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Changes in household income, food consumption, and diet quality in urban and rural areas of Ghana during the COVID-19 crisis

Results of 2020 phone surveys

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ABSTRACT

This study provides an assessment of changes in household income, livelihood sources, food consumption, and diet quality during the first months of the COVID-19 crisis in a sample of households drawn from both urban and rural areas in Ghana. Phone surveys were conducted in June 2020 with 423 urban consumers in Accra and with 369 small-scale crop and fish farmers in rural areas in six regions in middle and southern Ghana. Data was disaggregated by asset quintiles for both the urban and the rural samples.

Reduction in incomes were reported by 83 percent of urban households in Accra, mainly due to business closures and lower sales from their trading enterprises. Most households, however, are showing resilience in terms of food consumption, with a majority of urban consumers surveyed maintaining their pre-COVID-19 level of food consumption; only 9 percent of urban consumers reported reductions in food consumption to cope with income loss due to COVID-19.

For the respondents in the rural areas in middle and southern Ghana, 76 percent reported income loss, and all reported that their livelihoods had been affected. Thirty-four percent of 2020 minor season crop farmers experienced difficulty in selling their produce, and 43 percent of all sample crop farmers anticipated difficulties in accessing inputs in the 2020 major season, mainly fertilizers and agrochemicals. Of those growing fish, 53 percent experienced difficulty in accessing inputs, mainly feeds; 60 percent reported increased input prices; and 64 percent of those harvesting from March to June 2020 experienced difficulties in selling their fish because of lower demand, lower tilapia prices, and higher transportation costs. Despite farm and nonfarm income losses, a majority of households in the rural sample reported maintaining previous levels of diet diversity and food consumption – only 11 percent reported reducing their food consumption to cope with income loss.

Several months into the COVID-19 crisis in Ghana, households in both rural and urban areas showed some resilience in terms of their agricultural production and food consumption. Regular monitoring is needed, however, especially if household savings start to dry up and coping mechanisms become more restrictive.

Keywords: COVID-19, phone survey, income, food security, diet quality, Africa

1. INTRODUCTION

COVID-19 and food and nutrition security

Globally, the COVID-19 pandemic has caused much worry about threats to food and nutrition security (Laborde et al. 2020; Torero 2020; Headey and Ruel 2020). Because of COVID-19, an additional 130 million people were classified as food insecure at the end of 2020 (Anthem 2020). Changes in employment conditions pushed about 45 million people into acute food insecurity. About 33 million of them live in South and Southeast Asia, but most of rest live in sub-Saharan Africa (Micha et al. 2020).

From the supply side, substantial disruptions in agriculture and food systems make inputs and services more difficult to access, reduce production, and increase food prices. From a consumer perspective, reduced income may lead to less purchasing power for food, particularly among the vulnerable.

Increasing numbers of phone surveys and large amounts of empirical research now available provide useful evidence from the ground on the household level impact of the COVID-19 pandemic. Growing numbers of studies suggest widespread self-reported income reductions in both urban and rural areas (e.g., Hirvonen et al. 2020; Headey et al. 2020; Amare et al. 2020; Josephson, Kilic, & Michler 2020; Mobarak and Vernot 2020; Wieser et al. 2020; Ragasa et al. 2021a). Although COVID-19-related lockdowns and mobility restrictions may have led to income losses, the severity of those losses remains largely unknown, and the actual impact on food and nutrition security remains unclear.

Available studies on the effects of COVID-19 on food consumption and diet quality have been mixed. In India, studies on the immediate impact of COVID-19 with 448 farmers in four states (Jharkhand, Assam, Andhra Pradesh, Karnataka) showed that 62 percent of household reported disruptions to household diets due to COVID-19, and most farm households reported reduced ability to access the most nutrient-dense food. The largest falls in consumption were in fruit and animal source foods (Harris et al. 2020). In the Central Dry Zone of Myanmar, Maffioli et al. (2021) found a clear drop in food security and diet diversity among sample women (who were pregnant or had just given birth) during the COVID-19 crisis compared to two years earlier. However, in Addis Ababa, Ethiopia, overall food consumption and household dietary diversity were largely unchanged by August 2020 compared to September 2019 (Hirvonen et al. 2020). The Ethiopia study finds, however, that the composition of food consumption changed, with consumption of staples increasing by 11 percent on average, and consumption of legumes and nuts declining by 16 percent and vegetables by 19 percent on average (Hirvonen et al. 2020).

As stated in a review by Béné et al. (2021), despite the attention that this global crisis received so far from the scientific community, we still have a relatively poor understanding (both quantitatively and qualitatively) of the actual impact of the pandemic on people's food security and nutrition. The impact of COVID-19 on the nutritional status of people, while still poorly documented, is expected to be substantial in the long run. This paper aims to contribute to the literature by providing a case study from Ghana, which compares rural and urban areas and further disaggregates the analysis by household socioeconomic status. The lockdown and movement restrictions in Ghana can be considered less severe than those imposed in other countries. Nonetheless, Ghana relies more heavily on food imports—including rice, chicken, fruits and vegetables, and raw materials for its feed and food processing industries—which may be more severely affected by COVID-19 crisis response measures, particularly with regard to disruptions in global food supply chains.

In this paper, we investigate how livelihoods, food availability and consumption, and dietary diversity were affected by the COVID-19 crisis in Ghana from March to June 2020 – at the onset of the crisis. The paper covers both the lockdown period (March–April) in major cities in Ghana and the period after the lockdown restriction (May–June). No new lockdown measures were imposed from July 2020 onward, and we expect the effects we observe to be stable. However, several other measures remain, including social distancing measures and closure of land borders. Nonetheless, regular monitoring will be important in the future to understand how much of individual or household savings are left and how much of the household resilience capacity observed in this study is maintained.

Ghana context

Ghana is blessed with minerals, favorable agricultural conditions, and easy access to international shipping. The country has been successful in terms of growth in per capita income and agricultural output, reduction in poverty, achievement of middle-income status, and a broadly democratic and peaceful society. Per capita incomes have grown consistently since the mid-1980s (Diao et al. 2019). Associated with economic growth and increases in agricultural productivity, food supply began to improve markedly in the early 1990s. Ghana has also made notable progress in reducing malnutrition in recent years, especially among infants and young children (IFPRI 2015). The prevalence of stunting among children under five years of age dropped from 28 percent in 2008 to 19 percent in 2014 to 17 percent in 2017. As a result, Ghana made impressive progress on the first Millennium Development Goal of eradicating extreme poverty and hunger, halving the share of people suffering from each between 1990 and 2015 (NDPC and UNDP 2015).

Despite all of Ghana's advantages, structural changes in the national economy have been typical of much of West Africa, and Africa more broadly, characterized by rapid urbanization, a stagnant industrial sector, and a rapidly growing services sector, including food services (Aryeetey and Baah-Boateng 2015). The services sector in Ghana has overtaken the agricultural sector when it comes to sectoral contribution to national GDP. In the 2009/10 fiscal year, the agricultural sector accounted for only 31.7 percent of GDP compared to the services sector's 49.5 percent (FAO 2015). At 2.8 percent per year on average, Ghana's growth has been less than half of what China and other East Asian countries with vibrant economies experienced at similar stages of their economic transformation. Thus, Ghana appears to be on a slow path to greater prosperity (Diao et al. 2019). Exports remain concentrated in oil, gold, and cocoa.

Cocoa accounts for between 20 and 25 percent of total export earnings and 2 percent of Ghana's GDP over the last two decades (Kolavalli and Vigneri 2017). Other agricultural value chains are also thriving. The Ghanaian aquaculture sector is a notable recent success story (Kassam and Dorward 2017; Ragasa et al. 2021b). In 2018, the sector produced 76,000 tons of tilapia valued at $200 million and provided employment and income for thousands as feed and fingerling producers, fish feeders, monitors, processors, and traders. The sector has strong backward and forward linkages and a large multiplier effect on local economic growth and poverty reduction (Kassam and Dorward 2017). Generally, food value chains in Ghana are inherently vulnerable because of their being predominantly small-scale in nature as well as their rainfall dependence. However, challenges have arisen in recent years that have further exposed the vulnerability of some specific agricultural and food value chains. For aquaculture, in late 2018, Infectious Spleen and Kidney Necrosis Virus (ISKNV) spread through tilapia farms in Lake Volta, causing high mortality of fish in the thriving cage systems (Ramírez-Paredez et al. 2019). Then, in March 2020, just as the sector started to bounce back, the COVID-19 pandemic and its related lockdowns and restrictions began affecting aquaculture as well as other agricultural value chains.

