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EFFICIENCY IN RICE PRODUCTION AND AVAILABILITY DURING THE COVID-19 LOCKDOWN: FOCUS ON PRESIDENT MUHAMMAD BUHARI RICE PRODUCTION PROGRAMME IN MINNA, NIGER STATE; NIGERIA

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ABSTRACT

This paper aimed to assess the efficiency in rice production and availability during the covid-19 lockdown, with the objective to determine the success of president Muhammad Buhari rice production programmes in chanchaga local government area of Minna, Niger state; Nigeria. A sampled questionnaire was adopted for data collection. The study area was divided into eleven (11) Wards. The eleven wards are Limawa wards (a & b), Mekera, Minna (central and south), Nasarawa (a, b, c), Sabon-Gari and Tudun (North and South). Salants and Dillman (2007) formula was adopted for sample size selection. Four hundred (400) questionnaires were administered to sampled households. Three hundred eighty-two (382) questionnaires were returned and analyzed using descriptive statistics. The analysis shows that 52.37 percent of the farmers were involved in the RIFAN programme, 52.09% of households responded had no problem with rice scarcity during the covid-19 lockdown. About 200 respondents, which account for 52.36 percent had a low rice production level before the programme, while 51.83 percent of the respondents had their rice increase production level during the ongoing programme. While, in terms of loan accessibility, 46.60 percent of the total respondents accessed their loans easily through commercial banks. However, 75.39 percent of the respondents applauded the local rice production policy, based on the sanity it brought on the suffering from the importation of rice. On the other hand, only 24.61 percent of the respondents has diverse opinions. Among the recommendations that the agricultural programme on rice production be sustained, loans credit facilities accessibility should be made easy to farmers at all levels, and agencies should be constituted for strict monitoring and supervision of the program.

Keywords: Implication, Coronavirus, Food Sustainability, Rice Agricultural Programme



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INTRODUCTION

Coronavirus diseases (COVID-19) are a family of viruses that can cause illnesses such as the Common cold, severe acute respiratory syndrome (SARS). The signs and symptoms of covid-19 may appear two to 14 days after exposure and can include fever, cough, and shortness of breath or difficulty breathing, tiredness, aches, runny nose and sore throat. The preventive measure of this disease is total restriction from the public gathering like markets places, places of worship, ceremonies and transportation, both private and commercial. Restriction implication have enormous adverse effects on human livelihood, because this involved total lockdown of all public activities, countries that solely depend on importation of food and other essential needs always face shortage or scarcity of food supply, causing high cost of living in the country. Nigeria has been rated among the countries with the highest importation of rice in Africa.

Rice is a staple food in several African nations and regularly constitutes a bigger portion of the diet. In the last thirty years, rice has shown constant increases in sales, and its rising significance reflects the strategic food security initiatives adopted in many nations. Aside from a handful of nations that enjoy self-sufficiency in rice cultivation, rice consumption surpasses production, and a substantial amount of the crop are imported to sustain local demand at the expense of hard-earned foreign currency reserves (Lanessa, 2017) .Nigeria is currently the largest rice producing country in Africa. This is as the result of conscientious efforts by the current administration to place more emphasis on home growth production. With the available literature, annual rice production in Nigeria has increased from 5.5 million tons in 2015 to 5.8 million tons in 2017. In 2015, Nigerians spent not less than N1bn on rice consumption, adding that while spending had drastically reduced, consumption had increased because of increased local production of the commodity. The consumption rate now is 7.9 million tonnes and the production rate has increased to 5.8 tons per annum. The increase resulted from the Central Bank of Nigeria (CBN)'s Anchor



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Borrowers Program, with 12 million rice producers and four million hectares of FADAMA rice land (Gana and Ajala, 2015). Total cultivable land in Nigeria is estimated at 82(million hectares), while area suitable for paddy cultivation is estimated at 4.6 million hectares or only 39% is currently utilized. The country is also blessed with untapped (3.14 million) hectares of land suitable for rice irrigation but only about 50,000 hectares is currently utilized. The annual national demand for rice is 5 million tons and the annual production is estimated at 3.4 million tons while the annual national imports stood at about 1.6 2 million tons (Kura, 2009).

In the race to attain self-sufficiency, Nigeria stands apart. Since 2015, under the leadership of President Muhammadu Buhari, the country has taken significant steps to reduce its reliance on food imports, with a focus on the Rice Farmers Association of Nigeria (RIFAN 2017)

After implementing a steep tax increase on imported grains, Buhari blocked food importers' requests for foreign currency to prevent them from being able to pay for imports. Later, in August 2019, the nation was close was borders to prevent rice from being smuggled into the country, most of which comes from Benin. The move aimed to reduce the nation's over reliance on oil which has in the past year proved economically devastating as oil prices plummeted on the global market (Godwin Federic, Olaf 2001). The government is also keen on improving the country's self-sufficiency and reducing the commodity's import burden that currently runs into almost \$400 million annually (Udemezue, 2014). Rice farming in the country has received a boost from the central bank through the Anchor Borrowers Program that avails loans and distributes requisite tools to farmers to boost production. Such measures have helped to boost the productivity of small-scale farmers (who make up 80% of the sector) and encourage large companies (which account for just 20% of producers) to make investments, including domestic leaders such as



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Dangote, Coscharis and BUA, as well as foreign players like Olam and Stallion (aconglomerate owned by the Indian national Sunil Vaswani and headquartered in Dubai).

