AN ASSESSMENT OF ACCESS TO AGRICULTURAL EXTENSION SERVICES AMONGST WOMEN VEGETABLE FARMERS IN OSUN STATE, NIGERIA

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ABSTRACT

This study examined women vegetable farmers' access to extension services in Osun state, Nigeria. A two-stage sampling procedure was used to select 140 respondents. The procedure of selection involved firstly a random selection of 14 communities and secondly a random selection of 10 women from the list of women vegetable farmers in each community selected in the Iwo agricultural zone. Data were obtained by the use of an interview schedule. Data obtained was analyzed using descriptive and inferential statistics. All (100%) respondents cultivated Corchorus, Hibiscus esculentus, Celosia argentia and Amaranthus hybridus while the majority (60.7%) had never been visited by extension agents. The foremost extension services accessed by the farmers were farm or plot demonstration of improved seed practices (mean=1.69), linkage with a source of viable seeds (mean=1.53), linkage with sources of credit facilities (mean=1.32), and provision of information on marketing (mean=1.24). Lack of access to credit or finance (mean=4.75), water deficiency and lack of irrigation water for the planting of vegetable crops (mean=4.74), high cost of improved seed (mean=4.69) and limited access or no contact with the extension agents (mean=4.56) were the highest ranked problems facing women in vegetable productions. The result of the hypothesis shows that only farm size (r = 0.318, p< 0.01) was positive and significant related to access to extension services. The study concluded that few women vegetable farmers had access to agricultural extension services in the study area. The study recommended that extension organisations in the study area should focus more on women farmers in their extension service programmes by providing more access to credits, irrigation facilities and improved seeds.

Keywords: Amaranthus hybridus, viable seeds, credit facilities, irrigation water, marketing

INTRODUCTION

The roles of women farmers in Nigerian agriculture cannot be over-emphasized. According to Food and Agriculture Organization [FAO] (2018), women's contribution to agriculture is estimated at 60-79 per cent of labour, especially for food production, processing and marketing. Nigerian women participate in all aspects of agriculture and are becoming increasingly noticeable in vegetable farming, especially in rural and peri-urban communities (Ogwu, 2019). Women in Nigeria are mainly involved in the production, processing and marketing of vegetables and they increasingly supply national and international markets with traditional and high-value produce vegetables to a greater extent than men (FAO, 2018).

Vegetable farming has become a veritable livelihood alternative among women, whether as household heads or members.

Women essentially participate in vegetable farming to supplement farm income and ensure income and household food security (Dossah, Mohammed and Ndahi, 2016). Unfortunately, lack of access to productive resources, inadequate extension services and farm inputs hamper women farmers in increasing food production and improving food security (FAO, 2018). Studies had found that extension services were very low among women vegetable farmers in Nigeria (Nakwe *et al.*, 2018). Reduced access to extension services among women has been attributed to cultural and religious barriers that made it difficult for male extension workers to have contact with women farmers (Anaglo *et al.*, 2014). In addition, FAO (2018) noted that women are often overlooked by extension service providers because they may be poor and vulnerable and have less access to resources.

Vegetables are grown mainly for their leaves for consumption. According to World Vegetable Center (2017), vegetables contain nutrients including potassium, fibre, folate (folic acid) and Vitamins A, E and C which are needed for a balanced diet (Ullah *et al.*, 2017). Vegetables commonly grown in Nigeria include African spinach (*Amaranthus hybridus*), Ewedu/Jute (*Corchorus*), Lagos spinach (*Celosia argentia*), Okra (*Hibiscus esculentus*), bitter leaf/Ewuro (*Vernonia amygdalina*), water leaf/Gbure (*Talinum triangulare*), fluted pumpkin/Ugwu (*Telfairia occidentalis*) among many others (Busari *et al.*, 2012; Komolafe *et al.*, 2020). Vegetable production could be a viable economic alternative for raising the farm income of resource-poor farmers. French *et al.* (2019) reported that vegetables are important food for poor households because their prices are relatively affordable when compared to other food items. Also, vegetables are widely cultivated by both small and large-scale farmers. They can give a high yield per unit area of land and generate high income for the farmers (FAO, 2018).

