2013 – Aug 14, 2013	Public Assistance PA- A-B Emergency and PA C-G Permanent work Benton County only	\$8,183,854
Arkansas Severe Storms, Tornadoes, Straight-line Winds, and Flooding DR-4254-AR	Dec 26, 2015 – Jan 22, 2016	Individual and Households Benton County only	\$1,212,227 217 applications approved
		PA- A-B Emergency and PA C-G Permanent work	\$12,152,324
Arkansas Severe Storms, Tornadoes, Straight-line Winds, and Flooding DR-4318-AR	Apr 26, 2017 – May 19, 2017	Individual and Households	\$3,961,671 913 applications approved
		PA- A-B Emergency and PA C-G Permanent work	28,007,212
Arkansas Severe Storms, Tornadoes, Straight-line Winds, Tornadoes and Flooding DR-4460-AR	Jun 23, 2019 – June 24, 2019	Public Assistance Washington County only	\$5,877,299 Hazard Mitigation dollars: \$840,380
Arkansas Hurricane Laura EM-3541-AR	Aug 26, 2020 – Aug 28, 2020	PA- B Emergency	N/A

Natural Disaster Impact

While there are disasters covered by FEMA for federal support, there are many instances where climate change is wreaking additional havoc on farming and businesses with ever-evolving cycles and changes in weather making it difficult to plan.

Interview, focus group, and survey participants were asked to reflect on their experiences of natural disasters. Of the 109 survey participants, 79 (72%), shared that they experienced a climactic event or disaster, which included hail, drought, flood, wind, tornado, ice, and fire (see Figure 7). Of those participants, 64% experienced more than one climactic event. Within the survey, participants were also able to add in other events they were impacted by, which included five who experienced snow or deep freeze, and two who experienced heavy rains.

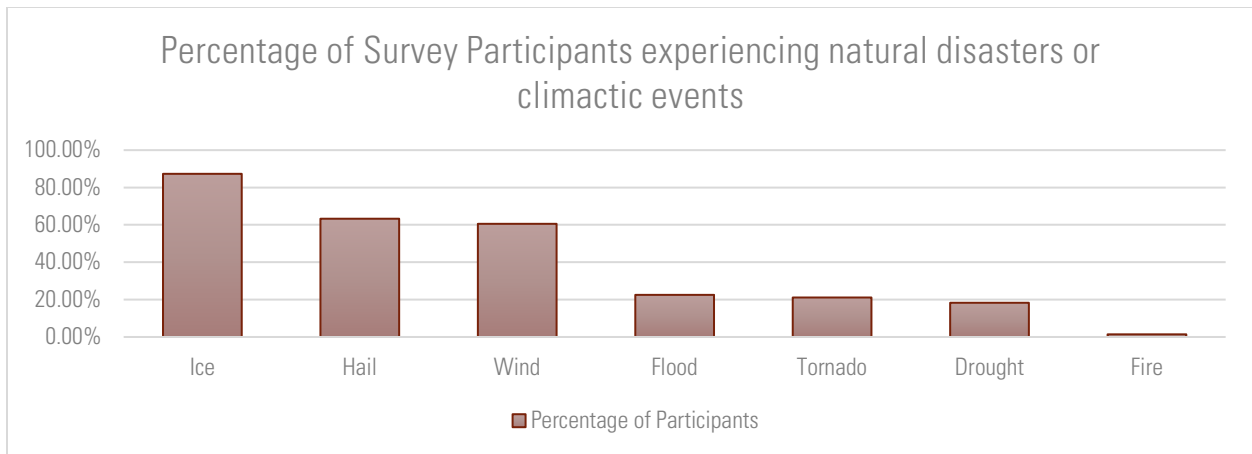


Figure 8: Percentage of Survey Participants experiencing natural disasters or climactic events (N=109)

Impact from Natural Disaster or Climactic Event

Of those who experienced a natural disaster, 70 participants (64%) experienced more than one event. Table 8 details the number of participants that experienced each type of event (left-most column) and the impacts they experienced. Figure 8 showcases the percentage of individuals that experienced each event and the impact it had.

Table 8: Total participant numbers based on impact from natural disasters and climactic events (N variable; left-most column)

	Loss of communications	Damaged home/ land/ etc.	Increase in mental stress	Loss of essential provisions	Increase in financial pressures	Diminished family health	Increase in physical stress	Damaged business/ farm/ etc.	Business closure	Diminished personal health
Ice (60)	42	34	24	22	15	10	10	6	5	3
Hail (48)	6	40	7	3	8	0	1	9	0	1
Wind (42)	20	33	10	5	8	3	3	7	0	1
Flood (15)	4	6	6	10	3	1	2	3	0	1
Tornado (15)	11	8	9	2	4	2	7	6	1	1
Drought (13)	0	7	1	0	4	0	2	6	0	0
Fire (1)	0	0	0	0	0	0	0	0	0	1
Totals:	83	128	57	42	42	16	25	37	6	8

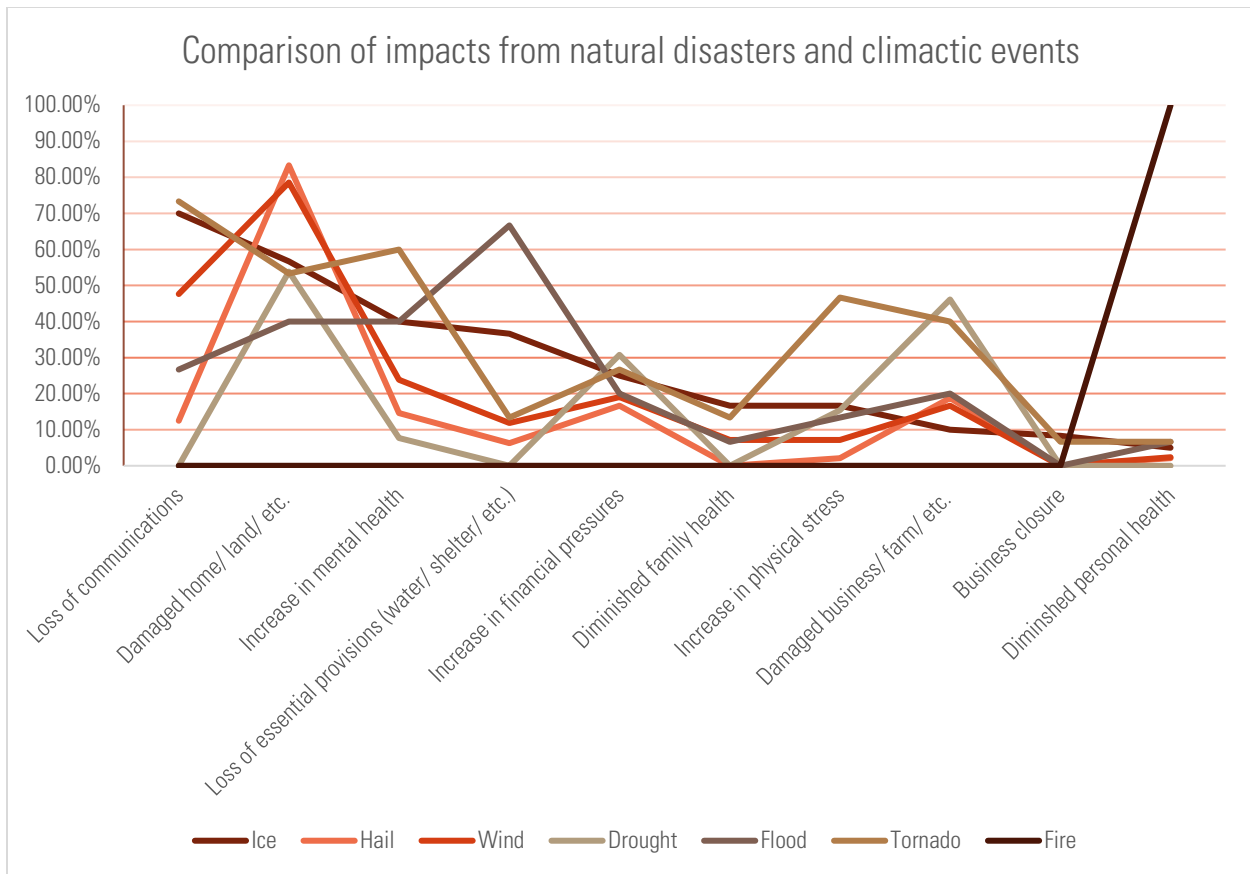


Figure 9: Comparison of impacts from natural disasters and climactic events based on percentage (N variable; see Table 8)

Other Responses for impact are shared below based on disaster type:

- Flood: “unable to get in or out of road” and “road to the house washed out”
- Wind: “large trees blocking essential areas necessary to get to road”

Damage to home and property and loss of communications were the most common impacts across all disasters, with tornadoes (followed closely by ice storms) causing the most frequent loss of communications and hail causing the most frequent damage to property.

While tornadoes only impacted 15 people, they had the most dramatic impact on individuals, with someone reporting an impact in every category. Ice (60 individuals) and Flood (15 individuals) had the next highest impact by percentage, followed by wind. Fire shows as the highest extent for diminished personal health, however, there was only one individual that reported experiencing a fire.

