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Adaptive capacity in emergency food distribution: Pandemic pivots and possibilities for resilient communities in Colorado

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Abstract

The unprecedented circumstances of the COVID-19 pandemic have revealed weaknesses in our emergency food distribution programs and also highlighted the importance of the adaptive capacity that is actively fostered within such programs. Community-based food distribution programs have faced an increased reliance on their services due to record-breaking food insecurity since March 2020. Concurrently, these emergency food distribution programs have had to deal with the logistical challenges of operating their programs during a pandemic. How are they adapting, and which existing organizational assets have they been able to draw from and/or strengthen? Based on in-depth qualitative research with emergency food distribution programs in Boulder and Denver, Colorado, this paper analyzes how their operational responses to the COVID-19 crisis both demonstrate and reinforce adaptive capacities. By drawing from collective resources, leveraging the efficiency of their flexible and decentralized structures, and networking across organizations, the programs in our study took advantage of existing organizational assets. At the same time, we argue that by overcoming logistical and practical barriers to address emerging food insecurity needs, they simultaneously deepened their adaptive capacities to respond to ongoing and future crises.

Keywords

Community Resilience, Adaptive Capacity, Food Systems, Local, COVID-19, Pandemic, Emergency Food Programs, Food Banks, Food Pantries, Colorado

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Introduction

> By and large, people were just really great and supportive and we had an explosion of new volunteers, and that really helped. We had support and the community was really receptive . . . but at the same time, a lot more people are experiencing food insecurity because of the pandemic. (Cameron,[1] representative from a food justice nonprofit)

> Hopefully once we get past this, it won't be like it's been, for instance, with Victory Gardens. As soon as we were past the Second World War, everybody said we're not doing that anymore, and gardening fell by the wayside. Hopefully this won't just be a passing fancy and more and more people will support local food. (Lori, representative from an urban gardening organization)

Disruptions created by the global COVID-19 pandemic have highlighted the fragility of conventional food pathways in the United States, specifically in terms of their ability to respond (Benton, 2020; Raja, 2020). Since the pandemic upended daily life in March 2020, countless media outlets have visually captured food (in)security and the (in)ability of American food systems to address growing food insecurity. Photographs document long rows of cars in packed parking lots, filled with people waiting in food bank lines to receive food assistance (O'Rourke et al., 2020; *Reuters,* 2020; Van Pykeren, 2020). While these images point to a rise in food insecurity during the pandemic, they also raise questions about the (in)efficiencies of emergency food distribution—including the slow speed, lack of choice in food items, and challenges of providing "free food" with dignity. In many ways, such questions and critiques of emergency food programs' response to persistent food insecurity are not new (Bruckner, Westbrook et al., 2021; de Souza, 2019; Poppendieck, 1999). Nonetheless, COVID-19 has accelerated the already alarming rate of hunger, with estimates suggesting that over 45 million Americans were food insecure in 2020 (Feeding America, 2020). At the same time, as quoted above, emergency food distribution programs faced not only challenges but also opportunities by welcoming an influx of volunteers who were inspired to action by the pandemic. What is clear is that COVID-19 shocked existing emergency food distribution networks, raising important questions as to the operational resilience of food distribution programs.

Where U.S. government relief money has been made available, it has been funneled primarily to large food banks and food pantries (Orden, 2020). However, many community food security programs outside the food banking model build grocery distribution into their programs and also serve a vital function in redistributing food. Often overlooked, or dismissed as a temporary or insignificant components to address hunger, these types of food assistance programs have become a central and consistent source of food provisioning to millions of Americans on a regular, long-term basis (Lambie-Mumford & Dowler, 2015; Tarasuk & Eakin 2003, Warshawsky, 2010). While sometimes referred to as "charitable" food assistance, in this paper we characterize these programs as "emergency" to reflect the urgency inherent in an ongoing crisis of food insecurity (Bruckner, Westbrook et al., 2021). Through the present research, we examine how diverse community-based emergency food distribution programs have demonstrated their ability to respond to fluctuations in food need. We argue that the programs in our study draw from, and in the process strengthen, adaptive capacities that are key to community resilience. In this paper, we direct our attention to five community-based emergency food distribution programs in the Colorado Front Range and their dynamic responses during the first 18 months of the COVID-19 pandemic.

While some anecdotal evidence points to an uptick in local food system participation in the pandemic through, for example, home gardening or support of community supported agriculture (CSA) (Local and Regional Food Systems Response to Covid, n.d.), few scholars have

[1] To protect the privacy of individuals, we have assigned pseudonyms to all our interviewees.

devoted analytic attention to unpacking the characteristics of specifically *emergency* food distribution programs that foster or inhibit resilience. Drawing from community resilience literature, we closely examine how latent adaptive capacities in community-based food distribution programs were activated and deepened the way food distribution programs responded to pandemic circumstances. We argue that the logistical and operational challenges in pandemic food distribution highlight the cyclical and reinforcing nature of adaptive capacities within organizational structures. While community resilience literature has theorized about organizational capital and institutional structures that foster resilience, attention to how these features influence community resilience within emergency food distribution programs has been missing. To this end, the following research sets out to (a) understand how features of community resilience apply to emergency food distribution programs, (b) gather qualitative data on how specific emergency food distribution programs adapted their operations to pandemic conditions, and (c) reflect on what their responses may mean for building community resilience within emergency food programs going forward.

In this paper, we first review concepts of community resilience and related understandings of adaptive capacity, linking these features explicitly to their implications for emergency food distribution. We then briefly discuss the impact of COVID-19 on food distribution in terms of national government response and impacts, before situating our qualitative research with five community-based emergency food distribution programs in Denver and Boulder, Colorado. Through unpacking specific programs' ability to adapt to and address community needs, we shed light on how each of the programs successfully mobilized collective resources within and across organizations and drew from the strength of their flexible and decentralized operations. We argue that disruptions like the COVID-19 pandemic may provide opportunities for more inclusive, socially just, and responsive emergency food distribution operations if, and when, disruptions foster social learning.

