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COMMUNITY FOOD RESILIENCE IN THE TIME OF COVID: AN EXAMPLE FROM AN APPALACHIAN COUNTY

ANDREW BAGWELL, HARRISON BROWN , CARLY PUGH, KATHLEEN SCHROEDER, CHARLES F. WEIR and QUINCY WILLIAMS

ABSTRACT. This article explores how Community Based Organizations, in Watauga County, North Carolina, faced a food crisis caused by the Covid-19 pandemic and quickly came together to fill unprecedented local need for food assistance. Existing bodies of literature on Appalachia and resilience provide useful frameworks for dissecting how the community reacted to events as they occurred in the Spring of 2020. Interviews with community leaders document their experiences in the early stages of the pandemic. We conclude that an already frayed social safety net contributed to the crises; but local leaders were able to respond because of their strong community ties and years of local experience. These community leaders explain that the food crisis caused by Covid-19 revealed deep cracks that have long existed in the food system. *Keywords:* Covid-19, food, resilience.

Early in the Covid-19 pandemic, geographers and others commented that this event had exposed the fragility of a neoliberal economic system that exists across global and national scales (Clapp and Moseley 2020; Warf 2021). Given the lack of a durable social safety net, innumerable community-based actors across the globe have attempted to provide aid to a population that faced unprecedented food needs. In this article, we explore how an Appalachian county reacted to the sudden disruption of its economic and food systems with a wide range of community-based interventions. This piece provides an example of a people's geography by documenting how a small rural county employed the resilience it developed over decades of community organization to respond to a crisis in the global food system. This article engages the Appalachian Studies literature as it debates the role of the region's remoteness and its inhabitants' independence and therefore ability to sustain themselves. In addition, we use the community resilience literature to investigate which characteristics might be present in Community Based Organizations (CBOs) responding to the food crisis. To examine themes of Appalachian resilience, we interviewed local leaders confronting pandemic induced food insecurity. We found a community that was able to engage its spatial and social connections to solve problems because they had invested time and energy beforehand to build relationships across agencies to address

✉ ANDREW BAGWELL, Department of Geography and Planning, Appalachian State University, Boone, NC; [bagwellap@appstate.edu]. HARRISON BROWN, Department of Geography and Planning, Appalachian State University, Boone, NC; [brownhr@appstate.edu]. CARLY PUGH, Appalachian Studies, Appalachian State University, Boone, NC; [pughcg@appstate.edu]. KATHLEEN SCHROEDER, Department of Geography and Planning, Appalachian State University, Boone, NC; [schroederk@appstate.edu]. CHARLES F. WEIR, Department of Geography and Planning, Appalachian State University, Boone, NC; [weircf@appstate.edu]. QUINCY WILLIAMS, Department of Geography and Planning, Appalachian State University, Boone, NC; [williamsqw@appstate.edu].

long-standing issues of food insecurity. We examine if key resilience traits were evident in CBOs and provide examples of how they were used to meet community needs. We conclude by emphasizing the importance of long-term relationships in building resilience to ensure that groups can come together quickly and respond to the inevitable next crisis.

In this article, we first summarize how Covid-19 provides an opportunity to examine food systems with an eye toward building a geography that protects vulnerable populations. We situate our study within the rich Appalachian Studies literature and highlight the contributions of geographers to this field. We then identify key resilience traits as discussed in the literature and note the vulnerability of a globalized neoliberal food system. After providing a description of the area, we identify our research questions and discuss our methodology including our identification of community leaders. We then present our results from key-informant interviews and our broader research on the county. Our conclusions indicate that many of the key resilience characteristics identified in the literature were present in CBOs in Watauga County, but that these organizations have been stretched thin and share that there is serious concern that CBOs could not continue their work without substantial additional support. This paper provides an example of how the fragile, neoliberal food system failed to protect a vulnerable community and how that community organized to provide for itself. It also serves as warning that these organizations need continued support if they are to be successful in meeting upcoming challenges.

BACKGROUND

COVID-19 AND FOOD SYSTEMS

Relying on Harvey's (1984) call for a people's geography, Block and Reynolds (2021) outline the need for more research on, and funding for, a peoples' food justice geography that integrates local knowledge and strengthens community-based control. Writing about the Coronavirus Pandemic, Warf argues that since the 1980s, conservative neoliberalism has dismantled the American social safety net and has contributed to societal inequality and that the United States is "uniquely vulnerable to the virus because of structural inequalities and weaknesses in the prevailing political and economic order" (2021, 496).

Having exposed the fragility of the neoliberal food system, the pandemic could possibly provide an opportunity for policy makers to turn away from further industrialization of agricultural production (Clapp and Moseley 2020). Wolfson and Leung (2020) describe federal programs designed to combat staggering levels of food insecurity during the pandemic as "patchwork" and criticize the US government for lacking consistent and far-reaching programs. Could rural places with strong agricultural ties be more food secure during a massive disruption in the food system? Not always, as Chapman and Perkins discuss in

a case from rural Appalachia; even localized food systems can reproduce, “neoliberalism when they prioritize niche-market consumerism over enhancing access for poor people” (2020, 113). Local food systems and farmers’ markets are often considered elite spaces that are inaccessible to the poor and the food insecure. Therefore, what role do they play in a food crisis?

