Socio-economic Characteristics of Rice Farmers in Flood Prone areas of Niger State, Nigeria

Apuyor, A.., Mohammad, U. S. and Ojo, A. O.

Department of Agricultural Economics and Farm Management, Federal University of Technology Minna, Nigeria

KEYWORDS

Disasters,
Flooding,
Incidents,
Multistage,
Standard of living

ABSTRACT

The study analyzed effects of flooding on the socio-economic characteristics of rice farmers' in Niger State, Nigeria. A multi-stage sampling technique was used to select respondents for the study. A sample size of 234 registered rice farmers obtained was used for the study. Data collected were analyzed using descriptive statistics. From the results showed that average age of the respondents is 38years, male dominated in rice farming in the area. Majority (89.7%) of the farmers were married, average household size was nine (9) persons, 59% of rice farmers had formal education at various levels while 41% were illiterate. Further, majority (72.2%) of the farmers were peasant farmers. While1.3% practiced commercial farming in the area. Majority (79.9%) of the farmers had experienced flooding in their rice farm while 20.1% had not experienced flood in their rice farm and average annual income of the farmers was ₦509, 296.58. The study concluded that flood may have adversely affected farmers' social status in the study area.

*CORRESPONDING AUTHOR

apuyoraugustine1@yahoo.com

INTRODUCTION

Flooding in the 21st century in Nigeria has been a serious environmental problem in the rice industry. In recent years, Nigeria has been threatened with regular and extreme flooding reoccurrence which has led to enormous destruction of crops, livestock, houses and human lives. It was reported that over $16.9 billion was lost due to incidence of flood in 2012 alone which had adversely affected the standard of living of the farmers and the entire population (Oladokun and Proverbs, 2016). More so, in 2020, there was devastating flood in about 20 Local Government Areas of Niger State which mostly affected rice farm that led to significant decrease in the actual capacity of its production. The 2020 flood incidence in Niger State affected about 17, 000 communities and about 60,000 homes were pulled down as well as farmlands (Environ 2020).

Nigeria is endowed with abundant natural and human resources that if well harnessed will boost rice production to meet local consumption and surplus for export. Nigeria has a potential area for rice cultivation of about 4.6 to 4.9 million hectares, of which, only about 1.8 million hectares that is 35%, of the total land mass is under rice cultivation (Ismaila *et al.,* 2013; Chidiebere-Mark., 2019). Rice production yield in Nigeria is among the lowest within neighboring countries. However, Nigeria top in the production of rice in West Africa, but is also ranked second largest importer of rice globally (USDA, 2019). Rice stands better in contributing to national food security, income generation, poverty reduction and socio-economic well-being of Africa (Ismaila *et al.,* 2013).

Rice plays a vital role in ensuring sustainable food security as well as provision of employment and income to the nation's teeming population. Nigeria has been a major consumer and importer of rice in Africa. Indeed, rice is classified among the top four agriculture imports in Nigeria along with wheat, sugar and fish (Terwase and Madu, 2014). It has been reported that the country spends over ₦356 billion on yearly importation of rice, out of which about ₦1 billion is used per day (Oyediran, 2016). Rice production in Nigeria is mainly rain-fed and most of the farming activities are carried out along the water plain which increases their vulnerability to

flooding. (Tiamiyu *et al.*, 2015). Thus, the study examined the effects of flooding on the livelihood of rice farmers in flood prone areas of Niger State.

METHODOLOGY

The Study Area

The study was carried out in Niger State of Nigeria. Niger State is located between Latitude 8º22'N and 11º30'N and Longitude 3º30'N and 7º20'E and covers a land area of about 76,363sq km, or about 8% of Nigeria's total land area. A Multistage sampling technique was used for the selection of respondents for this study. The first stage was purposive selection of two rice producing LGAs each from the agricultural zones I, II and II1 which are namely ;Lavun and Gbako, Paikoro and Bosso, and Wushishi and Mashegu respectively. The second stage also involved purposive selection of two rice producing villages that are mostly affected by flood and two rice producing villages that are less or not affected by flood from each of the selected LGAs. This gives a total of 24 villages selected for the study. The third stage employed Taro Yamane`s formula as adopted by Ibeziako (2017) to obtain an appropriate sample from the sample frame. A total of 234 respondents was selected from a total sample frame of 933(mostly affected = 467and less affected = 466) registered rice farmers. This comprised 117 households who were mostly affected by flood and 117 households who were less or not affected by flood at 0.08% and 92% precision and confidence level respectively.

RESULTS AND DISCUSSIONS

The socio-economic characteristics of the rice farmers are usually used to describe the behavioral factors of the farmers, which is a means of measuring their social status and financial worth's. The socio-economics of the respondents include age, gender, marital status, household size, educational level, farm size, rice farming experience, ever experienced flood in your rice farmland, annual rice farming income (Table1).