Resilience and Adaptive Capacity in Emergency Food Distribution

Community Resilience and Adaptive Capacity

The impacts of COVID-19 have illuminated the fragility of national and global food systems, encouraging us to consider the adaptability of current food networks to major social-ecological and economic shocks. Shocks and disruptions, however, are increasingly considered part of the new normal, as the impacts of climate change on food systems, for example, gain popular and academic attention (Mayer, 2016). How food systems respond, adapt, or even transform in light of shocks can speak to their overall system resilience (Tendall et al., 2015). While resilience literature has been applied to food systems, the implications for emergency food distribution programs are less well-developed—and this is where we situate our paper. We briefly review contributions from social-ecological and community resilience perspectives and highlight adaptive capacities that have been identified as part of resilient food systems, before connecting this literature to emergency food distribution programs.

Holling (1973) notably conceptualized resilience as a term to describe ecological systems and their response to shocks, including how nonequilibrium natural systems respond to disruptions by bouncing back (returning to normal functioning), or by collapsing.. Challenging the ecological balance framework of the time, Holling (1973) emphasized change as an inherent dynamic in ecological systems. Throughout the past 20 years, however, scholarship has increasingly addressed resilience as part of the social sciences, as social-ecological resilience is always entangled (Adger, 2000). Adaptive capacity, or the ability to respond to and learn from dynamic conditions, is a key feature in resilience (Magis, 2010). Whereas systems with low adaptive capacity are more vulnerable to shocks and changes to begin with (Adger, 2006), systems with high adaptive capacity build resilience (Walker et al., 2004).

Research on community resilience seeks to understand how communities can develop and engage with their existing capacities to respond to uncertainty (Magis, 2010). Scholars point out that com-

munity capacities like social support and social networks, preparedness, knowledge sharing, and physical infrastructure are critical features of resilient systems (Berkes & Ross, 2013; Harden et al., 2021; Magis, 2010; Norris et al., 2008). While some community-based programs and systems can be socially and environmentally oriented and resilient, Born and Purcell (2006) caution against romanticizing the community scale as *inherently* so just because it is "local." Furthermore, other scholars acknowledge that "community" can be a problematic scale when conceptualized as a unified entity or representative of all within that community (Agrawal & Gibson, 1999). Nevertheless, we welcome contributions to the community resilience literature that focus on place-based relationships, social networks, and the sharing of knowledge and skills as key aspects that may foster adaptive capacities (Berkes & Ross, 2013; Magis, 2010), while at the same time critically examining these community capacities as they emerge in practice.

Berkes and Ross (2013) point out that adaptive capacity in community development processes might be actively cultivated through participatory projects that build trust and work toward tangible outcomes, even in noncrisis times (p. 16). Magis notes the cyclical nature of drawing from and building future adaptive capacities when faced with waves of disruption: "in a self-reinforcing cycle, the engagement of community resources towards community objectives addresses the presenting issue and can develop community's resilience which then can generate adaptive capacity to both sustain and adapt in response to disturbance and change" (Magis, 2010, p. 405). In these frameworks, community resilience is strengthened by cultivating adaptive capacities that are responsive to social learning through participatory processes. We now turn our attention to how these adaptive capacities relate to emergency food distribution.

Resilience of Emergency Food Distribution

At the intersection of community resilience literature and our focus on emergency food distribution lies the goal of community food security, defined as "a condition in which all community residents obtain a safe, culturally acceptable, nutritionally adequate diet through a sustainable food system that maximizes community self-reliance and social justice" (Hamm & Bellows, 2003, p. 37). Food justice scholars conceptualize food access as a key feature of community food security (Alkon & Ageyman, 2011). However, food justice scholars and activists diverge in where emergency food distribution fits into community food security and into an overall resilient food system.

For some, food justice is distinct from emergency food distribution because justice is concerned with the redistribution of power within the management and control of food, including the factors which lead to food insecurity in the first place (Alkon & Ageyman, 2011; Anderson, 2018). Several academics and activists foreground the myriad of underlying structural causes of food insecurity in the U.S., including the capitalist political economy of food that leads to inequitable access (Guthman, 2011; Schlosser, 2012); structural racism (Penniman, 2018); and the spatial distribution of food retail that limits affordable and nutritious food options (Guptill et al., 2017), disproportionately affecting BIPOC communities (Raja, 2020). While emergency food distribution can address food access, many food justice proponents argue it can do little to address the root causes of systemic hunger (Poppendieck, 1994, 1999; Tarasuk & Eaton, 2003).

Resilience in itself is a neutral term (Walker & Salt, 2012), and undesirable states, like those which cause systemic hunger, can be persistent and hard to change. While "undesirable states of systems can be very resilient" (Walker & Salt, 2012, p. 20), recent work on local food system resilience and food distribution posits resilience as inherently positive (Azizi Fardkhales & Lincoln, 2021). Azizi Fardkhales and Lincoln point to "functional redundancy" (2021, p. 53) of existing distribution in a food system as a mechanism to encourage resilience. However, our understanding of resilience differs in that sometimes the "basic functioning" (Pingali et al., 2005) of systems, including the systems that produce hunger and emergency food distribution as a response, may be problematic to begin with. Thus, while resilience implies the continuity of basic functioning, we must still ask whom the system provides benefits (Cretney, 2014) and how or if social learning and

growth are actively promoted in program design.

Recent interventions related to emergency food distribution programs highlight the complexities and nuances of "free food." The literature on this research emphasizes the possibilities and insights we can gain from examining emergency food distribution programs as a set of dynamic social relationships—including the potential for programs to challenge the hierarchical relationships and stigma around food assistance, while serving as a space for social networks of care (Bruckner, Westbrook et al., 2021; Cloke et al., 2016; de Souza, 2019; Heynen, 2009). We acknowledge the diversity of programs that distribute emergency food, from food banks to food pantries, to food waste redistribution nonprofits and community gardens devoted to donating the bulk of their harvested produce. However, our analysis centers not only on the type of food distribution program, but how it operates in practice. While some models of emergency food distribution may reinforce hierarchal dynamics of feeding "the Other" (de Souza, 2019), other structures of mutual aid or horizontal food redistribution may contribute to building community networks of solidarity or social support—key aspects of community resilience identified by Berkes and Ross (2013) above.

