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### Impact of COVID-19 restrictions on livelihood and activities of postharvest value chain actors in Nigeria

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#### Abstract

Nigeria's first case of the highly communicable and deadly disease COVID-19 was formally documented in February 2020. The Federal Government of Nigeria thus introduced restrictions as control measures because at the time no vaccines or definite treatment existed. Fundamentally, this investigation was borne out of the assumption that postharvest value chain actors experienced disruptions which are fall outs of the restrictions. A cross sectional research design with a micro approach estimation methodology was used in 18 states across the 6 geopolitical zones. Data were obtained through questionnaire and interview guide, key informant interview, and focus group discussions (FGDs). A multi-stage sampling procedure was used to select respondents. Firstly, 16 states with high incidence of COVID-19 with formal restriction were purposively selected. Secondly, 6 key agricultural commodities in terms of their widespread trade and consumption were selected. Lastly, respondents were randomly selected from a pre-determined list obtained from Agricultural Development Programmes (ADPs) of the selected states, and relevant associations. A total of 96,000 respondents were sampled across 5 postharvest value chain actors. Data components were analyzed using both descriptive and inferential statistics. Results revealed that restriction environment was detrimental to output, access to market, food demand and supply, food prices, finance, labour demand and supply, sources of inputs, standard of living, and postharvest activities in general. Finally, the restrictions should not be seen in the light of negativities only, for it brought about increased intimacy among family members among others.

**Keywords:** Expenditure, income, output, pandemic, standard of living

#### 1. Introduction

The novel human coronavirus disease 2019 (COVID-19) a highly contagious and lethal virus was first reported in Wuhan, China in December 2019 and subsequently spread globally to become the fifth documented pandemic since the Spanish Flu of 1918-1920 (World Health Organization [WHO], 2021) [14]. COVID-19, was officially recorded in Nigeria in February, 2020. At the time, no vaccines or specific treatment therapies existed (McCearry and Pogue, 2020; Rothan and Byrareddy, 2020) [4, 8], the Federal Government of Nigeria therefore introduced restrictions (movement, time, and large gathering restriction etcetera) as containment measures (Ajibo, 2020) [1]. The growing number of studies on impact of COVID-19 in the agricultural sector is often discussed in context of developed countries highlighting the gap in the understanding of how the pandemic is impacting developing countries, Nigeria inclusive. Furthermore, the pandemic came at a time when Nigeria's food system was already under strain (Samuel *et al.*, 2021) [9] due to insecurity, drought and flooding. Thus, the outbreak exacerbated the challenges of the country's agricultural sector, impacting activities and actors (Farmers, Processors, Marketers, Transporters, and Consumers) along the postharvest value chain in ways that are yet to be critically and empirically assessed.

Fundamentally, this investigation is borne out of *a priori* knowledge that actors experienced several disruptions in their postharvest activities and consequently their livelihood as a fall out of restrictions. Thus, this study investigated the

effect of the COVID-19 restrictions on postharvest activities and livelihood of farmers, processors, marketers, transporters, and consumers. It further examined the effects of the restrictions on labor, access to market, food supply, commodity sales and prices, food demand, and access to agricultural credits. The fallouts of this study would lead to a better understanding of the potential assortment of impacts of COVID-19 restrictions. Most importantly, it would aid in establishing a post COVID-19 data driven order of operation in the postharvest sector, and guide response to key value chain actors' needs during difficult crisis periods, especially future pandemics.

#### 2. Methodology

##### 2.1 Research design

The research design is cross sectional and employed the micro approach as its estimation methodology in 16 states (Kano, Sokoto, Jigawa, Taraba, Bauchi, Gombe, Benue, Kwara, Ebonyi, Imo, Anambra, Lagos, Osun, Ondo, Delta, and Rivers States) across the 6 geopolitical zones of the country. The selection of postharvest value chain actors from diverse geographical zones and states is predicated on the fact that they experienced the effects of restrictions in ways peculiar to their situation and location.

