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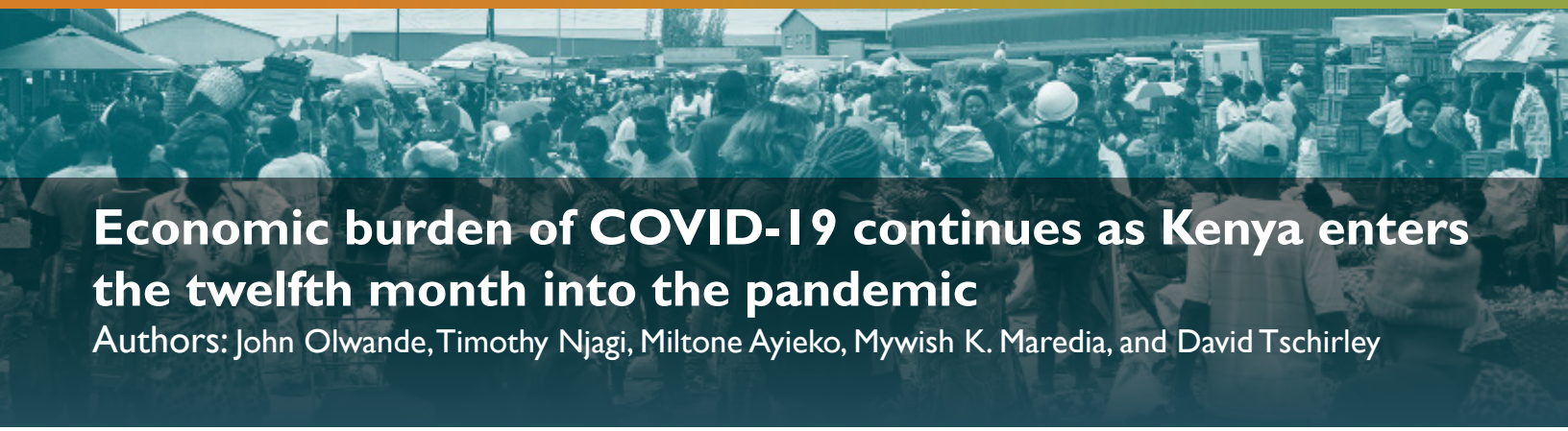

Economic burden of COVID-19 continues as Kenya enters the twelfth month into the pandemic

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Introduction

The Kenya government has responded to the COVID-19 pandemic with a range of containment measures since the first confirmed case of infection in the country on 12th March 2020. The measures have included restrictions in the movement and physical interactions of people, which have affected people's participation in social and economic activities; health specific measures, including equipping healthcare facilities, COVID-19 awareness campaigns and, lately, phased vaccination of people; and social protection interventions to mitigate the effect of containment measures on economic welfare of people. Nevertheless, because of the huge burden of the pandemic and limited fiscal capacity of the country, the social protection responses were unable to cushion most people from the economic blow due to the pandemic.

This research aimed to monitor and analyze the impact of the COVID-19 pandemic and associated containment measures on rural and urban livelihoods in Kenya, to help guide resource allocation and inform policy actions for future crises. Data were collected through two rounds of (cross-sectional) cellphone surveys of a nationally representative sample of 800 households stratified equally between rural and urban areas. The first survey round was conducted between 18th September and 26th October 2020 and results were reported in Olwande et al. (2021). In this Brief we report results of the second round of survey conducted between 3rd and 31st March 2021.

Results show significant decline in reported incomes of households in both rural and urban areas in September 2020 and February 2021 compared to

Key Facts

- Rural and urban areas continued to experience similar, significant declines in reported incomes of households eleven months into the COVID-19 pandemic.
- Majority of households in both areas also experienced reduction in the amount of food they consumed and in the quality of their diet.
- There is need to fast track mass vaccination of the population and facilitate faster resumption of people's normal participation in economic activities.
- It is also important to continue sensitizing people to observe simple health acts such as frequent hand washing, wearing masks, and avoiding crowded places as they go about their business.