Although system resilience literature specifically focused on emergency food distribution is limited, food system resilience broadly can be defined as the "capacity over time of a food system and its units at multiple levels to provide sufficient, appropriate and accessible food to all, in the face of various and even unforeseen disturbances" (Tendall et al., 2015, p. 19). We conceptualize community food security through emergency food distribution as one of these levels building toward food system resilience. Pingali et al. (2005) recommend diversifying food systems more broadly to improve resilience and expand food access. They highlight food system resilience that builds adaptive capacities of community resources and democratic forms of management, and actively dismantles socio-economic barriers to food (Pingali et al., 2005). Vitiello, Grisso, Whiteside, and Fischman (2015) focus on the multifaceted roles that community-based actors (local gardeners, farmers, and food justice advocates) are playing in community food system development. We consider emergency food distribution programs as key components of community food systems, though they are understudied in discussions about food system resilience.

At the federal level, there are various food assistance programs that operate as a "non-crisis" social safety net to distribute food, such as the Supplemental Nutrition Assistance Program (SNAP), the Special Supplemental Nutrition Program for Women, Infants and Children (WIC), the Disaster Household Distribution, the Emergency Food Assistance Program, and Commodity Supplemental Food Program (U.S. Department of Agriculture, n.d.). In response to the rising joblessness and food insecurity spurred by pandemic closures and illness, the U.S. government passed the Coronavirus Aid, Relief, and Economic Security Act (CARES) and the Families First Coronavirus Response Act (FFCRA). Through these acts, the government released US$2 trillion funds in April 2020, of which US$850 million were allocated for food banks and pantries (USDA, 2020). However, the *Washington Post* reported that as of June 2020, food banks had only received US$300 million (Werner, 2020). Feeding America, the largest nationwide network of food banks, noted that the pace of federal emergency funding was too slow for urgent demand and established a US$2.65 million COVID-19 Response Fund to cover food access and distribution shortfalls caused by the pandemic (Feeding America, 2020). Further efforts to invest in emergency food distribution, through the USDA's US$4 billion dollar "food box" initiative, have been criticized for inefficiency, high cost, and logistical shortfalls (Charles, 2020).

While the federal assistance during the pandemic has focused on large food banks and pantries, the creativity and operational shifts in diverse emergency food distribution programs are a critical piece of community food security. What does resilience in community-based emergency food distribution programs look like, and how can we use the pandemic to understand the challenges they faced? Acknowledging the ongoing nature of the COVID-19 pandemic, we begin to identify the adaptive capacities of emergency food distribution programs that have been drawn from and strengthened through this crisis.

Study Context and Methods

Our Approach

Cote and Nightingale (2012) forward "situated resilience" as a concept to help ground definitions of resilience and adaptive capacities. Arguing that scholars should look toward specific dynamics of places and systems to inform what leads to definitions of resilience—as opposed to imposing abstract metrics—Cote and Nightingale's situated resilience guides our inductive approach. We began our study of situated resilience by reaching out to five emergency food distribution programs with which we had previous existing relationships (as volunteers and as academic collaborators). One of us, an undergraduate student at the University of Colorado Boulder at the time, developed an independent study with the other author, her academic supervisor, to formalize a research project based on the pandemic's impact on emergency food distribution. We co-designed research focused on qualitative analysis with these five hunger relief and emergency food distribution programs in our vicinity of Boulder and Denver, Colorado. Before detailing our methodology, we provide a brief context of food systems in Boulder and Denver.

Study Area

The Front Range in Colorado is a flatland area at the base of the Rocky Mountains, which includes the metropolitan areas of Boulder and Denver (about 25 miles apart). While different in size and composition, both cities maintain a "green" reputation for prioritizing open space, sustainable development, and progressive politics, and the proliferation of "alternative food," ranging from community supported agriculture operations (CSAs) to thriving farmers markets (Hickcox, 2018). Agriculture has been a staple of Colorado's economy, and the majority of production is located along the Front Range region (Graff et al., 2014). While Boulder and Denver are different in many ways, their communities are connected by proximity, and there are many residents who live in one city and commute to the other (Boulder Daily Camera, 2019). According to a 2016 commute analysis, "slightly more than 50% of Boulder County jobs in the two lowest income brackets are held by people who live in other counties" (Nelson\Nygaard Consulting Associates, Inc., 2016, p. 1), and Denver is home to the most low-income commuters who work in Boulder. Yet, despite the affluence of Boulder and Denver and the agricultural productivity of the region, both cities still face persistent challenges with food insecurity, which was worsened by the COVID-19 pandemic (Bruckner, Castro-Campos et al., 2021; Hunger Free Colorado, n.d).

Boulder is a small city of about 100,000 residents and consistently ranks as the best "metro area" to live in (U.S. News & World Report, 2021) and one of the "greenest cities for families" in the U.S. (Wallace, 2016). However, the high quality of life comes at a price; the median Boulder home value increased to US$1.5 million in 2020 (Wood, 2021). For unhoused residents, Boulder can be a less welcoming place, with a "camping ban" criminalizing the unhoused, and often food insecure, residents (ACLU Colorado, 2021; Eastman, 2021; Swearingen, 2021). Thus, economic, racial, and social exclusion form less visible components of Boulder's high quality of life and environmental policies (Hickcox, 2018). Boulder has a sizable population of residents who experience chronic food insecurity, estimated at about 11% of Boulder County residents in 2020 (Bruckner, Castro-Campos et al., 2021).

Denver is an urban area with approximately 700,000 residents in the city center and almost 3,000,0000 in the greater metropolitan area in 2020 (Metro Denver EDC, n.d.). Like Boulder, Denver is attractive to many for its appeal to young, progressive, and eco-minded residents; however, the influx of young urbanites has led to rising housing costs and inequitable urban transitions through gentrification (Sbicca, 2020). Denver County's food insecurity rate in 2018 was 11%, with 76,340 reporting food insecurity (Feeding America, 2018). In 2016, 49% of low-to-moderate-income Denver neighborhoods lacked convenient access to grocery stores and culturally appropriate options (Angelo & Goldstein, 2016; Breger Bush, 2021).

