



## Rural Development and Sustainable Food Security in Ondo State, Nigeria

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### Abstract

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Rural development has been identified as a veritable tool for sustainable food security in developing nations of the world. However, most rural areas in Nigeria are still battling with lack or shortage of basic amenities, decline in agricultural growth, food insecurity, malnutrition and poor economy. This paper therefore examined rural development and sustainable food security in Ondo state, Nigeria. The population of the study consisted of all the rural dwellers in the rural communities across the three Senatorial Districts in Ondo State. The study adopted a descriptive research design of the survey type. A validated instrument with established reliability index  $r$ -value =0.78 was used to elicit information from 300 rural dwellers randomly selected from 15 rural communities across the three Senatorial Districts in the State. Three research objectives were formulated and handled using descriptive statistics of frequency count, simple percentages and mean. The two hypotheses raised in the study were tested using Pearson's Product Moment Correlation (PPMC) and Chi-square respectively. A significant relationship was observed between age, farm size and household size ( $r=0.586$ ,  $r=0.707$ ,  $r=0.659$ ,  $P < 0.05$ ) and level of food security. Similarly, the result of the chi-square analysis showed a positive and significant relationship between the community areas of needs (social facilities, economic facilities and physical facilities with ( $\chi^2=7.041$ , 11.573 and 11.920,  $p < 0.05$  respectively) and level of food security. It was therefore recommended that all the stakeholders concerned with sustainable rural development should harness the potentials inherent in rural transformation as a panacea to sustainable food security in Nigeria.

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### INTRODUCTION

Rural development is the systematic attempt of reorganising and mobilising the rural masses in order to improve their capacity to cope effectively with the global changes and demands. This can be achieved through the provision of social, economic and infrastructural facilities that can help the rural dwellers to alleviate rural poverty and enhance the quality of life of rural life (Adetona, 2013).

Nigeria having a large rural and agrarian population is not an exemption due to the fact that a large proportion of her populace are domiciled in rural areas and primarily engaged in agriculture as their source of livelihood.

According to World Bank (2014) Nigeria is still tagged developing country with about 53% of her

populace domiciled in rural areas and primarily engaged in agriculture. Corroborating this assertion Fasina and Tehinloju (2016) posited that a strong relationship exists between agricultural production and poverty alleviation programmes in sub-Saharan African countries.

In consonance with this food security exist when all the people at all times have physical, social and economic access to sufficient, save and nutritious food to meet their dietary needs and food references for an active and healthy life. The constituents of food security according to Fasina and Tehinloju(2016) are: food availability(production, distribution, exchange); food access( affordability, allocation, preference); and food utilization(nutritional value, social value, food safety).

In an attempt to ensure food security in Nigeria several food security measures were adopted by successive government to include Farm Settlement Scheme (FSC) of 1960s, National Accelerated Food Production programme (NAFPP) of 1972, Agricultural Development projects (ADP) of 1974, National Agricultural Cooperative Bank(NACB) 1973, Rural Banking System of 1973, Operation Feed the Nation (OFN) of 1976, River Basin Development Authority of 1976, Agricultural Credit Guarantee Scheme of 1978, Green Revolution (GR) of 1979, the Directorate of Food, Road and Rural Infrastructures(DIFRRI, the National Economic Transformation Agenda and the Agricultural transformation Agenda (ATA). The aim is to diversify the economy from reliance on oil, assure food security, create job especially for the youths, promote agribusinesses, attract private investment in agriculture, reduce post-harvest losses, add value to local agricultural produce, develop rural infrastructure and enhance access of farmers to financial services and markets (FMARD, 2014)

However, despite all these interventions by the successive regimes in the country, the rural areas still battle the problem of lack or shortage of basic amenities, decline in agricultural growth, food insecurity, malnutrition and poor economy with precipitation effects in people's welfare. In a study of rural household food security conducted in Ondo and Ekiti State Ayantoye (2009) submitted that rural households are the most vulnerable as 42percent of the households were food insecure in the harvesting season while as much as 78 percent face chronic food insecurity in the in the planting season.

Similarly, statistics given by the Food and Agricultural organization (2012) showed that Sub Sahara Africa has a bigger share of those facing hunger with about 168 million people in 2000 to more than 239 million people in 2010. It is against this background that this study was conceived to provide baseline data on rural development and sustainable food security in the study area. The study examined the following objectives:

- i. identify the socio economic characteristics of the respondents;
- ii. indicate community need areas for rural development;
- iii. ascertain the level of sustainable food security in the study area and
- iv. determine the disposition of the respondents towards rural development as a tool for promoting food security

Hypotheses of the Study were stated in the null form.

- i. There is no significant relationship between the socio economic characteristic of the

respondents and the level of sustainable food security.

- ii. There is no significant relationship between the identified community areas of needs and sustainable food security.