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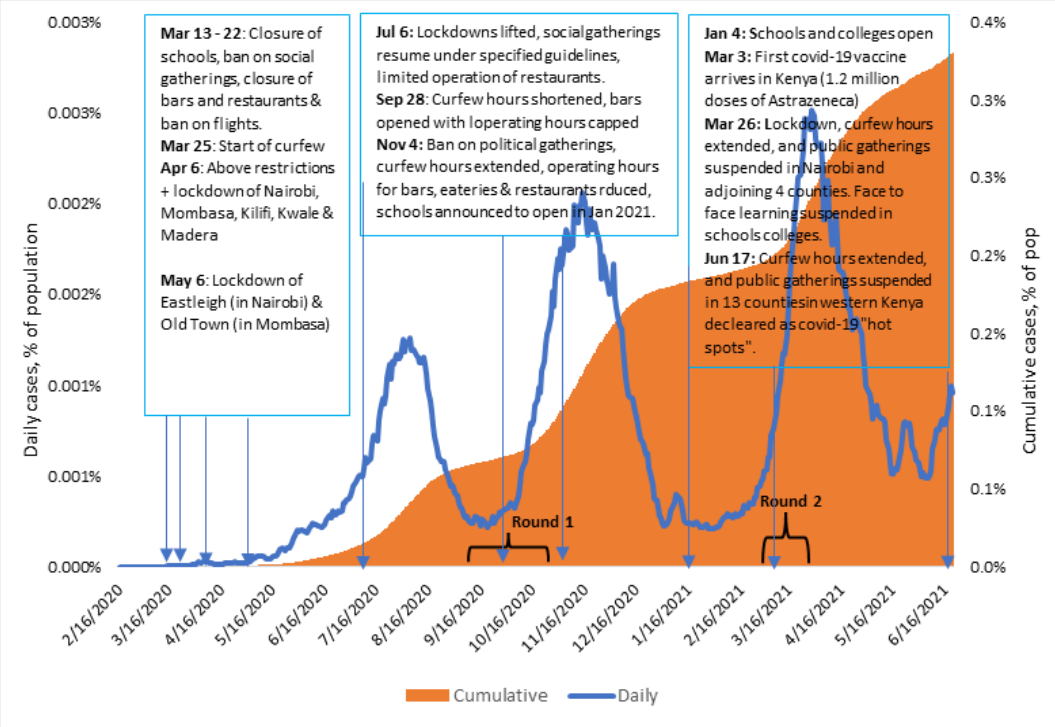
March 2020 (pre-COVID). The share of households reporting per capita per day income below PPP$1.90 increased significantly from 55% in March 2020 (pre-COVID) to 68% in September 2020 (six months into the pandemic) and remained largely unchanged at 69% in February 2021 (11 months into the pandemic). A majority of rural and urban households also had reduced amount of food and quality of diets. These findings are evidence that the economic burden of COVID-19 on Kenya's population continues in both rural and urban areas in equal measure. The patterns also suggest that it will take a long time before we see improvements in people's livelihoods, given the continuing new waves of infection in various countries in the world (e.g. China and Russia), the slow pace of COVID-19 vaccination, and the country's lack of fiscal resources to offer adequate economic assistance to households and businesses.

Figure 1: Confirmed COVID-19 daily and cumulative cases, government policy responses, and timing of survey data collection



There is a need to find innovative ways to fast track mass vaccination of the population and facilitate faster resumption of people's normal participation in economic activities. People also need to be sensitized to continue to observe simple health acts such as frequent hand washing, wearing masks and avoiding crowded places as they go about their business.

