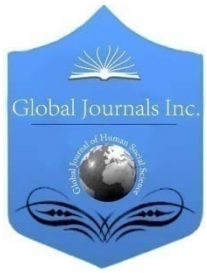
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Effect of Flood on Women Farmers Activities in Flood Prone Areas in Ibadan Metropolis, Oyo State, Nigeria

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Abstract- The study aimed to assess the effect of the flood on women farmers' activities in flood- prone areas in Ibadan Metropolis, Oyo State, Nigeria. Sampling technique was multi-stage, data were collected with the aid of a questionnaire using an interview format to eighty-one respondents. Descriptive and inferential analyses were used to analyse the data obtained. The result revealed that livestock production was the most engaging activities and findings showed that 90.1% of the respondents were into poultry production. Also, the result revealed that the level of the flood was high (61.73) among the women farmers, which mean that the flood-affected virtually all aspects of agricultural activities in the study area. Significant relationship between respondents' agricultural activities and effect of flood ($r = -0.151$, $p \leq 0.05$). The study concluded that flood had an adverse effect on women farmers despite engaging in various agricultural activities to minimize the effect in the study area.

Keywords: flood, agriculture, women, farmers, and activities.

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I. Introduction

In the past, Agriculture was the most significant sector in Nigeria. The environment was so conducive to farming and other related activities with the support of the government. Agricultural proceeds have been used to develop the country since the independence. The agriculture sector was doomed in Nigeria in the year 1970, the end of the Biafran war, which coincided with the rise in the world oil price. The country was able to benefit from the boom, which made the government neglect the agricultural sector. According to the National Bureau of Statistics (2012), the oil and gas industry have taken over the farming segment of Nigeria's economy as a result of the world oil boom in the 70s.

Surprisingly a nation with over 70% of the population employed in agricultural sector is still playing second fiddle to the oil and gas sector. It was so bad to the extent that that about 84 million hectares of Nigeria's total land area, which has potential for agriculture, only about 40% of this is under cultivation (FMARD, 2012). Also, the few lands under cultivation are facing issues ranging from natural disasters to human afflicted problems, thereby preventing the nation from achieving its full potential in the agricultural related activities.The vision of Nigeria to be among the first top twenty nations in the agricultural production could be a mirage if agricultural farmlands are not safe from the frequent occurrence of environmental disasters in the country.

Floods are major environmental disasters affecting agricultural activities in Nigeria. European Union (2007) sees it as a covering of land by water that is not covered by water before the incidence. According to the United Nations (UN) report of 1998, 23 million people were affected as a result of flooding in Xian, China (UNFCCC, 2007). Furthermore, severe floods also killed over two hundred people in India and Bangladesh and left millions homeless (Erekpokeme, 2015). Odufewa *et al. (*2012) report that floods are the most occurring, widespread, disastrous and frequent natural hazards of the world.

It is on record that Ibadan the capital city of Oyo State Nigeria, has recorded varying degrees of flooding. For instance, there were flooding in the watersheds of Ogunpa and Kudeti streams (one of the two major streams in Ibadan) in 1955, 1960, 1961, 1963, 1969, 1978, 1980 and the recent flood in Ibadan occurred in 2011. The 2011 floods which occurred in Ibadan between august to October, 2011 was one of the most devastating in the city. According to Erekpokeme, (2015), the flood incidence in Ibadan in the year 2011 claimed lives and properties which include farmland, farmproduce, and animals (Onwuemele, 2012).

It is a pity that agriculture tends to suffer the most when there is a flood in Nigeria properly due to the sensitivity and fragility of its natural environment as well as its high dependence on environment-based livelihoods. Women farmers are not left out in this overwhelming disaster, and many of them were unable to recover up to date. It is disheartening that agricultural policies on the whole still do not address the needs of women farmers adequately after floods incidence in their domain. Agricultural development programs might be misinterpreted in the long run if the roles and needs of women farmers are not recognized in policy. Therefore there is a need to critically look at the effect of floods on women activities with the intention to

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encourage the policy makers to gives adequate attention to women farmers and their needs.

The aim of the study, therefore is to assess the effect of flood on women farmers' activities in the flood-prone area in Ibadan Metropolis, Oyo State, Nigeria. The study also identified the types of farming activities engaged by the women as well as the relationship between the farming activities and the effect of floods in the study areas.

