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ADBI Working Paper Series

CHANGES IN THE RURAL ECONOMY IN BANGLADESH UNDER COVID-19 LOCKDOWN MEASURES: EVIDENCE FROM A PHONE SURVEY OF MAHBUB HOSSAIN SAMPLE HOUSEHOLDS

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Abstract

This study offers a comprehensive picture of the rural economy in Bangladesh during the first three months of the lockdown period in comparison with the pre-COVID-19 situation. Using a nationally representative sample (of 2,312 rural households from 62 villages in 56 districts) known as the Mahbub Hossain Survey sample, we conducted a telephone survey in June 2020. Our descriptive and regression analyses suggest that, during the survey period, the rural economy experienced several adverse impacts from the containment measures, such as a delayed harvest, difficulty in selling farm produce, labor and material input disruptions and cost increases, and reductions in remittance receipts and non-farm business sales. Rural households had to reduce their food consumption and receive food support from the government and cash support from the private sector. Vulnerability was especially apparent in households with a head who was female, less educated, young, or casual labor. Livelihoods varied significantly among geographical areas according to the concentration of the infection and less significantly according to the stringency of the lockdown measures. We also found that rural households preferred cash or product support, rural work or employment support, and cash assistance or soft loans for farm inputs and business inputs at the time of the survey.

Keywords: rural households, production economy, livelihoods, COVID-19 lockdown measures, Bangladesh

JEL Classification: D10, I38, Q12, R20

Contents

1. INTRODUCTION

The COVID-19 pandemic and governments' responses to it, especially lockdown and movement restrictions, are affecting almost everyone in the world. They are affecting poor people disproportionately (Barrett 2020). About 80% of the world's poorest and most food-insecure people live in remote rural areas of low-income developing countries in Africa and South Asia. COVID-19 might be mostly an urban pandemic, but what will happen if it spreads to vast rural areas where the medical care systems are vulnerable as urban migrant workers return to their home villages? How will mobility restrictions affect farm production and rural non-farm activities? How much will remittances from urban areas and abroad decrease? How will the reduced food production and income affect food security in rural areas? What will be the policy priorities in the changing situation? These concerns seem to be particularly serious in South Asia in terms of the cumulative numbers of infection cases and deaths.

Several microeconomic studies in South Asia have investigated the impacts of the COVID-19 pandemic and governments' containment measures on lives and livelihoods in rural areas. In Pakistan, for example, ADB surveyed 429 farmers across 10 districts of Punjab to determine how COVID-19-related measures and disruption affected the harvesting and marketing of winter crops and livestock products, the availability and price of inputs, and the financial needs of farmers (Yamano, Sato, and Arif 2020). In India, Kiran, Dharmendra, and Nirmalaya (2020) conducted a similar study with about 5,000 households in 12 Indian states in July 2020 to design relief measures. The World Food Program—Nepal (2020) conducted a nationwide household survey to assess the food security, livelihoods, and incomes of Nepalese households. In Bangladesh, several studies (Ahmed et al. 2020; Rahman et al. 2020a and Rahman et al. 2020b) estimated the immediate impacts on both rural and urban livelihoods and on income loss and food security, respectively. To guide policymakers, however, considerably more compilation of detailed studies of the rural economy in South Asia is necessary.

This study aims to strengthen this line of research by using nationally representative data on households in Bangladesh. Our sample covers 56 out of the country's 64 districts.[1] The late Mahabub Hossain has surveyed the sample households periodically every five to six years since 1987; hence, we refer to these as the MH sample households hereafter.[2] We conducted a telephone survey with the MH sample households in June 2020 to collect data. Since the Government of Bangladesh began its stringent lockdown measures during the period of the winter crop[3] harvest, our survey questionnaire asked farming households whether they had faced difficulty harvesting and selling their rice, other crops, and non-crop farm products and whether the reason for the difficulty was related to COVID-19. We also asked about their non-farm business activities in rural areas. However, we were interested not only in the rural economy but also in the livelihoods of households, rural or urban. Thus, our questionnaire asked what changes they had made to their food consumption, other

[1] However, the geographical locations of those villages represent the whole country; unlike other nationally representative sample surveys, namely the Household Income and Expenditure Survey, this survey, widely known as the Mahabub Hossain Panel Survey, is comparable (World Bank 2016).

[2] BIDS in 1987–88, IRRI in 2000 and 2004, and BRAC in 2008 conducted the previous surveys of the MH sample households.

[3] In Bangladesh, *Boro/Robi* crops, broadly speaking, fall into the winter crop category.

expenditures, finance, debt, and receipt of remittances from household members working inside and outside of the country.[4]

The collected data allow us to provide a comprehensive description of the economy under the lockdown and movement restrictions in comparison with the pre-COVID-19 situation. Because of the timing of our survey, we expect this paper to capture changes in livelihood and production due to both the containment measures and the health crisis, unlike the existing studies based on Bangladeshi data that researchers collected before the stringent containment measures began. This paper also deviates from the existing papers in its more comprehensive coverage of rural economic activities. The purpose of this paper, however, is not to establish a causal relationship but to provide a description of what happened to farmers and other people in the country. We do not try to provide evidence that distinguishes the difficulties and challenges that people have faced due to the government's containment measures from the health crisis or other disasters.

Among the major findings is that, during the first three months of the COVID-19 outbreak in Bangladesh, the rural household economy experienced several adverse impacts of the containment measures, such as a delayed harvest, difficulties in selling farm produce, labor and non-labor input disruption and cost increases, and reductions in remittance receipts and non-farm business sales. In addition, rural households reported a reduction of food consumption and the receipt of food support from the government and cash support from the private sector. We also found from the descriptive analysis that, while livelihoods varied significantly between areas with a concentration of the infection and other areas, they did not differ between areas experiencing more stringent lockdown measures and other areas. This contrast seems to be consistent with the view that Bangladesh did not enforce the lockdown measures very effectively (Biswas, Huq, and Afiaz 2020).

The regression analysis showed, among other things, that households with a head who was female, less educated, young, or a casual laborer suffered more during the period under study. According to the descriptive evidence, households in the more infected regions (Dhaka and Chittagong) faced worse conditions than those in the other six divisions. The farther away from Dhaka, the higher the probability of decreased consumption. The farther away from the district capital, the better the consumption conditions for households. The distribution of support from the government (food, cash, or both) appeared to be based on the severity of the COVID-19 impacts, and more vulnerable households received more support. While Mottaleb, Mainuddin, and Sonobe (2020) recommended $1 per day per household during the COVID-19 pandemic to ensure minimum food security, our findings from the regression analysis suggest that the survey respondents most strongly preferred cash/product support for rural workers or an employment support program, cash assistance/soft loans for farm inputs/business raw materials, and so on for COVID-19 affected people, while the lifting of travel restrictions was the least preferred, as of June 2020 when the survey took place.

[4] This survey in June 2020 was the first of an ongoing series of surveys of the MH samples that ADBI has funded in Bangladesh. The second- and third-round surveys took place in September 2020 and January 2021, respectively.

The paper proceeds as follows. The next section describes the survey method and the geographical distribution of the sample households. Section 3 reports descriptive data on income-generating activities, that is, the production and sale of farm and rural non-farm businesses, and remittance receipts. Section 4 presents the results of the descriptive analysis of consumption and finance. Section 5 reports data regarding the support that households received and the support and policies that they preferred. Section 6 summarizes the findings and concludes the paper.

2. SURVEY METHOD, GEOGRAPHIC DISTRIBUTION, AND SAMPLE CHARACTERISTICS

The previous surveys of the MH sample households addressed the issue of sample attrition by using the multi-stage random sampling method to add new sample households: (1) random selection of 62 unions (one union per district) from the list of all unions; (2) one representative village per union; (3) a census of all the households in the villages; (4) stratified random sampling of households; (5) 20 samples per village in 1988, 30 in 2000, and 40 in 2014; and (6) household stratification by land ownership and tenancy in 1988 and by wealth ranking using the PRA method since 2000. The present study targeted all 2,846 samples that responded to the survey in 2014, and it used the detailed contacts, including the cell phone number, of those households that they provided at that time.