Ghana recorded its first two cases of COVID-19 on 12 March 2020. The government responded by gradually introducing social distancing measures, travel restrictions, border closures, and eventually a two-week "partial" lockdown in the country's largest metropolitan areas of Accra and Kumasi, which took effect on 30 March (Amewu et al. 2020a). Social distancing measures have been enforced nationwide, including bans on conferences, workshops, and sporting and religious events, as well as the closure of bars and nightclubs. All educational institutions were also closed. The partial lockdown measures in urban areas directed all residents to remain home except for essential business, prohibited nonessential intercity travel and transport, and permitted only essential manufacturing and services operations to continue. The food and agricultural sector was exempted from the lockdown, but many agrifood businesses chose to close down too. The lockdown was initially extended for a third week but was officially lifted on April 20. Social distancing measures remain in place nationwide, although a gradual easing of restrictions commenced in June 2020. International travel restarted on 1 September 2020.

Various studies attempted to evaluate and model the impact of the COVID-19 crisis on Ghana's economy. Ghana's Ministry of Finance conducted an early rapid assessment of the likely budgetary impacts of COVID-19. On the revenue side, the government expects to lose GHC 5.68 billion[1] in oil revenue because of the two-thirds decline in crude oil prices. Non-oil revenues were expected to fall by GHC 2.25 billion because of the economic slowdown (MoF 2020). Using a Social Accounting Matrix (SAM) multiplier model, Amewu et al. (2020b) show that Ghana's partial lockdown, although in force for only three weeks during April 2020 and restricted to the major urban areas of Accra and Kumasi, likely caused national GDP to fall by 27.9 percent (or US$ 1.3 billion) relative to baseline GDP for the same three-week reference period. The national poverty headcount rate was estimated to have increased by 12.5 percentage points during the lockdown period from a base of 24.2 percent, assuming that the production slowdown during the lockdown translated into an immediate decline in employment income. This substantial increase, albeit temporary, translated into an additional 3.8 million people falling into poverty during the lockdown in the second quarter of 2020 (Amewu et al. 2020a). Despite the food sector's exemption from lockdown measures, COVID-19 policies and external shocks likely caused a 19.5 percent loss in value added in the agri-food system, i.e., the sum of agriculture, agro-processing, food services, and food trade and transport services GDP (Amewu et al. 2020a). Both rural and urban households were affected – 37 percent of households that were estimated to have become poor during the lockdown period were rural farm households (Amewu et al. 2020a).

The COVID-19 crisis is feared to have set back progress in Ghana in reducing food insecurity in urban and rural areas, and diet quality may worsen because of the crisis. The Ghanaian diet largely relies on starchy roots (cassava, yam) and cereals (maize, rice). In 2016, data from 452 households in Accra, Ghana showed that diets are diverse but low in consumption of micronutrient-rich foods, such as fruits and milk or other dairy products (Codjoe et al. 2016); and the share of animal protein in the dietary energy supply is lower than recommended (Sumberg et al. 2016). Several studies have also highlighted inequalities in food insecurity and dietary diversity. Rural areas still have higher rates of stunting and wasting compared to urban areas (Diao et al. 2019). In 2014, 22 percent of rural and 15 percent of urban children were two standard deviations below the recommended height-for-age ratio (Diao et al. 2019). Similarly, a survey in northern Ghana by Tuholske et al. (2020) found that a greater share of women in rural areas there (16 percent) had lower dietary diversity (≤ 3 WDDS, or Women's Dietary Diversity Score) than women in urban (13 percent) and in peri-urban areas (5 percent). The study showed low consumption and limited diversity of vegetables in diets in rural areas, especially vitamin-A-rich vegetables and tubers.

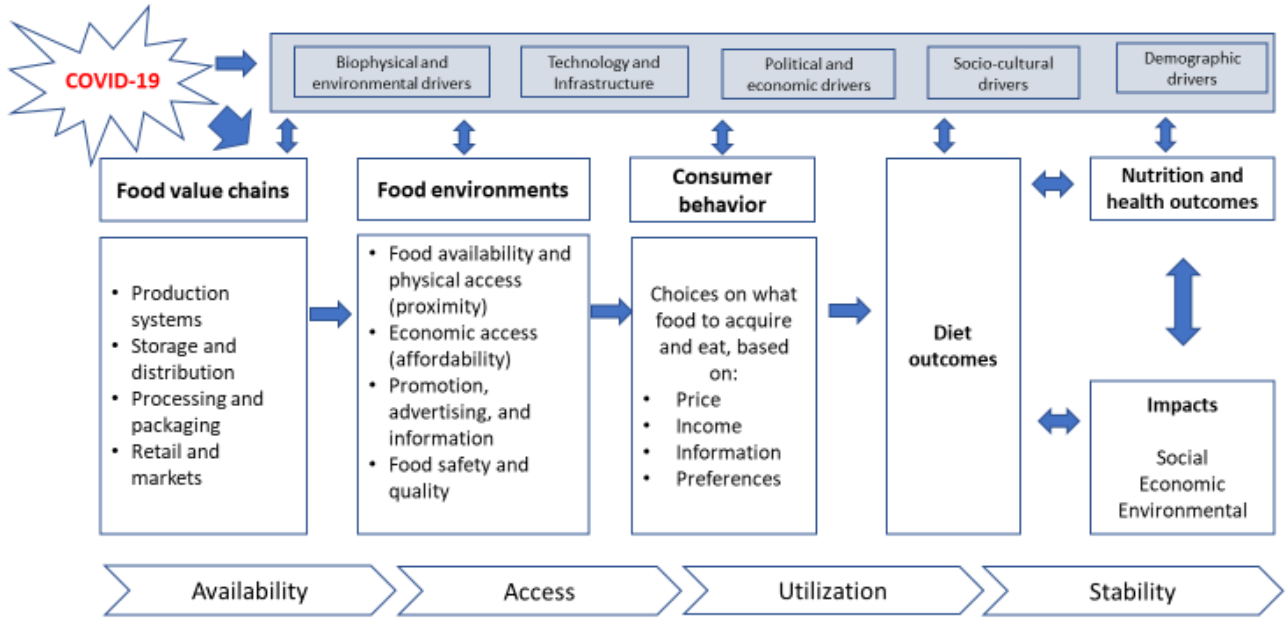
[1] Ghanaian cedi (GHC): US$ 1.00 ≈ GHC 5.75, mid-2020.

Moreover, rapid urbanization has modified food consumption patterns in urban areas, with increasing demand for imported food, especially processed food; convenience meals away from home; chicken; meat; and rice (Andam et al. 2019; Hollinger and Staatz 2015). Nationally, obesity rates are increasing across both rural and urban populations (GSS, GHS and ICF 2015). Among women ages 14 to 49 years, nearly 50 percent of urban women and 30 percent of rural women are obese, compared to 23 percent and 8 percent of urban and rural men, respectively (GSS, GHS and ICF 2015). How the COVID-19 crisis has affected the availability and consumption of imported and processed foods and its impact on the availability and consumption of different types of fruits, vegetables, and healthy foods are useful topics of investigation and are addressed in this paper.

Related concepts and hypotheses

The pandemic is unique, massive, and global and combines health, economic, and food crises. Adopting a food system framework in the case of COVID-19 helps to better realize the complexity—and sometimes very unstable nature—of the situation and the potential ripple effects that may pass through the entire food system once one component is affected by such a crisis (Figure 1). The food system lens brings together the myriad ways in which lockdowns may affect food production, even when exemptions to any economic restrictions on agricultural work are put in place.

Figure 1. Conceptual framework of the effect of the COVID-19 crisis on the different aspects of agrifood systems.



Source: Adopted from HLPE (2017).

Food production is an area in which COVID-19 could have potentially substantial effects. Food production requires the use of inputs, such as seeds and fertilizers, and input market disruptions can be particularly challenging for farming operations. Especially for sectors such as aquaculture—with its highly perishable fingerlings—transportation, handling, and timely access to inputs are crucial to prevent fish mortality and income loss. Access to inputs is susceptible to disruptions in international shipping, closures of land border crossings, and in-country restrictions on mobility. As planting seasons begin, farmers often borrow money from financial institutions to acquire working capital needed to purchase inputs. The closure of financial institutions, as what happened as part of the response to COVID-19 in many countries, may make it difficult for farmers to access the loans they require to purchase these inputs.

Food production requires labor – even farms of modest size hire workers at certain points during the production cycle. Access to hired labor may be disrupted because prospective workers are unwilling to travel to work sites, because prohibitions on movement mean that workers cannot travel, or because strict enforcement of social distancing regulations restricts the number of workers who can work together. Some farmers and farm workers may become ill or die from COVID-19. The effects of COVID-19 on food production have been mixed depending on sector, dependence on external and imported inputs, and country. As of June 2020, there were few reported cases of disruptions to food production (World Bank 2020). Other studies show mixed results, from varied effects in different states in India (Cabellos, Kannan, & Kramer 2021) to a range of effects in different sectors, locations, and value chain stages in Myanmar (Boughton et al. 2021).

Traditional food systems, with few links beyond the farm, and modern, vertically integrated systems were relatively resilient (Picchioni, Goulao, & Roberfroid 2021). More vulnerable, however, were food systems transitioning from traditional to modern; they are characterized by longer supply chains and still-fragmented storage, transportation, and services. During the pandemic, these characteristics made it more difficult for actors along these transitioning food supply chains to access markets and to procure labor and input supplies, which were affected by drops in demand and government restrictions. For example, in Myanmar, half of retailers of agricultural machinery, such as tractors and combine harvesters, reported a drop in sales of 70 percent or more (Boughton et al. 2021). The researchers attributed this to both equipment movement restrictions and to decreased machinery imports and decreased local production of machine parts.

