

## Elements of Rural Economics: Access to Agricultural Information among Rural Women Farmers in Abuja, Nigeria

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### ABSTRACT

Information is very important for sustainable agricultural development. In order to increase agricultural production, enhance good distribution strategies, achieve improve and efficient marketing system, agricultural information should be at the central position. This study evaluated elements of rural economics: access to agricultural information among rural women farmers in Abuja, Nigeria. The specific objectives are to: identify the socio-economic characteristics of rural women farmers, examine the various ways rural women farmers have access to agricultural information, and evaluate the factors influencing rural women farmers' access to new agricultural information in Abuja, Nigeria. A sample of 90 rural women farmers was selected through a multistage sampling technique from three selected agricultural extension blocks namely: Byazhin, Kubwa and Bwari Central. The data were collected with the aid of a questionnaire. The analytical tools used were descriptive statistics and Maximum Likelihood Estimates using Logit regression model. The results indicated that about 94 percent of the rural women farmers were less than 55 years of age which implies that most of the rural women farmers are in their active age. About 86 percent of the rural women farmers were married. Household sizes were large, 76 percent of rural women farmers had less than 10 members. Furthermore, 97 percent of the rural women farmers had less than 30 years farming experiences. In addition, 92 percent of the rural women farmers realized income less than ₦ 100, 000.00 or 318 US Dollar from the sales of their farm products annually. The results further show that the print media and audio-visuals (radio and television) were the major information sources of rural women farmers. The Logit model results revealed that age, marital status and members of farmer's cooperative association had positive and significant relationships with access to agricultural knowledge and information respectively. The coefficient of Nagelkerke determinant ( $R^2$ ) value was 0.658. The coefficient of Cox and Snell determinant ( $R^2$ ) value was 0.488. The study recommends that well-trained female extension agents should be provided in the study area to train the rural women farmers on modern farming techniques that will increase agricultural productivity or yields.

**Keywords:** Elements of Rural Economics, Agricultural Information, Rural Women Farmers, Logit Model, Nigeria.

### INTRODUCTION

According to FAO (1998) an estimates from United Nations reported that eighty percent of domestic food producers in Africa are women, in Latin America it is about forty percent, while in Asia and the Pacific, it is about sixty percent. It is important to note that in Africa, women are

involve in cultivating food crops, their men counterparts are involve in hunting, and fighting wars (in the pre-colonial days). Rural women are very important, peasant in nature, and they are distributed, well spread all over Nigeria. The various farming activities engaged in by rural

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women farmers in Nigeria are planting, weeding, harvesting, threshing, winnowing, processing, storage, and marketing of agricultural produce. About forty-four, forty-five, thirteen, and fifty-one percentages of farm labours are provided by rural women farmers in the southern states, eastern states, middle-belt states, and northern states respectively (Olaleye, 1998). Rural women farmers in Nigeria are also involve in the production of yams, cassava, groundnut, maize. They are involved in taking care, and managing farm animals, such farm animals include: poultry, sheep, and goats (Loagun, 1998). Rural women farmers are also important with respect to household food and nutrition security in Africa. As reported by Canagarajah and Nielsen (2001) about eighty percent of farm labours in sub-Saharan Africa are provided by rural women farmers. Rural farmers are majorly women and they are in need of appropriate agricultural knowledge and information. Resources are not evenly distributed between men and women; this inequality has been seen to cause production inefficiency. More so, many interventions especially those for smallholder farmers do not solve the rural women farmers' problems, such problems are: lack of access to agricultural resources, and lack of control of agricultural inputs (Quisumbing and Pandolfelli, 2008). When adequate information are available to rural women farmers, experiences can be shared, sources of financial aids, best practices, and new markets will be made known to them. In order to improve agricultural production, and attained agricultural sustainable development, information on agriculture is crucial for any nation (Aina *et al.*, 1995). Information are needed by rural women farmers on new farming technologies, management of breeds, and spawning, storage, processing, marketing, and financing (Ofuoku *et al.*, 2008). For increased agricultural productivity, rural women farmers need to access information. Agricultural information is available through Nigeria Agricultural Research and Extension Research Liaison Services (NAERLS) (Ikoja, 2003).

