

Subsistence Food Production and Household Food Security of Rural Dwellers in Central Senatorial Districts, Cross River State, Nigeria

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Abstract

This study examined the relationship between subsistence food production and household food security among rural dwellers in the Central Senatorial District of Cross River State, Nigeria. One research question and one null hypothesis guided the study. Relevant literature was reviewed, and the study was anchored on the Participatory Development Model. A cross-sectional survey research design integrating quantitative and qualitative approaches was adopted. A sample of 600 respondents was selected using multi-stage, simple random, proportionate, and systematic sampling techniques. Data were collected through structured questionnaires, Focus Group Discussions (FGDs), and Key Informant Interviews (KIIs). Quantitative data were analysed using the Pearson Product Moment Correlation Coefficient, while qualitative data were analysed thematically. The findings revealed a significant positive relationship between subsistence food production and household food security. The calculated correlation coefficients ($r = 0.878, 0.614, 0.925, \text{ and } 0.860$) were all greater than the critical r -value of 0.195 at the 0.05 level of significance. The study concluded that subsistence food production significantly enhances household food security among rural dwellers. It recommended increased government support through improved access to agricultural inputs, extension services, credit facilities, storage infrastructure, and capacity-building programmes to strengthen household food security and reduce rural poverty.

Keywords: Subsistence food production, household food security, rural women, rural dwellers, Cross River State.

Introduction

Subsistence food production remains an important part of rural livelihood systems across the world because it enables households to produce food primarily for their own consumption. By depending partly on food produced within the household, rural families can reduce their dependence on commercial markets, particularly when food prices are unstable or beyond their financial capacity (Food and Agriculture Organization, 2022). Subsistence agriculture is especially important in rural communities where farming remains one of the major means through which families obtain food and maintain household food security (FAO, 2023). Women play a particularly important role in this system because they participate in several stages of agricultural production, including cultivation, harvesting, processing, and storage of food crops, all of which contribute to the food security of their households (International Fund for Agricultural Development, 2021).

Across Africa, subsistence agriculture continues to serve as a major source of livelihood for many rural households. Women make substantial contributions to the production of food crops and remain important actors in agricultural systems that support rural populations (FAO, 2022). Many rural women cultivate staple crops such as cassava, maize, millet, sorghum, yam, and vegetables, which form a significant part of household diets in many African communities (World Bank, 2020). Through their participation in small-scale farming, women help to ensure that food is available for

household consumption, particularly in communities where access to commercial markets is limited or household incomes are insufficient to meet food needs (FAO, 2022).

Women's contribution to household food security also extends beyond the cultivation of crops. Many women are actively involved in processing, preserving, and storing agricultural produce in order to reduce spoilage and ensure that food remains available for a longer period (World Food Programme, 2021). Activities such as drying, smoking, fermentation, and traditional storage methods help households preserve food for use during periods when fresh produce is scarce (IFAD, 2021). These practices contribute to food stability and can also improve household dietary options by making different forms of food available throughout the year (WFP, 2021).

Despite their important role in agricultural production, women across Africa continue to experience several barriers that affect their productivity. These challenges include limited access to land, credit, improved farm inputs, agricultural extension services, and other productive resources (World Bank, 2020). Such inequalities often reduce women's capacity to increase agricultural production and limit the contribution that subsistence farming can make to household food security (FAO, 2022). Climate change, environmental degradation, declining soil fertility, and rural poverty have also increased the difficulties faced by women farmers and contributed to persistent food insecurity in many rural African communities (World Bank, 2020). In Nigeria, subsistence farming remains a major feature of rural livelihood and food production. Women constitute an important part of the agricultural workforce and contribute significantly to the production of food consumed by rural households (National Bureau of Statistics, 2021). Rural women are involved in the cultivation of crops such as cassava, yam, maize, rice, vegetables, and legumes, which are widely consumed across Nigerian households (FAO, 2022). Their participation in food production helps families maintain access to basic food items and reduces complete dependence on food purchased from markets (IFAD, 2021).

