

Level of Participation of Women in Cowpea Production in Wammako Local Government Area of Sokoto State, Nigeria

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Abstract

The study examined the level of participation of women in cowpea production in Wammako Local Government Area of Sokoto State. The specific objectives were to describe the socio-economic characteristics of women cowpea farmers in the study area, determine the level of income of the women in cowpea production, determine the factors influencing the participation of women in cowpea production and identify the constraints to cowpea production by the women. The study was carried out in Wammako Local Government Area of Sokoto State. Purposive and random sampling techniques were used to select fifty (50) respondents across five villages in three districts of the Local Government Area. Descriptive statistics and regression analysis were the analytical tools used to analyze the data collected. Results of the study showed that the women cowpea farmers were in their later stages of 41-50 years. Majority of them were married (62%), with household size of about 4-9 people and most of them (72%) have attempted one form of education or the other however, are small scale farmers with majority (68%) having farm sizes of 0.1-2.0 hectares. Their

primary occupation is trading and farming. Their level of income was found to be low to moderate. Farm size and distance to nearest good road (significant at 1% and 5% level respectively) were the factors found to influence women participation in cowpea production. The women cowpea farmers were constrained by pest and diseases, high cost of pesticides and fertilizer, inadequate finance, high cost of labour and poor storage facilities. The study therefore, recommends that government should formulate policies to encourage women farmers, government should also provide incentives specifically to the women farmers like ready market and fixed prices for their outputs, improved cowpea varieties and other inputs should be made readily available and accessible to the women farmers at affordable prices, on time and in adequate quantities, extension service should also be intensified to enhance the women's knowledge on the utilization of improved farming technologies.

Introduction

Cowpea (*Vigna unguiculata*) is one of the most important staple food crops in sub-Saharan Africa, especially in Nigeria. Cowpea remains one of the cheapest sources of protein in the diet of many Nigerians with protein content of 25%, in addition to its several mineral and vitamins contents [1]. Almost all parts of cowpea are useful for human consumption and as livestock feed making it one of the most important economic crops in the tropics. The crop tolerates drought. It is adapted to the tropics with temperatures between 28°C and 30°C and rainfall between 500 and 1200mm per annum. The crop performs well in a wide variety of soils but performs better on well drained sandy loam to clay loamy soils with pH between six and seven. Similarly, the bacteria in the root nodules contribute to soil fertility through fixation of nitrogen in the soil and production of organic matter. As such, cowpea is broadly cultivated around the world [2]. Nigeria, with an estimated annual production of 2.17 million tons, is the highest producer of cowpea in the world [3]. The northern region of Nigeria produces about 1.7 million tons from about 4 million hectares, which represents over 60% of total national production [3].

Despite the increase in production of cowpea in Nigeria over the years as a result of increase in cultivation, the overall productivity is still very low [2]. The problem of this low productivity has been found to result from the use of local varieties of the crop, poor management practices, lack of sufficient inputs, inefficient extension services and lack of or inadequate use of modern technologies [2,4]. Hence, there is the need to engage women in all production processes as well as to introduce improved technologies.

Women's contribution to food security in developing countries like Nigeria is well known. Rural women are the mainstay of small-scale agriculture, the farm labour force and day-to-day family subsistence [5]. About 60-80 percent of food in most developing countries is believed to be cultivated by women; as such they are responsible for half of the world's food production [5]. However, most of women production in developing countries like Nigeria is at subsistence level. This implies that most of what the women produce at most times is being consumed by their household with very little or no produce left for sale. Food insecurity and poverty are serious issues ravaging the female population and in comparison to men, women have a higher incidence and severity of poverty [5,6].

Women performs majority of the farming activities in all phases of agricultural production which include land clearing, land tilling, and planting, weeding, fertilizer/manure application to harvesting, food processing,

threshing, winnowing, milling, transportation and marketing as well as the management of livestock [7]. Women in Nigeria are therefore saddled with most tasks in agricultural production that should otherwise be done by men but the benefits gained by them are not measurable to the work they performed. Rural women perform the home chores in addition to the number of hours they spent on the farm. Women are engaged in family labour in agriculture as well as wage labour and in other income-earning activities; and generate a substantial proportion and sometimes even the entire basic daily food for the family [8].