To administer the survey, we collaborated with Socioconsult ltd, a well-known survey company in Bangladesh. It has been primarily responsible for implementing the MH sample surveys since inception (1987–88). For the present study, with its networks and contacts across all 62 villages, Socioconsult Ltd managed to approach the sample households and administer the survey through a short interview by mobile phone, which was the best survey method possible during the pandemic. Enumerators at Socioconsult Ltd received instructions and training remotely from one of the authors of this paper.

Our questionnaire consists of several modules, mostly focusing on rural livelihoods, food security, and households' experience and financial situation due to the outbreak of COVID-19. It begins with questions about respondent/household identification and attribute information, followed by questions about crop farm activities (rice, non-rice crops, vegetable/fruit harvesting, etc.) for the last winter season, inputs and finance for farming, livestock, poultry and fisheries, cottage industries or non-farm small-scale businesses, and absentee household members with employment within Bangladesh or abroad. Turning to household experiences and finance, the questionnaire asks about infected members of the household, the food security situation, the support that the household has already received from different sources, the preferred policy/financial measures, the household debt, and socio-psychological information.

The trained enumerators made phone calls to all 2,846 targeted sample households and input data into their smartphone, which contained an ODK survey application. The rate of successful completion of surveys was about 81%; that is, out of 2,846 targeted samples, 2,312 households, from 56 districts, provided more or less complete data. For each household, the best-informed adult member responded to our survey interview for 25–30 minutes by phone.

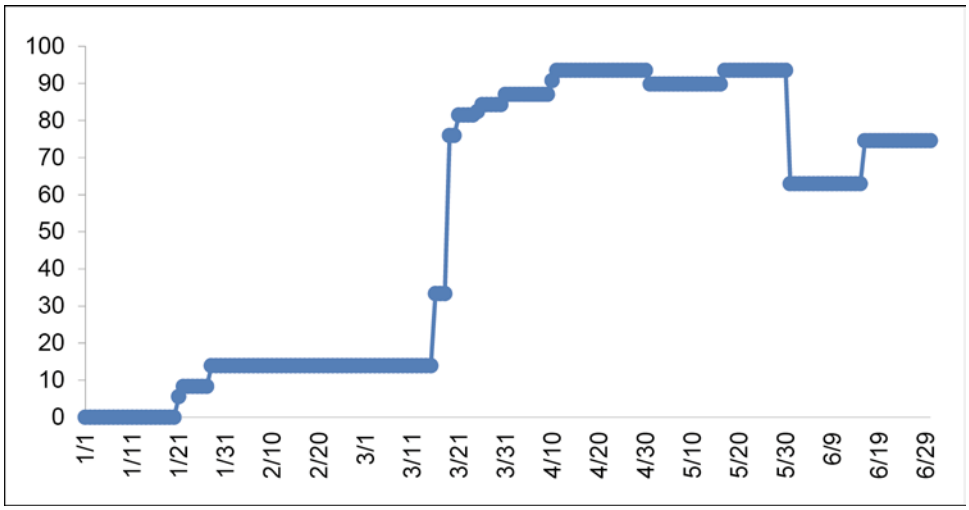
Table 1 shows the geographical distribution of the surveyed households and farming households in the sample by division. The country contains eight divisions. Households engaging in farming activities account for 63.7% of the whole sample. In this paper, we refer to the two most populated divisions, that is, Dhaka division and Chittagong division, as Region 1, even though these divisions do not adjoin each other. Dhaka and Chittagong are also the names of the capital city and the second-largest city, which people often designate as the commercial capital, respectively. We refer to the remaining six divisions combined as Region 2. While Region 1 is more economically developed and urbanized than Region 2, more than 50% of the sample households in Region 1 are still farming. Of all the divisions, Rangpur division has the highest percentage of farming households. Sylhet division, which includes the third-largest city, Sylhet, and thrives with its tea and gas production as well as being the home of non-resident Bangladeshi nationals mostly living in the United Kingdom, had the lowest percentage.

Table 1: Geographical Distribution of Surveyed Households and Farming Households

	Households	Farming Households	Farming Households (%)
Nationwide	2,312	1,473	63.7
Region 1	777	425	54.7
Dhaka	409	205	50.1
Chittagong	368	220	59.8
Region 2	1,535	1,048	68.3
Barisal	179	120	67.0
Khulna	390	260	66.7
Mymensingh	179	134	74.9
Rajshahi	301	217	72.1
Rangpur	293	224	76.5
Sylhet	193	93	48.2

Notes: Region 1 consists of Dhaka and Chittagong divisions. Region 2 consists of Barisal, Khulna, Rajshahi, Rangpur, Sylhet, and Mymensingh divisions.

Figure 1: Government Response Stringency Index (OxCGRT), Bangladesh, 1 January 2020–30 June 2020



Source: Hale et al. (2020).

As shown in Table 2, Region 1 accounted for about 85% of infection cases and Dhaka for about 70% in June 2020.[5] The Government of Bangladesh began responding to COVID-19 in mid-January and strengthened its containment measures drastically in mid-March. Figure 1 shows the government response stringency index (Oxford COVID-19 Government Response Tracker). On 17 April 2020, the government put 55 districts under lockdown. Among the 56 districts containing the 2,312 sample households, 33 districts came under complete lockdown and 16 districts came under partial lockdown, while the remaining seven districts in the sample were exempt from these measures, as Table 3 shows. It is obvious that, while the lockdown stringency correlates with the infection cases, the correlation is far from perfect. Thus, in the descriptive analyses developed below, we show two tables for one topic (Tables 2 and 3): the first table, which we denote (a), groups the sample households by region, as we defined above, and the second table, which we denote (b), groups the samples by lockdown status (that is, complete, partial, or no lockdown).

Table 2: Number of Confirmed COVID-19 Cases across Bangladesh

	Confirmed Cases (up to 1 June)	Confirmed Cases (up to 8 June)
Nationwide	30,549	41,160
Region 1	26,472	35,271
Dhaka	21,549	28,273
Chittagong	4,923	6,998
Region 2	4,077	5,889
Barisal	231	498
Khulna	550	814
Mymensingh	992	1,255
Rajshahi	697	1,002
Rangpur	919	1,136
Sylhet	688	1,184

Source: IEDCR, Bangladesh.

Table 3: Distribution of Sample Districts and Households by Region and Lockdown Status

	Region 1	Region 2
Complete lockdown	13 (566)	20 (875)
Partial lockdown	5 (211)	11 (405)
No lockdown	0	7 (255)

Note: The number of sample districts is outside parentheses. The number of sample households is in parentheses.

Source: The survey data and the list of the districts under lockdown, which the Directorate General of Health Service (DGHS) updated on Saturday 18 April.

[5] Among the 2,312 respondents to our survey, only 26 respondents received tests for COVID-19. Still, the geographical distribution of positive cases is consistent with the national statistics: there were 14 households in Region 1 with members who received testing for COVID-19; of those, six households had members with positive results and four members died due to/related to COVID-19. Out of 12 households with members having testing in Region 2, only one household had a member with a positive result who died due to/related to COVID-19.