## LITERATURE REVIEW

The South African Rural Development Framework (1997) viewed rural development as helping rural people set their priorities in their own communities through effective and democratic bodies by providing the local capacity investment in basic infrastructures and social services. Buttressing this assertion, Umehali (2006) sees rural development as multi dimensional changes involving changes in structures, attitude and institutions as well as the acceleration of economic growth; reduction of inequality and eradication of absolute poverty and hunger. Similarly, Ebong, Otu and Ogwumike (2013) asserted that rural development is the conscious effort targeted at designing programmes that can make available capital and credit, infrastructures and basic public utilities such as water, electricity, basic educational and health care facilities as well as food security and employment opportunities in the rural areas.

Food security according to United Nations (1976) refers to the availability at all times of adequate world food supplies of basic foodstuffs to sustain a steady expansion of food consumption and to offset fluctuations in production and prices. Consequently the ultimate objectives of food security according to FAO(1983) include:

- a) ensuring that all people at all times have both physical and economic access to the basic food that they need;
- b) food Security should have three basic aims, ensuring production of adequate food supplies, maximizing stability in the flow of supplies, and ensuring access to available supplies on the part of those who need them; and
- c) action will be needed on a wide front including all factors that have a bearing on the capacity of both countries and people to produce or purchase foods, while cereals will continue to be the main focus of attention, action should cover all basic food stuff necessary for health, agriculture and rural development, food production, food reserves, the functioning of national and international cereal market.

Food security exist when all the people at all times have physical, social and economic access to sufficient, save and nutritious food to meet their dietary needs and food references for an active and healthy life (FAO, 2001). The constituents of food security according to Fasina and Tehinloju(2016) are: food availability(production, distribution, exchange); food access( affordability, allocation,

preference); and food utilization(nutritional value, social value, food safety. This may be the reason why IFAD (2015) has advocated strong and specific focus on rural areas and smallholder agriculture in promoting food security in the post-2015 development agenda.

**MATERIALS AND METHODS**

The study was conducted in Ondo state, Nigeria. Ondo State was founded on February 3, 1976 from the former Western State. The State is one of the six states that make up the South West geopolitical zone of Nigeria and covers an area of approximately 15,195.2 square kilometers. It is divided into three Senatorial Districts; Ondo South, Ondo North and Ondo Central. Agriculture is the traditional occupation of the people with a significant percentage of the state's labour force engaging in farming. Cocoa is the dominant cash crop grown in Ondo. Other crops cultivated for domestic consumption include yam, cassava and oil palm. The study adopted the descriptive research design of the survey type. A well structured, validated instrument with reliability r -value of 0.73 was used to elicit information from the respondents. The population of the study comprised all the rural dwellers across the three Senatorial Districts in the state. Multi-stage sampling technique was used to select respondents for the study. The sample size was 300 rural respondents which were contacted through snowball technique and purposively interviewed from five rural communities from each of the three Senatorial Districts.

**Data Analysis**

Data were analysed using descriptive statistics and inferential statistics. Descriptive statistics of frequency counts, percentages and mean were used to analyse objectives 1-4 while the hypotheses formulated for the study were tested using inferential statistics (Pearson's Product Moment Correlation for hypothesis 1 and Chi-square for hypothesis 2). This was done on SPSS version 22.

**RESULTS AND DISCUSSIONS**

**Biometric and Socio economic characteristics of the respondents**

**Table1: Frequency distribution and percentage scores of the respondents based on the selected socio economic characteristics of the respondents**

Variables	Frequency	percentage
<b>Sex</b>		
Male	181	60.3
Female	119	39.7
<b>Age(Years)</b>		
≤32	13	4.3
33-42	52	17.3
43-52	81	27.0
53-62	78	26.0
63-72	35	11.7
≥73	41	13.7
<b>Educational Attainment</b>		
No formal Education	39	13.0
Primary education	53	17.7
Secondary education	149	49.7
Tertiary education	59	19.6
<b>Marital Status</b>		
Single	48	16.0
Married	191	63.7
Divorced	35	11.7
Widowed	26	8.7
<b>Primary occupation</b>		
Farming	138	46.0
Civil service	45	15.0
Entrepreneur/artisan	117	39.0
<b>Farm size</b>		
< 2 hectare	142	47.3
2-4 hectares	80	26.7
5 hectares & above	78	26.0
<b>Household size</b>		
6-10	147	49.0
11-15	85	28.3
≥16	68	22.7

Source: Field Survey, 2018

Results on Table 1 above showed that majority (60.3%) of the respondents were male while only 39.7% were females. Twenty-seven percent of the respondents were between the age bracket of 43 and 52 years, about 49.7% had secondary education, majority (63.7%) were married while forty-six percent engaged in agriculture as their primary occupation and have farm size of less than 2 hectares which indicates small holder farmers. This corroborates IFAD (2015) that smallholder farmers have enormous potential to contribute to sustainable development and food security. The high percentage obtained for male may be due to the high energy demand required for farming. This supports Akintade, Akinbani and Okunlola (2016) that there are more male in agricultural production than their female counterparts.

