

WOMEN IN IRRIGATED VEGETABLE PRODUCTION: CHALLENGES AND OPPORTUNITIES (CASE STUDY OF FARMERS IN PLATEAU STATE, NIGERIA)

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ABSTRACT

The study evaluated female farmers in resource utilization, efficiency and profitability of irrigated vegetable farming in Plateau State. The broad objective was to determine the challenges faced by female irrigated vegetable farmers in Plateau State. Primary data for the study were collected using structured questionnaire, administered to 195 female vegetable farmers during 2013-2014 production seasons using two stage sampling technique in selecting the respondents. Data collected were analyzed using descriptive statistics. The study identified inaccessibility to land; lack of access to water lifting equipment; inadequate technical know-how; poor access to fund and high cost of inputs were the major challenges faced by female vegetable farmers in the State. The study concludes that the yield level in vegetable production among female farmers can be raised if the female farmers were given title to land ownership, have access funds to owned water lifting equipment and given periodic training in irrigation farming. The study also revealed that vegetable production is a profitable enterprise to increase farmers' income in the State. The study therefore strongly recommends that extension agents working with the Plateau Agricultural Development Project should conduct periodic visit to the vegetable farmers in the project areas to enable the farmers have adequate access to information on vegetable production innovations and that the official definition of a farmer in Nigeria which has been corrected to be gender neutral, as in most other countries, should be strictly adhere to, to avoid gender bias in agricultural circles.

Keywords: Credit facilities, female farmers, gender, irrigation, land ownership, vegetable farming.

INTRODUCTION

Numerous development projects, government programmes, research studies, and theoretical models have demonstrated that the improvement of gender access to agricultural research and extension services must begin with an analysis of men's and women's participation in the agricultural production process along two related dimensions: their role in agriculture and their role in the household [1]. While the official definition of a farmer in Nigeria has been corrected to be gender neutral, as in most other countries, gender bias is prevalent in official agricultural circles and among field professionals [2; 3]. Irrigation is termed an indispensable resort in agriculture whenever there is increase in the food requirements due to increase in population or other natural occurrences [4]. Thus, irrigation is capable of increasing the total national food production, improving the income of farmers, and creating year-round farm employment [5].

In Nigeria, there are significant regional differences in women participation in agriculture. For instance, a study of women in the country revealed that on an overall basis, 40% of the rural women surveyed regarded farming as their major occupation. On regional basis, 89%, 10% and 6% of those in the East, West and South respectively regarded agriculture as their main occupation [6; 7].

[8], reported that women form the highest proportion of the economically active population in rural Nigeria and play an important role in agricultural activities in subsistence food production, where they contribute an estimated 60-80% of the total labour used. Women usually contribute significantly to both the economic growth and national development [3; 9]. However, women access to needed farm resources have been assessed to be very low due to marital, societal and religious reasons, lack of awareness caused by low literacy, lack of ownership and control of land, lack of sufficient and substantive collateral and inadequate knowledge of training in the use of improved innovations [10]. [6; 11] shed more light on the role of Nigerian women in agriculture. As in other parts of Africa, Nigerian women have worked side by side with men in agriculture with some marked division of labour between them, as it's been practiced in irrigated vegetable production in Plateau State.

It has been reported by different authors that inadequate information about the improved technologies was one of the constraints in agricultural production [12]. Women do not have adequate access to agricultural information and innovations [13; 14]. He emphasized that lack of separate land for women and inadequate contact with extension agents are serious constraints faced by women farmers. Majority of them use low yielding and unimproved planting materials, primitive and labour intensive farm implements, traditional farming practices, which have adversely affected agricultural production.

Therefore, this study was carried out to assess the role, contribution of women farmers to agricultural development and to examine the socio-economic characteristics of irrigated vegetable female farmers in the study area and to determine the challenges or constraints faced by female farmers involved in irrigated vegetable farming in selected LGAs of Plateau State.

