Mali Food Security Policy Research Program

COVID-19- Changes in Employment, Income, and Food Security in Mali

By

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Executive Summary

The purpose of this paper is to examine the changes in household employment, income, and food security in Mali as the government imposed and later relaxed restrictive measures aimed at containing the spread of the COVID-19 virus. These measures included curfews, house confinements, domestic and international travel restrictions, as well as the closure of schools, bars and night clubs, and non-essential markets.

Two nationally representative datasets, collected through cellphones, are utilized. The first dataset includes information on 1,900 households and was conducted by the Malian National Institute of Statistics (INSTAT), as a complement to the regular harmonized survey on household living conditions (EHCVM)) funded by the World Bank. The second dataset include information on 800 households and was conducted by Michigan State University.

Results from the INSTAT survey indicate that about 90% of the households reported that at least one member had a job before the pandemic. The rate fell to 75% of the households immediately after the pandemic hit. Job cuts occurred in almost all sectors of the economy but were the most felt in trade. Almost all sources of income showed declines in April, except for pensions and transfers from NGOs and private charities. In May, income of all categories started to increase as the government began relaxing the containment restrictive measures. However, as the COVID pandemic prolonged in June, more and more households reported a stop in some sources of income, including assistance from the government and NGOs.

The INSTAT survey used nine metrics to gauge households' food insecurity: increased food stock, fear of not having enough food, eating less nutritious or less varied food, skipping a meal, eating reduced portions, having nothing to eat at home, going hungry, and having no meal all day. There was an apparent spike in the share of households in all the nine categories immediately after the pandemic hit in April. Although these proportions slightly declined in subsequent months, they remained relatively high. For example, 50% of the households who indicated not having a meal all day said it was because of COVID-19.

Results from both the INSTAT and MSU-IFPRI survey indicated that 8 in 10 rural households were engaged in farm activities (farming and on-farm labor). Furthermore, the MSU-IFPRI survey showed that of all households reporting earning income from farming activities, 63 percent were in rural areas. The top-ranked source of income for urban households was in non-farm wage labor activities. Most earning types came from self-employment.

Households in the food supply chain experienced income declines. In May, less than one percent of rural households engaged in food transport delivery reported an income increase. No urban household experienced income improvement in May.
By July, less than two percent of rural households in the food transport and delivery, receiving remittances, and engaged in farming reported some income increases. In urban areas, less than one percent of households in the trade of farm/food products and in professional work reported income increase. Households in all other activities in the food supply chain continued to experience income declines. Because of declining incomes, the rate of household poverty rose by two percentage points from May to July, with poverty affecting 20% of all Malian households.

The declining incomes were also associated with some reductions in food consumption. Compared to the previous year, the consumption of almost all food items considered in the survey remained the same or fell. Starchy staples experienced the greatest decline, followed by meat, chicken, and fish and then by whole grains. The proportions of households which identified the fear of COVID-19 as a reason for less consumption were 15 percent and 17 percent in rural and urban areas, respectively. A small number of households reported an increase in food consumption, particularly whole grains. The number one reason for the increase was higher production of the items.

About half of households in both rural and urban areas obtain their foods from public markets (46 and 47 percent, respectively). Public markets do not include traditional stores, food stalls, and restaurants, among other things. After the pandemic hit, although the distribution of respondents across the different sources of foodstuffs changed, the rankings have remained virtually the same.

Considering the above, it is imperative that the Malian government continues to implement a COVID-19-Food Security Assistance Program (COVID-FSAP) targeting vulnerable populations through the Food Security Agency (Commissariat à la Sécurité Alimentaire), within the Office of the President. In addition, the government should strengthen the National nutrition program to reduce COVID-19 consequences on household nutrition. If possible, follow-up surveys should be conducted to evaluate the changes in income and food security a year from the time the pandemic hit in mid-March 2020, as the vaccine becomes available to the population and containment restrictions are fully lifted.

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1. Introduction

Immediately after the COVID-19 pandemic hit in mid-March 2020, the government of Mali implemented swift containment measures to reduce the spread of the virus. These measures included curfews, house confinements, domestic and international travel restrictions, as well as the closure of schools, bars and night clubs, and non-essential markets. Those measures have affected the way Malians eat, work, and live. In the current study, we describe how household employment, income, and food access and security changed during the months following the pandemic as the Malian government imposed and later relaxed restrictive measures that aimed at containing the spread of the COVID-19 virus.

Two nationally representative datasets are utilized to examine how the pandemic has affected Malian households. Both datasets were collected through cellphone surveys. The first dataset includes information on 1,900 households and was conducted by the Malian National Institute of Statistics (Institut National des Statistiques – INSTAT), as a complement to the regular harmonized survey on household living conditions funded by the World Bank. The purpose of the INSTAT survey was to track changes in household behaviors amidst the pandemic. The second dataset include information on 800 households and was conducted by the Michigan State University (MSU) in collaboration with IFPRI. The MSU-IFPRI dataset focus on changes in household behaviors and changes in the food supply chain amidst the pandemic.

Detailed information on both datasets is provided in the next section. Section 3 describes the methodology. Section 4 presents and discusses the key findings emerging from the INSTAT and MSU-IFPRI datasets, respectively. Section 5 concludes.

2. Data

2.1   INSTAT Dataset

The COVID-19 household phone survey was conducted across all regions in Mali in 2020. The survey was conducted monthly by phone, from April 2020 to September 2020. Questions to capture the possible impact of COVID-19 on employment, income, and food security were asked during the first three months of data collection.

A sub-sample of 1,908 households from the nationally representative sample of the 2018/19 Harmonized Survey on Household Living Conditions ("Enquête Harmonisée des Conditions de Vie des Ménages - EHCVM)" was used for the COVID-19 phone survey. The EHCVM is a two-stage stratified national survey and is representative at the national, regional, and area of residence levels (urban vs. rural). The full sample (EHCVM survey) is composed of 7,000 households. Among the sub-sample of 1,908 households, 1,766 households fully completed the monthly surveys about COVID-19 impacts.

For each household surveyed, four phone numbers were provided: the head of the household, another member of the household with his/her name; a reference person in the household who could be easily reached; and a second reference person in the household. It was typically the head of the household who was interviewed. The response rate ranged between 78 and 85 percent (World Bank, 2020). The caveat of a phone survey is that certain vulnerable groups of the society are less likely to participate. Those include the very poor who cannot afford a mobile phone as well as women due to the patriarchic structure of the Malian society.

