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Impacts of COVID-19 on Myanmar's Agri-Food System

Evidence base and policy implications

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EXECUTIVE SUMMARY

Between April and October 2020, the International Food Policy Research Institute (IFPRI) and Michigan State University (MSU), with support from the United States Agency of International Development (USAID) and the Livelihoods and Food Security Fund (LIFT), have undertaken analyses of secondary data combined with regular telephone surveys of actors at all stages of Myanmar's agri-food system in order to better understand the impacts of COVID-19 on the system.² These analyses show that the volume of agribusiness has slowed considerably in Myanmar since COVID-19 restrictions were put in place. There is lower demand from farmers for agricultural inputs and mechanization services and lower volumes of produce traded, especially exports to neighboring countries whose borders are closed. All actors in the agri-food system are facing liquidity constraints and experiencing increased difficulties in both borrowing and recovering loans.

The hardest hit segments of the agri-food system are 1) smallholder farmers and 2) low-income households in both rural and urban areas who depend on selling their labor. Low income families with newborn children are especially at risk for food and nutrition insecurity. Among a sample of 2,000 households, equally split between rural (Dry Zone) and urban (Yangon) areas:

- 75 percent of rural and 84 percent of urban households reported loss of employment and income in the past six months;
- The median decline in rural incomes was 38 percent, and half of rural households were income poor in June. The corresponding decline in urban incomes was 31 percent, with 28 percent of urban households being income poor in June.
- The highest increase in rural income poverty rates occurred among farming households, from 20 percent being poor in January to 55 percent in June. Those most at risk of falling into poverty are smallholders farming five acres or less. Such households directly support more than 5 million individuals nationally.
- The most common coping strategies used by households to manage the economic shocks associated with COVID-19 involve borrowing (48 percent of households) or using savings (31 percent). Smaller shares of households reported cutting both food and non-food expenditures or selling assets.

The increase in poverty among farmers inevitably impacts agribusinesses. Farmers are less able to purchase inputs, including hired labor. This results in their farms being less productive, reducing the volumes of produce for agribusinesses to handle.

The scale of the COVID-19 Comprehensive Economic Recovery Program (CERP) of the Government of Myanmar and the share of CERP expenditure on agriculture have been too small to offset serious economic harm to labor-dependent households in Myanmar's agri-food system or to prevent food and nutrition insecurity from increasing. By comparison, as a share of its GDP, Thailand has spent on COVID-19 relief activities four times as much as Myanmar has, equivalent to more than twenty times as much in USD terms.

To avoid transient economic shocks causing long-term economic harm and human suffering, it is essential that the scale of CERP be increased greatly in coming months. In addition to continuing programs that provide loans for agribusinesses, priorities for an expanded CERP should include:

² Reports are listed at the end of this document and can be downloaded using the Publications tab at the bottom of this webpage: <https://www.ifpri.org/program/myanmar-strategy-support-program>.

- Scale-out maternal and child cash transfer programs to achieve nationwide coverage;
- Expand employment subsidies for both rural and urban workers (employer subsidies, cash for work);
- Rehabilitate the financial condition of smallholder farmers in order to avoid a cycle of chronic indebtedness – this can be done through a combination of short-term input subsidies, flexible loan repayment conditions, freezing of interest payments on overdue loans, and repayment incentives; and
- Expand access to mobile money platforms for financial transactions, including for social protection grants and employment subsidies – doing so will increase the timeliness of payments and reduce exposure to infection among those involved.

In the short term, despite increasing numbers of COVID-19 infections, it will be important to allow movement of agricultural inputs and produce throughout the country; to ensure that consumers and suppliers have continuing access to markets using safe practices, such as through reducing congestion or remaining open for longer hours; and to negotiate with neighboring countries to re-open border trade. This is especially important in view of the extension of the recent lockdown of Yangon to include Ayeyarwady, Bago, and Mandalay regions and Mon state.

INTRODUCTION

After several months of very low COVID-19 infection rates being reported, Myanmar has recently seen a surge in confirmed cases – as of 8 October 2020, 22,445 confirmed cases.³ This resurgence in infections threatens to slow down and even reverse the economic recovery that was under way. Like all developing countries, the economic impacts of COVID-19 have been large and laid bare critical vulnerabilities in household livelihoods. The livelihoods of most rural households, being based on agriculture or non-farm employment, were highly vulnerable due to weather shocks, conflict, or trade restrictions even in normal times. The COVID-19 crisis not only disrupted trade, but also severed the flows of remittance earnings from domestic and overseas migrants upon which many households in the country rely. These income shocks depressed consumer and farmer purchasing power, with faltering demand generating significant adverse second-round effects for businesses. The impact of restrictions put in place to control the virus on the employment and income of urban households have also been severe.

Policymakers in Myanmar were operating in an extreme state of uncertainty in March 2020 when the global crisis quickly transformed into a national health and economic crisis. The government faced multiple challenges, including striking the right balance between controlling the COVID-19 pandemic, maintaining agri-food system operations, ensuring access to credit without amplifying levels of indebtedness and financial insecurity, and providing short term financial relief to those households most severely impacted at an unprecedented scale in the absence of strong social protection infrastructure. Additionally, evidence to guide decisions about these trade-offs was very limited. The research presented in this working paper is intended to address this evidence gap in regard to the agri-food system of Myanmar.

