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Effects of Off-Farm Activities on Arable Crop Production in Oyo State, Nigeria

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Abstract:

This study had assessed the effects of off-farm activities on arable crops production in Oyo State, Nigeria. Multistage sampling procedure was used in selecting three hundred and twenty (320) arable crop farmers and structured interview schedule was used to elicit needed information from the respondents in the study area. Frequency counts, percentages and mean were used as descriptive statistics while Chi-square was used as inferential statistical tool. It was revealed that the mean age of respondents was 49 years and 15.6% did not have any formal education. Majority (90.6%) engaged in trading as off-farm activities. Climate uncertainty and inability to meet social obligations solely by arable crop farming were among the major reasons why the farmers in the study area ventured into off-farm activities. It was hereby recommended that arable crop farmers should endeavor to apply some levels of adaptation measures, such as planting early maturing crop varieties and sequential planting of crops, to cope with climate uncertainty in their environment. Also, government should formulate policies that will curtail the menace of herdsmen in the study area.

Keywords: Off-farm activities, arable crops, production

1. Introduction

Arable crops are very important as life sustaining crops in Nigeria. The importance makes their consumption and cultivation becoming much increased. Arable crops are mostly cultivated in Nigeria by peasant farmers at subsistence levels. The importance of peasant/subsistence farming is very critical in any developing nation as manifested in the fact that their aggregate output formed the national output. Hence, the total national output available for the citizenry were often through the efforts of peasant/subsistence farmers. Despite the upsurge in arable crops cultivation, national domestic consumption has not been fully satisfied, talkless of exporting them as farm produce to earn foreign exchange for the nation. This unsatisfactory level of arable crops production was due to the fact that most arable crop farmers in Nigeria were practicing subsistence/peasant farming. This is in line with Onyebinama (2011) that agricultural production in Nigeria has remained at subsistence level. However, being subsistence/peasant in nature did not make them outrightly irrelevant. They occupy a prime place in national agricultural subsector. Torimiro, Kolawole and Adeogun (2006) had emphasized that it should be clearly understood that subsistence agricultural production of rural farm-families has been playing significant role in sustaining the Nigeria's economy for centuries. Further corroborating this, Onyenwaku and Fabiyi (1991) asserted that the bulk of food production in Nigeria is in the hands of a multitude of small scale (subsistence/peasant) farmers who were scattered all over the country. Thus, peasant farmers will still continue to play relevant and significant roles as much as agricultural subsector has not developed beyond where it is now in Nigeria.

It is noteworthy that subsistence/peasant farmers were always engaged in off-farm activities which often result in distraction of efforts and attention away from crop production. Off-farm activities were conceptualized as those activities being engaged in by a farmer, the spouse and or other members of the family which resulted in generating some level of income for the family or household. The resultant money so generated from such activities is referred to as off-farm income. The off-farm activities seem to augment the household income but also have the tendency to affect the family farm activities. In the light of this, the general objective of this study was to assess the effects of off-farm activities on arable crop production in Oyo State, Nigeria. The specific objectives were to:

- Identify socioeconomic characteristics of the arable crop farmers in the study area,
- Identify various off-farm activities being carried out in the study area,
- Determine the farm size cultivated by the respondents in the study area,
- Determine the annual revenue from off-farm activities by the respondents in the study area,
- Identify reasons for engaging in off-farm activities by the respondents in the study area, and
- Determine the effects of off-farm activities on arable crop production in the study area.

1.1. Hypotheses

- HO₁: There is no significant relationship between farm size cultivated and the effects of off-farm activities on arable crop production in the study area.
- HO₂: There is no significant relationship between reasons for off-farm activities and effects of off-farm activities on arable crop production in the study area.

2. Methodology

The study was conducted in Oyo State, Nigeria and all the arable crop farmers formed the population of this study. Multistage sampling procedure was used in selecting three hundred and twenty respondents for this study. In stage one, 50% from four Oyo State Agricultural Development Programme (OYSADEP) zones were randomly selected giving two zones (which were saki and Ibadan/Ibarapa). Second stage, 25% of the seventeen blocks in the selected zones were selected using systematic sampling technique giving four blocks. In the third stage, 25% of thirty-two cells in the chosen blocks were also randomly selected giving eight cells. Out of the sixty-four groups that constituted the selected cell, 25% were randomly chosen giving sixteen groups. Finally, 10% of registered 3,200 farmers from the selected groups were randomly selected, giving three hundred and twenty (320) farmers that constituted the sample size for this study.