Overview of pandemic situation and government responses

Since 12th March 2020 when Kenya confirmed the first case of COVID-19 infection, new cases increased rapidly. By the end of April 2021, the country had experienced three waves of infections; in August 2020, November 2020 and March 2021 (Figure 1). It is important to note that the number of confirmed cases is likely to be far below actual cases because confirmation relies on testing and testing rates have been generally low. In addition, data reporting difficulties may also contribute to under-reporting. On 3rd March 2021 when the second round of the survey began, cumulative confirmed cases had reached 106,801 compared to 1,029,325 estimated (or modeled) cases from a widely cited model by Imperial College London (ICL) (https://ourworldindata.org/covid-models). By 31st May 2021, confirmed cases had reached 169,985 compared to 1,983,071 from the ICL model. Estimated or modeled numbers thus are more than ten times confirmed numbers. While the pattern of movements in confirmed cases likely mirror those in actual cases, Kenya's covid burden is certainly far higher than the data on confirmed cases show.

As shown in Figure 1, Kenya has implemented a range of COVID-19 containment measures at various times, including school closures, dusk to dawn curfew, restrictions in cross-county movements, restrictions in social gatherings, and restrictions in operations of businesses (bars, restaurants, and entertainment places). While most of the restrictions were relaxed in July 2020 when new daily cases showed signs of a decline, the spike in cases in November 2020 and March 2021 triggered re-imposition of restrictions during those periods, including lengthening of curfew hours, reduction in operating hours for bars, eateries and restaurants, cessation of movement into and out of Nairobi and adjoining counties, suspension of social gatherings, and suspension of face-to-face learning in schools and colleges.

In addition to the containment measures, the government has also implemented social protection interventions and a range of fiscal, monetary and financial policies aimed at easing economic burden of COVID. These included a conditional cash transfer programme, reduction and/or postponement of taxes, expansion of the youth employment programme, reduction in the cost of private borrowing through lowering of the Central Bank Rate, waiver of financial transaction fees, and suspension of the listing of loan defaulters, among other measures. Some of the social protection measures ceased on December 31, 2021. About 15% of our survey respondents reported receiving cash assistance since November 2020 while 14% reported receiving food assistance. Loans were reported to have been received by 13% while 19% and 11% reported receiving tax cuts[1] and subsidies of various kinds, respectively. Overall, 25% of respondents received some kind of assistance that they believe was meant as COVID relief. This share is smaller compared to the 39% that reported having received assistance in the first survey (Olwande et al., 2021). These results indicate that a substantial share of households in Kenya seem to have been helped by social assistance during the pandemic, but we do not know the size of this assistance.

Methods

A phone survey was used to collect data during March 3-31, 2021 period by GeoPoll, a survey platform that specializes in survey research using mobile phones. Respondents were selected through simple random sampling (SRS) from GeoPoll's verified list of mobile subscribers in Kenya. The survey was targeted to the adult (i.e., 18 years old and above) main shopper of the household. Eight hundred (800) respondents, stratified 50/50 by rural and urban location, participated in the survey. More details about the sampling process is provided in Maredia et al. (2022).

Although cell phone survey data are representative only of people with access to a mobile phone, according to the DATAREPORTAL (www.datareportal.com) 96% of the adult population in Kenya had access to mobile phones in 2018-2019, which suggests relatively unbiased coverage by this survey. However, some calls did not lead to a completed survey. We addressed the bias that might arise from this in two ways[2]. First, within each rural and urban stratum, respondents were geographically distributed across all 47 counties in Kenya, with sample size for each county based on probability proportional to population size. This method of sample selection ensured that the respondents represented the spatial density and distribution of the country's population geographically. Second, we applied sample weights to adjust the rural/urban split, and gender and education of the household head in total population.[3] All reported results use these three adjustment factors.

Results

On average, respondents were 39 years of age and had nine years of formal education (Table 1). Those in rural areas were seven years older and had one year less formal education. Rural households were larger than urban households.