According to a report 2017, the Federal Ministry of Agriculture director claimed that the country had indeed reached self-sufficiency in the commodity, and that the country's production capacity had reached 15 million metric tons. This would translate to major savings as the country would no longer need to import the commodity. The country in fact consumes about 8 million tons, a figure that rises by about 6% annually (Imolehin and Wada, 2000). Therefore, it is projected that with around 34 states involved in rice cultivation, the country would have a surplus for export by the year 2019. The country is taking steps to control the rampant smuggling that has had a negative impact on local market prices (Gana and Ajala, 2015). With respect to rice production in Nigeria, there is a great disparity between the states of the Federation in rice production output and yield. In 2000, Kaduna State was the largest rice producer, accounting for about 22% of the country's rice out. Niger state accounted 16%, Benue State (10%) and Taraba State 7% respectively. In the dry season, Benue State accounted for the highest output (61%). On a geographical zone basis, central zone was the largest producer of rice in Nigerian, accounting for 44% of total rice output in 2000. North West was the second (29%) while the south west was the least (4%) (Godwin, Federic and Olaf, 2001).

In the past few weeks, as the novel Coronavirus (COVID-19) infection spread to reach pandemic proportions, the impact of COVID-19 on the food security over the locked-down, too much depends on what is not known — how long the outbreak lasts, how many countries it affects, and the type of policies governments have been in place to respond to the crisis. In these contexts, a lockdown of this nature, can exacerbate existing food insecurity. It limits people's ability to access food in different ways, including through reduced income or increased job insecurity (Husain, 2020). While the food and agricultural



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sector should in principle be less affected than others, illness-related labour shortages, transport interruptions, quarantine measures limiting access to markets and supply chain disruptions resulting in food loss and waste could affect supply.

On the demand side, a loss of purchasing power caused by the disease could change people's eating patterns, resulting in poorer nutrition. Panic purchases of food — as those recently witnessed in countries around the world, could break the supply chain and cause localized price hikes. Apart from the food security implications of a COVID-19-triggered economic slowdown, an extensive spread of the disease in a poorer and more food insecure country could take a heavier toll on the economy than in those currently affected (Ayodele and Fagade, 1986).

Countries with high levels of food insecurity are generally more vulnerable and less prepared for an epidemic outbreak and would likely see higher mortality rates (UN 2019) In addition, malnutrition increases vulnerability to disease. Poor people in many countries who rely on rice importation for their food and primary commodities may be faced with the scarcity of these essential commodities or pay for higher prices, because this pandemic has to turn into a food security crisis (Longtau, 2003).

However, Nigeria is the only country out of three African nations ranked amongst the top 20 rice producers in the world (alongside Côte d'Ivoire and Senegal) to have taken the necessary measure to control its importation of rice, this measure .have helped the country in sustaining its domestic rice requirement, during the ongoing covid-19 pandemic (West African Rice Development Association (WARDA) (1996). This paper aimed is to assessed the efficiency in rice production and availability during the covid-19 lockdown, and the objective is to determine the success of president Muhammad Buhari rice production



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programmes in chanchaga local government area of Minna, Niger state; Nigeria as it relates to food security using questionnaire techniques

MATERIALS AND METHODS

Study Area

Minna city serves as the administrative headquarter of Niger State and Chanchaga LGAs, but the township has grown to engulf the suburb like Kpakungu, Barki Saleh and Tunga, Bosso etc. The city has about 6,789 kilometres square of land area and according to the 2006 census, the population is estimated to be 209,341 and a projected population of 286,838 to 2016 using growth rate of 3.2%. The city of Minna is located between the latitude 9°28'0 N and latitude 9°42'0 N and longitude of 6°30' E to longitude 6°35' E. (Master plan, 1979). The north eastern part of the city is characterized by more or less continuous rock outcrop, which hinders urban development. Figure 3 shows Map of Minna metropolis.