To maximise the benefits of vegetable production in Nigeria, there is a need to increase the provision of extension services to farmers (Ogwu, 2019). Since women are the main producer of vegetables in Nigeria, it is therefore imperative to investigate women farmers' access to extension services. This study was therefore carried out to determine the level of access to extension services by women vegetable farmers in the Iwo zone of Osun state Agricultural Development Programme (OSSADEP). The specific objectives were to:

i. identify types of vegetables cultivated by women farmers
ii. assess the frequency of extension contact to women vegetable farmers;
iii. examine the effectiveness of sources and means of receiving extension services;
iv. identify extension services accessed by women vegetable farmers; and
v. identify the problems faced by women vegetable farmers.

METHODOLOGY

The study was conducted in Osun State. Osun State is located at latitude 05 558 N and longitude 04 00 E. The State occupies a land mass of approximately 8,602 square kilometres. The State is predominantly an agrarian society with a wide expanse of good agricultural land complemented by a wide

variety of vegetation. The state in addition has adequate rainfall in terms of quantity and distribution. Apart from crops, the state is endowed in all other sub-sectors of agriculture. These include livestock, fisheries and forestry. Major crops grown include yam, cassava (manioc), corn (maize), beans, millet, plantains, cacao, palm oil and kernels, and fruits. Iwo zone is one of the 3 administrative zones of OSSADEP. Iwo Zone of OSSADEP is made up of 7 local government areas namely; Olaoluwa, Iwo, Isokan, Egbedore, Aiyedire, Ayedaade, and Irewole.

A two-stage sampling procedure was employed to select respondents. The first stage involved a random selection of 2 communities in each LGAs. The second stage involved a random selection of 10 women from the list of women vegetable farmers in each community selected. The list was retrieved from OSSADEP Iwo zonal office. A total of 140 women vegetable farmers were selected.

Structured and validated interview schedule was used to collect primary data. Non-educated farmers were assisted by field assistants to complete the questionnaire. Variables were measured as age in years, farming experience in years, and farm size in hectares. Access to extension services, which is the dependent variable was measured as always=3, occasionally=2 and never=1. The effectiveness of sources/means of receiving extension services by women vegetable farmers was measured as very effective=3, effective=2, not effective=1. The problem faced by women farmers in vegetable production was measured as very severe=5; severe=4, somewhat severe=3, a little severe=2, and Not severe=1. The collected data were analysed using descriptive statistics including frequency counts, percentages, mean scores and standard deviation, while Pearson Product Moment Correlation for the hypothesis test.

RESULTS AND DISCUSSION

Socio-economic Characteristics of the Respondents

The results presented in Table 1 show that majority of the respondents fall within the age bracket of 35-50years (45%) and 51-60years (42.9%). This finding confirms the earlier report by Busari *et al.* (2012) that a larger proportion of women vegetable farmers in the Iwo zone were between 41 to 51 years. This implies that women vegetable farmers were in their active and productive years and so contribute greatly to agricultural productivity. Also, the majority of the women were married (89.3%), had more than 4 persons in their household (75%) and cultivate only 1 to 2 acres of vegetable farms (76.4%). This shows that women cultivate a small plot of land for vegetable production. This finding agrees with Dossah *et al.* (2012) that women dominate the production of vegetables in small plots. With respect to their educational status, 55% had primary education while the majority (60.7%) had never been visited by extension agents. Nakwe *et al.* (2018) reported a similar finding of a low level of contact with extension among women vegetable farmers in Taraba State.

Table 1: Socio-economic characteristics of the respondents

Socio-economics	Frequency (n=140)	Percentage	Mean(SD)Range
Age (years)			46.7(9.91) 20–60
20 – 34	17	12.1	
35 – 50	63	45.0	
51 – 60	60	42.9	
Marital status			
Married	125	89.3	
Divorced	5	3.6	
Widowed	10	7.1	
Educational level			
No formal education	29	20.7	
Primary education	77	55.0	
Secondary education	25	17.9	
Tertiary education	9	6.4	
Household size (persons)			6(2.74) 1–12
1-4	35	25.0	
More than 4	105	75.0	
Farm size (Acres)			2.0(1.51) 1–9
1-2	107	76.4	
3-4	28	20.0	
More than 4	5	3.6	
Farming experience(years)			12.1(4.22) 2–32
1 – 4	2	1.4	
5 – 8	22	15.7	
More than 8	116	82.9	

