FUDMA Journal of Agriculture and Agricultural Technology

ISSN: 2504-9496
Vol. 9 No. 1, March 2023: Pp. 110-116

https://doi.org/10.33003/jaat.2023.0901.14

COVID-19 AND AGRICULTURAL PRODUCTION: A STATISTICAL REVIEW OF THE EVIDENCE FROM NIGERIA

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ABSTRACT

Nigeria depends on agriculture in sustaining the economy. Over 70% of Nigerians are employed directly or indirectly in the agricultural sector which provides raw materials, employment, food and income and serves as a foreign exchange earner. The discovery of crude oil in the late 1950s dwindled government attention on agriculture. This has left the Nigerian economy with shortage of food production to feed the growing population. The agricultural business environment in Nigeria is frustrated by series of inhibiting factors; poor income, inadequate access to loan and credit facilities and insufficient legislations and government policies. The incidence of pandemic presented new dimension of challenges. The outbreak of the virus placed restrictions such as isolation, quarantine and total lockdown that invariably affected agricultural output. Research is being conducted in the academic world focusing on the pandemic. This research lends contribution in this regard to ascertain the effects of the pandemic on agricultural production. This research adopted a desktop approach in reviewing the documents of National Bureau of Statistics (NBS), Central Bank of Nigeria (CBN), Centre for Disease Control, online statistical repositories and literature used as secondary sources of data. The review made conclusion and recommendations based on empirical review.

Keywords: Production; Review; Statistical; Evidence; Nigeria

INTRODUCTION

The Nigerian agricultural sector is made up of Micro, Small and Medium enterprises that engage in production, processing, storage, warehousing and marketing that have faced lots of neglect by previous and present administrations and challenges in expanding their businesses. These challenges include difficulty in raising business fund, high interest rate on loans, unfavourable business environment, epileptic access to power and energy and poor government policies. The advent of Corona Virus Disease (COVID-19) has presented new dimension of challenges. According to Kumar *et al* (2020), the first case of virus was in 1960. It is associated with respiratory infection including pneumonia, cold, sneezing and coughing and transmitted from human to human or human to animal via airborne droplets (Kumar *et al*, 2020). Nigeria confirmed its first case of the virus on 27 February 2020 through an Italian returnee who works in Nigeria (*Ugbodaga, 2020).*

Most developed economies of the World leverage on the agricultural sector to create wealth, employment, redistribute income, generate innovation, fight hunger and poverty and provide food for the ever growing population. Agriculture is often operated by men, women and youths and help to overcome unemployment, support the family and sustain their livelihood. In Nigeria, agriculture plays vital role in the provision raw materials for the industry, improve the foreign exchange and GDP through exportation and stabilize the economy. The pandemic impacted on agriculture in multi-dimensional ways. The long-term food supply faces great danger and risk as a result of the incidence of the virus (FAO, 2020). One of the risks of the pandemic is negative impacts on the economy which gives rise to economic decline and crisis (Bai, 2020)

The emergence of the pandemic had negative impact on food production especially in developing nations with low technology and efficiently productive system to cushion the effects. These gave rise to food insecurity. Elsahoryi *et al* (2020), defined food insecurity as a state where individuals at all times do not have continuous physical and economic access to sufficient, safe, and nutritious food to fulfil their dietary needs and food choices for an active and healthy lifestyle. To be food secure, an individual is expected to experience food availability, accessibility, food utilization, food stability and nutrition. All these segments of food security were negatively affected by the coronavirus disease. The four pillars of security, viz. availability of food, accessibility of food, utilization of food, and stability of food, were negatively impacted on by the pandemic (Nechifor *et al.*, 2021 and Laborde *et al*., 2020). Reports from Genkin and Mikheev (2020), the Food and Agriculture Organization (FAO), World Trade Organization, and World Health Organization (WHO) reveals that current situation of interruptions in supply

chain as a result of the lockdown occasioned by the pandemic will exacerbate food catastrophe and result to global food shortage.

