



HOW COVID-19 HAS AFFECTED THE FOOD DIVERSIFICATION AGENDA IN ZAMBIA

A RAPID ASSESSMENT STUDY REPORT
HIVOS SOUTHERN AFRICA

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EXECUTIVE SUMMARY

The COVID-19 pandemic has had major health and economic impacts globally. Zambia has not been spared as the number of positive COVID-19 cases has continued to soar giving rise to uncertainties in all sectors of the economy¹. From the time the first case of the virus was detected in Zambia in March this year, the number of cases have soared to 9,981 as at 18 August 2020 with the number of deaths standing at 264². The economic effects of the pandemic have been dire, owing to the global recession which has extended to Zambia as well. Agriculture, food systems and value chains have equally suffered the negative effects of economic slowdown as the implementation of the health protocols of working from home, staying home, social distance, border and trade restrictions meant that the agricultural sector could not operate at full capacity. Disruptions of key value chains that are critical to ensuring food access to consumers implies that both food availability and access may have been impeded, especially for the poor.

Restrictions in the form of closure of some airports as well as enforcement of strict restrictions at border points are part of the measures aimed at preventing the spread of the virus from outside the country. People travelling from high-risk countries have been required to also undergo COVID-19 testing on arrival. If they present symptoms of COVID-19, they are taken to government facilities for treatment and quarantine. In addition, they must have proof that they have tested negative for COVID 19 in the 14 days before arrival in Zambia. The COVID-19 pandemic has imposed significant effects on Zambia ranging from health care, education, transportation, trade and most of all on the economy. It has imposed negative effects on the local economy precipitated by the depreciation of the local currency, which was already under pressure before COVID-19. There has also been a knock-on effect on the local economy such as a rise in unemployment both in the formal and informal sectors of the economy.

COVID-19 has the potential to reverse the positive gains the country has made to diversify diets and the food systems. The study explores the impact of COVID-19 on the food diversification agenda. Results show that COVID-19 has disrupted some food value chains. This for instance leads to low supply of food in urban centers leading to high prices. Food wastages were also reported in Kafue and Nakonde Districts when they were under a full lockdown due to movement restrictions as farmers could not access a market to supply harvested food. While these effects have been dire, the Zambian Government has been careful not to impose a total lock-down on the economy, a move which could have resulted in massive disruption of livelihoods both in urban and rural areas.

According to the JCTR's basic needs basket, food price rises have put further strain on the poorer households leading to their failure to access the required food diversity and nutrition. The Zambia Statistics Agency (ZSA) data also shows that prices rose significantly between October 2019 (before the pandemic) and June 2020 (during the pandemic). For example, in Lusaka, dried kapenta prices increased from K157 per kg to K226 during this period (a price rise of 44%), while dried beans increased from K21 per kg to K30 (an increase of 44%). Similarly, eggs increased by 28%; cooking oil by 47%; bananas by 30%; groundnuts by 40%; rape (kale) by 17%; among other price rises. The improved food supply on the back of a good harvest in the 2019/2020 agricultural season offers some resilience to the effects of the COVID-19 pandemic especially for rural households who depend on their own production. Nevertheless,

1. <https://znphi.co.zm/news/february-april-situation-reports-new-coronavirus-disease-of-2019-COVID-19-sitreps/>

2. <https://www.worldometers.info/coronavirus/country/zambia/>

there are structural food system constraints that may have rendered a significant proportion of the population vulnerable to food insecurity, malnutrition and lack of diversified diets. The COVID-19 pandemic exacerbated food access and availability to nutritious and diversified diets for some populations.

The COVID-19 pandemic is affecting availability of and access to nutritious and diverse foods in various ways. Specific aspects of the food system affected were production, marketing and consumption/utilization. With respect to the food diversification agenda, there have been disruptions across various food chains, thus food systems have been impacted negatively.

Production of seasonal (rain-fed) crops is more moderately affected in the short-term as the COVID-19 pandemic struck at the point when most crops were at the point of harvest. The effects of the pandemic are likely to become apparent in the next crop production season. Production of fresh produce, particularly vegetables and fruits has been affected by movement restriction affecting input access as well as market access. Similarly, livestock and fisheries production have suffered a similar fate, more so because some of the pre-mixed inputs are imported. The timing of the COVID-19 pandemic coincided with crop marketing and that is where the effects of COVID-19 are more pronounced. Again, there have been varied impacts of the pandemic on crop marketing depending on the exposure to markets. More commercial oriented farmers have suffered more severely from the effects compared to those who produce solely for subsistence. The COVID-19 induced market disruption is a disincentive for smallholders to engage in diversified production due to the market risks imposed by the COVID-19. The implication on diversification is that farmers might revert to mono-cropping crops such as maize where they perceive an assured market from the Food Reserve Agency (FRA).

Even with the COVID-19 pandemic, Zambia's small holders have not been sufficiently diversified in their agricultural production. Taking their crop production patterns as an example, production is disproportionately dominated by maize, a situation which has not changed much during the COVID-19 pandemic. This is largely due to the maize-centric policies pursued by the government through the two main programmes, the Food Reserve Agency (FRA) and Farmer Input Support Programme (FISP). The Revised Food Balance Sheet also confirms that a substantial proportion of calories for the population is derived from cereals and less from the other types of food. Maize also accounts for the largest supply of daily protein requirement, which should not be the case given that maize is a starchy food. However, progress has been made to diversify diets as evidenced by the revision of the Food Balance Sheet to include diversity within and across food groups as well as increased production of alternative staples such as sorghum and millet in this year's crop production. This has partly been attributed to various advocacy efforts including Hivos Sustainable Diets for All (SD4ALL) working closely with Government and other partners such as the National Food and Nutrition Commission (NFNC), Civil Society Organisation Scaling Up Nutrition (CSO-SUN) and Indaba for Agriculture Policy Research Institute (IAPRI) who are helping to put nutrition and food diversification high on the agenda.

Zambia's diversification agenda should be preserved in the midst of COVID-19. There is need to improve the disbursement of funds to key line Ministries and Quasi-Government institutions involved in nutrition and food diversification. Timely disbursement of funds to the Ministry of Agriculture, Ministry of Fisheries and Livestock and Fisheries and the National Food and Nutrition Commission is critical in order to sustain programmes that will increase resilience to the COVID-19 pandemic through dietary diversity and therefore, improve nutrition for the worst affected households. A multi-sectoral response to COVID-19 and increased collaborations is needed because the COVID-19 pandemic transcends the health sector. Government should promote the marketing of diverse foods. In the face of the COVID-19 pandemic, there is need to enhance marketing of diverse foods, which should be available to the population.

Government, through the FRA in partnership with private sector players can encourage marketing of diverse foods including millet, sorghum, pulses and other storable commodities. There is need to promote off-season production of diverse fruits and vegetables by increasing access to irrigation for smallholders. If farmers can be encouraged to produce more of these healthy foods, their consumption is likely to increase, while at the same time shortages and irregular supply to urban markets can be averted. There is need to promote local feed formulation for livestock and fish by providing training to farmers on local feed formulation in order to shift the focus away from importations. There is need to expand social behavioural change messaging campaigns for a change in consumption patterns. There is need to invest in training farmers with quality management in order for them to effectively supply supermarkets.



ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
BNNB	Basis Needs & Nutrition Basket
BoZ	Bank of Zambia
COVID-19	Corona Virus Disease 2019
DMMU	Disaster Management and Mitigation Unit
FAO	Food and Agriculture Organisation
FGDs	Focused Group Discussions
FISP	Farmer Input Support Program
FRA	Food Reserve Agency
FSA	Food Systems Approach
FSP	Food Security Pack
GDP	Gross Domestic Product
HIV	Human Immunodeficiency Virus
JCTR	Jesuit Centre for Theological Reflection
KIIs	Key Informant Interviews
LCMS	Living Conditions Monitoring Survey
NFNC	National Food and Nutrition Commission
NGOs	Non-Governmental Organisations
SCT	Social Cash Transfer
WFP	World Food Program
ZAW	Zambia Alliance for Women
ZDHS	Zambia Demographic and Health Survey
ZSA	Zambia Statistics Agency

1.0 INTRODUCTION

The COVID-19 pandemic has had major health and economic impacts globally. Zambia has not been spared as the number of positive COVID-19 cases have continued to soar giving rise to uncertainties in all sectors of the economy³. From the time the first case of the virus was detected in Zambia in March this year, the number of cases have soared to 9,981 as at 18 August 2020 with the number of deaths standing at 264⁴. The economic effects of the pandemic have been dire owing to the global recession which has extended to Zambia as well. Agriculture, food systems and value chains have equally suffered the negative effects of economic slowdown as the implementation of the health protocols of working from home, staying home, social distance, border and trade restrictions meant that the agricultural sector could not operate at full capacity. Disruptions of key value chains that are critical to ensuring food access to consumers implies that both food availability and access may have been impeded, especially for the poor.

