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# SCALING UP NUTRITION LEARNING AND EVALUATION (SUN LE)

## Monitoring Household Food Security and Nutrition in 30 SUN 2.0 Districts in Zambia during COVID-19 Pandemic

## 6th Bi-Monthly Telephone Survey Report
## July 2021

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# MONITORING HOUSEHOLD FOOD SECURITY AND NUTRITION DURING COVID-19

## 6th Bi-Monthly Telephone Survey Report
## July 2021

Submission Date: 13 January 2022

Prepared under:
Scaling Up Nutrition Learning and Evaluation (SUN LE) Project
USAID Contract Number 72061119C00003

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# ACKNOWLEDGEMENTS

This study on monitoring household food security and nutrition during COVID-19 in Zambia was made possible with the generous support of the American people through the United States Agency for International Development (USAID).

We are grateful to Zambia's National Food and Nutrition Commission (NFNC) for its leadership during the planning and execution of the survey. We further acknowledge the Monitoring, Evaluation, and Research (ME&R) Technical Working Group (TWG) for its technical review and input into the survey report and all stakeholders who participated in the validation workshop.

We are grateful to the field workers who worked tirelessly during the data collection period and the households that provided the information.

# EXECUTIVE SUMMARY

The Coronavirus Disease of 2019 (COVID-19) pandemic has remained not only a health concern but a social and economic crisis that continues to threaten livelihoods across the world. In Zambia, the first COVID-19 cases were reported in March 2020, and by August 2021, Zambia had experienced three waves. Given that Zambia has a high prevalence of unemployment and food-insecure households, the study was commissioned in September 2020 to monitor the impact of COVID on household livelihood, food security, and nutrition indicators. Six rounds of the bi-monthly survey were conducted via phone calls from September 2020 to July 2021. The report highlights the changes in household food security and nutrition trends, against which recommendations are drawn to guide policy interventions.

Overall, the results showed that most households experienced a negative income effect, which they attributed to the business becoming slow. The COVID-19 income effect was worse for households in the lower-income bracket (monthly income below 5000ZMW). The results revealed that household and women nutrition indicators were generally above the minimum dietary thresholds of four and five food groups, respectively, over the survey period. However, these indicators reduced during the periods when COVID-19 cases were high. While the majority of women did achieve the minimum dietary diversity, less than half of the children achieved the minimum adequate diet. The minimum number of food groups consumed by children was equally low and declined with successive data collection points. Compared to urban households, rural households experienced more negative impacts than their urban counterparts (for example, in this round of survey, 38.2% of children in the urban areas met minimum dietary diversity compared to 28.4% of the children in rural areas) .

In light of these findings, the following are the proposed recommendations. First, given that children nutrition indicators performed poorly, nutrition programs such as the 1ST 1000 Most Critical Days Programme II need to be upscaled more rapidly. Second, more emphasis is required on food security and nutrition-related COVID-19 relief assistance, primarily that very few households benefited from government COVID-19 assistance to cushion the effects of the pandemic (for example the highest proportion of households to benenit from cash transfer was only 1.7% in March 2021). Third, considerations need to be made for daily wage earners and households in lower-income brackets to access support during the pandemic. Improved access to affordable and sustainable financial services is one way of accomplishing this. Fourth, there is a need to upscale the preservation and storage of seasonal foods to enhance and preserve diets for households in rural areas that may not be able to purchase these foods when they are out of season – more so with income reduction due to the pandemic.

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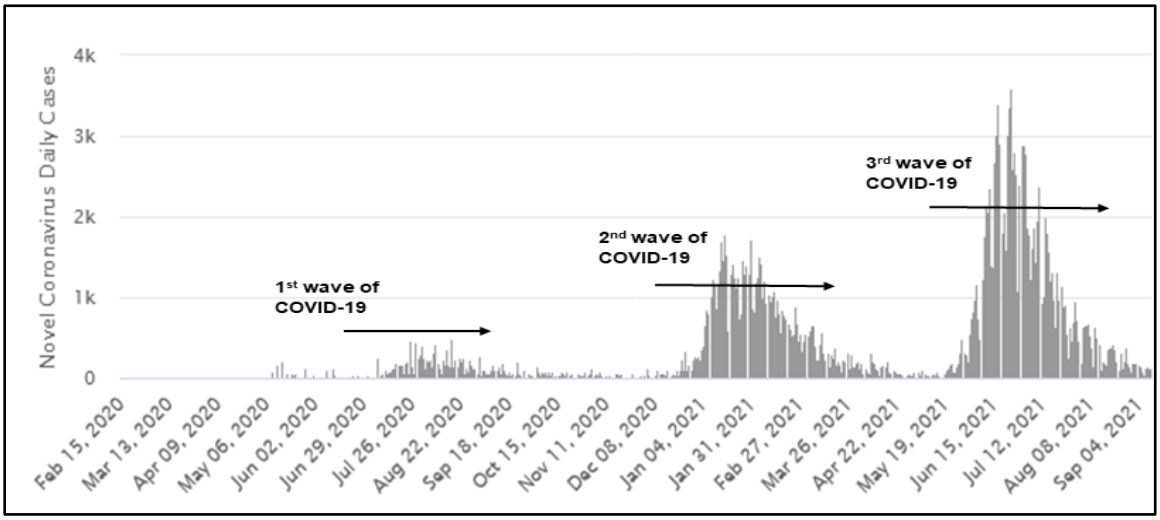
# 1 BACKGROUND

In Zambia, the first Coronavirus Disease of 2019 (COVID-19) cases were reported in March 2020. As of August 2021, Zambia had seen three waves, with each wave marked by an increase in cases (Figure 1). By the time of the Round 6 data collection in July 2021, 182,129 cumulative cases and 2,991 deaths had been reported[1]. Zambia was experiencing a third wave of the COVID-19 pandemic by the time of the Round 6 data collection; the number of daily cases ranged from six hundred and thirty to a peak of two thousand five hundred and forty-three cases per day. Although restrictions on social gatherings, meetings, and events were in place, there was mixed adherence to these and other COVID-19 regulations on social distancing, wearing masks, and hand hygiene.

**Figure 1. Daily cases of COVID-19 in Zambia**




Source: WHO Health Emergency Dashboard 2021

In July, the harvest from field crops grown during the 2020/21 agricultural season were still available across the country. However, these crops may not be as readily available to all households compared to March 2021 and May 2021. In addition, the availability of wild foods is minimal as they are generally out of season at this time of year.

To influence government policies on food security and nutrition, the study provides empirical evidence of the different changes in household food security and nutrition indicators due to COVID-19. Table 1 illustrates the data collection rounds implemented between September 2020 and July 2021.

**Table 1. Schedule of bi-monthly surveys**

| Survey number | Survey Month and Year |
|---|---|
| Round 1 | September 2020 |
| Round 2 | November 2020 |
| Round 3 | January 2021 |
| Round 4 | March 2021 |
| Round 5 | May 2021 |
| Round 6 | July 2021 |

[1] WHO. 2021. Zambia situation. Retrieved from: https://covid19.who.int/region/afro/country/zm

The following is a breakdown of the report's structure: Section 1 gives a general introduction, Section 2 defines the study's aims, Section 3 explains the study's methodology, and Section 4 summarises the key findings. Finally, section 5 discusses the study's challenges, and Section 6 sums up the study with some standout findings and recommendations.

# 2 OBJECTIVES

The objective of the study was to monitor and provide empirical evidence of the impact of COVID-19 on the livelihoods and food security of households in the 30 Scaling Up Nutrition (SUN) districts. The study's specific objectives were to:

- Examine the effect of COVID-19 on household income in the 30 SUN districts
- Examine household food security indicators in the 30 SUN districts in Zambia
- Monitor the effect of COVID-19 on the quality of diets consumed by women of reproductive age in the 30 SUN districts as measured by MDD-W
- Monitor the effect of COVID-19 on the quality of diets fed to children 6 to 23 months old in the 30 SUN districts as measured by MAD-C
- Identify changes in household food security and diet quality of women and children between the survey rounds in light of COVID-19

**Table 2. Definition of indicators**

| Indicator | Definition |
|---|---|
| Household Hunger Scale (HHS) | This is a household food deprivation scale based on the idea that the experience of household food deprivation causes predictable reactions that can be captured by a survey and summarized in a scale (Ballard et al., 2011) |
| Household Dietary Diversity Scale (HDDS) | The number of unique foods consumed by household members over a given period. It is a measure of household food access, particularly when resources for undertaking such measurement are scarce (FANTA, 2006) |
| Minimum Dietary Diversity for Women (MDD-W) | This is a dichotomous indicator of whether or not a woman 15-49 years of age has consumed at least five out of ten defined food groups the previous day or night (FAO and FANTA, 2016). |
| Minimum Acceptable Diet for Children (MAD-C) | This indicator measures the proportion of children 6-23 months of age who receive a minimum acceptable diet (MAD). It is a composite indicator calculated from the minimum feeding frequency and minimum dietary diversity, as appropriate for various age groups (WHO, 2009). The indicator is calculated separately for breastfed and non-breastfed children. |
| Minimum Meal Frequency (MMF) | Proportion of breastfed and non-breastfed children 6-23 months of age who receive solid, semi-solid, or soft foods or milk feeds the minimum number of times or more (WHO, 2009). |

# 3 METHODOLOGY

*Study Design:* A quantitative study was conducted to gather data to monitor and analyze the impact of COVID-19 on households' livelihood and food security.

*Study sites*: 30 SUN 2.0 of the Most Critical Days Programme II (MCDP II) priority districts (See (See Annex 1)

*Sample size and target:* 5431 of the 7501 households included in the 2019 baseline survey (See Annex 1)

were targeted. These were households that had provided telephone numbers. Women aged 15 to 49 years (women of reproductive age) and children aged 6 to 23 months old were of interest specifically for dietary indicators such as MDD-W and MAD.

*Data collection*: Telephone interviews were used to collect data following Government COVID-19 regulations requiring social distance.

The data collection tool was designed to collect information for computing household-level livelihood indicators. The reference period for household indicators such as income, food consumption, and HHS was the month before the survey. In contrast, the dietary diversity indicators (i.e. MDD-W, MAD-C and HDDS) had a 24-hour recall period. . Data was collected using tablets equipped with the Computer-Assisted Personal Interviewing software, Census and Survey Processing System (CAPI CSPro).

## 3.1 Enumerator Training and Data Collection

On average, 27 enumerators and five supervisors conducted the phone interviews across the six rounds of data collection. The enumerators and supervisors underwent two days of virtual training, while the survey took place over seven days. There were five data collection teams, each with a supervisor and five enumerators, and they converged in an open space to make the phone calls.

*Quality control*: IAPRI staff oversaw data quality control. The five supervisors conducted daily quality control throughout the data collection process by checking the questionnaires and following up where necessary before questionnaires were uploaded onto the server.

*Ethical issues:* Enumerators identified themselves, the organization they represented (IAPRI) and provided the context of the study. Households were assured that the information gathered from them would be kept completely confidential to the greatest degree permitted by law. Households were further informed that participation in the study was entirely voluntary and that if they chose to participate, they could refuse to answer certain questions or could stop participating at any time. Households were then asked to indicate their voluntary consent by accepting to participate in this interview or decline if they did not want to proceed. If households had any further questions about the survey, they were encouraged to contact the Director, National Food and Nutrition Commission Headquarters in Lusaka or the Executive Director, Indaba Agricultural Policy Research Institute.

Upon completing a questionnaire, enumerators would then inform the household about a token of appreciation for their time in the form of 50 Zambian Kwacha (ZMW) worth of airtime or mobile money. The study was approved by ERES Converge IRB and by the Zambia National Health Research Authority in June 2020.

# 4 RESULTS

A total of 1,713 households, of the 5,431 targeted households, were successfully interviewed in this round, representing a 31.5% response rate which is 1% higher than the response rate recorded in the fifth round (Table 3). Of the 1,713 households that were successfully interviewed, 1,448 households (84.5%) had participated in at least one of the previous surveys, whereas only 411 households (28.6%) had participated in all the previous surveys. Notwithstanding the second round of data collection that was conducted in November, an increase in the response rate is observed for subsequent rounds.

**Table 3: Survey response rate**

| | Sept.-20 | | Nov.-20 | | Jan.-21 | | Mar.-21 | | May.-21 | | Jul.-21 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Response Status | Freq. | % | Freq. | % | Freq. | % | Freq. | % | Freq. | % | Freq. | % |
| Refusal | 75 | 1.4 | 53 | 1.0 | 61 | 1.1 | 42 | 0.8 | 38 | 0.7 | 42 | 0.8 |
| Non-Contact (includes moved out of district) | 3821 | 70.4 | 3903 | 71.9 | 3832 | 70.6 | 3800 | 70.0 | 3738 | 68.8 | 3676 | 67.7 |
| Proceed | 1535 | 28.3 | 1475 | 27.2 | 1538 | 28.3 | 1589 | 29.3 | 1655 | 30.5 | 1713 | 31.5 |
| Total | 5431 | 100.0 | 5431 | 100.0 | 5431 | 100.0 | 5431 | 100.0 | 5431 | 100.0 | 5431 | 100.0 |

## 4.1 Description of Households included in the study

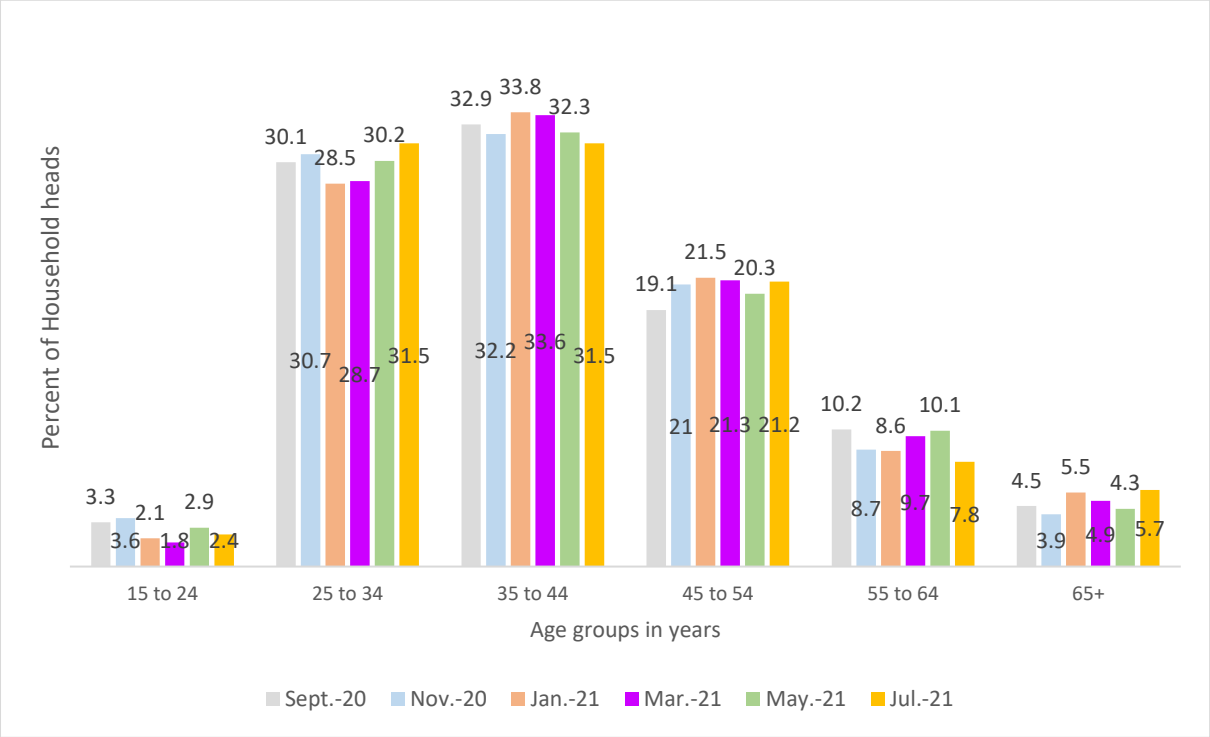
Both the regional and sex-disaggregated results were consistent with the demographics observed across all the survey rounds. In all rounds of data collection, rural household participation exceeded urban household participation and, male-headed household participation exceeded female-headed household participation (Table 4).

**Table 4. Distribution of households interviewed by region and sex of the household head**

| | | Percentage distribution of the households | | | | | |
|---|---|---|---|---|---|---|---|
| Region and gender of household head | | September 2020 | November 2020 | January 2021 | March 2021 | May 2021 | July 2021 |
| **Region** | Rural | 54.0% | 53.2% | 52.0% | 54.3% | 57.7% | 61.6 |
| | Urban | 46.0% | 46.8% | 48.0% | 45.7% | 42.3% | 38.4 |
| **Gender distribution** | Male-headed Households | 81.0% | 82.3%. | 82.4% | 80.8% | 81.9% | 81.4 |
| | Female-headed Households | 19.0% | 17.7% | 17.6% | 19.2% | 18.1% | 18.6 |

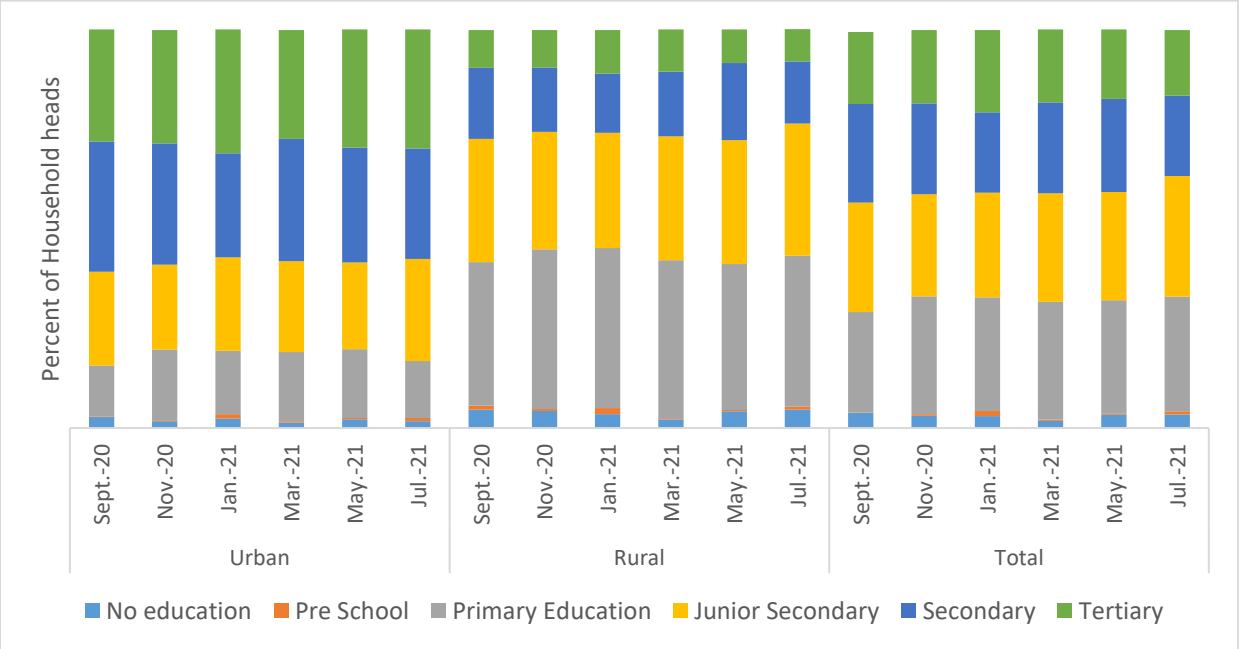
The age distribution of household heads continued to exhibit a relatively normal bell curve. Household heads aged 35 to 44 years old were the mode across all the survey rounds, and those with heads aged 65 years and over and 15 to 24 years were consistently the least represented across all survey rounds (Figure 2).