Source: Field Survey, 2019

Types of vegetables cultivated by women farmers

Data in Table 2 show the types of vegetables cultivated by the respondents. All the women were cultivating *Corchorus olitorius* (100%), *Hibiscus esculentus* (100%), *Celosia argentia* (100%), and *Amaranthus hybridus* (100%). The majority also cultivated *Talinum triangulare* (85.7%) and *Vernonia amygdalina* (72.9%), while the least cultivated by the women are *Solanum marcrocarpon* (7.1%) and *Murraya koenigil* (2.7%). This finding implies that *Corchorus, Hibiscus esculentus, celosia argentia, and Amaranthus hybridus* were the leading cultivating vegetables among women farmers while the availability of vegetables like *Solanum marcrocarpon* and *Murraya koenigil* may be scarce due to less involvement of women farmers in the cultivation of the species. A study by Olowa and Olowa (2015) also found *Amaranthus hybridus, celosia argentia and Hibiscus esculentus* as common vegetables grown by farmers in Lagos.

Table 2: Types of vegetables cultivated by women farmers

Vegetable cultivation	*Yes*
Murraya koenigii (Efinrin oso)	4(2.7)
Solanum marcrocarpon (Efo igbo)	10(7.1)
Launaea taraxacifolia (Efo yanrin)	20(14.3)
Allium ascalonicum (Alubosa elewe)	20(14.3)
Gongronema latifolium (Arokeke)	22(15.7)
Ocimum gratissimum (Efinrin)	27(19.3)
Crassocephalum crepidiodes (Ebolo)	28(20.0)
Basella alba (Amunututu)	32(22.9)
Telfaria occidentalis (Fluted pumpkin)	81(57.9)
Vernonia amygdalina (Ewuro)	102(72.9)
Talinum triangulare (Gbure)	120(87.5)
Hibiscus esculentus (Okra)	140 (100)
Corchorus olitorius (Ewedu)	140(100)
Celosia argentia (Shokoyokoto)	140(100)
Amaranthus hybridus (Efo tete)	140(100)

Source: Field survey, 2019

Frequency of extension contact to women vegetable farmers

With respect to the frequency of extension contact among women vegetable farmers, results presented in Table 3 indicated that only 9.3% of the respondents indicated that they had never been visited by extension agents while the majority (60.7%) of the respondents were occasionally visited. This implies that women vegetable farmers' contact with extension agents is relatively low in the study area. Nakwe *et al.* (2018) also reported a low level of contact with extension among women vegetable farmers in Taraba state. Similarly, Tanimonure *et al.* (2020) found indigenous vegetable farmers in Osun State lacked extension contact. In Ondo State, Daramola *et al.* (2016) found that inadequate information is one of the greatest challenges affecting over 92.5% of vegetable farmers.

Table 3: Frequency of extension contact

Frequency of extension contact	Frequency	Percentage
Always	42	30.0
Occasionally	85	60.7
Never	13	9.3

Source: Field Survey, 2019

Effectiveness of sources and means of receiving extension services by women farmers

According to the results presented in Table 4, the only method demonstration in the group (mean=2.64) can be considered an effective method because it is close to the scale of 2 (effective). Other leading extension teaching methods and sources of information used by respondents in the study area such as

farm/home visits of individuals (mean=2.28), and telephone calls of individuals (mean=2.25) were falls within the scale of 1 (not effective). The least utilized sources and means of acquiring information by farmers were information contact and newspaper.

Table 4: Perceived effectiveness of sources and methods of receiving extension services

Methods	*Mean of effectiveness*	*Mean rank*
Individual methods		
Farm and home visit	2.28	2nd
Informal contact	1.37	10th
Telephone calls	2.25	3rd
Group methods		
Result demonstration	2.12	5th
Method demonstration	2.64	1st
Meetings	2.24	4th
Mass media		
Newspaper	1.48	9th
Radio	2.07	6th
Television	1.61	8th
Posters	1.99	7th

Scale of effectiveness: very effective=3, effective=2, not effective=1

Specific Extension Packages Accessed By Women Vegetable Farmers

Results in Table 5 show that women vegetable farmers occasionally have access to plot demonstration of improved seed practices (mean=1.69) and linkage with the source of viable seeds (mean=1.53) because the mean values are close to scale 2. Furthermore, respondents had limited access or never had access to several extension services like linkage with sources of credit facilities (mean=1.32), provision of information on marketing or market outlets (mean=1.24), provision of fertilizer to be applied on the vegetable farm (mean=1.16), organizing a seminar on vegetable production (mean=1.10), provision on farm machinery and equipment or hiring outlets (mean=1.06), organizing workshop and training for women farmers (mean=1.01), and environmental sensitization awareness (mean=1.06).