The COVID-19 pandemic has a number of important implications on the agricultural sector as a whole, in particular on the food systems with negative consequences on food diversification and nutrition especially for the rural poor. The high levels of unemployment, job losses leading to income losses, and rising food costs have made access to food difficult for the poor (Food and Agriculture Organisation (FAO), 2020). It has also been noted in several countries that food prices have been rising in cities, where the highest concentration of consumers reside. On the other hand, food prices have been on the decline in rural areas, where food is produced. This disparity is a result of the inability of the rural food supply to connect with demand in cities as a result of restricted movements and disruptions of key food value chains (Food and Agriculture Organisation (FAO), 2020).

The resultant effect of these factors is to drive those who are already poor into deeper poverty, making it even more difficult for them to access diverse and nutritious diets. In Zambia, where low-income households already spend an average of 35 percent of their income on food, this implies that an additional loss of income brings more households below the poverty line, preventing them from meeting their daily food needs (World Food Programme Zambia, 2020).

Dietary diversity is already limited in Zambia and nutritious foods are highly priced. A further implication of the COVID-19 pandemic is that it affects food consumption and dietary patterns, especially for the most vulnerable segments of the population, pushing them to consume less nutritious products and more of staple carbohydrates such as maize. The high prices and lower purchasing power imposed by the COVID-19 pandemic may leave several households with limited food choices as they have to prioritise the consumption of carbohydrates as opposed to diverse and nutritious foods such as pulses, vegetables, fruit, meat, fish and milk. (World Food Programme Zambia, 2020).

In Zambia, the COVID-19 pandemic has been largely viewed to be an urban phenomenon as the majority of the reported cases have been concentrated in urban areas. Thus, little attention has been paid to the effects of the pandemic on the rural poor, more so how their food diversification and nutrition status have been impacted. With that in mind, it is imperative to comprehend how food diversity has changed among Zambia's poor households as a result of the COVID-19 pandemic. While Zambia has been making strides

3. <https://znphi.co.zm/news/february-april-situation-reports-new-coronavirus-disease-of-2019-COVID-19-sitreps/>

4. <https://www.worldometers.info/coronavirus/country/zambia/>

towards achieving food diversification at the levels of production and marketing -thereby promising to achieve better nutrition- these achievements could be eroded due to the evolution of the pandemic. On the other hand, the COVID-19 pandemic may have created opportunities for local farmers to produce and supply supermarket given the lock-down in neighboring countries such as South Africa. This is envisaged to spur local production and therefore, diversify local production especially for fresh produce such as vegetables and fruits.

Therefore, an understanding of the food system -vis-a-vis food diversification is urgently required. This entails unpacking these effects across various food chains all the way down to the consumer. With this understanding, it is envisaged that this study will contribute to policies that can effectively drive food diversification even during the COVID-19 times as Zambia strives to adapt to what is now dubbed the “new normal”.

The report is organized as follows: the study approach is discussed in section 2, while study findings are presented in section 3. The report closes with the conclusions and recommendations in section 4.

1.1 Objectives of the Study

The main objectives of the study were:

- To determine how food availability has changed during the COVID-19 pandemic among the poor smallholder farmers;
- To determine the extent to which food diversity has been affected during the COVID-19 pandemic;
- To identify policy measures that can promote food diversification in the food systems especially for poor smallholder farmers.

2.0 STUDY APPROACH

The study approach employed three main methods to collect and analyse the data: i) Review of literature ii) Key Informant Interviews (KIIs) and Focused Group Discussions (FGDs). The literature review assisted in gathering information on various impacts of the pandemic of food security and nutrition from the global and local perspective. KIIs sought views from a diversity of stakeholders involved in agriculture and food systems and nutrition mainly drawn from the Government, Non-Governmental Organizations (NGOs), Civil Society among others. FGDs were conducted with the aim of collecting primary information from smallholder farmers. The discussions sought to elicit open responses on personal and community experiences with the effects of the COVID-19 pandemic. Interviews were conducted in Kafue, Shibuyunji Chilanga and Mumbwa Districts in collaboration with the Zambia Alliance for Women (ZAW). A Food Systems Approach (FSA)⁵ was used to analyze how the COVID-19 pandemic affected the various components of the food chain as well as policy responses which could have ameliorated or worsened their effects.

5. https://knowledge4food.net/wp-content/uploads/2018/07/20180630_FoodSystemsReport-WUR.pdf

3.0 STUDY FINDINGS

3.1 Evolution of the COVID-19 and effects on the Economy

Zambia's trend in COVID-19 infections has continued to rise, with 9,981 cases and 264 deaths recorded as at 18 August 2020⁶. A number of preventative measures were heightened since the first case of the virus was detected in Zambia on 18 March 2020. Since then, the number of tests were steadily ramped up by the Ministry of Health and measures to safeguard the public included closure of schools, airports, selected businesses, and restrictions on movements among other measures.

Travel restrictions imposed by the government as well as the staying and working from home have had profound effects on both the formal and informal sector workers. Disruption of informal markets have had a knock-on effect on incomes and livelihoods of those that trade in markets, as their source of income. For the urban dwellers dependent on informal markets this has heightened the situation of hunger and malnourishment of their families as they rely on these markets for their survival. These disruptions also have ramifications on the value chain such as low supply of food in urban centers leading to high prices, while at the same time food wastes for perishable food stuffs e.g. tomatoes, fruits and other vegetables in rural areas (Mulenga et al., 2020). Food is reported to have gone to waste in the fields, as Kafue and Nakonde District were under a full lockdown, with movement restrictions as farmers could not access a market to supply harvested food. While these effects have been dire, the Zambian Government has been careful not to impose a total lock-down on the economy, a move which could have resulted in massive disruption of livelihoods both in urban and rural areas.

Restrictions in the form of closure of airports as well as enforcement of strict restrictions at border points are part of the measures aimed at preventing the spread of the virus from outside the country. People travelling from high risk countries are required to also undergo COVID-19 testing on arrival. If they present symptoms of COVID-19, they are taken to government facilities for treatment and quarantine. In addition, they must have proof that they have tested negative for COVID 19 in the 14 days before arrival in Zambia. This has particularly disrupted international trade especially for key commodities such as food leading to rising prices in these commodities.

The COVID-19 pandemic has imposed significant effects on Zambia ranging from health care, education, transportation, trade and most of all on the economy. Economically, the negative impacts have largely been as a result of the slowdown in global economic activity spurred by a slowdown in the demand for Zambia's main exports by its trading partners such as China. The Copper price declined from US\$6,156 recorded in December, 2019 to US\$ 5,179 in April, 2020 (Ministry of Finance Zambia, 2020). This has imposed negative effects on the local economy precipitated by the depreciation of the local currency, which was already under pressure as well as knock-on effects on the local economy such as a rise in unemployment both in the formal and informal sectors of the economy.

The COVID-19 pandemic has placed the Zambian government in an awkward position with regards to its ability to effectively respond. Firstly, the significant reduction in government fiscal revenues has worsened Zambia's trade position and put further depreciation pressure on the local currency (World Food Programme Zambia, 2020)

6. <https://znphi.co.zm/news/february-april-situation-reports-new-coronavirus-disease-of-2019-COVID-19-sitreps/>

A decline in revenues and the increase in expenditures is expected to create a financing gap of K26.9 billion (Ministry of Finance Zambia, 2020). A recent analysis from Zambia's Ministry of Finance indicates that the COVID-19 pandemic will have an adverse impact on the economy. Consequently, the projected growth in Zambia's GDP has been revised downwards from an initial positive growth of at least 3% to a new forecast indicating negative growth of -4.2%. This situation is compounded by Zambia's high debt position which is estimated at \$18.3 billion or 78.1% of the Gross Domestic Product (GDP) (International Monetary Fund, 2019). This, unfortunately, also means that there has been a reduction in Government's spending on the social sectors, with negative impacts on food and nutrition security (World Food Programme Zambia, 2020). The worsened fiscal position of the Government implies reduced spending on social sectors including health, agriculture and food systems, a situation that threatens to undermine food diversification and ultimately the nutrition status of Zambia's poor.