GOVERNMENT RESPONSES TO COVID-19

The government of Myanmar was highly cognizant of and responsive to the threat of COVID-19, both in terms of its health dimensions and its potential economic impacts. Due to its limited health services, the government relied on stringent public health restrictions, including a three-week lockdown of the entire country in mid-April, which coincided with the annual national water festival and New Year holiday, and the closure of all international borders, with the exception of returning international migrants. Following the lockdown, internal movement restrictions were relaxed. However, schools remained closed and public health measures remained in place. These included restrictions on the size of gatherings, factory inspections, mandatory wearing of face masks, and restrictions on international entry. After a period of implementing only selective lockdowns in townships where COVID-19 cases emerged, on September 21 a full lockdown was re-imposed on all townships in the Yangon metropolitan area in response to a surge in positive cases in the city. The lockdown was extended to Ayeyarwady, Bago and Mandalay regions and to Mon state on September 27.

The economic effects of COVID-19 were felt even before the initial implementation of the COVID-19 mitigation measures. As early as January 2020 a dramatic reduction in international tourists had a significant impact on the hotel and restaurant sectors. Agricultural exports to China were severely restricted during the same period, and increasing problems in accessing imported raw materials disrupted the country's manufacturing sector. In parallel with high-level committees set up to address health concerns, the government established an Economic Recovery Task Force

³ See Ministry of Health and Sports COVID 19 dashboard for updated numbers <https://moths.gov.mm/Main/content/publication/2019-ncov>

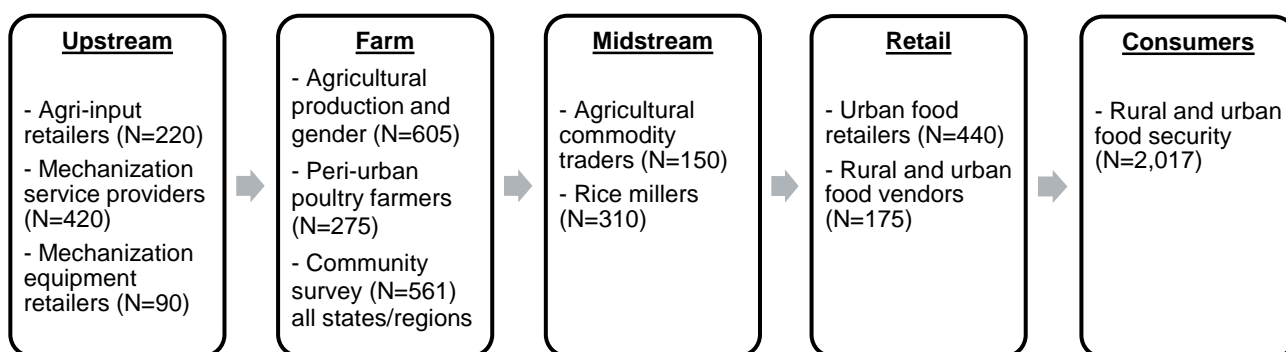
to develop the COVID-19 Comprehensive Economic Recovery Plan (CERP). The plan was initially very modest in financial terms, valued at approximately USD 2 billion, and focused on supporting shuttered industries, such as garment manufacturing, and expanding credit lines to affected enterprises. At first, the vulnerability of agriculture and rural livelihoods to COVID-19 was not strongly emphasized by the Economic Recovery Task Force, with very little initial involvement in its deliberations by the Ministry of Agriculture, Livestock and Irrigation (MOALI).

RESEARCH APPROACH AND DATA

To address the critical need for data and analysis on both the prospective and actual impact of COVID-19 on Myanmar's agri-food system, the International Food Policy Research Institute (IFPRI) and Michigan State University (MSU), with support from the United States Agency of International Development (USAID) and the Livelihoods and Food Security Fund (LIFT), re-directed their research efforts under the Myanmar Strategy Support Program to focus on this broad topic. A dual approach was implemented using, first, ex-ante simulation studies based on secondary data to gauge the likely economic impacts of the pandemic and the control measure put in place on different economic sectors and populations within Myanmar, and, second, a series of telephone surveys targeted at different segments of the agri-food system. This special report reviews key findings from these analyses to highlight the broad effects of COVID-19 on Myanmar's agri-food system and to identify some of the major policy choices the government of Myanmar should consider as it seeks to best respond to the challenges posed on its agri-food system by COVID-19.

Under the first component, a series of ex-ante analyses using a Social Accounting Matrix (SAM) multiplier approach were used to predict the impacts of international and domestic shocks related to COVID-19 on the economy as a whole and on the agri-food sector in particular. The modeling exercises also involved household-level simulation analysis using data from the nationally representative Myanmar Living Conditions Survey (MLCS) to assess the magnitude of income effects due to COVID-19 on different livelihoods. Both analyses modeled different scenarios (shocks) based on extensive reviews of economic events, such as factory closures, and government policy responses, including COVID-19 prevention measures, such as stay-at-home orders.

Figure 1. COVID-19 telephone surveys conducted on Myanmar's agri-food system



Number of first-round survey respondents in parentheses.