When speaking with farmers and focus group participants about natural disasters, climate change in general was the largest concern. Individuals shared that the inability to plan for the season and lack of access to insurance for weather events for specialty crop producers were some of the biggest barriers for responding to disaster. Regarding insurance, a farmer shared, “[I] haven’t even looked into crop insurance, [because I] have heard it’s not even financially viable to get the insurance.” They went on to share that throughout their fruit production failure in the past, they relied on off-farm income, commenting that “everyone [has] off farm income, so [the farm] can continue.”

Another producer shared that they are “most concerned about localized changes in climate.” They shared, “[We’re] getting more frequent and intense rainstorms, and some of the growers [we] work with are near rivers and streams . . . also [climate change] could wreak havoc from wind damage.” There are also less optimistic farmers that have shared about closure; one survey respondent stated, “I have lost a year of plants to sell, I don’t plan on recovery, I’m selling my land.”

Many of these events happened consecutively or during COVID leading to longer time periods of recovery. However, individuals were still asked to share their perspectives on recovery on a scale of zero to ten (with 0 being no recovery, and 10 being full recovery; see Figure 9). On average, participants have mostly recovered from each event, ranging from 8.85 -10. Drought had the lowest average, with 8.85 recovery and two participants who had only moderately recovered. Flooding was the only category that a participant shared they have had no recovery. Hail, wind, and ice also have participants sharing little recovery since the event.

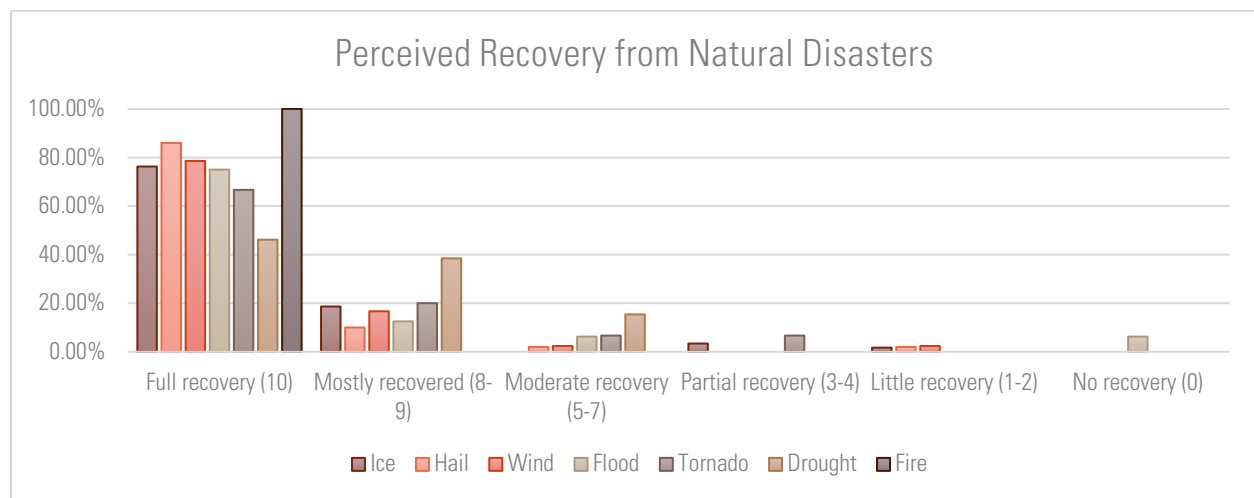


Figure 10: Extent of recovery for natural disasters (N variable; see Table 8). For full data spreadsheet on perceived recovery, see Appendix E

Usefulness of Organizations when responding to a Natural Disaster

Individuals were asked about usefulness of organizations in Benton and Washington Counties, based on a pre-made list from interviews. Organizations included in the survey were City Government, County Government, Arkansas Department of Agriculture, Arkansas Department of Education, Arkansas Department of Public Health, University of Arkansas, University of Arkansas Extension, Benton County Extension, Washington County Extension, University of Arkansas Medical School, Walton Family Foundation, Tyson, Fayetteville Farmers Market, and The Food Conservancy. Figure 10 details the extent to which individuals felt that each organization was useful in responding to disaster on average, not specific each type of natural disaster. Table 9 shows exact percentages; bolded numbers are the top two highest values per category.

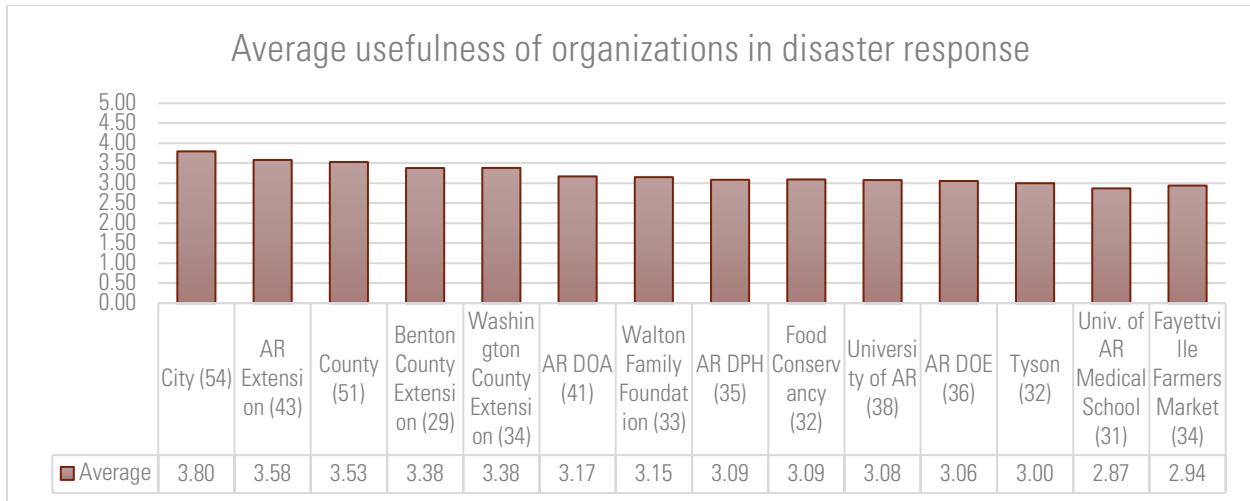


Figure 11: Average usefulness of organizations for responding to Natural Disasters (N is detailed in parentheses with the organization)

Table 9: Average and Percentage usefulness of organizations in responding to natural disasters

	City	AR Extension	County	Benton County Extension	Washington County Extension	AR DOA	Walton Family Foundation	AR DPH	Food Conservancy	University of AR	AR DOE	Tyson	Univ. of AR Medical School	Fayetteville Farmers Market
Extremely useful	33.33	23.26	19.61	20.69	20.59	9.76	12.12	5.71	9.38	5.26	5.56	6.25	6.45	2.94
%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Somewhat useful	24.07	23.26	27.45	20.69	11.76	17.07	15.15	14.29	15.63	15.79	16.67	18.75	3.23	20.59
%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Neither useful or useless	33.33	46.51	41.18	41.38	55.88	58.54	57.58	68.57	59.38	65.79	61.11	56.25	74.19	55.88
%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Somewhat useless	7.41	2.33	9.80	10.34	8.82	9.76	6.06	5.71	6.25	7.89	11.11	6.25	3.23	8.82
%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Extremely useless	1.85	4.65	1.96	6.90	2.94	4.88	9.09	5.71	9.38	5.26	5.56	12.50	12.90	11.76
%	%	%	%	%	%	%	%	%	%	%	%	%	%	%

There were no organizations that received over a “4” or “somewhat useful ranking.” The highest ranked organizations for usefulness were County Government (3.80), Arkansas Extension (3.58), and City Government (3.53). Fayetteville Farmers Market (2.94) and University of Arkansas Medical School (2.87) were seen to be the least useful. Additional categories were identified by providing “other” responses in surveys and included “State Farm,” “Carroll Electric Coop,” and “friends with equipment” as extremely useful and “neighbors” as somewhat useful. One respondent shared, “[There is] no outside assistance needed. I plan ahead and feel everyone should do so. THINK! Don’t expect others to fix things for you i.e. stockpile food, water and essentials AND buy insurance for health and property.”

When discussed within interviews and focus groups, it was discussed that many people may not understand what organizations do in response to natural disasters. It should be noted that participation in this response was significantly low compared to the 70 individuals that participated in the natural disaster response questions and could be due to individuals not seeing these organizations as important to recovery from natural disasters.