The COVID-19 pandemic struck at a time when Zambia was still reeling from the effects of the 2018/2019 drought which had plunged large numbers of people in hunger and malnutrition. At least 2.3 million people were recently affected by the 2018/2019 drought conditions and flash floods. These people were just starting to rebuild their livelihoods (World Food Programme Zambia, 2020). This is also a period when food prices tend to be at their peak. Therefore, food systems were severely impacted by these events. As confirmed by the JCTR's basic needs basket, food price rises have put further strain on the poor leading to their failure to access the required food diversity and nutrition⁷. According to the Zambia Statistics Agency price data, there have been significant price rises in several food items between the period before the COVID-19 pandemic (October 2019) and during the COVID-19 pandemic (June 2020). For example, in Lusaka, dried kapenta prices increased from K157 per kg to K226 during this period (a price rise of 44%), while dried beans increased from K21 per kg to K30 (an increase of 44%). Similarly, eggs increased by 28%; cooking oil by 47%; bananas by 30%; groundnuts by 40%; rape (kale) by 17%; among other price rises (ZSA, 2020). The improved food supply on the back of a good harvest in the 2019/2020 agricultural season offers some resilience to the effects of the COVID-19 pandemic. Nevertheless, there are structural food system constraints that may have rendered a significant proportion of the population vulnerable to food insecurity, malnutrition and lack of diversified diets. The COVID-19 pandemic has exacerbated food access and availability to nutritious and diversified diets for some sections of the population.

3.2 The link between Food Diversification and the COVID-19 Pandemic

In Zambia, agricultural diversification is defined in the Second National Agriculture Policy (2016) as a shift away from dominance by one crop to include livestock and fisheries production.. Food diversification is a key principle of a healthy diet, which should consist of whole grains and at least 400 grams of fruits and vegetables per day, while less than 10% of overall energy intake should come from free sugars and less than 30% from fats (WHO, 2015, cited in Hivos, 2019). Consumption of diets that are not diversified has been linked to high stunting and wasting in children (Khamis et al., 2019; Motbainor et al., 2015).

In Zambia, the statistics on stunting and wasting in children are less than encouraging. Rated among the countries with the highest rates of undernourishment in the world, Zambia also has a poor rating in the Global Hunger Index (FAO, et al., 2018). There has been a marginal improvement in the anthropometric measures of nutrition between 2013-14 and latest 2018 as indicated by the Zambia Demographic and Health Survey (ZDHS). Stunting decreased from 40% to 35%, wasting decreased from 6% to 4%, and the proportion of underweight children decreased from 15% to 12% (Zambia Statistics Agency, 2018). Despite the improvement, Zambia needs to make concerted effort towards improving the nutrition of its population. Diversification of food production and consumption is key to achieving this.

7. http://zgfoffice.org:8080/jspui/bitstream/123456789/48/2/JCTR_bnbhome.pdf

The COVID-19 pandemic has disrupted the economic and livelihood base of most households. For those most vulnerable to the effects of the pandemic, their ability to consume diversified diets and attain better nutritious outcomes is under threat. Despite Zambia having produced a bumper harvest, food access and availability may be constrained by a myriad of market related factors such as high prices and a diminished income base.

3.3 Effects of the COVID-19 on Food Systems and Food Diversification

The COVID-19 pandemic has affected people's availability and access to nutritious and diverse foods in various ways. We have categorized food systems under production, marketing and consumption/utilization, for simplicity. Production addresses the supply side, while consumption/utilisation, the demand side. Marketing facilitates the distribution of food from production to consumption. Using a Food Systems Approach, we evaluate whether and how food diversification has been affected by the COVID-19 pandemic at each of the nodes of the food chain.

3.3.1 Food Production

The effects of the COVID-19 pandemic on the production of field crops has been limited due to the fact that most of the crops were at the point of harvesting. Thus, the effects of the pandemic in the short-term could not be felt for most rain-fed crops. However, the effects on crop production and diversification could become more evident in the medium to long term if the COVID-19 pandemic prolongs. Notwithstanding, for medium to large scale farmers who depend on farm labour, the restrictions imposed by the Government limited the labour availability and thus affected the harvesting operations. The effects of the COVID-19 pandemic, however, are more pronounced for those involved in horticultural, livestock and aquaculture production. For these types of farmers, travel restrictions have affected them by inhibiting their access to production inputs. This also means that prices of inputs have shot up especially for those that are imported. Thus, horticultural producers such as smallholder tomato producers in rural areas have limited access to chemicals and fertilizers from the market centers located in urban and peri-urban areas.

For livestock and aquaculture farmers, prices of feed skyrocketed, particularly because premixed inputs are imported from neighboring countries. Thus, border restrictions cut the supply of these critical inputs, which has negatively affected their production. Delivery of Government programmes such as restocking exercises for livestock and fish fingerlings including extension services have been negatively affected during the pandemic, which imposed negative effects on production and productivity. A combination of these factors have meant that although crops such as maize are available from the projected bumper harvest, diversification into vegetables, livestock and fish production has become a challenge during the COVID-19 pandemic. Box 1 highlights some of the personal experiences of some smallholder farmers interviewed during the study.

Box 1: Effects of COVID-19 on production of diverse food from smallholder farmers' perspectives

One of the farmers lamented "we used to buy a packet of seed at K12 but now these agro-dealers are selling the packs at K25. As I am giving this report, my conviction is that these prices will not reduce, they shall be maintained even in the aftermath of the COVID-19 pandemic". A farmer involved in livestock expressed similar sentiments. "For some of us keeping livestock, we are finding it difficult to purchase medicine as most shops have run out of stock due to COVID-19 travel restrictions which confront importers of livestock medicine. Like the first female respondent, the second male farmer reported that agro-dealers had astronomically increased the cost of sprayers, seed and fertilizers beyond the affordable reach of most if not all peasant farmers". Importation of farming inputs has been negatively affected as Zambia, being a land locked or land-linked country closed her borders due to the lockdown measures imposed as measures to curb COVID-19 pandemic.

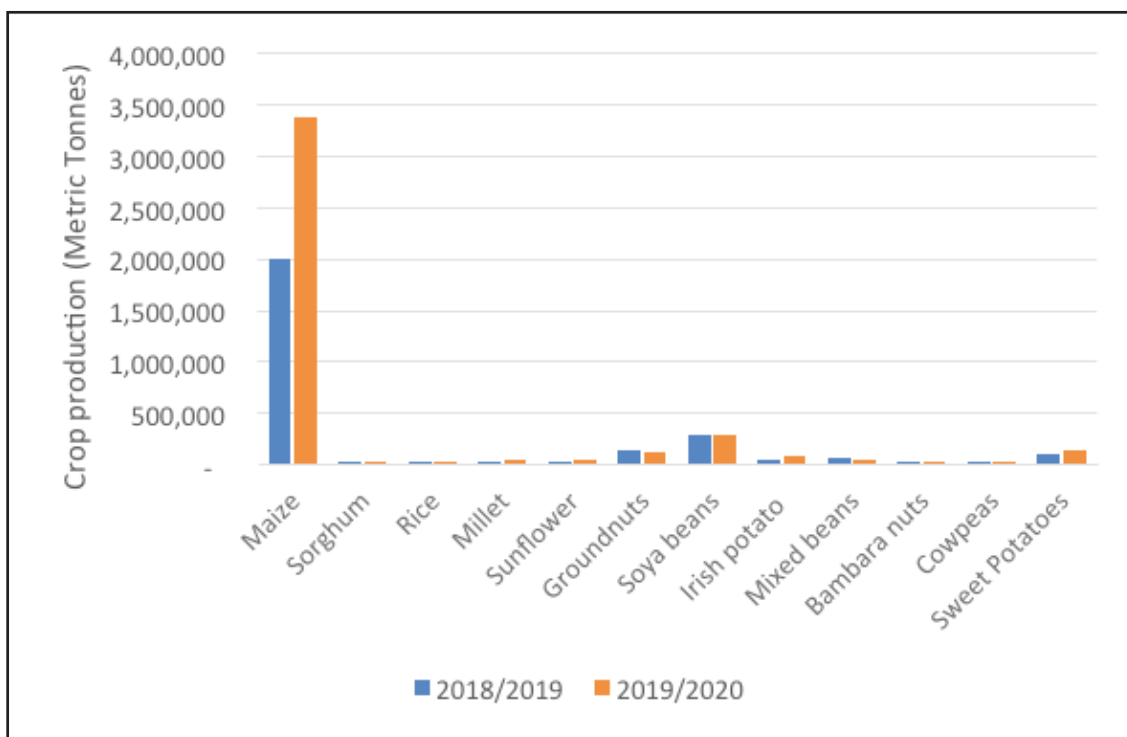
At the same time as input prices increased, crop prices dropped as a result of restricted movements. One of the farmers remarked, "As farmers, we were running at a loss because the little inputs that were available in Zambia became expensive, while harvested crops had to be sold and marketed at a cheap price that was not cost reflective". Noting the need to diversify crop production beyond maize to tomatoes, cabbage to name but two, one farmer regretted that expected incomes were lost as a consequence of COVID-19.