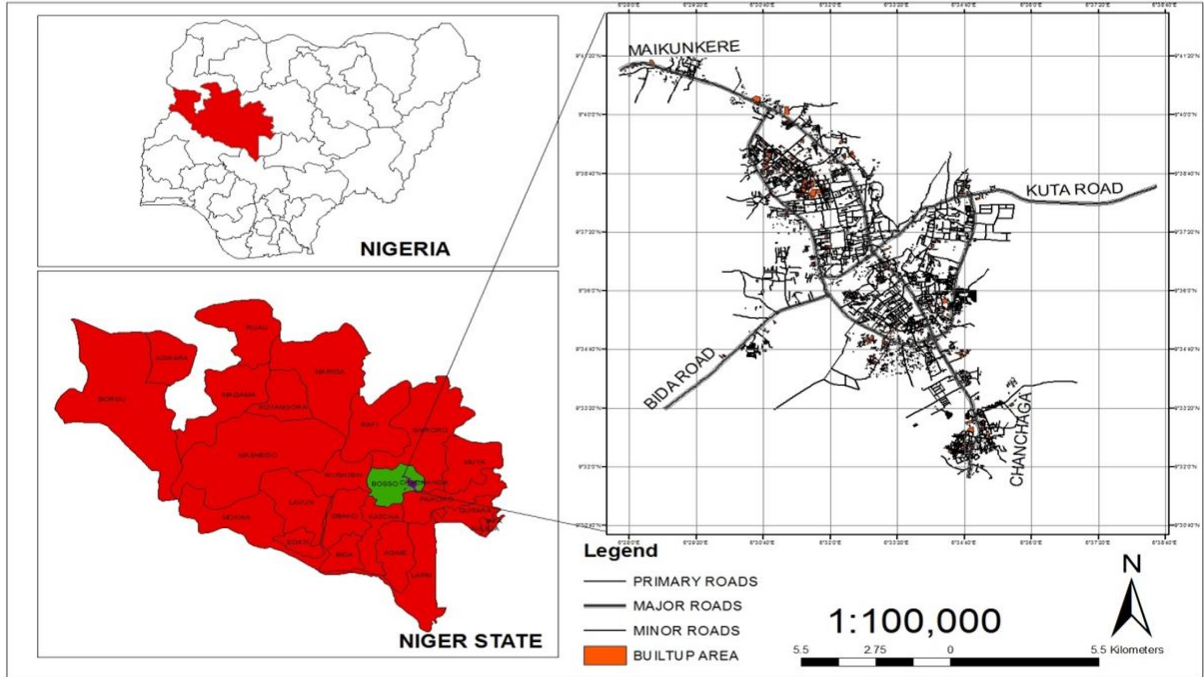


Figure 1: Location of Minna in Niger state
Source: Ministry of Land and Housing, Minna (2013)



Figure 2: Map of Nigeria showing rice producing States



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Table 1: Rice Production Trends in Nigeria from 2000-2019

Year	Production	Unit of Measure	Growth Rate
2000	1979	(1000 MT)	0.66%
2001	1651	1000 MT)	-16.57%
2002	1757	(1000 MT)	6.42%
2003	1870	(1000 MT)	6.43%
2004	2000	(1000 MT)	6.95%
2005	2140	(1000 MT)	7.00%
2006	2546	(1000 MT)	18.97%
2007	2008	(1000 MT)	-21.13%
2008	2632	(1000 MT)	31.08%
2009	2234	(1000 MT)	-15.12%
2010	2818	(1000 MT)	26.14%
2011	2906	(1000 MT)	3.12%
2012	3423	(1000 MT)	17.79%
2013	3038	(1000 MT)	-11.25%
2014	3782	(1000 MT)	24.49%
2015	3941	(1000 MT)	4.20%
2016	4182	(1000 MT)	20.09%
2017	5180	(1000 MT)	22.60%
2018	5080	(1000 MT)	25.20%
2019	5780	(1000 MT)	27.00%

Source: United States Department of Agriculture (2018)

The study was carried out in Niger State, Nigeria. The state is one of the few states in Nigeria that are known for rice production. Proportional sampling technique was employed for the data collection from the eleven wards of Minna Metropolis.

Descriptive statistics was employed for the description of the socio-economic characteristics of the respondents.

The adoption of structured questionnaire; extensively was used for the collection of large volume of data. For the purpose of determining the distribution of sampled size of 400 structured questionnaire, Minna eleven (11) Wards has a total population of 209,341 (2006



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Census) with a population growth rate of 3.2%, (NPC 2006) National Population Commission (NPC) The eleven wards are Limawa wards (a & b), Mekera, Minna (central and south), Nasarawa (a, b, c), Sabon-Gari and Tudun wada (North and South). These 11 wards constitute 100% of the population of Minna metropolis. In order to arrived at the appropriate sample size for the unbiased distribution of questionnaire for study areas populations, Salants and Dillman (2007) sample size formula was adopted based on wards population

$$N_s = \frac{(N_p)(p)(1-p)}{N_p^{-1}(b/c)^{2+(p)(1-p)}}$$

The distributions of questionnaires were presented in (Appendix 1) shows how the 400 copies of questionnaires were distributed among the wards population, sixty-nine (69) copies of questionnaires (17.25%) were allocated to Limawa wards(a & b) while Mekera ward had a total of forty-four (44) 11.00%, Minna (central and south) had a total of ninty-two (92) copies of questionnaires (23.00%) , Nasarawa (a, b ,c) had a total of sixty-six (66) copies of questionnaires (16.50%) , Sabon-Gari ward had a total of sixty-four (64) copies of questionnaires (16.00%), whereas Tudun wards(North and South) sixty-five (65) copies (16.25%) of the questionnaires. On the whole, the percentages of the questionnaires returned were found to be 97.8% meaning that 21 of copies questionnaires (3.2%) were unrecoverable.

$$N_s = \frac{(N_p)(p)(1-p)}{(N_p - 1) / (B/C)^{2+(p)(1-p)}}$$

Where N_s = computed sample size.

N_p = size of population.

P = proportion expected to answer in a most conservative way (at least 99% = 0.5).

B = accepted level of simple error is 0.05,

C = confidence level (95% =1.960)



RESULTS AND DISCUSSION

Socio-economic characteristics of rice sustainability in response to covid-19 lockdown in Chanchaga Local Government Area of Minna. The results of the analysis are presented in Tables and bar-charts. The result reveals various proportional respondents to rice demand during covid-19 lockdown in Chanchaga LGA of Minna.