**Figure 2. Age distribution of household heads**



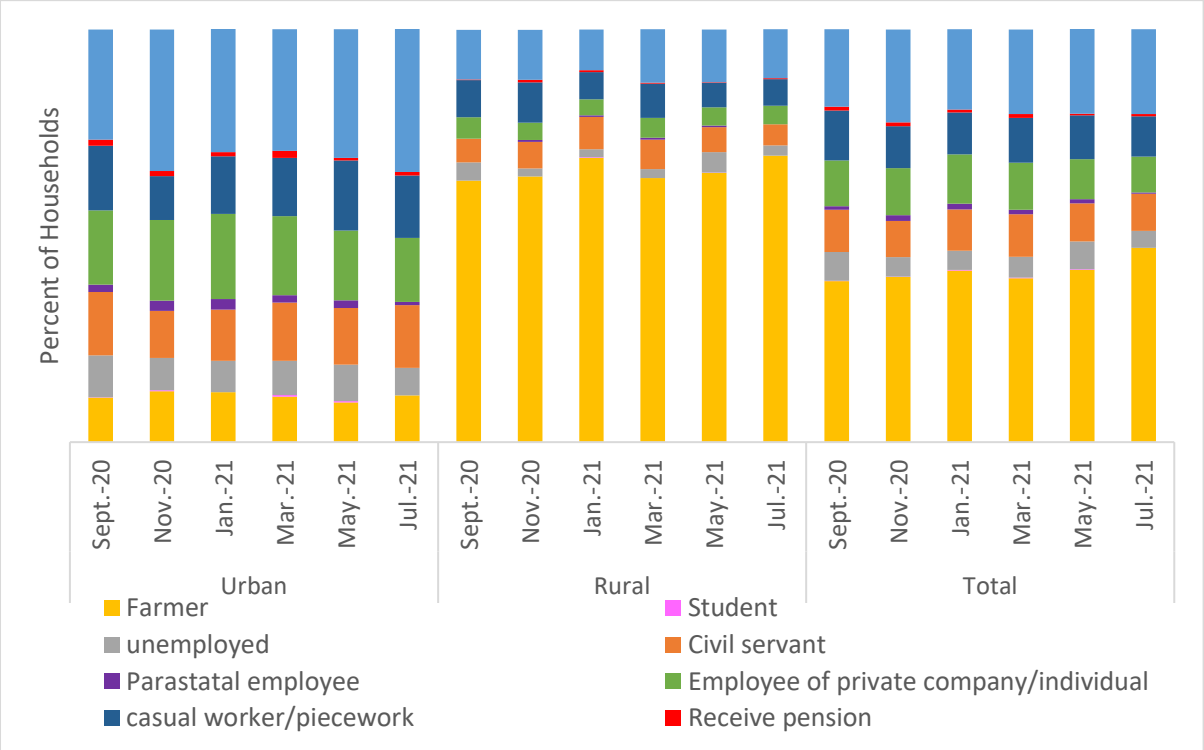

Most household heads participating across all survey rounds had attained some level of education. Primary and junior secondary education levels were the highest education levels attained by rural households. Tertiary and secondary education levels were more common among urban households in comparison to their rural counterparts. Overall, most household heads featured predominately in the lower levels of education (junior secondary and below) (Figure 3).

**Figure 3. Highest education level attained by household head**



Farming was the primary occupation for most of the households in this survey, particularly among rural households. After that, the most prevalent primary economic activities were self-employed/ entrepreneurs, casual workers/piece workers, employees of private companies/individuals, and civil servants (Figure 4).

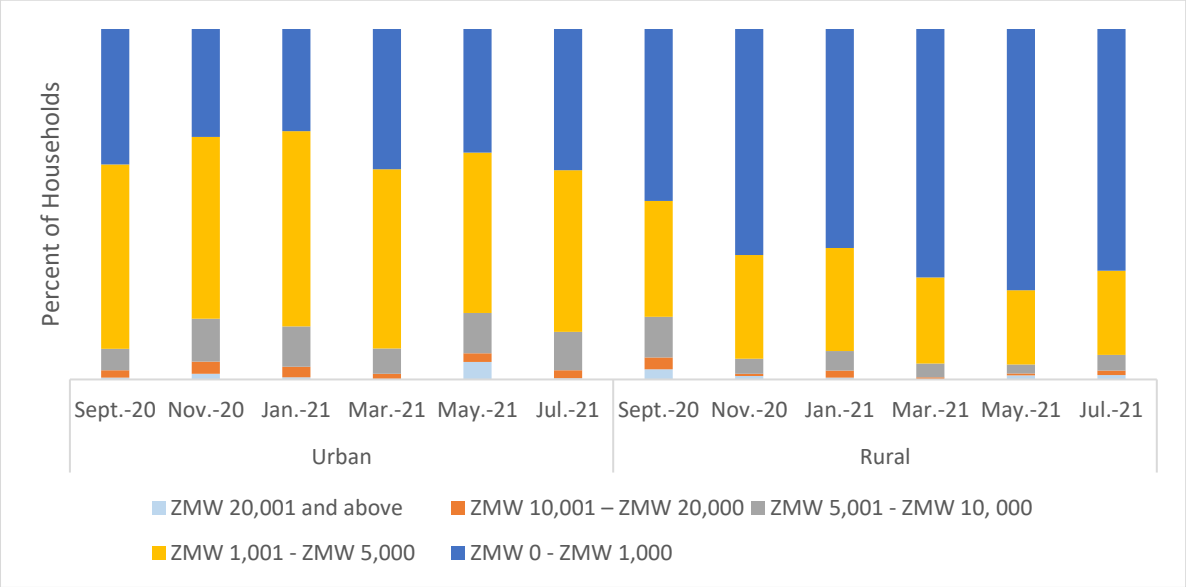
**Figure 4. Economic status of household heads**




The income levels of the households interviewed were disaggregated by region and are shown in (Figure 5). Most households earned less than ZMW 1000 per month.[2] More rural households fell in this income category compared to urban households.

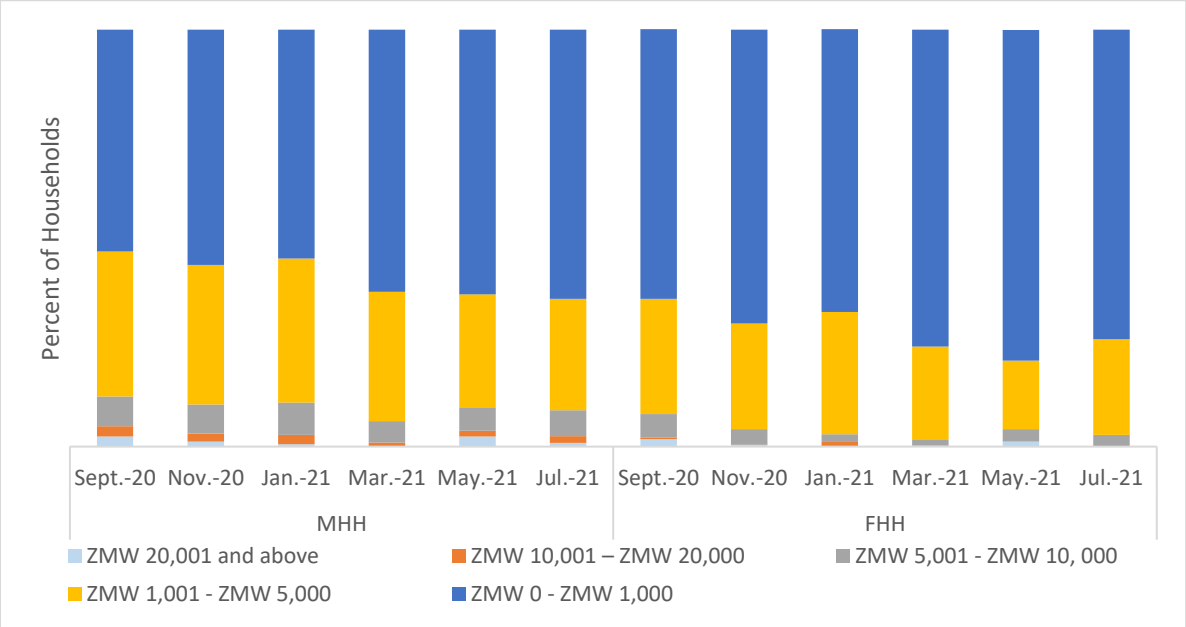
[2] 1 USD = ZMW 22.6 at the time of data collection

**Figure 5. Household income category disaggregated by region**




The income category distribution disaggregated by gender of the household head shows that more female-headed households fall in the lowest income bracket than male-headed households (Figure 6). However, male-headed households have a higher representation across all the other income brackets compared to female-headed households.

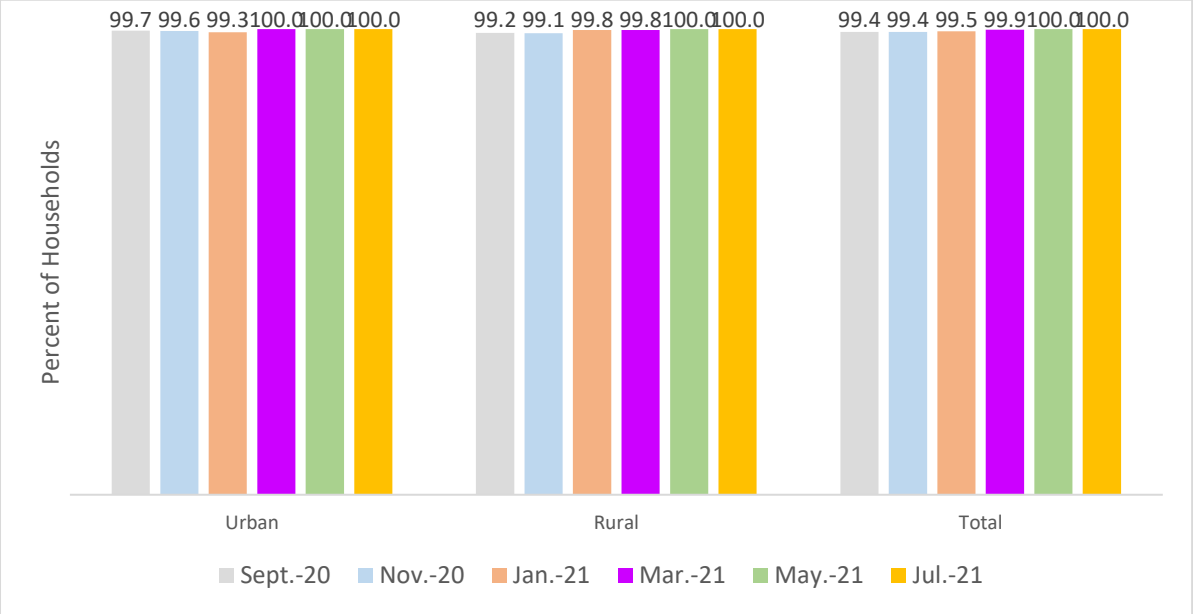
**Figure 6. Household income categories disaggregated by gender of the household head**




## 4.2 Awareness of COVID-19 and Vaccine Rollout

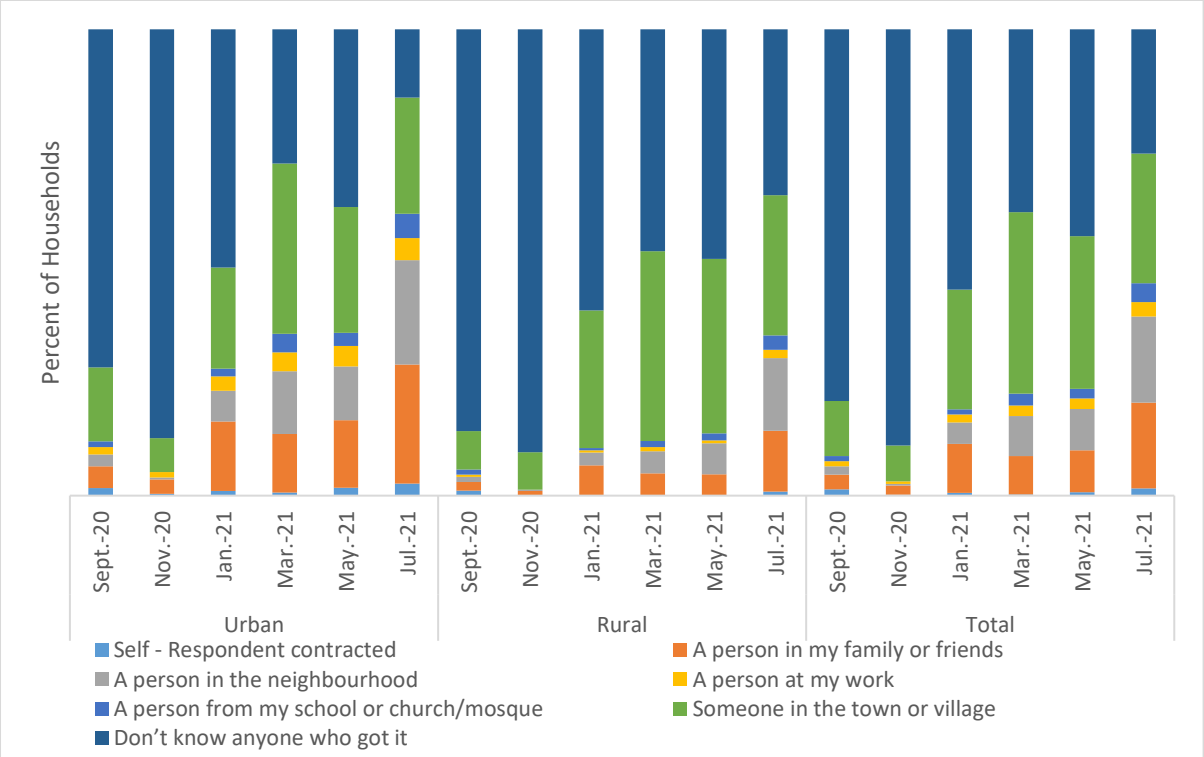
All the households in both urban and rural areas had heard about COVID-19. The results are shown in Figure 7.

**Figure 7: Proportion of households who had heard of COVID-19**



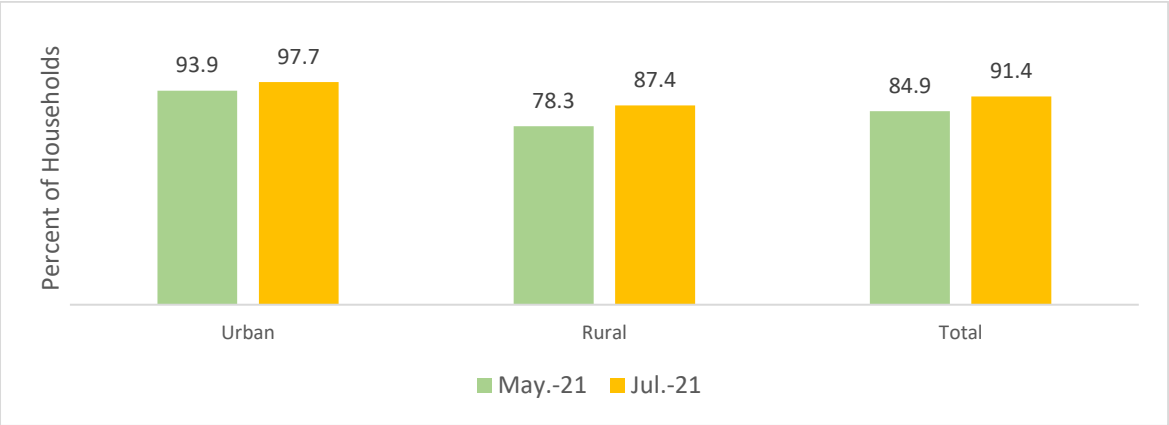

Respondents were asked if they knew anyone they believed had contracted COVID-19 and if they believed they themselves had contracted COVID -19. The results show that as the pandemic progressed, more households knew someone they believed had contracted COVID-19. This was particularly evident among urban households in comparison to rural households (Figure 8).