The advent of the pandemic in Nigeria with its ardent restriction ranging from social distancing, isolation, quarantine and total lockdown of the economy had adverse impact on the agricultural sector. Following these unanticipated scenarios, the research seeks to examine the impact of the pandemic on agriculture in Nigeria

INCIDENCE OF COVID-19 IN NIGERIA

Table 1: Incidence of Pandemic in Various Regions of Nigeria

States	Positive Cases	Active	Recovered	Death
The Level of Incidence in North Central Region				
Benue	2,129	340	1,764	25
Kogi	5	0	3	2
Kwara	4,660	421	4,175	64
Nasarawa	2,757	373	2,345	39
Niger	1,148	130	998	20
Plateau	10,279	21	10,183	75
FCT	28,949	167	28,533	249
Total	49,927	1,452	48,001	474
The Level of Incidence in North Eastern Region				
Adamawa	1,203	68	1,103	32
Bauchi	1,970	2	1,944	24
Borno	1,629	5	1,580	44
Gombe	3,310	6	3,238	66
Taraba	1,473	62	1,377	34
Yobe	634	1	624	9
Total	10,219	144	9,866	209
The Level of Incidence in North Western Region				
Jigawa	669	2	649	18
Kaduna	11,402	88	11,225	89
Kano	5,133	58	4,948	127
Katsina	2,418	0	2,381	37
Kebbi	480	10	454	16
Sokoto	822	0	794	28
Zamfara	375	0	366	9
Total	21,299	158	20817	324
The Level of Incidence in South Eastern Region				
Abia	2,201	24	2,143	34
Anambra	2,825	46	2,760	19
Ebonyi	2,064	28	2,004	32
Enugu	2,952	13	2,910	29
Imo	2,655	7	2,590	58
Total	12,697	118	12,407	172
The Level of Incidence in South Western Region				
Ekiti	2,393	69	2,296	28
Lagos	102,332	979	100,582	771
Ogun	5,810	11	5,717	82
Ondo	5,173	315	4,749	109
Osun	3,311	36	3,183	92
Oyo	10,311	49	10,060	202
Total	129,330	1,459	126,587	1,284
The Level of Incidence in South Southern Region				
Akwa Ibom	4,670	40	4,586	44
Bayelsa	1,355	17	1,310	28
Cross River	865	7	833	25
Delta	5,542	260	5,170	112
Edo	7,821	102	7,398	321
River	17,252	383	16,715	154
Total	37,505	809	36,012	684

The incidence of coronavirus disease was discovered in Wuhan City, Hubei Province, China in late December 2019 (Okolie *et al*., 2020). The pandemic poses a great danger to human health, world economy, and food security in both industrialised and emerging nations (Alam and Khatun, 2021; Mottaleb *et al*., 2020 and Carroll *et al*., 2020). The

incidence of the pandemic in Nigeria recorded the number of reported cases, active cases, recovered cases and death. As at June, 2022, the incidence of coronavirus disease in the country are as follows; positive cases 260, 977, active cases 4140 (1.57%), recovered cases 253, 690 (97.21%), and rate of death 3, 147 (1.21%). The incidence of the pandemic is further explained according to its prevalence in the different regions of the country as presented table 1.

The Level of Incidence in North Central Region

The table 1 shows that the rate of incidence of the pandemic in the region is second to the South Western region. The incidence shows the following: active cases (2.91%), recovered cases (96.14%) and death rate (0.95%). The rate of positive cases observed in the region could be attributed to the incidences in the Federal Capital Territory (FCT, Abuja). Abuja is the capital of Nigeria and has in flock foreigner from other countries of the world. Also, the intra-national movement bringing people from other parts of the country to the Capital city could also have influenced the level of the incidences.

The Level of Incidence in North Eastern Region

Table 1 indicates that the region witnessed the lowest rate of incidences of the coronavirus disease. The incidence revealed the following cases: active cases (1.41%), recovered cases (96.55%) and death rate (2.06%). The low level of incidence of the pandemic in the region could be attribute to the distance from the region to prominent cities in the country with in flock of foreign visitors and mass move of people. Furthermore, the rate of insecurity in the region occasioned by Boko Haram attack and insurgency, restricting movement of people from moving from one place to another, reduced the level of contact and hence the level of positive.