Future

To understand future needs for natural disaster response, a review of FEMA’s National Risk Assessment for Benton and Washington Counties was taken into consideration. Benton County has a relatively low risk – 12.20; Washington County has a relatively moderate risk of 16.61. This is compared to 12.90 for the state of Arkansas, and a national average of 10.60. The risk assessment considers expected annual loss, social vulnerability and community resilience based on datasets from 18 natural hazards (Department of Homeland Security, 2022). The formula utilized to assess risk is as follows:

$$(Expected\ annual\ loss \times social\ vulnerability) \div community\ resilience = Risk\ Index$$

- Expected annual loss: “natural hazards component that represents the average economic loss in dollars resulting from natural hazards each year”
- Social vulnerability: consequence enhancing risk component and community risk factor that represents the susceptibility of social groups to the adverse impacts of natural hazards
- Community Resilience: consequence reduction risk component and community risk factor that represents the ability of a community to prepare for anticipated natural hazards, adapt to changing conditions, and withstand and recover rapidly from disruptions
- Risk Index: represents the potential for negative impacts resulting from natural hazards

A comparison of the Expected Annual Loss overviews between Benton County and Washington County can be seen in Figure 11. According to the index, cold waves, drought, heat waves, ice storms, lightning, and strong winds have a relatively high-risk rating. Table 10 details estimates for expected annual losses from various climactic events.

Benton County		Washington County	
Composite Expected Annual Loss	\$15,528,590.23	Composite Expected Annual Loss	\$21,287,837.72
Building Value	\$5,196,263.16	Building Value	\$8,166,484.84
Population	0.91 fatalities	Population	1.23 fatalities
Population Equivalence	\$6,946,495.72	Population Equivalence	\$9,356,850.04
Agriculture Value	\$3,385,831.35	Agriculture Value	\$3,764,502.83

Figure 12: Expected Annual Loss Overview (FEMA, 2022)

Table 10: Economic Impact of Storms (FEMA, 2022)

Disaster	Benton County		Washington County	
	Risk Index Rating	Expected Annual Loss	Risk Index Rating	Expected Annual Loss
Flooding	12.40- relatively moderate	\$2,978,507	17.26 – relatively moderate	\$2,573,639
Hail	17.87 – relatively moderate	\$382,747	26.47- relatively moderate	\$1,242,899
Tornado	17.09 – relatively moderate	\$2,192,801	33.93 – relatively high	\$5,480,523
Drought	14.48 – relatively moderate	\$2,019,242	21.32- relatively high	\$2,363,989
Ice Storm	28.19 – relatively high	\$1,667,848	63.32 – very high	\$2,788,872
Strong Wind	18.45 – relatively moderate	\$1,803,983	35.49 – relatively high	\$802,000
Lightning	19.07- relatively moderate	\$594,968	33.71- relatively high	\$328,288
Fire	12.41- relatively low	\$943,214	17.94 – relatively moderate	\$914,130
Cold Wave	33.56 – relatively high	\$873,593	48.98 – relatively high	\$764,629
Heat Wave	16.21 – relatively moderate	\$1,275,878	28.85- relatively high	\$1,686,102
Winter Weather	17.55- relatively moderate	\$209,681	66.83 – very high	\$1,921,528
Landslide	18.60 – relatively moderate	\$55,932	18.28 – relatively moderate	\$53,070

Benton County and Washington County have almost identical rankings for community resilience with 53.67 and 53.71 respectively. This can be compared to 52.3 for the state and 54.49 for the national average for community resilience; meaning that there is moderate ability to prepare, adapt and withstand disruptions compared to other areas. Improvement potentials are shown below.

Natural Disaster Resilience Next Steps

Based on the full research scope, the following are suggested priorities and next steps. Additionally, partners were identified though focus groups for who would need to be a part of prevention and recovery.

1. Scaling Up of Farms to meet demand for local food procurement
 - a. Improve land access and understand gaps and challenges related to land tenure, including changes to tax code for renting
 - b. Look for initial products that can be kept in the local business supply chain rather than being exported
 - c. Develop webinars and educational series around wholesale markets for farmers; showcase nuances and business models between direct-to-consumer and wholesale
 - d. Conduct a feasibility study on mobile and permanent structures for fruit and vegetable processing
 - e. Educate on regionally adapted production practices
2. Establish new, or identify existing, insurance programs for small to mid-size farmers that will aid in extreme weather conditions
3. Improve land zoning and development considerations
 - a. Provide best practices on urban and rural zoning, comprehensive plans, and ordinances
 - b. Improve water drainage systems for both hardscapes and natural swales through bio-retention options and rainwater catchment
4. Enhance outreach to underserved, marginalized individuals and organizations, including developing materials in multiple languages
5. Create a regional network for communication, planning, and implementation of food systems projects, including for prevention, response, and recovery for climate-based events.
 - a. Develop roles and clear responsibilities for organizations and individuals
 - b. Include food policy components and funding recommendations to support purchasing of local foods within schools and larger institutions
 - i. In addition to the Local Food, Farm, and Jobs Act that requires institutions to set a 20% local procurement goal, incorporate additional suggestions on practices
 - ii. Offer grants program specific to capital and infrastructure improvement for farming, processing, and distribution
 - c. Ensure a coordinated effort and common place for individuals, farms, and food businesses to turn to for questions around local and regional foods
6. Develop awareness campaign about the impact of climate change and COVID-19 on farms and food businesses as well as the community at large
 - a. Showcase the fragility of the food system through narratives
 - b. Highlight how local farms, food businesses, organizations and networks were able to respond to COVID-19 and the need for continued support as we get back to “normal”
7. Create a sustainability “score card” and ways of assessing existing conditions and future needs
 - a. Develop plan for protecting natural spaces and agricultural land around the counties
 - b. Identify pollution streams and prevention
 - c. Understand hazard mitigation and response best practices; put in place a checklist for farms, food businesses
 - d. Educate on regionally adapted production practices

COVID-19 Impact

Interview, focus group, and survey participants were asked to reflect on their experiences of natural disasters. Of the 109 survey participants, 101 (93%) shared that they experienced COVID-19. Of those who experienced COVID-19, 73 (72%), also experienced at least one natural disaster that happened within the same time frame. COVID-19 had a broad impact on communities. Community members identified experiencing multiple influences on mental and physical health, general fatigue from exposure and worry, and stress related to financial and employment constraints that have occurred due to supply-chain and corporate closures. Table 11 details the funding allotment for the entire state of Arkansas for COVID-19 response, which was deemed both a “major disaster declaration” and “emergency declaration.” Table 12 details the number of participants in the survey that experienced COVID by type of impact, and Figure 12 showcases the percentage of individuals that experienced each impact.

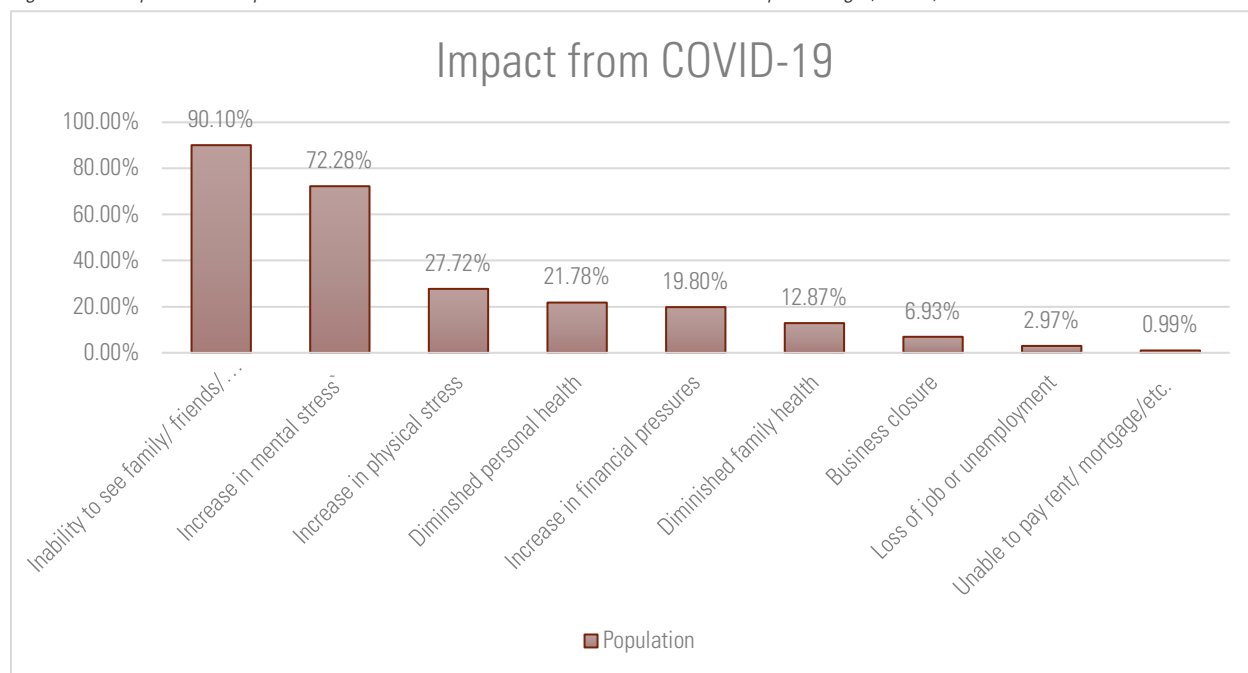
Table 11: COVID-19 Natural Disaster Declaration (FEMA, 2022)