Gundersen et al. (2021) projected significantly higher levels of food insecurity in 2020 compared with 2018 because of Covid-19 with substantial geographic variation in the availability of food. They assert that the agricultural supply chain was not at fault for increased food insecurity, but rather unemployment and poverty, with places that depend on service-sector jobs being hit the hardest. Compared to other counties, the study site for this article, Watauga County, North Carolina, has an unusually high number of residents working in “Food Preparation & Serving Related Occupations” (1.85 times higher than expected) because of its function as a college town and tourist destination (BLS 2021).

Between March and June of 2020, as the pandemic was having its first major impacts in the United States, consumer food prices rose 4.3 percent. However, most of this increase was due to a rise in the price of meat (which rose by around 20 percent), a result of Covid-19 outbreaks at meatpacking facilities. Much of the price volatility in the food production system was caused by the shift from eating out to in-home dining (Mead et al. 2020).

Over the course of 2020, “lockdowns” and efforts to “flatten the curve” led to a stark increase in unemployment and resulting economic volatility caused an increase in food insecurity nationwide. Though food insecurity in 2019 had been at its lowest level since 1990, the number of people experiencing food insecurity rose from around 35 to 45 million in 2020, from 11 percent to 14 percent of the population. (Feeding America 2021). This economic crisis drove millions of new people into the food aid system revealing to a broader segment of the population the fragility of the neoliberal economy.

GEOGRAPHY OF APPALACHIA AND RURAL RESILIENCE

Geographers have had a long fascination with Appalachia, with many well-known geographers offering descriptions of the region and the resilience of its inhabitants. For example, Semple (1910) famously characterized the “Anglo Saxons” of Kentucky in the *Bulletin of the American Geographical Society* as living a “frontier life of the backwoods.” She documented the food procuring systems of the region during that era and comments on the “necessary self-reliance of their pioneer-like existence.” (Semple 1910, 580). Raitz et al. (1984) examined Appalachia’s physical geography, settlement patterns, and economic development. They stressed that the diversity of the region called for diverse strategies to confront its poverty. Rehder’s (2004) *Appalachian Folkways*, provided a comprehensive study of the region’s folk culture from a geographic perspective including numerous maps and photographs. Jordan-Bychkov (2003)

analyzed the cultural landscape of the region with a focus on the built landscape. Oberhauser (2002) examined the economic development of the region and the changing role of women in its economy. Her insights on women's home-based income generating activities are particularly informative, particularly as geographers try to understand how the Covid-19 pandemic impacted women workers.

Other scholars of Appalachia have contested the region's many cultural stereotypes including its rurality, homogeneity, and "racial innocence" (Billings et al. 1999). Starting in the 1960s, the oral traditions of Southern Appalachia were documented in the *Foxfire* book series which captured the complexity of the region and shared it with a national audience (Smith et al. 2020). The powerful image of Appalachia as a "sorrowful place in need of well-intended intervention" with hyper-sexualized women and deviant men is contextualized by Massey (2007) as part of a broader discussion of the region's sexual rhetoric. Although the field of Appalachian Studies continues to unpack what it means to be Appalachian, it is clear to even the most casual observer that Appalachia exists as a cultural region and that its inhabitants are impacted by its remoteness and fortified by a sense of independence.

Community resilience, with its roots in the field of ecology, is often defined as a community's capacity to adapt and respond to external forces that can surprise a system (Folke 2006; King 2008; Wilson 2012). Resilience is more than simply the sum of traits, Faulkner et al. (2018) argue that resilience is an emergent property, where capacities are linked and act together, and that place attachment supports all aspects of community resilience. From a geographic perspective, it is important to note that resilience is place-based and contingent on understanding of, and attachment to, specific places. Furthermore, the work of CBOs during a time of crisis takes place across a variety of spatial and social scales including: informal bottom-up community initiatives; formal strategies emerging out of existing community-based organization; efforts of external actors and; networks of organizations who initiate action (Fransen et al. 2022). The complexity and density of these networks contribute to a community's overall resilience. Working specifically in the southern Appalachians, Smith et al. defined resilience as a "dynamic social process determined, in part, by the ability of communities to act collectively and solve common problems" (2012, 341). Their study examined three counties in western North Carolina that were economically dependent on natural resources and identified the importance of internal social ties, and ability to make connections across agencies, as crucial indicators of resilience.

Although geographers have described Appalachia in considerable detail, we are uncertain if present-day rural Appalachia is more resilient than other places. Academics from within the region have offered their insight. Jones (1994) work on "Appalachian values" includes notes on the region's: independence; self-reliance; and love of place, among values which should contribute to a region's resilience. *Fighting Back in Appalachia*, edited by Fisher (2009) documented

regional traditions of resistance with a focus on grassroots organizations and countered a narrative of the Appalachian people as passive. Fisher and Smith (2012) refrain from defining Appalachia, finding it “impossible to provide a finite, accurate summary of regional characteristics.” However, they assert that the region has a “long tradition of individual and collective resistance to severe political, economic, and cultural oppression”; they cite the region’s many short-lived grassroots organizations which originate in response to a single issue (Fisher and Smith 2012, 2). As we document below, CBOs that provide food aid have a long history in Watauga County. Perhaps the tradition of single-issue grassroots organizing, and the strong social capital of local leaders, was helpful in the response to food insecurity caused by the Covid-19 pandemic? It is with this lens that we examine Watauga County’s response to Covid-19 related food system disruptions.