**Figure 8. Respondents who believed they themselves had contracted covid-19 or knew someone who had**



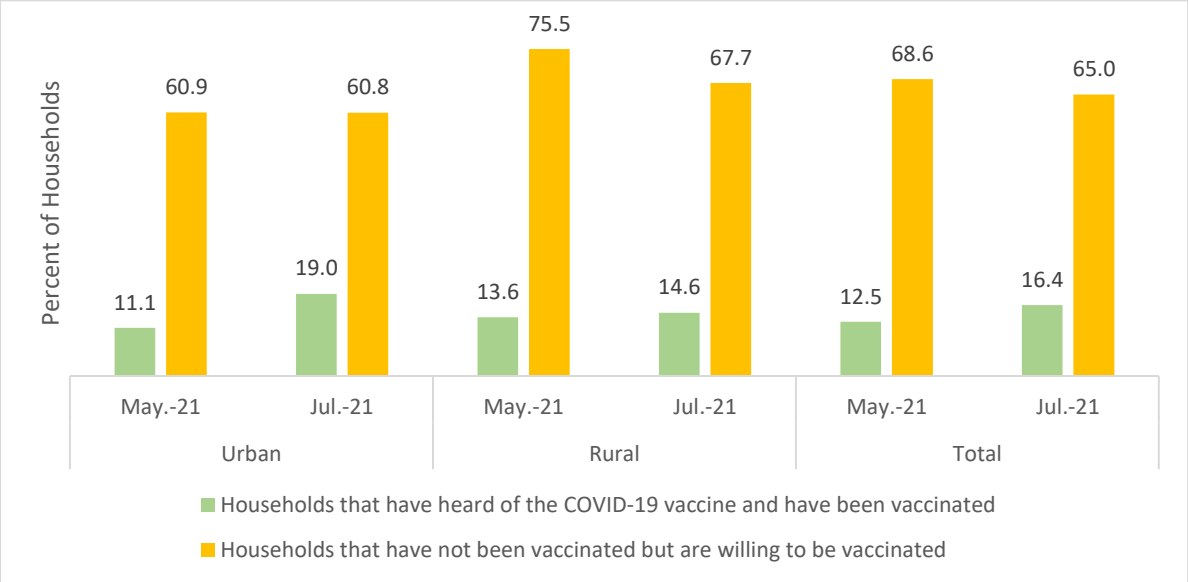
As illustrated in Figure 9, the majority of the respondents were aware of the COVID-19 vaccine rollout, and this awareness increased compared to the previous survey round in May. In addition, more urban households were aware of the vaccine rollout than rural households.

**Figure 9. Respondents that are aware of the COVID-19 vaccine rollout**



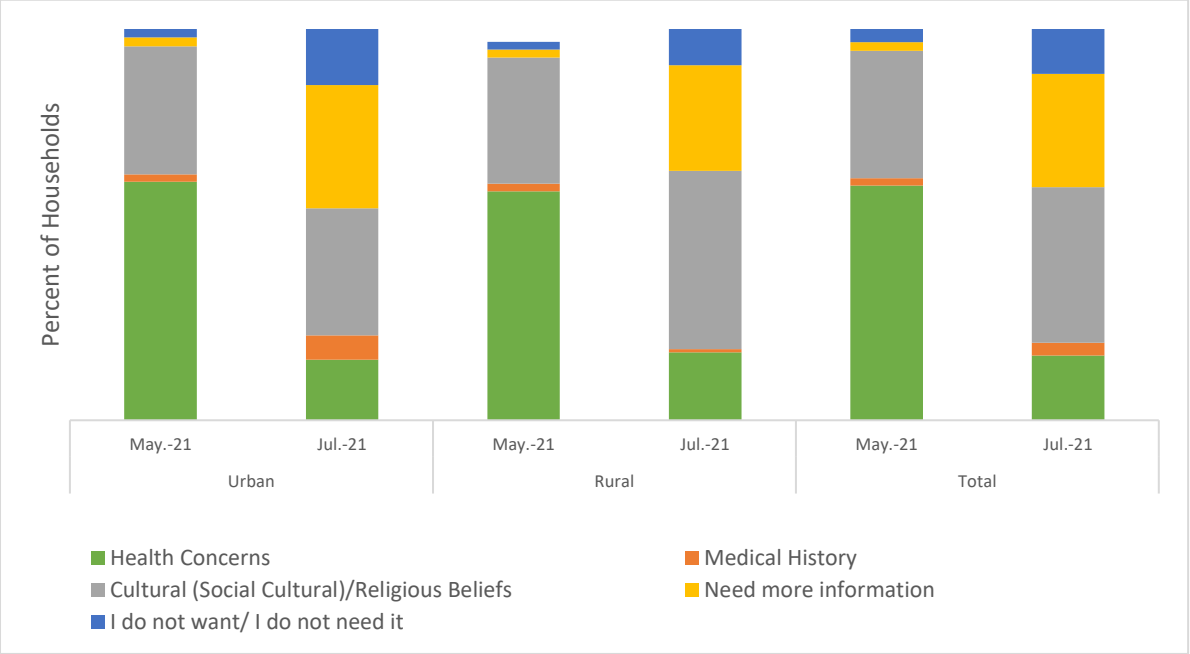

While a majority of respondents were aware of the COVID-19 vaccine rollout, only 16.4% of these households reported being vaccinated in July, with 3.9% more than those in May. However, most respondents indicated willingness to be vaccinated (65.0%) (Figure 10). Of interest and somewhat surprisingly, more households in rural areas (67.7%) are willing to be vaccinated in comparison to urban households (60.8%) (Figure 10).

**Figure 10. Households that have heard of the COVID-19 vaccine and have been vaccinated, and those that have not been vaccinated but are willing to be vaccinated**




With the passage of time and the pandemic's persistence, fewer respondents cited health concerns as a reason for their apathy towards getting vaccinated. However, cultural (social-cultural)/ religious beliefs continued to be prominent reasons, with more respondents citing them as a reason for their scepticism about vaccination (Figure 11).

**Figure 11. Reasons why households are sceptical of taking a COVID-19 vaccine**

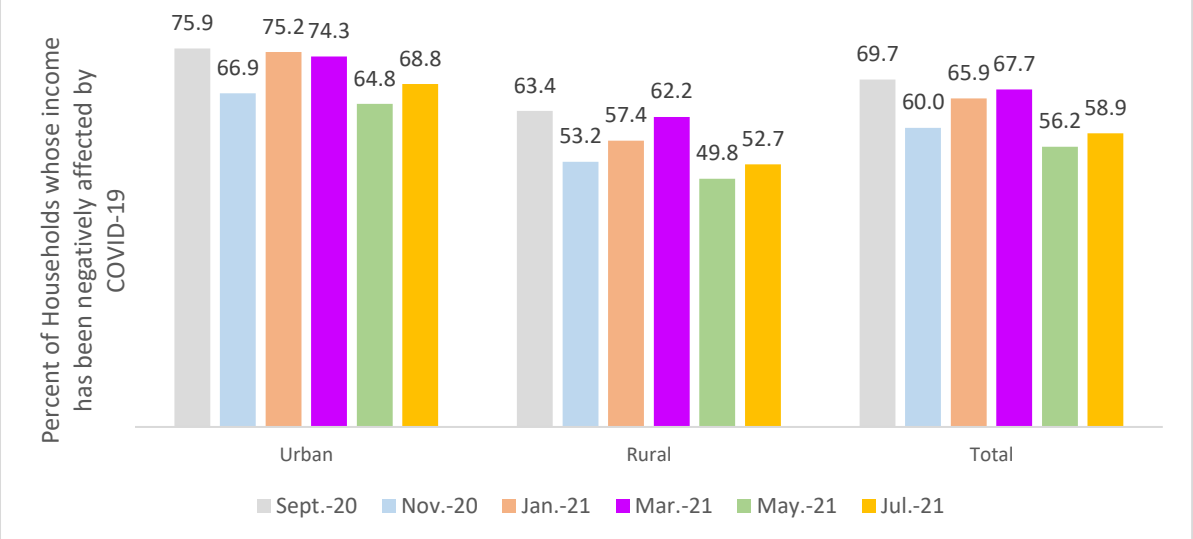



## 4.3 Effect of COVID-19 on Household Livelihoods

### 4.3.1 Effect on Household Income

A majority of the households indicated that COVID-19 had negatively affected their income, and this was more prevalent in the urban areas than rural areas. As illustrated in Figure 12, the July survey round showed an increase in respondents reporting that their income had been negatively affected. This corresponded with the third COVID-19 wave and an increase in the COVID-19 regulations. Further, it is worth noting that the second wave of the pandemic (December through to January) also corresponded with an increase in households reporting this negative impact.

**Figure 12: Proportion of households whose incomes were negatively affected by COVID-19**



Households that had their incomes negatively affected by COVID-19 were asked what they attributed their income loss to (Figure 13). A majority of the households attributed the income loss to the business becoming very slow across all the survey rounds. It is worth noting that health concerns closely followed the trend of COVID-19 cases among the reasons raised.

**Figure 13. How COVID-19 has negatively affected Household Income**

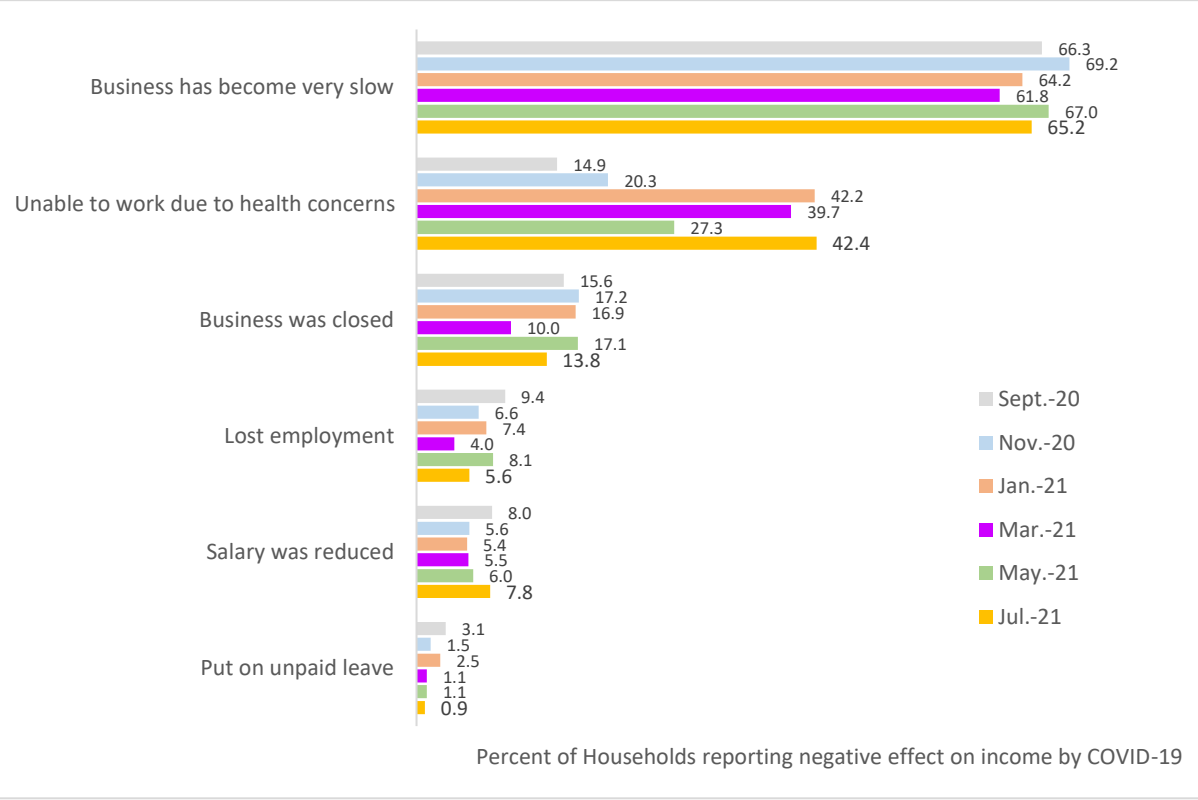
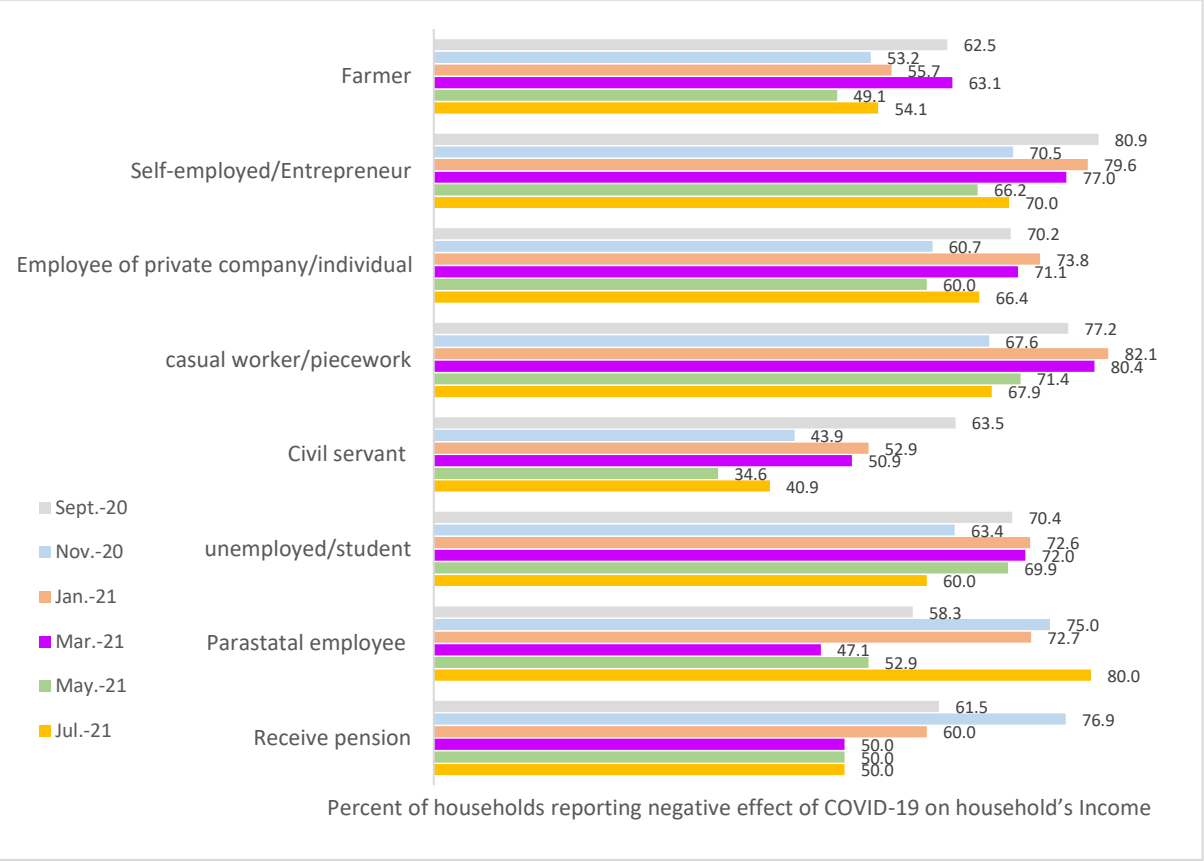



Figure 14 below illustrates those that reported that COVID-19 had negatively impacted their income by their primary economic activity. Although the majority of respondents were farmers, there was a relatively even distribution of respondents reporting this negative impact. The July survey round saw an increase in those reporting this negative impact across most of the economic activities ( aside from those in causal employment and the unemployed/students), which corresponded with an increase in COVID-19 cases and regulations. It is worth noting that increases in households reporting this negative impact corresponded with each COVID-19 wave and not only the July survey round. The second wave of COVID-19 cases corresponded with the increase in the January survey round while the third wave of COVID-19 cases corresponded with the increase in the July survey round. In some instances, households were reporting this negative impact in the following survey round as was the case with farming households in the March survey round.

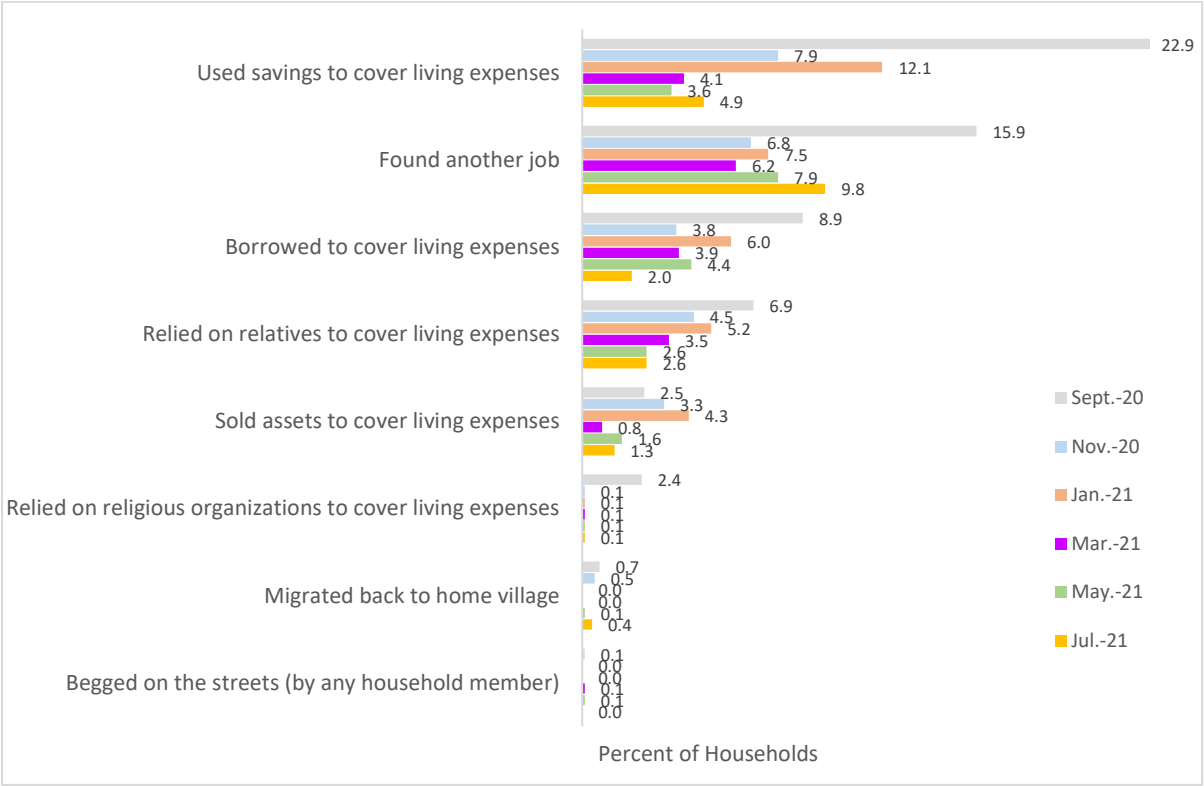
**Figure 14: Type of Household Most affected by COVID-19**




## 4.3.2 Effect on Household's Coping Strategies

The households were then asked how they were coping with the reduced income. Few households reported using the various coping strategies throughout the various survey rounds. However, the results showed that 9.8% were coping with these changes by finding another job, an increase from 7.9% in the May survey. There was also an increase in households that used their savings to cover their living expenses, from 3.6%, in the previous round, to 4.9% (Figure 15). It was further observed that as the COVID-19 cases increased, so did some of the coping strategies, particularly in the survey rounds of January and July, corresponding to the second and third wave of COVID-19, respectively.