Impacts on agricultural production and trade were mixed. Both labor supply and perishable products were notably affected by mobility restrictions. In Senegal, for example, small fruit and vegetable producers were impeded by closure of traditional wet markets and social distancing requirements, leading to food spoilage and lost income. In many countries, the pandemic struck during the agricultural season, and mobility restrictions reduced the availability of labor for harvesting and other farming activities, with the most severe impacts on farms that rely heavily on hired labor. In Ethiopia, for example, restrictions on mobility constrained the labor supply to rice farmers, about 75 percent of whom rely on hired day laborers for weeding and harvesting. In Myanmar, the rice sector saw variation in the effects of COVID-19 on farmers and millers and across rice varieties – price increases were seen for exported rice and for those varieties milled in modern mills, with much of the price increases going to farmers in the form of paddy price increases, but the prices for rice consumed locally remained stable (Goeb et al. 2021).

Food markets and the food environment are also potentially affected by COVID-19. COVID-19-related prohibitions on movement and the closure of informal food markets in order to achieve greater social distancing have affected the stability of food availability and access. Most retail outlets were allowed to continue trading during the lockdown in most countries, and consumers were allowed to leave their homes to buy essential food and groceries. In localities where consumers purchase food through formal sector outlets, this permits continued physical access to food, though stock-outs of specific foods may occur. However, restrictions on the size of crowds that can congregate resulted in some places in the closure of large, informal markets where the poor—particularly the urban poor—purchase much of their food. Such closures of food shops and markets may not affect all foods equally. This situation becomes especially problematic for foods with limited shelf life—fruit, vegetables, and animal source foods—with the result that these restrictions may adversely affect both quantity and quality of foods available for consumption. In South Africa, after two weeks of intense public debate about the trade-off between health risks and hunger risks, informal food traders were allowed to apply for licenses to resume trading (Devereux et al. 2020).

Consumer purchasing power may also have decreased because COVID-19 measures could affect all types of livelihoods. Lower household incomes from lost jobs can pose a significant shock to demand. For poor consumers, a forced shift to more expensive food outlets, such as supermarkets, following the closure of open-air markets and a ban on street vendors, may disrupt food access further and reduce diet quality. In the medium term, a prolonged reduction in access to preferred foods and a shift to cheaper, less nutritious food could lead to deteriorating nutrition status.

Because of the interplay of supply disruptions, income reductions, and lower purchasing power under COVID-19, consumption is projected to shift toward increases in vegetable oils, sugar, other crops and other processed foods, while consumption of nutrient-rich foods is projected to decline, along with food away from home (FAFH) (Laborde et al. 2021). Fruits, vegetables and animal-source foods are rich in a range of nutrients but are relatively expensive sources of calories. In the face of income losses, consumers tend to shift to cheaper sources of calories, including starchy staples, cereals, oils and/or non-perishable processed foods and, conversely, to more nutrient-dense foods when the price of staple food decreases (Headey and Alderman 2019; Laborde et al. 2021). This pattern was observed in previous macroeconomic crises.

On the supply-side, COVID-19-related disruptions may affect the supply of some perishable foods, especially during lockdowns, and lead to rising prices for consumers in some instances (Kansiime et al. 2021). Projected increases in the consumption of sugar, oil, and processed foods is related to relative prices, but also to stocking-up on non-perishables in anticipation of lockdown measures (Laborde et al. 2021). Declining consumption of FAFH, which may have a positive or negative effect on health, depending on the circumstances, is also a function of the effects of COVID-19 on reducing demand for in-person services to avoid contagion, as well as lockdowns forcing restaurant closures (Laborde et al. 2021). In this paper, these issues are assessed in the context of Ghana.

Food access is threatened by increases in food prices relative to wages or income. As of early June 2020, global food prices had shown relatively little change (World Bank 2020), partly because of good harvests of grains in key suppliers, such as Brazil, and partly because the fall in oil prices has reduced the cost of transporting food (Devereux et al. 2020). However, more recently in 2021 higher food price inflation has been commonly seen worldwide. In the longer term, there is more reason for concern. At the macro level (i.e., global and national), COVID-19 has not been shown to have compromised food availability to any noticeable extent (Laborde et al. 2020). However, there are concerns about countries reducing their food exports to protect national supplies. According to IFPRI's Food Trade Policy Tracker, as part of their response to COVID-19, 19 countries in 2020 introduced export restrictions, with severe effects on importing countries, including some of the poorest countries in Central Asia and sub-Saharan Africa (IFPRI 2020). Kazakhstan's ban on exports of wheat and other products in March 2020 affected 50 percent of neighboring Kyrgyzstan's food imports (Swinnen et al. 2021). However, many of these restrictions were removed or loosened in the second half of 2020, following strong reactions from international organizations (Swinnen et al. 2021).

The impacts of COCVID-related rising poverty, reduced livelihoods, and increased food prices are reflected in rising levels of food insecurity and decreasing diet quality in some countries. However, other countries are showing resilience at the onset of the crisis. On the one hand, more than a third of Bangladeshi rural and urban youth reported moderate or severe food insecurity during the country's lockdown period, and coping mechanisms reported by poor Bangladeshis included not eating for an entire day and exhausting household food reserves (Swinnen et al. 2021). Several studies, including from Guatemala and China, illustrate households' dietary shift away from more expensive nutritious foods, such as fruits, vegetables, and animal source foods,

toward cheaper staple foods (Swinnen et al. 2021). On the other hand, studies in Ethiopia show a more resilient food system and most sample respondents maintaining their food security and dietary diversity months into the pandemic (Hirvonen et al. 2020, Hirvonen et al. 2021). There seems to be diversity between and within countries in the extent of the impact of COVID-19 on food security and nutrition. The extent of this impact depended on several factors, including: 1) timing, duration and stringency of national COVID-19 restriction measures and policies to mitigate their adverse impacts; 2) context specific food value chain responses to domestic and international containment measures; and 3) differentiated impacts of restriction measures on different groups, along lines of gender, age, socio-economic status and employment conditions (Picchioni, Goulao, & Roberfroid 2021).

This paper aims to contribute to this emerging evidence on the impact of the COVID-19 crisis, particularly comparing rural and urban respondents, further disaggregating them by socioeconomic status, in Ghana, a country characterized by an agricultural transforming economy with large agrifood system well as increasing inputs and food imports to supply its growing local enterprises and growing populations.

2. MATERIALS AND METHODS

Phone surveys were conducted with respondents in urban and rural areas in Ghana. These built upon two earlier face-to-face surveys – a September 2018 survey of 1,203 consumers in various types of markets in Accra (Ragasa et al. 2018; Andam et al. 2019), and a June 2019 survey of 603 small-scale crop and fish producers in the major agriculture and aquaculture regions of Eastern, Volta, Ashanti, and Brong Ahafo (recently subdivided into Bono, Bono East, and Ahafo regions) (Ragasa et al. 2020). The samples for the phone surveys in June 2020 were 423 urban consumers and 369 small-scale farmers who were drawn from the samples for the earlier face-to-face surveys.

Almost all respondents during the earlier face-to-face surveys reported telephone numbers. Only 72 urban consumers (5 percent) and four rural producers (less than 1 percent) in the face-to-face survey samples did not have a cell phone or did not provide a telephone number. There was only one refusal for the urban survey. For the phone survey of rural producers, 1 percent refused to respond, saying that they were no longer involved in fish farming. Another 16 percent had telephone numbers that did not work. There were no systematic differences in terms of wealth distribution or region of origin between those surveyed and those who refused or whose telephone numbers were not working.

The phone survey was approved by the ethical review board of IFPRI. Eight enumerator-callers recruited and managed by the FMMS survey firm were trained for two days to implement the phone survey under the supervision of a senior research officer from IFPRI. Respondents were offered GHC 10 as phone credit after the interview.[2] The phone surveys lasted 30 minutes on average. For urban consumers, questions include livelihoods and impact of COVID-19 on their livelihoods, food availability and consumption, and food prices. For rural producers, questions included respondents' experiences with the COVID-19 crisis and response measures; its effect on their fish farming, crop farming, and other livelihoods; and their perceptions about the future of Ghana's aquaculture. Respondents were asked to compare situations before COVID-19 (January and February 2020), during lockdown (March and April), and after lockdown (May and June). For some questions, respondents compared the situation during COVID-19 to the same time in 2019.

[2] Ghanaian cedi (GHC): US$ 1.00 ≈ GHC 5.75, mid-2020.