The second approach was to implement a suite of panel surveys conducted by telephone to monitor actual ex-post impacts. These surveys were targeted to cover almost the full spectrum of actors in the agri-food system – farm input suppliers, farmers, commodity traders, rice millers, food

retailers, and rural and urban food consumers (Figure 1).⁴ The initial COVID-19 policy responses in April occurred at a critical time in the agricultural calendar in Myanmar just as farmers were procuring fertilizer and seed and beginning land preparation for their monsoon crops. We prioritized surveys at farm-level for earliest deployment as well as upstream-actors in the agri-food system, including agri-input dealers, mechanization services providers, and equipment retailers. Thereafter, survey rounds were carried out with farmers in the Dry Zone, with commercial poultry farmers near Yangon, and with agricultural commodity traders and rice millers chiefly in the Delta region. These were followed by a nationwide community survey and a food security survey focused on households with pregnant women or mothers of young children that was conducted in urban Yangon and in rural communities in the Dry Zone in late June and early July 2020. Food vendors in rural and urban areas were also surveyed about the same time.

Each telephone survey was designed as a panel with the first interview collecting recall information on any disruptions or behavioral responses since the start of the COVID-19 crisis. Each subsequent interview collected information on the effects experienced and the responses to those effects since the previous interview. Often new modules were added to the survey in later rounds to collect richer information on emergent topics of interest.

The community survey is national in scope and is extensive enough to examine differences across major geographical zones and between rural and urban communities. However, the other telephone surveys have focused on respondents concentrated mainly in the Delta and the Dry Zone, as well as urban Yangon and Mandalay. The surveys are also not representative of specific value chains. However, they do cover in some detail the production, processing, and trading of rice (the country's main staple) and poultry. The retail-oriented surveys and consumer surveys cover a range of different foods. An overview of the surveys with their target respondents, sample sizes, geographic coverage, and sources of the survey sample can be found in Table A1 in the Appendix.

The results of both the modeling work and the telephone surveys have been disseminated regularly through project Working Papers and Policy Notes.⁵ Project staff participated in four webinars to disseminate findings from this research. Three of these webinars were implemented by the project in collaboration with the Agriculture and Rural Development Sector Coordinating Group (ARDSCG) and one was organized by the United Nations Development Programme (UNDP) and the Union of Myanmar Federation of Chambers of Commerce and Industry (UMFCCI). Policy notes were also shared with MOALI and the Economic Recovery Task Force.

EX-ANTE ANALYSES OF POTENTIAL IMPACTS OF COVID-19 ON MYANMAR'S AGRI-FOOD SYSTEM

The sudden onset of the COVID-19 crisis and government's rapid action to prevent contagion created exceptional uncertainty among Myanmar's policy community. Different kinds of ex-ante analyses were implemented to reduce this uncertainty by providing a better understanding of the likely impacts of international disruptions to trade, investment, and migration and of domestic disruptions related to the three-week lockdown imposed in April and under possible scenarios of slow or fast economic recovery that would follow.

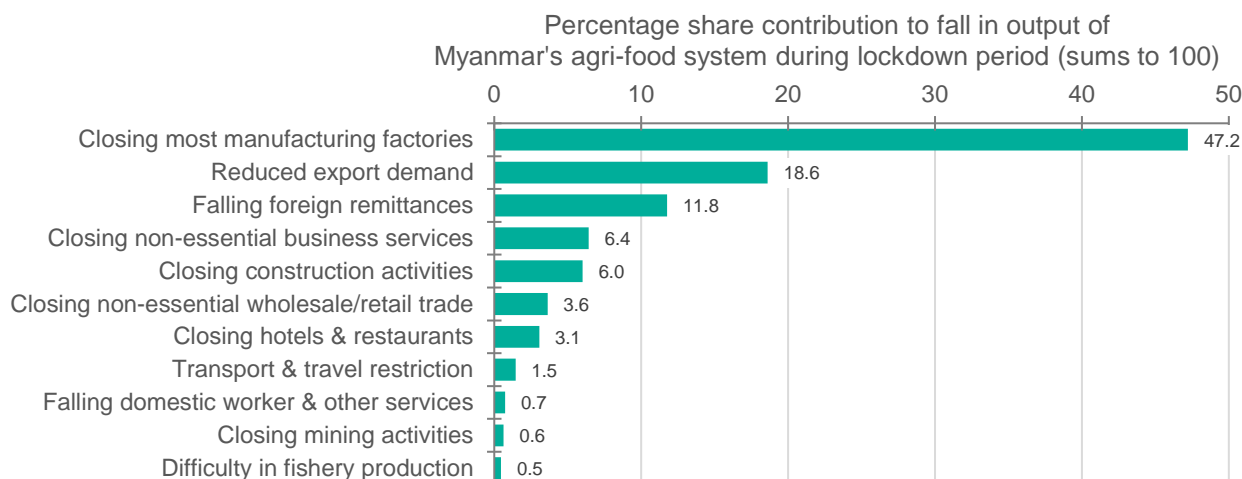
At the macro-economic level, one of the main findings of these modeling exercises was that the lockdown measures needed to prevent escalation of virus infection rates had a major impact on Myanmar's economy (Diao et al., Working Paper 01). Specifically, the SAM analysis predicted a

⁴ Respondent phone numbers were obtained from earlier farm and value chain surveys, regional offices of MOALI, agri-food industry associations, and private sector firms.