Table 1: Respondent and household characteristics

	Rural (N=400)		Urban (N=400)		All (N=800)	
	mean	sd	mean	sd	mean	sd
Minutes to travel to town in wet season	64.74	55.48	0.00	0.00	44.22	54.85
Respondent age	41.09	14.76	33.86	10.96	38.80	14.07
Gender of Respondent (1=male)	0.51	0.50	0.52	0.50	0.51	0.50
Respondent education (# of years)	8.43	3.90	9.42	4.47	8.74	4.11
Household size	5.78	2.78	4.48	2.70	5.37	2.82
1=Respondent is the household head	0.75	0.43	0.75	0.43	0.75	0.43
Age of household head	45.04	15.50	37.87	13.06	42.77	15.14
Gender of household head (1=male)	0.67	0.47	0.71	0.45	0.68	0.47
Education of household head (# of years)	8.20	3.90	9.05	4.71	8.47	4.19

Source: Phone surveys (March 2021)

[1] The most widely felt tax cut was 100% tax relief for low-income earners – those earning gross monthly income of up to KES 24,000 (about USD226). Other measures included small reductions in the VAT, the top pay-as-you-earn rate, and the corporate income tax rate. All these measures, except VAT, affected only formal sector firms and workers. All these measures had been eliminated by end of March 2021.

[2] Such cases may arise because of network connectivity issues, inconvenient time of the call, a respondent declining to pick the call, or a respondent declining to take part in the survey.

[3] Even though the survey was administered to the main shopper to capture the food shopping/consumption practices, the unit of analysis is a household, and thus we use household (and not respondent) characteristics to adjust the sample weight.

Table 2: Self-reported meso- and micro-level shocks experienced by respondents

	Rural (N=400)		Urban (N=400)		All (N=800)	
	mean	sd	mean	sd	mean	sd
1=feels that respondent or someone in family is at risk of contracting COVID	0.35	0.48	0.41	0.49	0.37	0.48
1=knows someone infected by or died from COVID	0.20	0.40	0.24	0.43	0.21	0.41
1=at least one person in the household has done stay-at-home	1.00	0.00	1.00	0.00	1.00	0.00
Has your neighborhood ever been under lockdown orders?						
1=Yes, total lockdown	0.09	0.29	0.10	0.29	0.09	0.29
1=Yes, partial lockdown	0.30	0.46	0.35	0.48	0.32	0.47
1=No	0.61	0.49	0.56	0.50	0.59	0.49

Source: Phone surveys (March 2021)

All respondents reported that at least one member of their household had done stay-at-home (Table 2). Approximately 41% of the households reported experiencing total or partial lockdown, with the share in urban areas (45%) slightly higher than in rural areas (39%). The high incidence of stay-at-home compared to the reported total or partial lockdowns suggests that individuals may have been modifying their behavior voluntarily and were limiting movement due to health concerns. It also suggests that other containment measures such as restrictions in the carrying capacity of public transport vehicles, curfew, and government advisory that encouraged working from home, were causing people to limit movement.

In terms of health effects of COVID, 21% of respondents reported that they knew someone who was infected by or died from COVID. This share was six-percentage point higher than in the first round of the survey and reflects increased infections and deaths from COVID. The share in urban areas (24%) was only slightly higher than in rural (20%) areas, which indicates that COVID-19 has more or less similar direct health effects in both rural and urban areas.

Table 3 shows reported number of income sources and level of income for March 2020 (pre-COVID), September 2020, and February 2021. The average number of reported income sources was statistically the same in September 2020 and February 2021 compared to March 2020. This is different from the finding in the first round of the survey which showed that the number of income sources dropped significantly in July 2020 compared to March 2020 (pre-COVID). Regarding income levels, however, the reported average per capita per day income prior to COVID in March 2020 was significantly higher (KSH 119) than in September 2020 (KSH 91) and February 2021 (KSH 87)[4]. Within rural and urban areas, average per capita per day income levels in March 2020 were similarly significantly higher than in September 2020 and February 2021. Compared across the areas and for corresponding months, average incomes in urban areas were higher than in rural areas. These findings are similar to those in the first round of the survey, which compared per capita per day income in March 2020 and July 2020.