3. Results and Discussion

Data in Table 1 showed the result of socioeconomic characteristics in the study area where it was revealed that 53.8% of the respondents were between age bracket of 41 – 50 years; 21.9% were between 31 – 40 years of age while 13.8% were 21 – 30 years. Also, 6.2% of the respondents were 51 – 60 years old and only 4.3% were above 60 years old. The mean age was 49 years. This implies that farmers in the study area were very agile. Their agility and vibrancy would be helpful in carrying out farming activities. The sex trend of the respondents revealed that 74.0% were male. This implies that arable crop production was male dominated occupation. This may be as a result of cumbersome nature attributable to low level application of modern technology of arable crop production in the study area. Majority (78.8%) of the respondents were married, 17.5% were single, 2.5% were widowed and 1.2% were divorced/separated. This implies that family labour would be available for farming activities which can reduce cost of labour on the farm as labour remains critical in both scarcity and availability. This is in agreement with Dalton (1982) that, at household level, the resource poor farmers consider labour force as one of the most limiting factors in crop production. Furthermore, 73.8% of the respondents had household size of 1 – 2 members, 21.2% had 6 – 10 members and 5.0% had 11 and above members as their household size. The mean household size in the study area was 6. The educational trend of the respondents in the study area revealed that 40.0% had secondary school education, 37.5% had primary school education, 15.6% did not have any formal education and 6.9% had tertiary education. This implies that the respondents had fair educational background which could enhance their information seeking habits and the adoption of new innovation when introduced to them.

Socioeconomic Characteristics	Frequency	Percentage	Mean
Age (years):			
21 – 30	44	13.8	
31 – 40	70	21.9	
41 – 50	172	53.8	49.0
51 – 60	20	6.2	
61 and above	14	4.3	
Sex:			
Male	256	80.0	
Female	64	20.0	
Marital status:			
Single	56	17.5	
Married	252	78.8	
Widowed	8	2.5	
Divorced/separated	4	1.2	
Household size:			
1 – 5	236	73.8	
6 – 10	68	21.2	6
11 and above	16	5.0	
Educational level:			
No formal education	50	15.6	
Primary school	120	37.5	
Secondary school	128	40.0	
Tertiary education	22	6.9	

Table 1: Distribution of Respondents by Socioeconomic Characteristics
Source: Field Survey, 2019

Results in Table 2 showed various off-farm activities being engaged in by the respondents in the study area and that majority (90.6%) claimed that they engaged in trading as their off-farm activities. However, 58.8%, 35.0% and 30.0% engaged in motorcycle transportation, itinerant labour and sewing/tailoring, respectively as their off-farm activities. The study further revealed that blacksmithing (6.3%) was least practiced. This implies that arable crop farmers engaged in various forms of off-farm activities in the study area, probably, to further increase their capacity to enjoy better standard of living with higher socioeconomic status within their locality.

Off-farm activities*	Frequency	Percentage
Cobbling	20	6.3
Transportation (motor vehicle)	32	10.0
Transportation (motorcycle)	188	58.8
Trading	290	90.6
Sewing/tailoring	96	30.0
Housemaid	8	2.5
Charcoal production	58	18.1
Blacksmithing	20	6.3
Milling/grinding	38	11.9
Itinerant labour	112	35.0

Table 2: Distribution of Respondents by Off-Farm Activities

*Multiple Responses

Source: Field Survey, 2019

Data in Table 3 depicted the results of annual revenue realized from off-farm activities by participating respondents in the study area, 38.1% realized N41,000.00 – N50,000.00 as their annual revenue from off-farm activities while 33.1% were earning N31,000.00 – N40,000.00 and 9.4% were earning less than N30,000.00 annually. However, 5.0% of the respondents were realizing N71,000.00 – N80,000.00 as their annual revenue from off-farm activities. The mean annual revenue of the respondents from off-farm activities in the study area was N42,630.25. This implies that though the farmers were arable crop producers but they engage in off-farm activities to earn relatively substantial amount to supplement their income which could aid them to enjoy better quality of life.