##### 2.2 Sample size and selection

A multi-stage sampling procedure was used to select respondents. Firstly, 16 states with high incidence of COVID-19 as published by the National Centre for Disease Control (NCDC) with formal restriction were purposively

selected. Secondly, 6 key agricultural commodities (rice, cassava, fish, cowpea, yam, and fruits & vegetables) in terms of their widespread trade and consumption were selected. Respondents were randomly selected from a pre-determined list obtained from Agricultural Development Programmes (ADPs) of the selected states, and relevant associations as appropriate. A total of 96,000 respondents were sampled; 6,000 per state comprising 1,200 each of the value chain actors (farmers, processors, marketers, transporters, and consumers) of interest. Data were obtained through key informant interview, focus group discussions (FGDs), questionnaire and interview guide. The estimation was considered over a 24-month period, that is, 12-months prior to the restrictions (before) and 12-months into the restrictions (during).

### 2.3 Data presentation and analysis

Data presentation was twofold; aggregated data (all states and all actors) and disaggregated data (individual states cum individual actors). Data collected were analyzed using both descriptive (percentages, frequencies and means) and inferential (T-test: Paired Sample and Independent) statistics. The statistical package for data analysis was IBM SPSS Statistics Version 20.0.

## 3. Results and Discussion

### 3.1 Socioeconomic characteristics of respondents

As shown in Table 1a, mean age of postharvest value chain actors is estimated at 44 years (disaggregated: Farmers; 45, Processors; 44, Marketers; 44, Transporters; 44, Consumers; 42). Mean household size (Table 1b) is 6 (disaggregated: Farmers; 6, Processors; 6, Marketers; 6, Transporters; 5, Consumers; 5). Household composition revealed equal distribution of the genders (Table 1a). The patriarchal reality of Nigerian society and the agricultural sector is reflected in the distribution of gender (Table 1a) across actors; 66% male, 34% female (disaggregated: Farmers; 68.5% male, 31.5% female, Processors; 56.4% male, 43.6% female, Marketers; 56.7% male, 43.3% female, Transporters; 91.7% male, 8.3% female, Consumers; 63.5% male, 36.5% female). As shown in Table 1b, actors belong to an average of 2 associations. Table 1b revealed the mean years of experience of actors to be 13 (disaggregated: Farmers; 15, Processors; 11, Marketers; 13, Transporters; 13). Furthermore, 10.4, 80, 6.5, 1.7, and 1.4% of actors were single, married, widowed, divorced, and separated in that order (Table 1a). Again, Table 1a revealed that 19.24, 20.21, 41.52, and 19.03% of the actors have no formal education, primary education, secondary education, and post-secondary education respectively.

More than half (57%) of the actors (excluding consumers) are ruralites (Table 1a). Also 53% have their businesses in rural areas (Table 1a). Again, 70, 22, 4, and 4% consume majorly grains, root and tubers, animal protein, fruit and vegetable respectively (Table 1b). As shown in Table 1a, the mean weekly earning of respondents is ₦ 56,487 (disaggregated: Farmers; ₦ 74, 075; Processors; ₦ 33, 926; Marketers; ₦ 68, 743; Transporters; ₦ 48,989; Consumers; ₦ 56,703). The foregoing reflects the poverty situation of subjects of the study since poverty worldwide is concentrated in rural areas (FAO & OPHI, 2022; FAO, 2022)<sup>[2,3]</sup>, and low consumption of animal protein, fruit and vegetable is closely associated to incidence of household

poverty (WHO Technical report series 916, 2003; Simone, Christy, Melissa, Yamin & Bradley, 2019)<sup>[11]</sup>.