The Level of Incidence in North Western Region

Like the North Eastern region, this region also had a low incidence of the pandemic. The incidences captured the cases as follows: active cases (0.74%%), recovered cases (97.74%) and death rate (1.52%). The North Western region also had incidences of Boko Haram attack and insurgency. The incessant kidnapping in the Southern part of Kaduna State and the lockdown order restricted peoples' movement and therefore the incidence of infection.

The Level of Incidence in South Eastern Region

This region is the second least affected region of the incidences of the pandemic. This could also be attributed to the fact that the region does not have in flock of foreign visitors and as such not much exposed to individuals who tested positive. The region had the following cases: active cases (0.93%), recovered cases (97.72%) and death rate (1.35%)

The Level of Incidence in South Western Region

The is the most affected by the incidence of coronavirus disease infection. This is so because of Lagos state in the region. Lagos city is the commercial hub of the Nigerian economy. It has the highest GDP in West Africa and the fast growing economy in Africa. The city has an international airport with an average of 4.09 million domestic and 1.06 million international passengers in 2021. This clearly shows the level of human movement with the region. The state also has the largest seaport in Nigeria. These inlets and outlets made the region more vulnerable to being infected by the pandemic. The region had the following cases: active (1.13%), recovered cases (97.88%) and death rate (.099%).

The Level of Incidence in South Southern Region

The region is the third affected by the pandemic in Nigeria. Like Lagos City, Port Harcourt city in Rivers State in this region has in flock of visitors both domestic and foreign because of the international airport in the city. The city is also one of the fast growing economies in West Africa. The region also has the greatest number of crude oil companies in the country. The oil companies have expatriates from other country travel out of the country. These exposed the region the vulnerability of contacting the pandemic. The reported cases in the region are as follows: active cases (2.16%), recovered cases (96.02%) and death rate (1.82%).

COVID-19 AND AREAS OF IMPACT ON AGRICULTURE

The incidence of COVID-19 had significant impact on agricultural sector in Nigeria in various dimensions. This includes: distortion in food supply change, labour shortage, distortion on transport and logistics, input supply challenges and market inaccessibility.

Distortion in Food Supply Chain

The COVID-19 pandemic presented unusual influences on food structures, food supply chains in farm work, preparing, transport and distribution, marketing, supplies and utilization of produced agricultural production. The scenario impact most significantly all components of food security; food availability, accessibility, affordability, stability and nutrition.

Labour Shortage

One of the most essential factors of production is labour; either manual, animal, energy or technology driven. The lockdown directive during the pandemic impacted on mobility all over the world. Labour intensive production processes were affect resulting to low income and shortage in agricultural production output.

Transport and distribution services

In various countries of the World, there were lockdowns and restriction people and vehicular movements. These also affected the provision of key food safety, quality and certification checks, as well as those that are required to facilitate trade, including physical inspections so as to

certify compliance with sanitary and standard requirements (OECD, 2020). Movement of produced food from the points of production to market and other distribution channels were copiously affected. The closure of airports and sea ports also affected food importation and exportation significantly. This affected the foreign earnings of many countries. Affected also by the pandemic are input supply process, access to market, loss of farmers additional sources of income, spoilage of store food production arising from inability to access sale outlets.

COVID-19 AND AGRICULTURAL PRODUCTION

All over the world, billions of people depend on agriculture for their livelihood as agriculture functions as the backbone of developing countries. It contributes to the various economic sectors accounting for 60.4% of employment, contributes up to two-third of gross domestic product of many countries. In Africa and Asia, agriculture contributes 49% and 30.5% of employment respectively (ILO, 2020). Production output therefore accounts for food provision, employment and livelihood especially in the rural area. From Fig. 1, agricultural production was at its lowest in Q2(1.5%) and Q3(1.3%) of 2020. This period coincides with the 2nd and 3rd phases of the total lockdown order announced by the Federal government. During the period, there was no movement and as such farmers were not able to attend to their farms and other support services that enhance and boost agricultural production could not be deployed. Restriction on movement occasioned by the incidence of the pandemic negatively influenced farmers in accessing, displaying and selling their food products and resulted to wastage. The temporary closure of local markets, schools, bars, hotels, restaurants and other leisure outlets made it more difficult for farmers to sell their products. This scenario posed a significant risk to the long-term food supply (FAO, 2020), and has a negative impact on the economy, resulting in economic decline and crisis (Bai, 2020).