**Community areas of need for sustainable development**

**Table2: Distribution of the respondents based community areas of need identified for sustainable development**

Areas of need	Needed	Not needed	Availability	
			Yes	No
<b>Social facilities</b>				
a) Schools	263 (87.7)	37 (12.3)	187 (62.3)	113(37.7)
b) ICT facilities	193 (64.3)	107(36.7)	96 (32.0)	204(68.0)
c) Entertainment& recreational facilities	198 (66.0)	102(34.0)	81(27.0)	219(73.0)
d) Religion centres	246 (82.0)	54 (18.0)	204 (68.0)	96(32.0)
e) Electricity	231 (77.0)	69 (23.0)	95 (31.7)	205(68.3)
f) Pipe borne water	272 (90.7)	28 (9.3)	102 (34.0)	198(66.0)
<b>Economic facilities</b>				
a) Markets	242 (80.7)	58 (19.3)	232 (77.3)	68(22.7)
b) Banks	166 (55.3)	134 (44.7)	149 (49.7)	151(50.3)
c) Industries	217 (72.3)	83 (27.7)	67 (22.3)	233(77.7)
d) Arable land	279 (93.0)	21 (7.0)	178 (59.3)	122(40.7)
e) Processing & storage facilities	181 (60.3)	119 (39.7)	79 (26.3)	221(73.7)
f) Credit facilities	231 (77.0)	69 (23.0)	64 (21.3)	236(78.7)
<b>Physical infrastructures</b>				
a) Good road network	271 (90.3)	29 (9.7)	37 (12.3)	263(87.7)
b) Health centres	218 (72.7)	82 (27.3)	139 (46.3)	161(53.7)
c) Public utilities	192 (64.0)	108(36.0)	154 (51.3)	146(48.7)

Source: Field survey, 2018

Figures in parentheses Represent percentages

It is evident from Table 2 above that the community areas of need that can promote sustainable food security as identified by the respondents among others were: arable land, pipe borne water, good road net works, schools, religious centres and markets with 93.0%, 90.7%, 90.3%, 87.7%,82.0% and 80.7% respectively. This further shows the pathetic condition of most rural areas in the country. According to Human Development Report (HDR) (2018) Nigeria is one of the poorest among the poor countries of the world with the rank of 157 out of 189 and Human Development

Index (HDI) value of 0.532 and a life expectancy of 54 years for female, 53 years for male; 44% literacy rate and 70% rural population living on less than 2 dollars per day and lacking adequate access to clean and safe water, education and health care facilities, electricity, housing and good road networks. As a way out IFAD (2015) posited that increasing productivity is not enough but improving access of rural people to markets, finance, technology and information is essential for achieving more diversified and resilient rural economies.

**Level of sustainable food security in Ondo State**

**Table3: Distribution of the respondents based on the level of sustainable food security in Ondo State**

Variables	High	Moderate	Low
Food availability	71(23.7)	137(45.7)	92 (30.6)
a) Production of food	98(32.7)	77(25.6)	125 (41.7)
b) Distribution of food	72(24.0)	54(18.0)	174 (58.0)
c) Exchange of food			
Food access			148 (49.3)
a) Food affordability	70 (23.3)	82 (27.3)	144 (48.0)
b) Food allocation	37 (12.3)	119 (39.7)	194 (64.7)
c) Food preference	25 (8.3)	81 (27.0)	
Food utilization	53 (17.7)	91(30.3)	156 (52.0)
a) Food nutritional value	77 (25.7)	146 (48.6)	77 (25.7)
b) Food social value	62 (20.7)	83(27.7)	155(51.6)
c) Food safety			

Source: Field survey, 2018

Figures in parentheses Represent percentages

As seen on Table 3 above, production of food according to the respondents is moderate (45.7%) while the distribution and exchange of food is low (41.7% and 58.0% respectively). Similarly, food affordability, food allocation and food preference is low (49.3%, 48.0% and 64.7% respectively). Moreover, food nutritional value and food safety were rated low by the respondents (52.0% and 51.6%) where as a moderate value (48.6%) was obtained for food

social value. This findings is in line with the statistics given by the Food and Agricultural organization (2012) that Sub Sahara Africa has a bigger share of those facing hunger with about 168 million people in 2000 to more than 239 million people in 2010. In the same vane IFAD (2015) avowed that three quarters of the poor and hungry people in the world live in the rural areas of developing countries and that most of them derive their livelihoods from agriculture.