### 3.2 Effect of the Restrictions on Postharvest Value Chain Actors

#### 3.2.1 Effects of the restriction on availability of labour

**Farmers:** Prior to the restrictions, 20.1% used family labour while 56.1% relied on both family and hired labour, which morphed to 47.1% and 35.9% respectively during the restrictions. Only 1.1% had a workforce of above 20 before the restriction while a sizable proportion (63.8%) had a pre-restriction workforce of 5 and below. This finding echoes the nature of the Nigerian agricultural sector where about 70% of farmers are smallholders. During the restrictions, as shown in Tables 2 & 3, the former reduced to 0.1% even as the latter increased to an even greater number (90%). A drop in number of farmhands is a pointer that farming activities and output were not optimal during the restrictions. This change created unemployment in the sector and is similar to the poor performance of other sectors in the economy during the pandemic. This finding corroborates report by the United Nations Development Programme (2021)<sup>[12]</sup> that Nigeria lost about 20% of her work force at the peak of the pandemic.

**Processors:** Before the restrictions, 33.9% used family labour while 40.4% relied on both family and workhands, which changed to 48.1 and 30.4% respectively during the restrictions. Only 2.2% had a pre-restriction workforce of above 20 while a considerable proportion (66.9%) had workforce of 5 and below which changed to 0.5%, and 75.1% respectively during the restrictions (Tables 2 & 3). This change represents a drop in number of workhands and signposts reduced processing activities and output during the restrictions. This is in line with submissions by Vatta *et al.*, (2022)<sup>[13]</sup> that restrictions significantly disrupted labour supply availability for processing and input supply patterns.

**Marketers:** Hitherto the restrictions, 40.2% used family labour while 32.9% relied on both family and workhands, which changed to 47.4 and 21.7% respectively during the restrictions. About 0.4% had pre-restriction workforce of above 20 and a sizable proportion (71.7%) of marketers had a pre-restriction workforce of 5 and below which changed to 0.1% 89.8% during the restrictions (Tables 2 & 3). The decrease in number of workhands is a pointer to reduced marketing activities during the restrictions. This finding is comparable to National Bank for Agriculture and Rural Development (2020) that restrictions adversely affected marketing of produce and likely led to distress sales and depressed prices.

**Transporters:** Before the restrictions 16.8% used family labour while 23.4% relied on both family and workhands which changed to 23.4 and 21.2% during the restrictions. 0.5% had a pre-restriction workforce of above 20 and majority (78.2%) had a workforce of 5 and below. This however changed to 0.2 and respectively 91.0% during the restrictions (Tables 2 & 3). The dip in number of workhands caused decreased freighting of agricultural commodities owing to the restrictions. In a related study, FAO (2020)<sup>[10]</sup> asserted that restrictions triggered reduced freighting, higher labour, and transport costs.

Nominally, there was a difference in number of workhands employed by farmers, processors, marketers, and

transporters (disaggregated) before and during restrictions. These actors reported a reduction in the number of workhands employed during this period. Additionally, inferential analysis for farmers, marketers, and processors show that there was a significant difference (T-test;  $p \leq 0.05$ ) in the number of workhands employed before and during restrictions. Nonetheless, there was no significant difference (T-test;  $p \leq 0.05$ ) in the number of workhands employed by transporters before and during restrictions. This may not be unconnected to the fact that at some point during the restrictions, transporters of agricultural commodities in Nigeria received government waiver to move these commodities intra and interstate.

However, for all actors combined (aggregated) there was significant difference (T-test;  $p \leq 0.05$ ) in the number of workhands employed before and during restrictions. The above implies that restriction probably had a negative effect on the scale of operation and wage employment in the postharvest sub-sector. This is akin to findings in India where restrictions led to increased production cost and reduced scope of agricultural operation (Rawal, Kumar, Verma & Pais, 2020).

### **3.2.2 Effect of restriction on access to farm/market, food demand and supply, and food prices.**

Access to market/farm, food demand, food supply, and food prices at the height of the pandemic in Nigeria was impacted by several restrictions put in place to prevent, mitigate, and respond to its spread.

