

Effect of Covid -19 Pandemic on Farmer's Agricultural Activities in Rivers State

Amadi, N.S & Okagwa, Promise

Department of Vocational and Technology Education, Rivers State University

Abstract: The study investigated the effect of Covid -19 pandemic on farmer's agricultural activities in Rivers State. The main purpose of the study is to investigate the effects of covid-19 pandemic on farmer's agricultural activities in Rivers State. The objective of the study was to determine the effect of Covid-19 pandemic on farmer's production activities, packaging and processing activities and farmer's marketing in Rivers State. Four research questions were asked in line with objective of the study. The study employed descriptive survey research design. The study was carried out in Rivers State. The population of the study was all farmers in Rivers state. Purposive random sampling technique was used to select two local government, twenty commercial farmers were randomly selected using simple random sampling technique. In total, the sample size used was 60 farmers. Questionnaire was used for data collection. The reliability of the instrument was established using Cronbach Alpha formula which yielded 0.88 reliability coefficient. The method used for data analysis was mean and standard deviation and the hypotheses were tested using one way Analysis of Variance at 0.05 level of significance. Findings of the showed that total lockdown restrained farmers from purchase of necessary farm inputs for production, restriction in movements limited farmers rate of transportation to their various farms, pandemic restricted purchase of packaging materials for farm product, encouraged farmers for packaging of agricultural produce, disconnection of distribution channel due to logistics restrictions, total lockdown eradicate medium of goods transportation in Rivers State. The study recommended that Federal government should develop a mobilization initiative for farmers so as to enhance their agricultural activities and sustain food security in Nigeria.

Keywords: Covid-19, Effect, Agricultural, Activities, Farmers

I. INTRODUCTION

Covid-19 pandemic became the dominants of world history in the month of March 2020. Coronavirus is a virus transmitted via respiratory droplets which was discovered in China with mild, non-specific symptoms, such as fever, cough, and shortness of breath, muscle pain and tiredness. More serious cases can develop severe pneumonia and acute respiratory distress syndrome that can lead to death. There is currently no approved vaccine to prevent the 2019 coronavirus disease, and no cure has yet been found despite medical research to gain a better understanding about the novel disease (Omekwe & Obayori, 2020). The danger of the deadly disease is in its ability to spread through hand contamination, sneeze and cough of the infected patients, among others. Due to this Covid-19 diseases invasion, millions of lives all over the world were lost as the human

death toll rose significantly since the inception of the pandemic. The COVID-19 pandemic has been considered as the most crucial global health calamity of the century and the greatest challenge that the human kind faced since the 2nd World war (Singh, Lakhani & Kumar, 2020). Covid-19 pandemic has been reported to be one of the deadliest pandemic in history that has led to fall of many economic activities. There has not being any other pandemic that kept the whole world still as Covid-19 pandemic, many were quarantined and almost the whole world went into total lock down into to limit the spread of the deadly disease.

Omekwe and Obayori (2020) stated that Covid-19 is extremely transmittable and infectious from an individual to another, and one infected individual can infect on average, six persons. By July 9th over 12 million confirmed cases and five hundred thousand deaths were reported in at least 200 countries of the world (Mingzhe and Zhong, 2020). This showed that pandemic is global however, Nigeria as a nation first witnessed the outbreak of Covid-19 in Lagos state on the 27th February, 2020 and as at 10th of May 2020, it has spread to about 34 states and the Federal capital territory except Cross Rivers and Kogi States

The rapid increase in the rate of infected person on a daily basis alone imposed threats to human freedom in social affairs. This amounted to the reason why many national leaders in the affected countries enforced countermeasures such as total lockdown, quarantines, restriction of movement, and closure of social gathering among others. According to Stephen, Martin, Vijk, Timsima and Snow, (2020) Covid-19 pandemic has resulted in immediate, serious and worldwide human health issues, necessary counter measures to the virus will remain in place for many months and have uncertain end dates. International efforts to control the virus by limiting human movement is inevitably causing economic shocks and social costs that will affect the functioning of agricultural and food systems worldwide.