2.2   MSU-IFPRI Dataset

Between September 18 to November 22, 2020, Michigan State University (Department of Agriculture, Food, and Resource Economics), in collaboration with the International Food Policy Research Institute (IFPRI), conducted surveys in multiple countries around the world (including Kenya, Zambia, Mali, Nigeria, Senegal and Thailand) to gauge the impact of the COVID-19 pandemic on the income in the food supply chain and on food consumption. The survey was conducted by GeoPoll, a survey platform applied by Mobile Accord, Inc., which specializes in survey research via mobile phone across the globe.

The respondents were selected based on a simple random sampling (SRS) technique from GeoPoll's verified list of mobile subscribers in each country surveyed. This verified list was generated using the Random Digit Dialing method to ensure increased randomization (and representation) of the generated sample. The sample is representative at the national level and between urban and rural areas.

3. Methods

We provide an analysis of key variables before and after the implementation of the containment measures. Comparisons of means tests allow us to determine whether the differences in employment, incomes, and food security are statistically significant. Whenever possible, we distinguish rural from urban and poor from non-poor households. In the INSTAT dataset, poor households are defined as households with total incomes of CFAF 269,485 or less annually, which is approximately equivalent to $538 (INSTAT, 2018). In the MSU-IFPRI dataset, poor households are defined as households with monthly incomes of CFAF 35,000 or less.

4. Results

4.1   INSTAT Dataset- Changes in Household Employment, Income, and Food Security

4.1.1   COVID 19 and Changes in Household Employment by Area of Residence and by Poverty Status

According to the INSTAT COVID-19 household phone survey dataset, more than 80 percent of rural households are employed in agriculture , reflecting the agrarian structure of the Malian economy. Over 90 percent of workers in the mining and extraction sector live in rural areas. About half of workers in construction, personal services, health, and trade live in rural areas as well. Employment in urban areas is more diversified across sectors, such as banking, insurance, real estate, public administration, manufacturing, utilities (electricity, gas, waste management), and tourism. The distribution of jobs across sectors by poverty status follows that of rural and urban spread, with a 54 percent of poor households located in rural areas (INSTAT, 2018).

During the first month of data collection, the respondents were asked about the number of household members who had jobs before the pandemic and then, how many household members lost their jobs after the pandemic hit. About 90 percent of households reported that at least one household member was employed before the pandemic compared to 75 percent after . On average, two household members were employed, before the pandemic. This number dropped to 1.4 members per household, after the pandemic hit. The mean comparison between the number of jobs before and after the COVID-19 shows that the difference is statistically

significant. The COVID-19 pandemic contributed to significant loss of household jobs (Table 1).

Table 1. Number of jobs per household type.

Households	Number of Jobs Before	Number jobs lost After	Number of Jobs After	Percentage Change	Mean Diff.	t value	P value
Rural	2.19	0.6	1.61	-27.3	-0.49	-5.45	0.00
Urban	1.71	0.5	1.22	-29.4	-0.39	-4.72	0.00
Non poor	1.79	0.5	1.30	-27.8	-0.25	-2.62	0.00
Poor	2.04	0.6	1.46	-30.0	-0.16	-1.86	0.06
All	1.86	0.5	1.34	-26.3	-0.52	-9.15	0.00

Source: Authors' calculations based on the INSTAT (2020) COVID-19 Household Phone Survey.

In urban areas, the trade sector was the most affected by the pandemic shutdowns, with job losses reaching 35 percent in April. Employment in the sector improved somewhat by June (30 percent below the pre-pandemic level) due to the removal of COVID-19 restrictions. Other sectors that cut jobs due to the pandemic were: education due to school closure (-15 percent in April and -10 percent in June, compared to March) and personal services because of house confinement (-10 percent in April and -15 percent in June). (Figure 1)
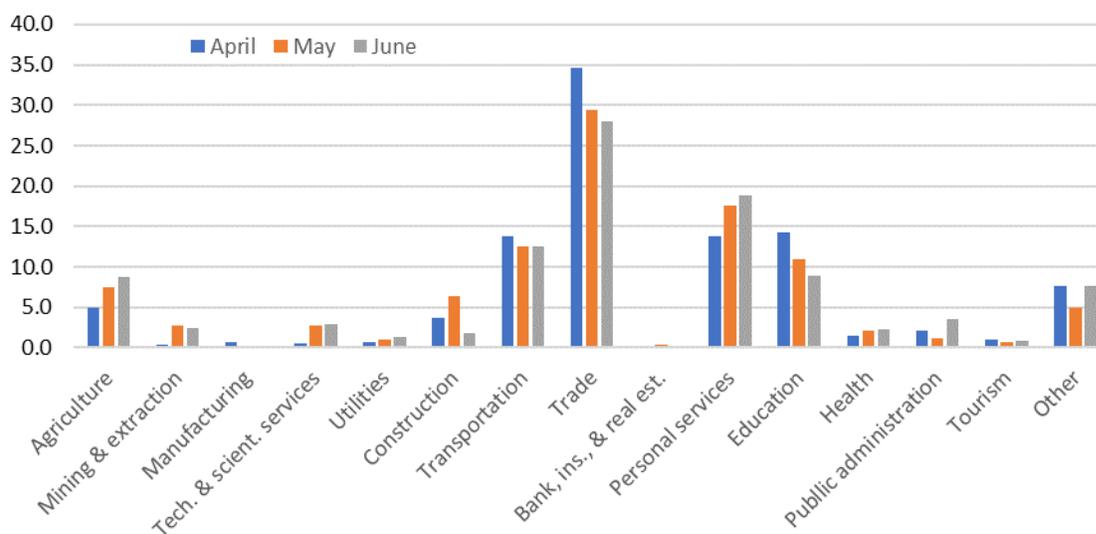

Figure 1. Proportion of urban households with job losses due to COVID-19 sector (April- June 2020).
Source: Authors' calculations based on the INSTAT (2020) COVID-19 Household Phone Survey.