⁵ Reports are listed at the end of this document and can be downloaded using the Publications tab at the bottom of this webpage: <https://www.ifpri.org/program/myanmar-strategy-support-program>

41 percent contraction of GDP during the three-week lockdown period in April, with recovery rates dependent on how quickly various restrictions were lifted. The agri-food system was predicted to decline by 24 percent during the lockdown period and not fully recover by the end of 2020.

Figure 2. Contribution of specific policy restrictions and external shocks to change in total agri-food system GDP during the three-week lockdown period in Myanmar



Source: IFPRI's Myanmar SAM multiplier model (Diao et al. 2020a).

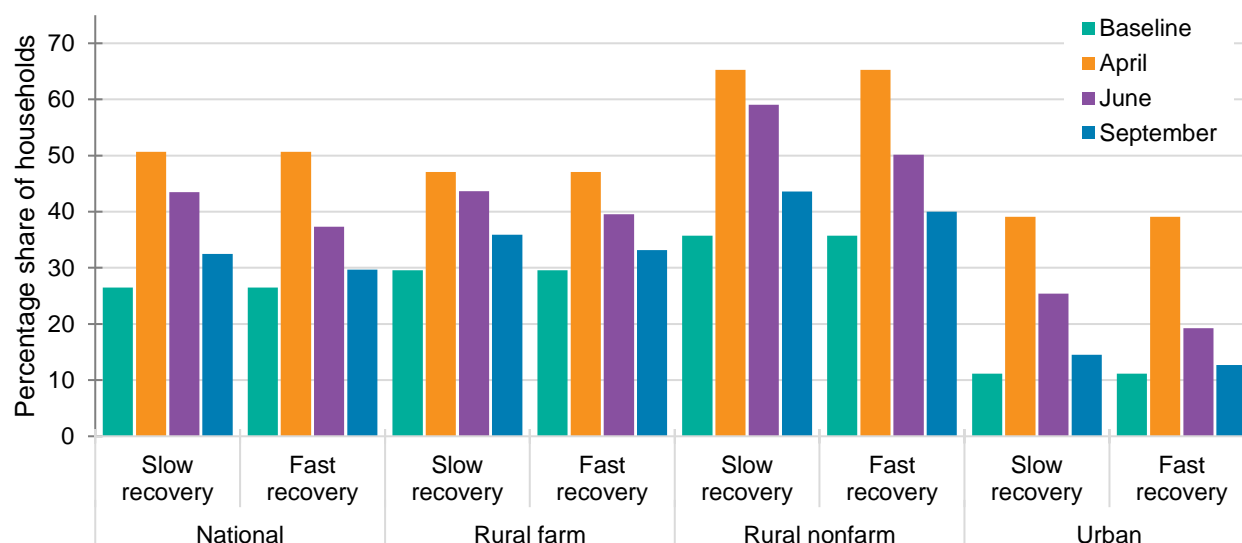
Strikingly, the largest impact of the lockdown on the economic output of Myanmar's agri-food system was through factory closings. These closings were significant due to strong linkage effects between manufacturing and both upstream primary agriculture supply manufacturing inputs and downstream marketing services. Reopening the manufacturing sector was therefore found to be crucial for economic recovery in Myanmar, both for the broader economy and for the agri-food system (Figure 2).

Reduced export demand and falling remittance inflows rank second and third in Figure 2 in explaining losses in agri-food system GDP during the lockdown period. Among Myanmar's total exports, agri-food exports are most affected by COVID-19 because of high dependency on Chinese and Indian markets, which were barred to Myanmar's products during their own lockdown periods. Additionally, remittances are more important for rural households, accounting for more than 8 percent of total income for an average rural household.

The welfare effects of these economic disruptions are also severe. The analysis predicted that non-farm employment would decline by more than five million jobs during the lockdown period, with employment levels taking some time to recover. Household income was predicted to decline by 27 percent over the April to June 2020 period for all households. The greatest loss of income was expected among rural non-farm households and urban households.

A subsequent model-based study looked at poverty impacts using a microsimulation approach and found similar results (Diao and Mahrt, Working Paper 02). Prior to COVID-19, the poverty rate at the national poverty line was estimated to be 26.5 percent (Figure 3). However, this was projected to rise to 50.6 percent during the lockdown period before falling to 32.5 percent by September under a slow recovery and 29.7 percent under a fast recovery. The worst affected groups were rural non-farm households, among which poverty was high to begin with, and urban households, which were much less poor to begin with a poverty headcount of just 11.2 percent.

Figure 3. Predicted change in poverty headcount under slow and fast recovery scenarios



Source: Microsimulation analysis from the 2017 MLCS (Diao and Mahrt 2020).

Another poverty analysis by Diao and Mahrt (Policy Note 06) looked specifically at remittance-receiving households as an exceptionally vulnerable group due to job losses among both domestic and international migrants, many of whom returned to their home communities.⁶ Assuming a 50 percent decline in international remittance income and a 30 percent decline in domestic remittance income, the study predicted that the poverty rate among remittance-receiving households would rise by 7.5 percentage points in 2020, affecting about 200,000 households and 830,000 individuals.

TELEPHONE SURVEY MONITORING OF COVID-19 IMPACTS

Consistent with the expectations of the ex-ante simulation analyses, the panel telephone surveys monitoring COVID-19 impacts uncovered severe effects on the full range of agri-food system participants. More severe impacts were reported in the immediate aftermath of lockdown measures, but these effects persisted to some degree in subsequent months. The surveys also clearly show supply problems and demand-side disruptions that have had ripple effects throughout the agri-food system.