**Figure 15. Income Loss Coping Strategies**




As part of cushioning the negative effects of COVID-19, the government provided various assistance to the affected households. However, this survey revealed that very few households continued to receive any sort of assistance to deal with the negative effects of the pandemic though there was a slight increase in households that reported receiving subsidies in the July survey round (Table 5).

**Table 5. Access to COVID-19 Government Assistance**

| | Sept.20 | | Nov.20 | | Jan.21 | | Mar.21 | | May.21 | | Jul.21 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Yes % | # | Yes % | # | Yes % | # | Yes % | # | Yes % | # | Yes % | # |
| **Food assistance** | 0.6 | 6 | 0.3 | 3 | 0.3 | 3 | 0.6 | 5 | 0.6 | 6 | 0.4 | 4 |
| **Cash transfers or Unemployment benefits** | 0.2 | 2 | 0.6 | 5 | 1.5 | 15 | 1.7 | 14 | 1.5 | 14 | 1.3 | 13 |
| **Loans** | 0.1 | 1 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.2 | 2 | 0.0 | 0 |
| **Subsidies of any kind** | 0.2 | 1 | 0.0 | 0 | 0.7 | 7 | 2.4 | 19 | 0.7 | 7 | 0.9 | 9 |
| **Tax cuts** | 0.4 | 4 | 1.7 | 15 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 |
| **None** | 98.6 | 1064 | 97.4 | 868 | 96.7 | 993 | 94.7 | 760 | 95.9 | 902 | 96.9 | 979 |

## 4.4 Effect of COVID-19 on Food Consumption

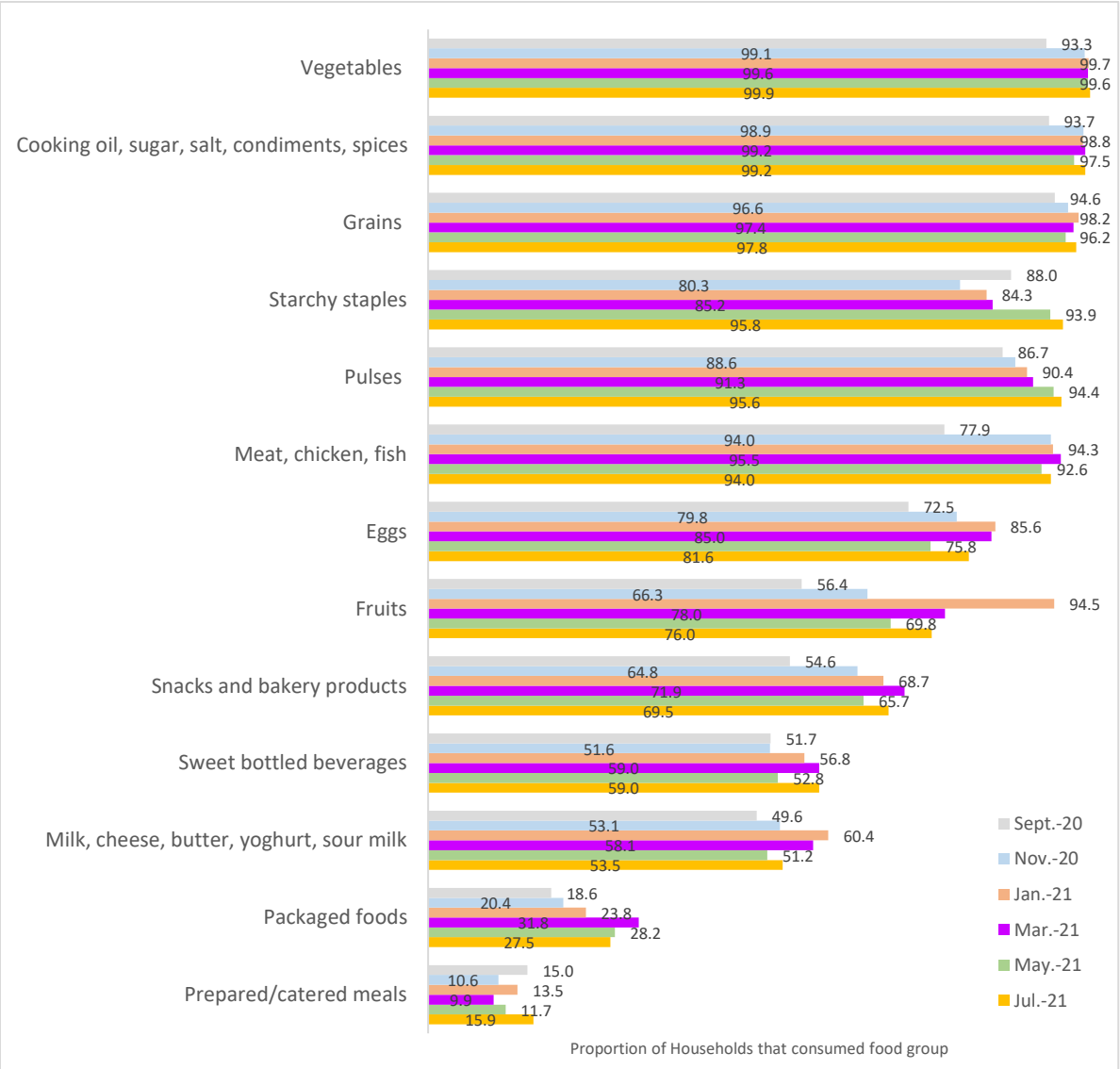
### 4.4.1 Effect on Household's Consumption Patterns

Households were asked about food consumption patterns to establish any changes due to COVID-19. Figures 16 to 20 illustrate trends in response to questions that included which foods had been consumed,

whether there were any notable changes in quantities of foods consumed, and the reasons for changes in the quantities consumed.

The results continued to show that vegetables; cooking oil, sugar, salt and other condiments; grains; pulses; starchy staples; and meat, fish and chicken were consumed by a majority of the households (over 90%) in the previous year during the same month irrespective of the COVID-19 pandemic (Figure 16). Surprisingly, no definitive trend was observed in the consumption of the respective food groups due to an increase in COVID-19 cases or as a result of the COVID-19 restrictions. This was particularly evident for packaged foods as well as prepared and catered meals which, given the nature of these food groups and COVID-19 restrictions, were expected to follow a trend similar to an increase in COVID-19 cases, particularly the COVID-19 waves.

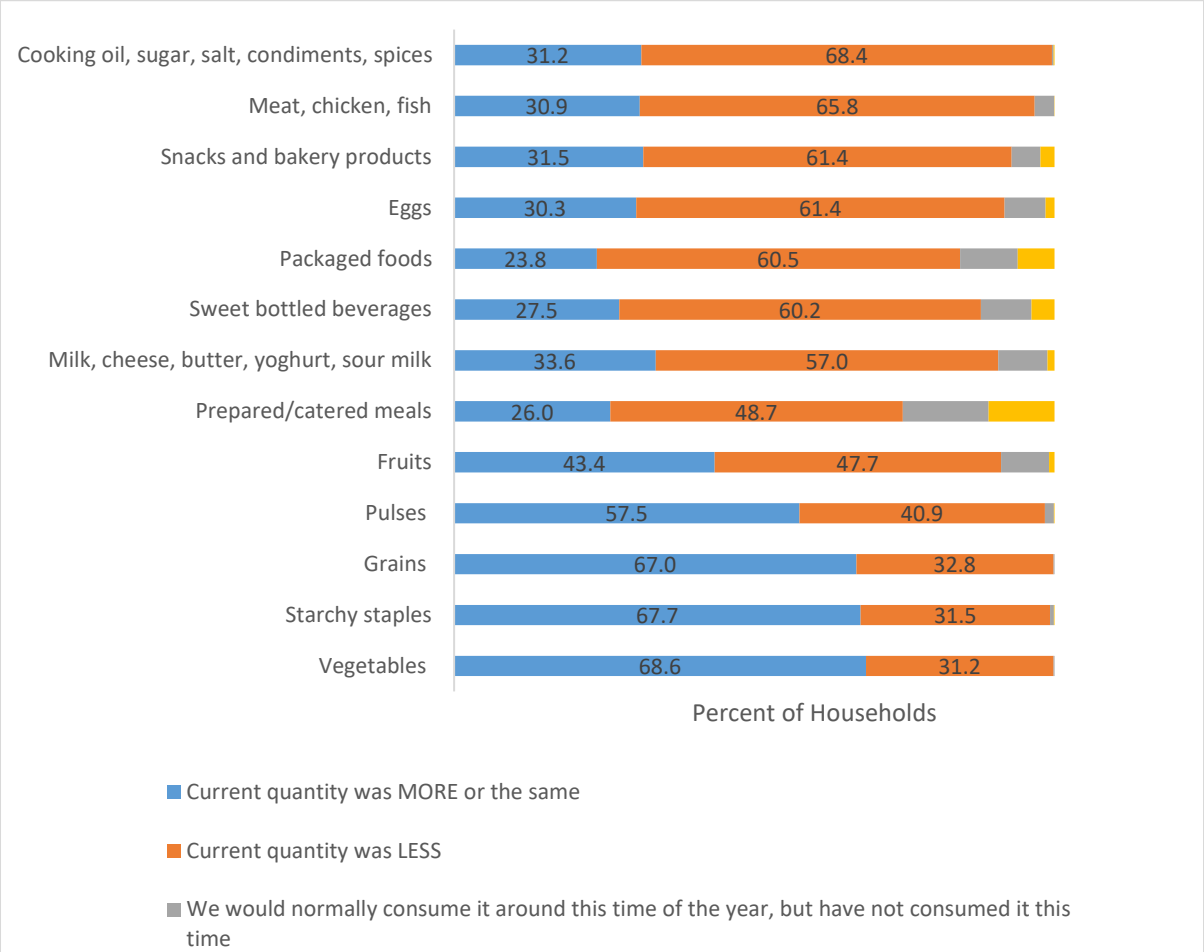
**Figure 16. Proportion of households that consumed food group in previous year, corresponding month**




Regarding changes households observed in the quantities of food consumed compared to the same time the previous year, almost 60% of the households reported a reduction in consumption for about seven of the food categories in the July survey round. This was observed for the following food categories:

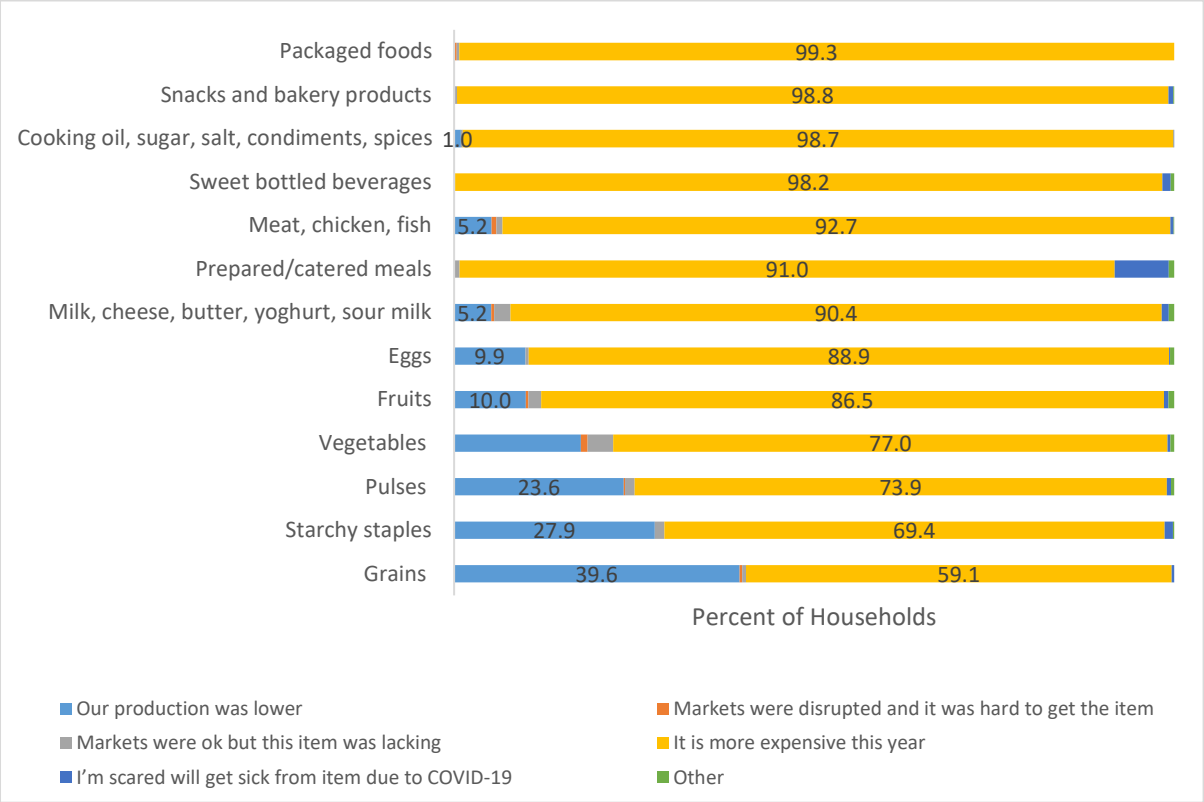
cooking oil and other condiments; meat, chicken and fish; snacks and bakery foods; eggs; packaged foods; sweet bottled beverages; and milk and dairy products (Figure 17). When consumption was compared to the previous year, a majority of households consistently reported a reduction in consumption across all survey rounds – with slight variations observed in the percent of households reporting reductions for various food categories.

**Figure 17. Changes in food consumption now compared to previous year, corresponding month (July)**




Households continually cited rising food prices as the reason for the reduced consumption across all survey rounds. Over 60% of the households attributed this to the reduced consumption in the July survey round (Figure 18). Less than 40% of the households indicated that they ate less grains, vegetables, starchy staples and pulses because their production was lower.

**Figure 18. Reasons for less food consumption in the past month compared to this time last year (July)**




## 4.4.2 Food Sources

The majority of households reported not having changed their food source during the past one year. Slightly over 90% of the households reported no change in sources across all food categories in the July survey round. The source(s) of the food category prepared/catered meals reflected the COVID-19 cases/waves trend. Of further interest is that the source(s) of some food categories seems to have been affected more during the first and third waves of the pandemic, which corresponded to the September and July survey rounds, respectively, in comparison to the second wave, which corresponded with the January survey round (Figure 19). This was likely as a result of the severity of restrictions and COVID-19 cases during the first and third waves of the pandemic as opposed to the second wave when both enforcement and adherence levels were seemingly lax.

