

STUDY OF THE THE IMPACT OF THE COVID-19 SHOCKS ON CROP PRODUCTIVITY

Avtar Singh¹, Ramandeep Kaur²
^{1,2}Guru Kashi University, Talwandi Sabo

ABSTRACT

Reporting on the first effects of actions made to restrict COVID-19 on Myanmar's agri-food sector is the primary goal here. Burma is one of several Southeast Asian low-income nations where agriculture still plays a significant role in rural livelihoods, and where food costs are a major factor in determining nutrition security for poor urban and rural households. When COVID19 disrupted tourism and manufacturing, the economic impact on the agri-food sector was less clear and frequently indirect to policymakers. This resulted in the government's initial fiscal reaction to COVID-19 being given to the rural sector at a relatively minimal percentage. A wide range of stakeholders in the agri-food system, including agricultural input suppliers, mechanisation service providers, farmers, commodities dealers, millers, food merchants, and consumers, were surveyed in order to close the knowledge gap. Before and during the primary agricultural production season, which began immediately after countrywide COVID-19 preventative measures were introduced in April, surveys were repeated at regular intervals. Resilience to early disruptions appears to be strong in the agricultural and food systems, but the high level of financial stress experienced by many individuals and agricultural and food system firms suggests that full recovery will take some time. Agri-food systems and the families that rely on them can benefit from the lessons learned from this experience.

Keywords: COVID-19, Myanmar, Agri-food system, Phone surveys, Rural livelihoods, Food security

I. Introduction

The agricultural industry in Myanmar is highly varied, but its productivity is low. The agri-food sector as a whole employs around half the population and provides about a third of GDP, 23% in farming and another 11% in input distribution, agro-processing, trading, and retailing. While Myanmar's economy was booming before to the COVID-19 meeting, it faced a number of concerns, including climate change, the legacy of restrictive economic policies, long-term military conflict, and the unpredictable policies of surrounding nations (especially China and India). Agricultural diversification and improvement, competitive value chains, and safe food systems are all part of Myanmar's hybrid military/democratic government's 2016 agricultural development agenda (Huss, et al. 2021). Cheap labour and incentives for investment sparked a boom in urban population development, which in turn spurred rural wages and agricultural expansion as a result of foreign migration.

As early as the first confirmed case of COVID-19 in March 2020, the virus had already caused major disruptions, including the closure of Chinese border trade in late January, a drop in international tourist numbers, and the closing of factories in February due to a lack of imported raw materials and a flight of capital from the country. Only a few hundred cases were reported in Myanmar prior to August. 1 Economic implications were expedited by the government's swift and harsh response to COVID-19's threat. After a three-

week shutdown in April, the government blocked all international crossings and enforced a three-week lockdown. According to macroeconomic simulations, the measures would reduce economic production by 40 percent and result in the loss of jobs for about 5 million people (Wang, et al. 2020). After that, limitations on internal mobility were somewhat eased, but schools remained closed and public health measures such as limits on the size of gatherings, industrial inspections, enforced use of face masks, and prohibitions on foreign access remained in effect. The more restrictive COVID-19 regulations were also reinstated after a second wave of illnesses hit in September, sometimes with additional limitations, notably on transit between different states/regions.

II. Methods and data

In the second quarter of 2020, we devised a series of panel phone polls to track the effects of the COVID-19 situation. Upstream agricultural enterprises (mechanisation service providers and merchants, and farm input suppliers), rural and non-farm families, commodities dealers, as well as urban consumers, are all included in phone polls. As a result, each phone survey was structured to be a panel, albeit occasionally imbalanced (Swinnen, & Vos, 2021). There are a few drawbacks to the surveys that should be noted. Time restrictions necessitated opportunistic approaches to sample because phone numbers from prior polls were readily available. Because of this, they aren't always representative of the regions or actors in the food system they are meant to represent (though many surveys have samples that are relatively large in comparison to the target population). More than three-quarters of Myanmar's agricultural output comes from the delta and central dry zone, where the samples are drawn. Since the surveys don't cover the mountainous parts of Myanmar, Rakhine in the west, or the southeast, it's not surprising that they don't include these regions. In the year 2021, Laborde and colleagues (et al.) Many of the surveys were not finished at the time of this writing; so, our findings are based on data from the second and third quarters of 2020, when the interruptions took occurred. Attrition and non-response (which might contribute to some bias, although these were not so widespread as to be of considerable concern) and the necessity for brief survey instruments and very basic question designs are also to be mentioned as technical constraints of phone surveys.

