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Impact of COVID-19 on Household Incomes and Food Consumption – The Zambian Case

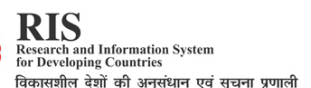
Policy Research Note #1

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Key Messages

- There was no significant change in per capita per day income from March 2020 (considered pre-COVID) to July 2020 for both rural and urban households.
- Reasons for lack of observed impact could include economic disruptions prior to and unrelated to the pandemic and the fact that first lockdowns happened in March
- More than half of households reported reduced consumption of food in August-October 2020 compared to a year previous and reported also that the quality of their diets had worsened.



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Statement of Support

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I. Introduction

The 2019 novel coronavirus disease (COVID-19) has devastated health and economic systems worldwide with varying impacts across different economic sectors. Projections of its impact in early 2020 were that developing countries in the global south with historic system inefficiencies would be the worst hit, as weaknesses in their economies would be exposed by the pressure the pandemic would place on health, food and economic systems. Global evidence on the impacts of COVID-19 on economic livelihoods suggests that the most vulnerable income sources to COVID-related shocks would be temporary wage income as opposed to permanent wage income, primarily because casual work that requires day to day contact would be less due to social distancing requirements and movement restrictions (Diao and Mahrt, 2020). Also, national and household food security and nutrition would be negatively impacted, mostly through loss or reduction in household income (both formal and informal sectors) and disruption of supply chains due to movement restrictions within and across countries (Mofya-Mukuka et al., 2020; GRZb, 2020).

In Zambia, it has been expected that food consumption would be reduced as the informal sector, which employs over 70 percent of the country's population, would be hardest hit – particularly for those in agriculture and trade (wholesale and retail) (CUTS and UNDP, 2020). Current local evidence shows that urban households are bearing the brunt of impact compared to their rural counterparts and the sources of impact include price gouging, reduced customers, and reduced business income (Kabisa et al., 2020; Mulenga et al., 2020; Mofya-Mukuka et al., 2020).

This brief aims to contribute to the local evidence on the impact that COVID-19 has had on incomes and food security in Zambia. This study complements nationwide-surveys documenting the impact the pandemic is having in real time on the economic livelihoods of Zambians in both rural and urban areas, and tracking food consumption changes during the course of the pandemic. This is in order to provide empirical evidence to guide government policy interventions.

This brief is organized as follows: Section 2 gives a brief overview of how the Zambian government has responded to the COVID-19 pandemic and this is followed by a summary of the data collection methods in Section 3. The survey results are discussed in Section 4 and conclusions of the findings and their policy implications are summarized in Section 5.

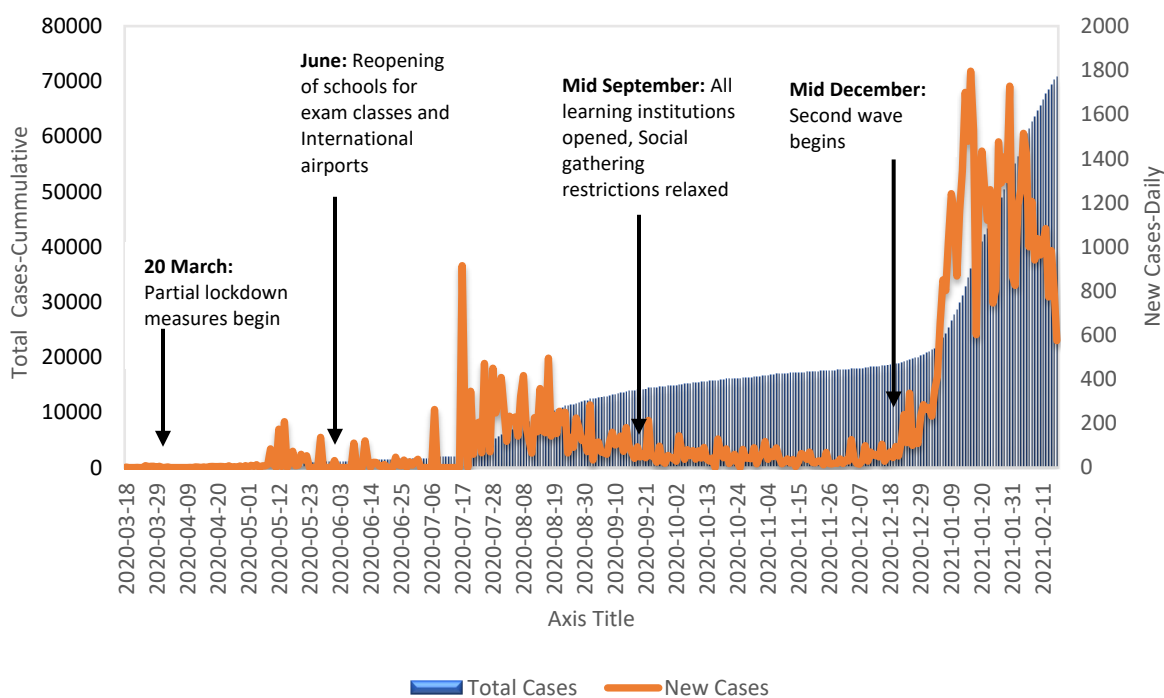
II. Brief overview of pandemic situation and government responses