Annual revenue (N)	Frequency	Percentage
<30,000.00	30	9.4
31,000.00 – 40,000.00	106	33.1
41,000.00 – 50,000.00	122	38.1
51,000.00 – 60,000.00	28	8.1
61,000.00 – 70,000.00	8	2.5
71,000.00 – 80,000.00	16	5.0
81,000.00 and above	10	3.1

Table 3: Distribution of Respondents by Annual Revenue

Mean = N42, 630.25

Source: Field Survey, 2019

Data in Table 4 revealed that all (100%) of the respondents claimed that climate uncertainty usually made them opted for off-farm activities. This was in line with Sowunmi and Akintola (2010) that agricultural production in Nigeria is always at the mercy of weather which determine and affect food production. As well, all the respondents, (100%) claimed their inability to meet social obligations by depending solely on arable farming usually pushed them into off-farm activities. This is in agreement with Lire, Jeffery and Harrold (2000) that households in developing countries face substantial risks and uncertainty in generating income to meet their basic needs and social obligations. In this same direction of thought, Ahmed and Melesse (2018) had asserted that incomes generated from off-farm activities ease the burden on agriculture as it enables households to have better incomes. Majority (96.3%) claimed that unreliable revenue from arable farming was the reason that led them into participating in off-farm activities. This affirmed Donye and Ani (2012) that the farmer is not sure of finding buyers for farm produce after harvest, or the market prices might have sloughed tremendously when the farm produce is ready for sale. Rajasekaran (1992) had asserted that fluctuating markets also constitute a great deal of uncertainty to farmers in rural societies. Further corroborating this, Lire *et. al.* (2000) had indicated that poorly organized market systems are one of the circumstances constituting uncertainties in food production. The market uncertainties being experienced by the farmers in Nigeria when at the onset of planting season, farm produce command better prices but at harvest become so ridiculously cheapened.

Majority (93.5%) affirmed that land fragmentation was the reason that made them ventured into off-farm activities. This really confirmed the reality of land accessibility becoming tough and being highly fragmented in Nigeria. Agricultural land is daily becoming more fragmented and land remained constant while farming population is increasing at geometrical proportion. Donye and Ani (2012) had stated that the potentiality of food production is largely determined by the availability or otherwise of land, due to many reasons, land availability has been decreasing in many rural farming communities these days. Also, frequent herdsmen invasion of the farms pushed 80.5% of the respondents into off-farm activities. This implies that herdsmen had been causing hardship to arable crop farmers. This may affect food production

thereby threatening the nation’s food security. In addition, 70.8% maintained that frequent destruction of crops through communal clashes forced them to go into off-farm activities while 50.7% went into off-farm activities because of drudgery nature of arable crop production.

Reasons for off-farm activities*	Percentage
Drudgery nature in cultivation of arable crop	50.7
Climate uncertainty	100
Inability to meet social obligations solely by arable farming	100
Frequent herdsmen invasion of the farms	80.5
Land fragmentation	93.5
Frequent destruction of crops through communal clashes	70.8
Unreliable revenue from arable farming	96.3

Table 4: Distribution of Respondents by Reasons for Off-Farm Activities

*Multiple Responses

Source: Field Survey, 2019

The effects off-farm activities on arable crop production in the study area was shown in Table 5 using weighted mean score (WMS). It should be noted that the more the weighted mean score (WMS) tends towards 3.0 (which was the maximum score), the greater the effect of such activity have on arable crops production. Therefore, activities that had high weighted mean score (which signified great effect on arable crops production) were discussed as follows:

Indirect increase in cost of arable crop production had WMS of 3.0. Cost of production could be increased indirectly as non-availability of labour, due to effect of off-farm activity, would afford little quantity of available farm labour to increase their service charge thereby pushing up the total farm cost of production. Also, non-availability of farm labour would make plots to become weedy thereby causing havoc by unwarranted competition with the cultivated crops resulting in reduced crop yield. Ekpo, Ekpo and Ekong (2014) had asserted that currently, hoe-weeding is the major weed control which is costly, very cumbersome, drudgery, less attractive and may require several operations. Another effect as indicated by the respondents was that off-farm activities helped in meeting their unplanned needs with WMS 3.0. This implies that income realized from off-farm activities were used in meeting diverse needs of the family though this tends to encourage family labour emigration thereby reducing the available family labour. Off-farm activities draw family labour away from family farms has WMS 2.9. This implies that family labour were no longer always available because of the pursuit of off-farm activities had attracted away part of the available family labour.

Effects	WMS
Indirect increase in the cost of arable crop production	3.0
Increase in wastage/spoilage of farm produce	2.6
Draws family labour away from family farms	2.9
Gives immediate financial returns	3.0
Reliable and steady source of income for farming families	3.0
Helps in meeting unplanned needs	3.0
Serve as back-up for farming failures	2.7
Farm plots becoming bush	2.6

Table 5: Distribution of Respondents by Effects of Off-Farm Activities

WMS = Weighted Mean Score

Source: Field Survey, 2019

3.1. Test of Hypotheses

- H0₁: There is no significant relationship between farm size cultivated and effects of off-farm activities on arable crop production in the study area. Data in Table 6 showed the results of Chi-square in which there was a significant relationship between the farm size cultivated ($\chi^2 = 78.594$; $pv = 0.000$) and effects of off-farm activities on arable crop production in the study area. Therefore, the null hypothesis was rejected. This implies that farm size cultivated was influenced or affected by off-farm activities. This is in agreement with *apriori* expectation that off-farm activities would take farm labour away from family on-farm work, which would hamper massive cultivation of arable crops as a result of labour scarcity.