Table 5: Specific extension packaged accessed by the women farmers

Services	*Mean*	*Rank*
Farm or plot demonstration of improved seed practices	1.69	1st
Linkage with the source of viable seeds	1.53	2nd
Linkage with sources of credit facilities	1.32	3rd
Provision of information on marketing or market outlets	1.24	4th
Provision of fertilizer to be applied on a vegetable farm	1.16	5th
Organizing seminar on vegetable production	1.10	6th
Provision of farm machinery and equipment or hiring outlets	1.06	7th
Organizing workshops and training for women farmers	1.01	8th
Environmental sensitization awareness (e.g. climate conditions)	1.00	9th

Source: Field survey, 2019

The scale used: always=3, occasionally=2 and never=1.

Problems Faced by Women Vegetable Farmers

As shown in Table 6, the very severe problems facing the majority of the women in vegetable production were lack of access to credit or finance (mean=4.75), water deficiency and lack of irrigation water for the planting of the vegetable crop (mean=4.74), high cost of improved seed (mean=4.69) and limited access or no contact with the extension agents (mean=4.56), this is because the mean values are close to the scale of 5 corresponding to very severe. This finding agreed with Ajibola, *et al.* (2015) that found a lack of credit facility and insufficient capital as constraints to women vegetable farmers in Nigeria.

Table 6: Problems faced by women farmers in vegetable production

Problems	***Mean of severity***	***Rank***
Lack of access to credit or finance	4.75	1st
Water deficiency or lack of irrigation water for the planting of vegetable crops	4.74	2nd
High cost of seed to purchase	4.69	3rd
Limited access or no contact with the extension agents	4.56	4th
Lack of suitable land to increase vegetable production	4.55	5th
Low level of awareness of extension services	4.17	6th
Easily perishable vegetable crops	4.05	7th
Poor storage facilities	3.96	8th
Inefficient tools or implements	3.81	9th
High incidents of pests, weeds and diseases	3.76	10th
Lack of enough market or unavailability of sales outlets	3.61	11th
Lack of adequate input (fertilizer, low crop yield, chemicals)	3.57	12th
Time constraints problem	3.30	13th
Shortage of labour	3.20	14th
Long distance from farm to marketplace	3.16	15th
Small-scale farm plots	2.97	16th
Weak land right	2.51	17th

Source: Field Survey, 2019

Hypothesis test

Results in Table 7 show that women vegetable farmers' age (r= -0.245) and years of vegetable farming experience (r= -0.302) had an inverse relationship with their access to extension services, while farm size (r=0.318) had a positive relationship with farmers' access to extension services. This finding implies that women vegetable farmers may have decreased access to extension services as the age and years of farming experience increase but increase with the increased size of vegetable farms. This finding agreed with Adamu (2014) who found that farmers' participation in OSSADEP increases with an increase in farm size.

Table 7: Relationship between socio-economic characteristics of women farmers and their access to extension services

Variables	*Correlation Coefficient (r)*	*Significant (p)*	*Decision*
Age	-0.245*	0.004	Significant
Farming experience	-0.302*	0.000	Significant
Household size	0.490	0.566	Not significant
Farm size	0.318*	0.000	Significant

*Correlation is significant at p≤ 0.01

Source: Field survey, 2019

CONCLUSION AND RECOMMENDATIONS

This study concluded that few women vegetable farmers have access to agricultural extension services in the study area. However, method demonstration in the group was considered an effective method of receiving vegetable farming information while farm/home visits of individuals and telephone calls of individuals were not effective means of receiving vegetable farming information. Women vegetable farmers have little or no access to extension services with occasional access to plot demonstration of improved seed practices and linkage with a source of viable seeds. Farm or plot demonstration of improved seed practices, linkage with a source of viable seeds, linkage with sources of credit facilities, and provision of information on marketing or market outlets were the foremost extension services accessed by women vegetable farmers. Lack of access to credit or finance, water deficiency and lack of irrigation water for the planting of vegetable crops, high cost of improved seeds and limited access or no contact with the extension agents were the severe problems faced by women vegetable farmers.

Based on the findings, the following recommendation was suggested that extension agents should make deliberate efforts to reach out to more women farmers cultivating large and small-scale vegetable farms. Information on improved technologies, improved practices, and seeds among others should be provided for women vegetable farmers through strategic channels of communication by the extension officers. Women vegetable farmers should form cooperative societies to be registered with OSSSADEP to facilitate their access to the extension services.

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