Are rural communities better able to respond to external threats be them natural disasters or disruptions to the food system? Cutter, Ash, and Emrich posed this question with regard to natural disasters and found that community capital is the most important driver of disaster resilience in rural areas. They find that, “the self-reliant nature of rural places with a strong sense of community, knowledge of and ties to natural resources, and strong social networks can enhance resilience” (2016, 1238). We are able to identify similar traits within the study site.

Appalachian communities are often characterized by strong ties to Protestant religious traditions (Rehder 2004). Church buildings are common and widely distributed within the study site (Figure 1). With deep, well-established

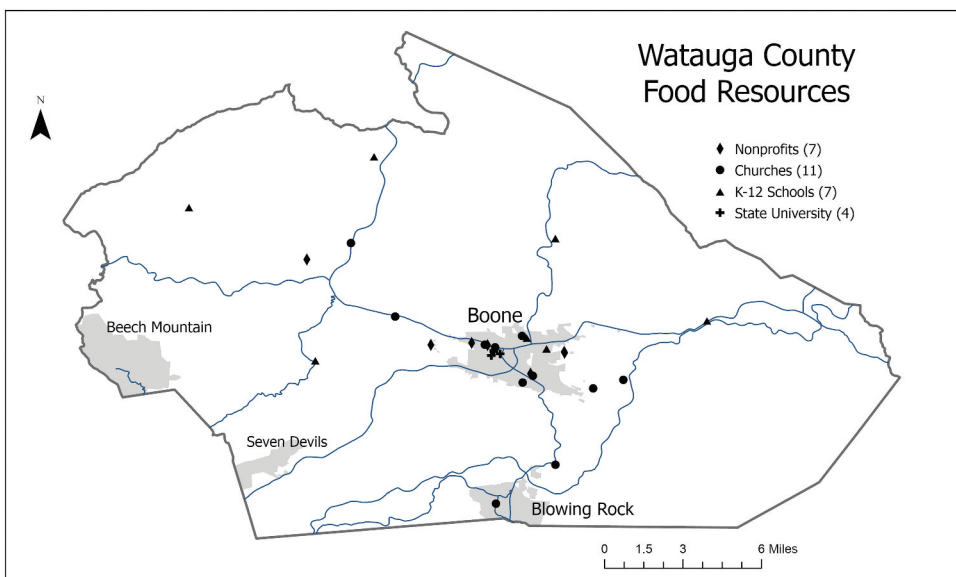


FIG. 1—Food resources

community connections, faith-based groups have the potential to play leadership roles when responding to a crisis. LaLone (2012) found that in rural Appalachian communities, faith-based organizations were often the first to act alongside local government when faced with a disaster. We would expect that faith-based organizations would be on the front-lines during the early stages of the Covid-19 food crisis, but how would they fare in a novel pandemic with older volunteers unable to risk exposure?

Although we have established that the traits that contribute to community resilience can be hard to identify, let alone quantify (Steiner and Markantoni 2014). It is clear that they include in some measure: 1) individual and group knowledge, skills, and learning capacity; 2) community networks; 3) people-place connections; 4) community infrastructure; 5) a diverse and innovative economy; and 6) engaged governance (Maclean et al. 2014, 149–152). Based on our review of the Appalachian Studies and resilience literature, we examine CBOs in Watauga County, North Carolina to document the presence or absence of these traits. We propose that identifying and strengthening community resilience is critically needed as we continue to struggle within a neo-liberal economic system and a fragmented social safety net.

Study setting

Watauga County is defined as part of “South Central Appalachia” by the Appalachian Regional Commission (ARC 2009). Boone, its county seat, is known for outdoor recreation, and as the home of Appalachian State University, a regional public university with an enrollment of approximately 20,000. Like much of Appalachia, the county has been historically isolated. The region’s steep topography has made travel and commerce difficult up to the present day. Watauga County is home to approximately 55,000 people, one-third of whom live in the town of Boone. The demographic and economic profile of Boone is shaped by three key factors: 1) the university, which doubles the town’s population when classes are in session; 2) the tourism industry, for outdoor activities such as skiing and hiking, as well as for small town “charm”; 3) the seasonal and vacation homes market (Zhao 2020). These factors, as well as the difficulty of building infrastructure in the mountains, has led Watauga County to become one of the least affordable counties in North Carolina. In 2019, approximately 40 percent of households were considered “cost-burdened” by housing (North Carolina Housing Coalition 2019).

Less than 10 percent of the population in Watauga county identifies as a racial minority and, unlike some areas of Appalachia, the Hispanic population of the county has not grown considerably over the last decade (Pollard and Jacobsen 2021). This could be because of the high cost-burden of housing noted above, with many lower-wage workers (including faculty and staff at the state university) finding themselves priced out of the housing market in the county.

Despite the high cost of living in the county, a notable Black community continues to live in the town of Boone. Keefe (2020) captures some of the ethnic complexity of the town in her collection of oral histories of the Black Appalachian neighborhood of Junaluska.