**Farmers:** Data suggest that a sizable proportion (73%) of farmers did not have easy access to their farms, while 60% had a reduction in customers' patronage during the restrictions of which majority (76%) could not meet customers' demand. The restriction of movement adversely affected the prices of commodities for 64.7%. This implies that access to farm, food demand and supply, and food prices were negatively impacted during the restrictions.

**Processors:** Approximately 86% of processors did not have easy access to commodity market/warehouse, and transportation of commodities while prices of commodities were unfavorable for 78.3% of those that have full access during the restriction. The foregoing suggests that access to market, transportation of commodities, and food prices were negatively affected for processors during this period.

**3.2.2.1 Marketers:** Access to customers was not easy for 87.4% of marketers, 86.6% found it difficult accessing warehouses/depot/processing locations during the restrictions. Furthermore, 80.5% sold less, while the prices of commodities were unfavorable for 84.1%. It is also worthy to know that 78.0% and 79.3% of marketers sold less and made less profit respectively during this epoch.

**3.2.2.2 Transporters:** Access to market/warehouses/depot was difficult for a whopping 90.3% of transporters, while freighting of commodities was not easy for 80.5% during the restrictions. Major cost incurred on freighting activities increased for 87.4% of transporters. Majority (83.7%) experienced increased harassment by security agents on the highways. Furthermore, 84.1% transported less commodities, whereas transportation charges were unfavorable for 77% during this period. These data suggest

that access to market, demand and supply, and freighting prices for transporters were negatively impacted during this period.

**3.2.2.3 Consumers:** Accessing market to buy food commodities was difficult for 88.4% of consumers while, 80% of the consumers with easy access bought less food commodities and 89.1% did so at higher prices during the restrictions. These data suggest that access to market was hindered, quantity of food commodities purchased dropped, and prices for food commodities spiked during this epoch. Hitherto the restrictions, 83.7% procured commodities in the open-air market, while 9.0% bought from shops/outlets in their neighborhood. This changed to 40.4% and 52.6% respectively during the restrictions. The fact that more consumers bought commodities in the open-air market prior to the restrictions but are now compelled to buy from neighborhood shops and sales outlets that are often considered expensive suggests that their purchasing power dipped during this period.

The challenges faced by farmers during the restrictions include, but are not limited to unavailability of labour, insect infestation and spoilage of inputs. For processors, theft, spoilage, unavailability of labour, shortage of raw materials, and difficulty in transporting the commodities were recorded. Marketers had issues with theft, spoilage, shortage of transport vehicle, unavailability of labour, low patronage and high cost of commodities. Transporters encountered reduced patronage, and unavailability of labour. Finally, consumers were face with high cost of commodities and inability to preserve leftovers.

### **3.2.3 Access to finance**

Fundamentally, farmers (88.4%), processors (90.1%), marketers (91.0%), transporters (84%), and consumers (87.5%) could not access loans for their businesses or personal use during the restrictions. Among those who accessed loans, farmers (82%), processors (84.3%), marketers (83.4%), transporters (82.9%), and consumers (73.7%) obtained them similar to or at rates higher than what was obtained prior to the restrictions. By the same token, 77.7% of farmers, 80.1% of processors, 84.3% of marketers, 79.6% of transporters, and 77.7% of consumers did not receive assistance from family and friends during this epoch. These data suggest that the restriction environment was detrimental to postharvest value chain actors in terms of access to finance. Dip in revenue occasioned by containment measures resulted in liquidity deficiencies, threatening the viability of otherwise sustainable enterprises. These measures have deeply impacted access to finance (Organization for Economic Co-operation and Development, 2020).