Table 4: Explanatory Variables of the Regression Analysis, Mean, and Standard Deviation

	Nationwide	Region 1	Region 2
Household characteristics			
Female household head	0.147	0.226	0.108
	(0.355)	(0.418)	(0.310)
Age of household head (years)	51.60	52.89	50.94
	(13.63)	(13.85)	(13.48)
Occupation of household head			
Casual laborer	0.088	0.056	0.104
	(0.284)	(0.231)	(0.306)
Crop farming	0.226	0.184	0.247
	(0.418)	(0.388)	(0.431)
Non-crop farming	0.053	0.056	0.052
	(0.225)	(0.231)	(0.222)
Non-farm business/cottage	0.196	0.173	0.207
	(0.397)	(0.379)	(0.406)
Salaried employee	0.038	0.038	0.037
	(0.190)	(0.191)	(0.189)
Other occupations	0.399	0.492	0.352
	(0.490)	(0.500)	(0.478)
Schooling of household head (years)	5.02	4.93	5.06
	(4.41)	(4.42)	(4.34)
Household size (people)	4.80	5.13	4.64
	(2.02)	(2.06)	(1.98)
Engaging in farming activities	0.637	0.547	0.683
	(0.481)	(0.498)	(0.466)
Land area for crop cultivation (decimals)	75.53	59.54	89.65
	(170.31)	(89.18)	(198.42)
Remittance recipient	0.261	0.403	0.190
	(0.439)	(0.491)	(0.392)
Village characteristics			
Travel time to Dhaka (hours)	5.61	4.35	7.00
	(2.23)	(2.14)	(1.67)
Distance to *Upazila* head (km)	8.64	7.59	9.17
	(4.80)	(5.01)	(4.61)
Population of village (people)	1433.00	1234.61	1533.42
	(786.56)	(668.06)	(822.34)
Lockdown measures			
No lockdown	0.110		0.166
	(0.313)		(0.372)
Partial lockdown	0.266	0.272	0.264
	(0.442)	(0.245)	(0.441)
Complete lockdown	0.623	0.728	0.570
	(0.485)	(0.445)	(0.495)

Notes: Except for the years of schooling, land area, household size, and village characteristics variables, all the variables are binary variables. Female household head takes the value one if the household head is female and zero otherwise. Occupational dummies, casual laborers, crop farming, non-crop farming, non-farm business, salaried employees, and other occupations take the value one if the household head's occupation falls into the respective groups and zero otherwise. Household size is the number of people who eat food together in a household. Engaging in crop farming takes the value one if the household produced crops in the last Boro/Rabi season. Remittance recipient takes the value one if the household received remittances in December 2019–February 2020.

Table 4 shows the characteristics of the households and their villages and the lockdown status of their districts. Since Region 1 is more urbanized, household heads in Region 1 are more likely to be female, and they are less likely to be engaged in crop farming in Region 2. Crops include rice, non-rice grains, vegetable, and fruits. By non-crop farming, we mean engagement in livestock and poultry farming and fish farming, producing milk, eggs, and fish. Household heads in Region 1 are not considerably less likely to be engaged in non-crop farming or rural non-farm business and not more likely to be salaried employees or more educated than their counterparts in Region 2. In Region 1, the land area for crop cultivation per household is smaller and the likelihood of remittance receipt from absent household members working inside or outside of the country is higher. Turning to the village characteristics, the travel time from the home village of a sample household to Dhaka is more than 4 and a half hours on average if the household is in Region 1, because Region 1 includes Chittagong as well. *Upazila* (formerly known as *Thana*) is the administrative sub-unit of a district. The table also shows the likelihood of a household to be under partial or complete lockdown.

3. INCOME-GENERATING ACTIVITIES IN THE RURAL ECONOMY

This section presents descriptive statistics concerning the changes in income-generating activities in the rural economy during the first few months after the outbreak of COVID-19. We begin with the production and sale of crop and non-crop farm products and then turn to non-farm businesses and the receipt of domestic and overseas migrant remittances.

3.1 Harvesting and Selling Farming Products

Table 5 (a) presents data on farm activities in the winter season by region. The winter season in Bangladesh ends in March to May; hence, COVID-19 affected the harvesting and selling of winter crops in 2020. In this country, rice is the dominant crop. Its production accounts for three-fourths of agricultural land and one-fourth of the country's GDP. Farmers transplant it from November to January, mainly using irrigation water. The first row of the first section of the table reports that 50.7% of households in the nationwide sample harvested rice in the winter season. In this season, farmers harvested other crops as well. Thus, the table contains three other sections. For example, in the nationwide sample, 50.7% of the sample households produced rice, 18.8% non-rice grains, 21.3% vegetables or fruits, and 44.6% milk, eggs, or fish. The sum of these percentages exceeds 100 because many households produced multiple categories of products in the winter season.

Among the rice growers in Region 1, 41.7% were unable to complete their rice harvesting on time, but only 25.8% of rice growers in Region 2 were unable to harvest on time. Among these troubled rice growers, 60% in Region 1 and 48.6% in Region 2 attributed the trouble to labor disruption. Labor disruption here means that labor was not available at the right time. This disruption was likely to be due to other COVID-19-related containment measures.[6] However, it is difficult to attribute the disruption to a single cause. According to the World Bank (2020), damage resulting from pre-existing natural disasters tends to be the most common difficulty for crop harvests in developing

[6] Reports indicated that labor shortages due to the imposed restrictions to limit the spread of COVID-19 severely disrupted farming activities in labor-intensive developing countries (Schmidhuber, Pound, and Qiao 2020).

countries. Indeed, about 75% of the troubled rice growers complained that storms, floods, or pests damaged the rice.

Table 5 (a): Farm Activities in the Winter Season 2019–2020 by Region (%)

	Nationwide	Region 1	Region 2
Rice growers			
% of farm households that grew rice	50.7	44.8	53.6
Unable to harvest on time[a]	30.5	41.7	25.8
Attributing to labor disruption[b]	53.2	60.0	48.6
Attributing to storms, floods, or pests[b]	76.5	77.9	75.5
Difficult or unable to sell rice[a]	10.6	20.1	6.6
Attributing to difficult access to transport service, traders, or market[b]	91.1	97.1	83.3
Non-rice grain growers			
% of farm households that grew non-rice grain	18.8	13.1	21.5
Unable to harvest on time[a]	23.5	23.8	23.3
Attributing to labor disruption[b]	20.6	32.0	16.9
Attributing to storms, floods, or pests[b]	84.3	88.0	83.1
Difficult or unable to sell the grain[a]	45.5	49.5	44.2
Attributing to difficult access to transport service, traders, or market[b]	59.6	65.4	57.5
Vegetable/fruit growers			
% of farm households that grew vegetables or fruits	21.3	20.6	21.6
Unable to harvest on time[a]	25.0	36.9	19.3
Attributing to labor disruption[b]	46.3	83.1	12.5
Attributing to storms, floods, or pests[b]	91.1	86.4	95.3
Difficult or unable to sell vegetables or fruits[a]	47.8	66.9	38.6
Attributing to difficult access to transport service, traders, or market[b]	77.9	96.3	62.5
Milk/egg/fish businesses			
% of farm households that engaged in milk, egg, or fish business	44.6	53.9	40.0
Difficult or unable to sell any of these products[a]	25.7	32.5	21.0
Attributing to difficult access to transport services, traders, or market[b]	86.8	92.7	80.6

Notes:

a The percentage of the growers of the indicated product that had inability or difficulty.

b The percentage of those troubled growers that attributed the trouble to the indicated reason. A grower might indicate multiple reasons.