The countermeasures that were carried out have been reported to have crippled global economic activities. The global lockdown threatened many large and small scale businesses worldwide. Likewise agricultural activities were not left behind. Agriculture has been a medium of sustenance for any developing countries and many nations are struggling to make ends meet in agricultural sector in order to satisfy the population's rising demand for food (Amadi & Raji, 2020). However, Covid-19 has struck at a time when hunger or

undernourished keeps rising. According to the latest Estimated at a minimum and additional 83 million people and possible as many as 132 million may go hungry in 2020 as a result of the economic recession triggered by the pandemic. The COVID-19 pandemic is already having devastating impacts on the world economy –both directly and through necessary measures to contain the spread of the disease. These impacts are also being felt by the food and agriculture sector (Singh, Lakhani & Kumar, 2020).

During the heat of the corona virus, some major crops that are supposed to be planted or even harvested are totally abandoned. Due to the inability to utilize planting and harvesting seasons there tend to be low production and distribution of food during the lockdown. Some studies have revealed that at the harvesting of major food crops has been completed almost at proper time and didn't get affected more due to coronavirus infection (Singh, Lakhani & Kumar, 2020). However, in Nigeria many farmers are highly affected with their agricultural activities ranging from production process till distribution to the final consumers.

The effect of Covid-19 pandemic in the agricultural sector is extremely felt as the impact is widely noticed in the scarcity of food and rise in prices of some essential commodities. Current observations by Food and Agricultural Organization (2020a), showed that agricultural business has been highly disrupted and many demand and supply chains has been disconnected due to the countermeasure of Covid-19. FAO (2020a) further posited that livestock producers were particularly affected under COVID-19 lockdowns due to market closures, declining demand or loss of export markets. Also movement restrictions led to a stoppage of livestock movement and trade, leaving many smallholder farmers in some countries unable to sell their livestock. These market restrictions have curbed pastoralists' access to pastures and overall farmers' access to markets, breeding materials and replacement stocks (e.g. day-old chicks and semen) (FAO, 2020b).

The lockdown activity imposed by the government was a significant impediment on farmer's production activities. Farmers were not allowed to go out or gather under any circumstances except for shopping for necessities. This led to a shortage of labor and decreased production efficiency. Most farm service providers stopped working due to the fear of the epidemic or the traffic restrictions (Wei & Lu, 2020). Because of this, farmers' production capacity drastically reduced in such that providers could plant 6 ha per day before the epidemic; however, after the epidemic broke out, they could only cover 3 ha per day because of the difficulty in hiring tractor drivers. Likewise, the planting and livestock raising activities were slowed down to certain extent because of restricted movement to markets to obtain necessary materials for livestock breeding and crop seeds. Not only that, fear of being infected by the corona virus restricted many farmers that have farms close to their neighborhood at home. The effect of the epidemic on labor inputs mainly lay on restricting

labor movement. Hence there tends to be reduction in the rate of labour in the farm, consequently there would be less crop management practices, planting, and late harvest of some matured crops. In line with this Mingzhe & Zhong, (2020) posited that unreasonable restrictions from mobility destroy production cycles and finally undermine production capacity. Also United Nations (2020) stated that in northwest India, wheat and pulse harvesting was disrupted because of non-availability of migrant labor.

Corona Virus is believed to have originated in China and the nation's economy is said to have been highly affected by the sudden disease outbreak. Therefore the online survey data collected from 1501 rural households by the Chinese Academy of Agricultural Sciences (CAAS) showed that 51.19% of respondents had difficulty buying fertilizers, pesticides, and other inputs, and 20.39% had no access to purchasing these necessities (Zhong, Pu, Liu & Zhang, 2020). On the national level, data from the Ministry of Agriculture and Rural Affairs (MARA) showed that the seed markets' opening time was delayed by 10–15 days, and seed sales decreased by 10%–30% by March 10th compared with the previous year (National Data Summary Page, 2020). Mulozi (2015) asserted that farmers in Nigeria were resorted to staying at home, avoiding breaking the law. Messages from the Nigerian Ministry of Health on non-movements of people and "lockdowns" of some towns and cities have caused farmers to slow down or abandon their work completely. "We are not moving; we cannot travel into town to buy insecticides or fertilizers for our crops. Winter maize will be drastically affected," remarked one farmer.

