12. Resilience of urban value chains during the COVID-19 pandemic: Evidence from dairy and vegetable chains in Ethiopia

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At the beginning of the COVID-19 pandemic, many researchers and international organizations voiced concerns about the resilience of food value chains amid lockdowns and border closures, particularly in low- and middle-income countries (Laborde et al. 2020; Reardon, Bellemare, and Zilberman 2020; Resnick 2020). This chapter explores the pandemic's effects on dairy and vegetable value chains in Ethiopia's capital through mid-2021. Despite early fears about the pandemic's impacts, survey data show that these urban value chains quickly rebounded after an initial period of fragility, demonstrating resilience over the research period. Amid tremendous uncertainty and market volatility, most value chain actors also indicated that the pandemic had not negatively affected their business activities.

In Ethiopia, the first detected COVID-19 case was confirmed on March 13, 2020. Just three days later, schools were closed, public gatherings and sporting activities were banned, and bars were shuttered. The government encouraged physical distancing and began major public awareness campaigns across the country. A federal state of emergency was declared on April 8, 2020. Land borders were closed, except for the transport of cargo. Facemasks were made compulsory. The government declared restrictions on local and long-distance public transportation, which included halving transport capacity. Early on, the government pledged to protect the most economically vulnerable segments of the population, and therefore lockdowns that severely restricted movement were not imposed (France-24 2020). Some administrative regions adopted stricter measures by closing restaurants and limiting movement between rural and urban areas. The state of emergency was lifted on September 6, 2020: transportation restrictions were repealed, bars reopened, and facemasks were no longer compulsory. Schools reopened on October 19, 2020.

To understand how major dairy and vegetable value chains in Ethiopia functioned amid the pandemic, we combined in-person survey data collected before the pandemic with periodic phone survey data collected during 2020 and 2021. With a focus on the main dairy and vegetable value chains connecting farmers in major production zones to consumers in Addis Ababa, we applied cascading survey approaches in which we collected data at all levels of the value chain (including farmers, wholesalers, and urban retailers). Pre-pandemic interviews with vegetable value chain actors were conducted in person in February 2020 and with dairy value chain actors in February 2018. Follow-up phone surveys for the vegetable value chain took place in May 2020, March 2021, and August 2021, while follow-up phone surveys for the dairy value chain were conducted in June and September 2021.

Between March and May 2020, we also conducted informal and non-representative rapid assessments of the situation in both value chains by interviewing key stakeholders, including small-scale farmers, large-scale investors, brokers, processors, agro-input dealers, and extension agents.

Signs of fragility at the onset of the pandemic

Our rapid assessment with the vegetable value chain actors in the first weeks of the pandemic revealed worrisome signs of disruption (Tamru, Hirvonen, and Minten 2020). Demand for fruit and vegetables in Addis Ababa was declining, partly driven by a fear that COVID-19 infections were linked to the consumption of raw vegetables. Because of confusion around the imposed travel restrictions and fears of contracting the virus, traders were less willing to travel to production areas. At the farm level, producer prices were declining but farm inputs were unavailable, or their prices were on the rise, indicating a double blow for the vegetable farmers. In the dairy value chain, the apparent negative impacts of the pandemic were more moderate (Tesfaye, Habte, and Minten 2020), possibly because the rapid assessment took place somewhat later, about two months into the pandemic. As with the demand for fruits and vegetables, urban demand for liquid milk declined, in part because of the misperception that milk consumption was associated with an increased risk of COVID-19 infection. Retailers reported an increase in powdered milk sales as consumers believed that the processed product was less risky than liquid milk.

Signs of rebound a few months into the pandemic

Our vegetable value chain survey in May 2020 focused on changes in prices and marketing margins since February 2020 (Hirvonen, Mohammed, Minten, and Tamru 2021).[1] During this period, we documented large and heterogeneous changes in retail prices for different vegetables. For most vegetables, these changes were driven by fluctuations in farmgate prices, leading to winners and losers among local vegetable farmers due to pandemic-related international and regional trade disruptions. While traders and retailers reported substantial hurdles in domestic trade, increases in marketing margins or transportation costs were not the major contributors to overall changes in retail prices. In fact, the marketing margins declined for half of the vegetables that we studied. In contrast to the widespread fears at the onset of the pandemic, these findings indicated relatively high short-term resilience for domestic value chains during the early months of the pandemic in Ethiopia.