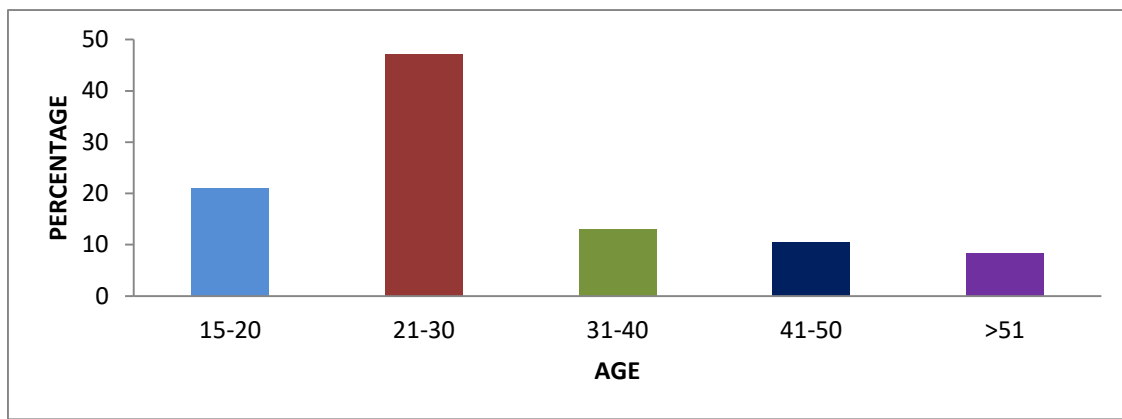
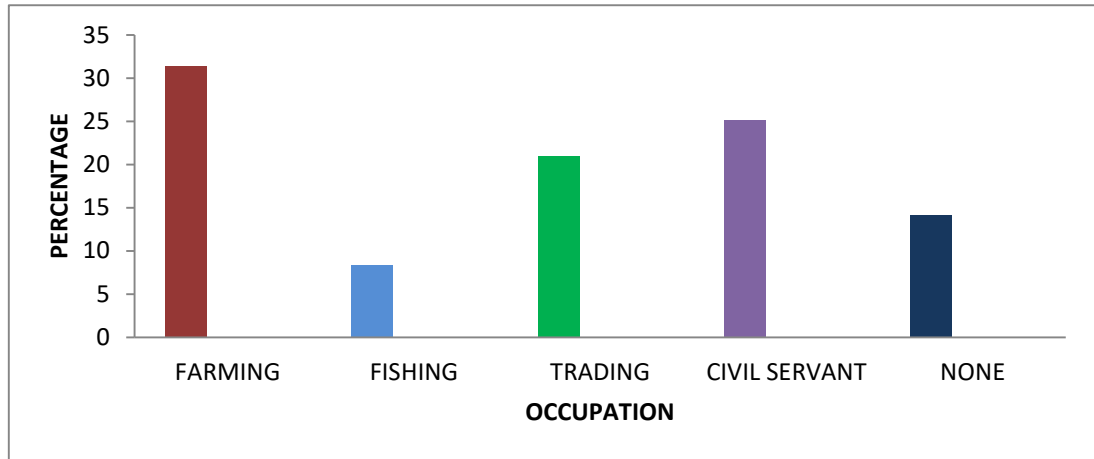


Figure 3: Age classification of Respondents

Source: Computed from field survey, 2020.

Figure 3 above, the age distribution of the respondents indicates that 80 (20.94%) are between the ages of 15-20 years, 180 (47.12%) of the respondents fall between the age group of 21-30years, 50 and accounts for 13.09%, of the age group between 31-40 years, 40 (10.47%) of the respondents are within the age group of 41-50 years, while, 32 of the respondents and accounted for only 8.38% falls above 51 years.



Source: Computed from field survey, 2020.

Figure 4 shows the occupational structure of the respondents interviewed. A large percentage (31%) of the respondents has farming as their main occupation while 32 (8.38%) of the respondents are Fishermen, 80 (20.94%) are in trading, 96 (25.13%) are civil servant, while 54 (14.14%) respondents are either not fitted to any of the above.

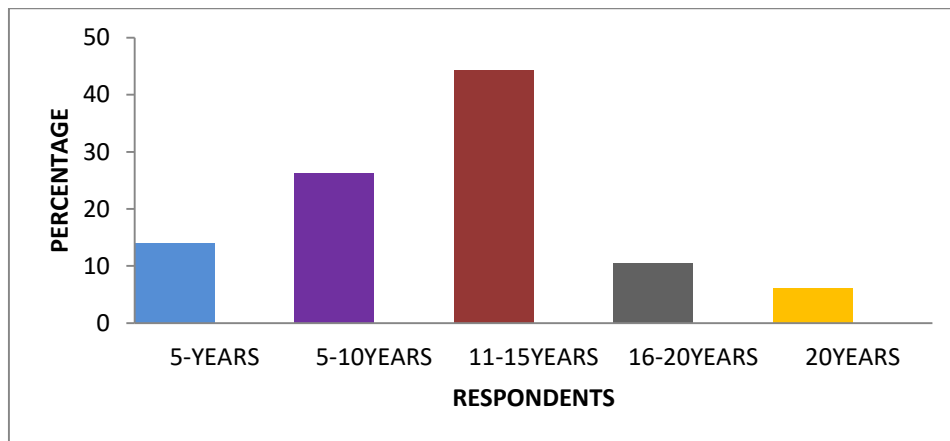


Figure 5: Involved in rice farming?

Figure 5, indicates the duration of the respondents involved in rice farming, 50 of the respondents were engaged in rice farming, but less than 5 years, this account for 13.09 %,



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100 (26.18 %) of the respondents falls within 5-10 years duration of rice farming, 169 of the respondents accounting for 44.24 % were within the rice farming duration of 11-15 years, while 40 and 20 respondents were within the periods of 16-20 and above 20 years respectively. These accounted for 10.4 percents and 6.02 percents of the respondents.