Not only do the production activities of farmers drastically reduced, but also affected in the area of marketing perishable goods to the consumers leading to massive food wastage. Unreasonable restrictions would block the outflow channels of agricultural products and hinder the necessary production inputs (Mingzhe & Zhong, 2020). Since the outbreak of the pandemic, panic buying of food has occurred in many countries. Many are actually afraid of contacting the Virus through the raw market products. At the onset of the outbreak, many avoided obtaining food stuff in the general market for fear of contamination with the hope of soon recovery to their normal livelihood. Unfortunately, the lingering of the restrictions especially the lockdown forced many to obtain food stuff where available whenever the restriction was lifted for home stocking. According to UN (2020), In Ethiopia, vegetable farmers suffered not only from income loss due to overstocked products but also from a shortage of important inputs. This has made many farmers to develop other marketing channels such as door to door and online marketing in the supply of essential commodities. Especially for farmers who are daily producers (poultry farmers) low rate of consumption were reported which made them to run at great lost. Market interruptions under COVID-19 lockdown affected a broad range of food products (fresh produce, live animals, and fresh fish). FAO COVID-19 impact assessments of food systems

showed several vulnerabilities, including inadequate storage infrastructure, weak market linkages, inadequate diversity of supplies (including from imports) and labour dislocation (FAO. 2020 a).

While the COVID-19 health crisis has not translated into a full-blown food crisis, disruptions in upstream food supply chains (including planting, crop management, harvesting, and marketing) have been widely reported in countries across the region. This impact is particularly acute in supply chains for highly perishable foods such as fresh fruits and vegetables, meat and fish putting the quality of diets at high risk (FAO, 2020a). Likewise FAO (2020c) posited that restrictions on movement curbed farmers' access to markets to buy inputs and sell products. Thereby hindering the flow of agricultural produce. However, the marketing restriction is also a worst has inability to effectively preserve, process, store and package agricultural produce during the pandemic.

The best means of preserving agricultural perishable goods is by appropriate storage, packaging and processing. However, Covid-19 pandemic has seemingly impacted the processing and packaging activities negatively. While the cases of corona virus pandemic kept soaring high, and death toll was rapidly rising on a daily basis, many people were engulfed with fear that many could avoid not touching any external materials. Also, the closure of the state borders hindered the incoming of essential materials needed for processing, packaging and appropriate storage of agricultural produce. Owing to the point farmers are unable to make any kind of market transaction because of curfew or lockdown fresh produce accumulate at farms, resulting in food loss (FAO, 2020c). However, report showed some agricultural processors especially Millers posited that they are operating overtime to produce enough flour but are worried how border closings and quarantine measures could impact the supply of raw materials (Reidy, Lyddon and Mckee, 2020). In the livestock farms, covid-19 shock brought in a reduction in labour force, consequently processing activities reduced while also necessitated the unavailability of livestock in the market (Tanger, 2020). He further stated that these disruptions occurred globally as multiple countries have been similarly challenged in harvesting animals and sustaining pre-COVID-19 desired meat production volumes.

The government of Nigerian has taken steps to soften the impact of COVID-19 on the agricultural value chain. For instance, the government distributed about 70,000 metric tonnes of grains from the strategic food reserve across the country and reduces fertilizer prices from N5, 000. The CBN has also increased intervention funding for the sector and reduced interest on existing intervention funding from 9 percent to 5 percent.

Based on the literatures that were reviewed, authors have been able to establish that Covid-19 pandemic is a disruptive occurrence to many sector especially agricultural sectors in their various countries. However, the study also tends to

investigate the effect of Covid-19 pandemic on agricultural activities in Rivers State.

Purpose of the Study

The main purpose of the study is to investigate the effects of covid-19 pandemic on farmer's agricultural activities in Rivers Sate. Specifically, the study sought to:

1. Determine the effect of covid-19 pandemic on farmer's production activities of Rivers State.
2. Determine the effect of covid-19 pandemic on farmer's packaging and processing activities of Rivers State.
3. Determine the effect of covid-19 pandemic on farmer's marketing in Rivers State.