CBOs have a strong presence in Watauga County, these organizations are locally well known and, in some cases, have been working to fill the gaps in the social safety net for decades. In the food justice movement based in the United States, CBOs connect people with organizations, promote community food systems, and focus their activities with the community at the forefront (Porter 2018). Watauga County's CBOs work individually, and collaborate with each other, to provide food security for the community as we illustrate below.

RESEARCH QUESTIONS AND METHODS

This study examines the spatial and social context of local response efforts to the food crisis caused by the Covid-19 pandemic. We investigated if traits commonly associated with "community resilience" exist in the study site and if these traits have been helpful in addressing food insecurity. Relying on the work of Maclean et al. (2014) we reviewed news sources, publicly available web sites, and then interviewed local leaders to examine the extent that the community demonstrated: 1) the needed knowledge, skills, and learning capacity to accomplish their missions; 2) strong community networks; 3) robust people-place connections; 4) access to sufficient community infrastructure; 5) a diverse, and innovative local economy; and 6) engaged governance.

METHODS

The authors of this study consisted of one faculty member and five graduate students at the regional comprehensive university. Several of the authors have decades of experience living in Appalachia and one graduate student can trace his roots to the county's early European founders. We recognized that issues of food insecurity were multi-scalar and complex with governmental and non-governmental agencies trying to meet unprecedented food needs. After identifying the key organizations working within the county, through news sources, food assistance websites, and the knowledge of local government officials, we conducted key-informants interviews with leaders in each of these agencies. Interviewees were selected for their depth of knowledge of the operational overview of food resilience issues in Watauga County, a method identified by Fransen et al. (2022). In total, we used a snow-ball method to select ten community leaders working in nine agencies throughout the county, many of whom had been in their position for over ten years.

We developed a framework for interviews using Hay (2000) for guidance. Interviews were conducted (primarily on Zoom) with a combination of structured questions and allowance for additional questions should they arise.

Preliminary lists of five to seven questions were crafted for each informant over an interview of 45 minutes to one hour. Questions were modified for each individual to be respectful of our informants' time and to document our respondents' experiences in the early stages of the pandemic. We pursued followup interviews with key informants to expand the depth and detail of our understanding of the ongoing crisis. In total, we interviewed ten different people from nine separate agencies. After each interview, recordings were transcribed with the use of the *Otter.ai* software. Using NVIVO software, transcripts were coded to correspond to key resilience indicators and then analyzed for reference to how these resilience characteristics were helpful in meeting the food needs of the community.

An important gap in our research design was its inability to capture the issues of food insecurity within the Latinx community. Primarily because a substantial portion of this community is undocumented, we felt it was unethical to investigate how and where this community was accessing food aid.

FINDINGS

Our research identifies key resilience indicators in CBOs responding to the Covid-19 food crisis within Watauga County. The resilience literature discusses how communities react to "surprise" events (Lebel et al. 2006) and truly this pandemic was unprecedented. As discussed below, we document evidence of the "resilience traits" identified in Maclean et al. (2014), namely: existing knowledge and skills, community networks, connections to local places; community infrastructure; a diverse and innovative economy; and engaged governance. It appears that the existence of these traits allowed the county to quickly mount a response to the food crisis.

TRAIT 1: EXISTING KNOWLEDGE AND SKILLS TO COPE WITH UNPRECEDENTED NEED

All of the CBO leaders we interviewed (10 total) expressed that the scope of food aid needed as the pandemic began was both larger and of longer duration than they had ever experienced. For example, a local church which traditionally maintained a food pantry, saw a staggering increase in demand for resources at the beginning of the pandemic. According to Sally, a volunteer with the church, before March 2020, they assisted roughly 30 clients per week. This increased ten-fold to over 300 clients per week receiving food boxes after the pandemic started. Demand for food boxes was so high that the church was not able to source enough cardboard boxes to use to distribute food. This problem was mitigated by volunteers rounding up boxes from stores and the hospital and bringing them by the church (Sally, March, 2021).

Another example, a CBO focusing on hunger and homelessness saw an increase of approximately 49 percent in the number of food boxes they provided, as well as a vast increase in the diversity of people seeking assistance.

According to Kara and Sam, long-time staff members, individuals who had previously had stable sources of income suddenly needed help. The increased need for food was made worse by increased costs of food to the organization. Where formerly, meals could be served in a central dining facility, meals had to be packed into styrofoam containers with plastic cutlery. Condiments made available in single use packets instead of large containers which greatly increased their cost and the amount of waste they produced. These shifts, meant to be more in line with changing safety protocols, led to difficulties for these organizations, specifically, an increase of 196 percent in food costs. Luckily, donations from the community also increased much to the organizers' relief (Kara and Sam, March, 2021). Although the interview subjects commented that they were unprepared for the unprecedented demand for their services, they felt that they had the appropriate **knowledge and skills** to respond to the crisis.

Second Harvest Food Bank is a major provider of food to CBOs. They serve eighteen counties in northwestern North Carolina and are part of a large national network of food banks that is part of the national organization Feeding America. Jill, a representative of the *Second Harvest Food Bank*, has been with the organization for over ten years. She stated,

While what we do everyday is respond [to disasters], we've never had anything last this long. This. Was. Different. [emphasized pauses between the words] something the whole country experienced. We weren't prepared for the disruption in the supply chain. We were not prepared for the fact that the grocery store shelves were going to go bare, so our grocery store donations dropped off. Jill, April, 2021.