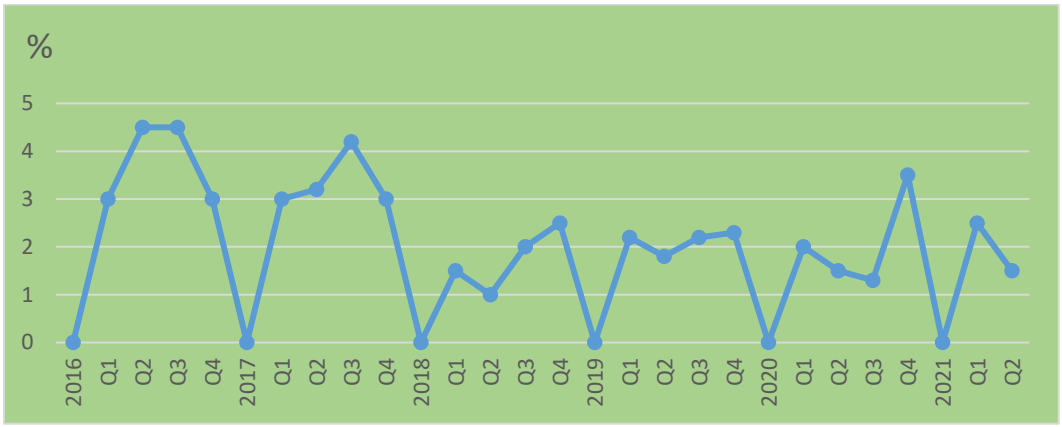

Figure 1: Agriculture Real Growth Rate (NBS, 2021)

COVID-19 AND GDP REPORT OF GDP GROWTH RATE OF AGRICULTURE SECTOR FROM Q2:2020 TO Q2:2021

In Nigeria, agriculture contributes significantly to the GDP and economy, second to the oil sector. In comparison, the agricultural sector and activities in Nigeria provides livelihood to many Nigerians while the wealth generated by oil sector reaches a handful of people especially the rich in the society. The contribution of agriculture Nigerian national economy makes it the largest sector with a contribution of 24% of GDP between 2013 to 2019. The sector as well contributes 36% of total the labour force making the sector the highest employer of labour (Oyaniran, 2020). Furthermore, the GDP figures of 2018 shows that the sector employed about 38 % of the total working population and accounted for 26.1%. The contribution of the sector to GDP resulted from the sub-sectoral contributions with crop accounting for 80%, fishery 4% and forestry 3% (Izuchukwu, 2011). Fig. 2 shows that the incidence of COVID-19 shrunk the GDP contribution of Nigeria as the GDP growth rate from agriculture was lowest in Q2(1.58%) and Q3(1.39%) in 2020.