In rural areas, employment in the trade sector was also the most affected by the shutdowns (-25 percent in April, -35 percent in May, and -30 percent in June). Jobs in agriculture dropped by 30 percent in April but improved by June to -20 percent, with the beginning of the new cropping season. The construction and health sectors also recorded employment improvements in June
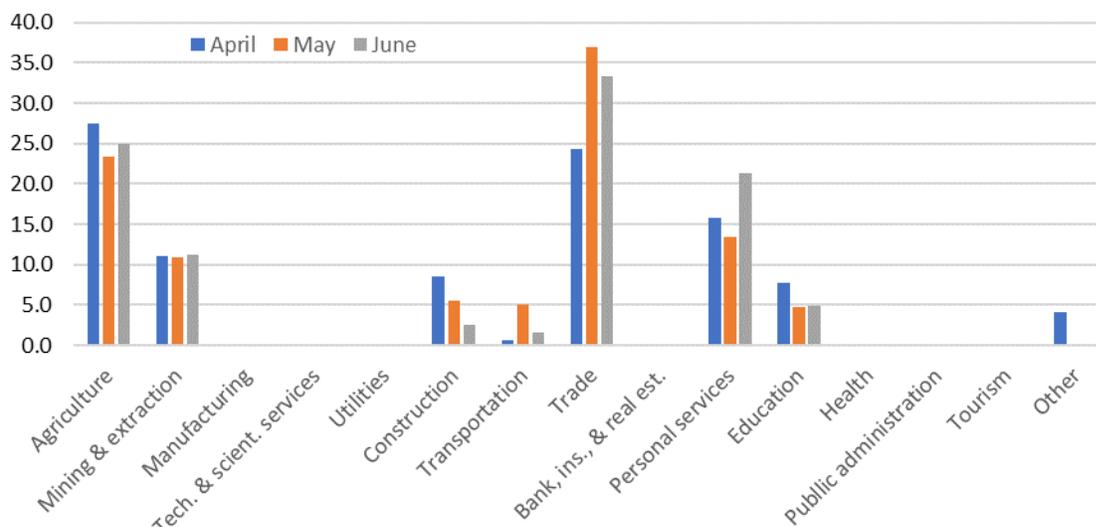
after dropping in April. (Figure 2).

Figure 2. Proportion of rural households with job losses due to COVID-19 sector (April- June 2020)

Source: Authors' calculations based on the INSTAT (2020) COVID-19 Household Phone Survey.

4.1.2 COVID 19 Impact by Sources of Household Income

Sources of household income in Mali, as considered in the survey, include wages, unemployment benefits, assistance from domestic relatives and friends, remittances from relatives or friends living abroad, real estate rent, self-employment proceeds, and transfers or assistance from the government and non-governmental organizations (NGO) and charities. Changes in income, from these different sources, were captured in the survey.

The source of income the most negatively affected by COVID-19 restrictive measures was employment wages. Almost half of the respondents who received a wage indicated a decline, and 12 percent of respondents reported not receiving any wages anymore. Less than one percent experienced an increase in wages. Incomes from rent, investment, and saving sources did not increase nor did governmental assistance.

Fewer than five percent of households saw an increase in income from self-employment (including agriculture), unemployment benefits, as well as assistance and remittances from family and friends. Pensions and transfers from NGOs and charities recorded the highest rate of increase in April (12 and 21 percent, respectively), at the time when other sources of income were being cut mostly due to the implementation of COVID-19 containment measures. The Mali's COVID-19 household phone survey collected information on transfers and assistance from: 1) relatives and/or friends, and 2) NGOs and/or government. The portion of households receiving any type of transfers was rather small during the months of April, May, and June. Starting at around 24 percent of the respondents in April, this share decreased to 19 percent in May, and then to 15 percent in June. The decline of this share was recorded exclusively among transfers from relatives and/or friends (22 percent in April to 13 percent in May, and down to 8 percent in June). On the other hand, the assistance received from NGOs and/or government increased over the same period, primarily due to a rise in NGOs' assistance (Table 2).

Table 2. Share of respondents who received any type of transfer or assistance

	April	May	June
From a relative or friend	21.6	12.7	8.5
From an NGO or Government	2.1	6.1	6.3

Source: Authors' calculations based on the INSTAT (2020) COVID-19 Household Phone Survey.

In April, households of all types (rural, urban, poor, and non-poor) indicated a decrease in all sources of income, ranging from 11 percent in pensions and 14 percent in assistance from NGOs to 67 percent in non-agriculture self-employment, and 86 percent in unemployment benefits (Figure 3). The economic theory predicts unemployment benefits to be an automatic stabilizer, rising in recessions when more workers are laid off and declining in economic expansion when the economy moves to full employment. In Mali, jobless benefits declined with the economic downturn in April, May, and June. It is important to note that only two percent of households were receiving unemployment benefits at the time when the pandemic hit. In fact, only 10 percent of total employment in Mali is made up of wage and salaried workers. The remaining 90 percent comes from self-employment, mostly in the informal sector (World Bank, 2019), not covered by unemployment benefits.
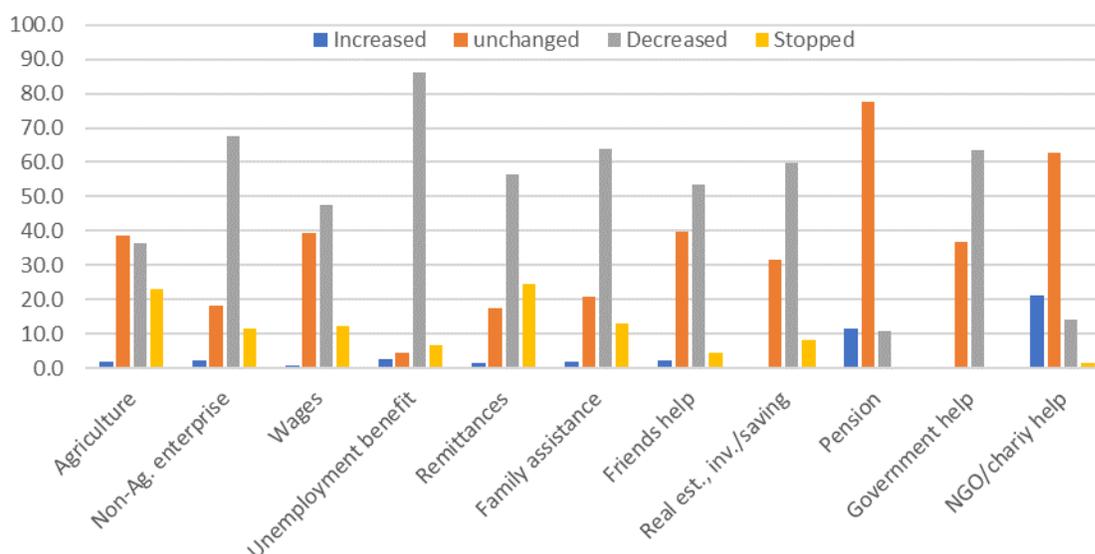

Figure 3. Proportion of households impacted by COVID-19 by source if income (April 2020).
Source: Authors' calculations based on the INSTAT (2020) COVID-19 Household Phone Survey.