Table 5 (b): Farm Activities in the Winter Season 2019–2020 by Lockdown Status (%)

	Complete Lockdown	Partial Lockdown	No Lockdown
Rice growers			
% of farm households that grew rice	50.3	48.9	56.9
Unable to harvest on time[a]	28.8	39.5	20.0
Attributing to labor disruption[b]	53.1	57.1	37.9
Attributing to storms, floods, or pests[b]	74.2	79.8	79.3
Difficult or unable to sell rice[a]	9.2	17.3	3.5
Attributing to difficult access to transport service, traders, or market[b]	89.6	92.3	100
Non-rice grain growers			
% of farm households that grew non-rice grain	17.2	20.0	25.1
Unable to harvest on time[a]	32.3	5.7	23.4
Attributing to labor disruption[b]	18.8	71.4	6.7
Attributing to storms, floods, or pests[b]	82.5	71.4	100
Difficult or unable to sell the grain[a]	46.8	43.1	45.3
Attributing to difficult access to transport service, traders, or market[b]	71.6	28.3	67.0
Vegetable/fruit growers			
% of farm households that grew vegetables or fruits	22.9	21.4	11.8
Unable to harvest on time[a]	20.3	40.2	10.0
Attributing to labor disruption[b]	40.3	56.6	0.0
Attributing to storms, floods, or pests[b]	91.0	90.6	100
Difficult or unable to sell vegetables or fruits[a]	37.0	73.5	53.3
Attributing to difficult access to transport service, traders, or market[b]	82.0	74.2	68.8
Milk/egg/fish businesses			
% of farm households that engaged in milk, egg, or fish business	45.5	48.9	29.4
Difficult or unable to sell any of these products[a]	22.1	35.9	16.0
Attributing to difficult access to transport services, traders, or market[b]	86.2	88.0	83.3

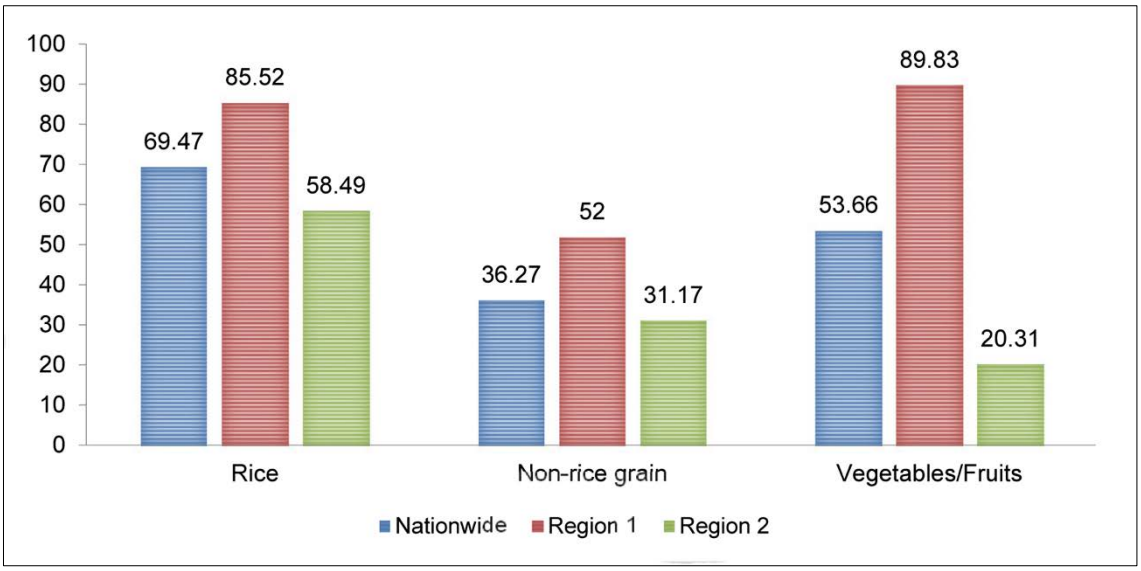
Notes: See Table 5 (a).

To determine whether COVID-19 was a major cause of the difficulty that rice growers faced, our questionnaire asked a similar but different question: “Was the reason for the inability to harvest on time related to COVID-19?” As Figure 2 shows, the household respondents who answered affirmatively accounted for 85% of the troubled rice growers in Region 1 and 58% in Region 2. Thus, in Region 1, COVID-19 was likely to be the main reason for the inability to complete rice harvesting on time, which occurred for more than 40% of rice growers in the winter season in this region.

Toward the bottom of each section of Table 5 (a), we present data on the difficulty of selling farm products. The incidence is higher in Region 1 than in Region 2 and higher for vegetables and fruits than for other products. Most farmers said that the reason was that they were unable to visit the marketplace, traders were unavailable, or transportation was too costly. The difficulty was more serious for perishable products and for those products harvested later, when the containment measures became more stringent. In addition, a devastating cyclone, Amphan, attacked Barisal, Khulna, and Rajshahi divisions and to a lesser extent almost all the other divisions during the winter

season (CARE Bangladesh 2020). Yamano, Sato, and Arif (2020) made similar observations from their survey of farmers in Punjab, Pakistan.

Figure 2: Cited Reasons Related to COVID-19 (%)



Turning to Table 5 (b), we present the same data for the sub-samples of households classified according to the lockdown status. The weighted average of the three percentages in the same row is equal to the nationwide percentage in the corresponding row in Table 5 (a). An unexpected finding from this table is that the complete lockdown did not necessarily have an association with a greater incidence of the inability to harvest crops on time or difficulty selling products than the partial lockdown and that the partial lockdown did not necessarily have a link with the greater incidence of such difficulty or inability than no lockdown. We have neither evidence supporting any particular explanation for this finding nor evidence opposing the view that we obtained this finding because the enforcement of lockdown was not effective, as Biswas, Huq, and Afiaz (2020) argued.

3.2 Farm Input Disruption

Yamano, Sato, and Arif (2020) found that, while COVID-19 did not affect the availability of labor much, it affected the farm inputs of seeds, fertilizer, and pesticides and their prices in Punjab. Tables 6 (a) and 6 (b) indicate that the situation in Bangladesh was not very similar to that in Punjab—the strongest impact on farm inputs is apparent in the reduced availability of labor and increased labor costs. According to Table 6 (a), nearly 40% of crop-farming households faced COVID-19-related input disruption or the limited availability of farm inputs, including labor disruption, and 90% of them faced difficulty finding laborers.

Table 6 (a): Disruption and Cost Increase of Farming Inputs by Region (%)

	Nationwide	Region 1	Region 2
Input disruption			
COVID-19-related input disruption[a]	39.1	46.5	36.0
Labor[b]	91.1	94.3	89.4
Seeds[b]	5.5	7.8	4.4
Fertilizer[b]	8.8	6.8	9.8
Pesticides[b]	12.9	15.1	11.9
Input cost increase			
Labor[c]	44.0	55.5	39.4
Seeds[c]	3.4	3.6	3.2
Fertilizer[c]	5.8	6.1	5.7
Pesticides[c]	6.0	7.8	5.3

Notes:

a The percentage of crop-farming households that experienced input disruption due to COVID-19 or lockdown.

b Those households that experienced a disruption in the designated input as a percentage of the households that experienced COVID-19-related input disruption. A household might face disruptions in multiple inputs.

c The percentage of crop-farming households that faced an increase in the designated input cost.

Table 6 (b): Disruption and Cost Increase of Farming Inputs by Lockdown Status (%)

	Complete Lockdown	Partial Lockdown	No Lockdown
Input disruption			
COVID-19-related input disruption[a]	38.2	45.7	28.9
Labor[b]	92.7	95.9	62.5
Seeds[b]	5.8	1.8	16.7
Fertilizer[b]	8.5	4.1	27.1
Pesticides[b]	11.1	11.2	31.3
Input cost increase			
Labor[c]	42.1	53.2	33.7
Seeds[c]	2.8	0.9	12.1
Fertilizer[c]	5.0	3.8	14.5
Pesticides[c]	5.1	5.4	12.1

Notes: See Table 6 (a).

According to the second section of this table, 44% of crop-farming households, whether facing a COVID-19-related problem or not, experienced a labor cost increase. Compared with labor disruption or a labor cost increase, problems with material inputs were less important.[7] As Worldpress (2016) noted, seasonal migrant laborers from northern regions, such as Rangpur and Rajshahi, carry out the crop harvest in Region 1 (Dhaka and Chittagong divisions) and in Sylhet division in Region 2 in normal years. It is easy to imagine that the complete and partial lockdown measures would cause labor disruption and labor cost increases in these divisions.

[7] This is because our survey question regarding the disruption/cost increase for non-labor material inputs (seeds, fertilizers, and pesticides) covers the transplanting season of less intensive summer crops, locally known as the Aus/Kharif-1 season, which happens during March to May; however, the labor input disruption/cost increases include both more intensive winter and less intensive summer crops.