One year into the pandemic: Resilience amid high uncertainty

Data from our extensive phone survey, which was conducted more than one year after Ethiopia's first recorded COVID-19 case, suggest that the disruption caused by the pandemic had minimal impacts on the urban (Addis Ababa) vegetable and dairy value chains in Ethiopia (Hirvonen, Habate et al. 2021; Hirvonen, Mohammed, Tamru et al. 2021).

1 No assessment of the short-term impacts of the dairy value chain was done. We therefore limit our discussion to the vegetable value chain.

In the vegetable value chain, access to credit, labor, and extension services did not markedly change for vegetable farmers between February 2020 and March 2021. The main concern for vegetable farmers was the soaring price of key inputs, with prices of fertilizers and agrochemicals increasing by more than 40 percent in just 12 months.

Among many other pandemic-related policy adjustments, the wholesale vegetable market was relocated from a crowded area in the center of Addis Ababa to the city's outskirts to reduce spread of the virus. Most wholesale traders felt that while the pandemic itself had a limited effect on their business activity, the relocation of the wholesale market had a considerably larger negative impact. Most wholesale traders reported trading fewer vegetables and having fewer clients than in February 2020. Nearly all wholesale traders blamed the decline in sales and clientele on the relocation of the wholesale vegetable market. Many of the urban vegetable retailers reported also being negatively affected by the relocation of the wholesale market. In March 2021, nearly two-thirds of retailers reported that there were fewer transport choices from wholesale markets than in February 2020. Nearly 80 percent of retailers who reported a decrease in transport availability said that the change was due to the relocation of the wholesale market, while 19 percent said it was due to the COVID-19 pandemic.

Using three rounds of vegetable price data collected at all levels of the value chain, we further document considerable volatility in vegetable prices and marketing margins. For instance, onion prices soared during the first months of the pandemic when imports from other regions of Ethiopia and from Sudan were halted. Encouraged by these price increases, many farmers began allocating more land to onions. This, together with the closure of major markets due to instability and conflict in some parts of the country, led to a considerable oversupply of onions in Addis Ababa. In turn, this oversupply resulted in a sizable decline in farmgate and final consumer prices between May 2020 and February 2021. Combined with increasing input costs, the decline in onion prices likely led to considerable losses among farmers.

In the case of the dairy value chain, sales patterns and sales destinations (farms, collection centers, markets, and others) among dairy farmers remained similar between 2018 and 2021. Evidence suggests modest declines in credit availability and access to extension services. The availability of daily workers also decreased, although hiring external help is relatively uncommon among dairy farmers. The main concern for dairy farmers was the soaring price of feed, which nearly doubled between February 2020 and June 2021.