For the phone survey of consumers in Accra, the sample was first stratified by tilapia, chicken, and rice shoppers—because these consumers were previously selected as actual buyers of these focus foods during the earlier consumer survey—and then randomly selected within each commodity strata. The 2018 consumer survey targeted different types of markets—from traditional markets to cold stores to supermarkets—catering to all types of households. The demographic profiles of these urban samples in both the face-to-face survey in 2018 and the phone survey in 2020 are very similar (Table 1). Moreover, the samples for both surveys are similar in several demographic characteristics to those for households included in larger surveys in Accra (Ragasa et al. 2020; Andam et al. 2019).

Table 1: Demographic statistics for respondents to the 2020 phone survey and the 2018 face-to-face survey of consumers in Accra, percent of respondents

	Phone survey, 2020	Face-to-face survey, 2018
Education level		
No schooling or up to primary school	23	23
Junior high + vocational	31	30
Senior high + diploma	33	34
College degree or higher	12	12
Missing education information	1	1
Sex		
Female	81	81
Male	19	20
Respondent's age (years)	40	40
20–35	41	40
36–60	52	54
61+	6	6
Missing age information	0	1
Household size (number of members)	5	4
Income group [a]		
Poor 1 (Poorest) (<GHC 400)	9	9
Poor 2 (GHC 400–999)	38	34
Poor 3 (GHC 1,000–2,000)	23	25
Nonpoor (>GHC 2,000)	13	18
Missing income information	16	13
Marriage status		
Married	65	-
Single	24	-
Divorced/widowed	10	-
Refuse to answer	1	
Observations	423	1,203

Source: IFPRI/FMMS phone survey of consumers in Accra (June 2020).
Note: [a] Based on 2018 data.

For the urban phone survey, 81 percent of the sample respondents were female and 41 percent were youth (age <36 years) (Table 1). Twenty-three percent have no schooling or only up to primary schooling, 31 percent have junior high schooling, and 33 percent have senior high schooling. Nine percent of the phone sample households are classified as belonging to the poorest income group (poor 1), 38 percent to the second-poorest group (poor 2), 23 percent to the third-poorest group (poor 3), and 12 percent to the nonpoor group.[3]

[3] The basis for the income groups presented in Table 1 is the Ghana Living Standard Survey (GLSS) 7 poverty profile (GSS 2018). The lower poverty line is GHC 792.05 per adult per year (extreme poverty) (GSS 2018). Individuals whose total expenditure falls below this

Table 2: Demographic statistics for respondents to the 2020 farmer phone survey and 2019 face-to-face survey of small-scale farmers in major aquaculture and crop-producing regions, percent of respondents

	Phone survey, 2020	Face-to-face survey, 2018
Education level		
No schooling or up to primary school	20	19
Junior high + vocational	36	37
Senior high + diploma	19	22
College degree or higher	23	22
Sex		
Female	7	6
Male	92	94
Respondent's age (years)	49	49
Less than 35	17	18
36–60	62	62
Over 61	20	20
Asset quintile		
1(poorest)	19	20
2	20	20
3	19	20
4	21	20
5 (richest)	20	20
Marriage status		
Married	84	84
Single	12	12
Divorced/widowed	3	4
Region		
Ashanti	21	25
Brong-Ahafo (Bono, Bono East, Ahafo)	42	39
Eastern	29	29
Volta	8	7
Observations	369	603

Source: IFPRI/FMMS phone survey of sample fish and crop farmers (June 2020).

For the phone survey in rural areas, the sample builds on the previous face-to-face interviews of a census of small-scale fish farmers, almost all of whom are also crop farmers, in six major agriculture and aquaculture producing regions (Table 2). Four of these regions, Ashanti, Bono, Bono East, and Ahafo, are the major maize- and cocoa-producing regions in Ghana. The main crops grown by the respondents are maize and cocoa, although some farmers also grow cassava, plantain, and vegetables. The sample is likely not the poorest segment of the rural population in those regions because the vast majority of them own both cropland and fishpond, and these activities require resources and capital.

The analysis is mainly descriptive using tables and figures and complemented by narratives from the key informant interviews. We disaggregated rural respondents by asset quintile and region and disaggregated urban respondents by income group.

line are considered to be in extreme poverty because, even if they allocated their entire budget to food, they would not be able to meet their minimum nutrition requirements. Assuming two adults in a household, the extreme poverty income limit would be about GHC 1600 per household per year. A majority of the sample consumers are in this category, so we further broke them down into three groups: poor 1 (poorest) (<GHC 400), poor 2 (GHC 400–999), and poor 3 (GHC 1,000–2,000). The upper poverty line is GHC 1,314 per adult per year (GSS 2018). Individuals consuming above this level can be considered to be able to purchase enough food to meet their nutritional requirements and their basic nonfood needs. Assuming two adults in a household, this would be about GHC 1,600 per household per year. Households in this category are referred to as nonpoor in our survey.

3. RESULTS

Impact on livelihood and income

Urban areas

Eighty-seven percent of the urban households surveyed were engaged in trading or other own businesses as their sources of income in May and June 2020 (Table 3). Most households across all income groups reported that their businesses were affected by COVID-19 because of lower demand from consumers and lower sales. Twenty-two percent of households reported that they had to shut down their business because of the impact of COVID-19, with a greater proportion of poor households (23 percent) than nonpoor households (17 percent) reporting such shutdowns.

Half of households reported wage or salary employment as their other source of income, with a greater proportion of nonpoor households (78 percent) than poor households (43 to 46 percent). Nonetheless, we see an almost similar proportion of households across income groups (5 percent) affected by either reduction in salary or wages or lost employment due to COVID-19.

Nineteen percent of households reported remittances from family within Ghana, and 12 percent reported remittances from family in other countries as their other source of income, with a greater proportion of nonpoor households (15 percent) than the poorest households (8 percent) reporting remittances from family in other countries. Similarly, 13 percent of households reported having at least one family member migrating (Annex Table 1). COVID-19 has affected both the migration patterns and remittances of these households. About half of respondents reported that at least one member of their household planned to migrate but could not do so because of the COVID-19 crisis. Compared with female members in the household, males are more likely to migrate, especially among the poorest households (Annex Table 1).

Overall, 83 percent of households reported a reduction in income. More of the poorest households reported a reduction in income (88 percent) than nonpoor households (76 percent). In terms of coping strategies, 68 percent of respondents for all income groups were able to use bank or cash savings in responding to their household income change. A greater proportion of households from the nonpoor group (83 percent) than households in the poorest group (60 percent) reported doing so, possibly because they likely had relatively higher savings. Twenty-nine percent of households reported reducing nonfood expenditures as a coping strategy, and 9 percent of households reported reducing food consumption, with the greatest proportion of households in second-poorest income group (14 percent) reporting having reduced food consumption. Thirteen percent of households resorted to borrowing money to meet with daily expenses. Only 1 percent reported having sold off assets by the time of the phone survey to cope with COVID-19.

Table 3: Income sources in April–May and impact of COVID-19, percent of respondents

	All	Poor 1 (poorest)	Poor 2	Poor 3	Non-poor
Panel A: Household's source of income from May to June 2020					
Wage/salary employment	50	43	43	46	78
Trading or other businesses	87	85	89	85	76
Pension	5	5	4	4	4
Remittances from family within Ghana	19	20	16	21	20
Remittances from family in other countries	12	8	12	13	15
Transfers or assistance (cash or in-kind)	14	8	11	16	17
Panel B: Income-generating activities affected by COVID-19					
Income affected by COVID-19	83	88	83	87	76
I lost my job	5	6	5	6	2
My company reduced my salary	5	3	5	3	7
My business shut down	22	23	19	28	17
Low market/sales/revenue for my business	80	83	84	74	80
Difficulty in accessing inputs for my business	20	11	24	21	12
Increase price of major inputs	13	3	16	15	12
Panel C: Coping strategy					
Used bank/cash savings	68	60	68	65	83
Reduced non-food expenditure	29	23	31	33	29
Reduced food consumption	9	6	14	3	7
Borrowed money	13	14	12	15	12
Bought food and/or household necessities on credit	2	0	4	1	0
Sold off assets	1	0	2	0	0
Did nothing	12	26	9	12	7
Other	4	3	5	6	0
Panel D: Impact of COVID-19 crisis on households					
Unemployment/loss of income	44	49	43	51	34
Shortages in food supply	3	0	1	5	4
Shops being closed	12	15	12	7	13
Travel restrictions	7	8	7	3	11
Social distancing	4	3	4	5	4
Quarantine or self-quarantine	15	15	19	9	8
Being sick or fear of getting sick	12	5	11	12	25
Fear of dying	4	5	1	6	2

Source: IFPRI/FMMS phone survey of consumers (2020).

Urban respondents were asked which impact of the COVID-19 crisis had most affected their household. Among the top three impacts, 44 percent of respondents reported unemployment or loss of income, with a higher proportion of poor households (43 to 51 percent) than of nonpoor households (34 percent) reporting unemployment or income loss as the greatest impact of COVID-19. The other top responses were the impact of quarantine or self-quarantine and its associated impact on mobility (15 percent reporting), fear of getting sick or dying (12 percent), and shops being closed and the associated limited availability and access to food and other daily needs (12 percent reporting).