According to Table 6 (b), while labor disruption and labor cost increases did not depend much on whether the lockdown was complete or partial, these problems were much less significant in places that did not enforce the lockdown. This observation is consistent with the view that the limited labor supply was a major challenge for crop-farming households in Bangladesh.

3.3 Non-farm Business

Besides farming activities, earning from non-farm cottage industries represents an important source of income for rural households in Bangladesh. According to Table 4, those household heads who run a rural non-farm business as their main occupation account for nearly 19.6% of the nationwide sample households. Common types of business include gas stations, timber or bamboo dealers, rickshaw garages, farm input dealers, tailor shops, grocery stores, pharmacies, tea stalls, and restaurants. About 40% of the business owners were also engaged in crop cultivation.

Table 7 (a): Non-farm Business by Region (%)

	Nationwide	Region 1	Region 2
% of households operating non-farm business[a]	18.6	17.0	19.4
Compared with Dec. 2019–Feb. 2020, sales are[b]			
lower by 75–100%	12.6	12.9	12.5
lower by 50–75%	29.8	34.9	27.6
lower by 25–50%	42.7	39.4	44.1
lower by 0–5%	8.6	6.8	9.4
no different	4.9	6.1	4.4
somewhat greater	1.4	0.0	2.0

Notes:

a The percentage of households that were operating a non-farm business at the time of the survey.

b The percentage of non-farm businesses that experienced a reduction in sales to the indicated extent.

Table 7 (b): Non-farm Business by Lockdown Status (%)

	Complete Lockdown	Partial Lockdown	No Lockdown
% of households operating non-farm business[a]	18.4	17.7	21.2
Compared with Dec. 2019–Feb. 2020, sales are[b]			
lower by 75–100%	13.2	10.1	14.8
lower by 50–75%	31.6	24.8	31.5
lower by 25–50%	41.4	47.7	38.9
lower by 0–25%	7.9	12.8	3.7
no different	4.9	4.6	5.6
somewhat greater	1.1	0.0	5.6

Notes: See Table 7 (a).

At the time of our survey, some of these non-farm businesses were closed. Thus, the percentage of household heads operating a non-farm business is somewhat smaller in Table 7 (a) than in Table 4. Table 7 (a) and Table 7 (b) indicate that about 85% of the owners of such businesses lost more than 25% of their sales in March to May compared with the earlier three months and that about 40% of the owners lost more than 50%.

3.4 Remittance Income

We turn now to the receipt of remittances from household members working outside their villages. In this subsection and the following sections, we focus no longer on the rural economy but on the livelihood of people, whether they are in urban or rural areas. As shown in the first and fifth rows of Table 8 (a), 18% of the sample households (431 households) received remittances from an absentee member working within Bangladesh and around 11% received remittances from a member working abroad in the last 3 months of 2019. Only 15 respondents responded to the question of which country: 10 of them referred to a Middle Eastern country. In March to May 2020, however, the corresponding percentages reduced to 13% and 6%, respectively, as the second and sixth rows show. These decreases reflect the containment measures in Bangladesh and the host countries. The average amount of remittances also fell by 30% from Tk23,000 (about $275[8]) to Tk16 (about $194) from domestic migrant workers and by 50% from Tk61 (about $735) to Tk31 (about $370) from overseas migrant workers.

According to Table 8 (a), both the percentage of households that received remittances from an absent member and the average amount of remittances are much higher in Region 1 than in Region 2 in the case of domestic migration. In the case of overseas migration, the gap in the percentage of households with a remittance receipt between Region 1 and Region 2 is even wider, but the regions have similar amounts of remittances. Table 8 (b) indicates that there is a considerable difference in both the percentage and the amount between areas under a complete or partial lockdown and areas without a lockdown. These differences may reflect the level of education necessary to work abroad, but we do not have any evidence supporting or refuting this conjecture.

Table 8 (a): Remittances from Absentee Working Members by Region

	Nationwide	Region 1	Region 2
Domestic remittances			
% of households receiving in			
Dec. 2019–Feb. 2020	18.1	25.0	14.6
March–May 2020	13.0	19.6	9.7
Amount of remittances[a]			
Dec. 2019–Feb. 2020	22,995	26,335	20,102
March–May 2020	16,152	16,907	15,008
Overseas remittances			
% of households receiving in			
Dec. 2019–Feb. 2020	10.8	22.7	4.8
March–May 2020	6.3	14.8	2.0
Amount of remittances[b]			
Dec. 2019–Feb. 2020	61,336	60,392	63,581
March–May 2020	30,875	30,417	32,633

Notes:

a The average amount for those households that received domestic remittances that were not among the sample households in the indicated region.

b The average amount for those households that received overseas remittances that were not among the sample households in the indicated region.

[8] 1 USD=Tk83.00.

Table 8 (b): Remittances from Absentee Working Members by Lockdown Status

	Complete Lockdown	Partial Lockdown	No Lockdown
Domestic remittances			
% of household receiving			
Dec. 2019–Feb. 2020	17.4	22.7	10.6
March–May 2020	12.6	16.2	7.8
Amount of remittances			
Dec. 2019–Feb. 2020	22,130	25,725	16,889
March–May 2020	16,012	16,025	18,050
Overseas remittances			
% of household receiving			
Dec. 2019–Feb. 2020	11.4	12.5	3.5
March–May 2020	6.6	7.3	2.0
Amount of remittances			
Dec. 2019–Feb. 2020	61,829	61,779	48,555
March–May 2020	31,095	31,267	18,050

Notes: See Table 8 (a).

4. CONSUMPTION AND FINANCIAL SITUATION

This section considers the consumption and finance aspects of households' livelihood. Table 9 (a) presents summary data on reductions in food quantity, food quality, and non-food expenditure. After the outbreak of COVID-19, 26% of the households in the nationwide sample reported reduced food quantity or frequency, but this applied to almost 40% of households in Region 1. Moreover, the vast majority of the sample households had to reduce their food quality and non-food expenditure in both regions. In Region 1, nearly 70% of the sample households experienced purchase on credit, 8% had to sell some assets, 80% increased their debt, and 50% received a waiver for a loan repayment. In Region 2, the typical financial situation was a little better than in Region 1, but households faced considerable challenges in financing their necessary expenditures.

In Table 9 (b), higher percentages of households in areas without a lockdown experienced reductions in food quantity (or frequency), food quality, and non-food expenditures than those in areas with a complete or partial lockdown. This finding seems to be inconsistent with the view that a lockdown would reduce income and consumption. If areas without a lockdown were less densely populated, probably because they were less developed and urbanized, the finding might not be inconsistent with the same view. Low-income households in such areas would probably have more difficulty financing expenditures and would be more likely to reduce their expenditures or sell assets, if they could, than those in more urbanized or developed areas. Indeed, the areas without a lockdown had lower percentages of households that experienced purchase on credit, increases in debt, and temporary waivers of loan repayments.

Table 9 (a): Consumption by Region (%)

	Nationwide	Region 1	Region 2
Food quantity or frequency reduced[a]	30.8	39.5	26.4
Food quality reduced[a]	85.1	82.1	86.6
Non-food expenditure reduced[a]	83.0	90.7	79.1
Purchase on credit[a]	56.2	68.2	50.1
Sale of any assets[a]	6.7	8.2	5.9
Increase in debt[b]	69.9	80.9	64.4
Temporary waiver of loan repayment[a]	28.6	50.1	27.9

Notes:

a The percentage of sample households that experienced the indicated change.

b The percentage of indebted sample households that increased their debt after the outbreak of COVID-19.