Research Question

The following research questions will the use to guide the study;

1. What are the effects of covid-19 pandemic on farmer's production activities in Rivers State?
2. What are the effects of covid-19 pandemic on farmer's packaging and processing activities in Rivers State?
3. What are the effects of covi-19 pandemic on farmer's marketing in Rivers State?

II. METHODOLOGY

The study employed descriptive survey research design. This design was employed because the opinions of rural farmers are required for the study. The area of the study was Rivers State. the state produces 100 percent of gas supply and about 60 percent of crude oil supplies in Nigeria, Its rich in Agricultural potentials, and was the major source of palm produce in Nigeria before oil boom. This state was used because it was among the states that were affected by Covid-19 pandemic. The result of Covid-19 pandemic was government enforcement of total lockdown, social distancing policies and facemask wearing. The population of the study was all farmers in Rivers state. However, due to the fact that the population of farmers is a finite one, purposive random sampling technique was used to select two local governments who were affected with total lockdown and other government imposed restrictions in bid to control the spread of Covid-19. The selected local governments include Obio-Akpor, Port-Harcourt and Eleme Local government areas. In each of the local government areas of Rivers State, twenty commercial farmers were randomly selected using simple random sampling technique. In total, the sample size used was 60 farmers. Correspondingly, the instrument used for data collection in the study was constructed by the research, i.e it was a self-designed questionnaire. The questionnaire contains items that present the expected responses of farmers on each of the research questions. Because the instrument was self-developed, the researcher ensured the instrument was validated by experts in agricultural education and extension.

Likewise, the reliability of the instrument was established using Cronbach Alpha formula. The reliability exercise yielded a reliability coefficient of 0.88 which indicated that the self-designed instrument was reliable. The instruments were distributed to the selected samples by the researcher and two research assistants. Some farmers who could neither read nor write were assisted in interpretations. In the case of inability to understand English language, indigenous resource person were used for interpretations. The method used for data analysis was mean and standard deviation and the hypotheses were tested using one way Analysis of Variance at 0.05 level of significance.

III. RESULT AND DISCUSSION OF FINDINGS

Research Question 1: What are the effects of Covid-19 pandemic on farmer’s production activities in Rivers State?

Table 1: Mean responses of the effects of Covid-19 pandemic on farmer’s production activities in Rivers State

S/N	Items	Mean	S.D	Remark
1	Total lockdown restrained farmers from purchase of necessary farm inputs for production	3.86	0.53	Agreed
2	Restriction in movements limited farmers rate of transportation to their various farms	3.62	0.71	Agreed
3	Social distancing policy discourages farmers to hired labours	3.70	0.52	Agreed
4	The pandemic drastically reduced labours’ availability	3.74	0.49	Agreed
5	The pandemic incident led to reduced production	3.62	0.40	Agreed
6	The restricted movement kept famers away from farms which led to death of some crops	3.50	0.56	Agreed
7	Delay in the harvesting of crops which led to crop wastage or spoilage	3.74	0.65	Agreed
8	Suspension in the planting of seasonal crops	3.84	0.76	Agreed
9	Management practices of the farm were kept on hold which led to reduced yield	3.55	1.03	Agreed
10	Increases the cost of production	3.89	0.98	Agreed
	Grand Mean & S.D	3.70	0.66	

Field Survey, 2020

Table 1 presents the Mean responses of the respondents on the effects of Covid-19 pandemic on farmer’s production activities in Rivers State. Based on the criterion mean value of 2.50, the study showed that total lockdown restrained farmers from purchase of necessary farm inputs for production (3.86), restriction in movements limited farmers rate of transportation to their various farms (3.62), social distancing policy discourages farmers to hired labours (3.70), the pandemic drastically reduced labours’ availability (3.74), the pandemic incident led to reduced production (3.62), the restricted movement kept famers away from farms which led to death of some crops (3.50), delay in the harvesting of crops which led to crop wastage or spoilage

(3.74), suspension in the planting of seasonal crops (3.84), management practices of the farm were kept on hold which led to reduced yield (3.55) and increases the cost of production (3.89).