Rural areas

Sample respondents in the rural areas were engaged in various income-generating activities, which were all affected by COVID-19. Most of the sample farmers were growing fish and crops when the COVID-19 crisis hit. Fifty-three percent of those growing fish experienced difficulties in accessing inputs (especially feeds) during the COVID-19 crisis (Table 4). Sixty percent reported increases in input prices, particularly for feed. The average increase in feed prices was roughly

GHC 2.00 per kilogram (kg). In 2019, the average price for starter feed was GHC 19.00/kg, while for grow-out feed it was GHC 4.25/kg. Between January and June 2020, the average fingerling price rose GHC 0.27 per piece, mostly sized between 5 grams and 10 grams. The average price for fingerlings in 2019 was between GHC 0.15 and GHC 0.80, depending on size (grams), location, and hatchery. Twenty percent of farmers experienced difficulty in accessing labor for fish farming. Several respondents said, *"Workers did not come to work due to fear of contracting COVID-19."* One farmer said, "*It was more difficult to maintain and hire workers because of loss of income from fish farming and other livelihoods.*" Few farmers harvested and sold fish during the COVID-19 crisis (March to June 2020). Of those harvesting fish, 64 percent of the sample farmers experienced difficulties in selling their fish. The reasons reported for these difficulties were lower demand or no buyers, lower tilapia prices, and higher transportation costs. One farmer said, "*Buyers are afraid of their movements to and from the production centers."*

Of those harvesting crops, 34 percent experienced difficulty selling during the minor season (Table 4). Of those growing crops, 43 percent experienced or anticipated difficulty accessing inputs during the major season. These difficulties are seen mainly for fertilizer and agrochemicals, but some also reported difficulty in accessing seeds, farm machinery, and human labor. News or research reports for Ghana also show similar difficulties in the farming of other commodities. The cocoa sector anticipated significant losses due to a lack of access to credit and global market contraction (Ayitey 2020). Cashew farmers experienced a 50 percent price drop in the first quarter of 2020 as foreign investors were unable to travel to Ghana to procure nuts (B&FT Online 2020). In our sample, we did not see a clear difference across asset or wealth groupings. We did see, however, some differences by region, with farmers in Brong Ahafo experiencing more difficulties in access to inputs and output markets than farmers in other focus regions (Annex Table 2).

Aside from fish farming and crop farming, most respondents have other livelihoods, including own nonfarm business or wage/salary employment (Table 4). Remittances from migrant workers were not common among fish farmers, reported by only 3 percent of respondents. Sixty-four percent reported that their livelihoods (other than fish and crop farming) were affected by COVID-19, with 76 percent reporting a decrease in household income due to COVID-19 (Table 4). Farmers' main mechanisms for coping with this loss of income were to use savings, reduce nonfood expenditures, and borrow money. Eleven percent of respondents reported reducing food consumption or expenditure because of COVID-19. One farmer said, "*Now money is scarce, [and] getting loans from family members is even difficult."* The main effect of COVID-19 on livelihoods was lower sales or revenue from respondents' own businesses. Others reported difficulty in accessing inputs or raw materials for their business and increased prices of major inputs or raw materials.

Table 4. Effects of the COVID-19 crisis on livelihoods and household income of surveyed fish and crop farmers, percent of respondents by asset quintile

Livelihood and Income	All	Quintile 1 (Poorest)	Quintile 2	Quintile 3	Quintile 4	Quintile 5 (Richest)
Panel A: Fish Farming						
Experienced difficulty in accessing any inputs	53	52	58	52	56	49
Fingerling	15	8	24	15	9	21
Feed	97	96	97	100	97	93
Fertilizer/lime/agrochemicals/drugs	11	0	26	7	6	14
Farm machinery/machinery rental facility	13	23	9	15	13	7
Reported increase in input prices	60	60	68	60	61	49
Experienced difficulty in hiring labor during COVID	20	12	25	21	19	24
Experienced difficulty in selling (of those selling)	64	0	100	50	83	60
Anticipates difficulty in selling	55	64	51	54	53	56
Panel B: Crop farming						
Experienced difficulties in selling harvested crops due to COVID-19	34	40	35	28	35	31
Experienced or anticipate difficulty in accessing farm inputs (during major season):	43	37	42	44	44	43
Seed	19	14	29	21	5	29
Fertilizer	67	71	59	79	52	76
Agrochemicals	67	79	53	74	71	62
Human labor	22	36	6	5	29	33
Farm machinery	15	14	29	16	19	0
Other inputs	4	7	6	5	0	5
Panel C: Other livelihood						
Food trading	1	3	0	1	0	3
Other trading business	13	10	12	12	20	8
Other own business	28	30	28	25	33	25
Wage/salary employment	17	17	13	16	14	21
Remittances	3	3	4	1	3	5
None	29	32	33	36	25	21
Other (mainly livestock production)	8	4	9	7	5	16
Panel D: Decreased income due to COVID-19	76	77	79	76	71	79
Panel E: Main income-generating activity affected by COVID-19	64	70	60	58	68	61
Lost job	1	3	0	0	3	0
Company reduced my salary	4	6	3	4	5	3
Business shut down	5	3	7	12	8	0
Low market and low revenue from business	80	76	83	80	83	75
Difficulty accessing inputs for business	19	36	17	12	15	17
Increase in price of major inputs	15	15	17	16	13	17
Other	13	9	7	8	13	22
Panel F: Coping strategies for income loss						
Used bank/cash savings	53	51	58	41	54	61
Reduced non-food consumption/expenditure	38	36	44	37	43	32
Reduced food consumption	11	6	7	12	14	17
Borrowed money	18	21	15	24	16	15
Bought food or household necessities on credit	7	8	10	10	4	2
Sold off assets (e.g., jewelry/mobile/furniture)	1	0	0	0	2	3
Did nothing	14	17	7	16	16	12
Remittances/cash transfers from relatives/friends	13	9	14	8	18	17
Other	6	8	5	12	2	5
Observations	369	69	75	67	79	75

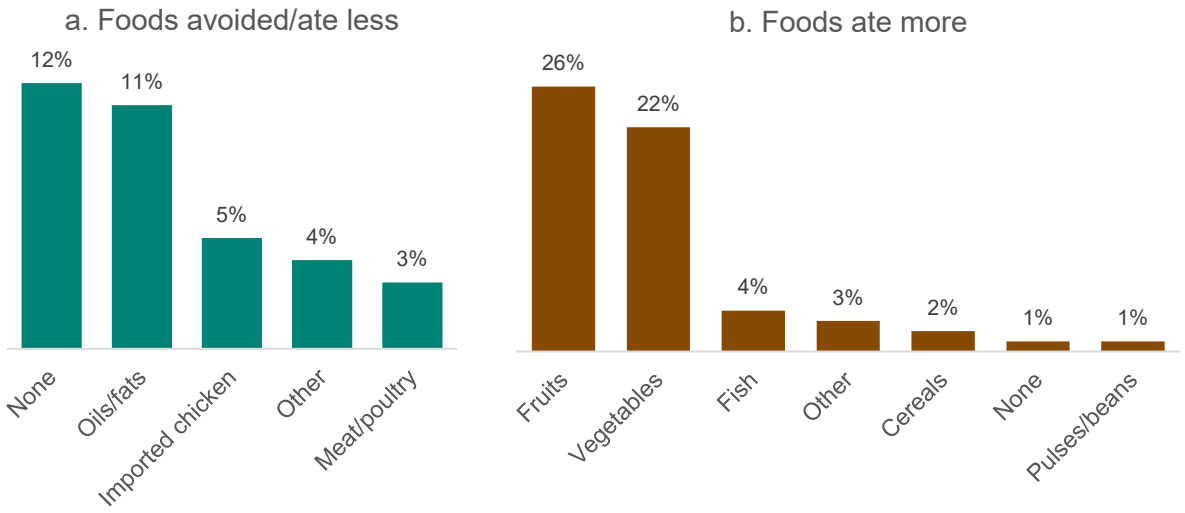
Source: IFPRI/FMMS phone survey of sample fish and crop farmers (June 2020).

Impact on food consumption and diet quality

Urban areas

A majority of the sample households in Accra did not report changes in food availability and food consumption during the lockdown period (March and April) and after the lockdown (May and June). However, a third of respondents reported having foods they ate more of or less of during the lockdown period. When asked if some foods were avoided or consumed less, the largest proportion of sample households in Accra said they consumed less of oils and fats (11 percent reporting), imported chicken (5 percent), and meat and poultry (3 percent) (Figure 2a). When asked if some foods were consumed more, the largest proportion of sample households in Accra said they consumed more fruits (26 percent reporting) and vegetables (22 percent) (Figure 2b). Some respondents also reported consuming more fish (4 percent). Nonpoor households were more likely to increase consumption of these foods than poor households. Media campaigns emphasized the need to eat healthy food to boost the immune system to fight COVID-19, and we see the effect of these media campaigns on food consumption. Many respondents reported eating less "sugary and oily food" and "alcohol beverages," and eating more "healthy food," including fruits, vegetables, and "Sobolo drink"[4] to help fight COVID-19.

