International Journal of Applied and Scientific Research (IJASR)
Vol. 2, No. 7, 2024 : 597-610

Analysis of Youth Engagement in Rice Production in North Central, Nigeria

Agbonika D.A[1*], Idisi P.O[2]
University of Abuja
Corresponding Author: Agbonika D.A doraagbonika@gmail.com

ARTICLE INFO

Keywords: Rice, Rice Production, Youth Engagement, North-Central

Received : 29, May
Revised : 09, June
Accepted: 23, June

ABSTRACT

This study evaluated youth engagement in rice production in selected states of north central, Nigeria. In this study, primary data was used and the data was collected through the use of structured questionnaire. Data collected were analysed using descriptive statistics, stochastic production frontier. The results showed that 79% of the producers were male. This indicates the dominance of male in rice production. Among the producers, youths who are ≤ 20 years (24%) engaged in weeding, 20% of youths who are 21-30 years engaged in land clearing activities. Determining the technical efficiency in rice production seed ($p<0.01$), fertilizer ($p<0.01$), labour ($p<0.01$) were among the significant factors. Result of the inefficiency model of technical efficiency revealed that sex, age, marital status, educational status had positive coefficient. Variability in prices of rice was ranked as the foremost constraints militating against the performance of rice producers as asserted by 95% of the respondents. From the finding it is therefore, recommended that rice producer should be encouraged and sensitized in their production activities in order to attain self-sufficiency in rice production.

ISSN: 3025-7670
DOI: https://doi.org/10.59890/ijasr.v2i7.2179
https://journal.multitechpublisher.com/index.php/ijasr/

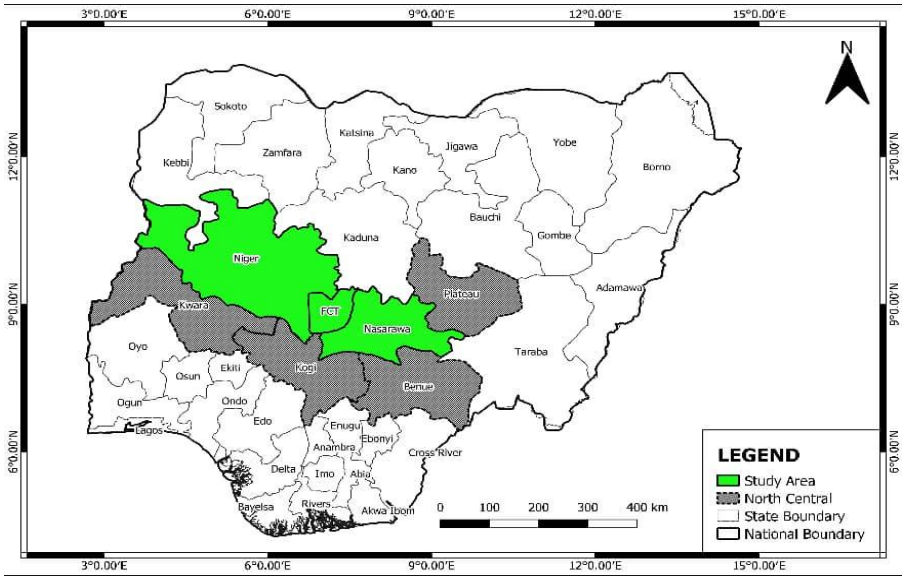
INTRODUCTION

According to Kadiri *et al.*, 2014 rice is the second largest produced cereal in the world after wheat. Rice is one of the major cereal crops of the tropical regions of the world. Among the staple food crops in Nigeria it ranks second (Nwele, 2016). In 2001, Akpokodje, Lancon and Erenstein opined that about 60 per cent of the world population depends on rice which is the fourth major cereal in Nigeria after sorghum, millet, and maize.