Agriculture as the main source of food for the people and as a means of livelihood for the most vulnerable citizens in developing countries plays a major role in the development of such countries. As such, raising agricultural productivity is an important policy goal for governments and development agencies and this is central to growth, income distribution, improved food security and poverty alleviation among farmers, and the most among them are the rural women who play vital roles in agricultural production and they are crucial to the overall success of the efforts directed at agricultural development in rural areas. Women farmers mostly grow cowpea to provide food security both to humans and the livestock as well as to serve as an important source of income for them [2]. Despite being the major labour force in small farms and perform the most of the farming activities, women are hardly appreciated and have limited access to production resources. They hardly have access to loans, grants and credit facilities. They are hardly reached with improved seeds, fertilizers and other inputs. Men still own land, control women's labour, and make agricultural decisions, extension services are not extended to them, and they are faced with domestic work. It is in view of the above problems that this study seeks to answer the following research questions:

- i. What are the socioeconomic characteristics of women farmers in the study area?
- ii. What is the level of income of women in cowpea production in the study area?
- iii. What are the factors influencing the participation of women in cowpea production?
- iv. What are the constraints to cowpea production by women in the study area?

The objective of this study is to examine the level of participation of women farmers in cowpea production in Wammako Local Government Area of Sokoto State. The specific objectives are to: describe the socioeconomic characteristics of the women in the study area, to determine the level of income of the women in cowpea production, to determine the factors influencing the participation of women in cowpea production and to identify constraints to cowpea production by the women in the study area.

The study will focus only on women farmers that engage in the production of cowpea. The target of the study will be to draw detail information on the level of the women in cowpea production as well as how their socio-economic characteristics affect their level of participation and the constraints to their production. The study will be carried out in Wamakko Local Government Area of Sokoto State, and can be generalized to other areas with similar agro-ecological characteristics. The data collected will be limited mainly to the 2019 season.

Materials and Method

Description of the Study Area

Wamakko local government area of Sokoto State is located at latitude $13^{\circ}2'16''\text{N}$ and longitude $5^{\circ}5'37''\text{E}$ (Nipost, 2010). It is about 226 meters above the sea level and covers an area of 697 square kilometers with a population of 179,619 [9]. Wamakko shares boundaries with Tangaza and Kware Local Government Areas to the East, Binji local government to the North, Sokoto North, Sokoto South and Dange Shuni Local Government Areas to the South and Bodinga and Yabo local government to the West. The local government is mainly populated by Hausa people. It also comprises of four major villages; Kammata, Gwamatse, Kaurankimaba and Kokanicidawa. Ambient temperature ranges from 14°C during harmattan period of November to January to 38°C during the hot season of March to May (SERC, 1992). The vegetation of the study area is characterized by open grassland interspersed with baobab, acacia and locust bean trees. The topography is flat, though there are isolated hills and mountain ranges scattered all over the area. The major occupation of the inhabitants are farming and rearing of animals.