Farm workers also expressed their concerns during the pandemic. "Farmers and employees were scared to go for work fearing that they could either infect their colleagues or eventually return home and infect children, who would in the end die as a consequence of a parent having infected them", expressed one farmer. "As soon as the travel restrictions were imposed farm workers stayed home as they feared to report for work as doing so would infect their employers and workmates", expressed another farm worker.

Source: Focused Group Interviews on farmers in Shibuyunji, Kafue and Chilanga

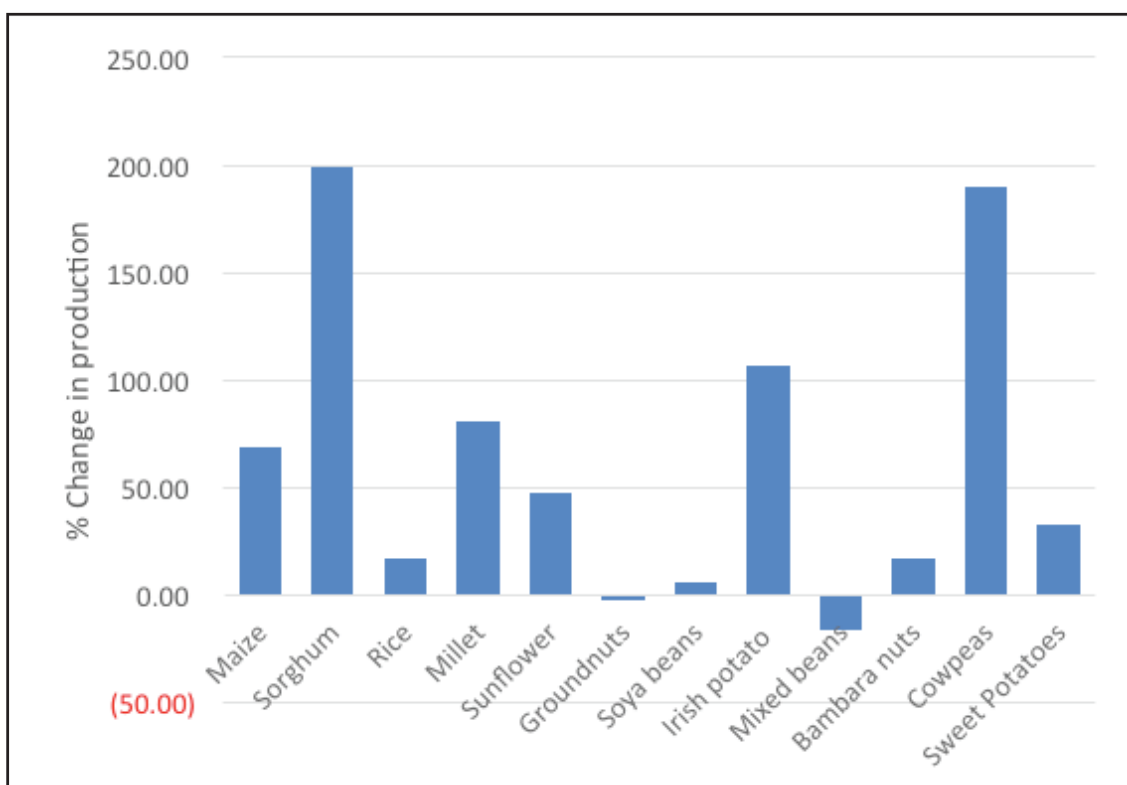
Even without the COVID-19 pandemic, Zambia's small holders have not been sufficiently diversified in their agricultural production. Taking their crop production patterns as an example, production is disproportionately dominated by maize. Figure 1 and 2 shows the production of the main food crops in the 2019 and 2020 agricultural seasons. As can be noted from figure 1, production is far from diversified as maize accounts for the "lion's share" of agricultural production. This is not surprising given the maize-centric policies pursued by the government through the two main programmes, the FRA and FISP. Figure 2 shows that there was increased production in nearly all crops under consideration between the 2019 and 2020 crop production seasons, except for groundnuts and mixed beans. Noteworthy, there has been a shift towards production of some staples such as sorghum, and millet which increased by 199% and 81% respectively between the 2019 and 2020 agricultural seasons. This is commendable given that it increases the production of alternative grains, a move which also promises to enhance consumption of nutritious diets as well as making households more resilient to shocks imposed by COVID-19 among other potential shocks. It is important to highlight that though this is commendable, the production levels of these crops are nowhere close to maize. However, the reduction in the production of legumes such as groundnuts and mixed beans presents a mixed picture of crop diversification, given that these are a major source of protein among poor smallholder farmers.

Figure 1: Selected food crop production 2019 and 2020 production seasons



Source: Ministry of Agriculture, 2020

Figure 2: Percentage change in selected food crop production 2019 and 2020 production seasons



Source: Ministry of Agriculture, 2020



The Ministry of Agriculture has for the first time released a diversified food balance sheet showing food supply, utilization, and food supply per capita for a more diverse range of foods covering all the major food groups including cereals, roots and tubers, sugars and syrups, pulses, meat, milk and fish (see appendix 1). The importance of this move, in the context of the COVID-19 is that it provides a baseline of food supply available for the population as at 1 May 2020, which was during the COVID-19 pandemic. This would allow Government and implementing partners to mobilize relief efforts to improve targeting the worst affected individuals. The balance sheet also confirms that a substantial proportion of calories for the population is derived from maize, cassava flour and refined sugar and less from the other types of food. Maize also accounts for the largest supply of daily protein requirement, which should not be the case given that maize is a starchy food. This underscores the fact that the other foods, which should be supplying the protein such as meat, fish, milk, pulses are not readily available to the population.

3.3.2 Food Marketing

With regard to marketing of food, COVID-19 has caused disruptions across entire value chains of some agricultural commodities. It is worth noting that the COVID-19 pandemic struck when most commodities were either ready for harvesting or were actually being marketed. For smallholder farmers producing primarily for their own consumption (subsistence farmers), the COVID-19 pandemic has had limited impact on their livelihoods because they do not rely on markets, while it had a more pronounced impact on those who produce for the market. Restrictions on movement have affected both the movement of people as well as goods, which has had knock-on effects on agricultural produce marketing from local buying to wholesaling, and from cross-regional logistics to city consumption. At the peak of travel restrictions, transporters could not deliver produce. This precipitated into market failure for some of the agricultural commodities. The inability of buyers to reach producers at farm-gate led to lower prices for farmers, while at the same time, the major consuming markets were faced with shortages of commodities, which triggered high prices. Despite the high prices being attractive for farmers in urban centers, they were constrained from easily accessing these markets due to travel restrictions. Private traders were not reaching their communities, and even the few that did demanded much lower prices on account of limited competition. For those engaged in perishable products such as fruits and vegetables, their situation was exacerbated by further decline in demand due to the shut-down of restaurants, lodges, hotels, schools and colleges which regularly demand produce. There were also several reports of uncollected commodities going to waste. Farmers interviewed during this study are of the view that if these issues remained unsolved, they would eventually fail to make a profit from this year's bumper harvest, which would in turn cause difficulty in investment for the following farming seasons. Noteworthy, there have been improvements in marketing since the restrictions were eased with the announcement by the President encouraging the nation to adapt to the "new normal" way of conducting business.