Study Area

The study was conducted in four Local Government Areas of Plateau State, Nigeria. Plateau State was created on February 3, 1976, located in the North-central geopolitical zone of Nigeria and is more or less located at the center of Nigeria. Plateau State is located between latitude $8^{\circ} 24'N$ and longitude $8^{\circ} 32'$ and $10^{\circ} 38'E$ of the Greenwich meridian. The State has 17 Local Government Areas, and occupies a land area of about $30,913 \text{ Km}^2$ with an estimated population of about 4,006,587 as at 2014 (estimation based on National Population Census, 2006) [15], with a growth rate of 2.7 [15]. Plateau State shares boundaries with Kaduna, Nasarawa, Bauchi, Taraba, Gombe and Benue States. It is also part of the catchment area of Lower Benue River Basin Development Authority, Makurdi, in Benue State, Nigeria.

METHODOLOGY

Sampling Method and Sample Size

A two-stage sampling technique was employed in the selection of the respondents that were interviewed for this study. In the first stage, four Local Government Areas were purposively selected based on the level of involvement of women in vegetable farming in Plateau State (Information was obtained from the Plateau Agricultural Development Project (PADP) Planning office during the preliminary study as presented in Tab. 1. The Local Government Areas that served as study areas are: Barkin Ladi, Jos South, Jos East and Riyom. Preliminary information gathered from the record available with the Planning Office of PADP showed that there were about 195 female farmers involved in vegetable production in the selected Local Government Areas. During the administration of the questionnaire, all the available (195) female vegetable farmers served as respondents.

Table 1. Distribution of vegetable farmers and the sample size in the study areas

LGAs	Sample frame	Sample size
	Female	Female
Jos South	86	86
Jos East	45	45
Jos East	37	37
Ryom	27	27
Total	195	195

Source: Reconnaissance survey, 2012

Method of Data Collection

The study used basically primary data because there were no ready data available from the study areas. The primary data used were collected by administering well-structured questionnaire to obtain necessary information from the respondents [16]. The data collected included among others the various inputs used in vegetable production like: farm size, labour quantity and types, fertilizer quantity and types, seed etc., (Tab. 2). Others were the information on the socio-economic characteristic of the vegetable farmers such as: age, educational status, family size, access to extension agent, membership of a cooperative organization and constraints faced in irrigated vegetable production (see Tab. 2).

Analytical Techniques

Descriptive Statistics

Simple descriptive statistics such as means, percentages, frequency distribution were employed to achieve the objectives of this study.

Table 2. Distribution of the respondents according to their socio-economic characteristics

Socio-economic characteristics	Frequency	Percentage (%)	Socio-economic characteristics	Frequency	Percentage (%)
	Female	Female		Female	Female
Age			Farm size (Ha)		
21-30 10	37	18.9	0.1-1.0	162	83.2
31-40 52	81	41.7	1.1-2.0	30	15.4
41-50` 50	53	27.2	2.1- 4.0	3	1.5
51-60 34	21	10.8	Total	195	
61-70 10	3	1.5			
Total	195		Number of extension visit		
Level of education			No contact	158	81.0
No formal education	15	7.7	1-3	34	17.5
Primary	46	23.3	4-6	2	1.0
Secondary	85	43.1	6 and above	1	0.5
Tertiary University	33	17.6	Total	195	
Adult education	16	8.2			
Total	195		Credit obtained (N)		
Household size			0	163	83.6
1-5	60	30.7	1000-20000	13	6.6
6-10	119	61.0	20001-40000	11	5.6
11-15	15	7.7	40001-60000	6	3.0
16-20	1	0.5	200000 and above	2	1.0
Total	195		Total	195	
Farming experience			Membership of cooperative		
1-5	168	86.3	Non members	162	83.1
6-10	23	11.7	Members	33	16.9
11-20	3	1.5	Total	195	
21-30	1	0.5			
Total	195				

Source: Field Survey, 2014

RESULTS AND DISCUSSION

Socio-economic Characteristics of Respondents

Socio-economic characteristics are envisaged to influence farmers' production decision as well as their overall production efficiency. The socio-economic characteristics considered in this study are age, household size, marital status, farm size, and years of farming experience, educational level, and membership of cooperative, extension contact and access to credit [17].