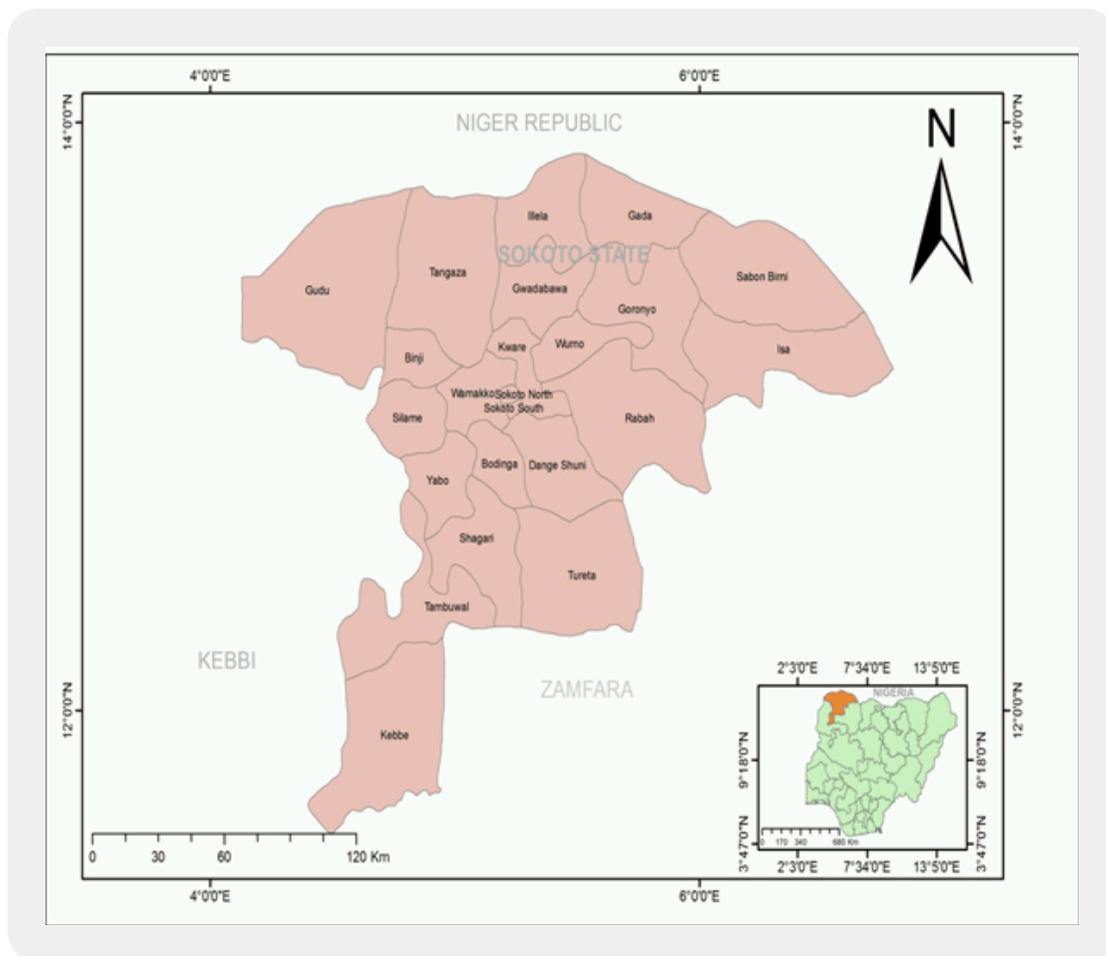


Figure 1: Map of Nigeria Sokoto State Showing the Study Area

Sampling Technique and Sample Size

Purposive sampling method was used to select the cowpea farming communities in the study area. Simple random sampling technique was then employed in selecting ten women farmers from 5 villages that engage in cowpea production to give a total of 50 farmers that was used for the study. The villages are Kammata, Fanari (Wammako district) Gumbi, Barkeji (Gumbi district), and Dundaye (Dundaye district).

Data Collection

The data required for this study was collected through the use of a well-structured questionnaire. Information was collected on socioeconomic characteristics of women farmers, level of income of women in cowpea production, and constraints to cowpea production by women farmers.

Data Analysis

The data was analyzed using descriptive and inferential statistics. Descriptive statistics such as frequency, percentage and mean score was used to satisfy objectives i, ii and iv, while objective iii was analyzed using linear regression model. The explicit form of the function is presented as follows:

$$Y_i = a + B_1X_1 + B_2X_2 + B_3X_3 + B_4X_4 + B_5X_5 + \dots + B_nX_n + U$$

Y= Participation of women in cowpea production

X₁= Household head

X₂= farm size

X₃= Farm ownership

X₄= Membership of Association

X₅= Number of extension visit

X₆ = Access to credit

X₇ = Farm distance to nearest good road

X₈ = Village distance to nearest market

X₉ = Village distance to nearest good road

B= Coefficient

U= Error term

a= Constant

Results and Discussion

Socio-economic Characteristics of Respondents

Age (years): Table 4.1 below show that 34% of the respondent falls between the age range of 41-50 years, 26% of the respondent falls between the age range of 50 years and above, 22% of the respondents were between the age range of 31- 40 years and 18% of the respondents falls between the age range of 21-30. This suggests that most of the respondents are in their later stages. This implies that farming activities are mostly practiced by elderly people as the youth seeks for white collar jobs (Field Survey, 2019).

Marital Status: Table 4.1 below shows that majority (62%) of the respondents were married, 28% of the respondents were widowed, while, 6% were divorced. This revealed the cultural and religious believes in the study area were a person is regarded as adult if he or she was married and this constituted the productivity of the household (Field Survey, 2019).