The food diversification agenda came under threat due to the effects of the COVID-19 pandemic on agricultural marketing. This concerns both the production and consumption side, as most farmers tend to consume what they produce. Given the market challenges highlighted above, smallholder farmers have been discouraged from producing diverse crops, livestock and fisheries, rather opting to invest more in crops such as maize where they are guaranteed of market support from the Government through the FRA. Hence there is an observed push-back by farmers to engage in perishable products due to the market constraints and this has ramifications in the short to medium term for the growth of these sectors as well as the food diversification agenda in Zambia. This undermines their own ability to produce and consume diverse and nutritious diets. In general, however, it has been observed that the effects of the COVID-19 pandemic only affected rural households to a moderate extent. This is due to the fact that even without markets, rural households can still cope with the shock of COVID-19 by relying on their own production.

In comparison, urban households have been more severely hit by the effects of the COVID-19 pandemic, which has imposed adverse effects on their livelihoods and consequently their consumption of nutritious and diverse foods. It is in the urban areas that severe job losses have been experienced as a result of laying off of workers in industries such as the hospitality and entertainment industries, schools, gymnasia among others. Also severely impacted is the informal sector including petty traders, marketeers, cross-border traders, charcoal burners/traders, among others particularly because they spend most of their daily earnings and, therefore, have to work every day for them and their families to eat. Two dynamic effects combined to worsen their ability to consume diverse diets. The loss of income and rising food prices eroded their purchasing power, which is critical to their access to diverse foods.

In urban areas, the effects of COVID-19 on food diversification have been more pronounced. Due to their reduced purchasing power and rising prices of food, households had to prioritize the purchase of foods that are mainly rich in calories instead of diverse nutritious foods such as meat, milk, eggs and fish, because they could not afford these types of food. Thus, it is clear that these households cannot afford to consume diverse diets due to increased impoverishment imposed by the COVID-19 pandemic. Their food diversity and nutrition remains compromised.

While most of the effects imposed by the COVID-19 have been negative, one potentially positive effect has been the opportunity for smallholders to increase their supply of fresh produce such as vegetables, fruits, meat, fish, dairy in order to fill the gap left by imports due to restrictions at borders. This was also emphasized by Government's policy pronouncement through the Presidential address urging smallholders to supply supermarket chains with fresh produce. With high prices of these commodities, smallholders have a unique opportunity to diversify their production and also their consumption. However, the findings of the study suggest that very few farmers are taking advantage of this market opportunity, most of these being medium scale (emergent) farmers.

3.3.3 Food Prices and Costs

Food prices directly affect access to food for those whose access is solely dependent on markets. These people mostly reside in urban or peri-urban areas. However, it must also be appreciated that there are a good number of net-buyers of food in rural areas. As the COVID-19 pandemic evolved, the prices of most foods rose out of the reach of most of the worst affected households. The effects of internal movement restrictions and international trade caused shortages in key commodities. For example, the price of cooking oil is reported to have skyrocketed due to the onset of the COVID-19 pandemic. In order to assess how the cost of food (and prices) changed during the period of the COVID-19 pandemic, we reviewed the Jesuit Centre for Theological Reflections' (JCTR) Basic Needs and Nutrition Basket (BNNB) over the period October 2019 and May 2020.

The JCTR's BNNB provides a realistic and accurate look at the cost of a decent living standard for a family of five in specific urban towns across Lusaka, Copperbelt, Eastern, Muchinga, Northern, Luapula, Central, Southern and Western Provinces. It is important to note that the JCTR's BNNB is not based upon actual expenditures of urban Zambian families but on ideal basic expenditures to promote proper nutrition, health and dignity for members of the average-sized Zambian family of five⁸. Furthermore, the main criterion for inclusion within the basket was that a good be a basic need for a family in promotion of nutrition, health or a decent standard of living⁹. The BNNB comprises of basic food and non-food items. The basic food items contain food items that are considered basic and spent on by every household for survival. According to the 2015 Zambia Statistics Agency Living Conditions Monitoring Survey (LCMS), basic food items are essential in determining households that are living in extreme poverty. Households under extreme poverty are those who cannot afford to meet the cost of the basic food items that include: cooking oil, dried beans, dried kapenta, dried bream, fresh milk, onion, groundnuts, table salt, tomatoes, roller meal and vegetables.

8. <https://www.jctr.org.zm/bnnb>

9. <https://www.jctr.org.zm/bnnb>

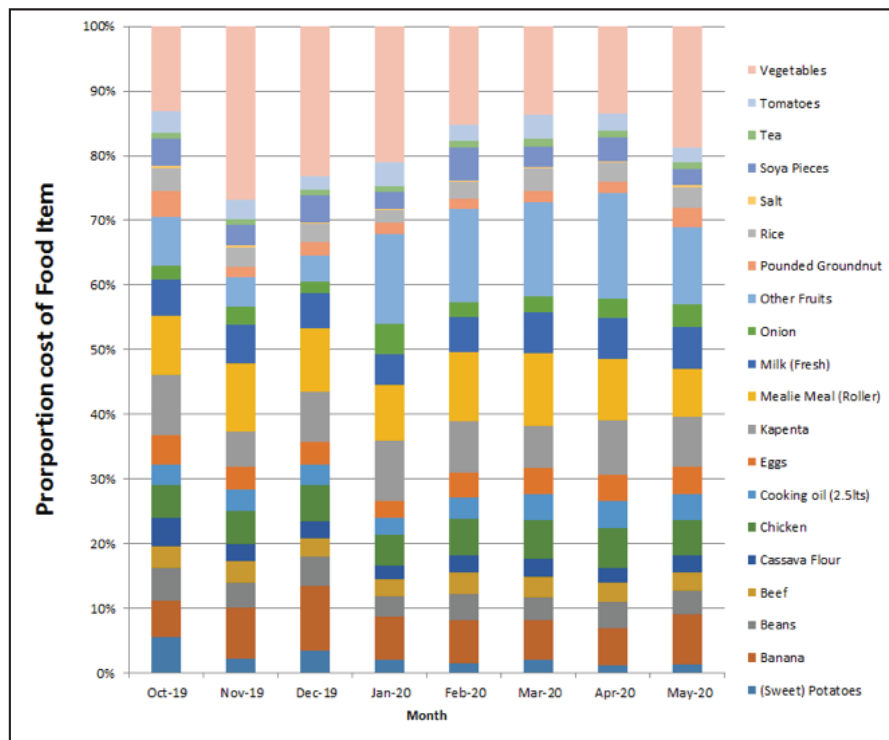
Table 1 shows changes in the components of the food basket that occurred between October 2019 (before COVID-19) and May 2020 (during COVID-19). We analyse the absolute change in the cost of each component of the food basket as well as the percentage change in order to observe which food items underwent the largest changes. It is worth noting, however, that in normal years, prices of most commodities (and cost of foods) tend to fall between October and May as food availability increases due to harvests. As expected, the prices of most crops dropped hence their cost in the food basket similarly dropped. This is represented by the negative change in table 1. These items include maize meal, rice, cassava flour, beans, pounded groundnuts and soya pieces. It is the fruits and vegetables which have experienced the largest (price) cost increases, which attests to the value chain disruptions that could have affected these commodities as earlier alluded to. Similarly, the cost of fresh milk rose sharply as the dairy market depends on movements between milk production areas and urban areas which are the main demand centers. The price of cooking oil significantly increased owing to the fact that Zambia has a deficit in cooking oil and depends on imports from the region and overseas to a large extent. Border restrictions have affected the smooth flow of the commodity hence the spike in the price and hence the cost. Figure 3 shows the percentage share of each commodity of the total food expenditure based on the BNNB. As a percentage share of the total food basket, we observed that vegetables make up the largest share of household food expenditure in general. This could be as a result of their relative affordability and not necessarily because of nutrition considerations by consumers. However, as the COVID-19 pandemic progressed, there is a decline in the share of vegetables between October 2019 and May 2020 as the share of other fruits also increases.