Figure 2. Foods eaten more or less during COVID-19, Accra, percent of respondents



Source: IFPRI/FMMS phone survey of consumers, 2020.

During the time of the urban phone survey (June 2020), the household dietary diversity score (using nine food groups and seven-day recall) was 5.8 on average (Table 5), which indicates a quite diverse diet but a low frequency of consumption for several food groups (Table 6). All of the sample households reported consuming grains every week; and a majority (74 to 97 percent) of sample households reported consuming other vegetables, meat or fish, and fruits weekly. Only 55 percent of respondents consumed dark leafy vegetables and 61 percent consumed eggs weekly. Only 30 to 45 percent of sample households consumed pulses, nuts or seeds, and milk or other dairy products weekly. Consumption was, however, not frequent. Of those consuming fruits, average consumption was four to five days per week. Of those consuming pulses and nuts, average consumption was two days per week.

[4] Sobolo drink is prepared with Hibiscus leaf and flavored with fruits. It is a popular drink in the country and is believed to have many nutritious benefits.

Table 5. Dietary diversity by income group in consumer phone survey

	All	Poor 1 (Poorest)	Poor 2	Poor 3	Nonpoor
Dietary diversity score (0–9)	5.8	5.6	5.6	6.0	6.1
Consumed food last 7 days by category, percent of respondents					
Grains, roots, or tubers	100.0	100.0	100.0	100.0	100.0
Pulses, beans, or legumes	32.4	32.5	31.1	30.3	38.9
Nuts or seeds	29.6	27.5	31.7	28.3	27.8
Milk or other dairy products	44.9	42.5	39.8	47.5	46.3
Egg	60.8	55.0	58.4	63.6	63.0
Dark leafy green vegetables	54.9	67.5	49.7	58.6	57.4
Other vegetables	87.9	77.5	86.3	92.9	94.4
Fruits	74.0	60.0	68.9	82.8	83.3
Meat and fish	97.4	95.0	96.3	100.0	100.0
Unhealthy food (fired/processed food, sugar/carbonated drink)	42.3	25.0	42.3	45.5	42.6

Source: IFPRI/FMMS phone survey of consumer survey (June 2020).

There are some differences across income groups. Households in the nonpoor group have higher dietary diversity than poor households. We see that the nonpoor were more likely to consume almost all food groups (pulses, milk and other dairy products, eggs, other vegetables, and fruits) than the poor households. The poorest households, however, were more likely to consume dark leafy vegetables than other groups.

A majority of urban respondents did not report any changes in food availability. The food groups for which most respondents reported reduced food availability in the markets (about a third of the respondents) were grains, fruits, vegetables, meat, and fish. Things seem to have stabilized after the lockdown, however, with only 8 to 12 percent of respondents reporting reduced availability of fruits, vegetables, grains, meat, and fish.

Similarly, a majority of respondents did not report changes in the frequency or quantity of food consumption. Thirteen to 18 percent of households reporting reduced frequency of eating pulses, nuts, eggs, milk products, and dark leafy vegetables. However, these are also the food groups not frequently consumed in normal times. The results are generally consistent with the results in Table 3 showing that 9 percent of respondents reported reduced food consumption and expenditure to cope with income loss. There is no clear difference across the income groups in terms of reduction in availability of food and frequency or quantity of food consumption.

The reported cases of food unavailability may be related to challenges of transporting food to markets and urban centers and also to closures of some markets that were not compliant with social distancing and safety measures. The Ministry of Food and Agriculture acknowledged reports of unavailability of food in some markets, instances of government security personnel restricting movements of traders of farm inputs and food despite their exempt status, increases in food prices in some markets, and increased food losses in producing areas and at markets due to supply chain challenges and low patronage of markets (MoFA 2020). There are several reports of local authorities temporarily closing markets or restricting trade because patrons or traders failed to adhere to social distancing protocols (IFPRI 2020).

Table 6. Food consumption and changes in consumption due to COVID-19 crisis reported by consumers surveyed in Accra, percent of respondents

Food group	Average days consumed in last 7 days	Consumed food last 7 day, %	If ate, average days consumed in last 7 days	Frequency of consumption compared to February, % change			Quantity consumed compared to February, % change			Reported decreased food availability	
				Same	Increase	Decrease	Same	Increase	Decrease	During lockdown compared to Feb	After lockdown compared to Feb
Grains, roots, or tubers	6.5	100.0	6.5	86.8	8.8	4.5	76.6	11.6	11.8	32.9	8.8
Pulses, beans, or legumes	0.7	32.4	2.2	74.5	9.5	16.1	83.9	10.2	5.8	21.9	4.4
Nuts or seeds	0.7	29.6	2.4	73.6	8.8	17.6	82.4	6.4	11.2	21.6	4.8
Milk or other dairy products	1.9	44.9	4.2	74.7	11.1	14.2	80.5	9.0	10.5	14.2	6.8
Eggs	2.2	60.8	3.5	70.4	12.1	17.5	83.7	7.8	8.6	19.8	5.8
Dark leafy green vegetables	2.1	54.9	3.8	69.8	17.2	12.9	79.3	17.7	3.0	21.1	6.0
Other vegetables	5.0	87.9	5.7	86.0	8.6	5.4	79.8	15.1	5.1	28.8	8.3
Fruits	3.4	74.0	4.6	45.1	44.4	10.5	48.6	48.2	3.2	33.6	11.8
Meat and fish		97.4									
Meat or poultry	2.4	60.8	3.9	80.9	6.6	12.5	82.1	6.2	11.7	21.4	3.5
Tilapia (processed)	0.5	22.9	2.2	73.2	3.1	23.7	82.5	4.1	13.4	35.1	6.2
Other fish (processed)	3.0	70.7	4.3	79.6	4.7	15.7	82.6	5.7	11.7	31.8	10.0
Catfish (processed)	0.5	19.4	2.4	70.7	2.4	26.8	84.2	3.7	12.2	26.8	2.4
Tilapia (fresh)	0.6	27.7	2.1	70.9	5.1	23.9	78.6	4.3	17.1	30.8	10.3
Other fish (fresh)	0.7	19.9	3.3	83.3	3.6	13.1	85.7	4.8	9.5	26.2	3.6
Catfish (fresh)	0.0	1.7	1.6	71.4	0.0	28.6	71.4	0.0	28.6	57.1	14.3
Fried or processed foods	0.7	19.9	3.5	76.2	6.0	17.9	79.8	7.1	13.1	36.9	7.1
Sugar, sweetened or carbonated drinks	1.2	36.2	3.4	73.9	6.5	19.6	80.4	5.9	13.7	11.8	2.0

Source: IFPRI/FMMS phone survey of consumers (June 2020).

Another issue raised by respondents was higher food prices. One respondent in Accra said, *"Food is available, but it has become more expensive."* Ghana Statistical Service reports show price increases for almost all goods and foods during the COVID-19 crisis. The national year-on-year inflation rate was 10.5 percent in August 2020, ranging from 4.7 percent in the Volta region to 13.6 percent in Greater Accra (GSS 2020). The food and nonalcoholic beverages category recorded a year-on-year inflation rate of 11.4 percent. Within the food category, vegetables (21.3 percent) and fish and other seafood (14.3 percent) were the categories with the highest rates of inflation. When separating inflation in food and nonfood inflation, it is clear that Greater Accra had lower food inflation (8.1 percent) than nonfood inflation (17.5 percent). In contrast, Ashanti region recorded the highest food inflation (20.3 percent) but relatively low nonfood inflation (4.8 percent). Surprisingly, price increases of local goods were higher than imported foods. The inflation of imported goods was 4.8 percent, whereas the inflation of local goods was 12.6 percent on average. Monthly price monitoring by the Statistics, Research and Information Directorate of the Ministry of Food and Agriculture also reveals increasing wholesale and retail prices for all foods monitored, including maize, rice, cassava, meat, and poultry.

We investigated further the price trends for meat and fish. The urban sample households seem to have lessened their shopping frequency both during and after the lockdown. The urban face-to-face survey in 2018 found that most tilapia shoppers in Accra ate tilapia at least once per week and most purchased it every week or more frequently (Ragasa et al. 2018). In contrast, 52 percent of consumers surveyed in June 2020 reported that they had reduced eating out or reduced their purchases for home consumption during the lockdown, and 36 percent reported that even after the lockdown ended they have reduced their purchases compared to before COVID-19 (Table 7). Half of the urban households surveyed reported that tilapia prices went up by 30 percent on average during the COVID-19 crisis and remained high even after the lockdown ended (Tables 7 and 8).

Table 7. Changes in tilapia purchases and price during the COVID-19 crisis, percent of consumers surveyed

Indicator	Tilapia	Other fish	Local chicken	Imported chicken	Imported rice
Reduced eating out or purchases for home during lockdown	52	42	52	33	42
Reduced eating out or purchases for home after lockdown	36	24	36	28	16
Perceived changes in prices:					
Prices remained the same	46	64	61	69	31
Prices went up	51	34	38	30	68
Prices went down	3	2	1	1	1

Source: IFPRI/FMMS phone survey of consumers in Accra (June 2020).