Occupation: Table 4.1 below also shows that 44% of the respondent's major occupation was trade where as 28%, 24%, and 4% were farmers, civil servants and apprentice respectively. This implies that the women in the study area favours trade than farming (Field Survey, 2019).

Educational Qualification: Table 4.1 below show that 44% of the respondents had primary education while 28% of the respondents have no formal education with only 18% and 10% of the respondents having secondary and tertiary education respectively. This implies that most of the women farmers engaged in cowpea production highest qualification were primary education. This can have negative influence in the use of improved farming technologies (Field Survey, 2019).

Household Size: 38% of the respondents were found to have household size of above 10 persons, while 30% of the respondents claimed to have 4-6 persons per household with 26 and 6% having 7-9 and 1-3 persons per household respectively (Field Survey, 2019).

Farming Experience: Table 4.1 below also shows that 28% of the respondent have 6-10years farming experience while 26% have 20years and above with 24%, 12% and 10% having between 11-15years, 16-20years and less than 6 years of farming experience respectively. This implies that most women engaged in cowpea production are having lot of experience in farming (Field Survey, 2019).

Farm Size: Table 4.1 below also shows that majority of the respondents (68%) have farm size of between 0.1-2.0 whereas 30% have 2.1-4.0 with only 2% of the respondents having above 8 hectares of farmland. This implies that women cowpea farmers in the study area are small scale farmers (Field Survey, 2019).

Table 4.1: Socio-economic Characteristics of Women Farmers in Cowpea Production

Variable	Frequency	Percentage
Age		
21-30	9	18.0
31-40	11	22.0

41-50	17	34.0
Above 50	13	26.0
Marital Status		
Variable	Frequency	Percentage
Single	2	4.0
Married	31	62.0
Widowed	14	28.0
Divorced	3	6.0
Occupation		
Variable	Frequency	Percentage
Farming	14	28.0
Trade	22	44.0
Civil service	13	24.0
Apprenticeship	2	4.0
Educational qualification		
Variable	Frequency	Percentage
No formal education	14	28.0
Primary	22	44.0
Secondary	9	18.0
Tertiary	5	10.0
Household Size		
Variable	Frequency	Percentage
1-3	3	6.0
4-6	15	30.0
7-9	13	26.0
10persons and above	19	38.0
Farming Experience		
Variable	Frequency	Percentage
5years and below	5	10.0
6-10years	14	28.0
11-15years	12	24.0
16-20years	6	12.0
Above 20years	13	26.0

Farm Size		
Variable	Frequency	Percentage
0.1-2	34	68.0
2.1-4	15	30.0
4.1-6	0	0
6.1-8	0	0
Above 8	1	2.0
Total	50	100.0

Source: Field Survey, 2019

Perceived Level of Income

Table 4.2 below presents the perceived level of income of women engaged in cowpea production. The results of the finding shows that 50% of the respondents indicates that their level of income was low, whereas 48% claimed that their level of income was moderate with the remaining 2% indicating a high level of income. This suggests that 98% of the respondents were low to moderate income earners in the study area. The findings corroborates with that of Akpabio (2005) [10], Ekong (2003) [11] and Ayoola (1999) [12] who reported that women farmers has low level of income due to lack of production inputs.

Table 4.2: Perceived Level of Income

Level of Income	Frequency	Percentage
Low	25	50.0
Moderate	24	48.0
High	1	2.0
Total	50	100

Source: Field Survey, 2019

Factors Influencing Women Participation in Cowpea Production

Table 4.3 below present the regression analysis of the factors influencing cowpea production by women farmers. The result indicated a coefficient of multiple determinations (R^2) of 0.76. This means that 76% variation in the dependent variable (cowpea production) is explained by variation in the explanatory variables included in the model. The result further revealed that farm size and distance to nearest good road were significant at 1%. The positive significance of farm size indicates that the more the farm size the higher the level of participation of women in cowpea production. The negative coefficient of distance to the nearest good road implies that the shorter the distance, the higher the level of participation of women in cowpea production which will results to a higher output

Table 4.3: Regression Analysis of Factors influencing women Participation in Cowpea Production