Arkansas COVID-19 Pandemic DR-4518-AR	Jan 20, 2020; continuing	Individual and Households	\$29,906,124 4846 applications approved
		Public Assistance (B)	\$111,628,082
		Hazard Mitigation Grant Program	\$141,018
Arkansas COVID-19 EM-3461-AR	Jan 20, 2020; continuing	Public Assistance (B)	NA

Table 12: Total participant numbers based on impact from COVID-19

	Inability to see family/ friends/ social networks	Increase in mental stress	Increase in physical stress	Diminished personal health	Increase in financial pressures	Diminished family health	Business closure	Loss of job or unemployment	Unable to pay rent/ mortgage/etc.
COVID-19	91	73	28	22	20	13	7	3	1

Figure 13: Comparison of impacts from natural disasters and climactic events based on percentage (N=101)



Other Responses for impact included: “significantly diminished trust of community members to take health precautions for their own sake and for mine,” “high anxiety regarding those who do not follow safety protocols,” “closed churches and library,” “minimal impact,” “death in family,” “extreme anxiety, instability in home life/job,” “loss of disability meant I need to work but I am new to community and don’t know how to find job where I can work from home and not be exposed to unvaccinated people since I have a compromised immune system,” “the refusal of many selfish people to be vaccinated and wear a mask is the cause of the inability of our society to return to normal. SHAME ON THEM for causing them. They should be the ones to suffer, NOT, we who are attempting to make things better for all in our country. SHAME ON THEM!!,” “more difficult to work in my profession (real estate)”, “I have helped and prayed for people I know. Have not had covid in our household as far as we know,” “all events were cancelled and are still being cancelled now”, and “no Impact.”

The most significant impact for individuals was being unable to see others and the mental stress that COVID-19 caused. Responses to an open-ended question about next steps demonstrated just severely COVID-19 affected mental stress among community members. It was evident through the overwhelming responses that there were feelings of fear, anger, and general contempt for others in their community around vaccinations, mask mandates and opinions about facts related to the pandemic.

Within interviews and focus groups, many spoke about the opportunities that virtual meetings and webinars had but also realized the lack of access to broadband, multi-lingual communication, and access to resources. Farmers Markets, restaurants, and other market outlets closed, and many farmers lost contracts, leading them to seek out their own sales through direct-to-consumer and online options, which has continued to be a “new way of doing” in hybrid formats. Individuals shared their fear of the future due to lack of “not knowing” and general stress over how individual community members are responding.

The question of “what will the future hold” regarding food systems continued to come up in conversation. While many hope that the new interest in locally-sourcing food and consumer demand for local will continue, concerns that individuals will forget about the supply chain shortfalls and go back to the “old way of doing” were prevalent. One

person shared that the “pandemic also forced interest in local healthy food... seeds sold out and folks started gardening and farming... people who never considered it are now interested in agriculture.” Another stated, “People very quickly became interested in growing [their] own food; there was a panic from people, and it shows how far removed we are from even 50 years [ago] as far as food production; this led to an opportunity (what can I grow here);” and yet another perspective, “[my] personal habits [changed], I did pick up from Walmart- but typically didn’t shop there at all, so that changed because of convenience of pick up and the weird outages of products that happened, it became an easy thing to do; we also started buying specialty options online.”

Across the board, food access changed, from purchasing to donations. Amidst all of it, one thing has been constant: a hope for change. The following is a list of quotes from interviews that speak to the need for understanding and awareness of the situation that has shown itself during COVID-19.

- “[I] hope the future is more community-focused when it comes to food, but [I] don’t know if it will translate across the board, or if it will revert back and we don’t learn from what’s happened”
- “[I] would like to think there is a greater interest in local food and [local food] filling gaps and needs in resilience, but we will see; is the staying power here?”
- “[I] previously thought local was too expensive, and now [I’m] trying to work around [it. I have a] new thought on seeing local as a resilience strategy, [but I] don’t have confidence that it will last when the world returns to normal... Until our government subsidy structure changes, local will be more expensive.”
- “[We are seeing people excited about] local food systems... excited about the rapid adaptation for technology, and the fact that there was a high concern for food given the supply chain logistics and there are new players – that will lead to more sustainable solutions and quicker reaction [in the future].”

While it is difficult to know the extent of recovery that has been able to occur from COVID-19 since it is an ongoing pandemic, individuals were still asked to share their perceived level of recovery from COVID-19 based on the moment in time that they were participating in the research study. Figure 13 showcases the extent to which individuals feel they have recovered. On average, people thought they were moderately recovered (7.5 on a scale of 10). It is fair that people have mixed reviews on recovery, as we are still continuously hearing about COVID-19 impacts and new scares. This is a time to take stock in the potential reality that this will be a long-term reality for our communities and the need to have practices in place to ensure safe and economically vibrant communities, amidst an ongoing pandemic.

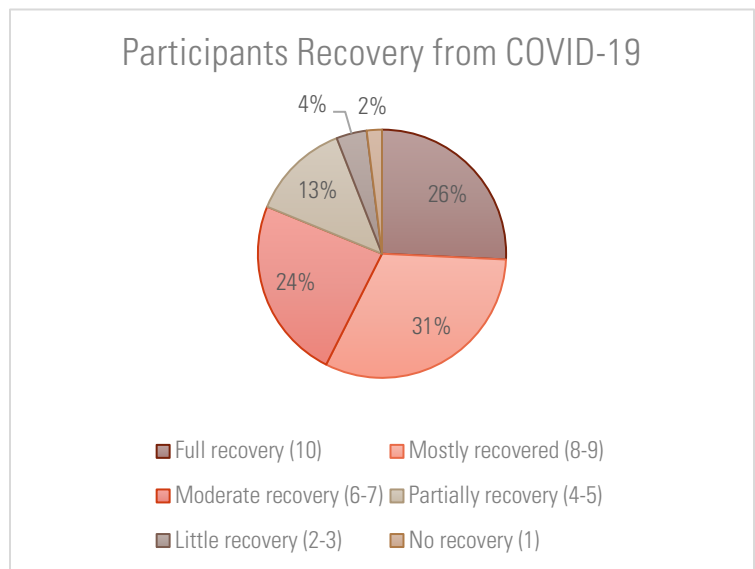


Figure 14: Perceived extent of recovery from COVID-19 (N = 101)

Usefulness of Organization when responding to COVID-19

Individuals were asked about usefulness for organizations in Benton and Washington Counties, based on a pre-made list and options to add additional responses. Organizations included in the survey were City Government, County Government, Arkansas Department of Agriculture, Arkansas Department of Education, Arkansas Department of Public Health, University of Arkansas, University of Arkansas Extension, Benton County Extension, Washington County Extension, University of Arkansas Medical School, Walton Family Foundation, Tyson, Fayetteville Farmers Market, and The Food Conservancy. Figure 14 details the average extent individuals felt that each organization was useful in responding to COVID-19, and Table 13 shows exact percentages for each level of usefulness; bolded numbers are the top two highest values per category.

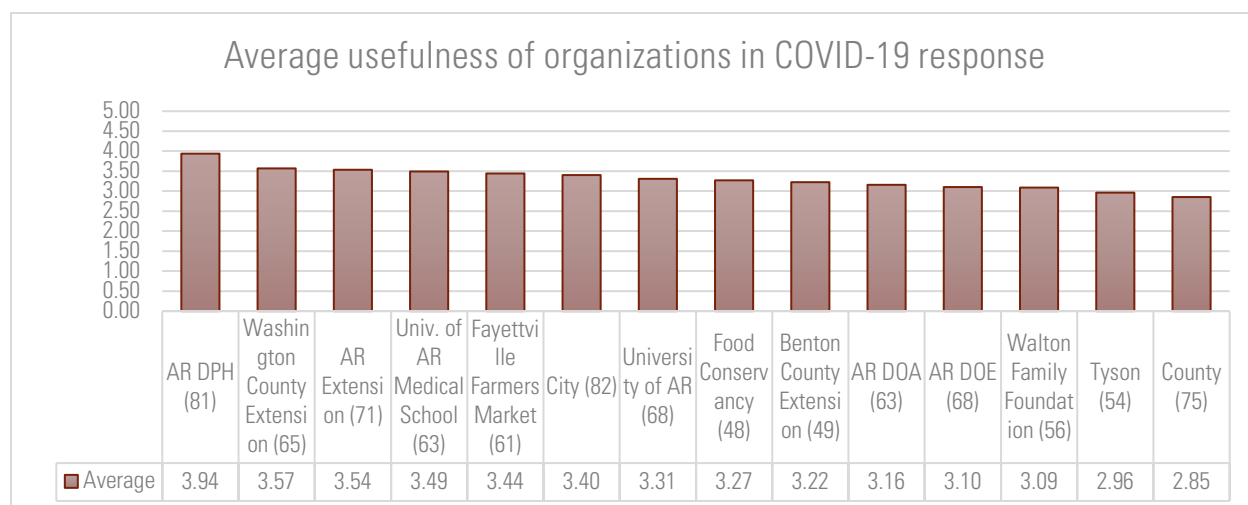


Figure 15: Average usefulness of organizations for responding to COVID (N is detailed in parentheses with the organization)

Additional categories were identified by providing “other” responses in the survey, which included “Arkansas Government,” “Mercy,” “CDC,” “News Sources,” and “NWA Food Bank.”

