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SHAREHOLDER COMMENTARY

Impact of COVID-19 on Pennsylvania farm revenue: Looking back at the 2020 season

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Abstract

Initial forecasts predicted severe financial losses for small and midsized farmers as the COVID-19 pandemic disrupted usual market channels nationwide. Early reports both confirmed and challenged these fears, as some farmers could not find new markets while others established or expanded their direct-to-consumer sales to replace their lost outlets. To understand the impact of the pandemic on Pennsylvania farmers across the entire 2020 growing season, Chatham University and Pasa Sustainable Agriculture[1] surveyed farmers and performed interviews with a subset of these farmers. The anonymous

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[1] Pasa Sustainable Agriculture is a nonprofit organization that provides training, research, and technical services to farmers in Pennsylvania and throughout the mid-Atlantic region. See more at https://pasafarming.org/

survey was distributed by Pennsylvania-based farm organizations to their constituents, predominantly through email. Just under half the farmers (42%) reported a loss of revenue, while over half (58%) reported either no change or an increase in revenue in 2020. The scale of these changes varied greatly. We also found that vegetable farmers fared slightly better than livestock/eggs/dairy farmers; those with a higher pre-COVID revenue did better than those with a lower pre-COVID revenue; and farms that were able to increase direct-to-consumer sales maintained or increased their total revenues. Participation in state and federal relief programs varied and appeared to have no significant effect on farmers' final 2020 revenue. Farmers' responses to the open-ended survey questions demonstrated that the weather, a lack of infrastructure to support small and midsized producers, and consumers' lack of support for a regional food system were major challenges before COVID. Without meaningful policy changes, these challenges will persist beyond the pandemic's resolution.

Keywords
COVID-19, Pandemic, Agriculture, Regional Food Systems, Relief Programs, Direct to Consumer, Adaptation

Introduction

According to national headlines, the COVID-19 pandemic wreaked havoc on farmers during the 2020 season. However, this picture is not the full story, as many farmers made successful adaptations during the height of the pandemic by increasing direct-to-consumer (DTC) sales. For example, in South Carolina, COVID-19 triggered an increase in demand for local meats (Richards & Vassalos, 2021), and media outlets nationwide reported that CSA memberships were booming and replacing lost revenue for some farmers early in the pandemic (Ricker & Kardas-Nelson, 2020; Shilton, 2020; Westervelt, 2020). The USDA's Economic Research Service (ERS) review of 2020 confirmed an 11.1% increase in spending by consumers on direct purchases from farmers, manufacturers, and wholesalers (Zeballos & Sinclair, 2021). On the other hand, COVID-19 added to serious pre-existing issues faced by farmers. As USDA Chief Economist Robert Johansson (2021) argued, farmers were already going through financial hardships due to the challenges posed by a global food system focused on large-scale suppliers and the worsening effects of climate change when the pandemic added new challenges.

This commentary summarizes results from a full-year retrospective survey of the effects of COVID-19 on farm finances, the success of any adaptation measures, and the impacts of federal, state, and local relief funds. Our research team includes faculty from Chatham University and staff from the Pasa Sustainable Agriculture, a nonprofit that provides training and technical support for Pennsylvania farmers. We hope that these findings will be useful in informing policies, programs, and initiatives to support and protect farmers in the face of continuing and future major disruptions. A full report of our findings will be published at a later date.

Methods

Pennsylvania (PA) is home to over 53,000 farms and is a national leader in a range of agricultural products and DTC sales. The link to an anonymous survey was emailed between February and March 2021 to over 20,000 farmers by 11 farm-related organizations, including the PA Farm Bureau and Pasa Sustainable Agriculture. Additionally, Chatham University's postal service mailed paper surveys to 200 farmers in February. Surveys were accepted through April 26, 2021. Responses from 318 farmer owner-operators from across all regions of PA met our inclusion criteria of having a farm located in Pennsylvania and meeting the USDA (2021) definition of a farm (US$1,000 or more of agricultural products were produced and sold, or normally would have been sold, during the year). Figure 1 reflects the survey respondents' predominant output.

Results

Farmers' responses to our survey reveal a mixed picture of the impacts of COVID-19 on Pennsylvania farm revenues in 2020. Less than half of farmers (42%) reported a negative revenue change, 37% a positive change, and 21% no change in revenue due to the pandemic compared to previous years. This data was self-reported and based on the farmers' estimate of their farm revenue during 2020. The degree of the negative and positive financial impact varied greatly, as shown in Table 1.