III. Agricultural production and rural economies

An urban and rural community survey was used to gather data on the impact of COVID-19 on rural families. Respondents were questioned about their opinions of what is going on in their communities in 85 urban districts and 223 rural villages, which covers roughly half of the 356 Myanmar townships. What questions did the survey ask about?

1. Remittances, farming, non-farm enterprises, farm and non-farm wage jobs, and the influence on rural income streams.
2. Specific effects on agriculture output and sales of COVID-19 mitigating measures; and
3. The ability to cope in different ways. Topics addressed in this study were COVID-19 preventative strategies, poverty and food insecurity, use of social safety nets and other types of aid and exposure to a variety of stressors.

IV. Agricultural marketing and trade

Crop merchants are an important link in the food supply chain in Myanmar, acting as a go-between for farmers and traders. Traders from the post-monsoon agricultural market in Myanmar were surveyed by phone to learn how COVID-19 policy responses influenced the sale of post-monsoon crops (Cariappa, et al. 2021). Restrictions on transportation meant to protect farmers' crops from being sold or bought, as well as more precise information on commercial operations, such as agricultural trading and the amount of credit available to farmers, were among the topics covered in a poll. We drew on lists of agricultural dealers gathered during two in-person value chain studies in 2017/18 to choose our traders. We adopted a panel design and phoned the same crop dealers three times at one-month intervals to track changes in agricultural trading activity and identify the evolving disruptions caused by transportation limitations.

V. Food retail

An additional small-scale food vendor survey was done in the same districts/villages as the rural and urban community survey was completed (Ni, et al. 2020). A survey of food vendors was conducted to gather information regarding the impact of the recent floods on their businesses, as well as changes in customer behaviour, changes in availability and pricing for representative food products in a variety of food groups.

VI. Results and discussion

Impact on upstream agribusiness

Restrictions on COVID-19 transportation greatly restricted MSP activities in terms of both geographical region and timeframe. 90 percent of MSPs were confined within the village tract and township in June. Similar restrictions applied to more than 40% of equipment merchants (including more than 50% of independent businesses). More than 10% of MSPs said that COVID limits had a direct impact on land preparation efforts, particularly in the Delta area. A quarter to a third of MSPs and more than a third of equipment merchants reported a reduction in the availability of machines and spare parts or attachments in May and June because of transportation restrictions (Meuwissen, et al. 2021). A variety of outcomes might be expected as a result of these interruptions. Travel restrictions had been eased and equipment shortages had been decreased for most responders by mid-2020, but a rising number of emergency rooms (ERs) predicted lower revenue in 2020 than in 2019. About two-thirds of MSPs and equipment dealers predicted that their revenues will be lower in 2020 than in 2019, with considerable proportions (20–30 percent) forecasting revenue decreases of more than 10 percent. Although solid data on this has not yet been made public, there are no signs that these interruptions have had a substantial impact on the production of critical crops in the 2020 monsoon season. As enforcement of the limitations loosened in certain places and farmers and supply chains adapted to the new environment, the disruptions caused by transportation restrictions diminished over time. Even in late July, 38 percent of our sample reported difficulties in collecting payments for credit-based inputs. Input retailers may be more reluctant to supply inputs on credit in the future and may have difficulty repaying their own loans if repayment rates are low and revenues are poor.

Impact on farming and the rural non-farm economy

According to the results of the community poll, agriculture is experiencing large and widespread disruptions as a result of both production disruptions (perhaps due to poor weather) and marketing disruptions in agriculture (mainly from COVID-19). According to the results of a community poll, agricultural yield was lower than average because of delayed rains, low total rainfall, and inadequate irrigation water. Pest concerns are also mentioned by almost a third of the communities. Farmers have a considerably greater difficulty selling their agricultural products than previously thought. In the lead-up to the monsoon season, traders were hampered by travel restrictions on a national and local level, as well as the closure of major marketplaces. Jjj's (forthcoming) findings that 68% of farmers in their irrigated region Dry Zone sample had difficulty selling their produce because of COVID-19 are in line with our findings. 32 percent of those experiencing difficulties had difficulty locating dealers to whom they could sell, 28 percent were hampered by market closures, 27 percent were hindered by mobility limitations, and 25 percent were unable to locate enough transportation to marketplaces. 39 percent of the farmers surveyed said they had difficulty selling their agricultural products because of decreasing commodity prices (Beckman, & Countryman, 2021). Thirty-four percent of farmers also predicted that COVID-19 would cause further difficulties in selling their crops. Rural community members who took part in the poll acknowledged that these problems are widespread: Farmer sales have become increasingly difficult due to low production prices and COVID-19-related limitations on movement, as well as a lack of dealers and brokers who are willing to buy.