The first cases of COVID-19 were officially reported in Zambia's capital, Lusaka, on March 18, 2020 and then later in urban districts in the Copperbelt and Central Provinces. Between March and April 2020, fewer than 50 cases a day were reported (Figure 1), with the number rising significantly in May (MoH/ZNPHI/WHO 2020a). COVID-19 cases had also spread throughout the country, but Lusaka and other urban districts in the Copperbelt province remained and still remain disproportionately affected (Malambo et.al, 2020). There are assertions of underreporting of cases

due to the limited tests being conducted, with a cumulative total of 6,828 tests done by 30th April, 2020 (Michelle Samuels, 2021; MoH/ZNPFI/WHO 2020c).

Following the World Health Organization (WHO) declaration of COVID-19 as a Public Health Emergency of International Concern (PHEIC) on 30th January 2020, the Government of the Republic of Zambia (GRZ) set up an Incident Management Structure (IMS) at the Zambia National Public Health Institute (ZNPFI) in March 2020 after the first few cases (MoH/ZNPFI 2020a, b, and c; MoH/ZNPFI/WHO 2020b). The GRZ announced a partial lockdown on March 20, 2020, inclusive of closure of borders into the country for human movement but remained open for the entry of goods and commodities deemed “essential”. This exception was meant to ensure that food systems operated uninterrupted. All learning institutions were closed and social and religious gatherings were restricted to not more than 50 people, with the requirement of a public health permit. All non-essential workers were requested to work from home or on rotational basis (Malambo et al., 2020).

Figure 1: Distribution of policy measures by daily and total cumulative COVID-19 cases



Source: Official data collated by Our World in Data; John Hopkins University CSSE-Mar 18, 2020 - Feb 15, 2021; <https://ourworldindata.org/coronavirus/country/zambia>

In June 2020, schools reopened for examinations only. After observation that an insignificant number of pupils and students had contracted COVID-19, all learning institutions were reopened in September 2020, and closed on normal calendar schedule in December. Social gathering restrictions

were also relaxed and bars were opened on a 2-week pilot basis (GRZa, 2020). The COVID-19 Stringency Index in September was between 48 and 50, and this steadily declined into May 2021, shot up to 60 in the month of June due to the onset of the third wave, but has continued to decline to a low of 27 as of July 12, 2021.¹ In addition to health responses that ensured there were adequate isolation centers, medical staff and testing centers, a number of social protection and monetary policies were also announced to cushion the adverse effects of COVID-19 on people's livelihoods. The Bank of Zambia approved relief of approximately USD 500 million for financial institutions (Bank of Zambia, 2020). Also, the government approved COVID-19 emergency cash transfers (ECT) of USD 21 to USD 42 per month for 204,000 vulnerable households (UNICEF 2020). UNOCHA reported that 18,021 households in nine districts had received ECT payments as at December 2020 while the World Food Programme (WFP) made ECT payments to 36,311 eligible households in two districts. The issuance of a COVID-19 bond of USD 144 million, which would in part be used to pay pensioner arrears was authorized as well (Ministry of Finance, 2020).

Although assertions on under reporting remain, we assume the movement in each wave reflects movements in actual burden of disease. Average daily cases in mid-December rose to over 500 from 44 at the beginning of the month (CDC, 2021). Despite the onset of the second wave and the detection of the new B.1.351 SARS-CoV-2 variant strain, learning institutions and economic and social activities remained operational as at 31st May 2021. The fatality rate in the second wave was relatively low and the recovery rate high in comparison to other countries. Similar to global trends, the pandemic in the country has since evolved and a third wave is currently being experienced. This has been attributed to the more widespread detection of the B.1.617.2 SARS-CoV-2 delta variant that has been shown to spread faster and causing higher incidence of severe disease. The average number of cases and deaths per million population for the period March 18, 2020 to July 12, 2021 was 9,613 and 155 respectively. Between June 1, 2021 and July 12 2021 alone, there have been 1,586 deaths and 81,479 new cases (ZNPFI, 2021). Learning institutions have since reverted to full time online learning, social activities have been restricted and food service industries are operating on a take-away basis only.