We converted the per capita per day income using the purchasing power parity dollar (PPP$) exchange rate of 40.2 for 2018 and applied the international poverty line of $1.90 per capita per day to measure changes in the percent of households that reported income levels below this poverty line. The share of households that reported per capita per day income below PPP$1.90 increased significantly from 55% in March 2020 to 68% in September 2020 and 69% in February 2021. The changes were similar in rural and urban areas. These findings are also similar to those in the first round of the survey which compared March 2020 and July 2020.

Consistent with the changes in Table 3, Figure 2 shows a substantial increase during September 2020 and February 202 in the percentage of urban and rural households that earned monthly income of less than KSH 4,600,

[4] We acknowledge the well-known limitations of our income measure (Deaton, 2003), which is different from the expenditure-based measure typically used in the development literature.

Table 3: Changes in sources and level of income reported for March 2020 (pre-COVID), September 2020 and February 2021

	Rural			Urban			All		
	Mar-20	Sep-20	Feb-21	Mar-20	Sep-20	Feb-21	Mar-20	Sep-20	Feb-21
Number of observations	400	400	400	400	400	400	800	800	800
Number of income sources	3.35	3.24	3.07	2.78	2.84	2.71	3.17	3.11	2.95
1=HH had income source from self-employment	0.73	0.71	0.67c	0.57	0.57	0.57	0.68	0.67	0.64
1=HH had income source from paid-employment	0.68	0.67	0.67	0.62	0.64	0.65	0.66	0.66	0.66
1=HH has income from other sources (including remittances)	0.24	0.24	0.24	0.20	0.25	0.22	0.23	0.24	0.23
1=HH has income from agriculture (on-farm) sector	0.62	0.63	0.60	0.41	0.42	0.39	0.55	0.57	0.53
1=HH has income from agrifood value chain (post farmgate) sector	0.52	0.51	0.50	0.47	0.48	0.47	0.50	0.50	0.49
1=HH has income from non-agriculture (non-farm) sector	0.52	0.53	0.53	0.52	0.54	0.54	0.52	0.53	0.53
1=HH has income from professional employment	0.23	0.23	0.21	0.27	0.28	0.28	0.25	0.24	0.23
Number of observations for following variables \a	372	372	372	356	356	356	728	728	728
Per capita per day income in KSH	89.04	70.36b	66.11a	185.02	136.26a	132.67a	118.66	90.70a	86.65a
Per capita per day income in PPP$	2.21	1.75b	1.64a	4.60	3.39a	3.30a	2.95	2.26a	2.16a
1=Per day per capita income is < PPP$1.90	0.62	0.74a	0.76a	0.39	0.53a	0.52a	0.55	0.68a	0.69a

Source: Phone surveys (March 2021). Values for Sep-20 and Feb-21 with no superscripts denote no statistically significant difference between that mean and the mean for Mar-20. Otherwise, letters denote a significant difference between the mean for that month and the mean for Mar-20 at p<0.01 (a), p<0.05 (b), and p<0.10 (c). \a Less than 800 observations for the per capita income variables reflect missing data due to 'refused/ don't know' responses to the income question.