In order to boost local production of rice, Nigerian government came up with a range of programmes in consideration of rice importance in the food security of urban and rural households in Nigeria. These include, the Nigerian National Rice Development Strategy (NRDS) set up in 2009, aimed at making the country self-sufficient in rice by raising paddy rice production from 3.4 million tonnes in 2007 to a targeted 12.8 million tonnes in 2018. Towards achieving this level of production, the priority focal areas looked into includes; – the improvement of post-harvest processing and treatment; fertilizer and farming equipment availability; development of irrigation and extension of cultivated lands; and seeds making. The presidential initiative on Rice, which was implemented from 2001 to 2007 centred on developing rice production, processing and exports, also aimed at achieving self-sufficiency and increased exports by 2007. Despite all policy measures by successive governments, the local rice production has not increased sufficiently to meet the increased demand (Aiyedun, 2013). Federal Ministry of Agriculture (1995) was of the opinion that the inability of Nigeria rice sub-sector to meet the domestic demand could be attributed to low productivity, resource use inefficiency, inability of older farmer in accepting new technology, macro-economic environment disincentives and large proportion of rice cultivation in the hands of small scale and old farmers. As a result of this, national Agricultural Transformation Agenda tagged Agricultural Transformation Action Plan (ATAP) was established in 2012 through the development of value chain in selected key crops such as: rice, cassava, sorghum, cocoa and cotton. According to Agbonika (2021) youth engagement in rice value chain is very necessary in order to boost the agricultural sector's contribution to the nation's Gross Domestic Product (GDP) and Gross Human Index (GHI). The contribution of agriculture was averagely 47 per cent between 1965-1969, this declined to 35 per cent between 2002-2004 (Amaza and Maurice, 2005), and to 17.6% in 2007 (FAO, 2008). Youth engagement in agriculture generally has significant impact in increase production (Obinne, 1998), so, their engagement in rice production and its value chain has the potential to bring about self-sufficiency in national rice production (Agbonika, 2021). The annual rice demand is estimated to be 5 million metric tonnes, while production is averagely 2.21 million metric tonnes, and the annual demand deficit of 2.79 million metric tonnes is covered by importation National Rice Development Strategy (NRDS, 2009, Aiyedun, 2013, Agbonika, 2021). On rice importation, Nigeria spends ₦360 billion annually (Adekunle, 2013). The demand for polished, odourless, stone less rice has been on the increase by urban dwellers, raising the desire for importation despite the fact that rice is grown in all zones of the nation, and the output is capable of

meeting domestic demand with exportable surplus. This high level of importation has led to import substitution, by way of the Nigeria government placing very high duties (over 100 per cent) on imported rice in order to promote local production of rice. The government also subsidises most of the inputs by providing; fertilizers, mechanization services and credits. In spite of these, the production increase is not sufficient to service local rice production in the hands of our aged farmers which provide few incentives for upgrading. Rice production activities are numerous therefore the need to engage young and energetic farmers to encourage sustainability (Agbonika, 2021).

METHODOLOGY



This research was carried out in north-central region of Nigeria. Nigeria is found in the west of Africa. The North-central of Nigeria consists of seven States which include; Benue, Kaduna, Kogi, Kwara, Nasarawa, Niger, Plateau and Federal Capital Territory (Abuja). A representative sample was selected using multistage sampling techniques (which involve four stages). Three states: Niger state, Federal Capital Territory (FCT), and Nasarawa state were purposely selected due to their relatively high strength in rice production.

Nigeria State lies on latitude 80° to 11°:30′ North and Longitude 03° 30′ to 07° 40′ East. The State is bordered to the North by Zamfara State, West by Kebbi State, South by Kogi State, South West by Kwara State, North-East by Kaduna State and South East by FCT. The State also has an International Boundary with the Republic of Benin along Agwara and Borgu LGAs to the North West. The land mass is 76, 469.903 Square Kilometers (about 10% of the total land area of Nigeria) out of which about 85% is arable. The state has a poplation of 6,407,568 according to NSB (2O2O) .

Federal Capital Territory (FCT) Abuja is located between latitudes $9^{0}25'$and $9^{0}21'$ north of the Equator and Longitudes $6^{0}45'$ and $7^{0}39'$ east of the Greenywich meridian. Abuja shares boundary with Kaduna State to the north, Niger State to the west, Nassarawa and Kogi States to the east and south respectively with a population of 2,820,261 (NBS, 2020)