In May, households recorded an uptick in all sources of incomes, extending from 1.5 percent in unemployment benefits to about 9.0 percent in non-agricultural self-employment. At the same time, the share of households recording no income increased by about 50 percent in all categories of income sources. The proportion of households reporting no change, or a decrease remained high, although lower than in April.

In June, as the COVID-19 pandemic prolonged and some government's containment restrictive measures remained in place, the share of households reporting a stop in some income sources increased. For example, 62 percent of all households receiving government assistance indicated that it stopped. About 40 percent said that the assistance they were receiving from NGOs also stopped.

One category of income sources, pension (or retirement benefits), remained almost unchanged during the three months, going from 77 percent of households getting pensions reporting no change in April to over 95 percent in June. One possible reason for the rising rate of households living on pensions could be that with increased risk of being laid off during the COVID-19 pandemic's economic shutdowns, more older workers opted to go into retirement.

4.1.3   COVID 19 Impact on Household Income by Residence and Poverty Status

Immediately after the COVID-19 pandemic hit, close to 70 percent of rural households reported that their income decreased or stopped. About 65 percent of urban households fell in this category. Household in rural and urban areas as well as non-poor and poor households were all affected, with about half of them reporting a decline income (Figure 4).
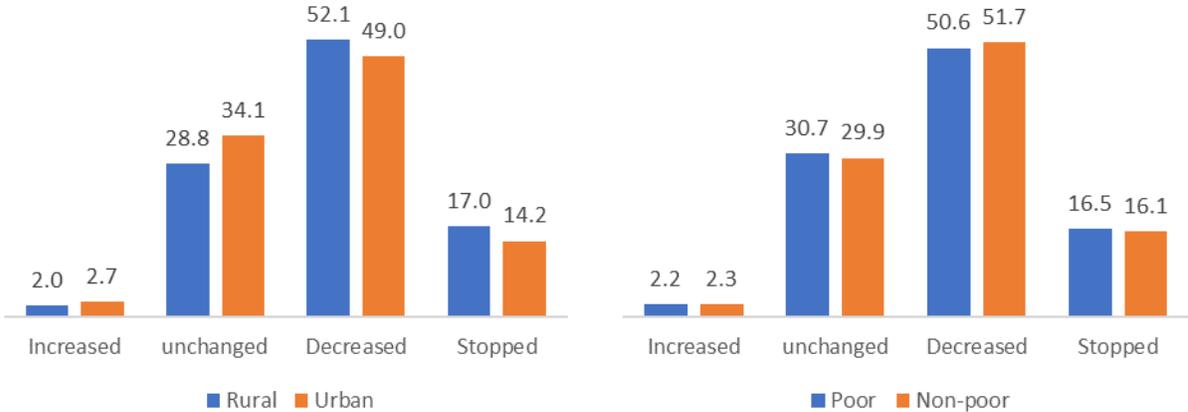

Figure 4. Proportion of households impacted by COVID-19 by residence and poverty status (April 2020).
Source: Authors' calculations based on the INSTAT (2020) COVID-19 Household Phone Survey.

In early May 2020, the Malian government began to phase out the restrictive measures in place since mid-March to reduce the spread of the COVID-19 virus, by lifting the curfew. Consequently, the portion of households declaring an income fall declined in May for all residence types and poverty status. The gap between rural and urban areas remained unchanged at five percentage points (55 percent in rural areas vs. 50 percent for urban households). However, the gap between poor and non-poor households widened to almost 9 percentage points: 59.1 percent of poor households reported their income reduced or stopped, while 50.4 percent of non-poor households were in this category. In June, incomes had stabilized, with 43 to 45 percent of all household types (rural, urban, poor, and non-poor) reporting their income to have decreased or stopped compared to March (Table 3).

Table 3. Proportion of households reporting an income impact due to COVID-19 by residence and poverty status (May-June 2020)

Income Change	May				June			
	Rural	Urban	Poor	Non-poor	Rural	Urban	Poor	Non-poor
Increased	6.1	5.4	7.0	5.4	6.1	5.4	5.1	6.4
Unchanged	39.0	44.5	34.0	44.2	49.0	50.8	51.8	48.1
Decreased	37.1	35.7	39.9	34.9	32.2	32.3	31.4	32.7
Stopped	17.8	14.3	19.2	15.5	12.7	11.5	11.7	12.8
Decreased or Stopped	54.9	50.0	59.1	50.4	45.0	43.8	43.1	45.5

Source: Authors' calculations based on the INSTAT (2020) COVID-19 Household Phone Survey

4.1.4 COVID 19 and Food Security

In April 2020, households were asked to rank the severity of the impact of the COVID 19 pandemic on their ability to satisfy their basic needs in terms of food. About 20 percent of the households reported the impact to be severe. More than half of the households said there was no impact or that it was too early to tell. This question was dropped from May, June, and July surveys. However, several other detailed measurements of household food security were collected in April and in the three consecutive months after that. The metrics included increased food stock, fear of not having enough food, eating less nutritious or non-varied foods, skipping meal, reducing meal portions, having nothing to eat, going hungry, and having no meal all day.

Table 4. Share of respondents who indicated being affected by COVID-19.

Impact	April	May	June	July
Increased food stock	22.1	19.7	17.7	17.7
Fear not enough food	64.9	62.2	43.1	43.4
Less nutritious food	57.8	51.8	43.4	43.7
Non-varied food	63.6	53.8	44.8	45.1
Skipping a meal	60.7	69.6	51.6	51.6
Reduced meal portions	64.2	76.0	57.0	57.0
Nothing to eat at home	66.3	69.6	59.4	59.4
Going hungry	67.1	77.3	68.3	68.3
No meal all day	63.6	61.8	50.0	50.0

Source: Authors' calculations based on the INSTAT (2020) COVID-19 Household Phone Survey.