**Figure 19. Proportion of households who changed food sources by food category**

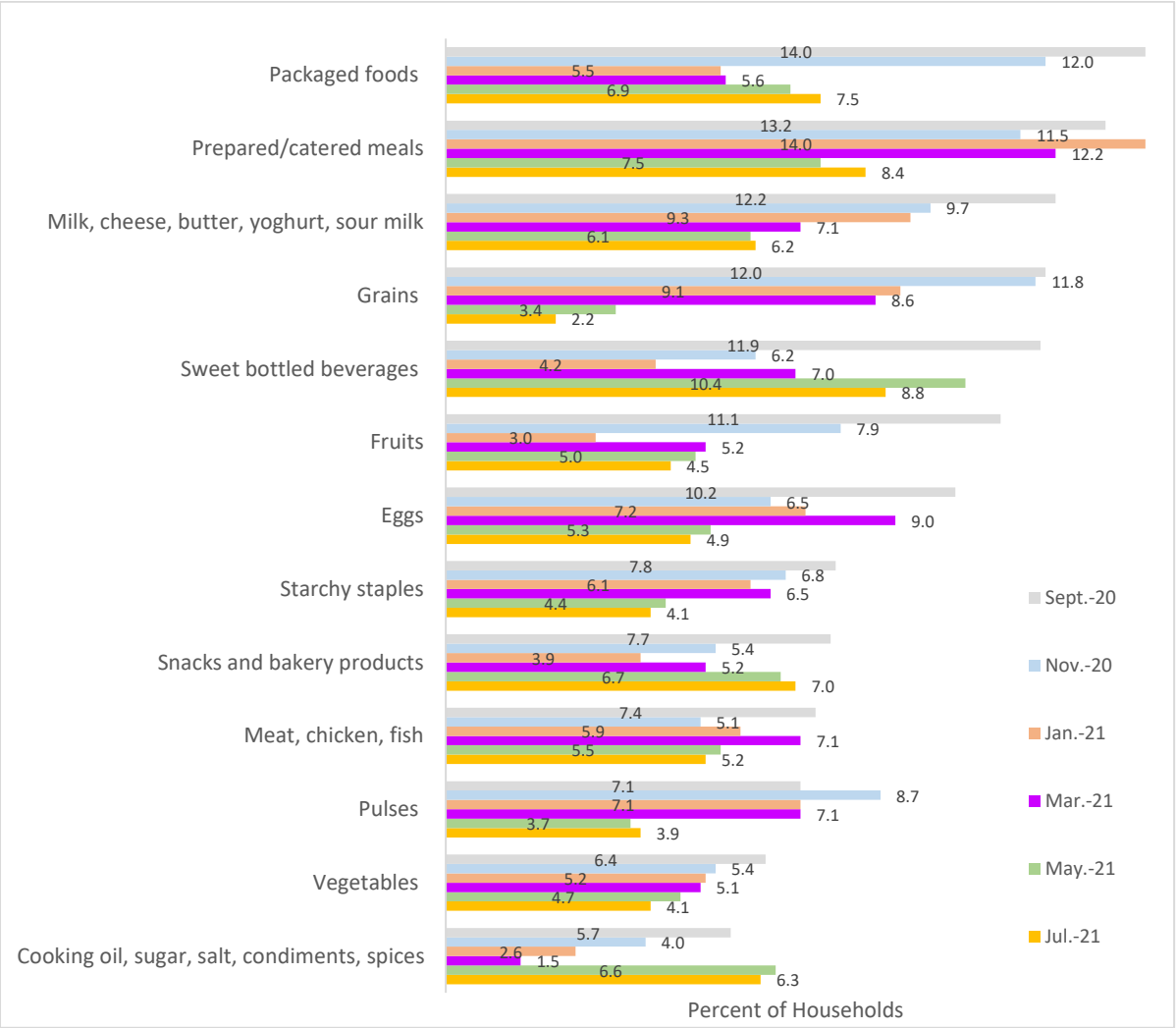
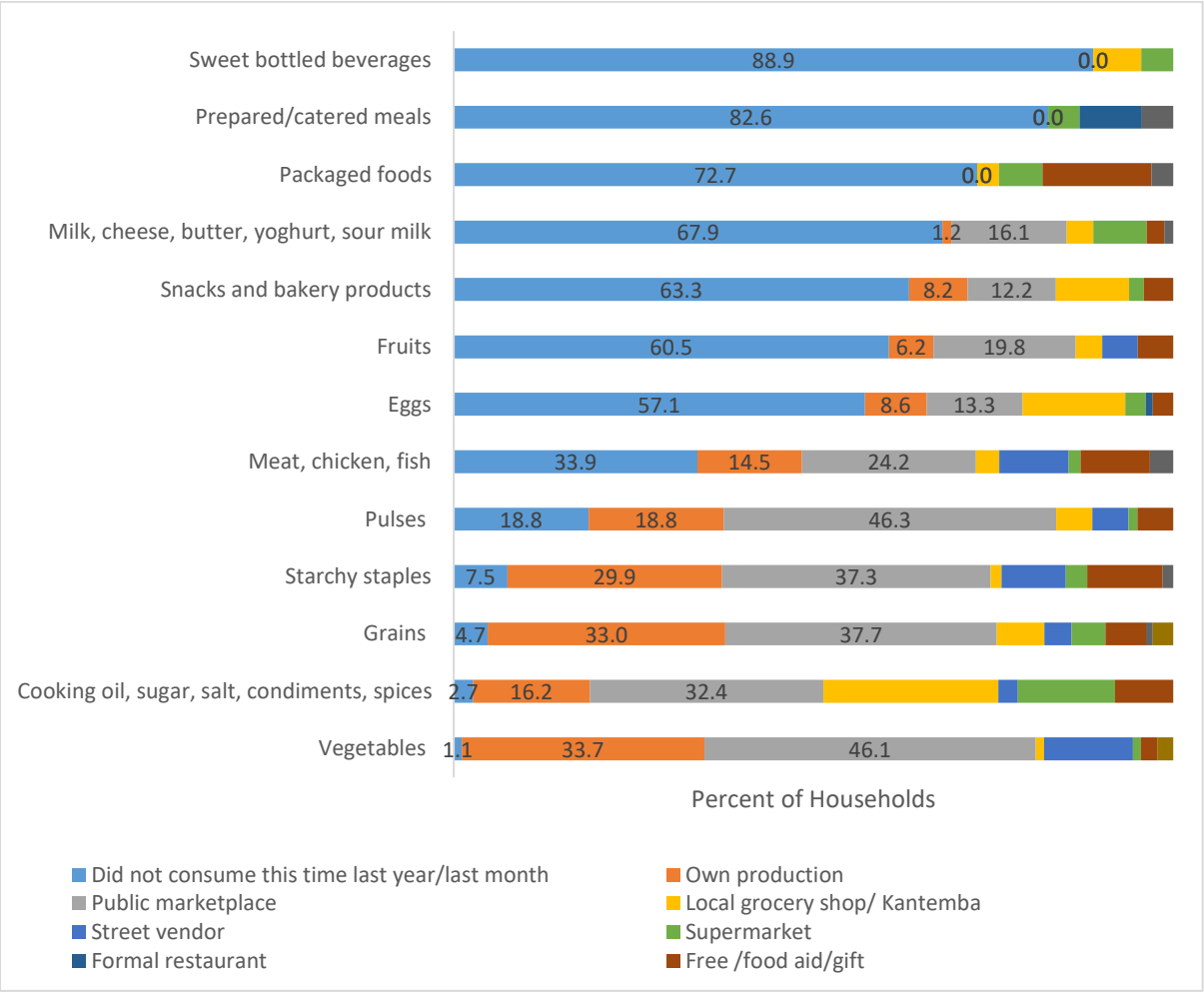



Figure 20 summarises the new food sources by food category for households that had changed their food source in the past year. Despite the COVID-19 restrictions, the public marketplace was the most common new source for most of the food categories for all the survey rounds. At least 24% of the households sourced their food from the public marketplace for six food categories.

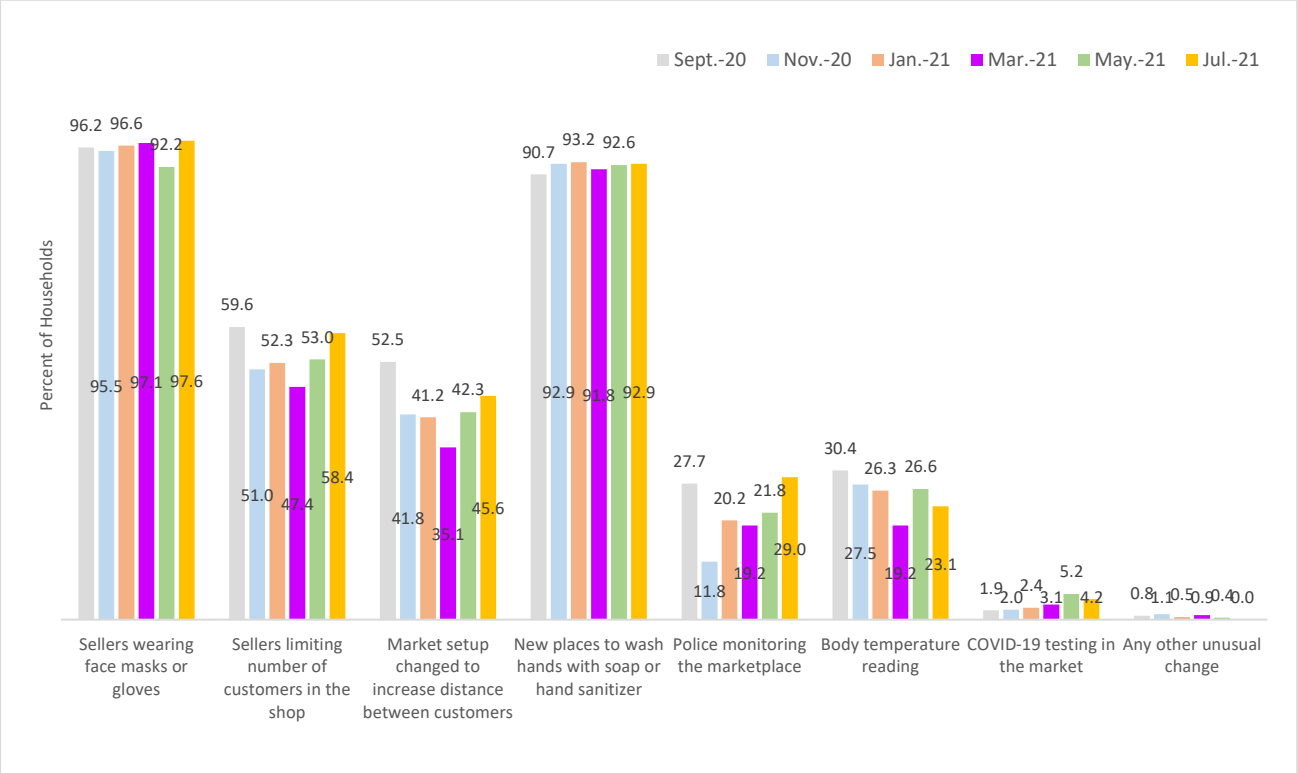
**Figure 20. Proportion of households indicating different food sources by food category (July)**




### 4.4.3 Market Environment

Households were then asked to report on changes they have observed in the market environment related to COVID-19 measures. Throughout all the survey rounds, it was noticed that there was relatively good adherence to COVID-19 market regulations. Like previous survey rounds, over 90% of households observed that sellers were wearing face masks or gloves and that there were new places to wash hands or sanitize (Figure 21). Adherence to social distancing measures in the marketplace followed the trend in the incidence of COVID-19 waves. This is particularly evident with wearing face masks and gloves, the limiting of customers in a shop, new places to wash hands or sanitize, and the monitoring by police officers at the marketplace. Aside from the social distancing regulations, there was low adherence to COVID-19 measures, particularly regarding COVID-19 testing.

**Figure 21: Changes in Market Environment as COVID-19 Preventive Measures**

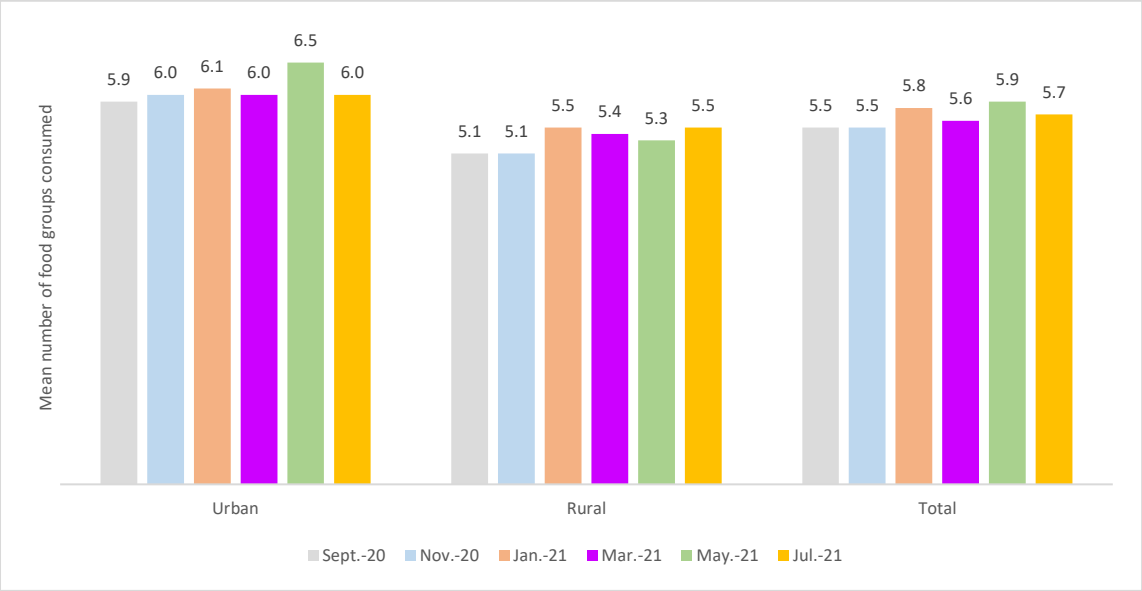



## 4.5 Household Food Security Indicators

Households were then asked about the food groups they had consumed using a 24-hour recall period and how often they had meals or a lack of meals in the previous month to compute the HDD and HHS indicators and subsequently assess their food security.

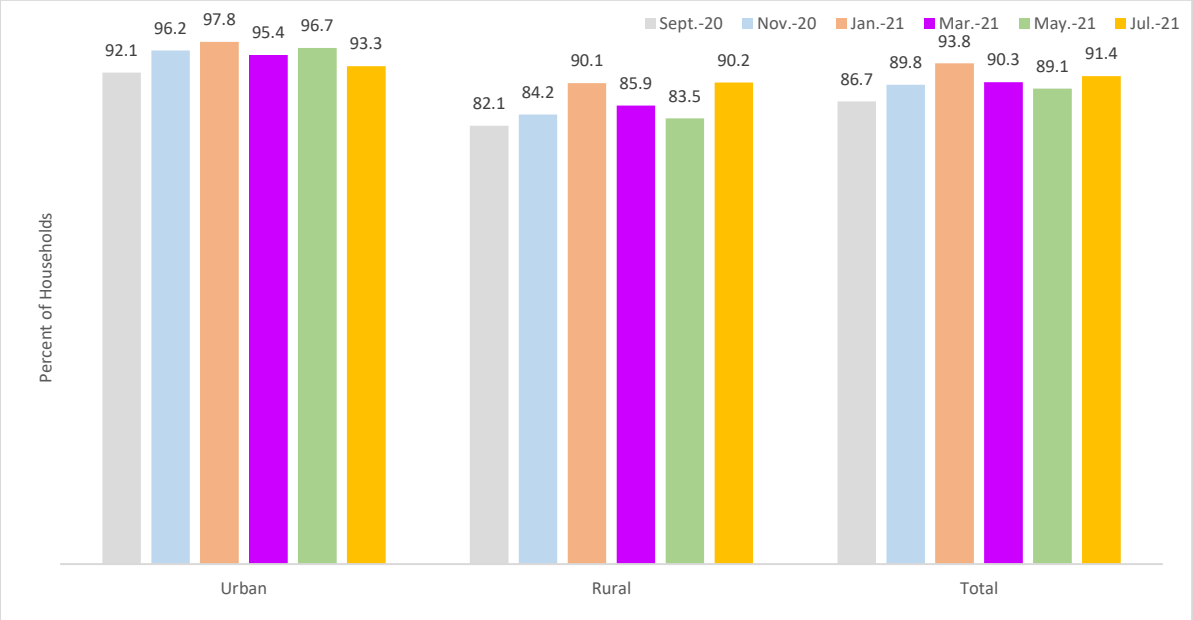
### 4.5.1 Effect on Household Dietary Diversity

**Figure 22. Mean number of food groups consumed by the household**



On average, at least 86.7% of the households achieved the recommended dietary diversity, having consumed four or more food groups throughout survey rounds (Figure 23). Urban households, on average, consumed at least 5.9 food groups, whereas rural households consumed 5.1 (Figure 22). Interestingly, relative declines in household dietary diversity were observed in both urban and rural areas when COVID-19 cases spiked (Sept, March, and July), except in rural areas when the third wave (July) coincided with the harvest period (Figure 23). Thus, the proportion of households with recommended Household Dietary Diversity (HDD) was low in rural areas compared to urban households for all the survey rounds.

**Figure 23. Proportion of households achieving recommended dietary diversity**



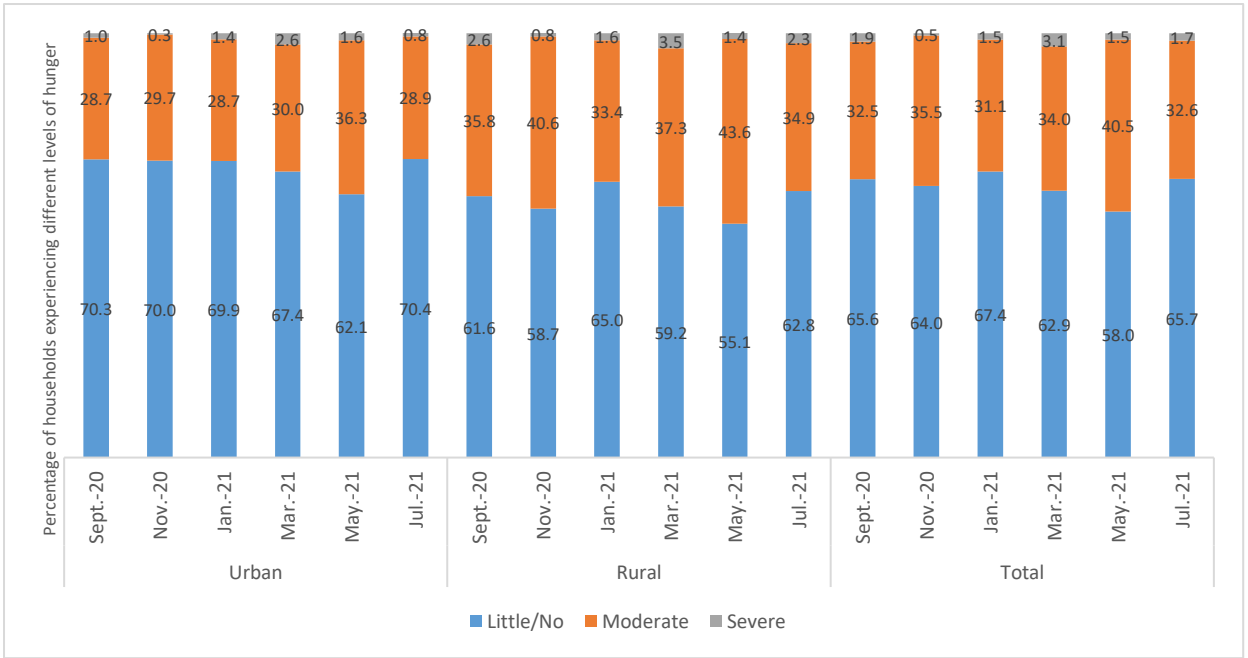

Cereals, oils and fats, vegetables, and other foods such as condiments and beverages were the most widely consumed foods, and these results are consistent across all the survey rounds. Eggs and milk and milk products continued to be the least consumed food groups. While no distinctive trend in food consumption is observed corresponding to the increases in COVID-19 cases over the survey rounds, it is worth noting that there is a decline in consumption of most (eight of the twelve) food groups for the July round, which corresponded with the highest COVID-19 spike recorded in the country to date (Figure 24).

**Figure 24. Proportion of food groups consumed by households**


## 4.5.2 Effect on Household Hunger Scale

Varying levels of severity of hunger were computed and disaggregated by region. For example, during periods of COVID-19 cases spiking (January, March and July), more households reported severe hunger especially in urban areas (Figure 25).