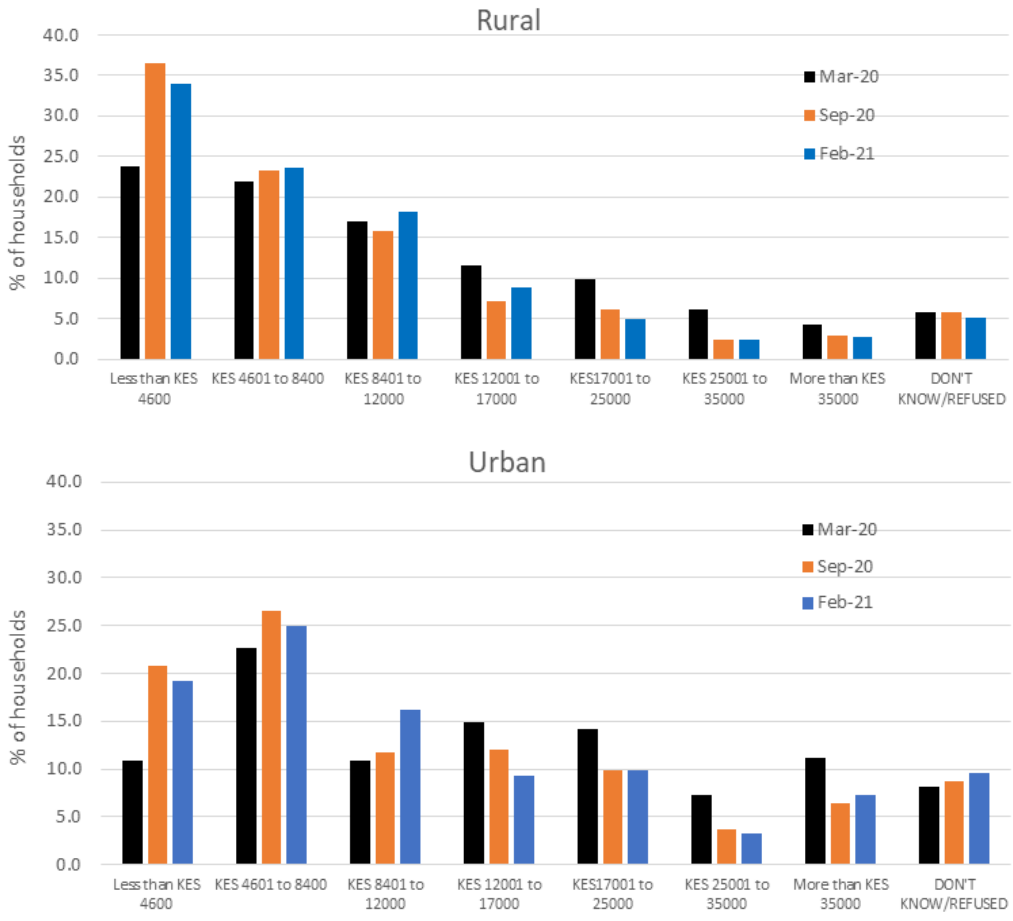
compared to March 2020. The share that had monthly incomes above KSH 12,000 fell in both areas in September 2020 and February 2021 compared to March 2020. However, the share that earned between KSH 4,600 and KSH 12,000 was higher in September 2020 and February 2021 compared to March 2020 in both areas.

Changes in households' sources of income are reported in Figure 3. In rural areas, farming, non-agricultural activities, activities in the agri-food value chain post-farm and professional work in that order were the most common sources of income. Comparing March 2020 to September 2020 and February 2021, we observe a marginal drop in the share of households reporting income for every source, except farming and professional work where the share of households in March 2020 and September 2020 were the same.

The mix of the most important income sources was different for urban households, where non-agricultural activities, farming, professional work and activities in the agri-food value chain post-farm in that order were most common. Different from rural areas, the share of households earning income from non-agricultural sector activities and professional work marginally increased in September 2020 (non-agricultural sector activities) and February 2021 (non-agricultural sector activities and professional work) compared to March 2020.