Figure 1. Predominant Farm Output of Surveyed Pennsylvania Farmers

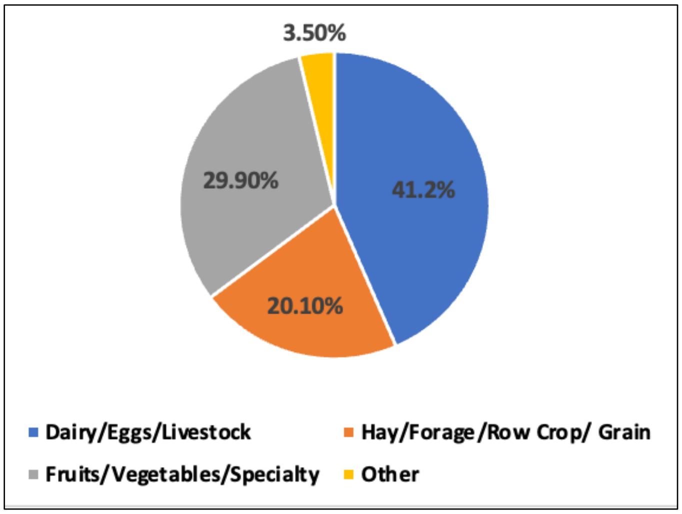


Table 1. Farmer-Estimated Change of Revenue in 2020 Due to the COVID-19 Pandemic

	Frequency [a]	Percent
>50% loss	27	9.1%
26–50% loss	18	6.0%
11–25% loss	51	17.1%
1–10% loss	29	9.7%
No change	63	21.1%
1–10% increase	54	18.1%
11–25% increase	34	11.4%
26–50% increase	17	5.7%
>50% increase	5	1.7%
Total	**298**	**100.0%**

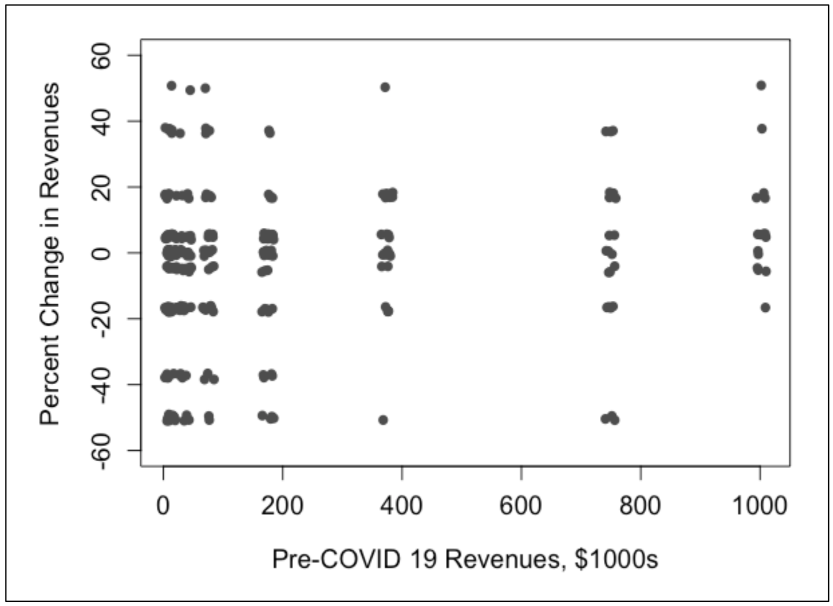
[a] 298 farmers of the total 318 survey participants responded to this question.

Several farm characteristics appeared to influence financial outcomes significantly. The fruit/vegetable/specialty farmers fared better than the livestock/eggs/dairy farmers, with the former reporting on average "no change" in revenue, and the latter reporting a 1–10% revenue loss (p=.006). Additionally, Figure 2 shows that farmers who reported lower pre-COVID revenue were slightly more likely to report a COVID-related loss of revenue (p=.003).

DTC sales such as through community supported agriculture (CSA), farmers markets, and/or on-farm sales positively supported revenue during the pandemic. Farmers who did ***no*** DTC sales reported significantly greater losses than those who maintained or increased their DTC sales (p<.001). Similarly, farmers who enhanced two or more online promotion practices, such as a business website, marketing emails, Facebook page, or Twitter, reported a significantly higher gain than those who made no enhancements (p=.020). Farmers also highlighted DTC sales in an open-ended question about their plans. One farmer responded, "Hoping to sell more freezer beef direct to the consumer." Another noted, "Working to increase yield for pick your own in anticipation of another year of strong demand." Another farmer's comment summed up many views about the future: "More direct to consumer sales and marketing."