**Disposition of the respondents towards rural development as a tool for promoting food security**

**Table 4: Mean ( $\bar{x}$ ) Distribution of the respondents based on their disposition towards rural development as a tool for promoting food security**

Statement of opinion	Agree	Disagree	$\bar{x}$	Decision
1. I am of the belief that rural development can facilitate food availability	213 (71.0)	87(29.0)	1.71*	A
2. Access to food is totally dependent on rural transformation	196(65.3)	104(34.7)	1.65	D
3. It is a fact that rural development can stimulate food affordability	217(72.3)	83(27.7)	1.72*	A
4. I am of the opinion that rural development can reduce nutritional deficiency in the country	224(74.7)	76 (25.3)	1.75*	A
5. It can facilitate easy distribution of agricultural produce to the end users	237(79.0)	63 (21.0)	1.79*	A
6. The rural people have not satisfied their daily dietary intake talk more of distributing to cities	106(35.3)	194(64.7)	1.65	D
7. Rural development is multifaceted and so not doable	91 (30.3)	209(69.7)	1.69	D
8. It will only increase the gap among the rich and the poor	113 (37.7)	187(62.3)	1.62	D
9. I don't think rural development can play any significant role in ensuring food security	95(31.7)	205(68.3)	1.68	D
10. Rural development is just a social phenomena	97(32.3)	203(67.7)	1.67	D

Source: Field survey, 2018 Figures in parentheses represent percentages A= agreed, D= Disagree Grand mean= 1.71

It can be observed from Table 4 that majority of the respondents agreed that rural development can facilitate easy distribution of agricultural produce to the end users, can reduce nutritional deficiency in the country, can stimulate food affordability and facilitate food availability ( $\bar{x}$ =1.79, 1.75, 1.72 and 1.71 respectively). However, they disagree to other statements such as rural development is multifaceted and so not doable, I don't think rural development can play any significant

role in ensuring food security, rural development is just a social phenomena among others. This is in agreement with Ebong, Otu and Ogwumike (2013) that rural development is the conscious effort targeted at designing programmes that can make available capital and credit, infrastructures and basic public utilities such as water, electricity, basic educational and health care facilities as well as food security and employment opportunities in the rural areas.

**Hypothesis one: Nosignificant relationship between some selected biometric and socio economic characteristics of the respondents and level of food security**

**Table 5: Results of the PPMC analysis showing significant relationship between some selected socio economic characteristics of the respondents and level of food security**

Variables	r- value	P- value	decision
Age	0.585	0.01	S
Farm size	0.707	0.00	S
Household size	0.659	0.03	S

Source: Field survey, 2018 Figures in parentheses Represent percentages S (Significant at p< 0.05)

Result in Table 5 above showed that age, farm size and household size( $r=$  0.585, 0.707 and 0.659,  $p<$  0.05 respectively) had positive and significant relationship on the level of food security. Hence the null hypothesis was rejected while the alternate hypothesis was accepted. This means that as the age, farm size and household size of the respondents increase the level of food security is suppose to also

increase. The implication is that these selected socioeconomic characteristics are supposed to have positive influence on food security. This corroborates the findings of Onyenobi (2014) that farm size, household size and years of farm experience significantly influenced the level of farmers' participation in yam production in Imo State.

**Hypothesis two: No significant relationship between the identified community areas of needs and sustainable food security**

**Table 6: chi-square analysis showing significant relationship between the identified community need areas and sustainable food security**

Variables	$\chi^2$	df	P- value	Decision
Social facilities	7.041	5	0.003	S
Economic facilities	11.573	5	0.007	S
Physical facilities	11.920	2	0.001	S

Results on Table 6 above revealed that a significant relationship exist between the identified community areas of needs ( $\chi^2 = 7.041, 11.573$  and  $11.920, p < 0.05$  respectively) and sustainable food security. This indicates the importance of these community areas of need and information is essential for achieving more diversified and resilient rural economies.

**CONCLUSION**

Findings from the study revealed that a significant relationship exists between the selected socio-economic characteristics of the respondents: age, farm size and household size and sustainable food security.

Similarly, the identified community need areas such as social facilities, economic facilities and physical facilities can stimulate sustainable food security as evidence from the opinion of the respondents.

The study therefore concludes that rural development is significant to sustainable food security.

**RECOMMENDATIONS**

Based on the findings of the study the following recommendations were made:

1. all the stakeholders concerned with sustainable rural development should harness the potentials inherent in rural development as a panacea to sustainable food security in Nigeria;
2. periodic research should be conducted on food security to ascertain the level of sustainable food security in the country;
3. the community areas of needs identified in the study should be properly looked into by all the stakeholders concerned with sustainable food security; and
4. Nigerian youths should be encouraged to embrace agriculture

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need in promoting sustainable food security. The implication is that there should be adequate provision of social, economic and physical facilities. This further emphasis the submission of IFAD (2016) that access of rural people to markets, finance, technology

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