Impacts on agricultural production, processing, and marketing

Table 1 summarizes key results from the farm production focused surveys. As a result of national and local government lockdowns, curfews, and other travel restrictions early in the crisis, the movement and supply of goods and services were severely disrupted. Even in June, about half of the respondents for the community survey reported some form of mobility restrictions into and out of their rural village or urban ward, including for traders (Lambrecht et al., Policy Note 29).

Agricultural input delivery times were longer in 2020 compared to 2019, and 26 percent of input retailers reported higher fertilizer prices caused by travel restrictions (Goeb et al., Policy Note 08). However, there were only minor input shortages in our survey areas and key inputs were still able to reach retailers and farmers – only 7 percent of farmers interviewed reported difficulties purchasing fertilizer (Lambrecht et al., Policy Note 20). Nearly half of the mechanization service

⁶ A review of agriculture and rural livelihood surveys in each of the country's major agro-ecological zones conducted over the previous five years identified the fact that a third of rural households depend on remittances from migrant household members for a major share of their income as a key vulnerability for Myanmar's agricultural production systems (Boughton et al., Policy Note 2).

providers interviewed reported restricted travel within their village tracts (Takeshima et al., Policy Note 07).

Table 1. Food production and trade, summary of key results from telephone surveys

Results category	Telephone survey			
	Mechanization service providers	Input retailers	Farmers	Agricultural commodity traders
Transport restrictions	<ul style="list-style-type: none"> • 47% reported restricted travel within village tract 	<ul style="list-style-type: none"> • Longer delivery times; • 26% reported higher fertilizer prices due to transportation restrictions 	<ul style="list-style-type: none"> • 31% reported difficulties finding traders to whom to sell pre-monsoon crops; • 7% reported difficulties purchasing fertilizer; • 5% of farm communities mentioned shortage of inputs among reasons for lower agricultural production; • 24% of poultry farms closed, of which one-quarter closed permanently 	<ul style="list-style-type: none"> • 53% reported travel restrictions as one of their two largest challenges • 29% of farming communities reported lower trader activity, • 31% mentioned mobility restrictions hindered sales
Lower crop prices before monsoon	--	--	<ul style="list-style-type: none"> • 60% of farmers received lower sales prices for pre-monsoon crops 	<ul style="list-style-type: none"> • 66% reported lower crop prices as one of their two largest challenges
Lower monsoon season income or demand	<ul style="list-style-type: none"> • 58% reported lower demand for tillage services 	<ul style="list-style-type: none"> • 69% reported lower fertilizer sales; • 58% reported lower pesticide sales 	<ul style="list-style-type: none"> • 50% reported lower incomes overall; • Remittance incomes were 20% lower; • 33% decrease in farm wage participation 	--
Challenges collecting repayment for credit lent out	--	<ul style="list-style-type: none"> • 55% reported difficulties in May; • 49% reported difficulties in June 	<ul style="list-style-type: none"> • 27% reported difficulties in May; • 22% reported difficulties in June 	--

Source: Telephone surveys undertaken by authors

Trade of agricultural commodities was also strongly affected by travel restrictions. Over half of the sample of crop traders – whose principal business is arbitrage and transport of agricultural commodities – cited transportation restrictions as one of their largest challenges stemming from the COVID-19 crisis (Goeb et al., Policy Note 10). As a result of decreased trader activity, farmers had difficulties marketing their pre-monsoon crop harvests. Sixty-five percent of interviewed farmers reported that they had difficulties in selling their harvest due to COVID-19, 39 percent had trouble finding traders to whom they could sell, 30 percent were constrained by market closures, 28 percent were hindered by movement restrictions, and 21 percent could not find adequate transportation to markets (Lambrecht et al., Policy Note 20). Community survey respondents also cited these kinds of agricultural marketing problems as major explanations for low levels of production and sales as of June 2020 (Lambrecht et al., Policy Note 29). Furthermore, two-thirds of crop traders reported lower prices as a significant challenge to their business (Goeb et al., Policy Note 10), reflecting disruptions to both local supply chains and international border trade putting downward pressure on demand.

Poultry farmers, already struggling from an outbreak of salmonella in January, were especially hard hit by difficulties in marketing produce during the lockdown. The combined effects resulted in almost a quarter of poultry farms closing their business. Commercial poultry producers also faced major disruptions in the supply of day-old chicks from China, leading to severe cuts in production. Although poultry farmers initially cited falling demand and low prices as a key problem, subsequent supply constraints led to a doubling of poultry prices for consumers between March and June (Fang et al., Policy Note 11 and 13).

COVID-19 restrictions and international shocks resulted in falling farm incomes. Overall, 50 percent of interviewed farm households in irrigated areas of the Dry Zone reported decreased income due to the COVID-19 crisis, and 24 percent expected further challenges in selling their harvest due to COVID-19 (Lambrecht et al., Policy Note 20). With farmers having less cash in-hand and increased uncertainty around future sales and crop prices, investment into the monsoon season crops appears to have been sizably reduced compared to 2019. Input retailers reported large decreases in sales compared to the 2019 monsoon season – 69 percent and 58 percent of retailers reported lower sales of fertilizer and pesticides, respectively (Goeb et al., Policy Note 08) - and 58 percent of tractor service providers reported lower demand for tillage services in May 2020 compared to 2019 (Takeshima et al., Policy Note 07). The decrease in farm incomes appears to have also affected farmers' abilities to pay back creditors who provided inputs on credit. Indeed, input retailers and crop traders often provide inputs on credit to farmers, but this year they had difficulties collecting repayments – 55 percent of input retailers and 27 percent of crop traders reported in the May survey rounds difficulties in recovering the credit they had provided farmers (Goeb et al., Policy Note 07 and 10).