In addition to crop production, Nigerian women are actively involved in food processing, preservation, and small-scale trading. These activities help convert agricultural produce into forms suitable for consumption and, in some cases, provide additional income for household needs (Ogunlela & Mukhtar, 2009). Income earned from these activities can improve a household's ability to purchase food and other necessities, while food processing and preservation help reduce waste and improve food availability (FAO, 2023). However, many women farmers still face challenges relating to land ownership, access to credit, inadequate agricultural extension services, and other forms of gender inequality within the agricultural sector (NBS, 2021). These limitations can reduce agricultural output and make it difficult for women farmers to fully maximize their contribution to household food security (Ogunlela & Mukhtar, 2009). Nevertheless, subsistence farming continues to serve as an important survival and livelihood strategy for rural women in Nigeria because it provides food for household consumption and supports the economic wellbeing of farming families (FAO, 2022).

In Cross River State, subsistence food production remains an important economic activity among rural households, with women making substantial contributions to household food supply (Agbor & Eteng, 2018). Women in rural communities cultivate crops such as cassava, yam, maize, cocoyam, and vegetables, which constitute important components of household diets (Alawa, Okeme, & Emani, 2015). Through their involvement in farming, women contribute directly to food availability by producing crops that support household consumption throughout different periods of the year (Agbor & Eteng, 2018). Women in Cross River State also participate in different forms of food processing and preservation, including garri processing, palm oil extraction, and fish smoking. These activities help to preserve agricultural and food products, reduce post-harvest losses, and increase the period during which food can be stored and consumed (Nkpoyen, Kenneth,

Umo, Eteng, Cobham, Udo, Anam, & Essien, 2021). The ability to process and preserve food is particularly important during periods of scarcity because it enables households to maintain access to food even when fresh agricultural produce is not readily available (Alawa, Okeme, & Emani, 2015). Women's involvement in farming and related economic activities can also generate income that supports the purchase of additional food and other household needs (Agbor & Eteng, 2018).

Within the Central Senatorial District of Cross River State, subsistence agriculture remains an important livelihood activity, and women are actively involved in food production and household sustenance (Nkpoyen, Kenneth, Umo, Eteng, Cobham, Udo, Anam, & Essien, 2021). Many women operate smallholder farms that focus mainly on producing food crops for household consumption, thereby contributing to the regular availability of staple foods within rural families (Agbor & Eteng, 2018). Their contribution becomes particularly important during periods when food prices rise or when households experience difficulty accessing food through commercial markets, as household production can serve as an additional source of food security and resilience (FAO, 2023). However, rural households within the Central Senatorial District continue to experience challenges that affect agricultural production and household food security. Rising costs of farm inputs, climate-related changes, communal conflicts, limited access to improved farming technologies, and declining agricultural productivity can reduce the capacity of households to produce sufficient food (Nkpoyen, Kenneth, Umo, Eteng, Cobham, Udo, Anam, & Essien, 2021). Despite these difficulties, women's participation in subsistence food production remains an important factor in sustaining rural households. Their involvement in crop cultivation, food processing, preservation, and other agricultural activities continues to support household food availability and strengthen the livelihoods of rural families in Cross River State.

Statement of the problem

Household food security has become an increasing concern among rural households in the Central Senatorial District of Cross River State, Nigeria. Although rural communities are naturally endowed with agricultural land and favourable climatic conditions, many households continue to experience inadequate access to sufficient, nutritious, and affordable food throughout the year. For many families, the challenge is no longer merely the availability of food but the inability to consistently obtain enough food to meet daily nutritional requirements. Consequently, many households are compelled to reduce the quantity and quality of meals consumed, skip meals, or rely on less nutritious foods to survive. This persistent food insecurity has contributed to poor nutritional outcomes, particularly among children and women, resulting in cases of malnutrition, poor health status, reduced productivity, and declining household well-being. The persistence of these conditions poses serious social and economic consequences, not only for affected families but also for the sustainable development of rural communities.

The situation is further aggravated by the widespread incidence of poverty among rural women, who constitute the major labour force in subsistence agriculture. Despite their enormous contribution to household food production, many women have limited access to productive resources such as farmland, improved farm inputs, agricultural credit, extension services, and modern farming technologies. These limitations have reduced their capacity to engage effectively in subsistence food production and have weakened their ability to contribute meaningfully to household food provision. As household food production declines, many women find themselves unable to adequately support the nutritional and financial needs of their families. This has increased household dependence on expensive food purchases despite declining incomes, thereby worsening poverty and food insecurity among rural households.