Measures of households' protective actions against the possible negative impact of COVID-19, namely increased food stocks and fear of not having enough food, were at the highest level immediately after the pandemic hit.

For example, about 1/5 of households indicated to had increased their stock of food because of the pandemic. About 65 percent feared to not have enough food to eat in the near future. However, both proportions declined in May and June, and were stable in July (Table 5). The shares of households reporting eating less nutritious or non-varied foods also peaked in April and declined thereafter, following the relaxation of the government's restrictive measures, which started in early May with the lifting of the curfew.

The proportions of households reporting skipping a meal, eating reduced meal portions, having nothing to eat at home, or going hungry because of the pandemic peaked in May, before the

lifting of some measures. These shares dropped by between 9 and 18 percentage points by July, as restrictions were relaxed and assistance to households from NGOs and remittances from family and friends increased.

Some of the possible explanations of trends in food security measures described above can be found in the patterns of change in the income and net transfers to households. Both earned and transferred income were reduced over the three months of the survey, leaving households vulnerable to food insecurity, particularly the poor ones. In fact, by June, over 60 percent of all households indicated that government assistance stopped, and about 40 percent said that the assistance they were receiving from NGOs also stopped. On the other hand, the share of households recording no income increased by about 50 percent in all categories of income sources.

4.2. MSU-IFPRI Dataset – Changes in Income and Food Access

4.2.1 The Main Sources of Pre-COVID-19 Household Income in the Food Supply Chain

The main sources of income identified in this survey are proceeds from agriculture, trade (retail and wholesale of food products), food processing, food transport and delivery, food services (e.g., restaurant, prepared food stall), as well as professional work (e.g., teachers, accountants, nurses, electricians, repair technicians). They also include labor wages in farming and non-farming sectors (e.g., banking, manufacturing, public administration, real estate, etc.), along with earnings in non-professional and non-food work (e.g., taxi drivers, domestic workers, vendors). Remittances from family and friends living abroad were counted as well. Households could select more than one source of income.

A little over half of all households (429 out of 800) declared receiving income from non-farm wage labor. Almost another half (345 households) reported that they obtained income from farming activities. Farming is the top-ranked source of income for rural households, while it is non-farm wage labor for urban households. (Table 5)

Table 5. Number of households in rural and urban areas reporting following sources of income in March (Pre-COVID)

Sources	All	Rural	Urban
Non-farm wage labor	429	203	226
Farming	345	216	129
Trade (retail or wholesale) involving farm or food products	310	167	143
Other sources	274	137	137
Professional Work (e.g., teacher, accountant, nurse, electrician)	237	100	137
On-farm wage labor	208	101	107
Non-food, Non-professional (e.g., taxi, domestic worker, vendor)	181	79	102
Remittances	157	73	84
Food service (e.g., restaurant, prepared food stall)	133	67	66
Food processing	110	66	44
Food transport and delivery	79	46	33

Note. Households could select more than one source of income.
Source: Authors' calculations based on the MSU-IFPRI (2020) COVID-19 Household Phone Survey.

Of all households that marked farming as a source of income, 63 percent were from rural areas. About 60 percent of households with earnings from food processing were also rural. In addition to farming, other significant sources of income for rural households were non-farm wage labor and trade of food products. Around 25 percent of rural households derived income from on-farm labor. (Figure 5)

In urban areas on the other hand, the main sources of income were earnings in non-farm wage labor activities followed by trade of food products, professional activities, and farming. About one-fifth of urban households reported remittances as a source of income. (Figure 5).
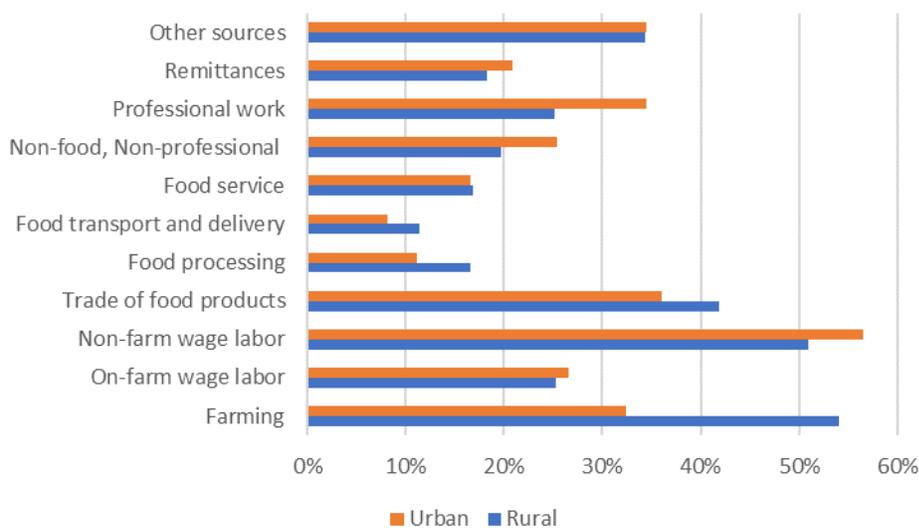

Figure 5. Percentage of Rural and Urban Households Reporting the Following Sources of Income in March (Pre-COVID-19)
Source: Authors' calculations based on the MSU-IFPRI (2020) COVID-19 Household Phone Survey.

Most earning types come from self-employment: 100 percent in farming activities, 96 percent in food processing, 94 percent in trade, 93 percent in food services, and 85 percent in food transport and delivery. Labor wages (on and off-farm) are 100 percent from paid employment. Incomes in non-food, non-professional and in professional work were almost evenly distributed between self and paid employment.