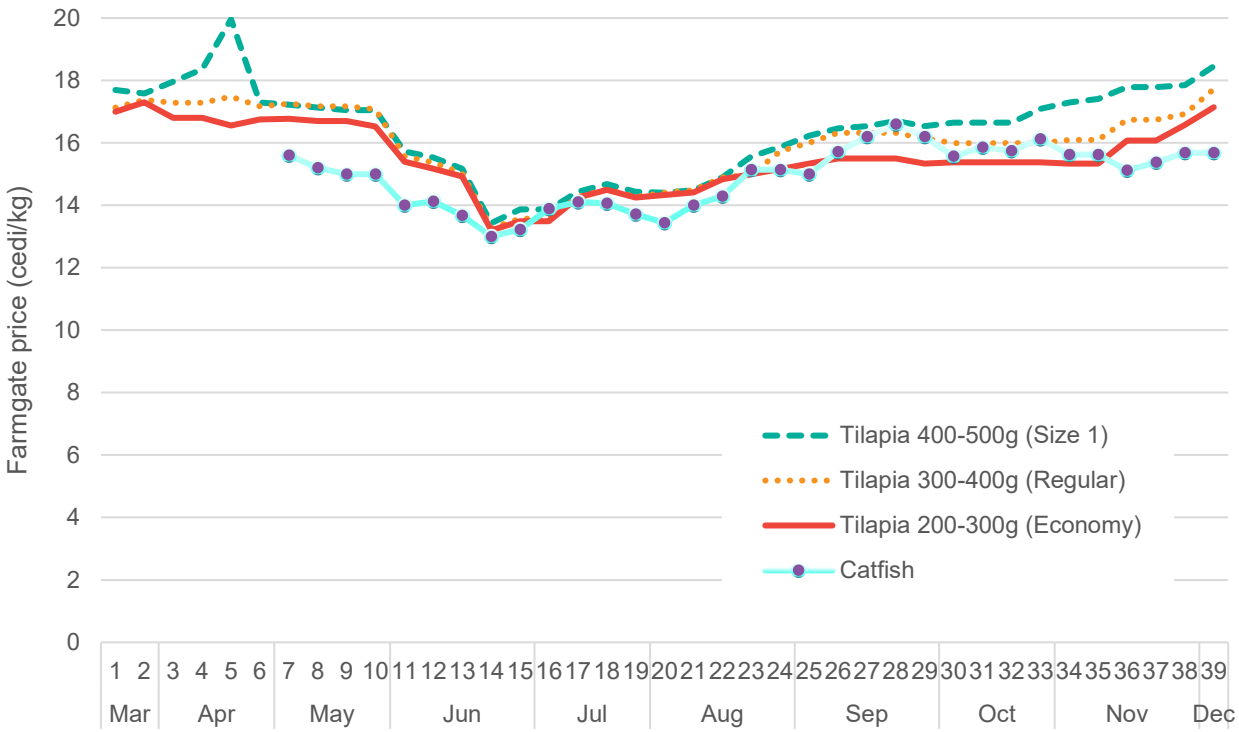
Table 8. Comparison of prices of selected food items before the COVID-19 crisis and after lockdown, price changes reported by consumers surveyed in Accra

Food item	Price after lockdown, GHC	Price difference before (February) and after lockdown (May and June), %
Tilapia	30.79 per kg	30.3
Other fish	11.28 per piece	29.9
Catfish	9.79 per piece	24.5
Salmon	8.25 per piece	32.3
Tuna	18.08 per kg	30.9
Local chicken	41.51 per chicken	23.8
Imported chicken	13.08 per kg	16.4

Source: IFPRI/FMMS phone survey of consumers in Accra (June 2020).

Although respondents and official data report that food prices increased, sample farmers complained of receiving lower farmgate prices for the same commodities. To illustrate, whereas most consumers in Accra reported an increased price for tilapia during the period March to June 2020, the farmgate prices received by farmers were low and decreasing during these months. One of the farmers blamed the situation on increased transportation costs as social distancing measures in vehicles kicked in. Others blamed the hikes on intermediaries who buy from the farm and sell in markets. One of the farmer leaders observed, "*We are being cheated by the traders who come to the farm to buy and go sell in Makola Market.*"[5] Although these are speculations from some farmers, further investigation can provide more insights and practical solutions. Figure 3 displays the farmgate weekly prices of tilapia and catfish from March to December 2020 using the price monitoring data from the Chamber of Aquaculture, showing that farmgate prices have slowly bounced back, but still with a large gap between farmgate and retail prices.

Figure 3. Farmgate prices of tilapia and catfish, March to December 2020



Source: Weekly price monitoring by the Ghana Chamber of Aquaculture.

Rural areas

During the time of the rural phone survey (June 2020), the household dietary diversity score (using nine food groups and seven-day recall) was 5.8 on average (Table 9), which is the same as in the urban sample (Table 5). These scores indicate quite a diverse diet but a low frequency of consumption for some food groups (Table 10). All of the sample households reported consuming grains and animal-sourced food (meat or fish) every week; and a majority (78 to 84 percent) have been consuming other vegetables and fruits weekly. Sixty-five percent of respondents consumed dark leafy vegetables and 62 percent consumed eggs weekly. Only 34 to 44 percent of sample households consumed pulses, nuts or seeds, and milk or other dairy products weekly; however, consumption was not frequent. Of those consuming fruits, average consumption was four to five

[5] Opportunistic behavior by traders and aggregators/middlemen is a plausible explanation for this occurrence of retail–farm gate price disparities, although this could be further investigated. Similar behavior was observed with regard to other essential commodities, especially personal protective equipment such as face masks, which were in high demand. Most retailers and middlemen took advantage of the situation to cash in by hiking up prices of these items.

days per week. Of those consuming pulses and nuts, average consumption was two to three days per week. We did not see a difference across asset quintiles on dietary diversity.

Table 9. Dietary diversity by asset quintile in fish and crop farmer phone survey

Food Group	All	Asset Quintile 1	Asset Quintile 2	Asset Quintile 3	Asset Quintile 4	Asset Quintile 5
Dietary diversity score (0–9)	5.8	5.5	6.1	5.9	5.5	5.9
Consumed food last 7 days by category, percent of respondents						
Grains, roots, or tubers	99.7	100.0	100.0	100.0	100.0	98.6
Pulses, beans, or legumes	34.1	37.0	41.9	34.5	19.4	37.7
Nuts or seeds	40.9	44.6	40.3	47.5	33.3	40.6
Milk or other dairy products	44.4	43.3	51.5	46.7	39.7	43.5
Egg	61.6	56.3	71.0	66.1	58.7	56.3
Dark leafy green vegetables	65.2	63.9	71.2	62.5	69.3	59.2
Other vegetables	84.4	82.5	89.0	86.2	79.7	83.3
Fruits	78.2	70.3	85.7	80.6	74.3	79.5
Meat & fish	99.5	100.0	100.0	100.0	100.0	97.3
Unhealthy food (fired/processed food, sugar/carbonated drink)	45.1	44.3	44.6	50.0	41.9	46.4

Source: IFPRI/FMMS phone survey of fish and crop farmers (June 2020).

Similar to urban consumers, a majority of sample farmers did not report any changes in food availability. The food groups for which most respondents reported reduced food availability in the markets (between 17 and 25 percent of respondents) were grains, other vegetables, meat, and fish.

A majority of respondents also did not report changes in the frequency or quantity of food consumption. The greatest reported reductions were in the frequency or quantity of pulses, nuts, egg, milk products, and dark leafy vegetables consumed (15 to 32 percent of households). However, these are also the food groups not frequently consumed in normal times. The results are generally consistent with the results reported for these rural households in Table 4 showing that 11 percent of respondents reported reduced food consumption and expenditure to cope with income loss. There is no clear difference across the income groups in terms of reduction in availability of food and frequency or quantity of food consumption. However, we see more households in Brong Ahafo (17 percent) reporting reduced food consumption as a coping mechanism for income loss during COVID-19 compared to households from other regions (Annex Table 2).