Even though Colorado's food insecurity rate decreased in fall 2020 (City and County of Denver, n.d.), the rate of food security increased from 11% food insecurity rate to 33% over the course of the

pandemic (Hunger Free Colorado, n.d.; Roy, 2021). Prominent food banks in Denver documented dramatic upticks in need, for example from feeding 450 families a month to 2,000 (Roy, 2021). Additionally, the state economy and small farms and businesses reported "a [US]$3.9 million decline in sales … [and] a total loss to the economy of up to [US]$6.7 million from March to May 2020" (Thilmany et al., 2020, p. 1). Despite the wealth and popularity of Boulder and Denver, or perhaps because of it, food insecurity is often excluded from discussions about the livability on the Front Range (Bruckner, Castro-Campos et al., 2021), but it has come into the spotlight through COVID-19 (Langford, 2020; Singer, 2021).

Methods

The qualitative research for this project centers on semi-structured interviews (Kvale,1996) with upper-level organizational representatives from five food projects in Boulder and Denver. While the types of emergency food distribution models vary (as we sketch out below), they all position themselves as community-rooted programs in the Front Range that prioritize environmental and social sustainability and food as a right for all. We first sent out recruitment emails to representatives of over 20 food distribution programs in Boulder and Denver. Ultimately, however, the response rate from recruitment emails was low, likely due to the increased stress and workload of pandemic food distribution. We then used convenience sampling (Morgan, 2008) to reach out to our existing contacts at Boulder Food Rescue and Harvest of Hope, with whom we had previously collaborated (with research) and as volunteers. These representatives connected us to other food distribution program employees through snowball sampling (Morgan, 2008). All five representatives we interviewed held upper-level management positions in their respective programs, as we detail in the project descriptions below.

We conducted two rounds of semi-structured interviews with each of the five program representatives (one per program), first in September and October 2020, and then again in July 2021. In the first round of interviews, we centered our questions on (a) how the pandemic had impacted their program, and (b) what changes the programs had instituted in response to these challenges. In the second round of interviews, we asked for (a) updates to their practices, and (b) their outlook on what changes instituted during the pandemic will persist moving forward. Due to health concerns during the pandemic, all interviews were conducted via Zoom in our respective remote locations. Each remote interview lasted between 45 and 60 minutes and was audiorecorded and transcribed. Both authors then used Taguette, an open-source qualitative data analysis software, to conduct a content analysis (Weston et al., 2001). We categorized participant responses into thematic areas of what types of changes were enacted in terms of operations, how these changes were enacted, remaining challenges, and opportunities for their future ability to withstand shocks. We conducted this project with approval from the Institutional Review Board (IRB) at the University of Colorado Boulder.

Before detailing our findings, we present a brief overview of each of the community-based emergency food distribution programs we included in this study.

Community-Based Emergency Food Distribution Programs

Harvest of Hope Pantry is a community food pantry located in Boulder. Its goals include providing sustainable and nutritious food and creating a safe, judgment-free space for food access and redistribution. Harvest of Hope Pantry has a low barrier to entry, with no income qualifications, and it recognizes that food insecurity can come in many forms. Its model for food redistribution is a dignity-centered, client-choice model, allowing people to choose the foods for themselves. The pantry receives the majority of its operational funding from individual donors (Harvest of Hope, n.d.). We interviewed Daniel, a project coordinator, at Harvest of Hope.

So All May Eat Café (SAME Café) is a pay-what-you-can café located in downtown Denver that seeks to provide healthy meals, a varied menu, and food to people in the community experiencing food insecurity. The café receives 90% of its pro-

duce as donations from local farms and gardens, and partners with Food Bank of the Rockies, Denver Botanic Gardens, Altius Farms, Denver Urban Gardens, Grow Local Colorado, and others for food donations. The café is either the primary or only source of nutrition for its guests, as 83% of guests live below the poverty line. Like Harvest of Hope pantry, the café addresses socio-economic barriers and the stigmatization of food access through food-choice models. SAME Café relies on donations from the community, its volunteer force, and state and federal funding. For this research, we spoke with Jeff, the executive director of SAME Café.

Grow Local Colorado is a volunteer-powered network of urban gardens in the greater Denver area that is working to produce food locally, engage the community, and contribute to the local economy (Grow Local Colorado, n.d.). It seeks to expand urban gardening, and in doing so increase areas of fertile soil and productivity. Grow Local is a major produce donor to Front Range organizations and food pantries (Grow Local Colorado, n.d.). We interviewed Julia, a program manager of Grow Local.

Denver Urban Gardens (DUG) is a nonprofit organization that supports community gardens; provides a gardening resource for educators, leaders, and community members; and serves as a major produce donor to local schools and community groups. DUG is a coalition of over 181 community gardens throughout Metro Denver with volunteer leaders sharing leadership and management of the various gardens. We interviewed Lori, a program coordinator at DUG.

Boulder Food Rescue (BFR) is a locally run food redistribution nonprofit in Boulder. The organization is focused on reducing food waste from local food businesses and grocery stores and redistributing food and power to community members, community centers, and low-income populations. Volunteers and staff transport food mostly by bicycle, reducing their carbon footprint as a part of their sustainability mission. The data for this research center on our interviews with Cameron, a program advisor at BFR.

While we recognize their diversity, ranging from food distribution to food production, each of the above emergency food distribution programs prioritizes food access for all and is deeply rooted in community. From our data, three key components emerged as central to the programs' adaptive capacity, within emergency food distribution programs, which were then strengthened: (1) the ability to mobilize collective resources in organizations and communities; (2) having decentralized and flexible structures, which allowed them to respond quickly to a dynamic situation; and (3) networking across organizations to form new strategic partnerships. We detail each of these findings below, along with the challenges that remain.