### **3.2.4 Sources of inputs/commodities**

Hitherto the restrictions, 67.8, 17.8, and 14.4% of farmers sourced inputs within their local government, outside their local government, and outside their state respectively which morphed to 73.4, 16.3, and 8.3% respectively during the restrictions. 67.1, 21.3, and 11.6% of processors obtained inputs within their local government, outside their local government, and outside their state respectively which changed to 76.1, 16.7, and 7.2% respectively during the

restrictions. 58.1, 22.4, and 19.5% of marketers sourced for commodities within their local government, outside their local government, and outside their state which morphed to 75.3, 13.4, and 11.3% respectively during the restrictions. 47.1, 31.4, and 21.5% of transporters operated within their local government, outside their local government, and outside their state respectively which changed to 74, 18, and 7.8% respectively during the restrictions. As well, results showed that 60.1% of farmers, 52.5% of processors, 64.6% of marketers, and 60% of transporters operated at a low capacity during restrictions. This data suggests that actors' movement became more restricted to locations closer to their area of operation or residence. As such, their choices became increasingly limited with respect to sourcing for quality and low-priced input(s), and rendering premium priced services.

**3.2.5 Work hours**

During the restrictions, farmers (70.5%), processors (74.9%), and marketers (77.9%) experienced reduction in time spent by workhands and overall productivity. However, 80.8% of transporters did not experience change in the time spent by manual handlers on activities. 78.9% of farmers spent more time moving commodities from farms to aggregation centres/point of sale during this period. The reduced man hour by workhands on farming, processing, and marketing activities led to low productivity.

**3.3 Livelihood**

**3.3.1 Income**

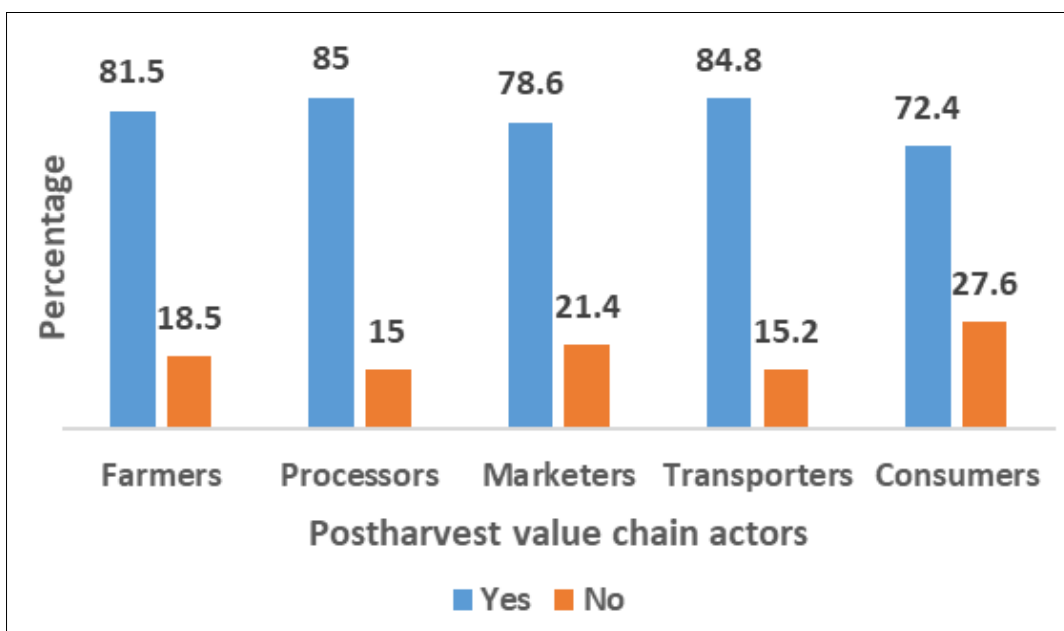
Farmers: As shown in Figure 1, 81.5% of farmers experienced a change in their livelihood, with 55.8 making less money, 32.1 on borderline, while 12% made more money during the restrictions. Only one in two (50%) farmers could make do with augmented earnings from other sources of income for family upkeep. These suggest that standard of living for farmers plummeted, adversely impacting both on-farm and off-farm income.