4.2.2 COVID-19 Effects on Household Income Sources

Rural households reported a decline in almost every source of income in May (compared to the pre-pandemic levels in March), due to COVID-19. The exception was for food transport and delivery where less than one percent of households stated an income increase. By July, less than one percent of rural households received more income from remittances or from on-farm wage labor activities compared to March. Similarly, less than one percent of those involved in food transport and delivery recorded some improvement. All other types of revenues continued to show deteriorations in July (Figure 6).
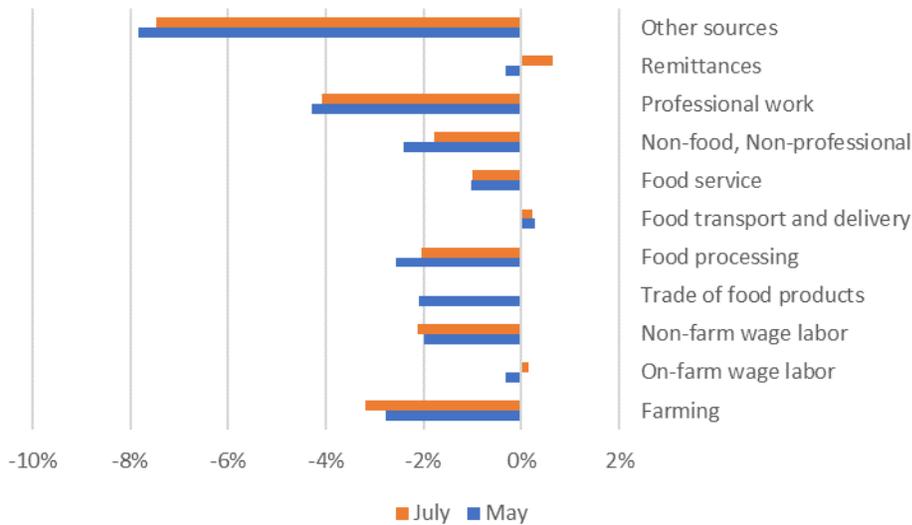
Figure 6. Proportion of rural households who lost (gained) a given source of income in May and July relative to March (Pre-COVID-19).

Except for professional work, urban households recorded reductions in all sources of income in May due to the COVID-19 pandemic. The largest change was in non-farm wage labor activities with 6 percent of households reporting a decline in May. Urban households stated income cuts in all non-farm activities, food transport and delivery, remittances, and food services. The only sector showing income rising in July was professional work (only one percent). No further decline was reported for trade in July (Figure 7).
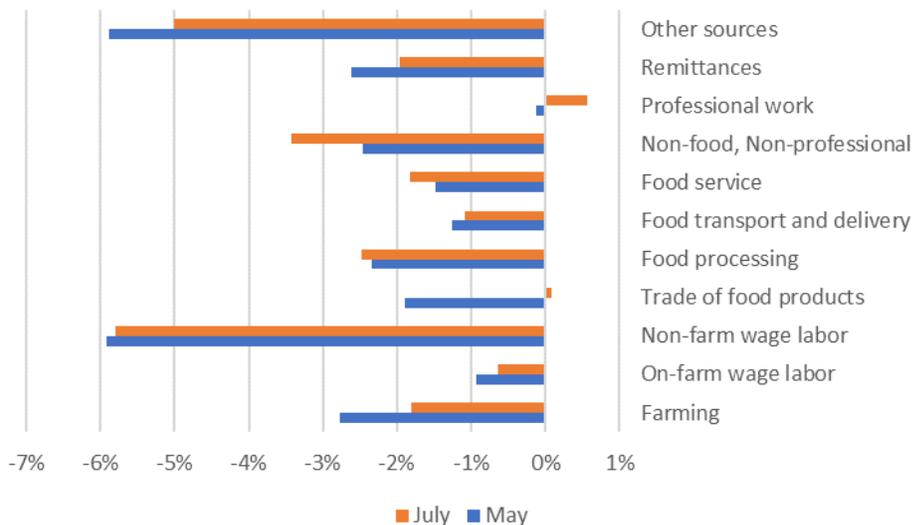

Figure 7. Proportion of urban households who lost (gained) a given source of income in May and July relative to March (Pre-COVID-19).

4.2.3 COVID-19 Effects on Household Poverty Levels

Income reductions which occurred during the COVID-19 pandemic led to an increase in the number of poor households in Mali between March and July. The household poverty status line was estimated at CFAF 35,000 per month or less. The survey results show that the proportion of households reporting an income less than 35,000 CFAF increased in July by two percentage points for all households (from 18 percent in March to 20 percent in July). The share of low-income households of less than 35,000 CFAF/month rose from 18 to 22 percent in rural areas and from 17 to 18 percent in urban areas (Figure 8).

In contrast, the share of households falling in income brackets higher than CFA 140,000 a month declined between March and July. This is particularly true for households making more than CFAF 210,000 per month whose share declined by about two percentage point (Figure 8).
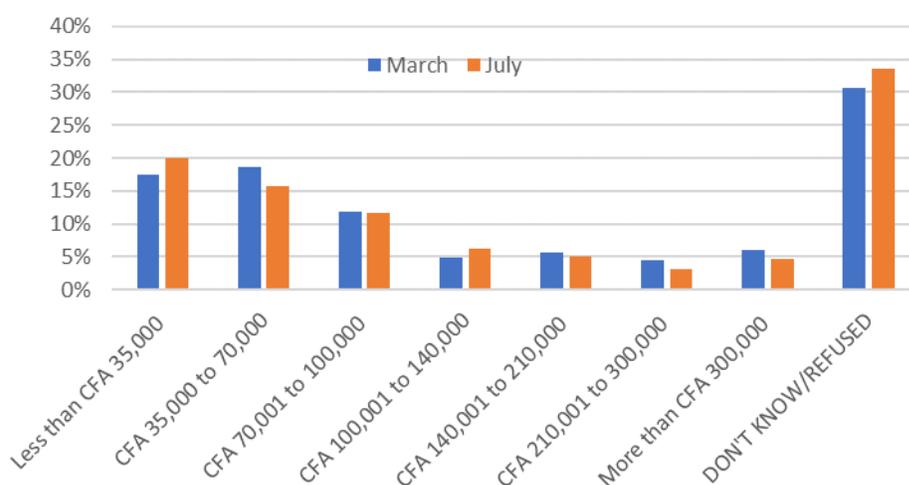

Figure 8. Reported monthly household income in March (Pre-COVID-19) and July (Post-COVID-19)- % of all respondents.
Source: Authors' calculations based on the MSU-IFPRI (2020) COVID-19 Household Phone Survey.