Table 9 (b): Consumption by Lockdown Status (%)

	Complete Lockdown	Partial Lockdown	No Lockdown
Food quantity or frequency reduced[a]	27.7	34.1	40.4
Food quality reduced[a]	82.7	88.5	91.0
Non-food expenditure reduced[a]	82.3	81.3	91.4
Purchase on credit[a]	59.5	53.9	43.1
Sale of any assets[a]	7.8	3.9	6.7
Increase in debt[b]	72.4	69.0	56.6
Temporary waiver of loan repayment[a]	26.5	35.9	22.8

Note: See Table 9 (a).

To link the reduced food security and expenditures not just with location but also with other characteristics of households, we estimate logit models explaining food quantity (or frequency) reduction, food quality reduction, and non-food expenditure reduction. Table 10 reports the results. The explanatory variables of these logit models are the characteristics that Table 4 shows. While columns (1), (3), and (5) present the estimated coefficients, columns (2), (4), and (6) present the corresponding marginal effects.

Columns (1) and (2) show that the food quantity or frequency was more likely to decrease for households with a female head than for male-headed households and for households headed by casual workers rather than crop- or non-crop-farming households, non-farm business owners, salaried employees, and those with other occupations. It was also more likely to decrease for less educated household heads, those who were not engaged in crop farming even as a side job, those living far from the nearest city center, those living in a village with a large population, and those living in areas without a lockdown.

Female-headed households were more likely to report a reduction in food quantity or frequency by 6.3% than male-headed households. This result is consistent with the argument of the FAO (2020) that female-headed households are more vulnerable because crises tend to drive females out of jobs more than males, even though the estimated coefficient for the female household head variable is not statistically significant in the logit model of food quality reduction and non-food expenditure reduction. The above results are also consistent with another argument of the FAO (2020) that casual laborers are vulnerable.

Table 10: Estimated Function Explaining the Reduction in Consumption (Logit Regression)

	(1)	(2)	(3)	(4)	(5)	(6)
	Food Quantity or Frequency Reduced		Food Quality Reduced		Non-food Expenditure Reduced	
	Coef.	Me	Coef.	Me	Coef.	Me
Female household head	0.328**	0.0629**	0.168	0.0181	0.0038	0.0051
	(0.157)	(0.0307)	(0.207)	(0.0215)	(0.199)	(0.0244)
Age of household head	–0.0064	–0.0012	–0.0127**	–0.0014**	–0.0128***	–0.0016***
	(0.0040)	(0.0007)	(0.00497)	(0.00055)	(0.0048)	(0.0006)
Crop farming	–0.412**	–0.0818**	–0.662*	–0.0648**	–0.403	–0.0474*
	(0.196)	(0.0394)	(0.340)	(0.0295)	(0.253)	(0.0283)
Non-crop farming	–0.632**	–0.122**	–0.880**	–0.0921**	–0.262	–0.0296
	(0.283)	(0.0534)	(0.399)	(0.0412)	(0.350)	(0.0403)
Non-farm business/cottage	–0.457**	–0.0902**	–0.406	–0.0366	–0.194	–0.0215
	(0.196)	(0.0391)	(0.344)	(0.0289)	(0.259)	(0.0281)
Salaried employee	–0.750**	–0.143**	–0.273	–0.0236	0.107	0.0109
	(0.325)	(0.0589)	(0.446)	(0.0388)	(0.427)	(0.0427)
Others	–0.596***	–0.116***	–0.638*	–0.0620**	–0.349	–0.0405
	(0.196)	(0.0390)	(0.335)	(0.0282)	(0.250)	(0.0274)
Year of schooling of household head	–0.0576***	–0.0107***	–0.103***	–0.0115***	–0.0104	–0.00127
	(0.0126)	(0.0023)	(0.0151)	(0.0016)	(0.0150)	(0.0018)
Household size	0.0667**	0.0124**	0.0327	0.0036	0.111***	0.0136***
	(0.0264)	(0.00489)	(0.0317)	(0.0035)	(0.0343)	(0.0042)
Engaging in crop farming	–0.396***	–0.0736***	0.138	0.0153	0.177	0.0216
	(0.125)	(0.0231)	(0.155)	(0.0172)	(0.145)	(0.0177)
Land area for crop cultivation (000)	–1.18*	–0.219*	–1.36***	–0.151***	–0.292	–0.0358
	(0.620)	(0.115)	(0.457)	(0.0505)	(0.303)	(0.0371)
Remittance recipient	–0.145	–0.0270	–0.352**	–0.0391**	0.182	0.0223
	(0.123)	(0.0229)	(0.146)	(0.0162)	(0.155)	(0.0189)
Travel time to Dhaka	0.0483	0.0089	0.2712***	0.0302***	0.4194***	0.05142***
	(0.0344)	(0.0064)	(0.0478)	(0.0052)	(0.0587)	(0.0070)
Distance to *Upazila* head	–0.0796***	–0.0148***	–0.0458***	–0.00510***	–0.0831***	–0.0102***
	(0.0134)	(0.0024)	(0.0172)	(0.00191)	(0.0168)	(0.0020)
Population of Village (000)	0.1885***	0.0350***	–0.1960*	–0.0218*	0.335***	0.041***
	(0.0704)	(0.013)	(0.101)	(0.0112)	(0.0927)	(0.0113)
Region 2	–3.565***		–0.631**		–2.179***	
	(0.527)		(0.272)		(0.264)	
Partial lockdown	–0.127	–0.0251	0.00054	5.02e-05	–1.373***	–0.144***
	(0.196)	(0.0389)	(0.299)	(0.0279)	(0.276)	(0.0236)
Complete lockdown	–0.481**	–0.0912**	–0.447	–0.0478	–1.034***	–0.0968***
	(0.211)	(0.0411)	(0.308)	(0.0300)	(0.299)	(0.0227)
Barisal	2.017***		1.695**		1.393***	
	(0.580)		(0.663)		(0.485)	
Chittagong	–0.384**		–0.670***		0.0754	
	(0.181)		(0.230)		(0.294)	
Khulna	2.679***		0.229		–0.507	
	(0.554)		(0.380)		(0.340)	
Rajshahi	2.964***		–0.658**		0.216	
	(0.535)		(0.287)		(0.266)	
Rangpur	3.450***		0.838**		–1.148***	
	(0.545)		(0.415)		(0.338)	
Sylhet	2.335***		–0.539*		0.865***	
	(0.549)		(0.283)		(0.279)	
Constant	1.330***		3.455***		2.404***	
	(0.402)		(0.589)		(0.537)	
Pseudo R-squared	0.118		0.139		0.129	
Log-likelihood	–1,236		–821.7		–892.6	

Notes: Numbers in parentheses are standard errors. ***, **, and * indicate the 1%, 5%, and 10% significance levels, respectively. The number of observations is 2,266.

Not all of these characteristics have a significant association with the likelihood of food quality reduction, as columns (3) and (4) show, and with that of non-food expenditure reduction, as columns (5) and (6) show. However, there are no characteristics that have coefficients with opposite signs and statistical significance. Some characteristics, such as the age of the household head and the travel time to Dhaka, do not have a significant coefficient in columns (1) and (2) but have significant coefficients of the same sign in columns (3) to (6). Thus, households with older heads and those living closer to Dhaka are less likely to reduce their food quality or non-food expenditure.

5. SUPPORT RECEIVED AND DESIRED POLICIES

This section provides information about the support, mainly in the form of food and cash, that households have received so far due to the COVID 19 outbreak and lockdown measures during March to May 2020 and their government policy preferences afterwards. Table 11 (a) shows that 583 households (25%) had received support immediately after the outbreak. The average value of the total support given to households was around Tk1,446 ($174). Food support was much more common than cash support but with a smaller average amount. Around 23.3% of households received food support, with the average value being around Tk974 ($12), while only 5.6% of households received cash support, with the average being around Tk2,444 ($29). The four parties that provided support for rural households were the government, rich relatives/friends/neighbors, NGOs, and voluntary groups. The government and rich people with a close tie played the main roles in supporting struggling households. About 79% of food support came from government, while rich relatives/friends/neighbors were the main provider of cash support. Tables A1–A2 in the Appendix present more details of the sources of support that households received by infections and lockdown, respectively. More households in Region 1, the more infected areas, received food support from all four different sources, whereas more households in the poorer region (Region 2) received cash support from government sources. By lockdown status, we find similar inconsistency, like the earlier cases; for example, more households in partial lockdown areas received food support from all four sources, but more households received cash support in “no lockdown” areas.