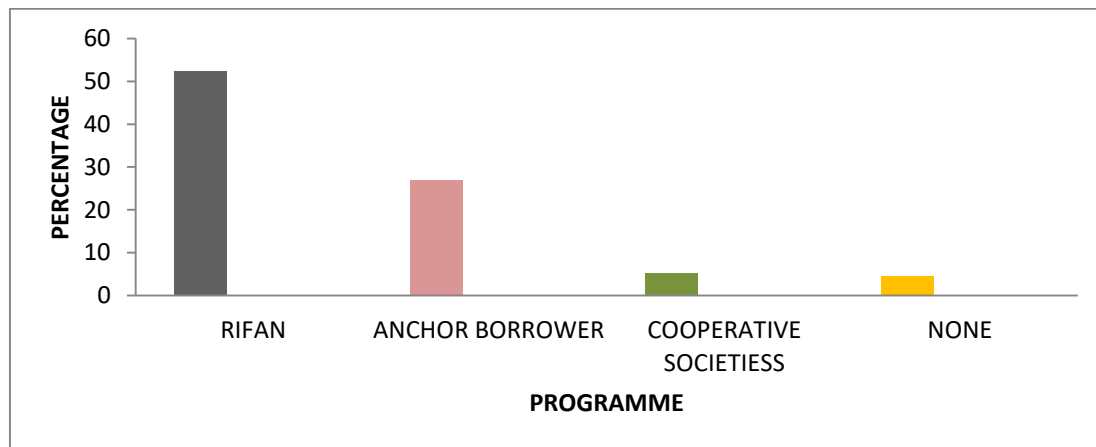


Figure 6 : Are you involved in any of the following rice farming programme

In Figure 6, analysis shows the highest of 200 respondents amounted to 52.37 percent were involved in RIFAN programme, 103 (26.96%) of the respondents were engaged in Anchor Borrower programmes, with only 20 and 59 respondents either rely on cooperatives organizations or none of the respondents involved in any of the above the programmes. This accounts for 5.26 percent and 15.45 percent respectively.

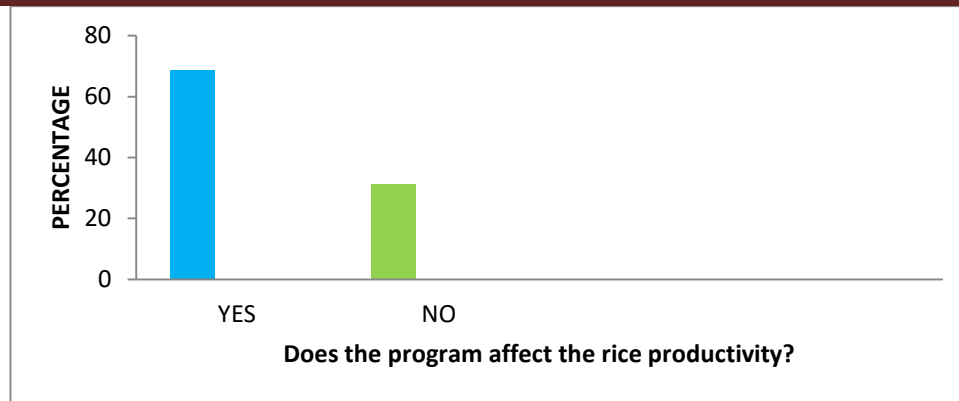


Figure 7: involved in any of the following rice farming programme

The majority of respondents confessed an increase in their productivity level. This is indicated in (Figure 7) with 262 of the respondents, which account for 68.59 percent, while, 120 of the respondents observed no increase in their productivity level

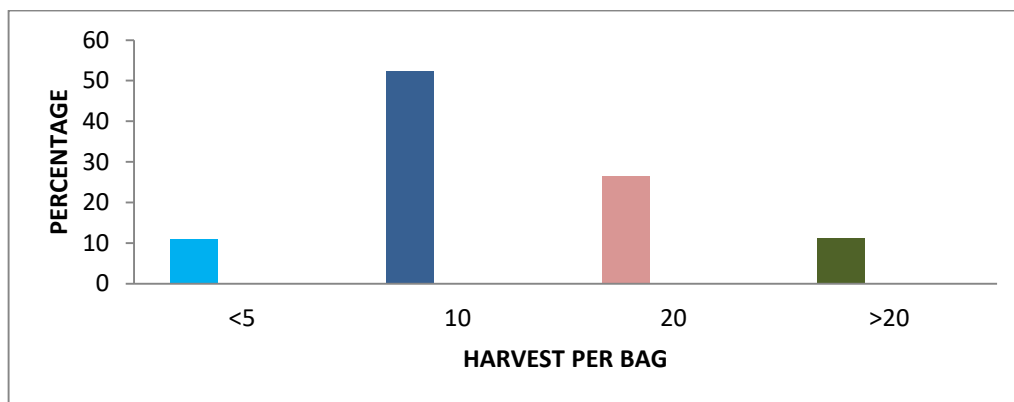


Figure 8: Rice productivity level per bag before the programme?