The Table showed that average age of the respondents is 38years. This implied that the majority of the rice farmers in the study area were in their active age for effective farming activities and they may likely to earn higher income. This is in agreement with the result of Abur, (2014) who carried out a study on Assessment of poverty status among rice farmers in Guma local government area of Benue State and reported that the rice farmers are in their active age and this can increase their income. The result revealed that majority about (85.5%) of the rice farmers were males compared to 14.5% females. This showed that male dominated in rice farming in the study area. This might probably be that female gender had hindrance to full participation in rice farming due to marital responsibilities coupled with culture and religious beliefs. This is in agreement with the findings of (Osanyinlusi and Adenegan 2016; Ajewole *et al*. 2018) Who reported that most of the rice farmers in their study area were male.

The result also revealed that majority (89.7%) of the rice farmers were married, while 10.3% were single. The implication is that there could be high supply of family labour which could reduce the cost of farming operations and increase the income of the farmers. This is in agreement with the result of (Osanyinlusi and Adenegan 2016). The result further revealed that the average household size was nine (9) persons. This is an indication that most of the rice farmers in the study area may likely had depended on family labour for their farming operations. This is because agricultural activities in the study area were labour intensive due to non-availability of machineries and this could reduce the variable cost of production. This is in agreement with the findings of Adedapo, *et al*. (2020). who reported that agriculture is labour intensive and large household size provides cheap labour.

The result also showed that 59% of the respondents had formal education at various levels while 41% were illiterate. Illiteracy could be a barrier to adoption of innovation that could have improved their production and productivity level. However, the educated rice farmers could easily adopt mitigating strategies against effects of flood in the study area as level of formal education is directly proportional to adoption of new and improved farming practices in the area which agrees with Jonathan *et al.* (2020) who reported that educational level of farmers makes it easier for adoption of new agricultural technologies in his study on Economic analysis of the effect of flood disaster on food security status of farming households in southern guinea savanna, Nigeria.

The result further revealed that majority (72.2%) of the rice farmers were peasant farmers, 26.5% practiced medium scale farming while1.3% practiced commercial farming in the area. This implied that most of the farmers were small-scale farmers. The result is similar with that of Chinaka and Udemezue (2015) who reported in their study on Adoption rate and potentials of improve cassava production technologies by farmers in Anambra state, that farmers in Anambra state were peasant farmers.

The average year of farming experience was 13. This revealed that the rice farmers in the study area had long period of farming experience which could enhance their farming practices. This is in agreement with the findings of Udemezue *et al.* (2019) who reported in their study that rice farmers had long farming experience in his study area. .Majority (79.9%) of the farmers had experienced flooding in their rice farm while 20.1% had not experienced flood in their rice farm. This was an indication that most of the rice farms were affected by flood incidence during the period. This is in line with the report of National Emergency Management Agency, (2021) that there was devastating flood incident between 2015 and 2020 in Niger State. Further, the average annual income of the farmers was ₦509, 296.58. The rice farmers with annual income range of between ₦801,000 and ₦1,200,000 claimed almost

half (44.9%) of the total sampled rice farmers, those between ₦401,000 and ₦800,000 claimed 30.8% while those that fell between ₦100,000 – ₦400,000 claimed 24.3% of the total sampled rice farmers in the area. This implies that the farmers in the study area may probably had diversified to other source of income which had helped them to mitigate the effects of flood. However, judging by their average household size of nine(9) persons, There is indication that they may had be affected by flood incident in the area. This is in line with the report of National Emergency Management Agency, (2021) that there was devastating flood incident between 2015 and 2020 in Niger State.

Table 1 : Distribution of respondents according to their socio-economic characteristics

Variable	Frequency	Percentage	Mean
Age(Years)			
≤ 20	4	1.7	
21-40	144	61.5	38
41-60	84	35.9	
>60	2	9	
Sex			
Male	200	85.5	
Female	34	14.5	
Marital Status			
Single	24	10.3	
Married	210	89.7	
Household Size			
≤ 10	164	70.1	
11-20	67	28.6	9
>20	3	1.3	
Educational level			
No Formal Education	7	3.0	
Quaranic	4	1.7	
Adult	8	3.4	
Primary	23	9.8	
Secondary	77	33.0	
Tertiary	19	8.1	
Illiterate	96	41.1	
Farm size			
≤ 2	169	72.2	
2-3	62	26.5	
>4	3	1.3	
Farming experience			
≤ 15	159	67.9	
16-30	72	30.8	13
>30	3	1.3	
Flooding experience last farming season?			
No	47	20.1	
Years	187	79.9	
Annual farmer income			509,296.58
≤ 400000	57	24.3	
401000-800000	72	30.8	
801000-1200000	105	44.9	

Source: Field Survey 2021

CONCLUSION AND RECOMMENDATION

Base on this study, it can be concluded that rice farming in study area is dominated male. Looking at the farmers income compare to their average household size, there is indication that rice farmers in the area had be affected by flood in the study area. The farmers could have engaged in other source income which might had probably improved their income.