Table 1: Changes in the food basket between October 2019 and May 2020

Food Item	Absolute change in ZMW	% Change
Mealie Meal (Roller)	-25	-11
Rice	-4	-4
Cassava Flour	-36	-33
(Sweet) Potatoes	-96	-72
Beans	-25	-20
Pounded Groundnut	-20	-21
Soya Pieces	-33	-32
Beef	-2	-2
Chicken	19	15
Kapenta	-21	-9
Eggs	1	1
Milk (Fresh)	34	25
Vegetables	181	56
Onion	42	82
Tomatoes	-19	-25
Banana	64	46
Other Fruits	140	77
Cooking oil (2.5lts)	32	42
Salt	1	19
Tea	4	20
Total Food Basket	238	10

Source: JCTR Basic Needs & Nutrition Basket

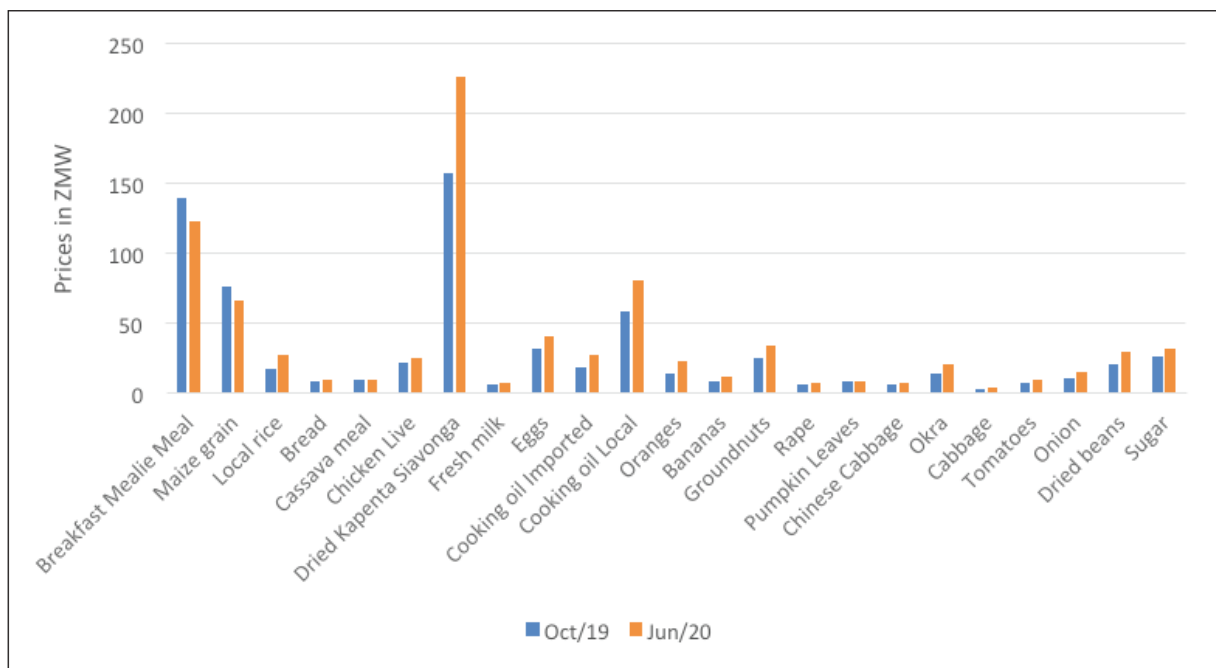
Figure 3: Proportion cost of foods items



Source: Authors construction using JCTR BNNB

The evidence on the price changes before the COVID-19 pandemic and during the pandemic is summarized in figure 4 and appendix 2. Comparing Lusaka prices of food items before the onset of the pandemic (October 2019) and during the pandemic in June 2020, shows that prices of most food items increased significantly.

Figure 4: Prices of food items in Lusaka, October 2019 and June 2020



Source: Authors construction using CSO Price data

3.3.4 Food Consumption and Utilization

Food consumption and utilization have been greatly affected for those worst affected during the COVID-19 pandemic. Notably, low-income households particularly in the informal sector purchase their food needs on a daily basis and do not have the luxury of stocking up for a whole month. Even the main staple (mealie meal) is purchased as pre-packs commonly known as “pamela”, which are purchased on a daily basis. Low-income households already spend an average of 35% of their income on food (World Food Programme Zambia, 2020). The movement restrictions, value chain disruptions, escalating food prices, diminished income and limited purchasing power fundamentally altered their consumption patterns. People have had to prioritize quantities of food rather than considering the quality of food. This means that people consumed more of the starchy staples rather than diverse diets, and this has detrimental nutritional outcomes. Some stakeholders interviewed during this study have noted significant changes in consumption by the households affected during the pandemic. One of the stakeholders remarked:

“People’s meals have reduced such that some even have one meal per day. This has serious implications on pregnant, lactating women, children, people living with HIV/AIDS”

Government is cognizant of the fact that the COVID-19 pandemic increases people’s nutritional needs. Hence, the Minister of Health, Dr. Chitalu Chilufya, emphasized this at one of the daily COVID-19 briefings. He urged people to increase their consumption of diverse and nutritious diets, especially indigenous vegetables, as a way of building people’s immune systems. Though it cannot be determined empirically, there is anecdotal evidence that micro-nutrient intake has been negatively impacted during the COVID-19 pandemic due to reduced food intake as well as undiversified diets. Furthermore, in times of inadequate food availability at household level, the issue of inequality in the sharing of food often arises. In many instances children’s nutritional needs tend to be neglected in preference for the adults. For example, a wife will serve the husband with the little eggs available, while children are served mostly with starch. This trend has been noticed to be on the rise during the COVID-19 pandemic for the most affected households.

The closure of schools, which was done as a precautionary measure to prevent the further spread of COVID-19 also brought some unintended consequences. Firstly, school going children that are dependent on the school feeding program for their nutrition lost access to the free nutritious and diverse meals offered during school. Secondly, this translates into reduced market opportunities for farmers that had been contracted to supply farm produce to a school feeding programmes, and affects their diversity in production in the medium term.

Further, COVID-19 reduces the ability of people to engage in physical activity and the closure of food suppliers has placed a burden on normal food-related behaviours. This is noteworthy, as good nutrition is important for health and well-being, particularly when the immune system is challenged. Additionally, limited access to fresh food could negatively affect overall physical and mental health. Anxiety and boredom evoked by quarantine are considered risk factors for consuming more food and food of a poorer quality. Combined with the potential for lower levels of physical activity, impaired nutritional habits could lead to a positive energy balance (i.e., weight gain)¹⁰.

10. <https://www.mdpi.com/2072-6643/12/6/1583>

3.4 Responses to the COVID-19 Pandemic by Government and Partner Organizations

The Zambian Government is responding to the COVID-19 pandemic in a number of ways. Most of the direct policy responses are targeting the Ministry of Health while others are aimed at stimulating or enhancing economic activity and people's livelihoods. What is worth noting is the limited fiscal space within the Government treasury especially given the current debt situation, which affects the ability to effectively respond to pandemics especially for the most vulnerable households. About 85% of Government's 2020 budget allocation goes towards non-discretionary expenditures such as salaries and debt servicing, leaving only 15% for social services and infrastructure etc. Unfortunately, this reduced fiscal space has limited the delivery of Government programmes as attested by the critically reduced levels of Government disbursement of funds to key services and programmes. This situation has also constricted the fiscal space and moved vital resources from key social sectors that include health, agriculture and social protection towards COVID-19 response. For example, disbursements to the Ministries of Agriculture and Fisheries and Livestock has been greatly affected and has become irregular, a situation which has worsened the ability of the two Ministries to respond to the COVID-19 pandemic.

Notwithstanding the above, money has been disbursed by the Government to directly fight COVID-19 through the Ministry of Health. This includes the Epidemic Preparedness Fund under the Ministry of Health amounting to K57 million and many other donations made by cooperating partners and business to the Ministry of Health. Having recognized the need to target the vulnerable, the Disaster Management and Mitigation Unit (DMMU) have set up a COVID-19 contingency and response plan with a budget of K659 million.