Table 13: Percentage usefulness of organizations in responding to COVID-19

	AR DPH	Washington County Extension	AR Extension	Univ. of AR Medical School	Fayetteville Farmers Market	City	University of AR	Food Conservancy	Benton County Extension	AR DOA	AR DOE	Walton Family Foundation	Tyson	County
Extremely useful	32.10	21.54	21.13	19.05	16.39	20.73	10.29	16.67	12.24	9.52	7.35	8.93	7.41	10.67
Somewhat useful	45.68	27.69	28.17	26.98	24.59	34.15	26.47	10.42	24.49	22.22	25.00	16.07	11.11	25.33
Neither useful or useless	12.35	43.08	40.85	46.03	52.46	23.17	52.94	64.58	48.98	53.97	50.00	60.71	64.81	30.67
Somewhat useless	3.70	1.54	2.82	0.00	0.00	8.54	4.41	0.00	2.04	3.17	5.88	3.57	3.70	5.33
Extremely useless	6.17	6.15	7.04	7.94	6.56	13.41	5.88	8.33	12.24	11.11	11.76	10.71	12.96	28.00

Similar to natural disasters, no organization received a “4 - somewhat useful” ranking or higher. Arkansas Department of Public Health (3.94), Washington County Extension (3.57) were seen to be the most useful organizations for response to COVID-19. County Government (2.85) and Tyson (2.96) were seen as the least useful

organizations in response to COVID-19. It should also be noted that while City government was ranked to have a usefulness of 3.40, they also had one of the top two percentages (13.41%) of being “extremely useless” for response to COVID-19. Also, all organizations had at least 6% of the survey participants stating they were “extremely useless” when it came to COVID-19 response. Also, while the County scored relatively high for usefulness ranking in response to natural disaster, they dropped to the least useful organization in response to COVID-19.

Within COVID-19 response, interviewees and focus groups discussed the lack of understanding on how organizations support farmers and food businesses. One interview participant shared, “Farmers are self-reliant, [we don’t] expect any help; there was more media/ articles/ etc. on how to respond to keep safe- and that’s why [we] implemented the wash stations – so some of that was helpful.” Within focus groups, it was discussed that there is a lack of understanding of Extension’s role and, at large, which organizations can be turned to for support. Another shared, “farmers also can be more progressive than [organizations] and may not benefit from [them].”

When discussing COVID-19 response, there was discussion around duplication of services. One person shared that they were not sure if new organizations knew about Land Grant Extension and its role. They shared that “new groups formed and duplicated what Extension was already doing, [but this] could be because Extension isn’t known well.” Another interviewee shared that “the biggest complaint about extension in Arkansas is they don’t show up unless asked. They are there when you call, but don’t go out of their way to step in and ask how to help or create new programs to respond and be proactive.” It should be noted that while Extension was discussed in interviews and focus groups with some critique, they did receive a high ranking of usefulness in response to COVID-19.

COVID-19 Resilience Next Steps

Based on the research scope, the following are suggested as next steps. Additionally, partners were identified through focus groups for who would need to be a part of prevention and recovery. The first two priorities are closely aligned with that of natural disaster response.

1. Develop relationships, communication and outreach plan for all producers, markets, and food businesses
 - a. Enhance outreach to underserved, marginalized individuals and organizations, including developing materials in multiple languages
 - b. Create a network of gardeners, producers, etc. and understand the desired communication platform for getting in touch
2. Develop or partner with existing gardening networks (like Master Gardeners) for seed sharing and gardening techniques
3. Continue regional network for communication for prevention, response, and recovery, expanding across and within all cities in the County, including multilingual communication materials, and text/ phone platforms.
4. Develop awareness campaign about the impact of purchasing from local food and farm businesses and how this support can provide financial sustainability for the local economy and community at large
5. Increase interest and labor support on farms, in schools, and other food-based businesses
 - a. Plan for H2A workers and support
 - b. Educational courses and incentives for dining and procurement professionals in early care, schools, and other institutions

Appendix A: Demographics and additional identifiers from survey participants

Zip Code

72701	20	72744	1
72703	9	72745	1
72704	9	72751	1
72712	8	72753	1
72713	5	72756	5
72714	3	72758	5
72715	11	72761	2
72718	1	72762	5
72722	1	72764	9
72727	1	72774	4
72730	1		
72732	3		
72734	1		
72735	1		
72736	1		

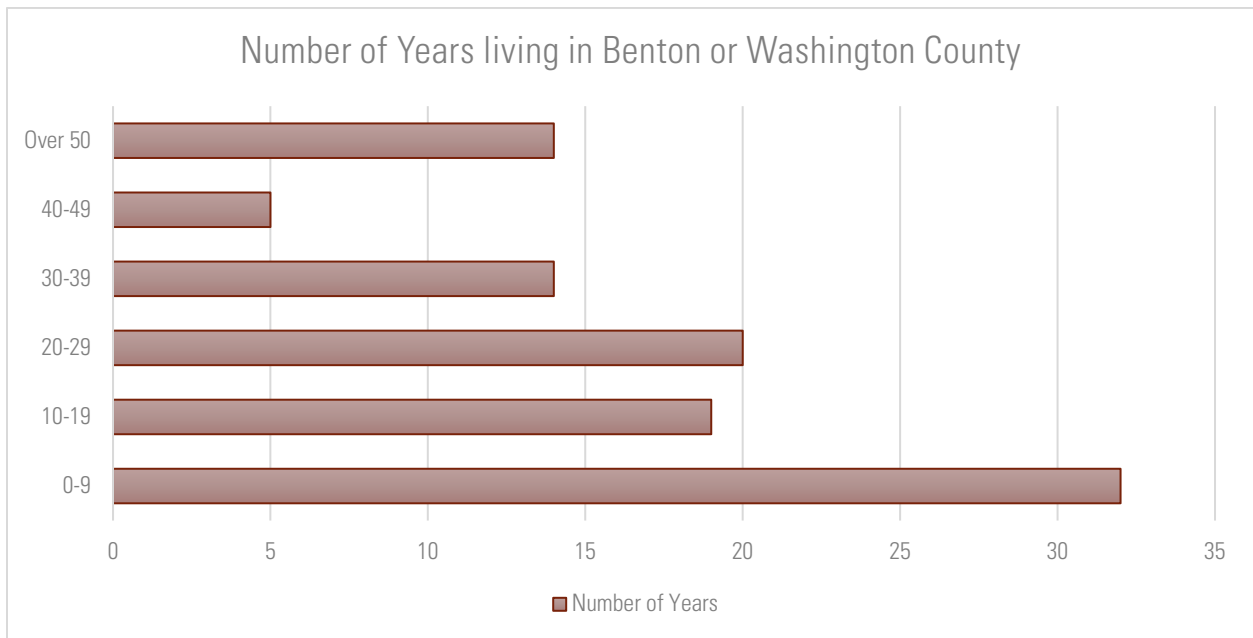


Figure 16: Number of Years living in Benton or Washington County (N=106)

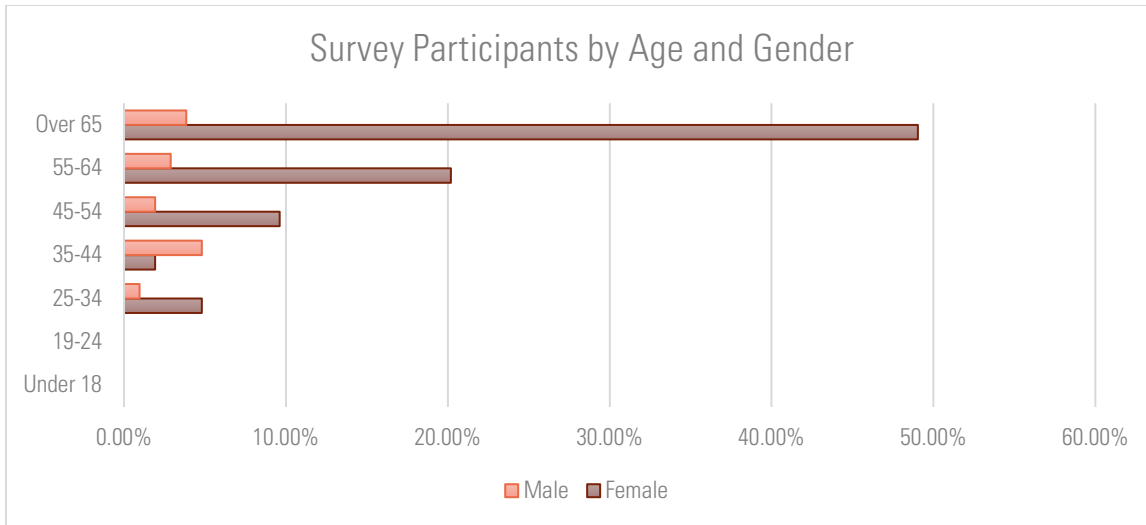


Figure 17: Survey Participants by Age and Gender (N=106)