Findings

Mobilizing Collective Resources in Organizations and Communities

As businesses shut down, as millions of Americans lost income from missed wages, and as the health and economic shock of COVID-19 began to set in during March 2020, food distribution sites rapidly experienced a spike in demand for food assistance. The resulting logistical challenges required the programs we investigated to respond quickly to the rise in need, as well as adeptly navigate shifting health circumstances. From working long hours, to preparing to-go meals, to fundraising and finding volunteers, to serving more people, community-based emergency food distribution programs mobilized their existing resources. In the process of enrolling community resources of volunteer staff and financial donations, all five representatives we interviewed mentioned both the increased need for volunteer staff as well as the community-building that occurred through this process of volunteer mobilization.

> [The increase in clients] was the first impact. We have to feed these people, which is great. And we did. And then everyone was working crazy hours and then we … [had] to raise money to offset this. I was able to work with our fundraising team, and we were able to raise a lot of money. So, the community then joined

> in and said, yes, we see that you're doing good. So many of our biggest funders reached out to us and said … "We assume you're really impacted by this. Do you need extra money? Because we can help." And a lot of them gave extra. (Jeff at SAME Café)

As described by Jeff, after the initial shock of closures in March 2020, emergency food distribution sites had to build responses to these increased demands into their programs, as opposed to just "working crazy hours." How they were able to respond so successfully, according to Jeff at Same Café, is due directly to "the community joining in." The emergency food distribution program representatives understood the increase in volunteerism as directly correlated to a sense of hopelessness of many during the pandemic—including activating a sense of volunteerism in those who wanted to help.

> People want to make a difference because everyone's seeing those images of mile-long lines of people waiting to get food at food pantries. And people just were excited to be outside with other people. (Julia of Grow Local)

Grow Local also dramatically increased the amount of produce it harvested and donated, from about 300 pounds to 1,100 pounds in a year. These donations were greatly needed because of supply chain disruptions and increased demand: "The food pantries that we partner with—almost every single one of them—[had] said we need more produce; and many of them, for the first time, we were their only source of fresh produce" (Julia of Grow Local).

To cover funding shortfalls, Grow Local acquired gardening supplies through its citywide network of partners, community gardens, and volunteers. It attributed the prolific harvest to the surge in volunteer interest of urban gardeners and growers who felt affected and wanted to make a difference: "It's amazing … no one walked in our gardens. No one vandalized them. No one picked anything. It just shows you that people understand what that's all about" (Julia from Grow Local).

In addition to an influx of volunteer aid, programs quickly mobilized other external resources from local partnerships when the circumstances threatened their ability to serve their clients. Similar to what other representatives echoed, BFR, which relies on excess produce from grocery stores, experienced low donations when community need spiked. Cameron explained how they shared food and financial resources with Denver Food Rescue and even enlisted volunteers to pick up produce from Denver when the partner organization had extra supplies. By rapidly arranging to share resources, both organizations made logistical changes without slowing their essential operations.

Aside from the practical benefits of increased produce and greater amounts of food distributed successfully, the representatives interviewed also highlighted that through mobilizing volunteers, the program participants cultivated a sense of community and investment. Lori with DUG described how the act of sharing, growing, and working together around food was critical for building community. At a time when so many were struggling not only with food insecurity, but also anxiety and loneliness, Lori drew attention to the role that community gardens play for societal well-being:

> We know from … our 35 years and operations that gardening is essential. It's an essential resource for food production. With strain on the food system, as well as the strain on our mental and emotional health, community gardens had to stay open. So it was a lot of work and most of our partners agreed; the garden had to stay open.

Lori also discussed the economic benefits and community-strengthening opportunities of DUG gardens: "environmentally, economically and socially, a garden is a great idea. … It's a great way to build community."

Yet, while in the early months of the pandemic these emergency food distribution programs could rally volunteers and funding, representatives were cautious about what an ongoing pandemic would mean for their volunteer labor force and economic future. Several interviewees spoke about their fears of "disaster philanthropy." This term refers to the

bursts of interest and energy for funding and resources stemming from a disaster (like COVID-19), but also the reactive and short-lived type of philanthropy. While some of the programs (BFR, SAME Café) received federal financial assistance through the Paycheck Protection Program, all programs related in their interviews that they relied heavily on philanthropy from individual and community foundation donations. Harvest of Hope's coordinator, Daniel, voiced concern about the public mentality surrounding disasters that they will resolve on their own, as he urged people to remember that they are going to need this support for a long time: "People talk about, 'when this is over,' and it scares me to think that it might not be, it might be something we live with."

While individual volunteer aid increased initially, the sustainability of organizations' human resources and volunteer support fluctuated in the months following the pandemic onset. Both Julia of Grow Local and Daniel from Harvest of Hope expressed anxiety over the unpredictability of support:

> We have good resources, and we are in Boulder—it's a very high-resource area—the volunteers are coming in. The most difficult part is the planning because everything changes day to day. (Daniel)

In follow-up interviews we conducted in July 2021, program representatives were pleasantly surprised to note that volunteer numbers had not dropped off (at least not yet). Instead, Julia from Grow Local remarked that because of the bonds and connections formed at the height of the pandemic, volunteer numbers remain strong as people "want to help … and they want to socialize." How and if this volunteer support continues, however, is uncertain, and the inability to plan is a challenge voiced by many. While community support was mobilized and strengthened, the pandemic has also severely threatened the economic viability of these emergency food distribution programs. Many were able to receive private donations in the forms of money, food, and supplies, but expressed concern over the precarity of funding for essential food operations moving forward.