Nasarawa state lies between latitude 7^0 and 45′ and between 7^0 and 9^0 37′ E of the Greenwich meridian (Marcus and Binbol, 2007). Nasarawa State is centrally located in the Middle Belt region of Nigeria. It shares boundary with Kaduna state in the North, Plateau State in the East, Taraba and Benue states in the south while Kogi and the Federal Capital Territory flanks it in the West. The state has a total land area of 26,875.59 square kilometers and a population of about 2,712349 according to the 2020 population Census estimate with a density of about 67 persons per square kilometer (NBS, 2020)

A multi-stage sampling procedure was used in selecting the sample size for the study. Three states were purposively selected, that is; Niger, Federal Capital Territory (FCT) and Nasarawa states because of their high involvement in rice production. The first stage involve the stratification of the three state into agricultural zones respectively, secondly, two local government areas were selected per state namely; Bida, and Wusisi from Niger state, Gwagwalada, and Abaji from FCT, and Lafia, and Nasarawa from Nasarawa state. The LGA selection was based on the dominance of rice farming in the LGA's and their representation of the agricultural zones. A total of six Local Government Areas was selected. Thirdly, from each selected LGA, four villages were purposively selected for the same reason to give a total of twenty four villages. At the fourth stage ten rice farming household were selected from the villages. The list of rice farmers in the Local Government Areas obtained from the Agricultural Development Programme (ADP) office formed the sample frame of farmers. The target respondents were youth; therefore from the sample frame of each state the youth rice farmer's pool was used. Ten rice-farming households were proportionately sampled from the twenty four villages to give a sample size of 240 rice farmers. Primary data was collected using structured questionnaires. For the analysis descriptive statistics and stochastic production frontier was used.

RESEARCH RESULT AND DISCUSSIONS

The engagement of youths in rice production

Table 1 show the distribution based on the engagement in rice production. It was found among the producers that youths who are ≤ 20 years (24%) engaged in weeding, 20% of youths who are 21-30 years engaged in land clearing activities, while, 32% of the youths under the ages of 31-40 years engaged in weeding and application of agrochemical. Weeding and agrochemical application constituted the major production activities engaged in by youths in the study area, depicting that youth's engagement in rice production was observed in weeding and agrochemical application. The engagement of youths in rice production activities inferred that they were born into the activities socialized into the activities and was found to have developed sufficient ruggedness suitable for rice production right from their tender age.

Table.1: Estimate of the Engagement of Youth in Rice Production

Activities	Age categories of producers							
	≤ 20			21-30			31-40	
Producers(n=210)	**Freq.**	**Percent**		**Freq.**	**Percent**		**Freq.**	**Percent**
Land clearing	15	20		20	18		2	8
Land preparation	1	1		6	6		0	0
Nursery	2	3		5	5		0	0
Transplanting	2	3		5	5		0	0
Fertilizer application	12	16		6	6		0	0
Weeding	18	24		14	13		8	32
Application of agrochemical	12	16		16	15		8	32
Harvesting	8	11		14	13		6	24
Threshing/winnowing	1	1		8	7		0	0
Bagging	5	7		15	14		1	4
Total	**76**	**100**		**109**	**100**		**25**	**100**

Technical efficiency of rice production

The result on table 2 shows that, the estimated sigma square (0.790) was significant ($p<0.10$), indicating the goodness of fit and the correctness of the specified distribution of the composite error term. The output of rice production function of the sampled respondents revealed that the estimated coefficient (0.871) for seed was significant ($p<0.01$) and positive, depicting that seed was a technical efficiency enhancing input. This implies that application of improved seed increased output by 0.871, this could be attributed to the good utilization of the resources. This finding is in tandem with Omaore *et al*. (2017) and Ayinde *et al.* (2017), who stated that increase in access to improved seed usage will lead to increase in technical efficiency. The estimated coefficient (0.805) for fertilizer was also significant ($p<0.01$) and positive. This indicated that the fertilizer was a technical efficiency enhancing input, that is, the application of 1 kg of fertilizer increased rice producer's output by 0.805. This finding is attested to the finding of Alabi *et al*. (2012) who opined that application of 1 kg of fertilizer increased rice farmer's output by 0.455. A positive relationship between fertilizer and output was equally obtained by Omonona *et.al* (2010). Also, it was found that the coefficient (0.434) for labour was significant ($p<0.01$) and positive. This indicated that labour was technical efficiency enhancing input. Result of the inefficiency model of technical efficiency as shown revealed that estimated coefficients of the inefficiency function provided some explanations for the relative efficiency levels among individual rice producers (Fasasi, 2007). The positive coefficient of sex of the respondents implied that sex increases technical inefficiency; indicating that they had reduced technical efficiency among men. This result does not agree with the result by Ayinde *et al.* (2017) who stated that sex increases technical efficiency among men, depicting that the men are more likely to be technically efficient than the women. The positive coefficient of age of the rice farmers, implies that the older the farmers the higher the technical