Challenges/constraints faced Female Vegetable Farmers

It was found that vegetable farmers in the study area are faced with some challenges in their attempt to produce vegetables. The challenges commonly faced by female farmers in Plateau State are presented in Tab. 3, and are discussed sequentially. Other factors presented in the table are generic, affecting all the farmers (both male and female).

Inaccessibility to Land

A total of 83.2% reported that they do not own land or have right to land ownership. This is true because women very rarely own land in Nigeria, despite their heavy involvement in

agriculture or other assets through inheritance [18; 19]. According to [18], this lack of right to land prevents women from exercising or improving their expertise in crop production and animal husbandry because of security of tenure. Because of this issue, it has traditionally been difficult for them to access bank loans or other forms of credit through the banking system or other financial institutions [20]. The inability to have rights to land disqualifies them from responding to market signals where land will be an important index.

Lack of Access to Water Lifting Equipment and High Cost of Inputs

The study revealed that most women 83.6% reported inadequate financial capacities to purchase farm inputs. This was attributed to the fact that women in general and rural women in particular have limited access to credit facilities. Credit is essential to purchase farm inputs or mechanical devices for food processing, or to expand the scale of output. The study further observed that women in the study areas have virtually no access to bank loans given their lack of or low level education and the collateral to secure such loans. [21], reported that farm capital contributes positively to yield and women farmers are mostly affected in this regard and are likely to have lower yields.

Table 3 Results of Likert scale showing the constraints encountered by male and female vegetable farmers

Constraints	Female mean score*	Rank
Inaccessibility to land	1.77	10
Gender disparity against women	1.63	12
Poor water lifting equipment	2.15	8
Problem of pest	2.75	2
Flooding at inception of rain	2.48	7
Poor market prices of vegetable	2.82	1
High cost of input	2.77	3
Poor standardization of inputs	2.27	6
Perishability of vegetable	2.62	4
Inadequate technical know-how	2.13	9
Inadequate access to timely fund	2.61	5
Low seed quality	1.76	11

* **Mean score** > 2 is regarded as serious constraints

Inadequate Access to Timely Fund

About 60% of female vegetable farmers reported the problem of limited fund for farm operation. The reason for limited fund could be inadequate or poor access to credit facility among the farmers. The study observed that lack of access to and control over land has also intensified women's difficulties. The investigation revealed that women farmers in the study areas find it difficult to access loan from financial institutions due to lack of collaterals and high interest rates charged by commercial banks. This investigation was supported by the findings of [22] and [23], who separately reported similar problems being faced by farmers in accessing credit facilities.

Inadequate Technical Know-how

About 31% women farmers reported to have limited education and non- accessibility to benefits of information and communication technology (Tab. 2). This results in inadequate technical know-how on irrigation farming. This effect could be evidently seen in their farm

lands where problem of flooding exist due to poor on-farm water management, and it was found that 62.1% of female farmers had this problem.

CONCLUSION

It was found that the yield level in vegetable production among female farmers can be raised if the female farmers were given right to land ownership, have access funds to owned water lifting equipment and farm inputs and given periodic training in irrigation farming. Vegetable production is a profitable enterprise among female farmers in the study area but they are faced with challenges that could reduce the quantity and quality of vegetable produced. The female farmers were found producing at stage two of production which is the rational stage for profit maximization.

RECOMMENDATIONS

Extension agents working with the Plateau Agricultural Development Project should have the vegetable farmers in the project areas on the schedule for visits and contact to enable the farmers have adequate access to information on vegetable production innovations, on-farm water management, disease and pest control measures developed by research institutions, price information among other issues of interest to the vegetable farmers. Female farmers should be given adequate training on irrigation water management and use of water lifting equipment. Private sector should be encouraged to set up cottage industries in the study areas, who will buy the vegetables produced by the farmers in the form of bulk purchase. This would enhance and enable farmers to overcome problem of poor prices and perishability of the produce. Vegetable farmers should organize themselves into credit relieving societies so as to pool their resources together, increase their access to fund and overcome liquidity constraints that can limit their accessibility to resources in vegetable production.

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