As the monsoon season progressed and transportation restrictions were lifted, the direct impact of many of the disruptions diminished. The shares of input retailers, traders, and mechanization service providers reporting demand or supply-side disruptions decreased substantially in later survey rounds. However, there are still large challenges ahead and indirect impacts will continue to affect the rural economy in the next months. Lower input sales imply the likelihood of lower yields and lower crop incomes following the monsoon season. This will likely be further aggravated by the drought that led to a late start of the monsoon season.

Low credit repayment rates have also persisted – in the June survey rounds, 49 percent of input retailers and 22 percent of crop traders still reported difficulties collecting repayment from credit had lent out to farmers. Difficulties collecting payments on credit extended to customers combined with already lower revenues may also have persistent effects on businesses repaying their own debts. Fifteen percent of input retailers reported difficulties repaying recent loans and 16 percent reported difficulties obtaining new loans (Goeb et al., Policy Note 08). This may continue into the post-monsoon season as input retailers and traders may be less willing or unable to offer inputs on credit.

Moreover, as of early September 2020 an emerging second wave of COVID-19 infections is triggering tighter mobility restrictions in some parts of the country, particularly in Rakhine and Yangon. Depending on its severity, this second wave is likely to re-intensify the financial and other business challenges farmers, input retailers, crop traders, and mechanization service providers faced earlier in 2020 due to the regulations imposed to control the spread of COVID-19.

Impacts on food retailers

Despite disruptions within Myanmar's agri-food sector during the April lockdown, the food supply chain adjusted remarkably well and has been able to meet consumer demand (Table 2). Surveyed food vendors in rural and urban communities did not generally notice major interruptions to food supply, although a quarter of the food vendors interviewed reported higher prices, mostly for poultry (Minten et al., Policy Note 30). Most food vendors (86 percent) delivered more products to homes, with customers more frequently using phones to arrange purchases from food vendors. At the same time, consumers reduced the frequency with which they shopped. They were reported to purchase larger quantities at a time and more non-perishable foods (49 percent of food vendors mentioned this), likely because such products can be stored longer and thus require fewer (risky) trips to the market or to food vendors.

Table 2. Food retail and consumption, summary of key results from telephone surveys

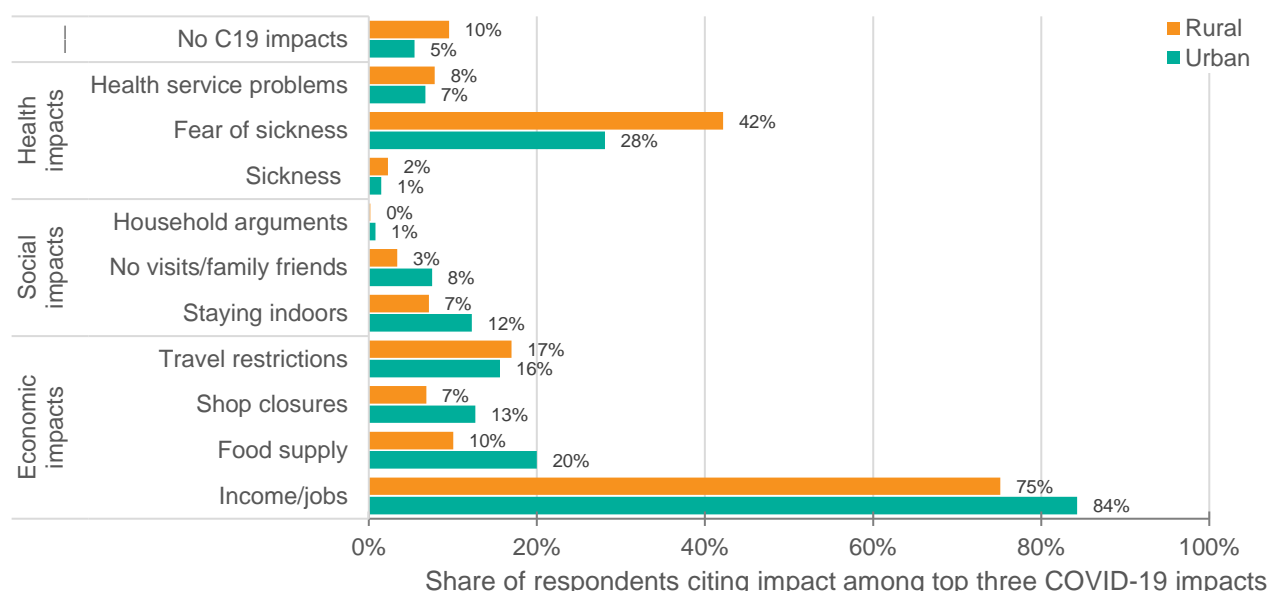
Results category	Rural food retail	Urban food retail	Consumers
Relatively little disruption in supply	<ul style="list-style-type: none"> • Availability and prices of food products mostly normal, except for poultry in the west and the north. • Price of broilers doubled between March and June • Onions more available, reflecting cross border trade restrictions 	<ul style="list-style-type: none"> • No decrease in the suppliers they use to procure food or in the food stocks 	--
Incomes are down, but food consumption impacts still limited	<ul style="list-style-type: none"> • Mostly normal levels of purchases by clients; • 66% state lower purchases of pork and chicken 	--	<ul style="list-style-type: none"> • 80% of consumers state lower incomes • 14% reduced food spending
Taking loans for coping with COVID-19 impact	--	<ul style="list-style-type: none"> • Credit use by consumers not important 	<ul style="list-style-type: none"> • 41% of urban and 51% of rural households experiencing income losses took loans