Research Question 2: What are the effects of covid-19 pandemic on farmer’s packaging and processing activities in Rivers State?

Table 2: Mean responses on the effects of covid-19 pandemic on farmer’s packaging and processing activities in Rivers State

S/N	Items	Mean	S.D	Remark
1	Lockdown hindered farmer for required movement for crop processing	3.43	0.85	Agreed
2	The pandemic restricted purchase of packaging materials for farm product	3.60	0.63	Agreed
3	Encouraged farmers for packaging of agricultural produce	3.73	0.41	Agreed
4	Increases the cost of processing agricultural produce	3.88	0.53	Agreed
5	Unavailability of agricultural produce ready for processing and packaging	3.70	0.34	Agreed
6	The pandemic led to unavailability of labour for packaging and processing of agricultural produce	3.67	0.63	Agreed
7	Social distancing policies led to reduced cooperation for processing and packaging among farmers	3.84	0.72	Agreed
8	Scarcity in the supply of packaging and processing material	3.90	0.56	Agreed
9	Create the thought of covid-19 contamination on customers	3.77	0.83	Agreed
	Grand Mean & S.D	3.72	0.61	Agreed

Field Survey, 2020

Table 2 revealed the mean responses of the respondents on the effects of covid-19 pandemic on farmer’s packaging and processing activities in Rivers State. Based on the mean values the following were agreed by the respondents. Lockdown hindered farmer for required movement for crop processing (3.43), the pandemic restricted purchase of packaging materials for farm product (3.60), encouraged farmers for packaging of agricultural produce (3.73), increases the cost of processing agricultural produce (3.88), unavailability of agricultural produce ready for processing and packaging (3.70), the pandemic led to unavailability of labour for packaging and processing of agricultural produce (3.67), social distancing policies led to reduced cooperation for processing and packaging among farmers (3.84), scarcity in the supply of packaging and processing material (3.90), and create the thought of covid-19 contamination on customers (3.77)

Research Question 3: What are the effects of covid-19 pandemic on farmer’s marketing activities in Rivers State?

Table 3: Mean responses on the effects of covid-19 pandemic on farmer's marketing in Rivers State

S/N	Items	Mean	S.D	Remark
1	The quarantine policies blocked product outflow channel	3.50	0.64	Agreed
2	Disconnection of distribution channel due to logistics restrictions	3.89	0.42	Agreed
3	Total lockdown eradicate medium of goods transportation	3.60	0.73	Agreed
4	Closure of local markets led to reduce produce demand	3.69	0.83	Agreed
5	Market closure lead to loss of perishable goods	3.55	0.65	Agreed
6	The lock down caused a lot of food wastage due to low demand	3.39	0.93	Agreed
7	The lockdown made farmers to device alternative means of marking their products	3.62	0.56	Agreed
8	The pandemic led to increase in prices of agricultural produce	3.83	0.45	Agreed
9	Covid 19 pandemic led to scarcity of agricultural produce in the market	3.64	0.76	Agreed
10	Rises the market demand whenever the lockdown is lifted	3.70	0.80	Agreed
	Grand Mean & S.D	3.64	0.68	

Field Survey, 2020

Table 3 presents mean responses of the respondents on the effects of covid-19 pandemic on farmer's marketing in Rivers State. The mean values show the acceptance of the items displayed in the table. The quarantine policies blocked product outflow channel (3.50), disconnection of distribution channel due to logistics restrictions (3.89), total lockdown eradicate medium of goods transportation (3.60), closure of local markets led to reduce produce demand (3.69), market closure lead to loss of perishable goods (3.55), the lock down caused a lot of food wastage due to low demand (3.39), the lockdown made farmers to device alternative means of marking their products (3.62), the pandemic led to increase in prices of agricultural produce (3.83), Covid 19 pandemic led to scarcity of agricultural produce in the market (3.64), and rises the market demand whenever the lockdown is lifted (3.70)