4.2.4 COVID-19 Effects on Food Quantity Consumed Compared to Last Year

Households were asked to compare the levels of quantity consumed of several food items in the previous month to the level in the prior year. Food items considered were: Whole grains; pulses and legumes; starchy staples; fresh vegetables; fresh fruits; eggs; meat, chicken, fish; milk, cheese, butter, yoghurt; cooking oil, sugar, salt, condiments; snacks and bakery products; packaged foods; prepared/catered meals and sweet beverages.

For both rural and urban households, almost all items' consumption remained the same or declined after the pandemic. In both areas, starchy staples saw the greatest decline, followed by meat, chicken, and fish and then by whole grains. For example, of the 400 rural households which were asked to report on their consumption pattern of starchy staples the previous month as compared to the year before, 131 of them said that the past month's quantity was less, while only 18 indicated a consumption increase. The remaining households reported the quantity to be the same or that they normally did not consume the item (Figure 9).
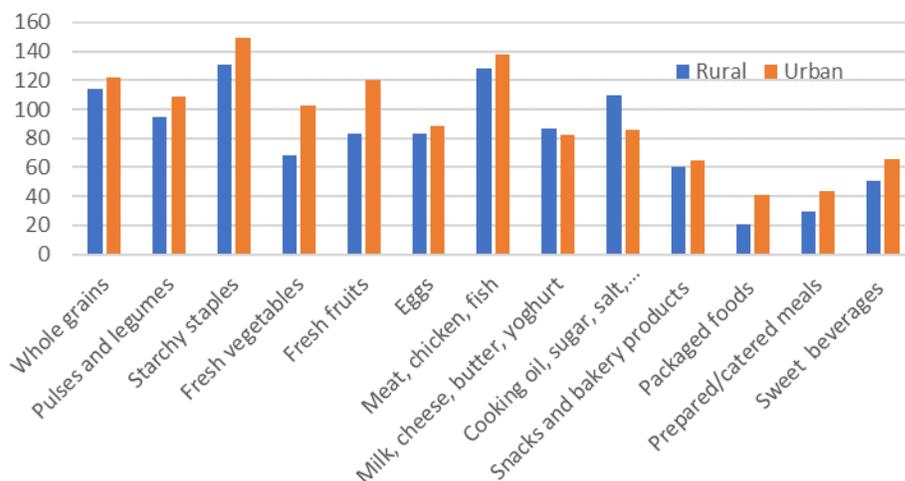
Figure 9. Frequency of households with a reduced food consumption compared to last year.
Source: Authors' calculations based on the MSU-IFPRI (2020) COVID-19 Household Phone Survey.

Households were asked the reasons for consuming less of the food items last month relative to last year. About 54 percent of households in rural areas and 50 percent of urban households said it was because the item was too expensive. Around 28 percent of rural households and 25 percent in urban zones cited low production. The proportions of households, which identified the fear of COVID-19 as a reason for less consumption were 15 percent and 17 percent in rural and urban areas, respectively.

A small number of households reported an increase in the quantity consumed of some food items. Less than five percent of all rural households interviewed declared to have consumed more during the pandemic compared to last year.

In both rural and urban areas, whole grains ranked highest among households that reported an increased food consumption, and prepared/catered meals ranked second (Figure 10).
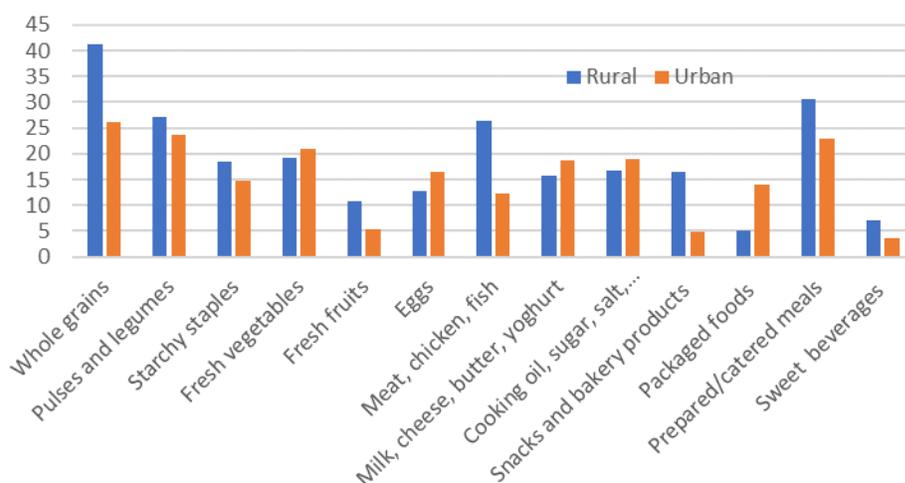

Figure 10. Frequency of households with an increased food consumption compared to last year.
Source: Authors' calculations based on the MSU-IFPRI (2020) COVID-19 Household Phone Survey.

Households which reported an increase in food consumption were also asked to provide reasons. In both rural and urban zones, high production of the item was the number one reason.

In rural areas, it was followed by affordability & higher income, whether the item was the only food available in the market, and cheaper price & lower income. In urban households, however, high production was followed by cheaper price & lower income, whether the item was the only food available in the market, and affordability & higher income. In both areas (rural and urban), market disruptions and item shortages were not significant reasons for reduced food consumption. There were more households in rural areas reporting an increase in the consumption of foods than there were in urban zones.

4.2.5 COVID-19 Effects on Food Shopping Patterns

A typical household in Mali obtains foodstuffs from public markets, own production, kiosks or traditional stores, street vendors, supermarkets, free/food aid/government programs, online/phone shopping, food stall, formal restaurant, and butcher.