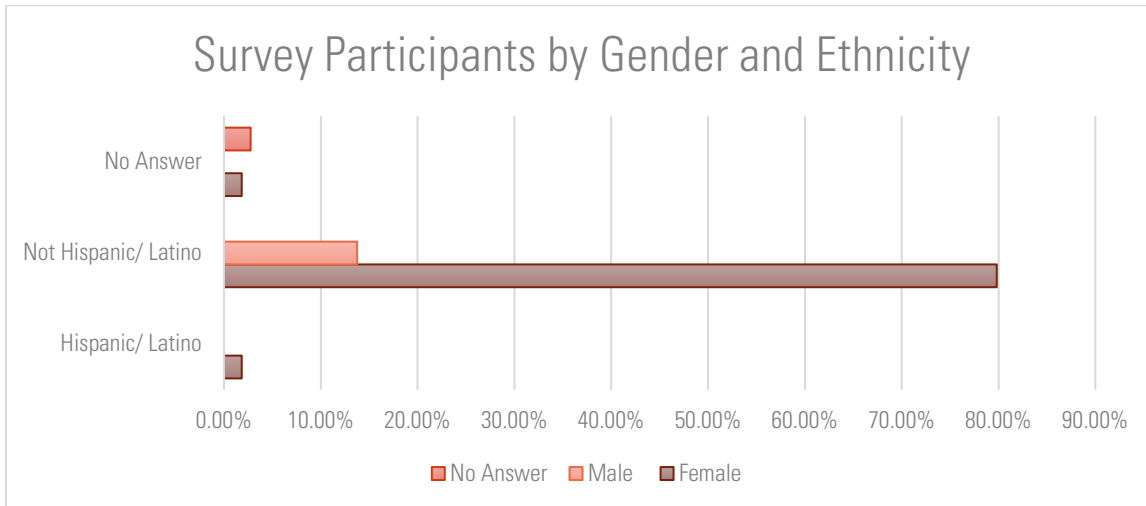


Figure 18: Survey Participants by Gender and Ethnicity (N=106)

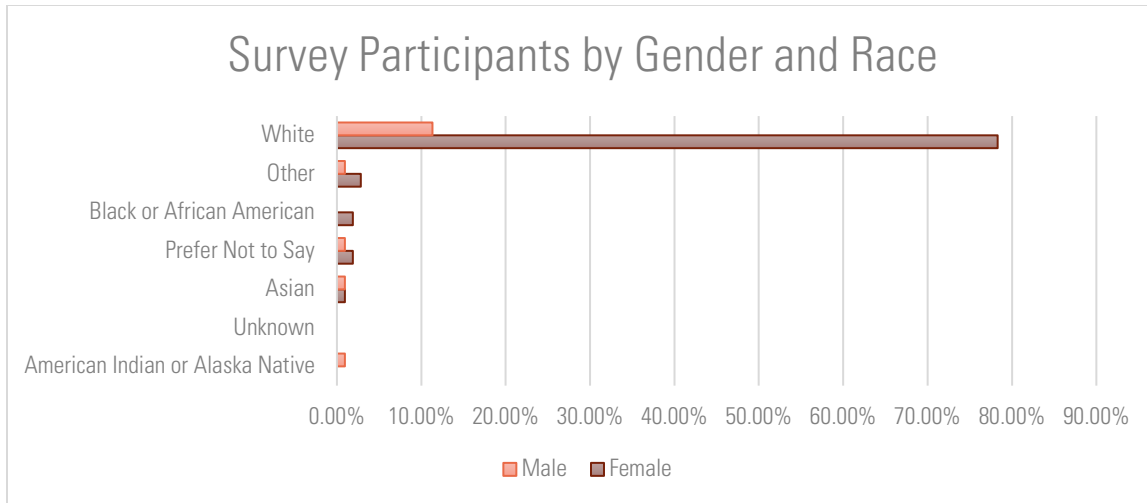


Figure 19: Survey Participants by Gender and Ethnicity (N=106; Participants could select all that apply)

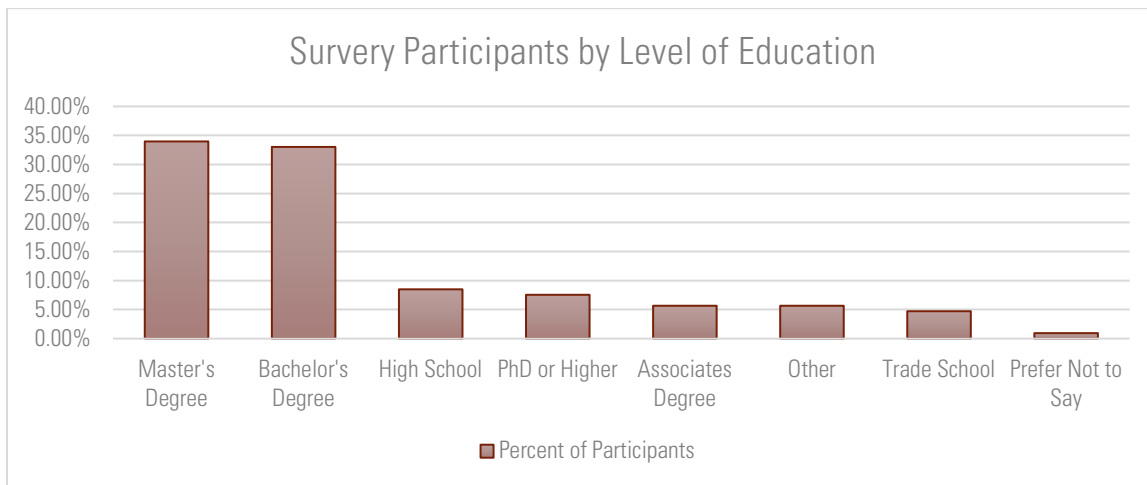


Figure 20: Survey Participants by Level of Education (N=106)

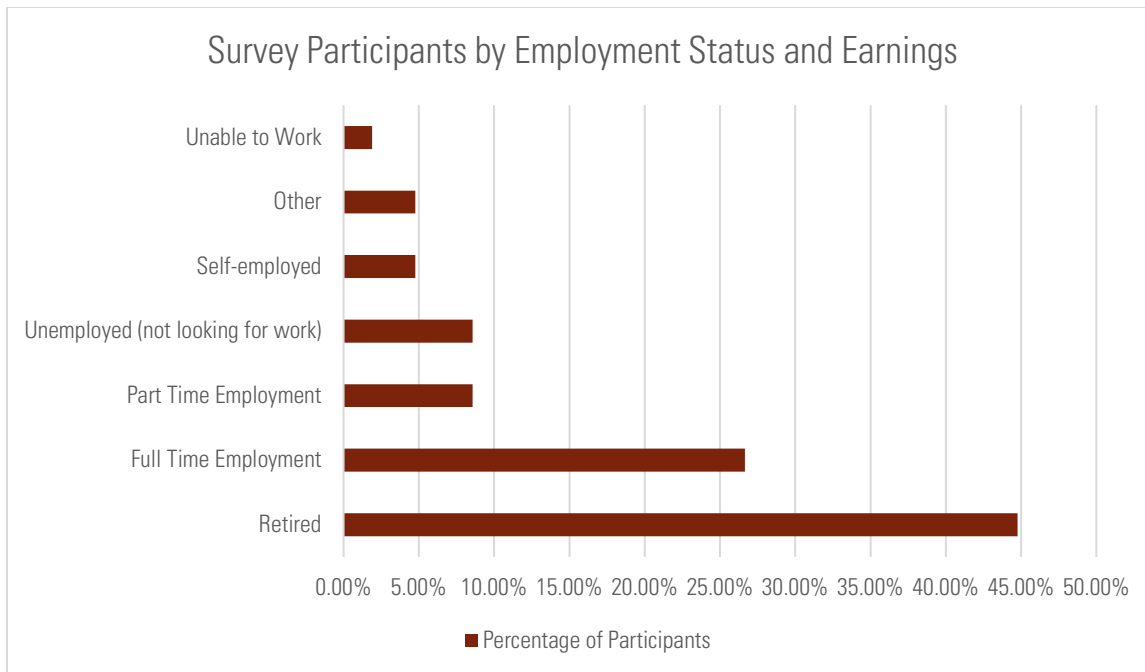


Figure 21: Survey Participants by Employment Status (N=106)