Figure 8 above, the results obtained from the respondents indicate a stable increase in their productive level per bags. This is indicated in (fig 8), with 200 of the respondents, which account for 52.36 percent of their rice production level before the programme, with 10 bags, while above 20 bags had 43 of the respondents indicating their productivity level



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before the programme. 42 and 97 of the respondents indicates their production level of 5 bags and 10 bags accounts for 10.99 percent and 26.39 percent respectively before the programmes. The survey did not inquire on the extent of price increases of the rice in the market

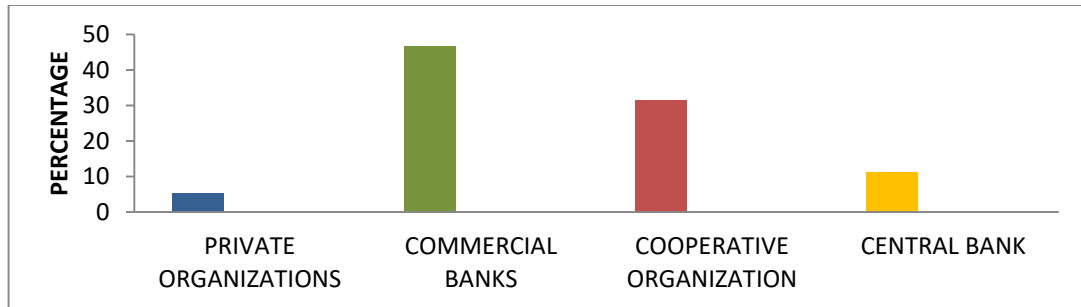


Figure 9: Does the programme enable you to access loan easily through

The result of this survey from (fig 9) show that (46.60 percent) of the total respondents access their loan easily through the commercial banks, (31.41 percent) obtain their loan through cooperative organization, while 5.24 percent and 16.75 percent of the respondents have their loan access through private organizations and Central bank respectively. The cursory observation of the study revealed that loan facility accessibility were made flexible to enable the success of the ongoing programme.

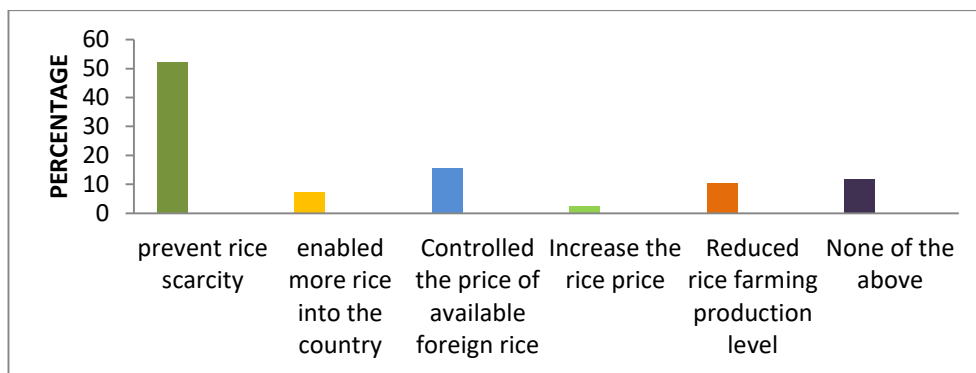


Figure 10: What way does rice farming programme assisted during the covid-19 lockdown?



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From table 10, a cursory observation of the study areas shows that most of the households responded have no problem of rice scarcity during the covid-19 lockdown, as indicated. This as result of home grown rice prevents rice scarcity. However, 52.09 percent of respondents has this view during the fieldwork, this account for 199 or two-third of the population of the respondent, with the others having a diverse opinion. Those in this categories are indicated in (table 10) above, with insignificant percentages.

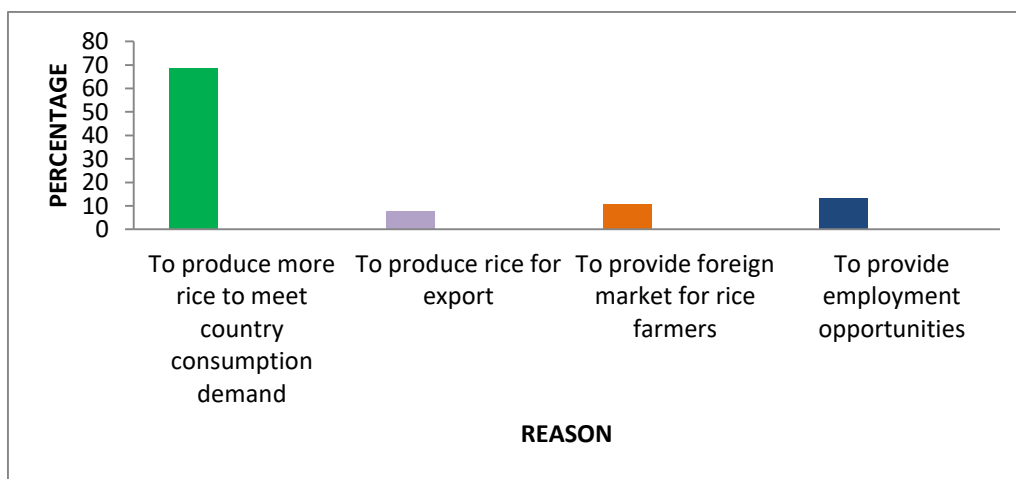


Figure 11: What do you think is the reason for initiating the programme

From figure 11, the analysis of the study shows that most of the respondents unanimously indicates their reason for initiating the programmes is to produce more rice to meet country consumption demand. About 262 of the respondents from the study areas indicated their reasons for initiating the programme, this accounted for 68.59 percent of the total population of the respondents. Other with diverse opinion were shown in the (table 11) with the least category of respondents 7.85 percent at the insignificant level.