Variable	χ^2 -value	df	p-value	Remarks
Farm size cultivated	78.594	11	0.000	Significant

Table 6: Results of Chi-Square Analysis Showing Relationship between F

Arm Size Cultivated and Effect on Arable Crop Production

Level of Significant = 0.05

Source: Field Survey, 2019

- H_{02} : There is no significant relationship between reasons for off-farm activities and effects of off-farm activities on arable crop production in the study area. Result in Table 7 revealed a significant relationship that existed between reasons for off-farm activities ($\chi^2 = 1148.00$; $p_v = 0.000$) and effects of off-farm activities on arable crop production in the study area. This implies that there were various convincing reasons which made respondents engaged in off-farm activities which ultimately had effect on the production of arable crops in the study area.

Variable	χ^2 - value	Df	p-value	Remark
Reasons for off-farm activities	1148.000	7	0.000	Significant

Table 7: Chi-Square Analysis Showing Relationship between Reasons for Off-Farm Activities and Effects of Off-Farm Activities On Arable Crop Production
Level of Significant = 0.05;
Source: Field Survey, 2019

4. Conclusion and Recommendation

The study revealed that the mean age of respondents was 49 years with majority being married and 15.6% not having any formal education. Majority engaged in various off-farm activities to supplement their accrued revenue from arable crop production in the study area. The mean annual revenue was N42,630.25. All the respondents asserted that climate uncertainty as well as inability to meet social obligations solely by arable crop farming as reasons that made them ventured into off-farm activities. Herdsmen farm invasion and farm crops destruction was prevalent in the study area. It was hereby recommended that arable crop farmers should apply adaptation measures such as planting early maturing crop varieties and as well always plan to plant their crops sequentially to deal with climate uncertainties prevailing in their environment. Policies that would curtail the menace of herdsmen should be enacted by government and at the same time formulate policies that will stabilize markets for farmers to encourage them to stay on farms.

5. References

- Ahmed, M. and Melesse, K. (2018): Impact of Off-farm Activities on Technical Efficiency: Evidence from Maize Production in Eastern Ethiopia. <http://doi.org/10.1186/s40100-0098-0>
- Donye, A. O. and Ani, A. O. (2012): Risks and uncertainties in Food Production and their Implications for Extension Work in Nigeria. *Agriculture and Biology Journal of North America*, 3(9):345-353.
- Ekpo, N. F., Ekpo, T. U. U. and Ekong, A. O. (2014): Sustainable Weed Management in Arable Crop Production and Training Needs of Women Farmers in Ikot Ekpene Senatorial District of Akwa Ibom State, Nigeria. *International Journal of Research Development*, 8(1):501-510.
- Lire, E., Jeffery, A. and Harrold, A. (2000): Changes in Consumption and Saving Behaviour Before and After Economic Shocks: Evidence from Zimbabwe. A paper Presented at the International Food and Agribusiness Management Conference. Chicago, Pp.1-39.
- Onyebinama, U. A. U. (2001): An Analysis of the Prospect for Commercialization of Smallholder Agriculture in Imo State. *Journal of Agricultural Technology*, 9(2):50-58.
- Onyenwaku, C. E. and Fabiyi, Y. L. (1991): A Comparative Analysis of Cooperative and Neo-cooperative Farmers in Food Production in Imo State. *Ife Journal of Agriculture*, 13:1-2
- Sowunmi, F. A. and Akintola, J. O. (2010): Effect of Climate Variability on Maize Production in Nigeria, *Journal of Environmental and Earth Sciences* 2(1):19-30.
- Rajasekaran, B. (1992): An Indigenous Duck-Fish Production System in South India: Impact on Food and Nutritional Security. www.ciesin.org/docs/004-200/004-200.html
- Torimiro, D. O., Kolawole, O. D. and Adeogun, M. O. (2006): Nigeria's University-Based Rural Community Development Project: An Exemplary Holistic Model for Rural Community Empowerment in Sub-Saharan African Region. *Nigerian Journal of Rural Sociology*, 6(1&2):1-12.