Impact on agricultural commodity traders

Farmer-to-farmer loans are common in Myanmar, where crop dealers are mostly engaged in specialising in agricultural commodity arbitrage. Both of these responsibilities were impeded by the COVID-19 policy responses to our sample of agricultural dealers. The COVID-19 dilemma was recognised by more than half of agricultural dealers as one of their two most significant challenges. At the end of May, 56 percent of traders reported problems with the sale or purchase of crops, while 47 percent reported problems with the purchase of crops. Lower crop prices were highlighted by 56% of those polled as one of the two biggest issues they faced during the crisis, coupled with restricted exports as a result of border restrictions on land.

VII. Conclusions

Numerous phone polls conducted across the Myanmar agri-food system reveal that the disruptions caused by COVID-19 have had serious economic consequences for farm and agricultural labour reliant households, agribusiness firms, and rural and urban customers. All of these factors have taken their toll on the agriculture and food supply chain: supply interruptions owing to movement limitations; local and foreign demand shock; and financial constraints. Farm households cut down on investment in monsoon season crop production as a result of decreased crop prices and income losses, which had a ripple impact on agricultural input and mechanisation service providers (Elleby, et al. 2020). It is possible that the agri-food system will have a protracted recovery phase, despite the fact that it appears to be able to adjust to disturbance in the near term. In the case of another natural disaster, the agri-food system in Myanmar can benefit from three crucial lessons. Agricultural inputs, services, and products must be permitted to circulate freely while maintaining sufficient COVID-19 preventive measures. Second, to avoid agricultural activities and service supply from being

disrupted, more financial liquidity and flexible terms should be made available to farmers and enterprises. In order to avoid severe food insecurity and malnutrition in poor households, extra social protection may be necessary. This means that the government's budgetary allocation to social protection will increase. If mobile payment coverage is increased, this new social protection will be timely. When there is a crisis in the food system, it is important to have the ability to monitor and analyse the situation quickly so that fiscal resources may be allocated in a way that minimises economic and welfare repercussions.

VIII. References

Beckman, J., & Countryman, A. M. (2021). The Importance of Agriculture in the Economy: Impacts from COVID-19. *American journal of agricultural economics*, 103(5), 1595-1611.

Cariappa, A. A., Acharya, K. K., Adhav, C. A., Sendhil, R., & Ramasundaram, P. (2021). Impact of COVID-19 on the Indian agricultural system: A 10-point strategy for post-pandemic recovery. *Outlook on Agriculture*, 50(1), 26-33.

Elleby, C., Domínguez, I. P., Adenauer, M., & Genovese, G. (2020). Impacts of the COVID-19 pandemic on the global agricultural markets. *Environmental and Resource Economics*, 76(4), 1067-1079.

Huss, M., Brander, M., Kassie, M., Ehlert, U., & Bernauer, T. (2021). Improved storage mitigates vulnerability to food-supply shocks in smallholder agriculture during the COVID-19 pandemic. *Global Food Security*, 28, 100468.

Laborde, D., Martin, W., & Vos, R. (2021). Impacts of COVID-19 on global poverty, food security, and diets: Insights from global model scenario analysis. *Agricultural Economics*, 52(3), 375-390.

Meuwissen, M. P., Feindt, P. H., Slijper, T., Spiegel, A., Finger, R., de Mey, Y., ...& Reidsma, P. (2021). Impact of Covid-19 on farming systems in Europe through the lens of resilience thinking. *Agricultural Systems*, 191, 103152.

Ni, Z. H. U. O., Chen, J. I., & Ding, J. Y. (2020). Pig farmers' willingness to recover their production under COVID-19 pandemic shock in China—Empirical evidence from a farm survey. *Journal of Integrative Agriculture*, 19(12), 2891-2902.

Swinnen, J., & Vos, R. (2021). COVID-19 and impacts on global food systems and household welfare: Introduction to a special issue. *Agricultural Economics*, 52(3), 365-374.

Wang, Y., Wang, J., & Wang, X. (2020). COVID-19, supply chain disruption and China's hog market: a dynamic analysis. *China Agricultural Economic Review*.

ZHOU, J. H., Fei, H. A. N., Kai, L. I., & Yu, W. A. N. G. (2020). Vegetable production under COVID-19 pandemic in China: An analysis based on the data of 526 households. *Journal of Integrative Agriculture*, 19(12), 2854-2865.