inefficiency; implying that they had reduced technical efficiency. It implies that the older a farmer is, the higher will be the level of technical inefficiency or the lower will be his technical efficiency in farming. This agrees with the findings of Kolawole and Ojo (2007) in their study of small scale farmers in Nigeria.

The positive coefficient of marital status of the rice farmers implies that marital status increased technical inefficiency; this shows that they had reduced technical efficiency among the married people. This could be attributed to the immense responsibilities of married rice farmers in meeting the income needs of their household members.

The positive coefficient of educational status of the respondents, shows that rice producers with higher number of years of formal education had increased technical inefficiency; indicating a reduced technical efficiency. This implies that, education has a positive impact on the technical efficiency of farmers. That is, the more educated a rice farmer, the higher his technical efficiency because education enhances farmer's ability to accept and evaluate useful information as well as improving labour quality.

Table 2: Maximum likelihood estimates of stochastic production function of rice producers

Variables	Parameters	Coefficient	Standard-error	T-value
Efficiency Model				
Constant	β_0	2.463	0.977	2.522
Seed	β_1	0.871***	0.269	3.238
Fertilizer	β_2	0.805***	-0.092	-8.751
Agrochemical	β_3	0.947	0.719	1.316
Labour	β_4	0.434***	-0.041	-10.611
Farm size	β_5	0.719	0.903	0.797
Inefficiency Model				
Constant	Z_0	0.914	-0.575	-1.590
Sex	Z_1	0.825***	0.184	4.482
Age	Z_2	0.073***	-0.026	-2.872
Marital status	Z_3	2.191***	0.641	3.419
Household size	Z_4	0.338	0.941	0.359
Educational status	Z_5	0.339*	0.176	1.927
Experience	Z_6	0.242	0.466	0.519
Diagnostic statistics				
Sigma-squared		0.790*	0.402	1.967
Gamma		0.001	0.003	0.238
Log likelihood function		-196.971		
LR test		11.138		

Note: *** and * denotes Significant at the 0.01 and 0.10 probability levels.

The allocative efficiency of rice production

Table 3 shows that the estimated sigma square (0.031) was significant ($p<0.01$) and this indicated the goodness of fit and the correctness of the specified distribution of the composite error term. The gamma was estimated at 0.997, suggests that the systematic influences that are unexplained by the production function are the dominant sources of errors. This means that 99.7% of the variation among the rice farms in the study area is due to differences in allocative efficiency. The log-likelihood function was -196.971, this showed the goodness of fit of the model. It was revealed that the estimated coefficient (0.007) for agrochemical cost was positive and significant ($p<0.01$), depicting that agrochemical cost were allocative efficiency enhancing input. This is to say that, it is an efficient tool for pest management for increased revenue, depicting that agrochemical usage for weeding and pest control in rice production enhance cost saving. This is closely related to the findings by Alabi *et al.* (2015) who reported that using agrochemical for weeding and pest control enhance cost saving and had positive coefficient and significant effect on allocative efficiency. Also, it was found that the coefficient (0.003) for rent on land was positive and significant ($p<0.01$). This indicated that rent on land were technical efficiency enhancing input. This implies that increase access to land rental for usage will lead to an increase in allocative efficiency. This finding is at variance with the findings by Haruna *et al.* (2016) who reported that as the number of plots increases, the farmer's allocative efficiency decrease, they posit that the farm plots were not located in one place and this makes the management of resources difficult. Result of the inefficiency model of allocative efficiency is presented in Table 3. The negative coefficient of age of the respondents, implies that the older the farmers the lower the allocative inefficiency; indicating that they had increased allocative efficiency. This suggests that the older the rice farmers the more inefficient they become. The negative coefficient of marital status of the respondents, implies marital status decreased allocative inefficiency; indicating that they had increased allocative efficiency. This explains how married individuals contribute directly or indirectly to household food supply and food security. Also it could improve their efficiency level, if there is togetherness in day –to day operation and decision making (Zaknayiba *et al.*, 2018).The positive coefficient of household size of the respondents, implies that the larger the household the higher the allocative inefficiency; indicating that they had reduced allocative efficiency. This finding is at variance with finding by Stephen (2015), who stated that household size was significant and increases efficiency of farmers