With regard to economic stimulus and support to businesses, the Zambia Government, through the Bank of Zambia (BoZ) established a K10 billion stimulus package which would disburse loans to small businesses and households affected by COVID-19 through commercial banks¹¹. In addition, the Government has issued a COVID-19 bond to raise K8 Billion locally, which will also be used as a stimulus for the economy (PMRC, 2020). The aim of these packages is to facilitate the recovery of the Zambian economy from the effects of the COVID-19 pandemic.

In his third address to the nation on the COVID-19 situation, the President of the Republic of Zambia, His Excellency Mr. Edgar Lungu recognized the opportunity for Zambian farmers to supply retail chains with produce. "For a long time people have been denied business and opted for foreign products. I am, therefore, directing the Ministry Of Commerce, Trade And Industry to ensure that chain stores prioritize local agricultural products in their localities"¹². The policy pronouncement came in the wake of the international travel restrictions, which left a gap in the supply of fresh fruits and vegetables as most trucks were marooned at border posts.

As earlier noted, the COVID-19 pandemic coincided with the crop marketing season. Government disbursed K1 million to the FRA for the purchase of crops (mainly maize) out of the budgeted K2.2 Billion for the 2020 marketing season¹³. This year, the FRA is targeting to buy 1 million metric tonnes of maize. While this may not directly be aimed at fighting the pandemic, it is also seen as a means of providing market support to farmers given the constrained market situation prevailing given the pandemic. Unlike previous years, the FRA has been paying farmers immediately, which helps to mitigate their liquidity constraints. The FRA is also increasing the number of satellite depots this year in order to reach more farmers in far flung areas. However, the lack of diversification in the crops purchased and the disproportionate focus on maize remains a challenge to the food diversification agenda.

11. https://www.boz.zm/FAQs_Stimulus_Package.pdf

12. *Third National Address On COVID-19 by His Excellency, Dr. Edgar Chagwa Lungu, President Of The Republic Of Zambia*

13. <https://zambiareports.com/2020/07/06/govt-release-k1-billion-crop-purchasing/>

The Farmer Input Support Programme (FISP) is seen as a vehicle for accelerating the food diversification agenda. Though not directly affected by the advent of the COVID-19 pandemic, FISP is already gearing itself to avert disruptions in input supply so that production and productivity are not affected in the coming production season. Timely delivery of inputs is high on the agenda. Therefore, an inter-ministerial team has been constituted to ensure that input supply is not adversely affected by international restrictions as most of the agricultural inputs are imported. However, there is an apparent push-back on FISP, as seen by reverting back to the traditional system of inputs at 60% while only 40% is delivered through E-voucher.

In response, some stakeholders in nutrition such as the National Food and Nutrition Commission (NFNC) have heightened nutrition messaging with a focus on micro-nutrients. There is a recognition that micro-nutrients such as selenium, Zinc and Vitamin C which are essential in boosting immunity play an important role, and therefore, social behavioural change messaging is being scaled up in that regard. Farmers are being urged not to sell all their produce, but to retain sufficient quantities for their own consumption. To highlight the importance of diversity in consumption, one of the stakeholder remarks:

“We are telling the farming communities not to sell all the chicken and legumes but to consume some. Everyone must eat what he or she grows, do not sell all your legumes. It is better to get nutrition from the available food that farmers produce and not to look elsewhere for nutrition”

The COVID-19 pandemic also underscores the central role that social protection can play in helping the poor to absorb shock. Given the socioeconomic effects of the pandemic, social protection systems become the mainstay for some people for the duration of the current crisis and possibly beyond (Food and Agriculture Organisation (FAO), 2020). The Government, through the Ministry of Community Development and Social Services together with partners such as the World Food Programme (WFP) are running social cash transfers for the most vulnerable households. The Government provides a Social Cash Transfer (SCT) of K92 per month to the most vulnerable households. The Ministry of Community Development and Social Services is also in charge of Food Security Packs (FSP) targeting the most vulnerable households with an input pack. During the COVID-19 pandemic, Government is considering expanding the FSP by increasing resource re-allocation to FSP from other programs such as FISP.

Other partners such as the World Food Programme (WFP) provide a food security emergency cash transfer of K400. Given that the larger impact of the COVID-19 on food consumption and diversification has been on urban households who access between 90-95% of their food needs via the market, the WFP has designed a unique social safety net targeting urban households. This will be delivered as a social cash transfer using mobile money.

11. https://www.boz.zm/FAQs_Stimulus_Package.pdf

12. Third National Address On COVID-19 by His Excellency, Dr. Edgar Chagwa Lungu, President Of The Republic Of Zambia

13. <https://zambiareports.com/2020/07/06/govt-release-k1-billion-crop-purchasing/>

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 Conclusions

The COVID-19 pandemic has had drastic effects on the Zambian economy with knock-on effects on peoples' livelihoods due to rising unemployment. These effects are more pronounced in the urban compared to rural parts of the country. With respect to the food diversification agenda, there have been disruptions across various food chains, thus food systems have been impacted negatively.

Production of crops has been moderately affected in the short term as the COVID-19 pandemic stuck at the point when most crops were at the point of harvest. The effects of the pandemic are likely to become apparent in the next crop production season. Production of fresh produce, particularly vegetables and fruits has been affected by movement restriction affecting input access as well as market access. Similarly, livestock and fisheries production have been negatively affected, more so because some of the pre-mixed inputs are imported. The timing of the COVID-19 pandemic coincided with crop marketing and that is where the effects of COVID-19 are more pronounced. Again, there have been varied impacts of the pandemic on crop marketing depending on the exposure to markets. More commercially oriented farmers have suffered more from the effects compared to those who produce solely for subsistence. The COVID-19 induced market disruptions are a disincentive for smallholders to engage in diversified production due to the market risks imposed by the COVID-19. The implication on diversification is that farmers might revert to mono-cropping crops such as maize where they perceive an assured market from the FRA.

The analysis of the Basic Need & Nutrition Basket shows that fruits and vegetables experienced the largest (price) cost increases, which attests to the value chain disruptions that could have affected these commodities. Similarly, the cost of fresh milk rose sharply as the dairy market depends on movements between milk production areas and urban areas which are the main demand centres. With regard to consumption and utilisation, the movement restrictions, value chain disruptions, escalating food prices, diminished income and limited purchasing power fundamentally altered the poor people's consumption patterns. The poor, especially those in the informal sectors, have had to prioritize quantities of food rather than considering the quality of food due to limited access to food. This has adverse effects on their consumption of adequate, nutritious and diverse diets.

In view of the above, there are various efforts by Government and stakeholders to mitigate the effects of the pandemic on the population. The main challenge with the Government response has been the reduced fiscal space that has affected the delivery of Government's programmes, resulting due to insufficient and irregular disbursement of funds. Though they are directly targeting the Ministry of Health, some of these efforts are aiming for economic recovery (stimulus packages). Many other efforts are centered on the agricultural sector and specifically targeting vulnerable households to enhance their food consumption, nutrition and diversification.

4.2 Recommendations

The following are the recommendations made by the study:

1. **Improve the disbursement of funds to key line Ministries and Quasi-Government institutions involved in nutrition and food diversification:** Timely disbursement of funds to the Ministry of Agriculture, Ministry of Fisheries and Livestock and the National Food and Nutrition Commission is critical in order to sustain programmes that will increase resilience to the COVID-19 pandemic through dietary diversity and therefore, improve nutrition for the worst affected households. Failure in the delivery of these programmes will compromise the nutrition status of vulnerable

households, to the detriment of the entire fight against the COVID-19 pandemic. One option is the reallocation of budgeted resources within and across ministries to the neediest areas in the face of the pandemic. An example is the reallocation of some of the budgeted funds from FISP to Food Security Pack (FSP) under the Ministry of Community Development and Social Services, which is a social safety net programme in nature targeting the most vulnerable households.