Agricultural information can also be sourced through research institutes, schools of agriculture in the universities, Federal and States Ministries of Agriculture (Adomi *et al.*, 2003). Rural women farmers had problem of access to agricultural information even with the advent of information technologies (ICTS) which has been seen to be removing bottlenecks in the dissemination of information, it is important to note that the constraints to information access is still available (Olaleye, 1998). To break the cycle of poverty and to achieve food and nutrition security that will improve both the standard of living and the livelihoods among rural women farmers, it is worthwhile to identify the factors working against achieving food and nutrition security. More so, rural women farmers constitute major and larger percentages of rural dwellers. Many rural women farmers use their backyards to grow crops and also farm their livestock; this is where they earn their incomes to feed their families and the communities, with this they are in disadvantaged areas. They use little land size for backyard gardening, and as little as this land size may be, rural women farmers still need information on agriculture that will make effective and efficient use of the land, control pests and diseases, manage the soil and water, and also allow them to solve other problems that will surface from the farm. Rural women farmers lack agricultural information, and such information are needed and can be used to design appropriate extension interventions. Knowledge and agricultural information are needed by rural women farmers to achieve maximum agricultural yields, the effect of lack of it is that they are being driven to urban centers looking for formal employment for survival (Munyua, 2000). Access to adequate knowledge and agricultural information on new farming technologies, early warning system on flood, drought, pests infestations, and disease insurgencies, credit, market prices, fertilizer inputs are the least expensive agricultural inputs for sustainable and improved rural and agricultural development (Blait, 1996). Rural

women farmers are generally illiterate and lack agricultural information from traditional prints and library based methods (Van and Fortier, 2000). They lack formal sources of agricultural information like extension stations, libraries. Rural women farmers could benefit from global agricultural information, if information is provided and located in rural areas equipped with the information and communication facilities and gadgets (Aina, 2006). This is the modern day of information and communication technologies (ICTs), adequate and reliable agricultural information can be provided through telecentres, such information on pest control; weed control; new farming techniques, and better methods of cultivation, disease control, improved seedlings, fertilizer application, and new techniques in livestock production can be distributed. Rural radio otherwise called traditional media for rural women farmers can be noticed in areas where there are less constraints in agricultural information (Munyua, 2000). Pictures, group discussions, exhibitions, and demonstrations, films, video, prints, slides, dance, television, meetings, are ways by which agricultural information or messages can be delivered to rural women farmers (Munyua, 2000). Rural women farmers are very active in the areas of food production, marketing, and processing of agricultural produce, but constraints and barriers both social and economic in nature are bottlenecks around them debarring them from accessing technological and scientific agricultural information (Daman, 1997). Rural women farmers lack technical knowhow needed for them to use farm inputs productively to achieve optimum yields. According to Gellen (1994) African rural women farmers lack support which could increase agricultural productivity. Such supports that are lacking include: credit facilities, improved seeds, and many other inputs. It is important to note that agricultural extension services are more accessible to male farmers than rural women farmers in Nigeria. Osuman (1997) reported that staff of agricultural extension services are

mostly men, and are tend to giving help to men. Morna (1989) reported that agricultural extension workers interact with men in their visit to rural areas, and not women in Malawi, they interact with men on areas of improved technologies, and access to agricultural inputs. Rural women farmers do not have access to extension services (Obinne, 1995). They participated in both activities on the farm and off the farms; they usually lack the time to enjoy the extension services provided. Taking care of the children, and also the elderly are among the multiple roles women farmers play in rural households that debar them from benefitting fully from extension services because the time schedule for delivery of extension services might conflict with the time schedule for other households responsibilities (Protz, 1997). Rural women farmers are time-constrained by domestic task, family obligations, and socially obligations (FAO, 1998). Over the years, rural women farmers depend on skills, and experience also known as indigenous or local knowledge which they gained majorly from oral tradition which are practices over many generations. It is worthwhile to know that such primitive skills acquired by rural women farmers certainly do not helped to increase agricultural yields. Resistant plant weeds, old farm implements, emergence of new crop, and animal diseases, pest attack on farm crops, poor farm output, and poor quality fertilizers are ranges system of agriculture in rural areas. Community libraries, television, agricultural pamphlets, extension workers, radio, film shows, state and local government agricultural agencies are various ways agricultural information can reach rural women farmers. Certainly, there are problems or constrained facing rural women farmers in their ability and efforts in trying to access knowledge and agricultural information that could be available from any sources for increase, and improve agricultural output, and better farming system. Specifically, the objectives of the study are to:

- (i) identify socio-economic characteristics of rural women farmers in Abuja, Nigeria.
- (ii) examine the various ways rural women farmers have access to agricultural information in Abuja, Nigeria.
- (iii) evaluate the factors influencing rural women farmers access to new agricultural information in Abuja, Nigeria.

## MATERIAL AND METHODS

### The Study Area

Geographically, Bwari Area Council (BAC) is located between Latitudes 9°27'N and Longitudes 7°38'E of the Federal Capital Territory (FCT), Abuja. Bwari has a land area of 914Km<sup>2</sup> and a population of 227,216 people from (NPC). The soil is fertile and supports a population that is predominantly engaged in farming. Bwari is made up of several and diverse ethnic groups such as Gbagyi, Koro, Fulani and other minority migrants in the area.

### Sampling Techniques and Sample Size

Purposive sampling technique was used to select Bwari Area Council, Abuja due to its proximity to the base of the researcher and from the fact that many rural women farmers were available in the area. The lists of rural women were obtained from Bwari Area Council, Abuja. The list serves as the sampling-frame consisting of 180 rural women farmers. Multi-stage random sampling was used for this study. The 1<sup>st</sup> stage was purposive selection of the three (3) extension blocks namely: Byazhin; Kubwa and Bwari Central. The 2<sup>nd</sup> stage was the systematic random selection of 30 rural women farmers from each extension blocks making a total sample size of ninety (90) respondents.

### Method of Data Collection

Primary data were used for this study. This involves the use of questionnaires which was administered to the rural women farmers in the three (3) selected extension blocks. The questionnaire was structured to achieve the specific objectives stated for this study.

### Method of Data Analysis

The following analytical tools were used to achieve specific objectives stated for this study:

- (i) Descriptive Statistics
- (ii) Logit Regression Model

### Descriptive Statistics

This include the use of mean, percentages, frequency distribution tables, this was used to achieve specific objectives (i) and (ii)

### Logit Regression Model

The model is stated thus:-

$$P_i = E(Y = 1/X_i) = \beta_1 + \beta_2 X_i \quad [1]$$

$$P_i = E(Y = 1/X_i) = \frac{1}{1 + e^{-(\beta_1 + \beta_2 X_i)}} \quad [2]$$

$$P_i = \frac{1}{1 + e^{-Z_i}} = \frac{e^Z}{1 + e^Z} \quad [3]$$

$$Z_i = \beta_1 + \beta_2 X_i \quad [4]$$

where,  $Z_i$  ranges from  $-\infty$  to  $+\infty$  and  $P_i$  ranges from 0 and 1.

$$1 - P_i = \frac{1}{1 + e^{Z_i}} \quad [5]$$

$$\frac{P_i}{1 - P_i} = \frac{1 + e^{Z_i}}{1 + e^{-Z_i}} = e^{Z_i} \quad [6]$$

$$L_i = \ln\left(\frac{P_i}{1 - P_i}\right) = Z_i = \beta_1 + \beta_2 X_i + U_i \quad [7]$$

where, L= Logit goes from  $-\infty$  to  $+\infty$ . One can add as many regressors as may be dictated by the underlying theory

$$P_i = F(Z_i) = \frac{1}{1 + \exp(-X_i\beta)} \quad [8]$$

$$Z_i = X_i\beta \quad [8]$$

where, = Probability that the  $i^{\text{th}}$  farmers select the first alternative,  $X_i$  = Vector of sampled farmer associated with the  $i^{\text{th}}$  farmer.