Decentralized and Flexible Operations

Emergency food distribution programs in Boulder and Denver quickly adapted their operations to respond to increased food needs. The decentralized and flexible nature of their food production and distribution models and close relationship with their communities allowed them to utilize vacant growing space, increase produce supply, implement safety measures to continue serving food, and move to decentralized distribution. However, there were some tradeoffs and challenges as local food projects pivoted their logistical operations, as the BFR quote below highlights:

> We all are dealing with this big increased need. So after the pandemic set in a little bit … what makes sense is to get as many shelf-stable foods to people as you can as quickly as you can. Short-shelf-life produce really just kind of gums up the works, with COVID-19 restrictions at pantries, unfortunately, because people really want and need it. But it needs to get out to people really fast. And that can be … a logistical challenge. (Cameron at BFR)

In terms of client choice, for example, Jeff described how SAME Café had to change its normal operations to meet safety protocols. Like most restaurants, safety precautions consisted of reducing capacity, installing physical barriers between staff and clients, and shifting to take-out or other ways of serving food with minimal contact. In particular, SAME Café transitioned to new services of to-go meals, in which clients were unable to select all the food items they wanted. The changes affected its mission of promoting food choice, but as a response to the increasing need, SAME Café found this compromise acceptable. The switch led to additional challenges which it had to adapt to, like increased costs:

> What we did was switch immediately to-go and [we] started seeing about double the number of people showing up at our restaurant and getting food … because the need increased so much. Now, we did that for a couple of weeks. And we were like … this is so much more expensive because we're giving out so much

> more food. But then we're also giving out to-go containers, which normally we use plates that we were washing. I stepped back from being there to hand out food and said, I have to raise money to make this happen. We started talking about our mission and what we were doing kind of publicly and loudly on social media … sharing what we've been doing. (Jeff)

The Harvest of Hope pantry instituted *Your Choice,* a modified, COVID-19–safe model. *Your Choice* integrated a new volunteer force as runners, who would take orders (off a menu with food choices available for that day) and deliver the food to people waiting in their cars. During the period of highest demand, however, Harvest of Hope combined prepared food boxes with the choice menu to most efficiently serve people.

> Client choice is very important to allowing people to choose the foods that they need for themselves, nutritionally and culturally … and it also gives people a measure of dignity to be allowed to select the foods that they need for themselves. When the pandemic hit and we couldn't let people inside … we said, now we had to dump elements of the choice system, and just give people a box of food. (Daniel)

This flexibility in approach allowed for food boxes with some degree of client choice, such as vegan and vegetarian options, while still adhering to health and safety guidelines and responding to the need for greater efficiency.

Despite some tradeoffs and adaptations regarding food choice, Cameron of BFR highlighted its No-Cost Grocery Programs (NCGP) as effective during this time due to their decentralized nature. The NCGPs distribute food at community centers of affordable housing sites and at schools and are run by residents themselves. BFR brings redistributed food to these sites that operate on a small scale:

> They run out of people's back yards. Essentially, they could just keep going because they're run by people in their own communities. We were better set up to continue operating without interruption than some other agencies because of the No Cost Grocery Programs. Food pantries, shelters, community meals, mental health recovery centers and a lot of those places, either like shut down, at least for a time, or couldn't operate, or couldn't receive our deliveries anymore. So it was a lot of reorganizing with those agencies and with the communities where we deliver food to basically find places for the food to go. In light of [the panic buying] we've become even more focused on the No Cost Grocery Programs. It was the focus of our energies and resources before COVID-19 but now we're routing more food there, too. (Cameron at BFR)

Cameron compares the NCGP's adaptability to the centralization of large food banks. With growing food insecurity, the NCGP was an efficient model for delivering food directly to people in their homes and neighborhoods, and distributing the food via neighborhood leaders who know their communities best.

We found that the flexible, decentralized, and horizontal structures, combined with a community-focused approach to food distribution, of the five food assistance programs were adaptive capacities that served community members well during the pandemic. At the time of the first interview, for example, BFR was collecting feedback from food recipient community members to rebuild its strategic plan, explaining that participant input was core to its mission. Harvest of Hope was increasing its own community outreach to connect more individuals experiencing food insecurity to its program. Jeff described how they were renovating SAME Café with a trauma-informed design to better provide understanding and care centered around clients' trauma. Lori emphasized the importance of trusting community expertise as a guiding principle for DUG programs:

> We trust the community to know what is best for their community, because the people in the garden are living there, right? They know their

> neighbors. They know who needs food, and what that should look like. (Lori at DUG)

Our interviewees highlight a variety of participant-focused strategies to improve the responsiveness and effectiveness of their programs, even in light of an evolving pandemic. Thus, while an understandable organizational response during a crisis would be to centralize or streamline decisions, BFR, Harvest of Hope, and SAME Café were actively reaching deeper into their community bases to ensure appropriate, responsive, and welcoming food distribution and operational design in the midst of the pandemic.

Cameron at BFR and Daniel at Harvest of Hope emphasized the difficulties of frequent changes in rules, safety guidelines, and circumstances, forcing them to adapt in very short time frames. Harvest of Hope Pantry and SAME Café reported on their challenges with continuing their food-choice model—a core value of their operations—and the challenge of safety precautions that affected kitchen and food preparation logistics. Thus, our findings point out that the characteristics of decentralized and flexible operations resulted in two distinct outcomes, at times in tension with each other. On the one hand, the ability to quickly adapt and decentralize operations was crucial for programs to meet increased demand and respond to pandemic conditions. At times, this adaption was at the expense of mission and values, such as by reducing client choice.

In follow-up interviews in July 2021, programs were still dealing with the uncertainty of a drawn-out pandemic and how, or if, changes that have been adaptive might get "left off" in future planning. Cameron of BFR, for instance, noted that with all the pandemic attention on decentralization, mutual aid, and "community," they fear that some organizations will co-opt those buzz words for funding opportunities without investing the time and resources into deeper community-led work. In the case of the five programs we investigated, however, the shift to different operational systems was combined with a recommitment to mission and values, by trusting community expertise and through community-informed design and participatory feedback models.

Aside from these internal operational shifts, emergency food distribution programs reached beyond their organizational assets to form new partnerships—a finding we describe next.

Partnering Across Organizations

Emergency assistance food programs developed or strengthened partnerships with each other, public schools, public transportation, and city management, creating a broader support system while also effectively delivering food aid to their respective communities.