Fred, a County Commissioner, who has also worked on the campus at Appalachian State University for over 20 years, explained that the county had the knowledge and skills to provide food resources for people in need, even if they were unprepared for the increase in demand. Referring to existing food insecurity, Fred said, "I think what Covid did was it brought awareness to a lot of these things." The challenge they faced was taking their existing knowledge and skills and scaling it up to meet the increased demand through their community networks.

TRAIT 2: COMMUNITY NETWORKS ARE DEEP AND COMPLEX

Key-informant interviews with leaders of CBOs in Watauga County confirm a complex network of food assistance groups, churches, schools, and public and private institutions that came together to provide food relief during the COVID-19 pandemic. These networks took many forms both formal and informal, top-down and bottom up, and included the initiatives of external actors. Five of our ten informants have been in their positions for over ten years, that is a long time to build relationships in a relatively small county. These relationships form "pathways" (Fransen et al. 2022) for providing food relief. They also resonate

with the Appalachian Studies literature with its emphasis on self-reliance in the sense that communities care for “their own” (e.g., Jones 1994; Jerolmack and Walker 2018; Dean-Witt and Hardin-Fanning 2020). What is more, these networks were built intentionally over decades.

Formal, community-based networks for food aid are evident in the efforts of churches, county schools, and food aid CBOs. A local church quickly pivoted from having a small food pantry to providing food boxes for distribution in cooperation with the county schools system. The church also helped deliver food boxes to homes, identified in coordination with the county school system, when it became evident that people did not have money for the gas needed to drive in and pick up food (Debbie, March 2021). An additional avenue of food aid emerged when the state university ran a program during the month-long winter break that supplied donated food to the campus community for free. This program provided both work for campus dining staff and a source of free meals for the community. Faculty, staff, and students all participated in this program which was suspended once classes began again in January of 2021 (Fred, March 2021).

In many cases, these networks were strong before the pandemic. For example, the relationships among churches, civic organizations, and a CBO focused on hunger and homelessness was well-established pre-pandemic. Almost every dinner distributed by the CBO was staffed by the volunteer labor of another group (Kara and Sam, March 2021). This strategy of relying on churches and civic groups ensured that a wide network of people were confident in, and familiar with, the CBO and its staff and operation. Churches that received donations from individuals within the community shared these resources both directly with people in need and with the local school system to ensure that the resources were not wasted. (Sally, March, 2021). These networks helped to reduce the amount of wasted food resources. Two separate interviewees (Sally, March 2021 and Joan, March 2021) mentioned that they would make or receive calls from other groups when they had a surplus of something (be it milk or apples) so that it could be transferred to another agency and be used.

Many community based organizations within the county utilize volunteers in their critical, day-to-day operations. The individuals who volunteer are members of the community, who are able to understand the local needs, challenges, and strengths of the people they serve. In addition to individual volunteers, organizations also rely on each other to respond to changing circumstances. Though community organizations often rely on larger-scale distributors for food products and related materials, there is also a shared, community network of businesses and organizations which assist one another, cardboard boxes from one business can be given to and used by a local food bank, rather than be recycled or thrown away (Sally, March 2021). This informal, bottom-up approach, works in part due to the strong ties that these organizations share and intentionally build.

Jill (April 2021) commented that the Covid-19 spike in food need happened to coincide with a huge loss of volunteer labor. At least one prominent church with a food pantry closed because they could no longer have anyone coming to the church. Appalachian State University is an important source of volunteers and of interns. For example, one CBO has four full-time interns which is an important source of labor for the organization (Kara and Sam, March 2021) another CBO uses many volunteers from the University (Jenny, March 2021). The need for labor at *Second Harvest Food Bank* was filled by the activation of the North Carolina National Guard. We assumed that strong church communities would be on the front lines providing food aid in the early stages of the pandemic but found that many were not able to respond because of lack of volunteers. Additionally, in a cascading effect, the lack of church-based support impacted other CBOs which typically count on volunteer labor. Some CBOs responded by using COVID relief funds to hire additional staff (Kara and Sam, March 2021).

Perhaps the deep interconnection of these agencies is because of the relatively small population of the county and the strength of its existing infrastructure which has been built with intention for many years. Another contributing factor is the length of time that people have been in their positions. Jill (April 2021) commented that Watauga County, “pulled together.” Peg (March 2021) explained that, “local food pantries are cooperating more.” The university’s long relationship with food assistance programs off campus, started by Fred well before the pandemic, surely helped strengthen these collaborations. These interviews provide clear evidence of the strength of local networks that allowed CBOs to respond to the food crisis. These networks are both formal and informal and many are based on decades of trust. It is worth noting that these networks exist in the first place because of a long history of food insecurity in the region and a realistic view that government support was not sufficient, reliable, or perhaps, desired. Interestingly, interviewees talked about “Appalachian culture” as a mechanism to explain their resilience. Joan, who works on the campus of Appalachian State University commented that, “... it is sort of the culture here, the Appalachian culture. But our office is really all about relationships, relationship development, collaboration” (Joan, March 2021). It is significant to note that the informants are aware that these relationships take time and energy to develop and maintain.

