



EFFECTS OF FLOODING ON SMALL SCALE FARMERS IN ANAMBRA, NIGERIA

Udemezue. J. C.^{1*}, Madukwe. M. C.², Nwoye. I. I.³, Osegbue. E. G.⁴, Kadiri. A.O.⁵

^{1*}National Root Crops Research Institute, Umudike, PMB7006 Umudike Abia State, Nigeria

²Department of Agricultural Extension University OF Nigeria, Nsukka

^{3,4,5}Department of Agricultural Economics and Extension, Chukwuemeka Odumegwu Ojukwu University, Igbariam Campus

ABSTRACT: The study examined the impacts of flood on small scale farmers in Anambra state, Nigeria. For the purpose of the objective of the research, 30 farmers were randomly sampled from each communities and this gave a total sample size of 180 farmers. Structured questionnaires were the instrument used for data collection. Data were analyzed through the use of frequency, percentage, mean scores and standard deviation. The result of the study indicated that the mean age was 40 years, 54.4% were male, 55% were married and 50% were illiterate with only 19.40% of the farmers completed primary school. The average farm size was 1.38ha while the mean year of farming experience was 15 years respectively. However, 72.2% of the farmers did not have access to extension services while majority (85.6%) of the farmers practiced subsistent farming. Loss of farms (2.72), hunger and starvations (2.59), displacement from natural domain (2.59), loss of properties (2.55), high incidence of poverty among farmers (2.53), ill health status of the farmers (2.35), loss of family members (2.25) and causing damages on roads (2.13) were perceived by the farmers as a very serious effect on their livelihood.

Keywords: Flooding, impacts, farmers

1. INTRODUCTION

Agricultural production and food security in Africa are tremendously threatened by extreme climate and weather events [1]. Most of the food productions in Nigeria are under small-scale farming; however, it is obvious that climate change will bring about substantial welfare losses especially for smallholders whose main source of livelihood derived from agriculture [2].

The effect of flood on human life should not be overlooked, according to Ajibade, et al. [3], floods contributed one third of all deaths, one third of all injuries, one third of all crop failure and one third of all damages from natural disasters. However, too much weather condition such as thunderstorms, heavy winds and floods damage farm land and can cause crop failure among small-scale farmers [4]. Flood has globally posed a tremendously danger to people's life and properties. It causes enormous damage all over the world every year. In the last decade of the 20th century, flood killed about 100,000 persons and affected over 1.4 billion people. Consequent upon this, floods may cause economic damage and damage to ecosystems, historical and cultural value [5].

In the past six years (2012 to be specific) there have been incidences of heavy flooding in various parts of Nigeria that held the lives of the rural farmers on ransom and their asset, income, production activities, transport and health were automatically exposed to negative impacts. Consequent upon the damages by flooding incidence, government in conjunction with Non-Governmental Organization (NGOs) came to the rescue of the rural small holder farmers with some felt needs.

According to Ajibade, et al. [3], Nigerian farmers are involved in agriculture on a substance level with majority of them being small scale farmers (holders) and is even more interesting to note that majority of these farmers do not actively take up insurance policies which would have given some sort of safety net in the event of adverse and unforeseen circumstances. This will make them to fall back upon nothing when there are unforeseen circumstances like flood.

Despite the economic damages and other negative effects caused by flood, it has been observed that there is no comprehensive information with regards to the effects of flood on small holder farmers in the study area. This research therefore seeks to assess the impact of flood on small scale farmers in Anambra state, Nigeria.

2. MATERIALS AND METHOD

The study area for this research is Anambra State. The State is located in the South east of Nigeria. It is bounded by Delta State to the West, Imo State to the South, Enugu State to the east and Kogi State to the North. It has estimated population of 4,77,828 million people [6] which stretches over about 60kilometers between surrounding community. The state lies on the longitude $6^{\circ} 35^E$ and 7^E and latitude of $5^{\circ} 38N$ and $6^{\circ} 47^E$ (Wikipedia. Org/wiki anambra State,2010). Anambra State comprises 21 local Governments and is predominantly occupied by Igbo ethnic groups who are farmers by nature.

The target population for this study was all farmers in the state. Multistage sampling techniques were used for this study. Three local governments out of 21 local governments in Anambra State were selected due to their popularity in flood effect. Ayamelum local government, Anambra West local government and Ogbaru local government were selected.