Table 10. Food consumption and changes in consumption due to COVID-19 crisis reported by sample farmers, percent of respondents

Food group	Average days consumed in last 7 days	Consumed food last 7 day, %	If ate, average days consumed in last 7 days	Frequency of consumption compared to February, % change			Quantity consumed compared to February, % change			Reported decreased food availability	
				Same	Increase	Decrease	Same	Increase	Decrease	During lockdown compared to Feb	After lockdown compared to Feb
Grains, roots, or tubers	6.1	99.7	6.1	7.1	11.4	81.6	13.0	22.0	65.0	77.0	18.4
Pulses, beans, or legumes	0.9	34.1	2.8	16.5	19.3	64.2	15.6	24.8	59.6	79.8	15.6
Nuts or seeds	1.1	40.9	2.7	14.2	17.9	67.9	11.2	26.1	62.7	85.1	9.7
Milk or other dairy products	1.8	44.4	4.1	11.5	23.7	64.9	13.5	25.0	61.5	87.8	10.1
Eggs	2.3	61.6	3.8	12.7	14.6	72.8	12.2	16.0	71.8	84.5	11.7
Dark leafy green vegetables	2.9	65.2	4.4	10.3	12.1	77.6	17.0	12.6	70.4	85.7	9.0
Other vegetables	4.8	84.4	5.7	8.4	7.4	84.2	15.2	12.5	72.4	79.5	16.8
Fruits	3.7	78.2	4.7	29.8	16.5	53.7	30.2	12.5	57.4	81.6	11.4
Meat and fish		99.5									
Meat or poultry	2.9	74.1	3.9	11.5	28.1	60.4	14.2	32.3	53.5	80.0	16.2
Tilapia (processed)	2.2	53.9	4.1	9.4	16.6	74.0	12.7	17.7	69.6	74.6	24.3
Other fish (processed)	2.9	68.6	4.3	6.0	16.4	77.6	6.5	23.7	69.8	72.4	23.7
Catfish (processed)	1.5	37.4	4.1	9.0	20.5	70.5	7.4	18.9	73.8	74.6	24.6
Tilapia (fresh)	1.6	39.5	4.0	11.9	22.2	65.9	15.9	25.4	58.7	81.8	12.7
Other fish (fresh)	0.8	20.2	3.9	14.3	19.1	66.7	12.7	19.1	68.3	82.5	4.8
Catfish (fresh)	1.5	37.2	4.0	8.9	20.2	71.0	8.9	25.0	66.1	91.9	4.0
Fried or processed foods	6.1	99.7	6.1	7.1	11.4	81.6	13.0	22.0	65.0	77.0	18.4
Sugar, sweetened or carbonated drinks	0.9	34.1	2.8	16.5	19.3	64.2	15.6	24.8	59.6	79.8	15.6

Source: IFPRI/FMMS phone survey of fish and crop farmers (June 2020).

4. CONCLUSIONS

This study provides an assessment of the changes in household income, livelihood sources, food consumption, and diet quality during the first months of the COVID-19 crisis in urban and rural areas in Ghana. Phone surveys were conducted in June 2020 with 423 urban consumers in Accra and with 369 small-scale farmers in six regions in middle and southern Ghana. Most households in the urban sample (83 percent) reported reductions in income. More poor households reported reduction in income (88 percent) than nonpoor households (76 percent). Nine percent of urban households reported reduction in food consumption to cope with income loss due to COVID-19. The greatest impact of COVID-19 on the urban households was in reduced consumer demand and sales from own businesses, on which 87 percent of the households rely as their main source of income. Twenty-two percent of urban households reported that they had to shut down their businesses because of the impact of COVID-19, with a greater proportion of poor households (23 percent) doing so than nonpoor households (17 percent). Many urban respondents recommended that government and partners should provide financial assistance to help them restart the businesses that shut down or to innovate and expand those that continued. They suggested that the government provide low interest rates and accessible loans to smaller businesses and make loan application processes easier than usual.

Similarly, for households in the sample for the rural phone survey, 76 percent reported income loss and impacts on all their livelihood sources. Fifty-three percent of those growing fish experienced difficulty in accessing inputs, mainly feeds, and 60 percent reported increased input prices. Few farmers harvested and sold fish during the COVID-19 crisis (March to June 2020); of those harvesting, 64 percent of farmers experienced difficulties in selling their fish. The reasons reported for these difficulties were lower demand or no buyers, lower tilapia prices, and higher transportation costs. A third of those growing crops and selling during the minor season experienced difficulty in selling their produce, and 43 percent of sample farmers anticipated difficulties in accessing inputs, mainly fertilizers and agrochemicals. A total of 64 percent reported that their other nonfarm businesses and wage/salary employment were affected by COVID-19. Eleven percent reduced their food consumption to cope with income loss. We did not see clear differences in impacts across asset quintiles in our rural survey sample, although we note that the sample farmers may not be the poorest segments of the farming population. This can be interpreted as a more optimistic picture than what the poorest segments of the farming communities may have experienced with COVID-19.

Sample households in urban and rural areas were similar in terms of their average diet quality scores, and a majority of them reported no change in availability of food during the crisis and no major reduction in food consumption and diet quality. Nonetheless, 10 to 30 percent of households reported reduced frequency or quantity of consumption of various food groups including pulses, nuts, eggs, milk or other dairy products, dark leafy vegetables, other vegetables, and fruits. However, the very low frequency of consumption of these key food groups before COVID-19 makes this further reduction in consumption particularly alarming. Although there seems to be no effect on food consumption and diet quality for most households, some households experienced reductions of food consumption and diet quality from an already low base. Nutrition behavioral change communication that goes with social protection programs has been working effectively in many countries and could be adopted and expanded in Ghana.

The wellbeing and livelihoods of households in Ghana need to be regularly monitored as the COVID-19 crisis continues, especially once savings start to dry up and coping mechanisms become more limiting. The surveys reported on here show that households in rural and urban areas were showing some resilience in terms of agricultural production and food consumption

several months into the crisis, but the government and its partners need to regularly monitor especially the poorest and the most food-insecure segments of the population.

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ANNEXES

Annex Table 1. Impact of COVID-19 on migration among members of Accra households, percent of respondents

Indicators	Total	Poor 1 (Poorest)	Poor 2	Poor 3	Nonpoor
At least one member migrating before COVID-19	12.8	7.5	11.2	14.1	11.1
At least one member planning to migrate, but could not do so due to COVID-19	51.9	33.3	44.4	57.1	66.7
Total number of household members back home during COVID-19[a]	1.0	2.7	0.7	1.3	1.0
% of male members	59.9	83.3	60.0	65.7	62.5
% of female members	40.1	16.7	40.0	34.3	37.5
Total number of household members currently migrating	1.0	0.3	1.1	1.2	1.2
% of male members	54.5	100.0	66.7	45.7	54.2
% of female members	45.5	0.0	33.3	54.3	45.8

Source: IFPRI/FMMS phone survey of urban consumers (June 2020). Notes: /a Only if a household had at least 1 member migrating before COVID-19, the respondent will answer the rest of migration question.

Annex Table 2. Impact of COVID-19 on income and livelihoods in rural areas of Ghana surveyed, by region and farming system, percent of households

Indicators	All	Pond				Cage
		All pond	Ashanti	Brong Ahafo	Eastern & Volta	
Fish farming						
Experienced difficulty in accessing any inputs	53	54	50	58	42	54
Fingerling	15	14	16	14	8	23
Feed	97	97	100	96	92	97
Fertilizer, lime, agrochemicals, drugs	11	14	26	11	0	3
Farm machinery	13	14	7	15	31	7
Reported increase in input prices	60	59	60	61	48	63
Experienced difficulty in hiring labor during COVID	20	23	26	24	16	11
Experienced difficulty in selling (of those selling)	64	56	60	60	33	78
Anticipates difficulty in selling	55	52	37	56	64	72
Crop farming						
Experienced difficulty in selling crops (during minor season)	34	35	37	32	40	30
Experienced or anticipate difficulty in accessing farm inputs (during major season):	43	43	41	46	34	39
Seed	19	20	25	18	20	20
Fertilizer	67	67	69	68	60	73
Agrochemicals	67	70	63	76	50	53
Farm machinery	22	22	13	26	20	20
Other inputs	15	17	19	20	0	7
Other livelihoods, percent of fish farmers surveyed						
Food trading	1	1	3	1	0	1
Other trading business	13	13	12	16	6	12
Other own business	28	30	37	25	38	22
Wage/salary employment	17	17	13	19	17	13
Remittances	3	3	1	4	4	4
Other (mainly livestock production)	8	9	5	11	8	6
None	29	26	29	24	27	41
Other livelihoods that were affected by COVID, percent of other livelihoods	**64**	**64**	**72**	**62**	**58**	**65**
Mechanisms of effect on livelihood:						
Lost job	1	1	3	0	0	3
Company reduced my salary	4	3	5	3	0	10
Business shut down	5	5	5	3	14	6
Low market and low revenue from business	80	82	77	83	86	68
Difficulty accessing inputs for business	19	19	18	15	32	23
Increase in price of major inputs	15	18	23	17	14	3
Other	13	12	8	13	18	13
Coping strategies for income loss:						
Used bank or cash savings	53	54	47	51	70	52
Reduced non-food consumption and expenditure	38	39	44	39	35	35
Reduced food consumption	11	13	11	17	3	6
Borrowed money	18	16	19	18	8	23
Bought food or household necessities on credit	7	6	5	5	8	9
Sold off assets, e.g., jewelry, mobile phone, or furniture	1	1	0	3	0	0
Did nothing	14	13	7	16	10	15
Other	13	15	9	15	25	8
Observations, other livelihoods	280	213	57	116	40	65

Source: IFPRI/FMMS phone survey of fish and crop farmers (June 2020).

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