2. **A multi-sectoral response to COVID-19 and increased collaborations is needed:** The COVID-19 pandemic transcends the health sector, therefore, a multi-sectoral response is urgently needed. This should involve all the key line Ministries such as Agriculture, Fisheries and Livestock, Community Development, Finance and National Planning and DMMU among others. This calls for a well-coordinated response that tackles the COVID-19 response holistically ranging from prevention of further spread, health care, protection of front line health staff, to improving hygiene and sanitation as well as the availability of nutritious and diverse diets to the most vulnerable segments of the population whose survival requires building immunity against the disease. Of course the primary response will be focused on the health care facilities and their frontline staff, as well as other health professionals and their safety, but there is also need to consider larger planning issues such as financing and fiscal policy; data management and scenario projection /risk assessment; supply chain management; transport planning; resource mobilization; and early recovery planning.
3. **Government should promote the marketing of diverse foods:** The release of K1 million to FRA for purchasing 1 million MT of maize provides a market skewed towards maize, which does not encourage farmers to diversify their agricultural production. Moreover, the unprecedented expansion in maize procurement crowds out the private sector participation. In the face of the COVID-19 pandemic, there is need to enhance marketing of diverse foods, which should be available to the population. Government, through the FRA in partnership with private sector players can encourage marketing of diverse foods including millet, sorghum, pulses and other storable commodities. Government can capacitate the private traders with funds to enhance the purchase, storage and distribution of other commodities, while the FRA should scale down the planned maize purchases to the recommended Strategic Grain Reserves of 500,000 MT in order to boost private sector participation as well.
4. **Promote off-season production of diverse fruits and vegetables:** This requires increased access to irrigation for smallholders. If farmers can be encouraged to produce more of these healthy foods, their consumption is likely to increase, while at the same time shortages and irregular supply to urban markets can be averted. Government should provide more incentives for importation of small scale irrigation equipment in order to make them cheaper and accessible to farmers. Government, working with partners such as the World Bank should accelerate the development of irrigation dams especially in drier parts of the country. These measures will promote all year round production of diverse and nutritious foods. Moreover, Government and NGOs should promote urban agriculture, particularly vegetable production using sack gardening and keyhole gardens. These production techniques will promote easy access to fruits and vegetables, critical for diverse diets for urban consumers.
5. **Promote local feed formulation for livestock and fish:** This will encourage farmers to effectively diversify their enterprises away from crop production only. This is premised on the fact that the cost of importing feed has tremendously increased. Therefore, promoting local feed formulation will ensure increased production of livestock and fisheries, thereby improving access to animal source foods that are critical for improved nutrition and dietary diversity. The Ministry of Fisheries and Livestock, working with other key government departments and NGOs should provide training to farmers on local feed formulation in order to shift the focus away from importations.

- 6. Expand social behavioural change messaging campaigns for a change in consumption patterns:**
The social behavioural campaign should be led by NFNC working with other NGOs such as CSO-SUN and Consumer Unity Trust Society (CUTS) in collaboration with key departments in the Ministry of Health and Ministry of Agriculture as well as Ministry of Fisheries and Livestock and Ministry of Community Development & Social Services. Emphasis should also be placed on child nutrition, pregnant and lactating mothers and the need for micro and macro nutrients. As COVID-19 cases increase, there is need for customized communications that targets specific groups with appropriate messages that take into account local realities and customs. Any successful communication strategy should take into account the various needs of their target groups and build on the socio cultural characteristics of specific target groups. The successful mitigation of the COVID-19 pandemic crucially depends on effective communication with the wider public.
- 7. Invest in training farmers with quality management in order for them to effectively supply supermarkets:** In order for farmers to meet the growing demand from supermarket chains with fresh produce there is need for quality management training. Farmers should also be facilitated to aggregate produce by investing in bulking centres in order to consistently meet the quantity requirements of the supermarket chains. This should be supported by the ZDA and CEEC as a way of promoting trade and also as a way of economically empowering communities. Aggregation will ensure sustained supply of essential agriculture commodities to meet demand from supermarkets in response to the reduced imports due to trade restrictions propelled by COVID-19.
- 8. Strengthen the role of cooperatives in aggregating commodities:** This will address the problems that farmers face such insufficient quantities and inconsistency in supplying supermarket chains. Cooperatives can be a powerful vehicle for collective action including bulking, aggregation, quality management and knowledge sharing especially during the COVID-19 pandemic.

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APPENDICIES

Appendix 1: Zambia Food Balance Sheet

REPUBLIC OF ZAMBIA, MINISTRY OF AGRICULTURE																
FOOD BALANCE SHEET 2020/2021																
Thousand Metric Tonnes POPULATION: 18,400,556 11,401 thousands																
Items	Supply					Domestic Utilization						Food Supply per caput				
	Production	Opening Stock as on 1st May	imports	exports	Available Supply	Feed	Seed	Food Manufacture	FRA	Waste	Food	Kg/Year	Grams/day	Calories/Day number	Protein day grams	Fat day Grams
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Cereals																
Maize	3,387	475		150	3,713	284	45	2,928.84	300	154.51						
Maize flour	2,519				2,519					125.94	2,393	130.04	356.28	1293.3	29.93	4.28
Wheat	192	129	233	0	554	0	0	537.55		16.05						
Wheat Flour	403				403	0	0	391.06		12.09	391	21.25	58.23	211.9	6.35	0.64
Rice, Milled	35	28	45	0	107	0	0	104.21		3.12	104	5.66	15.52	55.9	1.04	0.11
Sorghum	20			0	20	0	1	18.01		1.00	19	1.03	2.83	9.7	0.29	0.09
Millet	45	1.487		0	46	0	2.5	41.67		2.32	44	2.40	6.58	23.9	0.64	0.20
2. Root and Tubers																
Irish Potatoes	80	-	0	0	80	-	-	75.98		4.00	75.98	4.13	11.31	39.48	0.18	0.01
Sweet Potatoes	145	-	0	0	145	-	-	137.47		7.24	137.47	7.47	20.47	18.83	0.33	0.02
Cassava	4,120	0	0	0	4,120	-	-	3,913.58		205.98						
Cassava Flour	1,009	0	0	0	1,009	-	-	958.70		50.46	958.70	52.10	142.74	482.48	2.14	0.86
3. Sugars and Syrups																
Sugar, refined	495		0	200	295	-	-	295.00				295	16.03	43.92	169.98	0.00
4. Pulses																
Mixed Beans	49.2	17.0	-	-	66.2	-	-	62.9		3.3	62.9	3.4	9.4	31.9	2.1	0.2
Cow Peas	10.3	0			10.3			10.1		0.2	10.1	0.6	1.5	5.2	0.4	0.0
5. Oil Crops																
Groundnuts	127	1	0	0	128		30	91.30		6.38	121	6.6	18.1	102.4	4.6	8.9
Soya Beans	297	31	0	0	327	50	-	267.55		9.82	318	17.3	47.3	158.4	18.0	8.5
Sunflower	50	0			50			49.44		1.01	49	2.7	7.4			
6. Meat																
Beef Meat	200	-	0	0	200	-	-	196.00	0	4.0	196.0	10.7	29.2	43.8	5.4	2.3
Cattle offal	20	-	0	0	20	-	-	19.60	0	0.4	19.6	1.1	2.9	3.1	0.5	0.1
Pigmeat	89	-	0	0	89	-	-	87.22	0	1.8	87.2	4.7	13.0	28.6	1.7	2.3
7. Milk																
Cow Milk	280	-	0	0	280	-	-	271.6	-	8.4	271.6	14.8	40.4	24.7	13.3	13.3
8. Fish																
Freshwater Fish	130	-	119.069	1.057	248	-	-	244.11	0	3.90	244.11	13.27	36.35	3.96	11.99	0.91

Appendix 2: Price changes between October 2019 and June 2020

Appendix 2.1: Prices in October 2019 and June 2020

	Oct/19	Jun/20	% Change
Breakfast Mealie Meal	139	123	-12
Maize grain	76	66	-13
Local rice	18	27	53
Bread	8	10	25
Cassava meal	10	10	8
Chicken Live	22	25	11
Dried Kapenta Siavonga	157	226	44
Fresh milk	7	7	12
Eggs	32	41	28
Cooking oil Imported	18	27	47
Cooking oil Local	59	81	38
Oranges	14	23	62
Bananas	9	12	30
Groundnuts	25	35	40
Rape	7	8	17
Pumpkin Leaves	9	9	3
Chinese Cabbage	6	7	19
Okra	14	21	54
Cabbage	3	4	49
Tomatoes	7	10	38
Onion	11	16	44
Dried beans	21	30	44
Sugar	27	32	19

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