The inability of many women to actively participate in productive agricultural activities has also affected family welfare in several ways. In many rural households, women are traditionally responsible for providing food and ensuring the nutritional well-being of family members. However, when subsistence food production is constrained, women often experience feelings of frustration, anxiety, helplessness, and emotional distress arising from their inability to fulfil these responsibilities. The continuous struggle to provide adequate food for household members has placed considerable psychological pressure on many women, affecting their confidence, self-worth, family relationships, and overall mental well-being. This situation has equally reduced their contribution to household welfare and community development, thereby perpetuating the cycle of poverty and food insecurity within rural communities.

Recognizing these challenges, the Federal Government of Nigeria and the Cross River State Government have introduced several agricultural and rural development initiatives, including agricultural extension programmes, input support schemes, women empowerment programmes, credit facilities, and poverty reduction interventions aimed at increasing agricultural productivity and improving household food security (Charles, 2009). Despite these interventions, food insecurity and rural poverty remain widespread among many households in the Central Senatorial District, suggesting that existing measures have not sufficiently addressed the underlying challenges confronting rural women and household food production.

Previous studies have examined women's contributions to household food security and agricultural production in different parts of Nigeria. For example, Alawa, Okeme and Emani (2015), examined the contributions of rural women to household food security in Cross River State and established that women play significant roles in food production and household sustenance. However, the study did not specifically examine how subsistence food production influences household food security among rural dwellers in the Central Senatorial District of Cross River State, nor did it adequately address the implications of women's limited participation in subsistence food production for household welfare and food security. This constitutes a knowledge gap in the existing literature.

It is against this background that this study seeks to examine the relationship between subsistence food production and household food security among rural dwellers in the Central Senatorial District of Cross River State, Nigeria. The study is expected to provide empirical evidence that will contribute to policies and interventions aimed at strengthening subsistence food production, improving household food security, enhancing women's productive capacity, and promoting sustainable rural livelihoods.

Research question

Is there any relationship between subsistence food production and household food security of rural dwellers in Central Senatorial District of Cross River State?

Research objective

Specifically, the study examined the relationship between subsistence food production and household food security of rural dwellers in Central Senatorial District of Cross River State.

Research hypothesis

Subsistence food production has no significant relationship with household food security of rural dwellers in Central Senatorial District of Cross River State.

Literature review

Subsistence food production and household food security

Agricultural production is one of the major areas through which the socio-economic well-being of rural women can be understood. Agriculture provides food for households and supplies raw materials and food products to urban populations. In rural communities, subsistence food production remains an important means through which households secure food and sustain their livelihoods (Marsden & Smith, 2003). The agricultural sector therefore plays a significant role in improving the economic and social conditions of rural populations. Women are actively involved in different agricultural activities, particularly the production of food and raw materials for household consumption and other domestic needs (Umoh, 2018). Through their participation in agriculture, rural women contribute significantly to household welfare, food availability, income generation, and livelihood sustainability. Increased agricultural productivity among women also has the potential to create employment opportunities and improve the economic conditions of rural households.

Reports have consistently shown that women make substantial contributions to food production, processing, and marketing. The United Nations Development Fund for Women report of 1988–1989 indicated that rural women were responsible for producing, processing, and marketing a significant proportion of food consumed by households. Similarly, a World Bank survey of rural women in Nigeria reported that more than 80 percent of women aged 15 years and above were engaged in agricultural activities (Agba, 2005). Mehra and Rojas (2018) also established a strong connection between women's participation in agriculture and the socio-economic well-being of rural households. Women remain important contributors to rural development and national economies because of their involvement in farming, household care, small-scale businesses, and other productive activities. They often combine agricultural work with the responsibility of caring for children, older persons, and other family members, while investing a considerable proportion of their income in household and community welfare (Mehra & Rojas, 2018).

Women's involvement in agriculture produces several benefits for households and rural communities. Okio (2009), observed that agricultural projects involving women could lead to increased household income, improved food and nutritional security, greater purchasing power, enhanced decision-making capacity, increased self-reliance, improved access to healthcare, and better opportunities for children's education. Since women are largely responsible for meeting household food needs in many rural communities, their active participation in agriculture can contribute directly to improved socio-economic well-being. Agriculture remains an important driver of economic growth and rural development, particularly in countries where a large proportion of poor households depend on farming for survival. Women are therefore an important resource in agriculture and the rural economy because of their roles as farmers, agricultural labourers, processors, traders, and entrepreneurs (FAO, 2001).