Daniel described Harvest of Hope's emerging partnerships with Boulder County Public Health, Boulder County Farmers Market, and Boulder County Transportation to help distribute food packages to those who were in isolation during the pandemic. This collaboration allowed the pantry, normally a physically stationary resource, some flexibility to become mobile in its distribution. The collaboration between city-run management and community gardens was essential for Grow Local and DUG's land-use expansion. Julia of Grow Local reported that its production increased threefold with permission from Denver Parks and Recreation to use garden plots at the Civic Center Park, which were also made available for DUG to plant produce. DUG furthermore utilized unplanted plots in the school-based community gardens, since schools had shifted to remote learning. DUG and Grow Local demonstrate how land-use collaboration was essential to making up for food loss, as they coordinated with schools, city services, and landowners to do so:

> Food systems work in the Denver Metro area, and that's when we complement each other. It's recognizing that there's really no competition. I think that there's been a really deep understanding of how valuable the garden, these places, are to the community, not just for the people in the garden planting. (Lori of DUG)

The drastic need for more produce due to rising food insecurity motivated Grow Local to expand its partnerships, which it mobilized through Zoom meeting platforms, facilitated by the city of

Denver. The coalition Grow Food, Feed People grew out of community need during the pandemic, connecting various nonprofits in Denver to share resources, expand services, and address a higher volume of demand. The coalition produced and donated 60,000 pounds of food in 2020 and planned to increase its production to 70,000 pounds in 2021, with hopes that the coalition will outlast the pandemic (Grow Local Colorado, n.d.). Lori of DUG brought attention to the limited grant allocation for several organizations with similar missions, suggesting that external funding opportunities could create competition among allied organizations. Instead, Lori later emphasized the importance of working together and expressed that competition is relatively absent in the network. With Grow Food, Feed People, "it's all about how we are going to squeak out a lot more of our low funds" (Julia of Grow Local). Lori and the other representatives praised the new virtual network for its collective response and ability to successfully share resources and information, especially when funding was low or unavailable.

SAME Café representative Jeff also describes the positive impacts of the citywide collaborations:

> We also had people from organizations reach out to us for help. One was Denver Human Services because they started having families that were going into emergency housing in motels around the city and they needed to feed them. Then [Urban Peak] asked us to help start serving meals to Urban Peak, a youth homeless shelter, and they asked us to start helping feed the youth that are in supportive housing. With all of that we ended up serving … almost five times the number of people as before. (Jeff)

Jeff praised Denver's Food Sustainability Council for communicating community needs to the mayoral committee and helping to facilitate the virtual meetings: "there's people sitting at that table that are giving direct advice to the mayor of what Denver needs." SAME Café was able to coordinate with restaurants for donations of to-go containers and use a neighboring shop's outside space to increase the patio size for SAME Café. BFR and SAME Café collaborated with local food industries to help mitigate food waste.

Finally, BFR tackled the problem of reduced food availability by leveraging its contacts with local farms. BFR used COVID-19 relief funding to buy directly from small farms that experienced supply-chain disruptions. This shift helped mitigate agricultural losses and provide a healthy food source to BFR. Daniel of Harvest of Hope wishes that donating food were more built into "the corporate plan" of general food production and distribution, suggesting that the pipeline should be made much easier for farmers and other producers to donate their excess food.

The social and environmental resilience of food systems has been put to the test during a rapidly evolving pandemic. While community-based food distribution programs have pivoted their operational logistics, forged partnerships and thus drawn from and/or grown their adaptive capacity, the program representatives voice hope and remaining concerns about food access as a result of the ongoing pandemic:

> There's been a much greater willingness to access food pantries. I've also appreciated that the pandemic has shone a light on the need for healthy food, so food became such an elevated conversation. That makes it a little bit more at the forefront of people's minds because you're talking about food and shelter. … Those are the two biggies that you have to talk about when you're in a pandemic or even generally. So it's allowed food to … become a bigger issue. (Jeff of SAME Café)

Cameron at BFR raised critical questions about how the urgency of the pandemic has catalyzed the reduction of barriers to food access (for instance via decentralized distribution, home food deliveries, and new organizational partnerships), asking, "What does it look like doing this work outside of urgency?" Which changes will remain? Our findings point out that the pandemic at once highlighted the ongoing and chronic food insecurity in the U.S., while simultaneously mobilizing and deepening the capacities of community-rooted emergency food distribution programs. When the

pandemic is less in the forefront, how can community-led work still seriously engage with the urgency of chronic barriers to equitable access?

Discussion

The most essential shifts adopted by emergency food distribution programs were mobilizing collective and community support, adapting logistical operations, and forging new partnerships. We characterize these three thematic areas as "pandemic pivots" that have successfully addressed the growing need and dynamic conditions of the pandemic. Through their smaller scale and flexible and decentralized structures, the emergency food distribution programs in Boulder and Denver were able to quickly and safely adjust their modes of getting food into the hands of those in need, and for some, at a faster pace than federal or state aid. These pandemic pivots were feasible for the five programs investigated because they centered on adaptive capacities already present in their responsive and community-rooted structures. From making take-out boxes, to working with local farms looking for a market to sell produce, several emergency food distribution programs could make critical decisions about logistical procedures based on their flexible and decentralized operational structure. In terms of social support and networks, we noted that they mobilized collective organizational and community resources and partnered with other agencies to address common challenges and share resources. Finally, the aspect of building community, emphasized by several respondents, demonstrated how a community-oriented food distribution program can not only address short-term needs, but invest in longer-term relationships and human capital. The community-building aspect of growing food together, as referenced by Lori from DUG, exemplifies this process.

Our findings call attention to how community-based emergency food distribution programs were able to draw from, and deepen, existing adaptive capacity. This echoes the cyclical nature of adaptive capacity conceptualized by Magis (2010), who highlights that by engaging with existing resources, community organizations can also build capacity for future resilience. For example, based on their long-standing roots in the community, SAME Café, BFR, DUG, Grow Local, and Harvest of Hope could quickly mobilize resources of time, labor, and financial resources. At the same time, by engaging volunteer time and resources, the programs forged meaningful (re)connections with volunteers toward ongoing engagement. The attentive and community-engaged responses demonstrated through the emergency assistance programs' pandemic pivots directly relate to the key role of participatory processes in building community resilience, as forwarded by Berkes and Ross (2013).