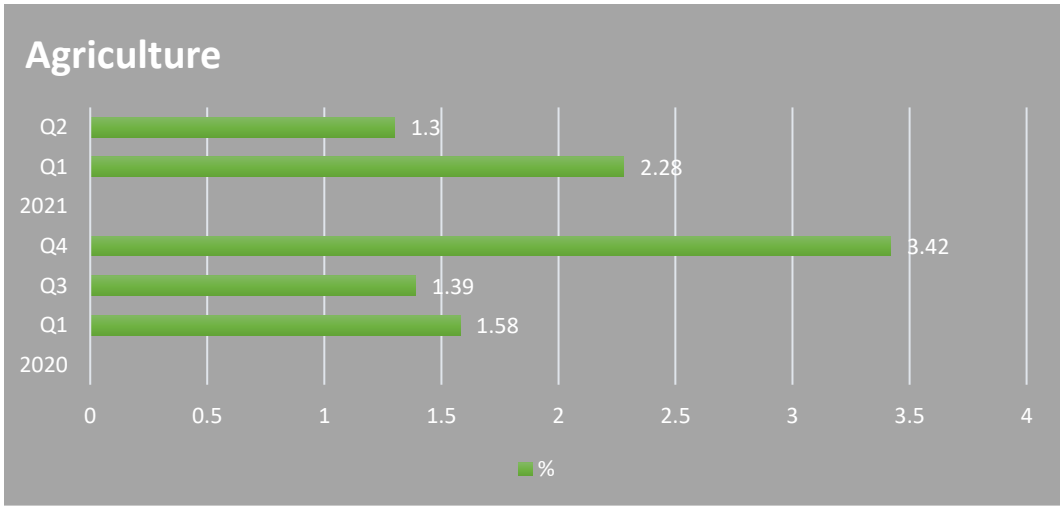

Figure 2: GDP Growth Rate (NBS, 2021)

COVID-19 AND CROP PRODUCTION GROWTH RATE

The sub-sectoral agricultural production in Nigeria includes crop production, fishing, livestock and forestry. According to (Oyaniran, 202), the crop production sub sector is the largest and accounts for about 87.6% of the sector's total contribution. The land mass used for agricultural production in Nigeria is about 70.8 million hectares used for maize, cassava, guinea corn, yam, beans, millet and rice as the major crops. The sector has witnessed tremendous improvement with rice production rising from 3.7 million metric tons in 2017 to 4.0 metric tons in 2018. As in shown in fig. 3, the pandemic impacted on crop production with low output in 2020 Q1(1.44%) and Q3(1.38%). The result of this decreased food availability and increase in food price. According to Devereux *et al* (2020), the pandemic affected food security both directly and indirectly especially food supply system, family income and access to food. Consequently, therefore, the four components of food security; availability, accessibility, utilization and stability were affected negatively by the pandemic (Nechifor *et al*., 2021and Laborde *et al*., 2020).