Table 11 (a): Support Received in March–May 2020 by Region

	Nationwide	Region 1	Region 2
Food support			
% of households receiving	23.3	29.5	20.2
Amount of support	974.9	1,080.0	897.3
Cash support			
% of households receiving	5.6	11.1	2.9
Amount of support	2,444.2	2,813.4	1,722.7
Total support			
% of households receiving	25.2	32.7	21.4
Amount of support	1,447.4	1,928.3	1,076.1

Note: The amount of support is the average amount by recipients.

Table 11 (b): Support Received in March–May 2020 by Lockdown Status

	Complete Lockdown	Partial Lockdown	No Lockdown
Food support			
% of households receiving	21.4	29.1	20.0
Amount of support	1,120.7	791.3	736.1
Cash support			
% of households receiving	6.2	4.9	4.3
Amount of support	2,800.6	1,666.7	1,681.8
Total support			
% of households receiving	23.8	29.9	22.0
Amount of support	1,737.7	1,042.1	1,000.7

Note: See Table 11 (a).

Table 12 presents the regression results that explain the food and total support that households received in March–May 2020. Our findings suggest that the sources distributed the support quite effectively, the vulnerable receiving more support. Households in the more severely affected region were more likely to receive aid and more likely to receive a more substantial amount. Households with female, younger, and less educated heads, which the pandemic affected disproportionately, received more support, while households with more land for cultivation or more remittance recipients received less support. Households with a casual laborer as their head also received more support than those with salaried employees or non-crop-farming workers as their head.

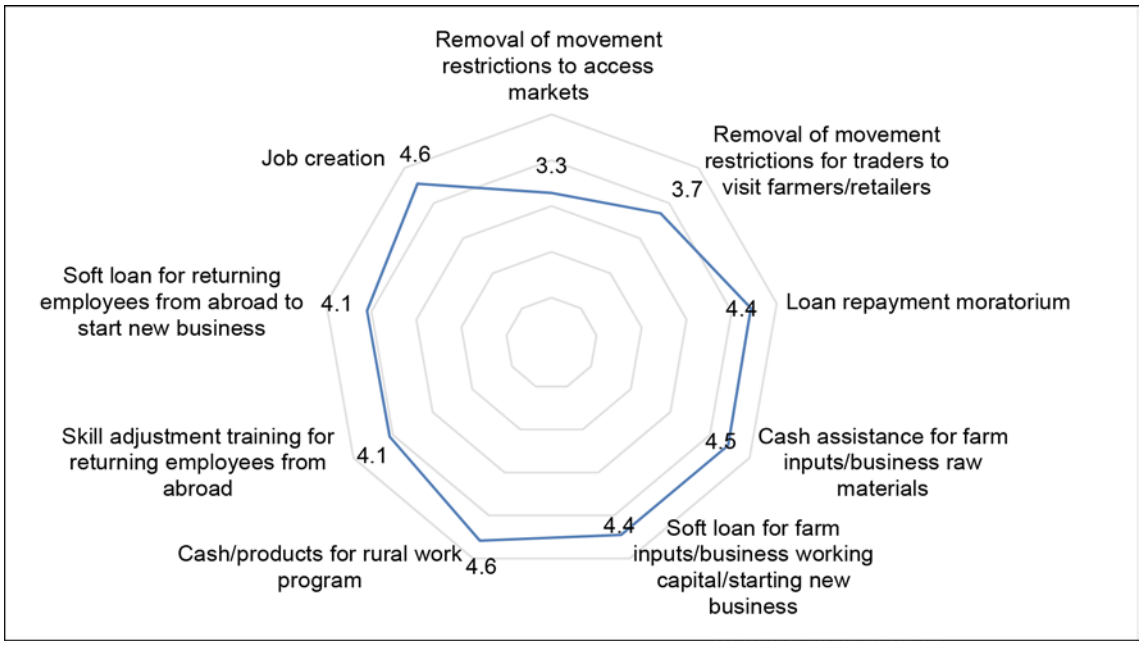
We asked households for their opinion on the necessary government policy in response to the COVID-19 outbreak. They listed nine relevant policies, from the lifting of the travel ban and financial support to employment and training policies. The respondents indicated their preferences for certain policies through a Likert-type rating from one (somewhat do not want) to five (strongly want); a higher score means that a policy was more desirable. Figure 3 shows the mean score for each policy. We can see that the most desirable policies fall into the government's financial support groups, such as cash/product support for rural workers or an employment support program, cash assistance/soft loans for farm inputs/business raw materials, and so on (see Table A3 in the Appendix). Although the unavailability of traders and limited access to the market were two major obstacles to marketing agricultural products, the lifting of travel bans was the least desirable among the nine listed policies. We did not find any variation across regions by infections or lockdown status; therefore, we do not report such results.

Table 12: Estimated Functions Explaining the Support That Households Received

	(1)	(2)	(3)	(4)	(5)	(6)
	Received Food Support		Received Any Support		Food Support	Total Support
	Logit		Logit		OLS	OLS
	Coef.	Me	Coef.	Me	Coef.	Me
Female household head	0.551***	0.0940***	0.427***	0.0755**	83.80**	74.93
	(0.162)	(0.0296)	(0.159)	(0.0296)	(41.61)	(70.90)
Age of household head	–0.0191***	–0.0030***	–0.0156***	–0.0026***	–2.835***	–1.791
	(0.00443)	(0.00069)	(0.00427)	(0.00070)	(1.026)	(1.748)
Crop farming	–0.178	–0.0292	–0.235	–0.0414	–41.30	–105.4
	(0.210)	(0.0349)	(0.203)	(0.0364)	(51.92)	(88.47)
Non-crop farming	–0.648**	–0.0964**	–0.798***	–0.126***	–90.46	–226.5*
	(0.308)	(0.0437)	(0.301)	(0.0449)	(71.85)	(122.4)
Non-farm business	–0.142	–0.0235	–0.271	–0.0474	–30.39	–109.7
	(0.209)	(0.0350)	(0.204)	(0.0363)	(52.34)	(89.19)
Salaried employee	–0.909**	–0.127**	–0.939**	–0.143***	–157.3*	–236.9*
	(0.414)	(0.0507)	(0.386)	(0.0522)	(81.58)	(139.0)
Others	–0.154	–0.0254	–0.212	–0.0375	–37.20	–90.54
	(0.208)	(0.0349)	(0.202)	(0.0363)	(51.66)	(88.02)
Year of schooling of household head	–0.0991***	–0.0156***	–0.0830***	–0.0138***	–10.63***	–9.156*
	(0.0148)	(0.00226)	(0.0141)	(0.00229)	(3.160)	(5.384)
Household size	–0.0113	–0.00178	–0.0365	–0.00608	–4.678	–22.49**
	(0.0292)	(0.00459)	(0.0287)	(0.00476)	(6.720)	(11.45)
Engaging in crop	–0.147	–0.0231	–0.0984	–0.0164	–36.13	–22.92
Farming	(0.139)	(0.0218)	(0.135)	(0.0225)	(30.24)	(51.53)
Land area for crop	–2.58***	–0.406***	–2.81***	–0.467***	–55.37	–56.76
cultivation (000)	(0.806)	(0.126)	(0.790)	(0.131)	(80.7)	(137.0)
Remittance recipient	–0.629***	–0.0989***	–0.625***	–0.104***	–64.99**	–108.7**
	(0.140)	(0.0218)	(0.136)	(0.0223)	(31.15)	(53.08)
Travel time to Dhaka	0.0201	0.0032	–0.0132	–0.0022	–25.54***	–105.12***
(hour)	(0.00063)	(0.0059)	(0.0367)	(0.0061)	(9.36)	(16.02)
Distance to *Upazila*	–0.00472	–0.00074	–0.00220	–0.0004	–2.409	2.551
head (km)	(0.0136)	(0.00214)	(0.0133)	(0.00221)	(3.252)	(5.542)
Population of Village	–0.522***	–0.082***	–0.485***	–0.0806***	–107.7***	–146.5***
(000)	(0.0923)	(0.0142)	(0.0881)	(0.0144)	(19.3)	(32.8)
Region 2	–0.795***		–0.895***		–84.00	–236.2**
	(0.293)		(0.285)		(58.53)	(99.74)
Partial lockdown	0.493**	0.0845**	0.397*	0.0705*	48.08	17.80
	(0.228)	(0.0368)	(0.222)	(0.0378)	(53.29)	(90.80)
Complete lockdown	–0.163	–0.0245	–0.147	–0.0236	–44.58	32.25
	(0.244)	(0.0376)	(0.238)	(0.0389)	(57.10)	(97.30)
Barisal	0.745**		0.945***		81.51	510.0***
	(0.360)		(0.351)		(78.51)	(133.8)
Chittagong	1.013***		1.103***		203.3***	554.0***
	(0.201)		(0.195)		(50.04)	(85.27)
Khulna	0.969***		1.103***		118.6	482.6***
	(0.344)		(0.336)		(73.82)	(125.8)
Rajshahi	0.371		0.437		–30.83	156.3
	(0.317)		(0.309)		(63.01)	(107.4)
Rangpur	0.940***		1.090***		160.5**	519.5***
	(0.340)		(0.331)		(71.31)	(121.5)
Sylhet	1.597***		1.713***		535.2***	666.6***
	(0.309)		(0.302)		(65.70)	(112.0)
Constant	1.194***		1.380***		800.3***	1,365***
	(0.454)		(0.439)		(106.8)	(181.9)
R-squared					0.098	0.095
Pseudo R-squared	0.117		0.112			
Log-likelihood	–1,093		–1,144			