**3.3.1.1 Processors:** A large percentage (85.0%) of processors observed a change in their livelihood (Figure 1). That 33 made less money, 42 on borderline, and 25% making more money is an indication of the severity of their circumstance with respect to earning during this period. Nonetheless, 42.5% did not rely on other sources of income. On the whole, these data suggest that the economic fallout of the restrictions was milder on processors compared to farmers.

Marketers: About 79% of agro-commodity marketers had a change in their livelihood during the restrictions (Figure 1), with 45.8 making less money, 37.4 on borderline, and 16.8% making more money. Furthermore, only one in two (50.8%) marketers could make do with augmented earnings from other sources of income. Reduced income for about half of marketers suggests that the restriction milieu had adverse effect on livelihood of marketers of agricultural commodities.

**3.3.1.2 Transporters:** During the restrictions, 84.8% of transporters had a change in their livelihood (Figure 1); 52.2 made less, 33.3 on borderline, while 14.5% made more money. About one in two (54.4%) transporters could make do with augmented earnings from other sources of income. This data is a pointer that the restrictions situation had untoward consequence on livelihood of transporters.

**3.3.1.3 Consumers:** Consumers include farmers, processors, marketers, transporters, students, civil servants, artisan, among others. Categorically, 72.4% had a decline in their livelihood during the restrictions (Figure 1). 42.1% consumed same quality food pre and during restrictions, while 64.9% lacked the wherewithal to procure food commodities during this period. Majority (75.5%) adopted mechanisms to cope with the negative fallout emanating from the restriction. These strategies may have included: removing vegetable, and animal protein from their meals, rationing meals, skipping meals etcetera.



**Fig 1:** Change in livelihood during COVID-19 restrictions



A cursory look at the results shows that postharvest value chain actors had a downturn in their earnings during the restrictions as more fell into weekly earnings of N 10,000 and below category. However, T-test ( $p \leq 0.05$ ) for each of the actors' earnings shows that there was a significant difference between their individual earnings before and during restrictions. In the same vein, analysis for all the actors combined also shows that there was a significant difference between their earnings before and during restrictions. Result of the T-test for aggregated and disaggregated data is in sync and confirms that the restrictions had an adverse effect on actors' income.

### 3.3.2 Expenditure on food

As shown in Figure 2, 73% of consumers/households spent N 10, 000 and below on food on weekly basis pre-restrictions, this is against 66.2% recorded during the restrictions. That a smaller percentage of persons spent N 10,000 and below on food as compared to pre-restrictions

should not be confused for increase in quantity and quality of food purchased during the restrictions; prices of food went up during this period and consumers bought same or lesser quantity of food at higher prices; hence the increased expenditure on food. Additionally, low income people majorly consume "giffen goods" and must buy them no matter what their prices are. The number of households in categories N 10, 001 - N 20,000, N 20, 001 - N 30,000, and N 30, 001 - N 40,000 increased during the restrictions. This is contrary to what was observed for N 10, 000 and below category in the same period. On the whole, data show a negligible difference of 0.5% dip in consumers' expenditure on food during restrictions. Be that as it may, further analysis (T-test;  $p \leq 0.05$ ) shows that the difference in expenditure on food before and during restrictions was not significant. This non-significance could be attributed to coping mechanism adopted by subjects to mitigate the effect of dwindling income, lower purchasing power, inflation, and unemployment during restrictions.