Source: Telephone surveys undertaken by authors.

Impacts on household incomes and food security

Despite some resilience in the ability of the agri-food sector to maintain and adapt supply chains for food commodities, household survey results for June 2020 in both rural and urban areas suggest that COVID-19 had severe impacts on household incomes and food security. Figure 4 presents results from the Rural-Urban Food Security Survey's question about the largest impacts of COVID-19 on household wellbeing. Around three-quarters of rural households and 84 percent of urban households mentioned income/job losses, while just over half of households report job losses or reduced work from COVID-19. In contrast, relatively few households noted that they experienced food supply problems, though urban households are much more likely to do so than rural households (20 percent versus 10 percent).

Figure 4. Respondent assessments of three largest impacts of COVID-19 on their household



Source: Authors' estimates from RUFSS data.

Note: Observations: 2,017 households.

The same survey shows that household incomes declined sharply from January to June 2020, dropping by roughly one-third, with relatively little variation by livelihood or location (Headey et al., Policy Note 27). These results are notably similar to the ex-ante modelling predictions produced by Diao et al. (Working Paper 02), who predicted a 27 percent decline in household incomes at

national level. However, Headey et al. (Policy Note 27) predict larger increases in poverty for June. As over half of surveyed households lost jobs or worked substantially less, this may imply a slower recovery through 2020.

Households have coped with these large and sudden shocks in different ways. Poorer households mostly have taken loans/credit (over half) and better off households have drawn on savings and reduced non-food expenditures (Headey et al., Policy Note 27). Between 15 and 20 percent of households report reducing food expenditures, and about the same proportion reported reductions in the consumption of healthy, but more expensive, foods and eating lower quantities of foods in June 2020. Self-reported income/job losses from COVID-19 were also associated with roughly a 10-point reduction in the probability that mothers in Yangon and the rural Dry Zone had adequately diverse diets in June 2020. These results suggest that COVID-19 may jeopardize the long-term growth and development of vulnerable young children. They also lend support to the hypothesis that, with the relaxation of most COVID-19 prevention measures, the COVID-19 economic crisis is chiefly a demand-side crisis.

POLICY IMPLICATIONS

COVID-19 has posed a huge challenge for policymakers in Myanmar because of the high degree of uncertainty involved and the difficult balancing act of undertaking effective measures to prevent contagion while still keeping the agri-food system running effectively. The lockdown measures in April 2020 inevitably disrupted every aspect of the agri-food system. It also resulted in losses in household incomes that have persisted. Here we discuss these challenges and additional steps needed to address them.

COVID-19 prevention and agri-food system disruptions

Early in the crisis, researchers advised policymakers that excessive restrictions on the agri-food system – including inputs providers, microfinance institutions (MFI), and traders – could result in severe economic disruption and food insecurity (IFPRI and MSU, Policy Note 01). Although the phone survey evidence clearly indicates significant disruption in the agri-food system in the second quarter of 2020, most actors were still able to function and the degree of disruption declined over time as the COVID-19 regulations were eased following the lockdown.

Evidence from the food vendor survey also suggests that most food markets (mostly wet markets) are implementing some of the basic COVID-19 prevention measures recommended, including disinfecting the market and wearing masks. However, there have been concerns that these measures have relaxed over time – authorities believe the most recent COVID-19 outbreak in Rakhine stemmed from contagion in a local food market. Local authorities need to closely monitor food markets and other segments of the agri-food system that are a potential risk for super-spreaders. However, in a largely informal food economy it is vitally important to keep all segments of the agri-food system running as smoothly and safely as possible. The extension of the recent lockdown of Yangon to include Ayeyarwady, Bago, and Mandalay regions and Mon state highlights this continuing concern. Closer cooperation between the health, commerce, and agriculture ministries, and between union, regional, and local authorities is needed to ensure vigilance to safeguard public health without avoidable disruptions to the agri-food system.

Managing agricultural production and marketing in the context of severe economic disruption

Many rural households quickly lost income in early 2020 due to loss of remittance earnings from household workers based overseas or elsewhere in Myanmar. This loss of income took place just

as farmers were beginning preparations for the monsoon season, for which planting takes place in June and July. Concerns arose that farmers might not be able to afford the required amounts of mechanization services, seed, chemical inputs, and labor to establish their crops. To mitigate this risk, researchers from IFPRI and MSU recommended an initial universal smallholder cash transfer of 50,000 Myanmar Kyat (about USD 35) per acre to help with crop establishment (Boughton et al., Policy Note 02). In response to these recommendations, the Comprehensive Economic Recovery Plan, published at the end of April, included modest provisions for cash for work and agricultural input subsidies, while the Myanmar Agricultural Development Bank made available a special COVID-19 recovery loan of 50,000 Kyat per acre, in addition to their regular seasonal loan.