TRAIT 3: PEOPLE-PLACE CONNECTIONS

The Appalachian Studies literature makes clear that people-place connections are central to Appalachian identity. A deep connection to the place they lived was discussed by many of our sources. Informants talked about the small size of the community and that Watauga County remains strongly tied to agricultural production, although gaining access to locally grown produce could be challenging.

While acknowledging resources from federal agencies and corporate partners such as Blue Cross-Blue Shield, Fred commented that Watauga County's ability to meet its food needs during the pandemic involved

this mountain mentality of we're up here, we've always been isolatedAnd I think there's always this, this idea of, okay, you know, we better take care of ourselves, let's figure this all out . . . we take care of ourselves here in this community. (Fred, March 2021).

The University is keenly aware of its place in the larger community and maintains a strong relationship with CBOs including the ability to share food and resources. Joan sees that her role on campus is to

keep that community connection, you know, really just trying to make sure that we are not only managing the hub and the pantry and how it works here for the Appstate community, but being a resource for the High Country itself as well. (Joan, March 2021).

Jenny, who works directly with food insecure people, explained how the relatively small size of the community was helpful when it came time to respond to the crisis,

So when Covid happened we immediately thought of the mobile delivery program (for food), we wrote a grant for it, it came back approved, got money for it, hired the position, and it was all done within a like two to three week period. You go to Charlotte, that's not possibleIt's just a small town like atmosphere, everybody's got each other's backs . . . it's that kind of thing with a small community. (Jenny, March 2021).

Sally, who volunteers with a church responding to the food crisis, also thought that the relatively small population of the community was an asset.

I think the beauty of [being in] a smaller community is that we do have this ability to all work together . . . We do have relationships . . . [other CBOs] . . . were great about calling us and saying, 'we just got 100 gallons of milk, do you need some?' (Sally, March 2021).

Watauga County remains strongly connected to its agrarian heritage. Although the number of farms in the county has decreased 15 percent from 2012 to 2017, the market value of products sold has increased 9 percent during the same time period (USDA 2017). With the exception of food distributed through the public school system, many pathways for food aid during Covid provided some opportunity to include local produce. In some cases, food was produced by the CBO for their own distribution. Kara discussed the community garden associated with the organization that she works for. They have averaged approximately 1500 pounds of fresh food from this facility annually providing an important source of locally produced fruits and vegetables to the meals that they provide daily (Kara and Sam, March 2021). The University has several vegetable gardens and a teaching farm that provides fresh produce to the campus food aid program (Joan, March 2021).

County Commissioner Fred discussed the importance of an on-line marketplace where local farmers could connect to consumers during the start of the pandemic. This "Food Hub" became an essential avenue for people looking for

local foods and, in particular, local meats. Peg, an extension agent in Watauga County for over 20 years, commented that she saw a renewed interest in self sufficiency with regard to food and an increase in interest in starting farms during the pandemic (Peg, March 2021).

One CBO works with the medical community to provide fresh produce to people identified as being food insecure so that people who are managing a condition such as diabetes are given a prescription for fresh produce (Jenn, March 2021). A pay-what-you-can cafe, has close partnerships with nearby farms and provides lunch with a focus on local products and healthy foods that is popular with clients of another CBO (Kara and Sam, March 2021). Every person we interviewed commented in some way on the role of local foods in providing for the communities' food needs. These organizations clearly demonstrate a strong connection to the place where they are located, and that place has a strong agrarian and local foods tradition.

TRAIT 4: COMMUNITY INFRASTRUCTURE

Our interviewees note numerous examples of their ability to identify and use community infrastructure including: the free public bus system; University facilities; the K-12 school system; and even a website devoted to helping people get access to food. As [Figure 1](#) illustrates, place matters. Food resources, defined as places where food aid is available, are concentrated in the central part of the county near the town of Boone. When asked about the location of a CBO that is a major provider of meals in the county, Kara and Sam explained that their central location was important because it made them accessible to their clients via a free public bus system. The largest food bank in the county, also has a central location. This facilitates both the distribution of food and medicine to clients and the assemblage of food from donors. This CBO has 21 organizations that regularly donate supplies to them ranging from the *Second Harvest Food Bank* to local grocery stores, restaurants, and bakeries. They receive donations through the "Food Hub" to provide fresh in-season produce. Two drivers regularly drive around town to collect the donations. People who are food insecure often lack reliable transportation, so the CBO developed a food delivery system where they drop food directly at people's doorstep (Jenn, March 2021).

For students on the campus of Appalachian State University, location also matters. The University has its own food aid system and supplies various food pantries on campus. The main facility is centrally located on campus and is within easy walking distance of many of the dormitories and the university's main quad. This facility provides support to six satellite food pantries located in different parts of the campus and also operates a free store (Appalachian State 2021). When the pandemic started, the campus shifted its model from one where clients could come in and shop for what they need to having ready-made bags of staples available for pick up (Joan, March 2021).