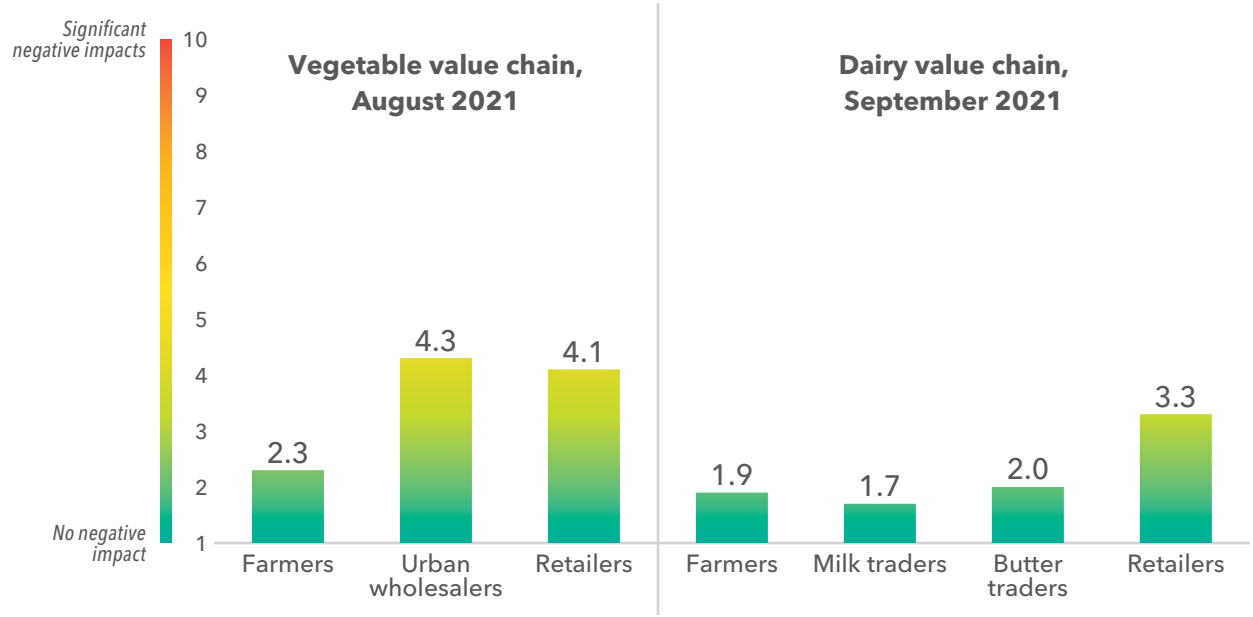
At the wholesale level, there were no dramatic changes in dairy procurement and sales destinations between 2018 and 2021. Traders reported that competition in their sector had increased since February 2020. The availability of labor at the midstream segment of the value chain remained the same over the 2018–2021 period. A comparison of the data collected in 2018 and 2021 reveals that the quantities traded in the dairy retail sector increased. However, when traders were asked to compare their current situation to the period just before the pandemic began, most reported selling less and having fewer clients. There is little change in labor use at the retail level across the survey period.

In line with high general inflation in Ethiopia over the last three years, prices of liquid milk increased considerably during this time. However, when expressed in US dollars, prices of milk have remained surprisingly stable (US$0.92 /liter in 2018 and US$0.91/liter in 2021). A comparison of the farmgate and retail prices reveals that the farm share (that is, the share of the final retail price received by the

farmer) increased slightly between 2018 and 2021. Compared to 2018, there is more quality testing of milk along the value chain. However, there is no evidence that quality testing has increased post-harvest losses. The physical quantities wasted appear to be very low, in line with the analysis conducted by Minten, Tamru, and Reardon (2020). If anything, losses at the wholesale and retail levels have declined during the pandemic. However, it is important to note that we did not assess losses in terms of value or quality. It is an encouraging sign that the testing of milk quality with lactometers and alcohol tests has become more common since 2018, particularly in the mid- and downstream segments of the dairy value chain.

Overall, it is unclear whether the changes documented in both value chains are linked to the pandemic. For example, our qualitative interviews with key stakeholders in the vegetable value chain in 2019 revealed that the industry was characterized by considerable volatility before the pandemic. Moreover, when value chain actors were asked in 2021 to rate the seriousness of the COVID-19 pandemic for their businesses on a scale of 1 to 10 (with "1" indicating no negative effect and "10" indicating significant negative effects), actors from both chains responded with an average rating of less than 5, with farmers being the least concerned about the pandemic (Figure 1). However, value chains may have been indirectly affected by pandemic-related changes, such as through the relocation of market centers and disruptions in regional and international trade due to COVID-19, with the latter contributing to observed increases in input costs (Baffes and Koh 2021).

FIGURE 1 Negative effects of the COVID-19 pandemic on farming and trading activities, as reported by value chain actors



Note: Respondents were asked to report, on a scale of 1 to 10 ("1" indicating no negative impact and "10" indicating significant negative impacts), how much the COVID-19 pandemic was currently affecting their farming or trading activities.

Conclusions

The disruptions caused by the COVID-19 pandemic in these important food value chains in Ethiopia were relatively short-term. By May 2020, the main vegetable value chain supplying consumers in Addis Ababa was already functioning relatively well. In mid-2021, the impacts of the pandemic on both dairy and vegetable value chains were minimal. These findings are corroborated by results from a representative longitudinal survey conducted by IFPRI in Addis Ababa before and during the pandemic. This study did not document any negative changes in levels of household food consumption and indicators of dietary diversity (Hirvonen, de Brauw, and Abate 2021), indicating that food value chains in urban Ethiopia have been remarkably resilient to the pandemic.

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