We asked respondents about changes in their households' food consumption, comparing the past month prior to the survey (February 2021) to same month the previous year (February 2020 (pre-COVID)). A majority (55%) of households consumed less food in the past month compared to the same time the previous year, with a slightly higher percentage in rural areas (56%) than urban areas

Figure 2: Average monthly income reported by rural and urban households in March 2020 (before COVID), September 2020 and February 2021



Source: Phone surveys (March 2021)

(54%) (Table 4). A similar observation is made regarding diet quality, where 53% of households in rural areas and 52% in urban areas reported that their family's diet quality worsened in the past month compared to same time the previous year. Approximately 62% of households (62% rural and 61% urban) reported that they skipped meals more in the past month prior to the survey due to lack of food compared to same time the year before.

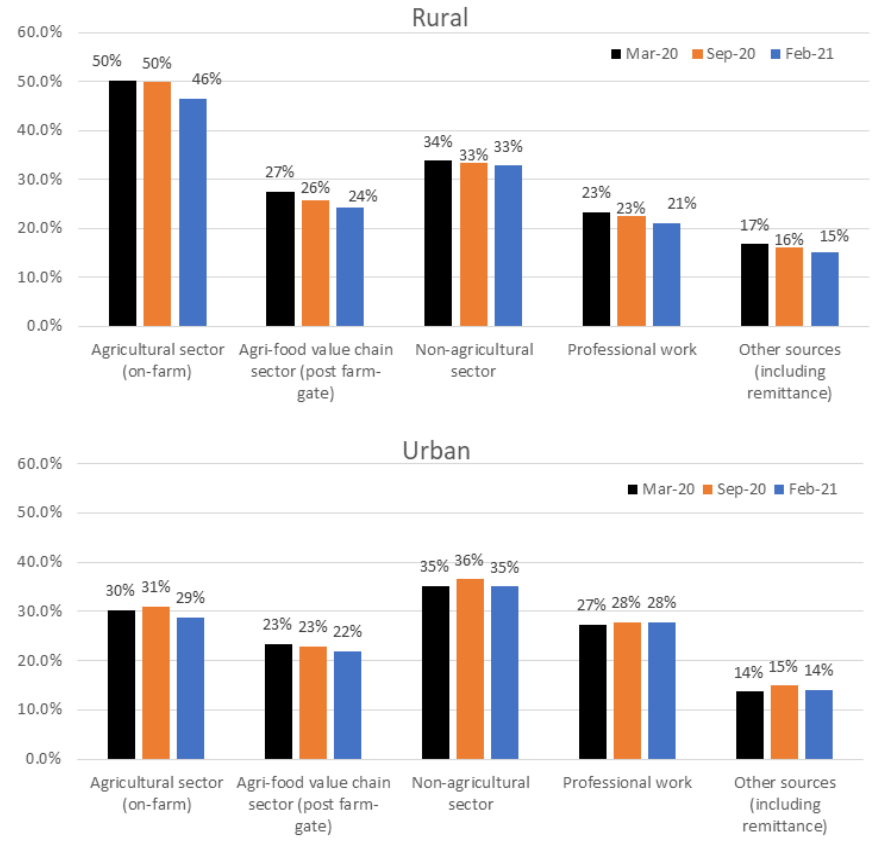
Conclusion

Government's containment measures for COVID-19 have likely helped to slow down the local spread of coronavirus. However, the measures have also had negative impacts on economic status of rural and urban households through their curtailment of normal participation in social and economic activities. Although lockdowns were imposed at various times in a few counties considered to be hotspots, including Nairobi and its environs, the social and economic interconnectedness of urban and rural areas of the country meant that effects of such lockdowns would be felt far and wide. The recurring COVID-19 waves of infections in November 2020 and March 2021 triggered the re-imposition of containment measures some of which had been relaxed in July 2020, suggesting that the negative effects of COVID-19 on the livelihoods of majority of the population would persist for some time.