The county's public school system provided much of the community infrastructure needed to provide food assistance. Jill, who coordinates services for the Second Harvest Food Bank, explained that once schools closed, they developed a system to deliver backpacks of food to students. When schools re-opened their doors, a food pantry was established at the county's one centrally-located high school (Jill, April 2021). Many school staff members also needed these resources for themselves. Distance was an important factor in determining the food distribution plan for the school system; they determined that it was most efficient to send buses along routes to deliver food boxes. One CBO received a grant to place a refrigerated locker at a K-8 school in the western part of the county so that food could be placed there for families to pick up. This is a potent example of how an improvement in community infrastructure was scaffold onto existing infrastructure and was successful at shortening the distance families had to travel to gain access to food.

Debbie, a school social worker with 28 years of experience, tends to take the lead on community projects for the school system. She cited a collaboration where a CBO provided food and the schools facilitated its distribution to families. Much of the county is considered a "food desert" by the USDA definition, that is, it is a "low-income census tract where more than 100 housing units do not have a vehicle and are more than ½ mile from the nearest supermarket, or a significant number or share of residents are more than 20 miles from the nearest supermarket" (USDA 2019). School buses would drive into the county and stop in places with a high concentration of need to provide food directly to families (Debbie, March 2021). When schools provided the food, they also included lists of other food resources because they were aware that gaining access to this information was difficult as this is an area that lacks reliable internet.

In interviews conducted separately, three different informants (Peg, Jill, and Joan) at three different CBOs discussed the crucial role of the Watauga Food Council (Watauga Food Council 2021) which serves as a county clearinghouse for information about food and nutrition. Their website provides detailed information about how to access food resources and includes information about volunteer opportunities. The Watauga Food Council acts as a critical piece of infrastructure because it supports two key functions of the food system: it helps people to get access to food aid and it informs the community how to help provide aid.

TRAIT 5: DIVERSE AND INNOVATIVE ECONOMY

The economy of Watauga County is dependent on a few key sectors: education; tourism; and healthcare (North Carolina Department of Commerce 2022). It is unclear from the literature (i.e., Maclean et al. 2014) how to precisely measure diversity and innovation in a local economy to assess its resilience, but according to a County Commissioner, Watauga benefits from the stability of a large state

university to provide an anchor for the local economy (Fred, March 2021). Although the tourism industry did struggle in the pandemic initially, tourism revenues rebounded quickly (Barber 2020) and the local ski industry reported a hugely successful season (Barber 2021).

Similarly, perhaps benefitting from people staying closer to home and avoiding air travel (Rogers 2021), the Blue Ridge Parkway, which is a major tourism draw, had an estimated 14,099,485 recreation visits in 2020 and claimed the top spot among all parks in 2020 (NPS 2021). Anecdotal evidence suggests that AirBnB bookings in the county were so strong nearby towns implemented restrictions to curb the flow of short-term rentals (Watauga Democrat 2020) and dashboard surveys of local grocery stores indicate that stores were busy with out-of-state visitors. Our informants did not discuss the diversity or innovativeness of the local economy, so we are left unsure of the relative importance of this factor with regard to resilience. However, we did find evidence of engaged governance at the local level.

TRAIT 6: ENGAGED GOVERNANCE

Warf (2021) discusses the abdication of the state with regard to Covid, the authors recognize this as well in the study site, with most of the real effort coming from local leaders working together to meet food needs. One of the key takeaways from our interviews was that CBOs were able to rapidly respond to the challenges brought on by the pandemic. These organizations were largely able to respond to uncertain and changing circumstances, such as increased restrictions on capacity within buildings, scarcities caused by uncertain food precautions (i.e., whether or not fresh produce could transmit Covid-19), and safety regulations regarding mask-wearing and hand sanitization within businesses. Smith et al. (2012) would call this a “dynamic social process,” with local organizations responding to challenges without clear guidelines from government organizations, as a key marker of a resilient community.

John, a member of the Watauga County Board of Education, spoke about how once schools closed, the school system had to rethink every aspect of their operation. The overall feeling shared by respondents was that they were on their own with very little guidance from the state. The public school system discovered that they were able to keep the cafeteria workers and bus drivers employed by redeploying them to make meals that were delivered to school children. As schools were developing ways of providing meals to students, they also found that they had to adjust their communication strategies. Usually schools rely on announcements and notes being sent home with students, or through face to face communication when parents pick up their children at school; with these avenues shut down, schools reached out through news outlets and social media. “We had to invent new ways to communicate” (John, April 2021). John and other members of the Board of Education provide examples of the kind of engaged

governance at the local scale that was vital for the food aid to be successfully delivered.

County Commissioner Fred, talked at length and with pride about how the county functioned in the early days of the pandemic. He offered that the people in the county “were here working together.” That working together was done through a lot of intentional communication, frequent Zoom meetings, intense use of social media, the local newspaper, and use of the local radio station. (Fred, March 2021). With very little practical information coming from government officials outside the local community, the county relied on itself to find ways to feed its people.