III. Methods

Data used in this paper come from phone surveys conducted in Zambia between September 18 and November 22, 2020 as part of a multi-country effort. These surveys were conducted by GeoPoll, a survey platform used by Mobile Accord, Inc., a company that specializes in survey research via mobile phone across the globe. Due to the COVID-19, this method allowed us to conduct a rapid assessment of the on-the-ground situation and behavioral responses as the pandemic and government actions were unfolding. The respondents were selected based on a simple random sampling (SRS) technique

¹ "This is a composite measure based on nine response indicators including school closures, workplace closures, and travel bans, rescaled to a value from 0 to 100 (100 = strictest). If policies vary at the subnational level, the index is shown as the response level of the strictest sub-region." [Source: https://ourworldindata.org/covid-stringency-index](https://ourworldindata.org/covid-stringency-index)

from GeoPoll’s verified list of mobile subscribers in Zambia. Readers are referred to Maredia et al. (2021) for details on the methods used for this paper during the multi-country survey.

The survey was conducted with 800 respondents, which was stratified 50/50 by rural and urban location. Throughout the paper, descriptive analysis results reported are weighted to make them closely representative of population characteristics at the country level and to improve the external validity of the findings.

IV. Results

4.1 Demographic characteristics

The demographic characteristics show that the mean age for the household head is 39 years in the rural areas while in the urban areas, the average age is about 40 years. In terms of sex of the household head, female headed households made up 26 percent in the rural areas and 29 percent in the urban areas. On average, household heads in the urban areas were more educated compared to household heads from the rural areas. Households were larger in size in the rural areas compared to urban areas.

Table 1. Respondent and household characteristics

Survey Questions	Rural (N=400)		Urban (N=400)		All (N=800)	
	mean	sd	mean	sd	mean	sd
Minutes to travel to town in wet season	177	233	0	0	107	201
Respondent age	36	13	35	13	35	13
Gender of Respondent (1=male)	0.69	0.46	0.58	0.49	0.65	0.48
Respondent education (# of years)	7	4	9	4	8	4
Household size	7	3	6	2	6	3
1=Respondent is the household head	0.79	0.41	0.73	0.44	0.77	0.42
Age of household head	39	14	40	14	39	14
Gender of household head (1=male)	0.74	0.44	0.71	0.45	0.73	0.44
Education of household head (# of years)	7	4	9	5	8	4

Source: Phone surveys (September-November 2020)

4.2 Household income

Changes in sources of income from pre-COVID to July 2020 are shown in Table 2. Both pre-COVID and in July 2020, each household on average had 3 income sources, showing no statistically significant change. This trend was observed for both rural and urban households. Farming, non-wage labour and trade were the most common income sources for both rural and urban households. There was an increase, albeit small, in the proportion of rural and urban households engaged in trade and non-farm wage labour activities from pre-COVID times to July 2020.

Table 3 shows changes in income levels pre-COVID to July 2020 for both rural and urban households. Income levels also showed no statistically significant change. This has been ZMW10 for rural areas and ZMW18 for urban areas on average. With regard to the poverty line, 37 and 24 percent of households were under the \$1 poverty line in rural and urban areas respectively pre-COVID, while about 38 percent in rural areas and 22 percent in urban areas fell under the \$1 poverty line in July 2020. Again, these differences are not statistically significant.

Table 2. Changes in sources and level of income reported for March (pre-COVID) and July

	Rural		Urban		All	
	March	July	March	July	March	July
Number of observations	400	400	400	400	800	800
Number of income sources	2.96	3.04	2.52	2.53	2.78	2.84
1=HH had income source from self-employment	0.73	0.77	0.60	0.59	0.68	0.70
1=HH had income source from paid-employment	0.61	0.59	0.55	0.55	0.59	0.58
1=HH had income from other sources	0.37	0.36	0.46	0.42	0.40	0.39

Source: Phone surveys (September-November 2020)

Table 3. Changes in level of income reported for March (pre-COVID) and July

	Rural		Urban		All	
	March	July	March	July	March	July
Number of observations for following variables \a	346	346	320	320	666	666
Per capita per day income in local currency (ZMW)	10	10	18	19	13	13
Per capita per day income in PPP\$	2	2	4	4	3	3
1=Per day per capita income is < PPP\$1.00	0.37	0.38	0.24	0.22	0.32	0.32
1=Per day per capita income is < PPP\$1.90	0.67	0.64	0.45	0.45	0.59	0.57
1=Per day per capita income is < PPP\$3.20	0.83	0.82	0.65	0.64	0.76	0.75

Source: Phone surveys (September-November 2020)

Values for March and July with no superscripts denote no statistically significant difference between the two means. Otherwise, letters denote a significant difference between the means of two groups 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.