Recent works in this journal (Azizi Fardkhales & Lincoln, 2021; Harden et al., 2021) resonate with some of our findings about the positive role of decentralized food systems and social networking in resilient community-based food systems. We similarly found decentralized food distribution to be efficient at quickly pivoting to address emergent and dynamic needs. Staff and volunteers were able to make autonomous decisions about specific distribution sites relevant to the conditions and demands of their local contexts. Having a decentralized structure of distribution to advance horizontal structures of power is a central mission of BFR's No Cost Grocery Programs. By actively combating the stigma of food assistance by placing participants as collaborators and co-designers of its distribution model, BFR was able to engage with participants themselves about what was needed and what might work better. Through mutually beneficial visioning on a strategic action plan, and by collecting feedback on what was working or not working about pandemic food distribution, BFR could not only incorporate practical changes in response to shifting conditions, but furthermore strengthen social learning processes. Thus, as opposed to a reactive approach to shocks, BFR is building these opportunities to foster learning and participation, simultaneously strengthening adaptive capacity for future (and ongoing) crises. Cretney (2014) argues that "resilience can be articulated and practiced in a way that expresses transformative, alternative counter-neoliberal discourses of self, community and society" (p. 635). Aspects of adaptive capacity that center collective resources, more equitable power structures, and networking among organizations reflect an ethics of collaboration. Contrary to discourses of charity prevalent in many circles of

emergency food programming (de Souza, 2019; Poppendieck, 1999), our study of community-based emergency food distribution programs shows that they articulate and practice the counter-neoliberal discourses of self and community forwarded by Cretney (2014) above. They commit to expanding food access as a right for all, without strings or conditionalities attached, as a collaborative effort. In this way, our case studies reflect Cloke et al.'s (2016) finding that emergency food distribution programs can demonstrate ethics of care, collaboration, and possibility.

This characterization of emergency food distribution as places of possibility and transformation is complex. As Cameron from BFR noted, "Ideally, we transform the food system so that there is no need for us to redistribute food. But how invested are most [charitable] food organizations in this outcome? It's tricky" (Cameron). Their comment reflects an ongoing challenge of nonprofit organizations that exist only in the framework of ongoing food insecurity. A further challenge in discussing the resilience of community-based emergency food distribution programs is unknown aspects related to prolonged food insecurity and financial stresses of COVID-19. As expressed by representatives in the findings, at times the same elements that foster resilience (for example, drawing from volunteer support, or having flexible operations) lead to uncertainty. Will collectively mobilized resources, including human resources, tire? How can programs plan successfully when they are reliant on a potentially fluctuating volunteer labor force and an uncertain financial base? In addition, the ability to pivot food distribution models also came with some sacrifice of client choice. The unknown elements about the pandemic make it difficult to make definitive claims about the resilience of these programs and points us back to the importance of the "situated resilience" framework (Cote & Nightingale, 2012). By understanding the specific dynamics of these five emergency food distribution programs, we have highlighted the adaptive capacities that have been critical for meeting the increased needs of their clients to date. As opposed to forwarding an abstract metric of resilience for all programs, such as flexibility, we simultaneously recognize that the same quality that fosters adaptive capacity can have limitations or tradeoffs. However, our findings do support previous research that emphasizes how fostering social learning, building flexibility into organizational infrastructure, and committing to collaboration can support resilience in communities (Berkes & Ross, 2013; Magis, 2010; Pingali et al., 2005).

We encourage future research on how other factors, including geographic factors and size and type of emergency food distribution program affect the strengthening of adaptive capacities in specific places. We also recognize that our study only included one representative from each program and did not center food-insecure participants and their assessment of the success and limitations of these food distribution programs' responses. Knowing how and for whom emergency food distribution provides benefits is a key piece of the puzzle.

Conclusion

Whereas the pandemic has laid bare numerous injustices in our food systems, it has also brought emergency food distribution infrastructure into the spotlight. From the support of volunteers and new partnerships, to flexible and decentralized food distribution models, programs in Boulder and Denver have pivoted their models to meet and respond to shifting conditions and community needs during COVID-19. Aspects of community resilience literature emphasize the role of social support and networks, along with physical infrastructure and an adaptive capacity, to learn and change in response to dynamic conditions (Berkes & Ross, 2013; Magis, 2010). In our research, we found that the degree to which emergency food distribution programs could shift and react was directly related to their deep roots in community, their ability to forge partnerships, and their existing organizational structures that facilitated appropriate and time-sensitive decision-making.

That said, any discussion of lasting food justice and social-ecological resilience requires serious attention to political and economic investments in community food systems more broadly, and not just emergency food distribution. Food insecurity cannot be addressed through emergency food distribution programs alone, as the root causes of structural inequality and racism must be considered

as key factors in a food system in which food insecurity has become so widespread. We nonetheless argue that greater attention to emergency food distribution programs, and what their organizational assets and community-rootedness might teach us, holds implications for community resilience literature more broadly in terms of how food programs can draw from and deepen their adaptive capacity in uncertain and dynamic times. As the demand for meeting the urgent need for food access has only increased throughout the course of the COVID-19 pandemic, we recognize that emergency food distribution continues to play an important role in the food provisioning of millions of Americans. If, at the same time, emergency food programs can foster participatory learning, community-building, and adaptive capacities in addition to distributing food, then they indeed fill an overlooked role for building community food system resilience.

In addition, while we have emphasized positive ways the emergency food distribution programs in our study have been able to adapt, we caution against romanticizing either "the local" or "community"; while some community-based emergency food distribution programs can be resilient in a socially and environmentally just way, they are not *inherently* so just because they are "local" or "community-based" (Born & Purcell, 2006). This is why we underscore the importance of a place-based, qualitative approach to understand how food distribution programs are situated within their socio-spatial context and the specific challenges (and opportunities) they may encounter.

While COVID-19 has highlighted the need for adaptive food systems, we urge more critical scholarship to consider resilience as a concept that means more than simply bouncing back. Reflexive, responsive, and democratic food systems, supported with both physical and social capital, are well situated for our dynamic world. But what is more, we must begin thinking about disruptions and food system pivots as opportunities for transformation. Attention to the possibilities of care and mutual aid in community-based emergency food distribution programs may provide clues to what those fair futures look like.

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