Across Sub-Saharan Africa, women make important contributions to agricultural production and rural economic activities. Many rural women manage complex households while engaging in several livelihood activities to support their families (FAO, 2001). Their responsibilities commonly include crop production, livestock care, food processing and preparation, agricultural wage labour, collection of fuelwood and water, trading, marketing, household maintenance, and caregiving responsibilities (FAO, 2011). These multiple responsibilities demonstrate the important position women occupy in sustaining household livelihoods and promoting the welfare of rural families. Empirical evidence from different countries further demonstrates the importance of women in agricultural and other economic activities. A study conducted by Kalia (2012), in Ethiopia found

that a large proportion of women employed in the informal sector were involved in agriculture-related self-employment, while others participated in non-agricultural informal businesses. Similarly, Avorny (2013), examined women's contribution to economic growth and well-being in Ghana using interviews and focus group discussions with women working in the informal sector in the Twifo-Hemang-Lower Denkyira District. The findings showed that women made important contributions to household and community development through farming, trading, and different forms of entrepreneurship. The study reported that many rural women were engaged in farming and trading, while others operated businesses such as soap making, baking, fish processing, dressmaking, hairdressing, aluminium work, and photography. Income generated from these activities enabled many women to support their children's education, meet healthcare needs, and provide other essential household requirements. These findings demonstrate that women's productive activities can significantly improve household income and socio-economic well-being.

Women also contribute greatly to agricultural production through the amount of time and labour they devote to farming and food-related activities. They participate in land preparation, fertilizer application, planting, weeding, harvesting, processing, and storage of agricultural produce. Women also perform a large share of household food processing and preparation. Their contributions to agricultural labour and food production are therefore important for poverty reduction, household food security, and economic growth. Manuh (2018), noted that women make substantial contributions to food production, particularly within developing societies where women play a major role in small-scale agriculture. Food production by women represents an important foundation for household food security. Women participate as farmers, agricultural workers, and managers of natural resources, thereby contributing to food availability and agricultural output at the household, community, and national levels (Urowayini, 2012). Their involvement in farming also contributes to environmental management and the maintenance of family food security (Brown, 2011). In Nigeria, women's participation in agriculture has received increasing attention because women are involved in several aspects of food production, processing, and value addition. Odurukwe, Njoku, and Okereke (2006), identified several off-farm and processing activities undertaken by women, including cassava processing into flour, pancakes, and fufu; soybean processing into soymilk and other products; preservation of tomatoes; rabbit meat processing; melon and cocoyam processing; vegetable gardening; and the harvesting and storage of paddy rice. These activities demonstrate the broad contribution of women to agricultural production and household food supply.

Rural women involved in agricultural production also participate in animal husbandry and subsistence farming. Some women engage in the rearing of livestock such as goats, pigs, poultry, and other farm animals. Their responsibilities may include breeding, feeding, caring for animals, and marketing livestock products. Subsistence farming generally involves the small-scale cultivation of crops primarily for personal or household consumption (Tambi, et al., 2017). Through these activities, women contribute directly to household food availability and nutritional security. Women play a particularly important role in food production across Sub-Saharan Africa. In many households, women are primarily responsible for cultivating food crops, while in other communities, men and women jointly cultivate staple crops under household farming arrangements (Bafana, 2012). These production systems demonstrate that women remain central actors in ensuring that households have access to food. Their contribution is especially important in rural areas where households depend largely on locally produced food for survival.

Women's agricultural contributions are not limited to Africa. In many developing societies, women participate actively in farming, food processing, and other agricultural activities. In Thailand, for example, women contribute to the production of fruits and vegetables in homesteads, small farms, plantations, and crop-processing activities. These activities contribute to household income and

food availability. Women are also commonly involved in vegetable cultivation and the planting of fruit trees (Roy & Mondal, 2015). Roy and Mondal (2015), further observed that farming remains an important economic activity among women and other farmers in developing countries. Traditional farming and integrated farming practices are increasingly used to improve agricultural productivity, while organic vegetable production has become an important agricultural activity in response to growing food demand. The increasing participation of women in these agricultural activities further demonstrates their important role in food production, household livelihoods, and socio-economic development.