These findings are surprising considering income was projected to be the main COVID-19 impact pathway, particularly for urban households involved in daily casual labour. One of the possible reasons for this insignificant change could have been due to unrelated events such as the "gas attack" incidents in the country between December 2019 and February 2020. These led to operating hours for businesses being reduced as a safety concern for staff, evening curfews and army patrols due to sporadic riots in various areas before the on-set of the COVID partial lockdown, leading to income

losses (Lusaka times, 2020; France24, 2020; Zambia Reports, 2020). The March 20 pronouncement may have exacerbated the impacts already being felt by local businesses, without much change being observed into July 2020. For rural households, the impact on income may have been less than expected because the main measures to curb COVID-19 spread happened after the agricultural production season, leaving agricultural activities mostly unaffected by the pandemic.

4.3 Food consumption

Nearly twice as many households reported consuming less quantity of food compared to more, during the August-October 2020 period. This was also the case with the quality of food indicator (Table 4), a result consistent with local evidence (Mofya-Mukuka et al., 2020; Mulenga et al., 2020). Households were asked how long they could meet food consumption needs of the households as of the day of the interview. Over a third of all the household types indicated that they could only meet food consumption needs for a period of less than a week. A smaller proportion (less than 20 percent) indicated that they could meet food consumption needs for more than a month. The majority of the households reported to have skipped at least one meal because of lack of food in May 2020 compared to the same time the previous year, with more rural households (60 percent) reporting this in comparison to urban households (55 percent).

Table 4. Qualitative assessment of food consumption and food security measures

Survey Questions	Rural (N=400)		Urban (N=400)		All (N=800)	
	mean	Sd	mean	sd	Mean	Sd
Comparison of August to October 2020 with the same period in 2019						
How does the amount of food consumed by your HH this past month compare with the same time last year?						
<i>Higher</i>	0.30	0.46	0.29	0.45	0.29	0.46
<i>Lower</i>	0.52	0.50	0.55	0.50	0.53	0.50
<i>Same</i>	0.18	0.39	0.17	0.37	0.18	0.38
How does your family's diet quality this past month compare with the same time last year?						
<i>Better</i>	0.23	0.42	0.17	0.37	0.21	0.41
<i>Worse</i>	0.57	0.50	0.59	0.49	0.58	0.49
<i>Same</i>	0.19	0.40	0.24	0.43	0.21	0.41
of today, HH can meet food consumption needs for						
<i>Less than a week</i>	0.36	0.48	0.39	0.49	0.37	0.48
<i>7-14 days</i>	0.27	0.44	0.28	0.45	0.27	0.45
<i>15-30 days</i>	0.18	0.38	0.16	0.37	0.17	0.38
<i>More than a month</i>	0.20	0.40	0.16	0.37	0.19	0.39
Comparison of May 2020 compared to same time in 2019						
Did you skip meals because of lack of food						
<i>In May, compared to same time last year? (1=Yes)</i>	0.60	0.49	0.55	0.50	0.58	0.49
<i>Past month, compared to same time last year? (1=Yes)</i>	0.57	0.50	0.51	0.50	0.55	0.50

Source: Phone surveys (September-November 2020)

V. Conclusion

The findings in this study show that 4 months into the crises, the income sources of both rural and urban households did not show any significant reduction, and this was also the case for per capita per day income in both regions. The main impact pathway identified by the respondents was the reduction of foods consumed and erosion of diet quality in comparison to the same period the previous year (August to October). This implies that in the first 4-6 months post-COVID related restrictions, the main impact being experienced by the respondents was changes in food access, with about a third of the respondents in both rural and urban areas only having enough food supplies for about a week. As the second wave of the pandemic continues during the 2020/2021 agricultural season, more food centered, food trade and marketing activities will have to be supported in government policy responses, particularly for informal sector actors.

These results have the following policy implications:

- Food security should be rated as a priority response strategy in dealing with the impact of COVID-19, a feature that was not clearly seen in the policy responses in 2020 in which only one response was implemented for the agricultural sector.
- There is need to create an enabling environment to sustain both formal and informal (mostly farming, non-farm wage income, and trading) income sources to facilitate food access as a priority activity in government response. Specifically, targeted monetary and fiscal incentives need to be provided to secure these key economic activities that can improve resilience and food security of vulnerable households.
- Monitoring of the prices of essential commodities and basic food stuffs to pick up on any price gouging on essential food items will also need to be given priority (see Mulenga et al., 2020).
- Government policy response is still largely focused on the formal sector, and this will need to be refocused by providing a safety net for informal sector workers to enhance the ability of the country to adequately respond to sustaining livelihoods safely, and curbing further community spread.

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