The positive coefficient of educational status of the respondents, implies that rice producers with higher number of years of formal education had increased allocative inefficiency; indicating that they had reduced allocative efficiency. It is expected that allocative efficiency increase as the number of years spent acquiring formal education increases, but the results showed that the higher the number of years of formal education, the lower the allocative efficiency. This could be as a result of attention shift to other non-farm activities as more time is taken by the educated farmers in acquiring more education.

The negative coefficient of experience of the respondents, implies that the more the experience the lower the allocative inefficiency; indicating that they had increased allocative efficiency. This suggests that more years of experience enhance famer's efficiency in production because they would be knowledgeable of the right management practices for higher output and cost saving. This agrees with Buba and Mamuda (2018), who reported that farming experience was negative and statistically significant at 5% level of probability.

Table 3: Maximum likelihood estimates of stochastic cost function of Rice Producers

Variables	Parameters	Coefficient	Standard-error	T-value
Efficiency Model				
Constant	β_0	11.877	4.540	2.616
Seed cost	β_1	0.052*	-0.028	-1.833
Fertilizer cost	β_2	0.002	0.002	1.208
Agrochemical cost	β_3	0.007***	-0.002	-3.473
Labour cost	β_4	0.005	-0.006	-0.779
Rent on land	β_5	0.003***	0.001	3.936
Inefficiency Model				
Constant	Z_0	0.414**	0.185	2.239
Sex	Z_1	0.041	0.044	0.915
Age	Z_2	-0.041***	0.016	-2.518
Marital status	Z_3	-0.162**	0.073	-2.227
Household size	Z_4	0.082***	0.031	2.678
Educational status	Z_5	0.188***	0.074	2.546
Experience	Z_6	-0.126***	0.039	-3.189
Diagnostic statistics				
Sigma-squared		0.031***	0.009	3.561
Gamma		0.997	0.144	6.903
Log likelihood function		-358.452		
LR test		164.129		

Note: ***, ** and * denotes Significant at the 0.01, 0.05 and 0.10 probability levels.

Level of technical, allocative and economic efficiencies of rice producers

Presented in Table 4 is the result of the frequency distribution of rice producers' technical efficiency, allocative efficiency and economic efficiency. The mean technical efficiency of the rice farm household was 0.837; suggesting that the rice producers were 83.7% technically efficient. About 34.3% of the rice farm households fell in the technical efficiency class interval of between 0.96 and above. However, 1.4% of the respondents had technical efficiency of 0.46-0.55 efficiency score. In addition, Table 4 showed the result of the allocative efficiency scores of the rice producers. The mean allocative efficiency of the rice producers was 0.95. This implied that the rice producers produced at minimum total production cost and were 95.0% allocative efficient. It was found that 70.5% of the respondents fell in the allocative efficiency class interval of between 0.96 and above. The worst rice producers had an allocative efficiency of 0.668. The result further showed that the respondents attained a range of economic efficiency as shown in Table 4. The mean economic efficiency of the rice producers was 0.80. This connotes that the respondents were 80.0% economically efficient. Also, 30.0% of the rice producers fell in the economic efficiency class interval of between 0.96 and above, while only 3.8% of the respondents attained the least economic efficiency of 0.47.