$$\text{Log} \left( \frac{P_i}{1-P_i} \right) = \text{Log} Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + U_i \quad [10]$$

where;

$\beta_0$  = Constant Term

$\beta_1 - \beta_{10}$  = Logit Regression Coefficients

Y = Access to Agricultural Information (1, Access; 0, Otherwise)

$X_1$  = Age of Farmers (Years)

$X_2$  = Marital Status (1, Married; 0, Otherwise)

$X_3$  = Household Size (Units)

$X_4$  = Educational Status (Years)

$X_5$  = Rural Women Farmers Income (Naira)

$X_6$  = Farming Experience (Years)

$X_7$  = Membership of a Co-operative or Farm association (1, Membership; 0, Otherwise)

$X_8$  = Total Farm Size (Hectares)

$X_9$  = Contact with Extension Staff (Numbers of Visit/ Months)

$X_{10}$  = Number of Information Accessed by Rural Women Farmers (Units)

$U_i$  = Error term

This was used to achieve specific objectives (iii)

## RESULTS AND DISCUSSION

### *Socio-Economic Characteristics of Respondents in the Study Area*

Table 01 indicated that about 94 percent of the rural women farmers are less than 55 years of age which implies that most of the rural women farmers are in their active age; this is in consonance with the findings of Abdulkareem (2000), in which age was found to be a factor that can significantly affect productivity. Table 01 further shows that 86 percent of the rural women farmers were married, 10 percent single and 4 percent were divorced. Household sizes were large, about 76 percent had less than 10 members. This result is in consonance with findings of Oxfam (2010). The report suggests that farmers may choose to have large families in order to access labour for agriculture. About 80 percent had formal education. Level of education has a positive a priori expectation with agricultural productivity. Furthermore, 97 percent of rural women farmers had less than 30 years farming experience. It is expected that with increasing years of farming, rural women farmers gain experiences in farming to the advantage of increasing agricultural productivity. The above research findings are in line with those of Edeoghon *et al.*, (2008). About 96 percent of the rural women farmers had less than 5 hectares as farm size. The result as shown in Table 1 revealed that 92 percent of rural women farmers realized income less than ₦ 100, 000.00, from the sales of their farm produce.

### *Sources of Agricultural Knowledge and Information by Rural Women Farmers in Abuja, Nigeria.*

Table 02 enumerated the various sources of agricultural knowledge and information accessed by rural women farmers in the study area. Print media and audio-visuals (radio and television) can be observed to be the major sources of agricultural knowledge and information available to rural women farmers.

**Table 01: Socio-Economic Characteristics of Rural Women Farmers in Abuja, Nigeria.**

Variables	Frequency	Percentages
Age (Years)		
15-35	36	40.00
36-45	35	38.00
46-55	14	16.00
56-65	05	06.00
Marital Status		
Married	77	86.00
Single	09	10.00
Divorced	04	04.00
Household Size (Units)		
< 5	24	27.00
6 – 10	44	49.00
11 – 15	13	14.00
16 – 20	06	07.00
21 – 25	01	01.00
26 – 35	02	02.00
Level of Education		
Primary	13	14.00
Secondary	34	38.00
Tertiary	25	28.00
Non-Formal	18	20.00
Farming Experience (Years)		
0 – 10	53	59.00
11 – 20	23	26.00
21 – 30	11	12.00
31 – 40	02	02.00
41 – 50	01	01.00
Farm Size (Hectares)		
< 5	86	96.00
6 – 10	04	04.00
Income Level (Naira)		
< 25,000	34	39.00
26,000 – 50,000	30	33.00
51,000 – 75,000	08	09.00
76,000 – 100,000	10	11.00
101,000 – 125,000	02	02.00
126,000 – 175,000	04	04.00
176,000 – 200,000	02	02.00
Total	90	100.00