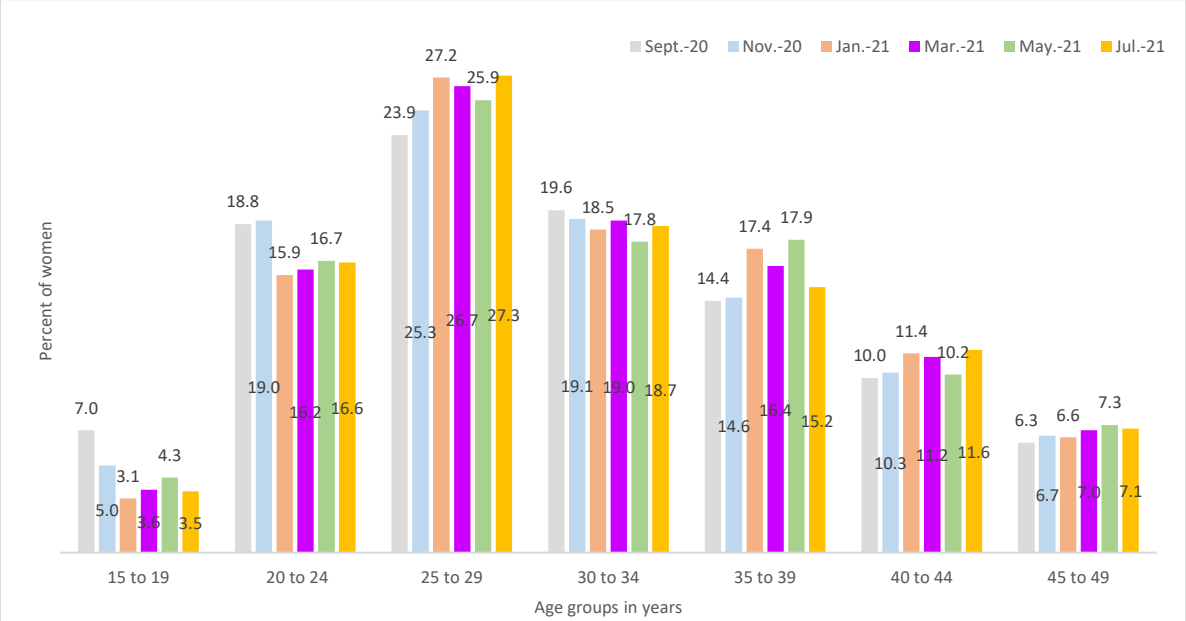
**Figure 25. Household hunger scale by region**



### 4.5.3 Effect on Women's Dietary Diversity

The age distribution of women of reproductive age continued to exhibit a relatively right-skewed distribution. Women aged 25 to 29 years old were the mode across all the survey rounds. Whereas households with women aged 15 to 19 years and 45 to 49 years were consistently the least represented across all survey rounds (Figure 26).

**Figure 26. Age distribution of women included in the study**




Women from urban households, on average, consumed at least 5.2 food groups, whereas women from rural households consumed 4.5 food groups. Relative declines in the number of food groups consumed and women dietary diversity were observed in urban areas when COVID-19 cases spiked (September, March, and July) (Figure 27 and Figure 28). However, this was not exactly the case in rural areas where seasonal foods and the harvest period altered trends. On average, at least 60% of women achieved the recommended dietary diversity, having consumed five or more food groups over the course of all the surveys – The September survey round recorded the lowest MDD-W. Generally, the proportion of women meeting the recommended MDD-W thresholds was low in rural areas in comparison to urban areas over the period of all the survey rounds.

**Figure 27. Mean number of food groups consumed by women**

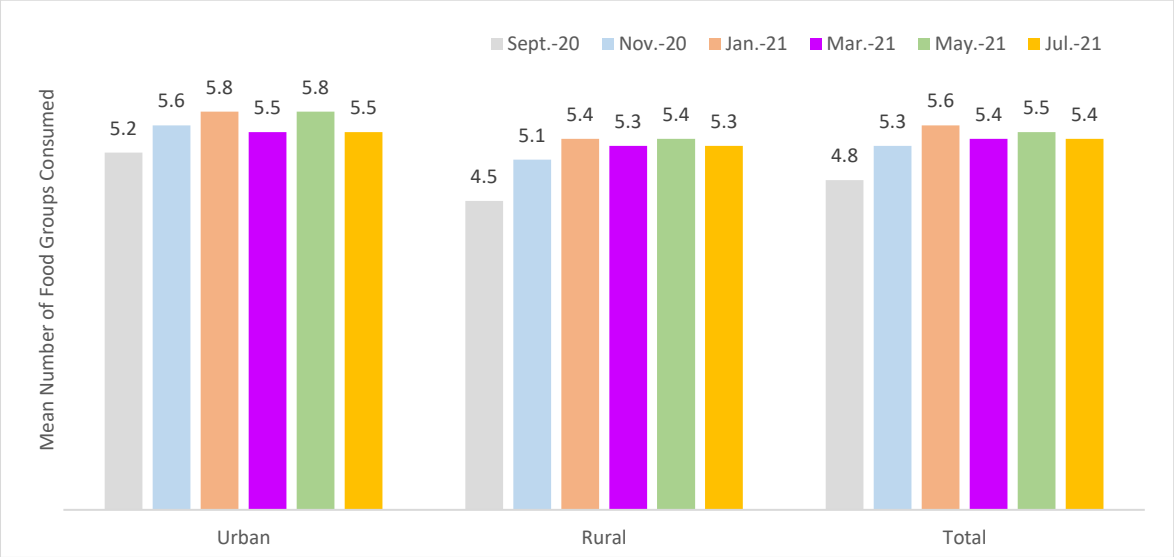
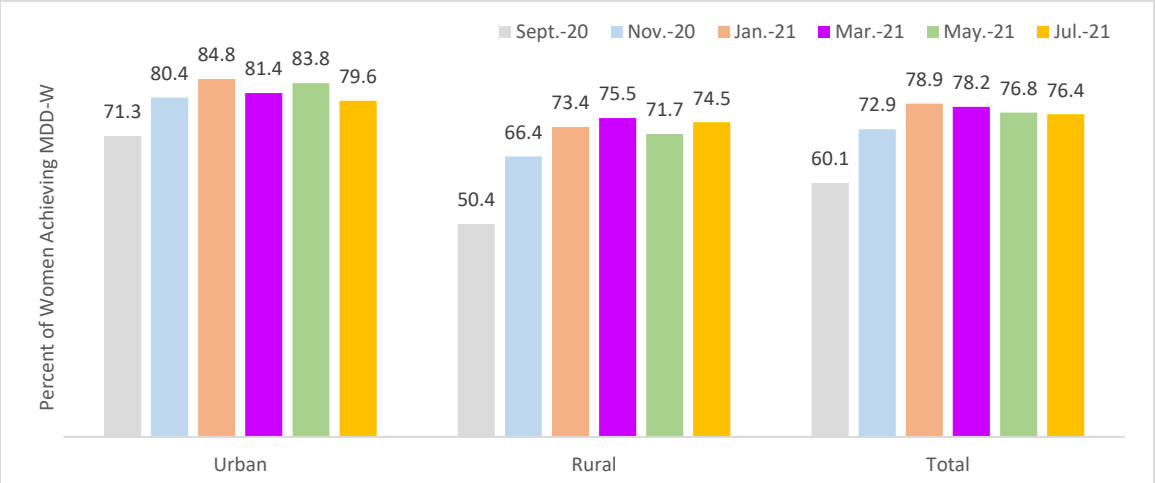
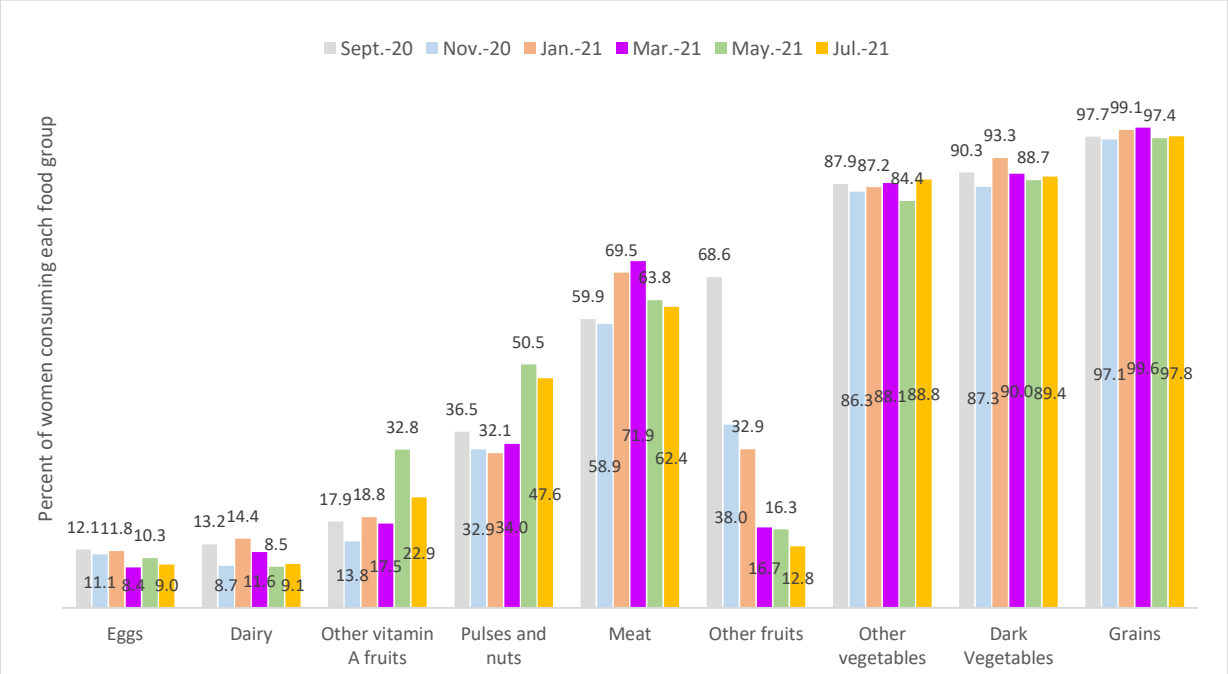



**Figure 28. Proportion of women achieving MDD-W**




The most widely consumed food group by women was grains, while the least consumed food groups were dairy and eggs; this was consistent across all the survey rounds (Figure 29). While some food groups such as fruits exhibit a more definitive seasonal trend, other food groups do not. And so not all food groups had a decline in consumption during spikes in COVID-19 cases. However, eggs and dairy were noted to decline in the March survey round, while consumption of the eggs, pulses, meat and vitamin A fruits declined in the July survey round.

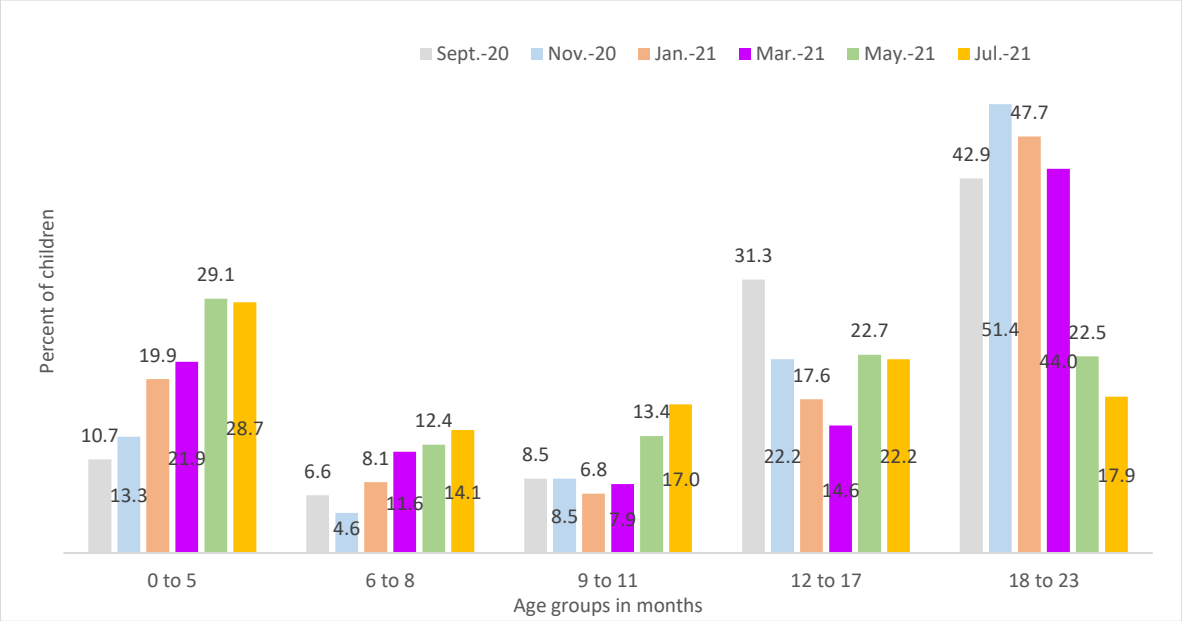
**Figure 29. Consumption of food groups by women**




## 4.5.4 Effect on Minimum Acceptable Diet for Children

The age distribution of children below the age of two years showed that most children were between 18 and 23 months old though this declined over the survey rounds while the percent of children aged between 0 to 5 months increased (Figure 30).

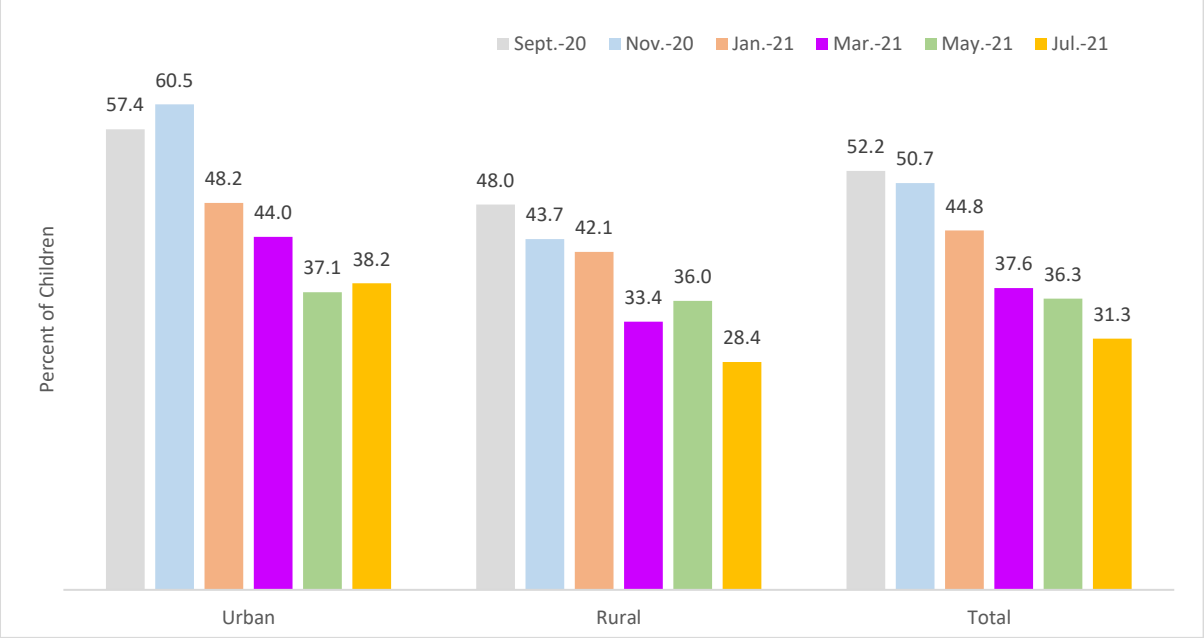
**Figure 30. Age distribution of children included in the study**




Of all the interest groups observed, the dietary diversity indicators of children below the age of two performed the worst. On average, only 31.3% of children (children 0-23 months) achieved the minimum dietary diversity, having consumed four or more food groups by the last round of the survey (Figure 31).

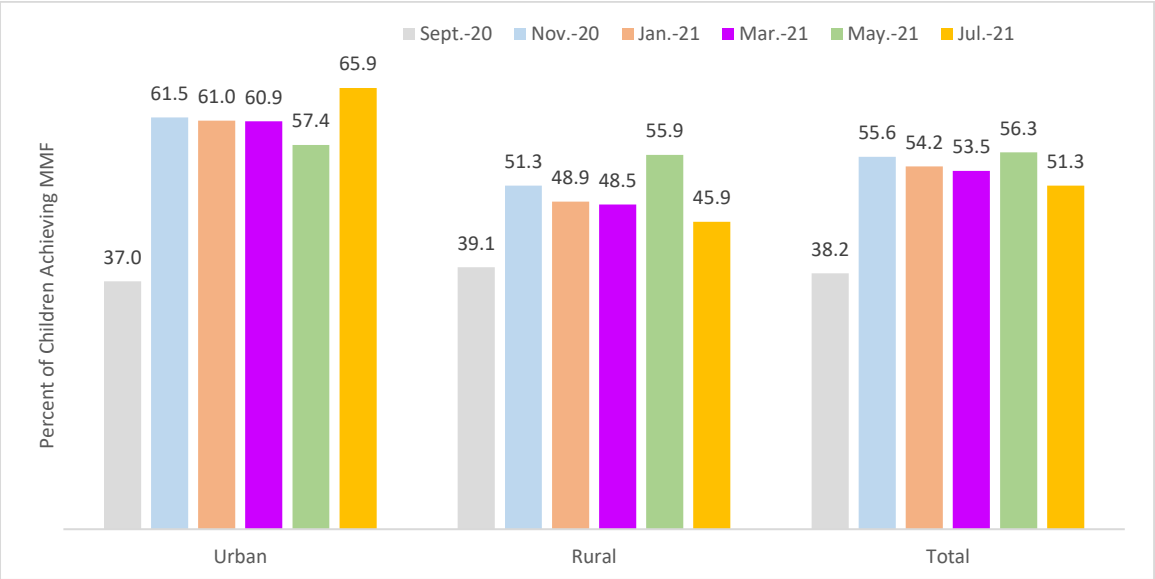
Worryingly, this indicator dropped consistently over the period of the survey. Furthermore, it was observed that the decline in the minimum dietary diversity for children was more pronounced in rural areas, particularly during both the second COVID-19 wave (March) and the third wave (July).

**Figure 31. Proportion of children meeting the minimum dietary diversity**




Overall, there was an increase in the number of children meeting MMF (Table 2. Definition of indicators - children 6-23 months). However, MMF was most affected when COVID-19 cases spiked (September, March, and July) (Figure 32). Surprisingly, MMF for children in urban areas did not reduce in the July survey round even when this corresponded with the highest COVID-19 spike of the pandemic thus far.