The risks posed to the viability of MFIs were also highlighted (Toth, 2020, Policy Note 03). Many MFIs use group-based lending approaches, which were rendered infeasible by restrictions on the number of people allowed to participate in a meeting. Not only could MFI agents not meet with their clients, but public announcements mandating forbearance on repayment schedules added uncertainty for MFIs. Likewise, MFIs were ordered not to extend new loans to clients at a period of the agricultural calendar during which demand for credit is highest. Fortunately, these mandated disruptions to the MFI sector were later relaxed. However, the sector still faces many challenges, as do the many AFS firms who extend credit to their customers in the normal course of their business.

Scaling up social protection

The impacts of the crisis on household incomes appear to be severe and geographically widespread, affecting farmers, non-farm workers, traders, retailers, and even salaried employees. This poses a major social protection challenge for a country that had devoted relatively limited resources and infrastructure to social protection prior to COVID-19. The effects of COVID-19 and the regulations put in place to control its spread has aggravated poverty. In particular, urban poverty seems to have increased dramatically, as has poverty among remittance-dependent rural households.

Despite the fiscal challenges, scaling up social protection is essential to accelerate Myanmar's economic recovery. One clear lesson is the need to expand access to financial information and communication technology (ICT) platforms (mobile money) to provide social protection grants to households and financial support to SMEs. More rapid transfers of funds would likely have mitigated the liquidity constraints observed at multiple stages in the COVID-19 crisis for Myanmar's agricultural production and food systems. Another important component for effective social protection and for improved management of the agri-food sector more generally is much stronger monitoring and evaluation systems to track the impacts of different kinds of shocks on household welfare and on the various components of the agri-food system. Agricultural livelihoods in Myanmar are a risky business in normal times given the country's exposure to climate shocks and trade volatility. COVID-19 has laid bare how vulnerable livelihoods are in Myanmar in both urban and rural areas. The ex-ante and ex-post empirical methods reviewed in this study offer a useful toolkit for more sustained monitoring and evaluation of the agri-food system. However, specific evaluations of social protection and other emergency response interventions are also urgently needed.

Scale of the COVID-19 Economic Recovery Program

The scale of the CERP and the share of CERP expenditure on agriculture have been far too small to offset the serious economic harm to labor dependent households or prevent increasing food and nutrition insecurity. By comparison, Thailand has spent four times as much as Myanmar as a share of its GDP (equivalent to more than twenty times as much in total USD terms). The government

should urgently consider a major expansion of the CERP for the financial year beginning October 1 through a combination of central bank operations, borrowing and donor support.

APPENDIX

Appendix Table A1. Details on telephone surveys

Survey	Targeted respondents	Targeted sample size	Geographic coverage, states and regions	Primary source of sample	Respondents from other sources
Agricultural input retailers	Input retailers	220	Shan, Kachin, Bago, Ayeyarwady, Sagaing, and Mandalay	SHARES and READZ	Yes
Mechanization service providers	Tractor and combine service providers	420	Sagaing, Mandalay, Magway, Bago, and Ayeyarwady	READZ	Yes
Mechanization equipment retailers	Tractor retailers	90	Sagaing, Mandalay, Magway, Bago, and Ayeyarwady	READZ	Yes
Agricultural production	Agricultural households	600	Sagaing and Magway	SUN baseline study (IFPRI, World Bank, & MSR 2020)	No
Poultry farms	Poultry farms	275	Yangon and Bago	Yangon Peri-urban Pig and Poultry Survey, 2019	No
Agricultural commodity traders	Crop traders, brokers, and wholesalers	150	Shan, Sagaing, Magway, and Mandalay	SHARES and READZ	Yes
Rice millers	Medium- and large-scale rice millers	310	Ayeyarwady, Yangon, and Bago	IGC rice miller survey	No
Urban food retailers	Small, traditional food retailers	440	Yangon and Mandalay	-	Yes
Rural and urban food vendor	Food vendors	200	Ayeyarwady, Yangon, Bago, Tanintharyi, Mon, Kayin, Kayah, Magway, Mandalay, Sagaing, Naypyidaw, Rakhine, Chin, Shan, and Kachin	-	Yes
Urban and rural community survey	Community representatives	561	Ayeyarwady, Yangon, Bago, Tanintharyi, Mon, Kayin, Kayah, Magway, Mandalay, Sagaing, Naypyidaw, Rakhine, Chin, Shan, and Kachin	-	Yes
Rural and urban food security	Households	2,017	Yangon, Sagaing, Mandalay, and Magway	LEGACY, MayMay project	Yes

Note: SHARES = Shan Household Agriculture and Rural Economy Survey; READZ = Rural Economy and Agriculture in the Dry Zone community survey; SUN = Scaling Up Nutrition; MSR = Myanmar Survey Research; IGC = International Growth Center; LEGACY = Learning, Evidence Generation, and Advocacy for Catalyzing Policy (rural sample); MayMay = an urban sample of users of the "MayMay" mobile phone application to improve maternal and child health;

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