Notes: See Table 10.

Figure 3: Policy Preferences of Rural Households



Notes: 1: Somewhat do not want; 2: neutral; 3: least want; 4: somewhat want; 5: strongly want. Authors' calculation using the survey data.

6. CONCLUSIONS

This study provides a comprehensive picture of the economy under the lockdown and movement restrictions during the first three months of the predominant lockdown period in comparison with the pre-COVID-19 situation. Our results suggest that the COVID-19 outbreak immediately had detrimental effects on the rural economy in Bangladesh, reflecting in deterioration on both the household production and the household consumption side. Rural households observed several notable changes. About 30% of farm households could not harvest in time, mainly due to a shortage of labor. Rural households faced difficulty selling their farm produce, and non-farm cottage/business sales decreased due to the lower demand or the supply constraints (predominantly transportation). The outbreak disrupted and inflated the cost of non-labor input (seeds, fertilizers, and pesticides) for crop production. As is evident in other labor-intensive developing countries (Schmidhuber, Pound, and Qiao 2020; Shafiur et al. 2020), the labor shortage and the increase in the labor cost were the biggest challenges to the farm production, while the unavailability of traders and transportation-related issues were the greatest difficulties in the marketing of dairy products that the COVID-19-related restrictions caused. We also found that about 31% of absentee workers returned home and remittance receipts decreased significantly.

As Rahman et al. (2020a, 2020b) showed, we obtained a supporting indication that, due to the COVID-19 outbreak, rural households faced severe challenges involving income loss and managing to finance their food and non-food consumption expenses. Our results show that about 25% of households reported a reduction of food consumption and 79% reported receiving food support from the government and cash support from the private sector.

The descriptive evidence also provides a clear indication that the pandemic affected households in Region 1 (Dhaka and Chittagong—the more infected region) more severely than those in the less-infected region (six other divisions). According to lockdown status, as declared on 17 April, while the identification of the first case in Bangladesh occurred on 8 March, vegetable/fruit-growing farmers in "partially" locked-down areas faced a more delayed harvest, which we can predominantly attribute to COVID-19-related labor input disruption, than those in areas with "complete lockdown" and "no lockdown." On the other hand, we did not find any consistent pattern in farmers' difficulty in selling agricultural produce, decrease in non-farm business sales, and reduction in remittance recipients and amounts across the lockdown statuses except for some increases in domestic remittances and disruptions in non-labor farm inputs (seeds, fertilizer, and pesticides) in areas with no lockdown. Such inconsistencies across lockdown statuses may explain why the lockdown measures in Bangladesh were not particularly effective across the country, as the media reported and some documents evidenced (Biswas, Huq, and Afiaz 2020).

Our regression results offer some additional insights. We characterized the vulnerability of rural households according to both their characteristics and their geographical proximity. Female, less educated, young, and casual labor-headed households suffered more at the beginning of the lockdown measures. The descriptive evidence showed that households in more infected regions (Dhaka and Chittagong) experienced worse conditions than those in the other six divisions. A greater distance from Dhaka came with a higher probability of decreased consumption, while a greater distance from the district capital had an association with better consumption conditions for households. The providers of support (food, cash, or both) appeared to base the distribution on the severity of COVID-19 impacts, and more vulnerable households received more support. After estimating the one-day complete lockdown economic loss (wage loss) for the daily wage workers, which is equivalent to $64 million, while Mottaleb, Mainuddin, and Sonobe (2020) recommended $1 per day per (wage-based farm and non-farm) household to ensure minimum food security, our results indicate that cash/product support for rural workers or the employment support program, cash assistance and soft loans for farm inputs and business raw materials, and so on for people whom the COVID-19 affected were the most desirable, while the lifting of travel restrictions was the least desirable at the time when we conducted the first round of our survey in June 2020.

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APPENDIX

Table A1: Sources of Support by Region (%)

	Nationwide	Region 1	Region 2
Food Support			
Government	79.0	81.7	77.1
NGOs	11.1	21.4	3.6
Voluntary groups	19.1	37.6	5.5
Rich relatives/friends/neighbors	29.5	32.3	27.4
Cash Support			
Government	40.8	27.9	65.9
NGOs	4.6	4.7	4.6
Voluntary groups	15.4	20.9	4.6
Rich relatives/friends/neighbors	59.2	73.3	31.8

Notes: % by amount of support given. Authors' calculation using the survey data.

Table A2: Sources of Support by Lockdown Status (%)

	Nationwide	Complete Lockdown	Partial Lockdown	No Lockdown
Food Support				
Government	79	72.2	91.1	78.4
NGOs	11.1	3.2	26.8	3.9
Voluntary groups	19.1	11.7	30.7	23.5
Rich relatives/friends/neighbors	29.5	40.1	15.1	15.7
Cash Support				
Government	40.8	32.6	50	81.8
NGOs	4.6	4.5	6.7	0
Voluntary groups	15.4	13.5	26.7	0
Rich relatives/friends/neighbors	59.2	66.3	53.3	18.2

Notes: % by amount of support given. Authors' calculation using the survey data.

Table A3: Households' Preferences for Government Responses to COVID-19

Policies	Somewhat and Strongly Want (%)	Average Score
Removal of movement restrictions to access markets	57.35	3.28
Removal of movement restrictions for traders to visit farmers/retailers	69.77	3.71
Loan repayment moratorium	86.29	4.43
Cash assistance for farm inputs/business raw materials	86.42	4.46
Soft loans for farm inputs/business working capital/starting a new business	86.55	4.45
Cash/products for a rural work program	90.75	4.58
Skill adjustment training for returning employees from abroad	73.27	4.08
Soft loans for returning employees from abroad to start a new business	72.84	4.09
Job creation	87.03	4.55

Notes: 1: Somewhat do not want; 2: neutral; 3: least want; 4: somewhat want; 5: strongly want. Authors' calculation using the survey data.