In the second stage, two communities each from a local government were selected. Here Omor and Anaku in Ayamelum Local Government, Nzam and Igbedo in Anambra West, Atani and Odekpe in Ogbaru local government were purposely selected. This gave total of six(6) communities. Third stage, 30 farmers were selected from each community using simple random techniques and this gave a total sample size of 180 respondents.

2.1. Measurement of Variables

To determine the effects of flood on farmers, they were asked to indicate the extent of the effects on their livelihood. Their response categories were very serious, serious and not serious.

3. RESULTS AND DISCUSSIONS

Table 1 show that 54% of the farmers were male while 45.61% of them were female. This implies that male dominated farming activities in the study area. Majorities (55%) of the farmers were married while 19.4% of the farmers were single. This implies that the farmers are more likely to have children that might have been affected by climate effect. This result is in consonance with the finding of Ojo and Muhammed [7] which found in their study that more than 96% of their respondents were married. The average mean age was 40 years. The indication is that farmers were predominantly in their active productive age and this could increase their stamina for production. Majority (50%) of the farmers did not have formal education while 19.4% of them completed primary education. High levels of illiteracy among farmers could deprive them chance to adopt the recommended strategies for climate change. The finding is in line with the findings of Ndantsha [8] and Tsoho [9] which reported in their separate studies that rural farmers were characterized with low level of literacy. However, 85.6% of the farmers practiced subistent farming system while 14.41% of others practiced commercial farming. This implies that farmers were still under small scale farming. This finding is in line with the findings of Chinaka and Udemezie [10] which said in their study that farmers in Anambra state were small scale farmers. The mean year of farming experience was 15years. This implies that the farmers had long period of farming experience and this could enhance their knowledge on farming activities. Majority (72.2%) of the farmers did not have access to extension services while 27.8% had access to extension services. Those of the farmers who did not have access could be as a result of the inability of extension workers to discharge their official duty diligently or it could be due to inadequate extension workers to cover a wide range of farmers within a stipulated time.

Table 1. Percentage Distribution of the Socio-economic Characteristics of the Farmers

Variables (n = 180)	Frequency	Percentage	Mean (m)
Sex:			
Male	98	54.40	
Female	82	45.60	
Age:			
20-30	19	10.60	40.3
31-40	60	33.30	
41-50	88	48.90	
51-60	6	3.30	
60 and above	7	3.90	
Marital Status:			
Single	35	19.40	

Married	99	55.00	
Separated/divorced	40	22.20	
Widowed	6	3.30	
Educational Level:			
Non formal education	90	50.00	
Primary school completed	35	19.40	
Secondary school completed	25	13.90	
OND/NCE completed	15	8.30	
B.Sc.HND completed	9	5.00	
M.Sc/Ph.D	6	3.30	
Farm Size:			
<1ha	35	19.40	
1-2ha	99	55.00	
3-4ha	46	1.38	
Types of crop grown			
Rice	66	36.70	
Cassava	52	28.90	
Maize	15	8.30	
Yam, cassava and maize	11	6.10	
Yam, okro, cassava and maize	5	2.80	
Cassava and maize	10	5.60	
Yam and maize	8	4.40	
All of the above	13	7.20	
Farming Experience:			
1-10 years	81	45	15 years
11-20 years	85	47.20	
21-30 years	8	4.40	
31 years and above	6	3.30	
Access To Extension Service:			
Yes	50	27.80	
No	130	72.20	

Source: Field Survey, 2015

Figures in [table 2](#) indicate the various perceived effect of flood by the farmers in the study area. The effects were categorized as very serious = 3, serious = 2 and not serious = 1. The effects were later ranked in the descending order of their sequence. Loss of farm with a weighted mean score 2.72 was ranked first, hunger and starvation with a weighted mean score 2.59, displacement from natural domain with a weighted mean score 2.59, loss of properties (2.55), high incidence of poverty (2.53). Change in weather which brought about malaria disease (2.35), loss of family member (2.25) and causing damages on road with a weighted mean score 2.12 were perceived as serious effect of climate change to farmers in the study area.

These results therefore agreed with [Adesiji, et al. \[11\]](#) who found deviation from normal health status (malaria) as consequence of climate change but at the same time disagreed with the other findings of their studies. However, the finding is also in line with [Ajibade, et al. \[3\]](#) who saw loss of farm land as one of the impact of flooding on small scale rice grower, farmers in Kwara state, Nigeria. More so, the standard deviation values were less than one in all the variables and this implies that the responses of the farmers on these variables did not vary much from the mean, therefore, can be useful in policy formulation.

Table 2. Effect of Flooding on small-scale Farmers in Anambra State.