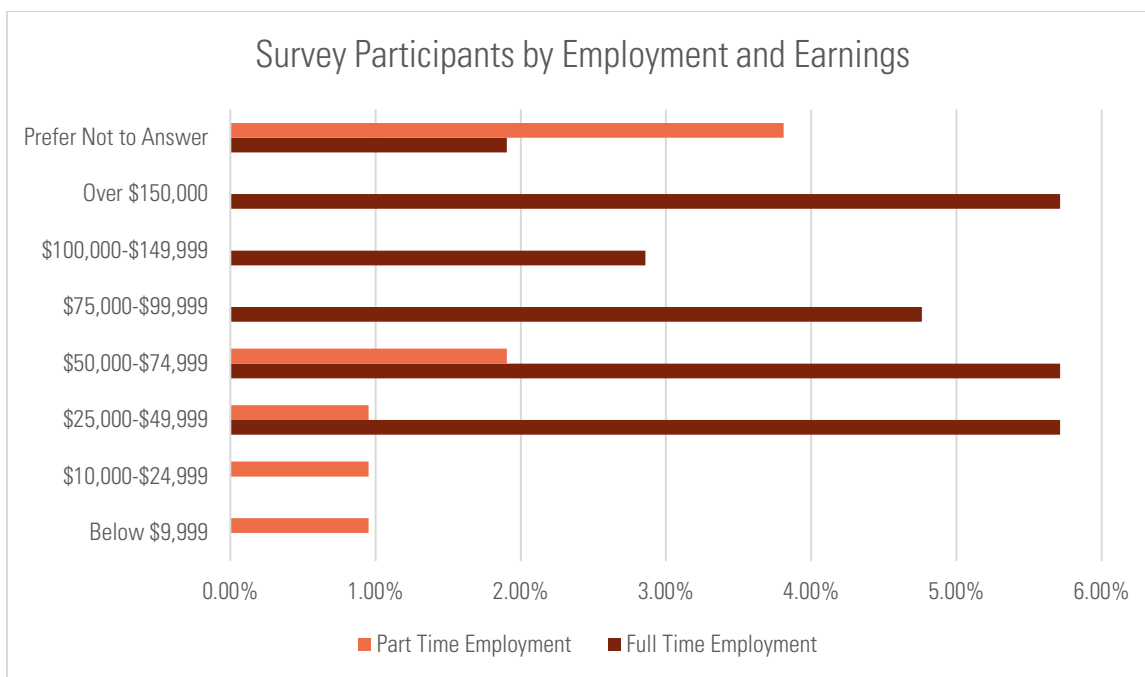


Figure 22: Survey Participants by Employment and Earnings (N=37)

Appendix B: Poverty Data

Table 14: Income and Poverty Thresholds for the United States (United States Census, 2020)

Size of family unit	Related children under 18 years									
	Weighted average thresholds	None	One	Two	Three	Four	Five	Six	Seven	Eight or more
One person (unrelated individual):	13,171									
Under age 65.....	13,465	13,465								
Aged 65 and older.....	12,413	12,413								
Two people:	16,733									
Householder under age 65.....	17,413	17,331	17,839							
Householder aged 65 and older.....	15,659	15,644	17,771							
Three people.....	20,591	20,244	20,832	20,852						
Four people.....	26,496	26,695	27,131	26,246	26,338					
Five people.....	31,417	32,193	32,661	31,661	30,887	30,414				
Six people.....	35,499	37,027	37,174	36,408	35,674	34,582	33,935			
Seven people.....	40,406	42,605	42,871	41,954	41,314	40,124	38,734	37,210		
Eight people.....	44,755	47,650	48,071	47,205	46,447	45,371	44,006	42,585	42,224	
Nine people or more.....	53,905	57,319	57,597	56,831	56,188	55,132	53,679	52,366	52,040	50,035
Source: U.S. Census Bureau.										

Additionally, based on this poverty guideline, households can apply for assistance through the Supplemental Nutrition Assistance Program to receive monthly allotments to support their food purchases.

SNAP Participation

It is estimated that 4,804 households in Benton County received SNAP in 2020, or about 4.5% of the total households within the county. About 34% of those households had not worked within the past 12 months, 45% had one worker in the family, and 20% had two or more workers in the family (U.S. Census Bureau, 2020)

It is estimated that 4,491 households in Washington County received SNAP in 2020, or about 4.8% of the total households within the county. About 11% of those households hadn't worked within the past 12 months, 33% had one worker in the family, and 56% had two or more workers in the family (U.S. Census Bureau, 2020)

The Arkansas Supplemental Nutrition Assistance Program has an [interactive table](#) to showcase eligibility for the program.

Appendix C: Business and Industry

Table 15: Business and Industry, Benton and Washington Counties, (United States Census 2021; U.S. Census 2017)

Establishments by employees	Benton County businesses	Washington County Businesses	Benton County Annual Payroll (\$1,000)	Washington County Annual Payroll (\$1,000)	Benton County Number of employees	Washington County Number of employees
Less than 5	3,548	2,984				
5-9	1,293	1,065				
10-19	924	775				
20-49	806	594				
50-99	278	198				
100-249	139	100				
250-499	35	18				
400-999	13	11				
Over 1000	10	7				
Total	7,046	5,752	8,037,680	4,208,741	128,100	94,164
By category						
Agriculture, forestry, fishing and hunting	12	4	3,084	5,072	81	103
Mining, quarrying, and oil and gas extraction	4	4	N/A	1,983	N/A	28
Utilities	16	13	28,153	34,689	317	426
Construction	682	553	296,872	329,248	6,005	5,895
Manufacturing	183	201	569,997	621,361	12,577	13,402
Wholesale Trade	377	273	464,874	199,036	9,146	3,265
Retail Trade	813	752	509,178	368,740	13,412	11,752
Transportation and Warehousing	182	176	740,466	339,637	12,786	6,859
Information	68	91	N/A	72,378	N/A	1,309
Finance and insurance	382	338	278,089	169,358	578	2,523
Real estate and rental and leasing	399	390	61,798	62,551	1,379	1,609
Professional, scientific, and technical services	838	691	707,191	270,181	9,233	4,495
Management of companies and enterprises	724	41	3,033,133	320,536	22,175	2,689
Administration and support and waste management and remediation services	402	289	180,417	188,583	4,334	5,371
Educational Services	93	54	51,152	19,370	2,327	723
Health Care and Social Assistance	658	716	515,141	891,303	10,317	16,799
Arts, Entertainment, and Recreation	98	82	38,061	18,876	1,717	1,088
Accommodation and Food Service	539	594	192,318	176,813	11,996	11,643
Other services (except public administration)	505	483	128,310	118,780	4,296	4,173

Appendix D: Food Purchasing, Levels of Importance

Table 16: Level of Importance for food purchasing criteria (N variable; see "Number of participants" row)

	Grown Local	Affordability	Relationship with producer, seller, etc.	Location	Convenience	Organic	Fresh	Food Safety Practices
Number of participants	109	109	106	107	107	105	107	105
Average	3.85	3.62	2.76	3.50	3.62	2.77	4.31	3.58
Extremely Important	26.61%	20.18%	10.09%	14.68%	14.68%	10.09%	49.54%	26.61%
Very Important	40.37%	37.61%	15.60%	35.78%	44.04%	13.76%	38.53%	30.28%
Moderately Important	24.77%	30.28%	33.03%	40.37%	34.86%	40.37%	9.17%	28.44%
Slightly Important	8.26%	8.26%	25.69%	5.50%	3.67%	18.35%	0.92%	7.34%
Not At All Important	0.00%	3.67%	12.84%	1.83%	0.92%	13.76%	0.00%	3.67%

Appendix E: Recovery from Natural Disasters

Table 17: Perceived Recovery from Natural Disasters (N variable; see row "Total participant numbers")

Recovery	Hail	Drought	Flood	Wind	Tornado	Ice	Fire
Total Participant Numbers	50	13	16	42	15	59	1
Average Recovery	9.62	8.85	9.12	9.5	9.13	9.4	10
Full recovery (10)	86.00%	46.15%	75.00%	78.57%	66.67%	76.27%	100.00%
Mostly recovered (8-9)	10.00%	38.46%	12.50%	16.67%	20.00%	18.64%	0.00%
Moderate recovery (5-7)	2.00%	15.38%	6.25%	2.38%	6.67%	0.00%	0.00%
Partially recovery (3-4)	0.00%	0.00%	0.00%	0.00%	6.67%	3.39%	0.00%
little recovery (1-2)	2.00%	0.00%	0.00%	2.38%	0.00%	1.69%	0.00%
no recovery (0)	0.00%	0.00%	6.25%	0.00%	0.00%	0.00%	0.00%

Appendix F: Action Planning Notes

Benton County and Washington County Action Planning Group Notes

1-3pm Action Planning Group @ Tyson (Session 1)

Introductions: (6 attendees)

Sharing the data/presentation

Will these be shared? Yes!

Is there anything missing?

- It feels pretty comprehensive and sound like things she's heard for years now. Is there something about market access within these priorities? – Access to market— It might come through in the Scale Up priority, but perhaps it needs to be pulled out?
 - Farmers are still figuring out how to interact with food hubs and other organizations
- Definitely see things we have the capacity to do...feel like we've dipped our toe in the water in a few of those things. They're trying to ramp up the networks and mentoring programs.
- Score card idea – extension/professor – looking at soil health aspect, the idea would be to have a case study to show how this example is a more resilient system
- Scaling up is a challenge if you don't have the labor – especially if you are a farmer and only have a couple workers.
- Trust – food hub mistrust/past experience

Sticky dots activity: Suggested priorities

Scale up: Scaling up of farms to meet demand for local food procurement (2)

Establish: Establish new, or identify existing, insurance programs for small to mid-sized farmers that will aid in extreme weather conditions (0)

Improve: Improve land zoning and development considerations (0)

Enhance: Enhance outreach to underserved, marginalized individuals and organizations, including developing materials in multiple languages. (1)

Maintain: Maintain and re-engage existing regional network for communication, planning, and implementation of food systems projects, including for prevention, response, and recovery for climate-based events. (3)

Establish: Establish peer-to-peer networks and mentorship with existing and new farmers (3)

Develop: Develop awareness campaign about the impact of climate change, purchasing from local farms and food businesses as well as the community at large (2)

Create: Create a sustainability "score card" and ways of assessing existing conditions and future needs (0)

Increase: Increase interest and labor support on farms, in schools, and other food-based businesses (1)

Action planning groups (2)

Maintaining and re-engaging existing regional network...