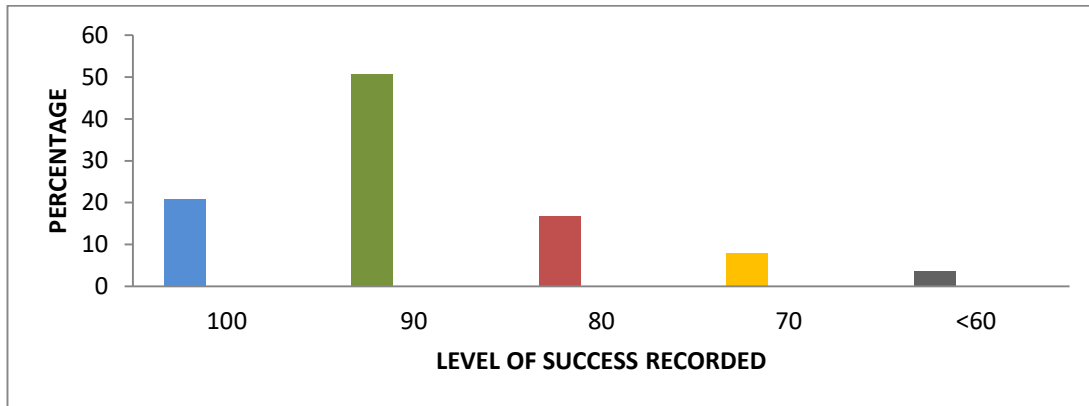


Figure 12: What is the level of success recorded by the programme?

From figure 12, it is observed from the study that most of the respondents have clearly without bias that the home grown local rice have achieved significant level of success during the covid-19 lockdown, with 194 of the respondents, which accounted for 50.79 percent. Other respondents opinion are indicated insignificant percentages of 3.66 percent.

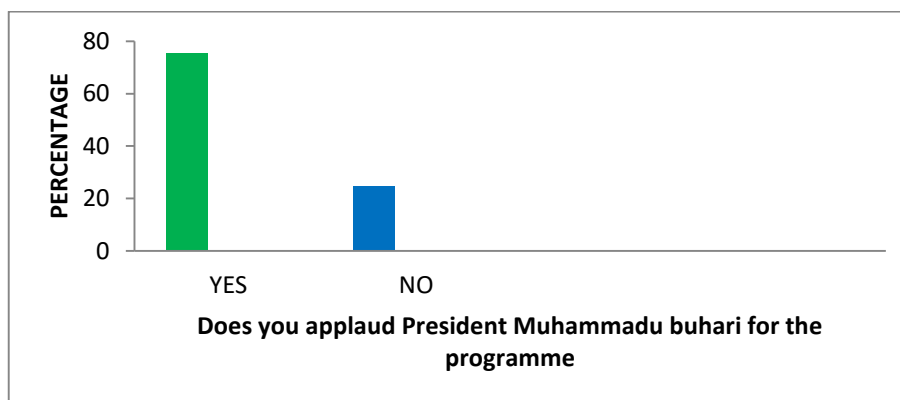


Figure 13: Do you applaud President Muhammadu Buhari for the programme?

The results of this survey as conundrum observed from (figure 13) of the study shows that mos respondents applaud the administration for rolling out the programme, and based on focus-group interviewed that despite sustaining food security in it has enable many to be



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self-employed, and that the result of home grown rice, provide sanity and check to illegal importation rice into the country. However, 75.39 percent of respondents has this view during the fieldwork, this account for 288 or two-third of the population of the respondent, with the others having a diverse opinion. Those in this categories are indicated in (table 13) above, with insignificant percentages of 24.61 percent.

CONCLUSION

This study examined the efficiency in rice production and its availability during covid-19 lockdown in Nigeria (A case of Minna metropolis) Niger State.

Proportional sampling technique was employed to collect data from eleven wards. Descriptive statistics was employed for data analysis. This study shows that the greatest proportion of the results shows that 52.37 percent of the farmers were involved in RIFAN programme, 52.09 percent of households responded that there was no rice scarcity during the covid-19 lockdown. About 200 of the respondents, which account for 51.83 percent had low rice production level before the programme, while, 52.36 percent of the respondents had their rice increase production level during ongoing programme. While, in terms of loan accessibility, 46.60 percent of the total respondents accessed their loan easily through the commercial banks. However, 75.39 percent of the respondents applaud the policy on local rice production, based on the sanity it brought on the suffering from importation of rice. Only 24.61 percent of the respondents has diverse opinions.

The conscientious efforts by the current administration to place more emphasis on local rice/ home growth rice production, has reduced drastically the rate of rice scarcity during the covid-19 lockdown, as indicated from the research. The increase was as a result of the Central Bank of Nigeria (CBN)'s Anchor Borrowers Program loans to 12 million Rice



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Farmers Associations of Nigeria (RIFAN) for the cultivation and production of rice to meet up with the high demand locally.

The Statistics of rice production in Nigeria clearly shows that the country needs 7 million metric tons of its local demand, but Nigeria is capable to supply only 49% of domestic demand. However, rice production in Nigeria keeps growing, but yet to meet with the domestic demand This is because the consumption rate now stood at 7.9 million metric tonnes and the production rate has increased to 5.8 million tons from 5.5 million metric tonnes per annum.