Table 4: Level of Technical, Allocative and Economic Efficiencies of Rice Producers

Efficiency range	Technical			Allocative			Economic	
	Freq	Percent		Freq	Percent		Freq	Percent
0.46-0.55	3	1.4		0	0.0		8	3.8
0.56-0.65	20	9.5		0	0.0		33	15.7
0.66-0.75	55	26.2		4	1.9		49	23.3
0.76-0.85	28	13.3		9	4.3		38	18.1
0.86-0.95	32	15.2		49	23.3		19	9.0
0.96 and above	72	34.3		148	70.5		63	30.0
Total	210	100		210	100		210	100
Mean	0.837			0.952			0.798	
Minimum	0.487			0.668			0.469	
Maximum	0.990			0.998			0.988	

Constraints Militating Against the Performance of Rice Producers

Variability in prices of rice which was indicated by 95% of the respondents was the foremost constraints militating against the performance of rice producers as presented in Table 5. The next was inadequate knowledge of post-harvest handling and technique and inadequate storage facilities alluded to by 92% of the respondents. Poor access to production credit was ranked fourth by 86% of the respondents. Poor access to markets, Poor market information and unavailability of modern and affordable processing facilities was ranked fifth, sixth and seventh by 84%, 82% and 80% of the respondents, respectively. Study by Chetana, Sarthak, Bipin and Sudarshan, (2019) found the following constraints faced in rice paddy production; high cost of the farm equipment, lack of access to market information, lack of access to credit, poor infrastructure and access to market, unavailability of the post-harvest technology and intensive land preparation.

Table 5: Constraints faced by Rice Producers in the study areas

S/no	Constraints	Freq.	Percent	Ranking
1	Variability in prices of rice	199	95	1st
2	Low productivity	44	21	15th
3	Pests and diseases	32	15	16th
4	Poor access to markets	176	84	5th
5	Inadequate knowledge of post-harvest handling and technique	194	92	2nd
6	Inadequate storage facilities	193	92	2nd
7	Poor access to production credit	181	86	4th
8	Poor access to inputs	158	75	9th
9	Poor market information	172	82	6th
10	Competition from imported rice	161	77	8th
11	Unavailability of modern and affordable processing facilities	167	80	7th
12	Climate change	138	66	11th
13	Unavailability of irrigation facilities	120	57	12th
14	Poor access roads	69	33	13th
15	Lack of favourable government policy	49	23	14th

16	Lack of timely access to improved seeds and other inputs	143	68	10th

** ***Multiple choices response***

CONCLUSIONS AND RECOMMENDATIONS

This study assessed youth participation in rice farming in selected states of north-central Nigeria. The research utilized primary data collected through structured questionnaires. The collected data were analyzed using descriptive statistics and a stochastic production frontier. The findings indicated that 79% of the producers were male, highlighting the male dominance in rice farming. Among the producers, youths aged 20 years or younger (24%) primarily engaged in weeding, while 20% of youths aged 21-30 years were involved in land clearing activities. Significant factors affecting technical efficiency in rice production included seed ($p<0.01$), fertilizer ($p<0.01$), and labor ($p<0.01$). The inefficiency model revealed that sex, age, marital status, and educational status had positive coefficients. Price variability of rice was identified as the primary constraint affecting the performance of rice producers, as reported by 95% of respondents. Based on these findings, it is recommended that rice producers be encouraged and educated in their production activities to achieve self-sufficiency in rice production.

REFERENCES

Ahmadu, J. & Erhabor, P. O. (2012). Determinants of technical efficiency of rice farmers in Taraba State, Nigeria. *Nigerian Journal of Agriculture, Food and Environment, 8(3) 13*

Agbonika D. A, E.A Aiyedun and P.O Idisi (2021): Cost and Returns analysis of paddy rice production in Nasarawa state and FCT, Abuja Nigeria. *Abuja journal of Agriculture and Environment, faculty of Agriculture university of Abuja. Vol 1.(1) pp 276-285.*

Agbonika D.A. and Aiyedun E.A. (2012) Sustainable Food Security: The Nigerian Experience. *Proceedings of the 26th annual conference of the farm management association of Nigeria (FAMAN) held at Michael Okpala University of Agriculture, Umudike, Nigeria. 15TH – 19TH October, 2012 Pp 101-105.*

Aiyedun E. A (2013): Rice and Nigeria. Joyce Graphic and publisher kaduna

Akpokodje, G, F. Lançon and O. Erenstein, 2001. Nigeria's rice economy: State of the art. Paper presented at the NISER/WARDA Nigerian Rice Economy Stakeholders Workshop, Ibadan, 8-9 November 2001. Bouake: WARDA.