- Identify orgs, producers, individuals in the area... try to centralize that information. Database? Listserv?
- Holding regular convenings... focused on building trust, reciprocity, space to share challenges, build cohesive communication, have space to deep dive into important topics
- Understanding who can fill roles and responsibilities across the food system, invite more in
- Identify an administrative entity to organize meeting, etc.

Establish peer-to-peer learning and mentorship

- Research for what kind of model?
- Are there groups that already have programs like this? What is out there?
- Do we have enough mentors? How to recruit and get buy in? Maybe some of that money could go towards paying them for mentorship services?
- Identify and connecting with producers that are in existing networks or groups
- Beginning farmers... what are your needs? Do you need a mentor? Are you ready for a mentor?
- Properly identifying active pool of potential participants... skepticism/mistrust from some farmers.
 - *Question about trust... wouldn't a beginning farmer trust an experienced farmer? Might be some intangibles like competition/not wanting to share some secrets. Want to provide multiple avenues of information and trust. Having formalized opportunities AND informal peer-to-peer interactions.
- Who is starting and pushing the network? Farmers or the university... concept of how trustworthy or time-worthy the program would be.
- Discussion about apprenticeship program...
 - Have to be available to meet on a weekly basis with apprentice, be available for questions, need to work through skills worksheet
 - Apprentice is paid by the farm because they are employed by the farm
 - What is the incentive for the mentor farmer? Interest in seeing more farmers, a lot of farm mentors went through some kind of farm training or mentorship, so they know and see the value of mentorship. Altruism is also another aspect of why mentors do participate. Pay it forward type of mindset.

Do we bring gardening out of the peer-to-peer network?

- Master gardeners are separate...
- Are they interested in selling commercially?
- Peer to peer learning will be completely different depending on scale. Consider economics, risks, etc.
- Home gardens/homesteading are separate from farming

What other types of peer-to-peer learning are there beyond directly peer-to-peer?

Farm Link... Land access. Connects farmland seekers with farmland owners.

Benton County and Washington County Action Planning Notes

5:30-7:30pm Action Planning Group @ Tyson (Session 2)

Introductions: (1 attendee)

Sharing the data/presentation

- Identified the lack of commercial kitchens... Awareness of commercial kitchens. Connected this to scaling up.
- Farm to School, Farm to Large Institutions – some don't have infrastructure for processing produce

Sticky dots activity: Suggested priorities

Scale up: Scaling up of farms to meet demand for local food procurement (1)

Establish: Establish new, or identify existing, insurance programs for small to mid-sized farmers that will aid in extreme weather conditions (0)

Improve: Improve land zoning and development considerations (0)

Enhance: Enhance outreach to underserved, marginalized individuals and organizations, including developing materials in multiple languages. (0)

Maintain: Maintain and re-engage existing regional network for communication, planning, and implementation of food systems projects, including for prevention, response, and recovery for climate-based events. (1)

Establish: Establish peer-to-peer networks and mentorship with existing and new farmers (0)

Develop: Develop awareness campaign about the impact of climate change, purchasing from local farms and food businesses as well as the community at large (0)

Create: Create a sustainability "score card" and ways of assessing existing conditions and future needs (0)

Increase: Increase interest and labor support on farms, in schools, and other food-based businesses (0)

Action planning

- Nuance to Scaling Up priority to make sure that scaling up is scaling up feasibly and successfully
- Awareness of shared-use, commercial kitchens

Maintaining...

- Networks – was the conversation more about creating a new one or an existing? Does it need to be an organization? Can it be a network?
- Accountability? If one of us falls through, what happens?

Scaling up...

- Need for understanding feasibility- labor, land, markets
 - Property, sales tax, tax exemptions
- Big gap in farmer knowledge and confidence
 - Meeting demand, quantity, and quality

Benton County and Washington County Action Planning Notes

Bentonville Action Planning Group (Session 3)

Introductions: (5 attendees)

Sharing the data/presentation

- Can you share how trust was framed? This was in a survey, simply a word
- Who were survey participants? Sent out through listservs, networks that people had agreed to share to
- It seems like a lot of the places they go to it seems like a lot of farms have a supplemental income, the farm isn't the only source of income
- Not really surprised by the Values results of the survey. Aspect of hyperlocal, how are people defining local? Public awareness across the supply chain as a need... understanding what it means to support local farm and food businesses.
- Food conservancy was relatively new when this survey went out, so it says a lot that they've made the list and scored the way they did

What's missing? Is there anything missing?

- If you would have done this a few years earlier, there would've been a gap in supply chain. For better or worse, food conservancy fills that gap.
- H2a workers – is there a way to form a farmer cooperative to share workers? Farmers are so small that they need the labor, but can't afford the expenses
- Institutional investment and commitment to local purchasing. That 20% goal is a target. Purchasing local onus is often placed on the consumer, institutions have the access and power to purchase local. Commitment must come at the highest levels; the food service provider has no incentive to buy local if that makes their margins smaller
 - Do we embed the need for additional commitment of institutional commitment of sourcing local/actually showing up? Or should it be pulled out?
 - Cohort model of institutional buyers to have convos, discussions, learning community style – look this is the pathway, this is what you need to know if you want to get into this space
 - See COMMITMENT as a separate priority bucket
 - Arkansas has a really strong f2s program, there's a lot to learn there for other institutional settings; the ag department has done a good job of building that network
- Where does improving tracking and labelling fall?

Sticky dots activity: Suggested priorities

Scale up: Scaling up of farms to meet demand for local food procurement (3)

Establish: Establish new, or identify existing, insurance programs for small to mid-sized farmers that will aid in extreme weather conditions (0)

Improve: Improve land zoning and development considerations (0)

Enhance: Enhance outreach to underserved, marginalized individuals and organizations, including developing materials in multiple languages. (1)

Maintain: Maintain and re-engage existing regional network for communication, planning, and implementation of food systems projects, including for prevention, response, and recovery for climate-based events. (1)

Establish: Establish peer-to-peer networks and mentorship with existing and new farmers (0)

Develop: Develop awareness campaign about the impact of climate change, purchasing from local farms and food businesses as well as the community at large (0)

Create: Create a sustainability “score card” and ways of assessing existing conditions and future needs (0)

Increase: Increase interest and labor support on farms, in schools, and other food-based businesses (1)

***NEW PRIORITY* Commit:** Commit to and increase local food purchasing within institutions and businesses (4)

Action planning

Commit: Commit to and increase local food purchasing within institutions and businesses.

- Identifying a champion, food service mgmt. company, or buyer – we see value and this is what we see as important. Getting to know their process and their values and how their system works. Kind of as a case study and mentor
- Matching growers and producers that have appropriate supply and demand to ensure that relationship is sustainable.
- Developing contract language that institutions can put forth to their distributors or food service mgmt. that preferences local food purchases and includes languages in supporting them in the completion of local food act reporting. For some that work with big distributors, that can result in no reporting of local if the distributor does not label appropriately...policy language shift internally for whoever is procuring the local food.
- Putting a face to the farm can be a powerful tool and motivator. Part of that too is just clever marketing.
- Arkansas Grown database – does there need to be more awareness or technical assistance or just brokering of relationships?

OVERALL ARKANSAS RESULTS AND NOTES

Sticky dots activity: Suggested priorities

Scale up: Scaling up of farms to meet demand for local food procurement (6)

Scaling up feasibly and successfully

Establish: Establish new, or identify existing, insurance programs for small to mid-sized farmers that will aid in extreme weather conditions (0)

Moved under Scale Up- linked to production

Improve: Improve land zoning and development considerations (2)

Transfer to development rights (TDR)

Enhance: Enhance outreach to underserved, marginalized individuals and organizations, including developing materials in multiple languages. (2)

And live translation in meetings

this ended up merging within several of the priorities as a cross-cutting need

Maintain: Maintain and re-engage existing regional network for communication, planning, and implementation of food systems projects, including for prevention, response, and recovery for climate-based events. (5)

Establish: Establish peer-to-peer networks and mentorship with existing and new farmers (2)

Develop: Develop awareness campaign about the impact of climate change, purchasing from local farms and food businesses as well as the community at large (2)

Create: Create a sustainability “score card” and ways of assessing existing conditions and future needs (0)

Increase: Increase interest and labor support on farms, in schools, and other food-based businesses (2)

Move under scaling up, it's linked

H2A – Farmer cooperative

***NEW PRIORITY* Commit: Commit to and increase local food purchasing within institutions and businesses (4)**

Improved tracking and labeling of local food

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