The marginal changes in sources of incomes for households in September 2020 and February 2021 compared to March 2020 (pre-COVID) suggest that household's participation in economic activities was beginning to slowly return after the initial relaxation of COVID-19 containment measures in July and September 2020, which saw lockdowns lifted, social gatherings allowed under specified guidelines, curfew hours shortened, and limited operation of eateries, restaurants and bars allowed. Further, opening of schools and colleges for physical learning from January 4, 2021 may have boosted economic activities. However, per capita per day income and the share of households whose income levels were above the international poverty line remained significantly lower in September 2020 and February 2021 compared to March 2020 (pre-COVID). This indicates that households continued to struggle to survive due to the pandemic and associated containment measures. This is further evidenced in the finding that over half of the households in both rural and urban areas experienced reduced food consumption and diet quality in February 2021 compared to February 2020.

Our findings suggest that the economic burden of COVID-19 on Kenya's population continues in both rural and urban areas in equal measure and it will take a long time before we see improvements in people's livelihoods, for several reasons. First, there is still no end in sight for the

Figure 3: Percent of households receiving income in March 2020 (pre-COVID), September 2020 and February 2021, by source of income and rural or urban residence



Source: Phone surveys (March 2021)

pandemic, which means that the containment measures remain an option should the rate of infection increase. Although the government lifted the dusk-to-dawn curfew, relaxed restrictions in social gatherings, and removed restrictions in operations of bars and entertainment places on October 20, 2021, it warned that it would not hesitate to re-introduce the containment measures should a surge in COVID-19 cases occur that would require such measures. Secondly, Kenya's pace of COVID-19 vaccination drive is slow, and a large share of the population is unvaccinated, which means that most of the population remains highly vulnerable to coronavirus infection. As at this writing, Kenya already received 7,502,820 doses of COVID-19 vaccine and administered 4,733,770. Only 1,317,024 (or 4.8%) of adult population have been fully vaccinated. Thirdly, Kenya lacks fiscal resources to offer adequate economic support to all households and businesses that need assistance. This is evidenced by the twin findings that

Table 4: Qualitative assessment of food consumption and food security measures during the past month prior to the survey (February 2021) compared to same time in 2020

	Rural (N=400)		Urban (N=400)		All (N=800	
	mean	sd	Mean	sd	mean	sd
How does the amount of food consumed by your HH this past month compare with the same time last year?						
Higher	0.27	0.44	0.22	0.41	0.25	0.43
Lower	0.56	0.50	0.54	0.50	0.55	0.50
Same	0.18	0.38	0.24	0.43	0.20	0.40
How does your family's diet quality this past month compare with the same time last year?						
Better	0.23	0.42	0.21	0.41	0.23	0.42
Worse	0.53	0.50	0.52	0.50	0.53	0.50
Same	0.24	0.43	0.26	0.44	0.25	0.43
Did you skip meals because of lack of food last month compared to same time last year? (1=Yes)	0.62	0.48	0.61	0.49	0.62	0.49
As of today, HH can meet food consumption needs for…						
Less than a week	0.34	0.47	0.31	0.46	0.33	0.47
7-14 days	0.29	0.46	0.25	0.43	0.28	0.45
15-30 days	0.21	0.41	0.24	0.43	0.22	0.42
More than a month	0.15	0.36	0.19	0.40	0.17	0.37

Source: Phone surveys (March 2021)

only 25% of the households received some form of assistance and that a majority of households lost income and were struggling to access adequate food. Partnering with multi-lateral organizations to finance well-designed social protection programs would be an important approach to consider. Such programs should ensure appropriate supervision and accountability to reduce misuse of funds. Other measures that can be helpful include lowering bills on utilities such as electricity, water, and cooking fuel.

Finally, the repeated waves of COVID-19 infection that Kenya has seen, and which other countries continue to experience, shows clearly that mass vaccination of the population must be urgently prioritized to facilitate faster resumption of people's normal participation in economic activities. There is need to find innovative ways to fast track the government's set target of vaccinating 26 million people by December 2022. Combined with mass vaccination drive, it is also of value to continue sensitizing people to observe simple health acts such as frequent hand washing, wearing masks and avoiding crowded places as they go about their business.

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