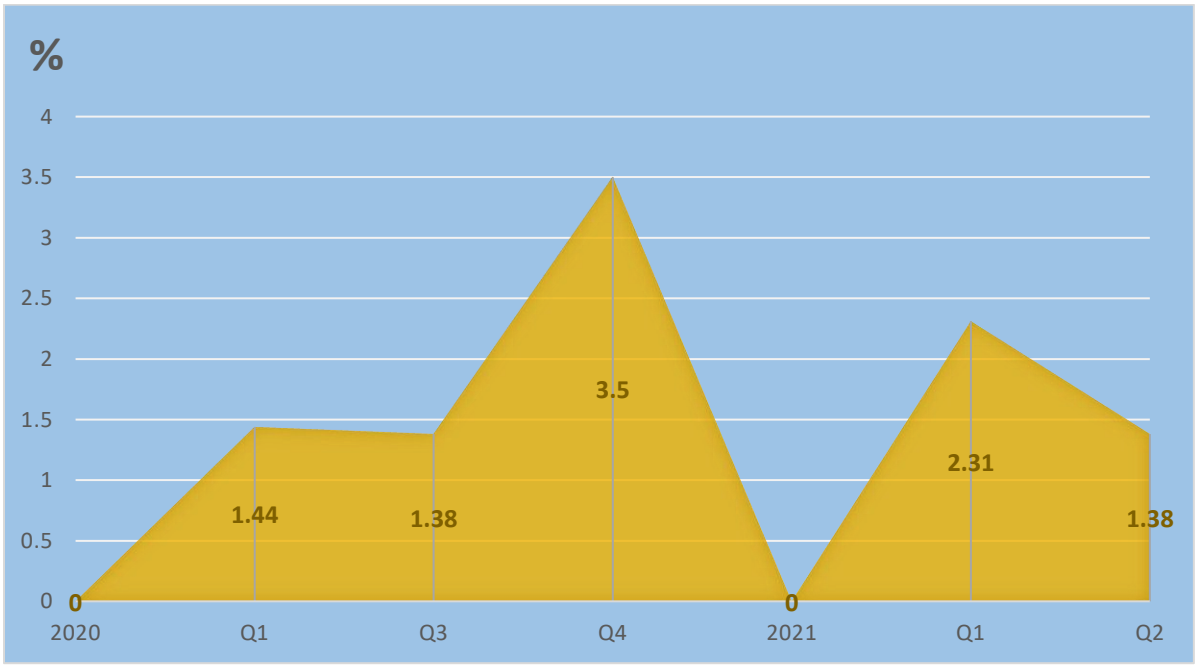

Figure 3: Crop Production Growth Rate (NBS, 2021)

COVI-19 AND INCREASE IN FOOD PRICES

One of the devastating impacts of the pandemic was food shortage resulting to inflation. The food supply chain was disrupted, there was no labour mobility and no access to market to dispose produced crops. These led to wastage and regrettable disposal

of spoilt food crops. All these created scarcity leaving demand to outweigh supply resulting to increased price of various food crops. In Nigeria, increase in the price of food crops was across all food items. The inflation level for single food crop rose up to 98% as shown in Fig.4.

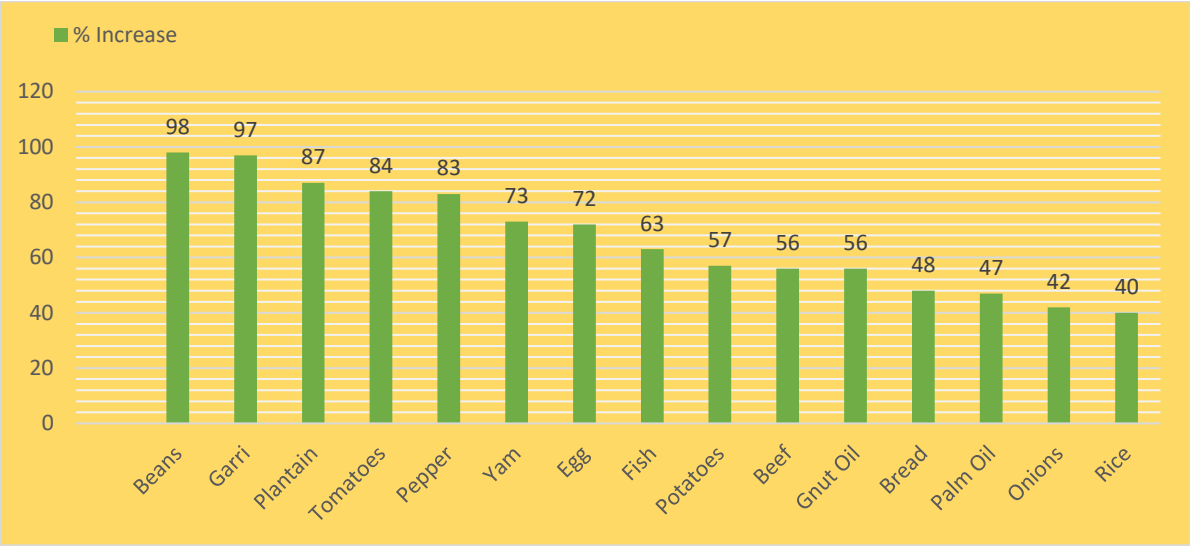

Figure 4: Percentage Increase in Food Crop Price from 2020 to 2021

CONCLUSION

The COVID-19 pandemic dealt a devastating blow on the system – crop production, fishing, livestock and forestry. It also impacted on agricultural value chain enterprises such as processing, agro dealership, warehousing, transportation and logistics and labour provision.

Most adversely affected by the pandemic were decrease in food production, reduction the contribution of agriculture to the GDP and increase in the price of food products. The never expected impact of the pandemic gives rise to the need for a shift from the "business as usual" polities and strategies to more forward looking policy package that invests in the productivity, sustainability, and the resilience of the global food system.

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