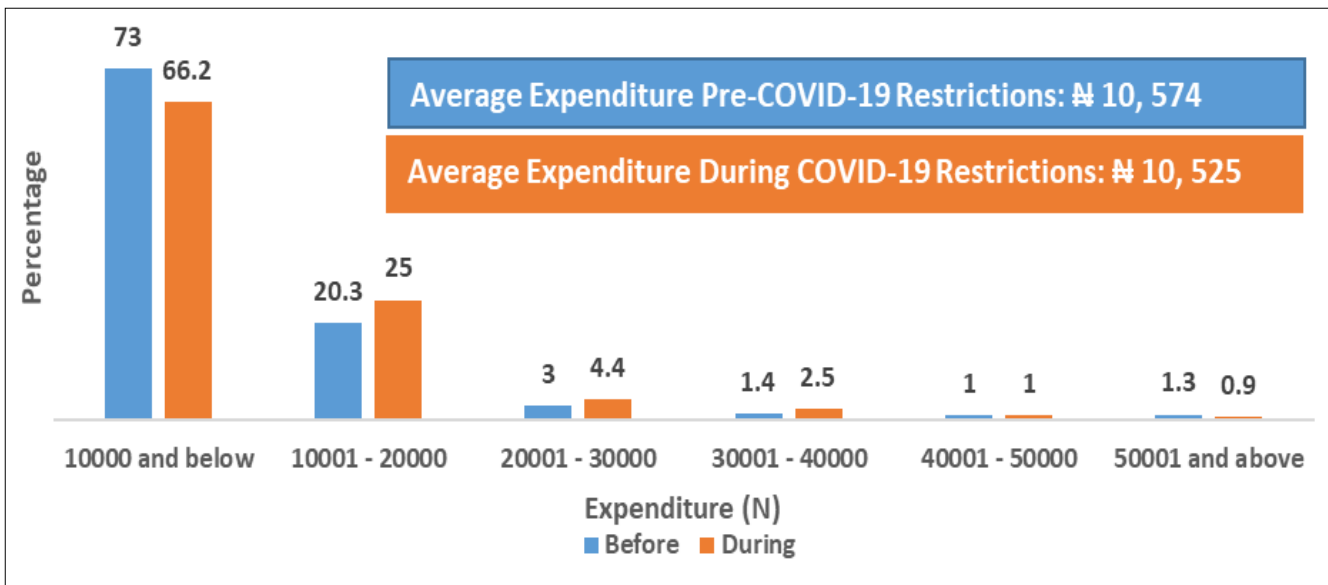


Fig 2: Weekly expenditure on food before and during COVID-19 restrictions

### 3.4 Postharvest activities

During the restrictions, 70% of farmers had their harvesting activities interrupted; 73.2% could not get readily available labour for harvesting, while those who got (81.3%) had them expensive. On the whole, 71.5% of farmers could not keep up with the level of postharvest handling as it was pre-restrictions. Similarly, 66.8% of processors had storage challenges. 60.8% stored products longer than what was obtainable pre-restrictions. Majority (82.9%) faced difficulties in procuring commodities, and 73.5% experienced disruption in processing. Furthermore, 78.1, 62.6, and 76.6% had reduction in quantity of commodities processed, reduced quality of products, and worsened power supply respectively. Additionally, 82.6% had to battle with spiraling increase in the cost of packaging materials; this increase could lead to higher production cost for processors and most often than not higher prices for consumers. A preponderance of marketers (80.7%) had disruption in the movement of commodities during the restrictions. The implication is that customers might not get needed

commodities as and when due, and prices of highly perishable commodities may skyrocket. Furthermore, 90.1, 85.5, and 81% of transporters encountered increased number of checkpoints, regular harassment and delay at checkpoints, and difficulty/bottleneck in securing permit to transport commodities respectively. In the same vein, 86.1% of consumers experienced scarcity of food commodities, while 84.1% bought fewer of it than they would during this epoch.

### 3.5 Perceived Benefit Associated with the Covid-19 Restrictions

This study did not only investigate the untoward consequences of the restrictions, but also delved into associated benefits. The results of this inquiry revealed that increased intimacy between family members is the leading benefit associated with the restriction. Other top ranked perceived benefits include; increase in household labour, diversification of income sources, increased profit, and food/money palliative from government.