Theoretical framework

Chamber's Participatory Development Model

The Participatory Development Model was developed by Robert Chambers (1983), with contributions from Mahatma Gandhi (1962), John Friedmann (2000), Elinor Ostrom (1990), Amartya Sen (1999), and Uphoff and Esman (1997). The model emerged as a response to the limitations of top-down development approaches that often-excluded local people from decisions affecting their livelihoods. The model advocates a bottom-up approach in which community members actively identify their needs, participate in planning, and implement development activities. It is based on the belief that sustainable development is achieved when local people participate in decisions that affect their lives. The model also recognizes that rural communities possess indigenous knowledge and practical experience that can contribute to solving their development challenges.

The Participatory Development Model is relevant to this study because it recognizes rural women as active participants in subsistence food production rather than passive beneficiaries of development programmes. In the Central Senatorial District of Cross River State, women play important roles in cultivating, processing, and preserving food crops that sustain household food supply. Their active involvement contributes to improved household food availability and food security. The theoretical application of the model to this study is that when rural women are actively involved in subsistence food production and are supported to participate in agricultural decision-making, they are better able to increase household food production using local knowledge and available resources. This improves food availability, enhances access to food, reduces household vulnerability to hunger, and strengthens household food security. The model therefore provides a useful explanation of how women's participation in subsistence food production can improve the food security of rural households in the Central Senatorial District of Cross River State.

Despite its strengths, the model has been criticized for assuming that all community members participate equally in development activities. In some communities, local elites may dominate decision-making, while inadequate resources and weak community institutions may limit effective participation. Nevertheless, the Participatory Development Model is appropriate for this study because it provides a useful framework for explaining how women's active participation in subsistence food production contributes to improving household food security among rural dwellers in the Central Senatorial District of Cross River State, Nigeria.

Methodology

The study adopted a cross-sectional survey research design integrating both quantitative and qualitative approaches to examine the relationship between subsistence food production and household food security of rural dwellers in the Central Senatorial District of Cross River State, Nigeria. The quantitative component involved the administration of structured questionnaires,

while the qualitative component utilized Focus Group Discussions (FGDs) and Key Informant Interviews (KIIs) to obtain in-depth information on women's experiences and perceptions regarding subsistence food production and household food security.

The study was conducted in the Central Senatorial District of Cross River State, comprising Abi, Yakurr, Obubra, Ikom, Etung, and Boki Local Government Areas. The area was selected because women actively engage in diverse livelihood activities that contribute to household survival and rural development.

The study population comprised rural women residing in the six Local Government Areas. Based on the 2016 projected population estimates of the National Population Commission, the female population of the study area was 513,887. Using the Taro Yamane (1967) formula at a 0.05 level of significance, a minimum sample size of 400 respondents was obtained. To improve representativeness and the reliability of the findings, the sample size was increased to 600 respondents. Out of the 600 respondents, 60 participated in the Focus Group Discussions, while six women leaders participated in the Key Informant Interviews. These participants were drawn from the existing sample; therefore, the total sample size remained 600 respondents.

A multi-stage sampling procedure involving purposive, simple random, proportionate, and systematic sampling techniques was adopted. The six Local Government Areas constituted the sampling strata, from which wards and rural communities were selected through simple random sampling. Thereafter, respondents were selected systematically from sampled households, with one eligible woman selected from each household. The sample was proportionately distributed across the six Local Government Areas based on their respective female population sizes.

Data were collected from both primary and secondary sources. Primary data were obtained through structured questionnaires, Focus Group Discussions, and Key Informant Interviews, while secondary data were sourced from scholarly journals, textbooks, government publications, and other relevant literature. Quantitative data were analyzed using descriptive statistics and the Pearson Product Moment Correlation Coefficient, while qualitative data were analyzed thematically to complement and explain the quantitative findings. The hypothesis was tested at the 0.05 level of significance using the Pearson Product Moment Correlation Coefficient. The formula is presented as follows:

$$r = \frac{N\sum XY - \sum X \sum Y}{\sqrt{(N\sum X^2 - (\sum X)^2)(N\sum Y^2 - (\sum Y)^2)}}$$

Where:

r = Co-efficient of the correlation
y = Dependent variable
x = Independent variable
Σ = Summation

Analysis and Discussion

Data presented below presents the responses obtained from the field survey. The table specifically examined respondents' views on availability of rice markets and income generation.