Variable	Estimated Coefficient	Standard Error	Sig.
Household Head	-0.338	0.347	0.336 ^{NS}
Farm Size	1.200	0.134	0.000 ^{***}
Farm ownership	-0.279	0.352	0.433 ^{NS}
Membership of Association	-0.699	0.591	0.243 ^{NS}
Number of Extension Visit	-0.012	0.043	0.777 ^{NS}
Farm distance to nearest good road	-0.419	0.135	0.003 ^{***}
Village distance to nearest market	-0.153	0.099	0.128 ^{NS}
Village distance to nearest good road	-0.324	0.605	0.595 ^{NS}
Constant	1.349	0.977	0.175

Analysis, 2019

Significant at ***=1% level of significance

NS = Not Significant

R² = 0.76

Constraints Affecting Women Participation in Cowpea Production

Table 4.4 below presents the constraints affecting women participation in cowpea production in Wammako Local Government Area of Sokoto State. The results of the finding shows that the major constraints affecting the women farmers were prevalence of pest and diseases (92.0%), followed by high cost of pesticides and fertilizer (90.0%), Inadequate finance (86.0%), high cost of labour (76.0%), high cost of farm inputs (64.0%) inadequate land and poor storage facilities (60.0%). Other constraints indicated by the farmers include shortage of farm inputs, low government participation, poor marketing system and pricing and low level of income.

Oladebo (2003) [13] and Spore (2003) [14] attributed the low women participation in cowpea production to lack of initial agricultural production capital, which acts as a barrier to women cowpea farmers and also limits their means of hired labour or affording available technology [15-62].

Table 4.4: Constraints Affecting Women Participation in Cowpea Production

Constraints	Frequency	Percentage
Inadequate land	30	60.0
Inadequate Finance	43	86.0
Shortage of farm inputs	24	48.0
High cost of farm inputs	32	64.0
High cost of pesticides and fertilizers	45	90.0
Low patronage	0	0

High cost of labour	38	76.0
Low government participation in cowpea	13	26.0
Scarcity/shortage of improved cowpea variety	0	0
Low level of extension visits	1	2.0
Lack of processing facilities	0	0
Poor storage facilities	30	60.0
Natural hazard, flood and draught	4	8.0
Poor marketing system a and poor pricing	3	6.0
Prevalence of pest and diseases	46	92.0
Constraints	Frequency	Percentage
Inadequate land	30	60.0
Inadequate Finance	43	86.0
Shortage of farm inputs	24	48.0
High cost of farm inputs	32	64.0
High cost of pesticides and fertilizers	45	90.0
Low patronage	0	0
High cost of labour	38	76.0
Low government participation in cowpea	13	26.0
Scarcity/shortage of improved cowpea variety	0	0
Low level of extension visits	1	2.0
Lack of processing facilities	0	0
Poor storage facilities	30	60.0
Natural hazard, flood and draught	4	8.0
Poor marketing system a and poor pricing	3	6.0
Prevalence of pest and diseases	46	92.0

Field Survey, 2019

*Multiple Responses observed

Conclusion and Recommendations

Conclusion

Based on the findings, the study therefore conclude that, farming and trading were the major economic activities of the women farmers in the study area and their level of income is low-moderate and the major factors that influence their participation in cowpea production were farm size and farm distance to the nearest good road. This indicates that with adequate farm land and production inputs, they have the potential to increase their present level of output. The participation of women in cowpea production in the study area is associated with many constraints which includes high incidence of pests and diseases, high cost of pesticides and fertilizer, inadequate finance, high cost of labour and poor storage facilities.

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Recommendations

Based on the findings of this study, it was recommended that:

1. The government should formulate policies to encourage women farmers in the study area to adopt and sustain the use of improved varieties of cowpea which will lead to higher yields and as result lead to higher incomes.
2. The government should provide incentives specifically to the women farmers like ready market and fixed prices for their outputs. Adequate market infrastructure and facilities should be provided to the women so that they can easily sell their increased cowpea yields.
3. Improved cowpea varieties and other inputs should be made readily available and accessible to the women farmers at affordable prices, on time and in adequate quantities.
4. Pests and diseases were major problems of women cowpea farmers as such women farmers in the study area should be given adequate enlightenment on how to control them. The IITA should also improve the cowpea varieties to increase their resistance to pests and diseases.
5. Extension service should be intensified to enhance the women's knowledge
6. Pesticides and fertilizers should be subsidized to make them affordable by the farmers.
7. Land policies that deprived women access to land should be amended so that women can own farmlands as that will influences their participation in farming activities and cowpea production.

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