IV. DISCUSSION OF FINDINGS

Findings of the showed that total lockdown restrained farmers from purchase of necessary farm inputs for production, restriction in movements limited farmers rate of transportation to their various farms, social distancing policy discourages farmers to hired labours, the pandemic drastically reduced labours' availability, the pandemic incident led to reduced production, the restricted movement kept famers away from farms which led to death of some crops, delay in the harvesting of crops which led to crop wastage or spoilage, suspension in the planting of seasonal crops, management practices of the farm were kept on hold which led to reduced yield and increases the cost of production. This finding is in cooperation with FAO (2020a) who observed that those livestock producers were particularly affected under COVID-

19 lockdowns due to market closures, declining demand or loss of export markets. Mingzhe & Zhong, (2020) posited that unreasonable restrictions from mobility destroy production cycles and finally undermine production capacity. Also United Nations (2020) stated that in northwest India, wheat and pulse harvesting was disrupted because of non-availability of migrant labor. In support of this finding, Mulozi (2015) asserted that since farmers in Nigeria were resorted to staying at home, avoiding breaking the law. Messages from the Nigerian Ministry of Health on non-movements of people and "lockdowns" of some towns and cities have caused farmers to slow down or abandon their work completely.

Secondly the findings of the study revealed that lockdown hindered farmer for required movement for crop processing, the pandemic restricted purchase of packaging materials for farm product, encouraged farmers for packaging of agricultural produce, increases the cost of processing agricultural produce, unavailability of agricultural produce ready for processing and packaging, the pandemic led to unavailability of labour for packaging and processing of agricultural produce, social distancing policies led to reduced cooperation for processing and packaging among farmers, scarcity in the supply of packaging and processing material, and create the thought of Covid-19- contamination on customer. This finding is line with Reidy et al (2020) who reportedly asset that some agricultural processors especially Millers posited that they are operating overtime to produce enough flour but are worried how border closings and quarantine measures could impact the supply of raw materials. In line with findings Tanger (2020) asserted that in livestock farms, covid-19 shock brought in a reduction in labour force, consequently processing activities reduced while also necessitated the unavailability of livestock in the market.

Lastly, the study found that quarantine policies blocked product outflow channel, disconnection of distribution channel due to logistics restrictions, total lockdown eradicate medium of goods transportation, closure of local markets led to reduce produce demand, market closure lead to loss of perishable goods, the lock down caused a lot of food wastage due to low demand, the lockdown made farmers to device alternative means of marking their products, the pandemic led to increase in prices of agricultural produce, Covid-19 pandemic led to scarcity of agricultural produce in the market, and rises the market demand whenever the lockdown is lifted. The findings of the study in collaboration with FAO (2020a) who posited that movement restrictions led to a stoppage of livestock movement and trade, leaving many smallholder farmers in some countries unable to sell their livestock. Findings of Zhong, et al (2020) collaborates with this finding by revealing that farmers had difficulty buying fertilizers, pesticides, and other inputs, and had no access to purchasing these necessities. Also in support of the finding Mingzhe & Zhong (2020) posited that unreasonable restrictions would block the outflow channels of agricultural products and hinder the necessary production inputs.

V. CONCLUSION

Based on the findings, the study concluded that Covid-19 pandemic has resulted to serious economic downturn in various sectors of the society. All activities of agriculture are highly affected with serious negative consequences. Various aspect of agriculture ranging from production activities, processing and packaging, and marketing activities were by implication an impediment to successful operation of agricultural activities.

VI. RECOMMENDATIONS

Based on the findings of the study

- Federal government should develop a mobilization initiative for farmers so as to enhance the state agricultural activities and sustain food security in Nigeria
- Government should grant zero interest loan or subsidy programme to farmers to reduce the impact of Covid-19 pandemic on the production capacity of farmers. This will make it easier for farmers to recover from the Covid-19 pandemic damages
- Agricultural education programme should be carried out for farmers on how to sustain their farm production capacity during and after covid-19 pandemic. This will equip the farmers with necessary knowledge to build restriction to Covid-19 pandemic effects on the farm activities.

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