Therefore government should intervene by helping the rice farmers with irrigation facilities to increase their productivity and incomes to improve their standard of living.

REFERENCES

Abur, C. C. (2014). Assessment of poverty status among rice farmers in Guma local government area of Benue State.*Global.Journal.Interdisciplinary.Social.Sciences*. 3(4): 122-127

Ajewole, O.O.; Ojehomon, V.E.T; 1 ;Ayinde, O.E.; Agboh-Noameshie, A.R., andDiagne, A(2016). Gender analysis of poverty among rice farming household in Nigeria rice hub . Department of Agricultural Economics and Farm Management, University of Ilorin, Kwara State, Nigeria . Invited paper presented at the 5th International Conference of the African Association of Agricultural Economists, September 23-26, 2016, Addis Ababa, Ethiopi

Chinaka E. C and Udemezue J. C (2015) Adoption rate and potentials of improve cassava production technologies by farmers in Anambra State, Nigeria. Proceedings of the 49th Annual Conference of the Agricultural Society of Nigeria. pp. 321-325

Chidiebere-Mark, N., Ohajianya, D., Obasi, P.and Onyeagocha, S. (2019) Profitability of rice production in different production system in Ebonyi State, Nigeria. *De Gruyter Journnal* 4: 237-246

Environ.(2020). Flood wrecks havoc in Niger state, kills eight family members. https://www.google.com/search?q=ENVIRON.+2020.+Flood+wrecks+havoc+in+Niger+state%2Candoq=ENVIRON.+2020.+ 6th April, 2021.

Ibeziako, U. N. (2017). Effects of household demographics on Agricultural technology utilization and technological efficiencies of cowpea farmers in Nigeria. Unpublished M. tech Thesis, Department of Agricultural Economics and Extension, Federal University of Technology Minna.pp34-41

Ismaila U. , Wada A. C. , Daniya E. andGbanguba A. U. (2013). Meeting the Local Rice Needs in Nigeria Through Effective Weed Management. *Sustainable Agriculture Research*; URL: http://dx.doi.org/10.5539/sar.v2n2p37 .2(2)

Jonathan, A., Owolabi, M. T., Olatunji, I. B., Duntoye, B. T., Henshaw, E.E. (2020).Economic analysis of the effect of flood disaster on food security status of farming households in guinea savanna, Nigeria. *Journal of Agriculture and food science* 18(1),59-69

National Emergency Management Agency (2021). Flood disaster monitor in Niger state/Kwara state Nigeria .A Brief Report. Available www.nema.org.ng, retrieved on 25th October, 2021.

Oladokun, V. O., and Proverbs, D. (2016). Flood risk management in Nigeria: A review of the challenges and opportunities. *International Journal of Safety and Security Engineering*, 6(3), 485–497.

Osanyinlusi, O. I. andAdenegan, K.O.(2016). The Determinants of Rice Farmers' Productivity in Ekiti State, Nigeria . *Greener Journal of Agricultural Sciences* . 6 (2), 049-058

Oyediran, W. O. (2016). Assessment of paddy rice (Ofada) processing in ensuring rural women livelihold sustainability in Ogun state Nigeria. *International Journal for research in agricultural research*, 2(2), 108-215.

Terwase, I. T. and Madu, A. Y. (2014). The impact of rice production, consumption and importation in nigeria: the political economy perspectives. *International Journal of Sustainable Development and WorldPolicy*. 3(4). 90-99

Tiamiyu, S. A., Eze, J. N. , Yusuf, T. M., Maji A. T. andBakare, S. O. (2015)."Rainfall Variability and Its Effect on Yield of Rice in Nigeria". *International Letters of Natural Sciences* . 49(1) 63-68

Udemezue, J. C., Madukwe, M. C. , Nwoye, I. I., Osegbue, E. G. and Kadiri A.O. (2019).Effects of flooding on small scale farmers in Anambra, Nigeria. *Noble International Journal of Agriculture and Food Technology* (1), 2. 70-74.

United State Department of Agriculture (USDA 2019) Nigeria Rice Industry- Outlook: Business Monitor International(BMI)Euromonitor Database- Rice Production and Consumption, 2018, KPMG Analysis