II. Methodology

The study area was Oluyole Local Government Area of Ibadan, Oyo State, Nigeria. It shares boundaries with four Local Government Area, i.e. Ibadan South-West, South-East, Ona –Ara and Ido within Ibadan Metropolis, and lies between latitude 7°25' N and longitude 3°5'. (NPC, 2007). Data were collected through interviews with the aid of a well- structured questionnaire and directed towards women farmers. Oluyole Local Government was purposively selected for the study. This is because the area is prone to flood occurrence during the raining season.

The sampling technique was multi-staged. Four out of the 10 wards in Oluyole Local Government were purposively selected which was the first stage. In contrast, the second stage involved a random selection of the villages from the wards. The wards selected were 4, 8, and 9, which contained two villages respectively, and ward 5 had three villages. Random selection of one village respectively from each selected wards was carried out based on the history of floods destruction to farm produce on farmlands in the wards selected. The villages selected across the wards are Abanla, Busogboro, Odo-Ona Elewe, and Idi Ayunre.

In the last stage, farmers (women) counting was carried out to obtain a population in each village using the PRA technique. 20% of the population obtained was then used to select the respondents in list that ensue. Below is an illustration of the sampling procedure and sample size

Table 1: Sampling Size

Village	Population of women farmers	Respondents Selected (50% S.P)	Retrieved Questionnaires
Aba-eemo	100	20	20
Apete	150	30	30
Odoona-elewe	60	12	12
Idi-Ayunre	130	26	22

Note the Total Number of Retrieved Questionnaires =81

The data were analyzed using descriptive and inferential analyses. The descriptive statistics used include frequency distributions and percentages, mean, while the relationship between agricultural activities and effect of the flood on women farmer's activities in the study area was examined using inferential statistics such as PPMC were used to examine

a) Measurement of variable

A five-point scale of a "strongly agree," "agree," "uncertain," "disagree," and "strongly disagree" was used to measure the effect of the flood on women farmers, which is the dependent variable. A score of 5 was assigned to "strongly agree," 4 to "agree," 3 to "uncertain," 2 to "disagree," and 1 to "strongly disagree. The highest score obtainable was 50, and the lowest is 10. The effects were categorized as high and low. A two-point scale of yes and No was used to measure the second variable (agricultural activities). A score of 2 was assigned to yes, 1 to no. Thirteen questions were asked. Hence the highest score obtained was 26 and the lowest was 13. The reasons were categorized to high, and low.

III. Result and Discussion

Table 2: Agricultural Activities Practice by Woman Farmers in the Study Area

Variable	Yes	No
Crop production		
Arable crop	42(51.9%)	39(48.1%)
Cash crop	53(65.4%)	28(34.6%)
Vegetable production	68(84.0%)	13(16.0%)
Horticulture	28(34.6%)	53(65.4%)
Livestock production		
Sheep production	40(49.4%)	41(50.6%)
Piggery production	13(16.0%)	68(84.0%)

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Cattle production	32(39.5%)	49(60.5%)
Goat production	45(55.6%)	36(44.4%)
Domesticated cane rat	17(21.0%)	64(79.0%)
Rabbitary production	15(18.5%)	66(81.5%)
Fish production	10(12.3%)	71(87.7%)
Domesticated snail production	22(27.2%)	59(72.8%)
Poultry production	73(90.1%)	8(9.9%)
Total	81	100.0%

Source: Field survey, 2016.

The table above indicates that the majority of the respondents (90.1%) engaged in poultry production. The respondent's engagement in this activity constituted the major proportion of participation in agricultural activities in the study area. This implies that the respondents possess a very large amount of poultry in the study area. The assertion is in aligns with Okitoil *et al*. (2007), who reported that women in rural areas are majorly interested in poultry production. Also, it was revealed that 84.0% of the respondents were into vegetable production. The involvement of the respondents might be attributed to the fact that vegetables can be grown even with little space available in the study area, thereby contributing to their source of livelihood. It is in line with Nakwe *et al.,* (2018). They reported that the chief occupation of most women living in rural areas is agriculture, and they produce most of the vegetables consumed in rural areas. This table above revealed that 65.4% of the respondents in the study area also engaged in cash crop production. Furthermore, it was revealed that more than half (51.9%) of the respondents were into arable crops production. The involvement of the respondents in the culttivation implies that the respondents generally make good use of available land that is accessible to them, especially for backyard farming and all the agricultural practices mentioned above. This finding is in line with Ekesionye and Okolo (2012), who found that women were actively involved in economic activities.

Table 3: Effect of Flood on Women Farmers in the study area.