CONCLUSIONS

The resilience literature has shown that preparation before a disaster is critical for a region’s ability to cope and rebound quickly. We see strong evidence that the people of Watauga County’s long-standing investment in CBOs has helped its response to the food disruptions caused by the pandemic. Fisher and Smith (2012) describe a fragmented, short-lived, system of community organization in Appalachia, however that is not what we documented in Watauga County with regard to questions of food insecurity. In 2020, CBOs were able to use their decades of experience and strong community ties. Clearly, local CBOs have deep roots and a strong connection to place. Leaders in these organizations have decades of experience and complex local networks. As is common in many small towns, everyone seems to know everyone and perhaps more importantly, everyone seemed to know who in particular to contact to request assistance for their organization or to provide assistance to others in need.

We inquired if local leaders felt they had the knowledge and skills they needed to respond to the crises. Overwhelmingly, the people we interviewed felt that they did **not** have what they needed to respond to the food crisis as it was first developing. They were overwhelmed by unprecedented need, and in many cases, cut off from their traditional support systems that provided volunteers and communication with their potential clients. However, the interview subjects spoke at length about how they overcame these difficulties and eventually put together new systems for food distribution.

And so it’s like, we really, really put our minds to any thing and we’re in a situation where we have to, like make something work. We can do it. It’s been really inspiring to see how everybody has really stepped up and worked together. (Kara, March 2021).

Kara was feeling empowered, in that if they could make these adjustments and continue to serve their clients, they might be able to accomplish most anything.

A key aspect of this response was the use of existing community infrastructure which, once identified and repurposed, provided support for food relief. The county school system is a prime example, they used their buses and drivers to distribute food in distant parts of the county and added extra refrigerated

space to store food. Overall, we were able to find that, at the county level, experienced elected officials were able to step into new roles and facilitate the coordination of efforts. However, we do not want to paint a picture of a rural community that is able to rally and feed everyone in the long term. When given the opportunity, interviewees spoke with great concern about long-term issues of food insecurity. When asked about food security in the county, a representative from Appalachian State said,

It's certainly a very generous and neighborly culture, um, that mountain culture. And so I think that we do a really great job of using the resources we have, but the long-term solution to food insecurity is a bigger picture. (Joan, March 2021)

It will be years before we have enough data to assess how Watauga County's response compares to others and be able to determine if the community's needs were sufficiently met. We know very little about how communities of color (particularly Spanish-language speakers) have fared. When asked directly about this issue, a representative of a local CBO stated that, despite being located close to a trailer park with a significant Spanish-speaking population, they see few Latinex clients (Kara and Sam, March 2021).

As the pandemic hit western North Carolina in 2020, organizations that helped provide food to the people of the region were upended. Organizations and the people who run them had to quickly find ways to continue providing services. Interviewees all discussed how challenging the early phase of the pandemic was and how they relied on other CBOs to help meet the food needs of the county. Our analysis shows a complex web of interaction and interdependence of these agencies. We did not find that a single organization, be it a church or the university was uniquely able to solve problems by themselves. What we did find, was a community with a long history of working together and a university that tries to support these initiatives where it is able. Where many local churches were not able to respond due to COVID-19 restrictions and a lack of member volunteers, other community based organizations and the local school system were able to fill in the gaps. The strength of community networks is demonstrated by the multiplicity of connections among CBOs.

It is interesting to note that interviewees did not view pandemic events in the context that they were truly unique or would never happen again. Some of the interviewees commented that they hoped to learn something from the experience of 2020 so that when the next disruption came around they will not be "flat footed." Peg advised, "A shift back to more local food systems would be beneficial in the long run to help alleviate many of the [food] supply issues." (Peg, March 2021).

Debbie summed up her feelings,

I don't know if the need was different [during the pandemic], I think we finally began to meet it ... the way people pulled together and the focus made us meet a need that had always been there that we weren't doing a good job meeting. (Debbie, March 2021).

Within the study site, and in the wider world, the pandemic demonstrates that we need strong CBOs because of the persistent reality of the neoliberal economic system and the continued fraying of the social safety net. CBOs exist in these gaps and because of these gaps, and their importance was fully demonstrated during the pandemic. This research tells a story of resilience and helps to build a people's geography about how a rural Appalachian community persevered as the neo-liberal food system failed. But the need for strong CBOs goes beyond rural communities in Appalachia to every community. It is clear that the neoliberal economic system is fragile and that it fails in spectacular ways. When it fails, those people who are most at risk need immediate help from a strong network of actors.

As geographers, we gather insight from communities such as the one documented here. We also hope to apply our findings more broadly. It is clear that building strong resilient communities can not be achieved without sustained effort from multiple actors at a variety of scales. Community leaders need expert knowledge of local geographic factors such as the locations of resources and how to gain access to the resources in short order. Community leaders interviewed in this study also provide a warning. To be clear, the interviewees did not comment directly on the global neoliberal food system. The people we interviewed were exhausted, yet in some ways they felt empowered by their ability to work with one another to solve problems and address dire needs. They expressed pride in being part of an Appalachian community. Respondents discussed a sense of relief that food insecurity was finally being given more attention due to the pandemic, after all they have dedicated large portions of their lives to issues of poverty and food access in Appalachia. It seemed that finally the broader community could see the importance of their work. Community leaders hoped that this attention would have a lasting impact and bring greater support for the broader goals of creating a food-secure future. They also expressed concern that they needed more support in order to be prepared for the next crisis, because they all felt that certainly there would be another.

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ORCID

Harrison Brown  <http://orcid.org/0000-0002-0993-5879>

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