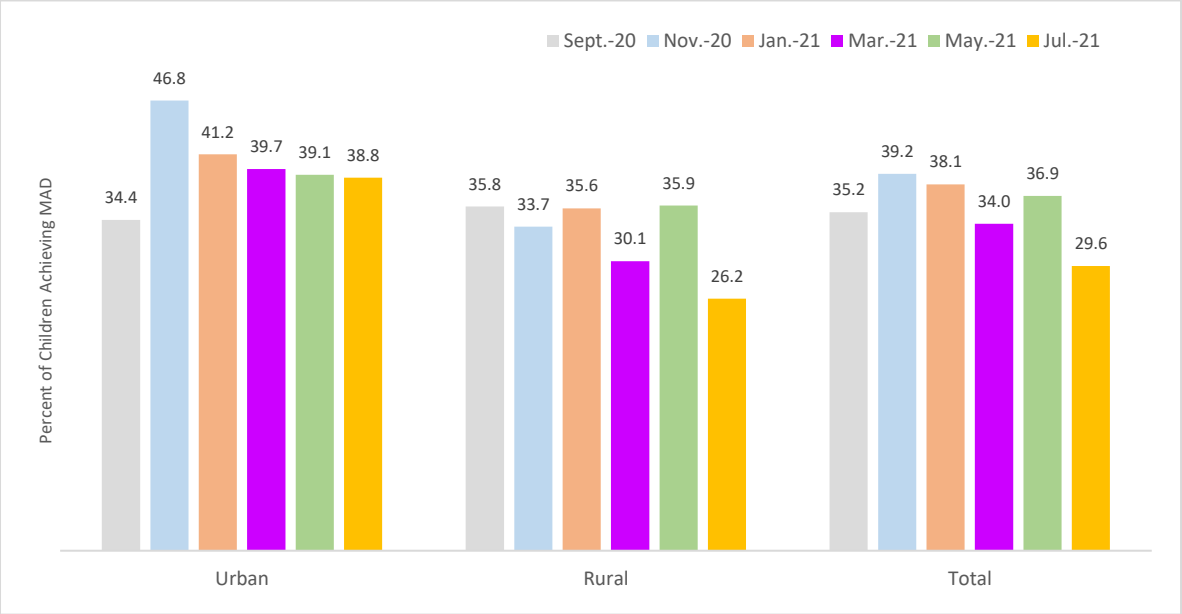
**Figure 32. Proportion of children meeting the minimum meal frequency**




The proportion of children who achieved MAD (See Table 2. Definition of indicators) varied across the

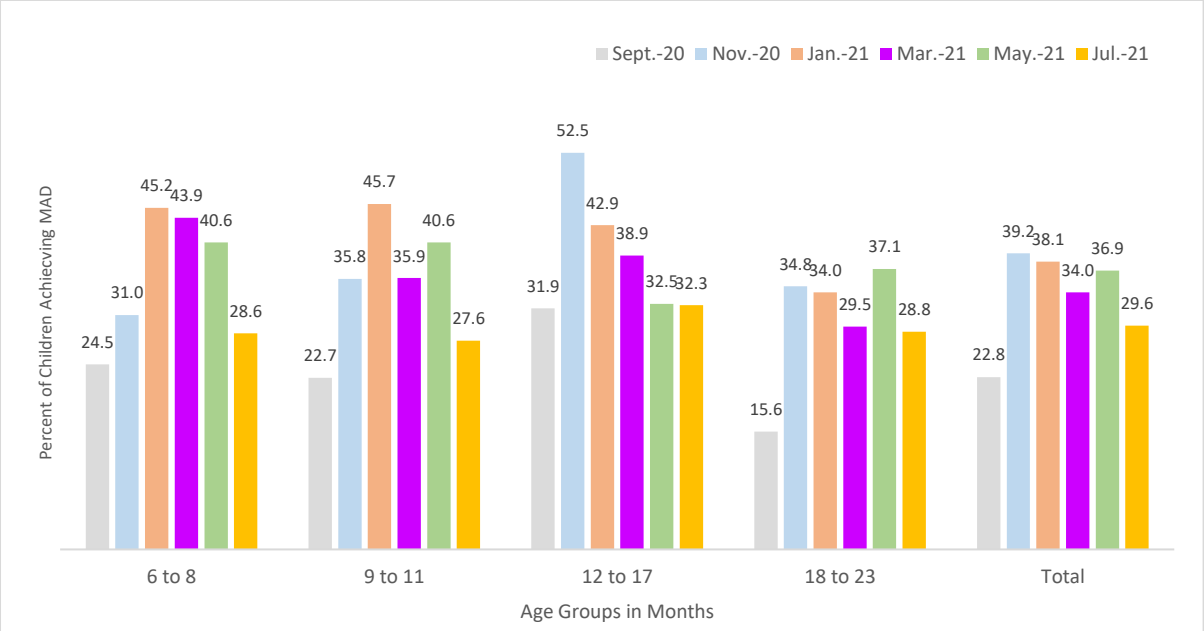
survey and was observed to be low or in decline following an increase in COVID-19 cases (September, January, March, and July). This decline was more pronounced in rural areas (Figure 33).

**Figure 33. Proportion of children meeting MAD**




The distribution of MAD by child age category is shown in Figure 34. While no particular age category was consistently the lowest throughout the survey, the percent of children achieving MAD reduced in the months with high COVID-19 cases (September, March and July). Of interest is that this trend is more pronounced for children aged 9 to 11 months as well as for children aged 18 to 23 months.

**Figure 34. Children meeting MAD by age category**



# 5 STUDY CHALLENGES

The following were the challenges experienced throughout the survey:

- Poor network connectivity was an issue: This was more evident for respondents from rural districts than urban districts. To mitigate this, enumerators were asked to keep trying the numbers several times during the survey in case respondents became reachable.
- Unavailability of respondents: Some households could not be interviewed as they had relocated to new districts outside the SUN districts since the 2019 baseline survey.
- Dissolution of households due to factors such as death or divorce, where the household no longer existed, was another challenge. In such instances, a household could not be replaced, leading to lower response rates relative to the targeted number of households.
- Low response rate and inability to derive district representative results: Despite the implementation of incentives in the January survey round, the response rate only slightly increased.

# 6 CONCLUSION

This study was designed to monitor household livelihood, food security and nutrition indicators during the outbreak of the COVID-19 pandemic. The following are conclusions drawn from the six rounds of bi-monthly data surveys.

The majority of households reported that COVID-19 negatively affected their household income across all the survey rounds. However, this was more pronounced during spikes in COVID-19 cases and among low-income earners. Despite this, few households reported receiving COVID-19-specific government assistance.

Most of the food security indicators across the survey rounds performed relatively well. However, although the household and women indicators generally were above the minimum dietary thresholds of four and five food groups, respectively, over the six survey rounds, they reduced during the spikes of COVID-19. The dietary diversity indicators for children varied and fared poorly throughout the survey rounds. In addition, the number of food groups consumed by children declined with successive survey rounds, and the percentage of children meeting the minimum dietary diversity remained consistently low. While it is known that dietary diversity indicators are susceptible to seasonal shocks, the negative impact that the COVID-19 pandemic had on dietary diversity and household food security cannot be understated. This is especially true for rural households and children whose nutrition indicators deteriorated when COVID-19 cases spiked or when COVID-19 regulations were heightened. This speaks similarly to findings elsewhere[3] that income is one of the indicators affected by the pandemic, which inevitably impacts food access. Therefore, sustaining livelihoods while adhering to safety measures is critical in ensuring household and individual food security.

[3] Finn, A., and Zadel, A. 2020. Monitoring COVID-19 impacts on households in Zambia. The World Bank Group. Report No.1. Retrieved from: https://documents1.worldbank.org/curated/en/125731599720065927/pdf/Monitoring-COVID-19-Impacts-on-Households-in-Zambia-Results-from-a-High-Frequency-Phone-Survey-of-Households.pdf; and Laborde, D., Martin, W., and Vos, R. 2020. Impacts of COVID-19 on global poverty, food security, and diets: Insights from global model scenario analysis. The Journal of the International Association of Agricultural Economics. 1-16. DOI:10.1111/agec.12624

# 7 RECOMMENDATIONS

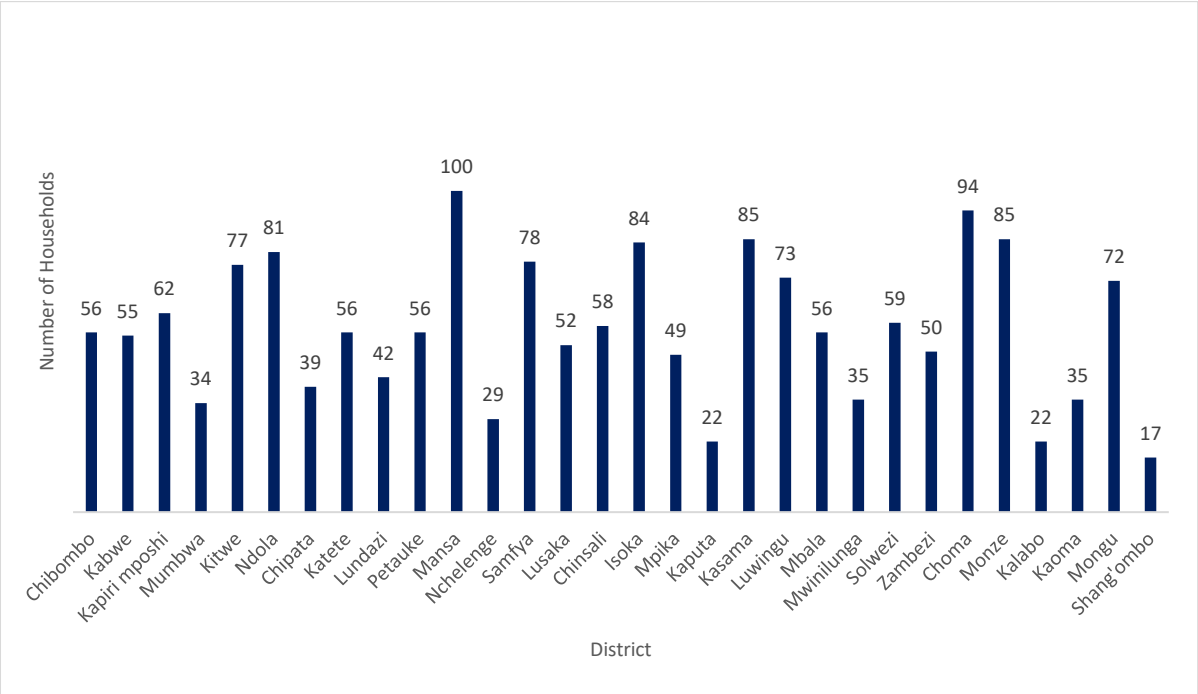
Based on the performance of the various income, food security and nutrition indicators, the following recommendations are proposed:

- Child nutrition programs such as the First 1000 Most Critical Days Programme II need to be up-scaled more rapidly, as child feeding practices and care seem to be hard hit by the ongoing pandemic
- More emphasis is required on food security and nutrition-related COVID-19 relief assistance. Given the combination of declining dietary diversity, food consumption, and income, it is recommended that the government support food fortification and make fortified foods available to supplement household diets. These fortified foods should be incorporated into the food relief packages offered by the government.
- Considerations need to be made for daily wage earners to access support during the pandemic. For households to increase or sustain their savings and incomes, improved access to affordable and sustainable financial services is critical. One way of accomplishing this is through strategic partnerships between the government and financial institutions that can implement such initiatives, allowing for innovative packages and facilities.
- Food systems, as well as the preservation and storage of seasonal foods, need to be up-scaled to enhance and preserve diets for households in rural areas that may not be able to purchase these foods when they are out of season – more so with income reduction due to the pandemic.

# ANNEX 1: Round 6 (July) Distribution of Households interviewed by Province and District

| District | Households with Phone Numbers | Number of Households Interviewed | Response Rate |
|---|---|---|---|
| Chibombo | 183 | 56 | 30.6 |
| Kabwe | 191 | 55 | 28.8 |
| Kapiri mposhi | 202 | 62 | 30.7 |
| Mumbwa | 194 | 34 | 17.5 |
| Kitwe | 234 | 77 | 32.9 |
| Ndola | 238 | 81 | 34.0 |
| Chipata | 141 | 39 | 27.7 |
| Katete | 152 | 56 | 36.8 |
| Lundazi | 164 | 42 | 25.6 |
| Petauke | 164 | 56 | 34.1 |
| Mansa | 250 | 100 | 40.0 |
| Nchelenge | 92 | 29 | 31.5 |
| Samfya | 250 | 78 | 31.2 |
| Lusaka | 241 | 52 | 21.6 |
| Chinsali | 189 | 58 | 30.7 |
| Isoka | 208 | 84 | 40.4 |
| Mpika | 202 | 49 | 24.3 |
| Kaputa | 84 | 22 | 26.2 |
| Kasama | 248 | 85 | 34.3 |
| Luwingu | 250 | 73 | 29.2 |
| Mbala | 184 | 56 | 30.4 |
| Mwinilunga | 143 | 35 | 24.5 |
| Solwezi | 230 | 59 | 25.7 |
| Zambezi | 167 | 50 | 29.9 |
| Choma | 223 | 94 | 42.2 |
| Monze | 180 | 85 | 47.2 |
| Kalabo | 81 | 22 | 27.2 |
| Kaoma | 106 | 35 | 33.0 |
| Mongu | 163 | 72 | 44.2 |
| Shang'ombo | 77 | 17 | 22.1 |
| Total | 5431 | 1713 | 31.5 |

# ANNEX 2: Distribution of households interviewed by district - Round 6 (July)



# ANNEX 3: SURVEY INSTRUMENT

**SECTIONS OVERVIEW**

A. INFORMED CONSENT FORM
B. HOUSEHOLD IDENTIFICATION
C. HOUSEHOLD ROSTER AND DEMOGRAPHICS LIVELIHOOD
D. KNOWLEDGE ON COVID-19 AND IMPACT ON INCOME
E. FOOD CONSUMPTION
F. CHILDREN UNDER 2 (0-24 MONTHS) DIETARY DIVERSITY
G. WOMEN'S DIETARY DIVERSITY
H. HOUSEHOLD DIETARY DIVERSITY (HDDS)
I. HOUSEHOLD HUNGER SCALE
J. CHANGE IN FOOD / MARKET ENVIRONMENT
K. USE OF COOKING ENERGY

## A. INFORMED CONSENT FORM

This survey is part of a team effort at the Indaba Agricultural Policy Research Institute aimed at tracking impact of COVID-19 on food security and nutrition in the country. The institute intends to do this by collecting monthly data on four indicators. Your help in answering these questions is very much appreciated. Your responses will be kept COMPLETELY CONFIDENTIAL to the maximum extent allowable by law. If you choose to participate, you may refuse to answer certain questions, or you may stop participating at any time. Your responses will be summed together with those of roughly **5159 other households** in Zambia and general averages from analysis will be reported. You indicate your voluntary consent by participating in this interview: may we begin? If you have questions about this survey, you may contact the Director, National Food and Nutrition Commission Headquarters in Lusaka. If you have any questions for IAPRI about this survey, you may contact Mr. Chance Kabaghe at +260 211 261 194/97.

## B. HOUSEHOLD IDENTIFICATION

| | | | |
|---|---|---|---|
| Name of Household Head | | HHID | |
| Is the Respondent the Household Head | 1 = Yes<br>2 = No…… | | |
| If No, what is the name of Respondent_____ | | | |
| Respondent's Phone Number | _____ | | |
| Date and time of interview Date (day/ month/year) | Time (hr/min) (……../…… am/pm) | | |
| District | _____ | DISTCODE | |
| Constituency | _____ | CONSTCODE | |
| Cluster | _____ | CLUSTCODE | |
| Region | 1= Rural<br>2=Urban | REGCODE | |
| Combined Statistical Area (CSA) | _____ | CSACODE | |
| Standard Enumeration Area (SEA) | _____ | SEACODE | |
| Village/ Section | _____ | | |
| Response status | 1 = Refusal<br>2 = Non-contact<br>3 = Proceed | | |
| Name of Supervisor | SUPCODE | | |
| Name of Enumerator | ENCODE | | |

## C. HOUSEHOLD ROSTER AND DEMOGRAPHICS

**Table 1.1 Demographics Key Variables: CLUSTER, HH, IDCODE**

**C00.How many people are living in your household?** _____

*Note: This means every person who usually resides in this household at least four nights a week on average and has done so over the last four weeks*

C100a. Of the total number of members living in your household, how many members are aged 0 to 12 years_____

C100b. Of the total number of members living in your household, how many members are aged 18 years and above _____

List **only** the **household head**, their **spouse** and the **primary caregiver** who have been living in the household for the last 6 months including all children below the age of 24 months

Instruction: Start with the surname, names that are similar must be differentiated e.g. when there are two people with the same name an initial must be added or Jr if such a person holds the name of the parent. Listing begins with the head of the household, spouse and other members starting with the oldest.

| | Name of household member? ***Enum: Start with Head of the HH followed by spouse*** | What is [NAME's ] sex? 1 = Male 2 = Female | What is [NAME's] relationship to the HH head? | ***In Which year was [Name ] born?*** | ***In Which Month was [Name] born?*** | Who is the primary caregiver of [NAME of the child below 24 months]? | What is primary caregiver's relationship to [CHILD's NAME]? | ***Enum: Ask for education level of the Head, Spouse and caregiver*** Education level of the HH head/Spouse/caregiver | ***Enum: Ask for primary occupation of the Head, Spouse and caregiver*** Primary occupation of household head/spouse/caregiver |
|---|---|---|---|---|---|---|---|---|---|
| ID CODE | **C01** | **C02** | **C03** | **C04** | **C05** | **C06** | **C07** | **C08** | **C09** |
| | | | | | | | | | |
| | | | | | | | | | |

| **C03: Relationship to Head** | **C05: Month Born** | **C07: Relationship of Primary caregiver to the child** | **C08** | **C09** |
|---|---|---|---|---|
| 1=Head<br>2=Spouse/partner<br>3=Son/daughter<br>3=Parents<br>4=Other relatives<br>5=Non-relatives | 1=Jan<br>2=Feb<br>3=March<br>4=April<br>5=May<br>6=June<br>7=July<br>8=Aug<br>9=September<br>10=Oct<br>11=Nov<br>12=Dec | 1= Mother<br>2= Aunt<br>3= Grandmother<br>4= Sister<br>5= Cousin<br>6= Not related | 0 = None<br>1= Preschool<br>2 = Primary (Standard 1 to 6)<br>3=Junior Secondary (Form 1 and 2)<br>4=Senior Secondary (Form 3 to 5)<br>5 = Higher | 1 = Farmer<br>2 = Student<br>3 = unemployed<br>4 = Civil servant<br>5 = Parastatal employee<br>6 = Employee of private company/individual<br>7 = casual worker/piecework<br>8 = Receive pension<br>9= Self-employed/Entrepreneur |