In the light of this, both private and public sectors should intensify more efforts towards domestic rice production to meet the demand of the citizens at affordable price.

RECOMMENDATION

The government should begin to pay more attention in rice farming in all seasons, because government spent so much money on the importation of rice. Government should strengthened the home base rice production through its Anchored borrower and RIFAN rice production programs, by supplying subsidized rice seeds and fertilizer to Nigeria's farmers to boost agriculture and food security to cope with any disruptions resulting from the pandemic. This programme will helped in boosting rice processing and packaging for exportation, and enable the country becoming self-sufficiency. Borders closure should be comprehensive and sustained to prevent smuggling of foreign rice into the country. Furthermore, loans facilities should be made available and accessible for local farmers, to enable them embark on massive production of rice. Government should encourage farmers by offering market packages for rice value chain drivers, so that they will be able to buy the surplus from the farmers immediately and pay them. There should be synergy in operations



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between various stakeholders in rice value chain. Sensitize the Nigerian public for the need to patronize the Nigeria rice.

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APPENDIX: Showing Tables of Results Distributions

Appendix i

$$N_s = \frac{(Np)(p)(1-p)(Np-1)}{(B C)^2 + (p)(1-p)}$$

Where N_s = computed sample size.

N_p = size of population.

P = proportion expected to answer in a most conservative way (at least 99% = 0.5).

B = accepted level of simple error is 0.05,

C = confidence level (95% = 1.960)

Table 2: Distribution of Questionnaires among the Wards Pop of Minna areas

S/	L.G.A wards	Projected Population	Sample size Questionnaire	%	Rate of returned	% of returned
1	Limawa (a&b)	45,438	69	17.25	65	17.01
2	Mekera	28,621	44	11.00	51	13.35
3	Minna (central & south)	62,756	92	23.00	78	20.42
4	Nasarawa (a,b,c)	44,902	66	16.50	67	16.75
5	Sabon gari	41,636	64	16.00	60	15.00
6	Tudun wada (north & south)	41,952	65	16.25	61	15.25
TOTAL		262095	400	100.0	382	97.78

Source: Computed from field survey, 2020.



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Appendix ii Age classification of respondents

	Number of Respondents	Percentage(%)
<5years	50	13.09
5-10years	100	26.18
11-15years	169	44.24
16-20years	40	10.47
>20years	23	6.02
Total	382	100.00

Source: Computed from field survey, 2020.

Appendix iii Table 4: What is your Occupation

Occupation	Number of Respondents	Percentage(%) of Respondent
Farming	120	31.41
Fishing	32	8.38
Trading	80	20.94
Civil Servant	96	25.13
None	54	14.14
Total	382	100.00

Source: Computed from field survey, 2020.

Appendix iv Table 5: involved in rice farming? Appendix v

Table 6: Are you involved in any of the following rice farming programme

Age	Number of Respondent	Percentage(%) of Respondent
15-20	80	20.94
21-30	180	47.12
31-40	50	13.09
41-50	40	10.47
>51	32	8.38
Total	382	100.00



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Programme	Number of Respondents	Percentage(%)
RIFAN	200	52.37
Anchor Borrower	103	26.96
Cooperatives Societies	20	5.26
None	59	15.45
Total	382	100.00

Source: Computed from field survey, 2020.

Appendix vi

Table 7: rice productivity level per bag during ongoing programme?

	Number of Respondents	Percentage(%)
Yes	262	68.59
No	120	31.41
Total	382	100.00

Source: Computed from field survey, 2020.

Appendix vii

Table 8: rice productivity level per bag before the programme?

Harvest per bag	Number of Respondents	Percentage(%)
< 5bags	42	10.99
10bags	200	52.36
20bags	97	26.39
>20 bags	43	11.26
Total	382	100.00

Source: Computed from field survey, 2020.



Appendix viii

Table 9: Does the programme enable you to access loan easily through

	Number of Respondents	Percentage(%)
Private organizations	20	5.24
Commercial bank	178	46.60
Cooperative organisation	120	31.41
Central Bank	64	16.75
Total	382	100.00

Source: Computed from field survey, 2020.

Appendix ix

Table 10: What way does rice farming programme assisted during the covid-19 lockdown?

	Number of Respondents	Percentage(%)
Prevent rice scarcity	199	52.09
Enabled more rice into the country	28	7.33
Controlled the price of available foreign rice	60	15.71
Increase the rice price	10	2.62
Reduced rice farming production level	40	10.47
None of the above	45	11.78
Total	382	100.00

Source: Computed from field survey, 2020



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Appendix x

Table 11: What do you think is the reason for initiating the programme

Reason	Number of Respondents	Percentage (%)
To produce more rice to meet country consumption demand	262	68.59
To produce rice for export	30	7.85
To provide foreign market for rice farmers	40	10.47
To provide employment opportunities	50	13.09
Total	382	100.00

Source: Computed from field survey, 2020.

Appendix xi

Table 12: What is the level of success recorded by the programme?

	Number of Respondents	Percentage (%)
100%	80	20.94
90%	194	50.79
80%	64	16.75
70%	30	7.85
<60%	14	3.66
Total	382	100.00

Source: Computed from field survey, 2020.

Appendix xii

Table 13: Do you applaud President Muhammadu Buhari for the programme?

	Number of Respondent	Percentage(%)
YES	288	75.39
NO	94	24.61
	382	100.00

Source: Computed from field survey, 2020.