Variables (n = 180)	Mean	SD
Loss of farms	2.72	0.609
Hunger and starvation	2.59	0.650
Displacement from natural domain	2.59	2.59
Loss of properties	2.55	0.663
High incidence of poverty	2.53	0.612
Cause malaria	2.35	0.810

Loss of family member	2.25	0.783
Damages road	2.13	0.762
Adding nutrients to the soil	1.55	0.758
Causes environmental pollution	1.45	0.688
Enriched farmers	1.40	0.657

Source: Field Survey, 2015. Cut off point = 2 and above. SD = Standard deviation

4. CONCLUSION AND RECOMMENDATIONS

The result revealed that 54.4% of the farmers were male while the majorities (55%) of them were married. The mean age of the farmers was 40 years while the average farm size was 1.38ha. However, 50% of the farmers were illiterate while 19.4% of them completed primary school. The mean year of farming experience was 15 years. More so, it was observed from this research that loss of farms, hunger and starvation, displacement from natural domain, loss of properties, high incidence of poverty, ill health status of the farmers, loss of family members and causing damages on roads were the major perceived effects of flood on small scale farmers. This research therefore recommends that workshop on climate change should be organized frequently for farmers in the study area as to enable them being acquainted with a proper knowledge on climate change and mitigation. Farmers should be encouraged and educated on issuance policy that would give them some sorts of protection in the case of adverse and unforeseen circumstances. Government on the other way round should compensate and give a source of financial aids to the victims of climate change. Education among the rural farmers should be encouraged and implemented as to enable them have a wider knowledge on weather forecast. Government at all levels should provide basic medical facilities to combat the problems of ill health status of the parents which if adequate care is not taken could lead to untimely death among farmers.

REFERENCES

- [1] L. L. Setshaelo, "Impact of Extreme Weather and Climate Events on Agriculture and Food Security". A Two-day National Conference on Applications of Metrological information on weather disaster risk reduction and socio-economic planning organized by the Nigerian Metrological Agency (NIM et) 13th and 14th February, 2012," 2013.
- [2] C. Komba and E. Muchapondwa, "Adaptation to climate change by small holder farmers in Tanzania". Economic Research Southern Africa (ERSA) working paper 299 (online): <http://econrsa.org/home/index.php?Option=comocman&task=docdownloaded&gid=433&itemid=6718/9/2013>," 2012.
- [3] E. T. Ajibade, R. O. Babatunde, J. B. Ajibade, and O. E. Ayinde, "Examining the impact of flooding on small-scale rice growers' per capita expenditure in Kwara state, Nigeria. Proceedings of the 49th Annual Conference of the Agricultural society of Nigeria 'Delta 2015," 2015, pp. 250-253.
- [4] A. O. Ajao and L. T. Ogunniyi, "Farmers strategies for adapting to climate change in Ogbomoso Agricultural Zone of Oyo state," *Agris on-line papers in Economics and Infomatics*, vol. 3, pp. 3-13, 2011.
- [5] M. N. Ezemonye and C. N. Emeribe, "Flood characteristics and management adaptations in parts of the imo river system," *Ethiopia Journal of Environmental Studies and Management*, vol. 4, pp. 56-57, 2011.
- [6] National Population Commission (NPC), "Population figure. Federal Republic of Nigeria, Abuja. Available at: <http://www.npc.gov>," 2006.
- [7] M. A. Ojo and U. S. Muhammed, "Resource used efficiency in maize production among small scale farmers in Lavun Local Government Area of Niger state," *International Journal of Tropical Agriculture and Food System*, vol. 2, pp. 170-174, 2008.
- [8] M. A. Ndantsha, "Economic Analysis of Fadama crop production in Niger state, Unpublished M.Sc Thesis submitted in the Department of Agricultural Economics and Farm Management, University of Ilorin, Ilorin, Nigeria," p. 67, 2005.
- [9] B. A. Tsoho, "Economic of Tomato based cropping system under small scale irrigation system in Sokoto state, Nigeria. Unpublished M.Sc Thesis submitted in the Department of Agricultural Economics and Farm Management, University of Ilorin," p. 105, 2015.

- [10] E. C. Chinaka and J. C. Udemezue, "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. "Delta," pp. 321-325, 2015.
- [11] G. B. Adesiji, I. S. Tyabo, M. Ibrahim, J. O. Fabiyi, and O. A. Aladele, "Effect of climate change on the health of rural farmers in Offa, environmental studies and management," vol. 6, pp. 249-252, 2013.