About half of households in both rural and urban areas obtain their foods from public markets (46 and 47 percent, respectively). In rural areas, own production is the second largest source of food, while it is kiosks and traditional stores for urban households (Figure 11).
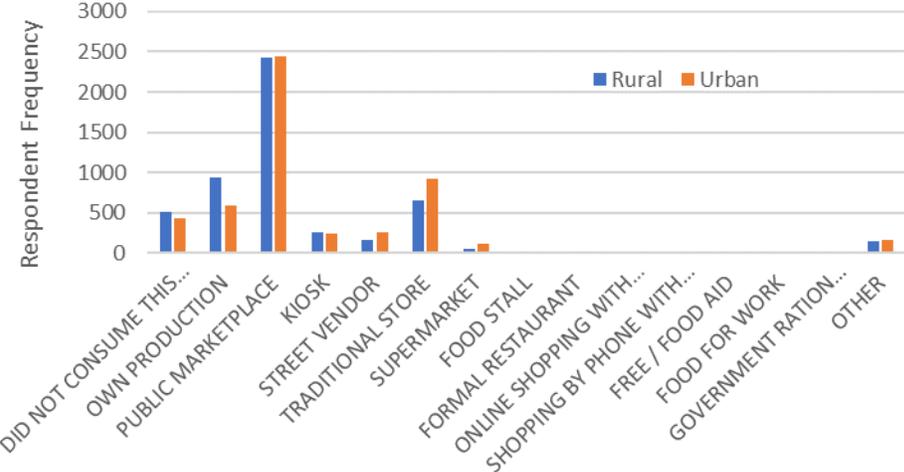

Figure 11. Sources of household foodstuff last year for each of the 13 consumed items (N=5200 per area)
Source: Authors' calculations based on the MSU-IFPRI (2020) COVID-19 Household Phone Survey.

For each the 13 food consumption items considered in the survey (see Figure 10 above), households were asked if the main source of obtaining the item has changed during the pandemic compared to the same month last year. About 40 percent of the surveyed households (in both rural and urban zones) indicated that the sources of their foodstuffs have changed after the pandemic hit.

Although the distribution of respondents across the different sources of foodstuffs changed, the rankings have remained virtually the same, with most households in both rural and urban areas still obtaining their foods from public marketplaces. This could be because the survey was taken after the government relaxed COVID-19 containment restrictive measures (Table 6).

Table 6. Respondent sources of foodstuffs for each of the 13 consumed items (N = 5,200 per each area)

		Last Year		Current Month	
Source of foodstuff		**Rural**	**Urban**	**Rural**	**Urban**
Did not consume		507	426	531	434
Own Production		939	587	895	574
Public marketplace		2,423	2,445	2,452	2,418
Kiosk, traditional stores (inc. ATMs)		906	1,162	915	1,206
Street vendors		163	249	163	253
Supermarket		47	111	43	100
Food stall		8	6	5	5
Formal restaurant		6	24	8	15
Online/phone shopping		18	18	17	22
Free/food aid/govt. program		34	13	21	15
Other		149	159	150	158

Source: Authors' calculations based on the MSU-IFPRI (2020) COVID-19 Household Phone Survey.

5.   Conclusions

Data from the two phone surveys have demonstrated that COVID-19 has had negative effects in terms of reduced or stopped income and the ability to satisfy basic food needs for Malian households. In fact, both surveys show that immediately after the pandemic hit in mid-March and in the three months that followed, income from all types of sources declined due to the government's restrictive measures to contain the spread of the virus, particularly for rural and poor households.

The INSTAT survey revealed that about 70 percent of all households experienced employment losses and reduced incomes. Although all sectors of the economy were affected, trade, agriculture, personal services, and mining & extraction cut jobs the most (in descending order). By June, incomes had stabilized below the pre-pandemic levels. In fact, 43 to 45 percent of all household types (rural, urban, poor, and non-poor) reported their income to have decreased or stopped compared to March.

The proportions of households reporting skipping a meal, eating reduced meal portions, having nothing to eat at home reached a peak in May but continue to be high, affecting over 50 percent of all households, as assistance from relatives and friends, as well as from the government reduced or stopped.

The MSU-IFPRI survey reported that in May, a month and a half after the COVID-19 pandemic hit in mid-March, households in the food supply chain in Mali continued to display cuts in almost all sources of their income. By July, incomes from food transport and delivery,

remittances, and on-farm wage labor had shown some improvement. All other income sources were still at the May levels or had fallen even further. The consequences of this reduction in income meant more households falling in poverty. The income reduction also meant that a greater number of households could not afford the same amount of food consumed, with around 20 percent of households in rural areas (23 percent in urban areas) declaring food consumption declines. This reduction in food consumption could lead to a lesser intake of needed daily calories and proteins, and potentially to an increased level of malnutrition. These numbers are troublesome, given that the food security situation in Mali was already precarious in the pre-COVID-19 era.

In April 2004, the Food Security Agency (Commissariat à la Sécurité Alimentaire) was created in Mali within the Office of the President by Decree N°04-l40/P-RM, to coordinate a national food security policy with all concerned ministerial departments, to evaluate the country's food needs, and to identify the zones and populations in immediate need of food assistance. Its branch, the Early Warning System (Système d'Alerte Précoce – SAP) gathers the needed intelligence. The SAP estimated that about 757,217 people (mostly in Mopti, Gao, and Kayes regions) or 3.7 percent of the total population of Mali needed food assistance in April and May, right after the pandemic hit (Commissariat à la Sécurité Alimentaire, 2020).

The current analysis recommends that, given the negative effects on employment, income, and food security associated with the pandemic and the containment measures in place, the Malian Food Security Agency should continue to implement and even increase (if possible) a COVID-19-Food Security Assistance Program (COVID-FSAP) targeting vulnerable populations. In addition, the government should strengthen the National nutrition program to reduce COVID-19 consequences on households' nutrition. The government should appeal to bilateral and multilateral donors such as USAID for increased assistance. NGOs' assistance increased during the pandemic and should be encouraged.

It is also recommended that follow-up surveys be conducted a year after the pandemic hit and as the vaccine becomes available to most of the population and that the restrictive measures are lifted, in order to decide whether to maintain the food assistance program already in place.

6. References

Commissariat à la Sécurité Alimentaire (CSA). 2020: Système d'Alerte Précoce, Flash No. 001, http://www.food-security.net/wp-content/uploads/2020/04/Mali-Flash-n1-sur-la-situation-alimentaire-et-nutritionnelle-dans-le-contexte-du-covid-19-au-Mali.pdf. Retrieved April 25,2021.

Institut National des Statistiques (INSTAT). 2018: Enquête harmonisée sur les conditions de vie des ménages maliens (EHVM).

Institut National des Statistiques (INSTAT). 2018: Enquête modulaire and permanente auprès des ménages ((EMOP-2018/2019).

World Bank. 2019. World development indicators. https://data.worldbank.org/country Retrieved March 25, 2021.

World Bank, 2020 : COVID-19 Panel phone survey of households. https://microdata.worldbank.org/index.php/catalog/3725 Retrieved March 25, 2021.