**Table 1a:** Socio-Demographic Characteristics of Respondents

Socio-demography	Frequency	Percentage (%)	Mean
<b>Age</b>			
20 and below	1921	2.6	44
21-30	9342	12.5	
31-40	19580	26.2	
41-50	25163	35.7	
51-60	13438	18.0	
61 and above	5236	7.0	
<b>Gender</b>			
Male	25448	34.0	
Female	49232	66.0	
<b>Marital Status</b>			
Single	7778	10.4	
Married	59715	80.0	
Widowed	4853	6.5	
Divorced	1266	1.7	
Separated	1068	1.4	
<b>Level of Education</b>			
No formal education	14371	19.2	
Primary	15089	20.2	
Secondary	31007	41.5	
Post-secondary	14213	19.1	
<b>Area of Residence</b>			
Rural	42,581	57.0	
Urban	15136	20.0	
Sub-urban	16138	22.0	
Non-respondents	825	1.0	
<b>Area of Business Operation</b>			
Rural	29136	53.0	
Urban	13745	25.0	
Sub-urban	11262	21.0	
Non-respondents	357	1.0	

Source: Field survey 2021

**Table 1b:** Socio-Demographic Characteristics of Respondents

Socio-demography	Frequency	Percentage (%)	Mean
<b>Household Size</b>			
5 and below	38576	51.6	6
6-10	27296	36.5	
11-15	4044	5.4	
16-20	1540	2.1	
21 and above	869	1.2	
Non-respondents	2355	3.2	
<b>Years of Experience</b>			
10 and below	26433	48.5	13
11-20	16908	31.0	
21-30	6966	12.8	
31-40	2689	4.9	
41-50	889	1.6	2
51 and above	615	1.2	
2 and below	46671	92.3	
3-4	3447	6.8	
5-6	158	0.3	
7 and above	314	0.6	
<b>Weekly Earning</b>			
N 10000 and below	28250	37.8	N 56, 487
N 10001- N 20000	16290	21.8	
N 20001- N 30000	8413	11.3	
N 30001- N 40000	4675	6.3	
N 40001- N 50000	4000	3.4	
N 50001 and above	12153	16.3	
Non-respondents	899	1.1	
<b>Categories of Food Consumed</b>			
Grain	14139	70.0	
Root and tuber	4415	21.9	
Animal protein	743	3.7	
Fruit and vegetable	883	4.4	

Source: Field survey 2021

**Table 2:** Workhands employed on a weekly basis

	Farmers (%)		Processors (%)		Marketers (%)		Transporters (%)	
	Before	During	Before	During	Before	During	Before	During
5 and below	63.8	90.0	66.9	75.1	71.7	89.8	78.2	91.0
6-10	27.4	8.1	20.1	16.3	22.9	8.4	16.8	7.3
11-15	4.7	1.4	6.9	5.3	3.2	1.2	3.1	0.8
16-20	3.0	0.5	3.9	2.8	1.8	0.5	1.4	0.7
20 and above	1.1	0.0	2.2	0.5	0.4	0.1	0.5	0.2

**Table 3:** Sources of labour

	Farmers (%)		Processors (%)		Marketers (%)		Transporters (%)	
	Before	During	Before	During	Before	During	Before	During
Family labour	20.1	47.1	33.9	48.1	40.2	47.4	16.8	23.4
Casual hands	23.8	17.0	25.7	21.5	26.9	22.1	58.0	43.0
Family and Casual hands	56.1	35.9	40.4	30.4	32.9	21.7	23.4	21.2

**4. Conclusion**

The restriction was detrimental to postharvest activities in general. It affected output, access to market, food demand and supply, food prices, finance, labour demand and supply, sources of inputs and the standard of living of persons and households negatively. The findings of this investigation showed that postharvest value chain actors had a reduction in earnings and number of workhands employed during the restriction. With respect to expenditure on food, these actors had a negligible decrease. Finally, the restrictions had several negative impacts on the life of Nigerians, it however brought about increased intimacy among family members

among others.

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