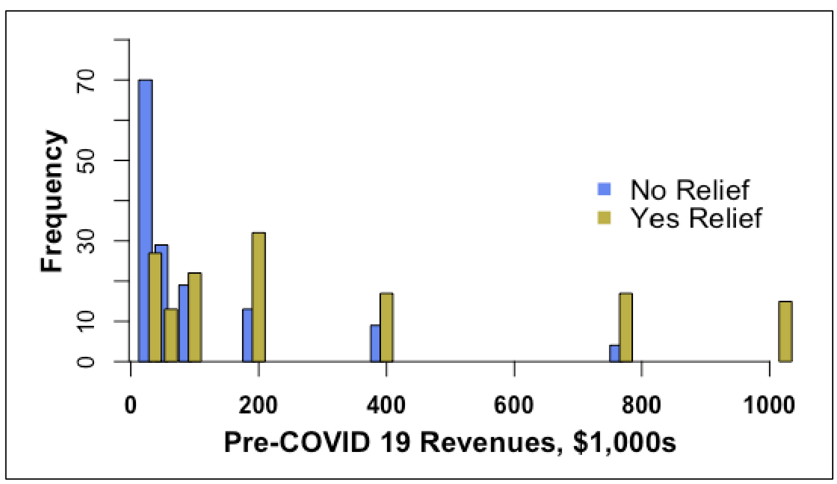
In an effort to lessen the pandemic's financial impact on farmers, the federal government, as well as state and local entities, offered a variety of relief programs. Of the 299 farmers who responded to the survey's relief-program question, almost one-half (*n*=147, 49%) participated, and slightly more than one-half (*n*=152, 51%) did not. More than a quarter (29%) of relief program participants participated in two or more programs. The Coronavirus Food Assistance Program's (CFAP) Farmer to Family Food Box Program (FFFBP) had the most participation (50 farmers); the Payroll Protection Program had 39, the Small Business Administration program had 12, and the Economic Injury Disaster Loan had nine. Eighteen other relief programs had between one and four farmers participating. The FFFBP prioritized small and midsized farms in funding Rounds 1 and 2, and larger farms in Rounds 3 and 4 (Broad Leib et al., 2021). Many of the farmers specified Rounds 1 and 2 when reporting CFAP relief. The Carolina Farm Stewardship Association conducted a similar survey in April to early May 2020 (before CFAP was offered) and concluded that relief funding did not serve local producers and instead was geared to higher-volume commodity farmers (McReynolds, 2020). Our survey found a significant difference between relief program participation and pre-COVID revenue. As shown in Figure 3, farmers who reported a

Figure 2. Correlation Between Typical Pre–COVID- 19 Annual Revenues and Percent Change in Annual Revenues for 2020 [a]



[a] While data are displayed on continuous axes for ease of interpretation, our survey presented farmers with response options corresponding to ranges of pre–COVID-19 revenues from US$1,000 to over US$1,000,000 and percent change in revenues from >50% loss to >50% increase. Farms are plotted at the midpoint of their range groups, with some random jitter added to help differentiate individual farms.

Figure 3. Typical Pre–COVID-19 Annual Revenues for Pennsylvania Farms that Received Federal Relief Funds and Farms That Did Not [a]



[a] While revenue data are displayed on a continuous axis for ease of interpretation, our survey presented farmers with response options corresponding to ranges of pre–COVID-19 revenues from US$1,000 to over US$1,000,000. Farms are plotted at the midpoint of their revenue range group.

higher pre-COVID revenue were significantly more likely to participate in relief programs (p<.001), while the very small farmers with revenues less than US$100,000 were more likely not to participate in relief programs.

Very small farmers may have chosen not to participate because the farm was not their primary source of income. Alternatively, as Econsult Solutions, Inc. (2021) found, small farmers had difficulty accessing public funds because they often lacked connections to loans and grant providers. In fact, 27% (n=41) of respondents who did not participate in relief stated they could not determine if they were eligible for a program. Farms that participated in relief program(s) had, on average, similar changes in revenue compared to farms that did not accept relief payments (p=.834).

Conclusion

While our survey focused on COVID-19, farmers' responses to open-ended questions demonstrated that the pandemic was far from their only challenge. The long-recognized inadequate infrastructure to support small and midscale producers hurt many farmers in our survey. For example, farmers commented about challenges with animal processing. One noted that "[I] can't get product butchered for retail, therefore can't sell at Farmer Markets." Another shared, "I don't need marketing help. I need the government [to] enable me to get my animals processed so I can sell them by the cut/pound." Climate change was a major problem: "Weather cause[d] more trouble than COVID-19. Poor weather lowered production for early-season crops. This reduce[d] sales more than COVID." Another farmer highlighted the lack of rain and explained, "Specific to Western PA, we experienced a drought during summer of 2020 that basically cut yields in half which was a double wammy [*sic*] in addition to the pandemic market disruptions."

Finally, although the pandemic's disruptions sent many consumers to their local farmers, small and midsized farmers wondered if that trend would continue post-pandemic:

> I think a lot of attention that was given to local food systems early in the pandemic has waned, which is a shame. . . . The general public needs to imagine what food resiliency in our region could look like and then use political will and purchasing power to make it happen.

While the economic results of the pandemic's first full year did not pan out as badly for some farmers as the worst predictions, several lessons from the survey stand out and can help point to useful changes in future years. DTC sales were a good solution for many vegetable and other fresh produce farmers, and therefore support for farmers to expand more of their operations to direct sales may help build resiliency for future disruptions. Relief program funds were generally accessed by farms at the scale of family-businesses (US$100,000 to US$500,000 in annual revenues) and less utilized by very small-scale farms (<US$100,000). We will further explore relief program participation in a future publication.

As noted above, the pandemic itself had a variable impact on Pennsylvania farmers in 2020 but also exposed the vulnerabilities and needs of producers that existed prior to COVID-19. Ongoing issues with extreme weather and lack of access to processing and distribution infrastructure challenged farmers pre-pandemic and, without meaningful policy actions, will continue after the pandemic ebbs.

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