General Description of Demographic Data

Table 1: Personal characteristics of respondents (N = 600)

Variables	No of Respondents	Percentages (%)
Age		
35 – 40 years	238	39.67
41 – 45 years	184	30.67
46 – 50 years	102	17.0
51 – 55 years	54	9.0
56 years and above	22	3.66
Marital Status		
Single	160	26.67
Married	380	63.33
Divorced	45	7.5
Widow	15	2.5
Religion		
Christianity	575	95.84
Islam	5	0.83
African Tradition	20	3.33
Occupation		
Farming	286	47.66
Fishing	92	15.33
Trading	101	16.83
Civil servant	63	10.5
Unemployed	42	7
Others (Specify)	16	2.66
Educational Level		
Primary education	186	31.0
Secondary education	308	51.33
Informal education	106	17.67
Income Level Per Month		
Less than ₦50, 000	164	27.33
Less than ₦100, 000	240	40.0
Less than ₦200, 000	182	30.33
Above ₦300, 000	14	2.33
Source of Income Per Month		
Profit from fishing	92	15.33
Salary	63	10.5
Profit of enterprise	101	16.83
Profit of agriculture	286	47.66
None	58	9.66
Number of Children		
1 - 2	246	41.0
3 - 5	302	50.33
6 and above	52	8.67

Source: Field Data (2026).

Table 2: Responses on subsistence food production and household food security of rural dwellers in Central Senatorial District

S/N	Items	Responses	
		Positive (%)	Negative (%)
1	We are involved in subsistence food production to meet household consumption and nutrition needs.	546 (91%)	54 (9%)
2	Our food production efforts have improved the living conditions of people by making food available and accessible.	448 (74.7%)	152 (25.3%)
3	In my community traditional small land holder's farmers are raising subsistence crops such as maize, cassava, yam, rice etc. My community is self-sufficient in food production through women's efforts.	482 (80.3%)	118 (19.7%)
4	Women's food production efforts have helped to reduce hunger and starvation in the community.	406 (67.7%)	194 (32.3%)
5	Households have benefited from subsistence food production because they are now able to eat nutritious food	492 (82.1%)	108 (18%)
6	Our efforts in subsistence food production have reduced poverty	425 (70.8%)	175 (29.2%)
7	Involvement in agriculture has impacted positively on food security	488 (81.3%)	112 (18.7%)
8		506 (84.3%)	94 (15.7%)

Source: Field Data (2026).

Hypothesis

Subsistence food production has no significant relationship with household food security of rural dwellers in Central Senatorial District of Cross River State.

The independent variable involved in this hypothesis is subsistence food production while the dependent variable is household food security of rural dwellers. Subsistence food production was classified into cultivation of food crops, poultry/livestock production, improve storage facilities and adequate nutrition. Pearson Product-moment Correlation analysis was used to test this hypothesis. The result is presented in table below

Table 3: Pearson product-moment correlation analysis of the relationship between subsistence food production and household food security of rural dwellers in Central Senatorial District of Cross River State (N=600)

Variables	$\sum x$ $\sum y$	$\sum x^2$ $\sum y^2$	$\sum xy$	r-cal
Rural women initiative in food security				
a. Cultivation of food crops (X_1)	1050	1950	1775	0.878
b. Poultry/livestock production (X_2)	1055	1970	1750	0.614
c. Improve storage facilities (X_3)	1040	1945	1780	0.925
d. Adequate nutrition (X_4)	1046	1952	1774	0.860
Household wellbeing (y)	950	1650		

Significant at 0.05, critical- $r = 0.195$, $df = 598$

Results of analysis in table 5 show that the calculated r-values of 0.878, 0.614, 0.925, 0.860 are greater than the critical r-value of 0.195 at 0.05 level of significance, with 598 degrees of freedom. By these results, the null hypothesis is rejected and alternate hypothesis upheld. This means that subsistence food production in terms of cultivation of food crops, poultry/livestock production, improved storage facilities and adequate nutrition have significant relationship with household food security of rural dwellers in Central Senatorial District of Cross River State. The result further show that subsistence food production in terms of improve storage facilities has great effect on household food security of rural dwellers in the study area.

Findings

Since the calculated r-values of 0.878, 0.614, 0.925, 0.860 are greater than the critical r-value of 0.195 at 0.05 level of significance, with 598 degrees of freedom. This means that subsistence food production in terms of cultivation of food crops, poultry/livestock production, improved storage facilities and adequate nutrition have significant positive relationship with household food security of rural dwellers in Central Senatorial District of Cross River State. The result further show that subsistence food production in terms of improve storage facilities has great effect on household food security of rural dwellers in the study area.