Variable	SA	A	U	D	SD
Low nutrient of soil	52(64.2)	29(35.8)	0(0.00)	0(0.00)	0(0.00)
Migration	40(49.4)	32(39.5)	2(2.5)	1(1.2)	6(7.4)
Income of farmers.	39(48.1)	42(51.9)	0(0.00)	0(0.00)	0(0.00)
Reduction in labour	22(27.2)	40(49.4)	2(2.5)	8(9.9)	9(11.1)
Loss of crops and Livestock	36(44.4)	37(45.7)	8(9.9)	0(0.00)	0(0.00)
Lack of motivation	3(3.7)	52(64.2)	2(2.5)	7(8.6)	17(21.0)
Reduction in yield produce	31(38.3)	50(61.7)	0(0.00)	0(0.00)	0(0.00)
Reduces the quality of Produce .	33(40.7)	43(53.1)	5(6.2)	0(0.00)	0(0.00)
Reduction in the standard of living	35(43.2)	36(44.4)	6(7.4)	4(4.9)	0(0.00)
Outbreak of diseases	36(44.4)	36(44.4)	3(3.7)	2(2.5)	4(4.9)

Source: Field Survey, 2016 NB: Percentage in parenthesis,

SA= Strongly agree, A=agree, U=undecided, D=disagree, SD=strongly disagree.

The result showed that 64.2% of the respondents strongly agreed that the effect of the flood on their farms resulted in low nutrient in the soil. This implies that when a flood occurs, the nutrients are leached off. Corroborating this, Akpoveta el at., (2014) opined that flood occurrence significantly decreased the nutrients in the soil. Also, 61.7% of the respondents agreed that the flood negatively affects the yield on the farm. The report could be because flood destroyed most of the farm produce, which also included the farm produce stored in the storage facilities. This assertion supported the findings of Aluko et al (2020), who reported destructions of stable crops in flood-prone areas in Oyo State Nigeria. The declaration implies that

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the incidence of water flood in the study area left the farmers with little or nothing to hold on to. Furthermore, 51.9% of the respondents agreed that, whenever flood occurs it affect family income, and revenue available at their disposal. The statement implies that the flood issue in the study area may reduce the income earned at the end of each farming season drastically. Also, 49.4% of the respondents reported that flood resulted in migration (moving from one place to another) to less flood-prone areas. The affirmation, by the respondents implies that respondents migrated from the flooded affected areas to non-affected flood areas for the safety of lives and properties.

Based on the results from the table above, flood affects ways of leaving of the people with the majority either agreed or strongly agreed that it led to reduction in labor used for farming activities, loss of crops and livestock on the farm, decline in the standard of living as well as the outbreak of diseases in the study area.

Table 4: Categorization of the level of effect of flood among the respondents in the study area

Level	Frequency	Percentage
Low	31	38.27
High	50	61.73
Total	**81**	**100**

From the table above, the level of the flood was high (61.73) among the respondents in the study area. The assertion implies that overflow of water had severe negativity in the farming activities of the respondents in the study area.

Table 5: Relationship between Agricultural Activities and the Effect of Flood

Variable	r-value	p-value	Decision
Agricultural Activities and Effect of Flood	- 0.151	0.0179	NS

Source: Field Survey, 2016

The correlation analysis on Table 5 shows that there is a significant relationship between respondents' agricultural activities and the effect of the flood ($r=-0.151$, $p \leq 0.05$). The negative correlation suggests that the nature of farming activities practiced by the respondents also contributed to the effect of flood in the study area. The statement could be attributed to the fact that most of the respondents preferred lands closer to the river boundary which could have a negative impact on their activities as a result of high risk to flood during the raining.

IV. Conclusion

The study revealed that flood hurt the respondents resulting to the migration, the reduced yield of the produce, reduction in quality of output, and loss of nutrients in the soil in the area. Farmers, especially women, are vulnerable to flood due to warmer climate and a higher rate of evaporation, which is contributing to an increase in the average annual amount of rain.

Despite engaging in various agricultural activities to minimize the effect on their activities and way of life, the finding revealed that the level of the flood was high (61.73%) among the respondents in the study area.

V. Recommendation

The following are recommendations made based on the findings of this study.

- The government should construct drainages in flood-affected areas and diversify a means of storing up excess water, to avoid the damage caused by flood yearly.
- The government should plant trees and encourage farmers to plant trees that could prevent washing away from farmland.
- Farmers should be encouraged to construct flood diversion channels that involve the artificial construction of channels along main river channels to divert part of the discharge during flood flows.

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