## D. KNOWLEDGE ON COVID-19 AND IMPACT ON INCOME

| # | Question | Response key | CAPI notes |
|---|---|---|---|
| D1 | Have you heard of Corona virus or COVID-19? | 1-Yes<br>2-No | |
| D2 | Do you feel that you or anyone in your household is at risk of contracting COVID-19 | 1-Yes<br>2-No<br>3-Don't know/Refused | |
| D3 | Who do you know who you believe got the virus? (SELECT All Applicable) | 1-Me<br>2-a person in my family or friends<br>3-a person in the neighbourhood<br>4- a person at my work<br>5- a person from my school or church/mosque<br>6-Someone in the town or village<br>7-Don't know anyone who got it | Multiple choice (disable 7 if any options 1-6 is selected) |
| D4 | Who do you know who you believe died from the virus? | 1-a person in my family or friends<br>2-a person in the neighbourhood<br>3- a person at my work<br>4- a person from my school or place of workshop<br>5-Someone in the town or village<br>6-Don't know anyone who died of it | Multiple choice (disable 7 if any options 1-6 is selected) |

Now I would like to ask you about the household income and covid-19

| | | |
|---|---|---|
| **D5** | In the last one month, what was the TOTAL income earned by the household from all sources?<br>*Enum: Ask about all income earned from all sources for the household* | (ZMW) |
| **D6a** | Has any of the household income been affected by the COVID-19 pandemic? If No proceed to D8 | 1.Yes<br>2.No |
| **D6b** | If yes, how? *(Enumerator: Do not read the options to the respondent)*<br>*(Tick all that apply)* | 1=Lost employment<br>2=Salary was reduced<br>3=Put on unpaid leave<br>4=Business has become very slow<br>5=Business was closed<br>6=Unable to work due to health concerns<br>7=Other (please specify) |
| **D7** | What did you do or are you doing to cope with the situation. *(Enumerator: Do not read the options to the respondent)*<br>*(Tick all that apply)* | 1-Migrated back to home village<br>2-Found another job<br>3-Used savings to cover living expenses<br>4-Borrowed to cover living expenses<br>5-Sold assets to cover living expenses<br>6-Relied on relatives to cover living expenses<br>7-Relied on religious organizations to cover living expenses<br>8 – Begged on the streets (by any household member)<br>9 – Other (please specify) |
| **D8** | Has your household got any of these from government to cope with the virus:<br>(Read the options and select Y/N) | 1-food assistance<br>2-cash transfers or unemployment benefits<br>3-loans<br>4-subsidies of any kind<br>5-tax cuts<br>6-Any other assistance? (specify) |

## E. FOOD CONSUMPTION

Now I would like to ask you about your family's food purchases and food consumption over the PAST MONTH compared to the SAME TIME LAST YEAR

| E1 | E2 | E3 | E4 | E5 | E6 |
|---|---|---|---|---|---|
| Food category | Where did you mainly obtain ____ LAST YEAR this time? | Did this change over the past month? Where did you mainly obtain ___ over LAST MONTH? | How do the quantities consumed of ___ during the PAST MONTH compare to LAST YEAR this time? | Why did your family consume LESS this past month? | Why did your family consume MORE this past month? |
| | 0=Did not consume this time last year/ last month<br>2-own production<br>3-public market place<br>4- local grocery shop/ Katemba<br>5-street vendor<br>6-supermarket<br>7-Formal restaurant<br>8-Free / food aid/gifts<br>9-Food for work<br>99-Other | 0=Did not consume this time last year/ last month<br>2-own production<br>3-public marketplace<br>4- local grocery shop/ Katemba<br>5-street vendor<br>6-supermarket<br>7-Formal restaurant<br>8-Free / food aid/gifts<br>9-Food for work<br>99-Other | 1=Past month's quantity was MORE<br>2=Past month's quantity was the SAME<br>3=Past month's quantity was LESS<br>4=We would normally consume it around this time of the year, but consumed NONE this past month<br>5=I normally do not consume this food | 1- Our production was lower<br>2- markets were disrupted and it was hard to get the item<br>3-market were ok but this item was lacking<br>5-It is more expensive this year<br>6—I'm scared will get sick from item due to COVID<br>99-Other, specify | 1-Our production was higher<br>2-It is CHEAP and our income is lower than last year<br>3-Our income is higher so we can afford it<br>4-It is the only food available in the market<br>5-Other, specify |
| Grains like maize, rice, wheat, sorghum, millet (include meals and flour) | | | | | |
| Pulses like beans, cowpeas, chickpea, pigeonpea, soybean, groundnuts | | | | | |
| Starchy staples like cassava, potato, sweet potato | | | | | |
| Vegetables | | | | | |
| Fruits | | | | | |
| Eggs | | | | | |
| Meat, chicken, fish | | | | | |
| Milk, cheese, butter, yoghurt, sour milk | | | | | |
| Cooking oil, sugar, salt, condiments, spices | | | | | |
| Snacks and bakery products like chips, candies, bread, pastries | | | | | |
| Packaged foods like pasta, noodles, canned goods, frozen food | | | | | |
| Prepared/catered meals such as fast foods | | | | | |
| Sweet bottled beverages like soft drinks, flavored milk | | | | | |

## F. CHILDREN UNDER 2 (0-23 MONTHS) DIETARY DIVERSITY

*Now I would like to ask about the nutrition of the child. Please clarity/inform/assure the respondent that there are no wrong or right answers and that it's important that he/she tries to remember*

*everything the child ate or drank the previous day, also remembering snacks like sweets, fruit and cookies. It also includes breast milk, water or food picked from the garden or field.*

*Please clearly state to the respondent to mention breast milk and other animal milk (cow, goat and sheep) separately. Please list the food (meals and snacks) that the child ate and drank yesterday (from the moment he/she woke up yesterday till he/she woke up this morning), at home or outside the home. Start with the food or drink consumed yesterday morning.*

| **Yesterday during the day or night, did [Child's name] drink/eat any [food group items]? Follow Instructions Above.** | Response | Response Code |
|---|---|---|
| Cereals and products made of them: bread, fritters, scones, maize meal, rice, millet porridge, sorghum etc. | 1=Yes<br>2=No | |
| White roots and tubers and products made of them: white (Irish) potatoes, white sweet potatoes (fried, mashed, cooked, roasted etc.) yam, cassava (maize meal, porridge, nshima etc.) | 1=Yes<br>2=No | |
| Vitamin A rich vegetables and tubers (orange) and products made of them: pumpkin (cooked, fried, cakes etc.) red sweet pepper, orange or yellow sweet potatoes (fried, mashed, cooked, roasted etc.), carrots (cooked, fried, 100% juice). | 1=Yes<br>2=No | |
| Dark green leafy vegetables: pumpkin leaves, sweet potato leaves, black jack, cassava leaves, bean leaves, cow pea leaves, African spinach, amaranth leaves, mustard greens, Chinese, cabbage, rape. | 1=Yes<br>2=No | |
| Other vegetable, cabbage, eggplant, garlic, green pepper, mushroom, tomatoes, onion, okra | 1=Yes<br>2=No | |
| Vitamin A rich fruits and 100% juices from this: guava (raw, dried, juice), banana (raw, dried, juice) avocado, pineapple, jackfruit, wild fruit, watermelon | 1=Yes<br>2=No | |
| Organ meat: liver, kidney, hearts, gizzard, intestines, lungs, tongue, stomach | 1=Yes<br>2=No | |
| Flesh meats: beef, pork, lamb, goat, rabbit, chicken, duck, other birds, insects, grasshopper | 1=Yes<br>2=No | |
| Eggs: duck, chicken, quails, guinea fowl | 1=Yes<br>2=No | |
| Fish and seafood: fish (fresh/dried), kapenta | 1=Yes<br>2=No | |
| Legumes, nuts and seeds: Beans, cowpeas, soya beans, sunflower seeds, Bambara nuts, ground nuts (raw, roasted, peanut butter, powder) | 1=Yes<br>2=No | |
| Milk and milk products | 1=Yes<br>2=No | |
| Oils and fats: groundnut oil, sunflower oil, castor oil, butter, animal fat, pig fat and palm oil | 1=Yes<br>2=No | |
| Sweets: sugarcane, honey, biscuits, soft drinks (coca cola, tango pina, maheu, etc.) | 1=Yes<br>2=No | |
| Spices, condiments, beverages: salt, chilli, herbs, beer, other alcoholic beverages, tea, coffee | 1=Yes<br>2=No | |
| How many times did the child eat foods, i.e. meals and snacks other than liquids, yesterday during the day or in the night? | | |

F1. Is your child breast feeding? (YES/NO)
F2. Do you have any concerns about breastfeeding during COVID-19? (YES/NO)
F3. If yes, have you made any changes to your breast-feeding practice because of COVID-19?

## G. WOMEN'S DIETARY DIVERSITY *(For women aged 15 to 49 years)*

*Explain to the respondent that in this section you will ask about her own diet like you did with the child's diet. This section only applies if the woman is aged **15 to 49 years.** Please clarity/inform/assure the respondent that there are no wrong or right answers and that it's important that she tries to remember everything she ate or drank the previous day, also remembering snacks like sweets, fruit and cookies. It also including water or food picked from the garden or field. Please clearly state the food (meals and snacks) that she ate and drank yesterday*

*(from the moment she woke up yesterday till she woke up this morning), at home or outside the home. Start with the food or drink consumed yesterday morning.*

| | **Yesterday during the day or night, did you drink/eat any [food group items]? Follow Instructions above.** | Respons e | Response Code |
|---|---|---|---|
| 1 | Cereals and products made of them: bread, fritters, scones, maize meal, rice, millet porridge, sorghum etc. | 1=Yes 2=No | |
| 2 | White roots and tubers and products made of them: white (Irish) potatoes, white sweet potatoes (fried, mashed, cooked, roasted etc.) yam, cassava (maize meal, porridge, nshima etc.) | 1=Yes 2=No | |
| 3 | Vitamin A rich vegetables and tubers (orange) and products made of them: pumpkin (cooked, fried, cakes etc.) red sweet pepper, orange or yellow sweet potatoes (fried, mashed, cooked, roasted etc.), carrots (cooked, fried, 100% juice). | 1=Yes 2=No | |
| 4 | Dark green leafy vegetables: pumpkin leaves, sweet potato leaves, black jack, cassava leaves, bean leaves, cow pea leaves, African spinach, amaranth leaves, mustard greens, Chinese, cabbage, rape. | 1=Yes 2=No | |
| 5 | Other vegetable, cabbage, eggplant, garlic, green pepper, mushroom, tomatoes, onion, okra | 1=Yes 2=No | |
| 6 | Vitamin A rich fruits and 100% juices from this: guava (raw, dried, juice), banana (raw, dried, juice) avocado, pineapple, jackfruit, wild fruit, watermelon | 1=Yes 2=No | |
| 7 | Organ meat: liver, kidney, hearts, gizzard, intestines, lungs, tongue, stomach | 1=Yes 2=No | |
| 8 | Flesh meats: beef, pork, lamb, goat, rabbit, chicken, duck, other birds, insects, grasshopper | 1=Yes 2=No | |
| 9 | Eggs: duck, chicken, quails, guinea fowl | 1=Yes 2=No | |
| 10 | Fish and seafood: fish (fresh/dried), kapenta | 1=Yes 2=No | |
| 11 | Legumes, nuts and seeds: Beans, cowpeas, soya beans, sunflower seeds, Bambara nuts, ground nuts (raw, roasted, peanut butter, powder) | 1=Yes 2=No | |
| 12 | Milk and milk products | 1=Yes 2=No | |
| 13 | Oils and fats: groundnut oil, sunflower oil, castor oil, butter, animal fat, pig fat and palm oil | 1=Yes 2=No | |
| 14 | Sweets: sugarcane, honey, biscuits, (coca cola, tango pina, , etc.) | 1=Yes 2=No | |
| 15 | Sugary drinks [MAHEU/CHIBWANTU/MUNKOYO, SOFT DRINKS, FIZZY DRINKS, SODA, OR CHOCOLATE DRINKS]? | 1=Yes 2=No | |
| 16 | Spices, condiments, beverages: salt, chilli, herbs, beer, other alcoholic beverages, tea, coffee | 1=Yes 2=No | |

## H: HOUSEHOLD DIETARY DIVERSITY (HDDS)

Now I would like to ask you about the types of foods that you or anyone else in your household ate yesterday during the day and at night. *Please note that this includes **only food prepared or bought within the household and not outside the household.***

| | | | 1 = Yes, 2 = No |
|---|---|---|---|
| 1 | CEREALS AND ITS PRODUCTS | Corn/maize, rice, wheat, sorghum, millet or any other grains or foods made from these (e.g. bread, noodles, porridge or other grain products) + insert local foods e.g. nshima, porridge | [____] |
| 2 | WHITE ROOTS AND TUBERS | white potatoes, white yam, white cassava, or other foods made from roots | [____] |
| 3 | VEGETABLES | pumpkin, carrot, squash, or sweet potato that are orange inside + other locally available vitamin A rich vegetables (e.g. red sweet pepper) dark green leafy vegetables, including wild forms + locally available vitamin A rich leaves such as amaranth, cassava leaves, kale, spinach, other vegetables (e.g. tomato, onion, eggplant) + other locally available vegetables | [___] |

| | | | |
|---|---|---|---|
| 4 | FRUITS | ripe mango, cantaloupe, apricot (fresh or dried), ripe papaya, dried peach, and 100% fruit juice made from these + other locally available vitamin A rich fruits other fruits, including wild fruits and 100% fruit juice made from these | [___] |
| 5 | MEAT | liver, kidney, heart or other organ meats or blood-based foods, beef, pork, lamb, goat, rabbit, game, chicken, duck, other birds, insects | [____] |
| 6 | EGGS | eggs from chicken, duck, guinea fowl or any other egg | [____] |
| 7 | FISH AND SEA FOOD | fresh or dried fish or shellfish | [____] |
| 8 | LEGUMES, NUTS, AND SEEDS | dried beans, dried peas, lentils, nuts, seeds or foods made from these (eg. hummus, peanut butter) | [____] |
| 9 | MILK AND ITS PRODUCTS | milk, cheese, yogurt or other milk products | [____] |
| 10 | OILS AND FATS | oil, fats or butter added to food or used for cooking | [____] |
| 11 | SWEETS | sugar, honey, fritters, chocolates, candies, pastries, cakes, biscuits, or frozen treats like ice cream | [____] |
| 12 | SPICES, CONDIMENTS, BEVERAGES | spices (black pepper, salt), condiments (soy sauce, hot sauce), coffee, tea, alcoholic beverages | [____] |

## I: HOUSEHOLD HUNGER SCALE

Now I would like to ask you questions related to availability of food in the household. All six questions relate to not having enough money or other resources to buy food.

***Now I would like to ask you some questions about food over the last one month [4 WEEKS].***

| Q No. | Question | Response | Response Code |
|---|---|---|---|
| 1 | In the past 30 days was there ever no food to eat of any kind in your house because of lack of resources to get food? | 1=Yes<br>2=No *(skip to Q3)* | |
| 2 | How often did this happen in the past 30 days? | 1=Rarely (1-2 times)<br>2=Sometimes (3-10 times)<br>3=Often (more than 10 times) | |
| 3 | In the past 30 days, did you or any household member go to sleep at night hungry because there was not enough food? | 1=Yes<br>2=No *(skip to Q5)* | |
| 4 | How often did this happen in the past 30 days? | 1=Rarely (1-2 times)<br>2=Sometimes (3-10 times)<br>3=Often (more than 10 times) | |
| 5 | In the past 30 days, did you or any household member go a whole day and night without eating anything at all because there was not enough food? | 1=Yes<br>2=*No (End module)* | |
| 6 | How often did this happen in the past 30 days? | 1=Rarely (1-2 times)<br>2=Sometimes (3-10 times)<br>3=Often (more than 10 times) | |
| | | | |

## J. CHANGE IN FOOD / MARKET ENVIRONENT

Now I would like to ask you about the food market environment in relation to COVID-19

| # | Question | Response Key | CAPI notes |
|---|---|---|---|
| **J1** | Over the PAST MONTH, have you seen any of the following where you shop for food (select all that apply?) | 1-Sellers wearing face masks or gloves<br>2-Sellers limiting number of customers in the shop<br>3-Market setup changed to increase distance between customers<br>4-New places to wash hands with soap or hand sanitizer<br>5-Police monitoring the marketplace<br>6-Body temperature reading<br>7-COVID-19 testing in the market<br>8-Any other unusual change (explain)<br>_____ | Include Y/N for each option |

## Agricultural Marketing

| | | | |
|---|---|---|---|
| ***J2*** | Did your household produce any crops during the 2019/2020 farming season or kept livestock for sale from March 2020 to date? | 1 = Yes<br>2 = No | |
| ***J3*** | Where did your household mainly sell or is selling your produce? | 1 = Small-scale trader<br>2 = Large-scale trader/wholesaler 3 = Retailer/marketer<br>4 = Other households (for consumption) 5 = Direct sale to FRA<br>6 = Sale to FRA through a coop<br>7 = NGO/faith-based organization/church 8 = Cooperative (not destined for FRA)<br>9 = Directly to miller/processor (delivered to mill/processor gate)<br>10 = To miller/processor through agent or designated buying point<br>11 = Out grower<br>12 = Supermarket<br>13 = Schools, hospitals or health centers 14 = Other (specify) _____ | ***(Allow for multiple answers)*** |
| ***J4*** | Do you think the selling of your produce has been affected by COVID-19? | 1 = Yes<br>2 = No | |
| ***J5*** | If J4 is yes, how has your marketing of produce been affected | 1= Buyer has closed business<br>2 = Price offered is too low<br>3 = Quantities demanded have reduced<br>4 = Buyer no longer comes to the area<br>5 = Others specify | |

## K. USE OF COOKING ENERGY

***Now I would to ask you a question on cooking energy***

| | | |
|---|---|---|
| ***K1*** | Compared to the time before the outbreak of COVID-19, does your household now use more or less of electricity/charcoal/firewood for cooking: | 1 = More<br>2 = About the same amount<br>3 = Less |

***END OF QUESTIONNAIRE***