These findings are highly in support of Marsden and Smith (2003) and Umoh (2008), that agricultural production is one area in which the significance of socio-economic wellbeing of women in rural districts is especially observed. The findings agreed with these scholars that subsistence food production is a central vehicle for ensuring the socio-economic wellbeing of rural dwellers. Women are totally involved in this activity. The most basic one is the production of food and raw materials for consumption. The findings also agree with Udofia, (1997); Sarris, (2002); Arhin, (2000); Abzug, (2002), that rural women are predominantly found in the agricultural sector in most African countries including Nigeria. Rural women account for 60-80 percent of the agricultural labour force. Most subsistent food and cash crops are also produced by women.

The findings here validate Tambi, Tabi, Atemnkeng and Bime (2017) that women constitute a crucial asset to humanity due to their triple indispensable role in the society. These roles are in the areas of productivity (food security), population growth (constituting the principal source of child bearing and domestic care-cooking, washing, serving, fetching and grooming. In these functions, women working in subsistence agriculture give in more than other occupation.

In the Focus Group Discussion (FGD) and Key Informant Interviews (KII) carried out in some communities in the sub-stratum of the study, it was reported that women comprised a higher proportion of small holder farmers. The women work in agriculture, produce food, process basic food and also undertake rural marketing. In response to research question one, the consensus was that rural women have acted as very strong catalyst of positive change in the wellbeing of community members. In the FGD at Ediba, in Abi Local Government Area, it was reported that:

because if we do not, our children will be hungry. Our women in the community, even those who are not members of this community are involved in farming activities. We clear the bush, cut down trees, plant cocoyam, melon, cassava, pumpkin, okro.

A Key informant, women leader of the Women Organization, in Ediba, A. aged 51 years in response to research question one” Does subsistence food production relate with household food security of rural dwellers?” reported that:

It is clear that without women no community can exist. We are the pillar in all manner of agriculture. Do not be deceived by our men who only wait for us to suffer to bring them food. Many of us have large family land that we plant variety of crops. So in our homes, we are able to eat well.

In the FGD conducted in Nsadop in Boki Local Government Area, still on research question one, admitted that:

Our major work here is farming. Garri and fufu is our main source of diet and from there we get our family income. So we earn cash from cassava production. Some of us are able to make large quantity of starch from cassava. Some people from Calabar use the cassava product as raw material for their livestock there.

The FGD in Nsadop community in Boki Local Government Area it was reported, based on the question “Does subsistence food production relate to household food security in Boki?” that:

We are involved in agriculture because we have land and there is no government work for many of us. We cannot stay without farming. We are farmers here. Our farm products are consumed by us and are also sold. Through what we do, our status in both the family and community have improved.

Conclusion

The study concludes that subsistence food production plays a significant role in improving household food security among rural dwellers in the Central Senatorial District of Cross River State. Women's participation in the cultivation and processing of food crops enhances food availability, improves household access to food, and contributes to the nutritional well-being of families. However, challenges such as poverty, limited access to productive resources, and inadequate agricultural support continue to hinder effective subsistence food production. Therefore, strengthening women's participation in subsistence farming through appropriate support and

agricultural interventions is essential for improving household food security and promoting sustainable rural livelihoods.

Recommendations

The following recommendations are made in line with the findings:

1. The Federal Government and the Cross River State Government, through relevant agricultural agencies, should strengthen support for rural women engaged in subsistence food production by improving access to farmland, improved seedlings, fertilizers, farm implements, extension services, and affordable agricultural credit. This will enhance food crop cultivation, livestock production, and overall household food security among rural dwellers.
2. The government, in collaboration with development partners, cooperative societies, and community-based organizations, should establish and equip modern community storage and preservation facilities in rural communities. This will reduce post-harvest losses, improve food availability throughout the year, stabilize household food supplies, and enhance the nutritional well-being of rural families.
3. Policymakers should formulate and implement rural agricultural policies that promote women's participation in subsistence farming through regular capacity-building programmes, improved access to markets, and nutrition education. These interventions will increase agricultural productivity, improve household food security, reduce rural poverty, and strengthen the socio-economic well-being of rural households in the Central Senatorial District of Cross River State.

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