Alabi O.O, Lawal A.F, COKER A.A and Awoyinka Y A (2012) Probit Model Analysis of Smallholders Farmers Decision to use Agrochemical Inputs in Gwagwalada and Kuje Area Council of Federal Capital Territory, Abuja Nigeria. *International Journal of Food and Agricultural Economics Vol 2 No 1 pp85 – 93.*

Amaza, P. S. and Maurice, D. C. (2005). Identification of Factors that Influence Technical Efficiency in Rice Based Production System in Nigeria: A Paper Presented at Workshop on Policies and Strategies for Promoting Rice Production and Food Security in Sub-Sahara Africa, Cotonou (Benin).

Aminu, A., Obi-Egbedi, O., Okoruwa, V. & Yusuf, S (2012). Effect of rice trade on household welfare. *European Journal of Business and Management*, *4(8),* 160-170.

Ayinde, I., Kareem, K., Holdele, O.J. and Bakare, H. (2013). Consumption pattern of Ofada Rice among Civil Servants in Abeokuta Metropolis of Ogun State, Nigeria, *Journal of Biology Agricultural and Health Science (3)6*.

Chetana, B., Sarthak, G., Bipin, P. and Sudarshan, B. (2019). Constraints of paddy production in Western Terai of Nepal. *International Journal of Environment, Agriculture and Biotechnology (IJEAB)*, 4(5):1584-1588

Fasasi, A.R. (2006). Resource use efficiency in yam production in Ondo State, Nigeria. *Agricultural Journal*, *1* (2), 36-40.

Haruna S.K, Sani Isiaku, Baba .D, I.Y. Illu and Dora A.A (2016): Determinants of Farmers Participation in Rice Seed Out grower Programme for enhanced Seed quality in Kano River Irrigation Project. *Proceedings of 5th international conference on rice for food, market and development held at Raw Material and Research and Dev. Council Abuja on the 14th – 16th April, 2016 pp 79-88.*

Kadiri, F. A., C. C. Eze, J. S. Orebiyi, J. I. Lemchi, D. O. Ohajianya, and I. U. Nwaiwu. (2014). Technical efficiency in paddy rice production in the Niger Delta Region of Nigeria. Global Journal of Agricultural Research, 2(2), 33-43.

Kolawale, O. and Ojo, S.O. (2007). Economic Efficiency of small scale food crop production in Nigeria: A Stochastic Frontier Approach. *Journal of social science.* 14(2):123-130.

National Bureau of Statistics (NBS) (2020). Nigerian population by state.

Nwele, J.N (2016). Economics of Rice Production and Marketing in Nigeria: A Study of Ebonyi State, *International Journal for Research in Business, Management and Accounting Vol. 2 Issue 5 May 2016 I SSN : 2455-6114*

Obinne, C.O.P., Obasi and O.N. Agbulu (1998): Research and Policy Issues for

Children-In-Agriculture, Book of Proceedings of the 4th Annual Research Network meeting and Conference of Children-In-Agriculture Programme (CYIAP), Pg.3.

Ochigbo A.A (2011). Enabling Policies and Sector Strategies and Plan for Rice: The Nigeria Experience. *Proceedings of 1st international conference on rice for food, market and development held at merit house Abuja on the 6th -8th march, 2011 pp4-14.*

Omoare, A. O. and Oyediran, W. O. (2017). Assessment of factors affecting rice (*Oryza Spp.*) Value Chain (RVC) in Ogun and Niger States, Nigeria. *Global Journal of Agricultural Research*. 5(4):43-59.

Omonona, B.T., Egbetokun O.A. and Akanbi, A.T. (2010). Farmers Resource –Use and Technical Efficiency in Cowpea Production in Nigeria. *Economic Analysis and Policy*. 40(1): 87 – 95.

Omonona, B., Lawal, J. and Oyebiyi, I. (2012). "Profitability of production and resource-use efficiency among *ofada* rice (*Oryza sativa* Japonica) farmers in Southwest, Nigeria. *Comunicata Scientiae* 3(2): 104-107, 2012.

Oyibo .O, Rekwot G. Z. Adegboye and D.A. Agbonika (2015): Growth Trend of Rice Demand and Supply in Nigeria: An Investment Opportunity for Youth and Women Empowerment. *Proceedings of 4th international conference on rice for food, market and development held at Raw Material and Research and Dev. Council Abuja on the 7th -8th may, 2015 pp 63-70.*