Source: Field Survey, 2015

**Table 02: Source of Agricultural Information by Rural Women Farmers in Abuja, Nigeria.**

Sources	Frequency	Percentage
(a) Print Media		
Bill Board	31	06.35
Newsletter	14	02.87
Video Slides	09	01.85
Posters	31	06.35
Audio Cassettes	05	01.02
Booklets	01	00.20
Film Shows	16	03.28
Bulletins	08	01.64
Leaflets	07	01.43
Agricultural Magazines	23	04.71
Newspapers	05	01.02
Agricultural Journals	10	02.05
Sub Total		32.77
(b) Shows		
Agricultural Shows	33	06.76
Exhibition	17	03.48
Drama and Theatre	04	00.82
Festivals	19	03.89
Film Shows	16	03.28
Agricultural Field Days	23	04.71
Sub Total		22.94
(c) Audio Visuals		
Radio	60	12.30
Television	63	12.90
Sub Total		25.20
(d) Extension Agent	47	09.63
(e) Group Meetings	46	09.43
Total	*488	100.00

Source: Field Survey, 2015 \*Multiple Responses

The result of this findings is in line with the findings of Ngathou *et al.*, (2006) and Farooq *et al.*, (2007) who in their separate studies reported that print media is highly preferred and useful sources of agricultural knowledge and information. Similarly, other findings like Gloy *et al.*, (2000) and those of Howell and Habron (2004), together with Parthaap and Ponnusamy (2006, and Clifford and William (2007) further confirmed the report that print media, and audio-visuals are the most useful sources of knowledge and information. Group meetings

could also provide agricultural information to rural women farmers as shown in Table 02. Reports of Chaudhry *et al.*, (2008), and those of Edeoghon *et al.*, (2008), together with Nosheem *et al.*, (2010) observed that friends, relatives, and other farmers significantly provide agricultural knowledge and information to farmers on farming techniques and practices for sustainable agricultural development.

***Factors Influencing Rural Women farmers Access to Agricultural Information in the Study Area***

Maximum Likelihood Estimate technique was used to determine the factors influencing access to agricultural information by rural women farmers in Abuja, Nigeria: The variables examined in this model include; age; marital status; household size; level of education; income level; farm experience; cooperation/farm association; farm size; contact with extension agent; number of information accessed. Age ( $X_1$ ) was significant at 5% probability level; marital status( $X_3$ ) was significant at 5% probability level and member of cooperative association was equally significant at 10% probability level. The coefficient of Cox and Snell determinant ( $R^2$ ) value was 0.488, which shows that 48% percent of dependent variable was explained by variables included in the model. The log likelihood statistics for the model exhibited appropriate signs and are significant; meaning that the explanatory variables included in models jointly explained the probability of access to agricultural information by rural women farmers. The Cox and Snell R square (Coefficient of Multiple Determinations) ( $R^2$ ) is 0.488. This indicates that 48.8% of variations in rural women farmers' access to agricultural information are accounted for by variations in the selected explanatory variables, suggesting that the model has explanatory power on the changes in rural women farmers' access to agricultural information. The Nagelkerke R Square also supported the claim with a value of 0.658 or 65.8%. This implies that the selected explanatory variables explain behavior of rural women farmers' access to agricultural information at 65% level of confidence.

***Problems Encountered in Accessing Agricultural Information among Rural Women Farmers in the Study Area***

Most problems encountered by these rural women farmers in accessing information were; lack of ICTs centers, lack of agricultural library; cost of transportation to agricultural centers; high cost of some media equipment; inadequate infrastructure (electricity); few women extension agent; accessible road to get extension office; lack of supervision or field assistance. Table 04 shows that 33 percent of the farmers had problems with ICTs centers. In Uganda, rural women form listening groups to gather for special radio programmes produced by and for women (World Bank, FAO and IFAD, 2009). Furthermore, 31 percent of rural women farmers lack access to agricultural library. Agricultural research, learning, and education are supported by academic libraries. However, current libraries do not provide support to rural women farmers. They lack adequate infrastructure that will enable rural women farmers make use of modern ICTs, which will provide agricultural knowledge and information that could enhance increase agricultural production. This is in consonance with findings of Aina (2006). About 10 percent of the rural women farmers complained about cost of transportation to agricultural information centers. About 13 percent of the rural women farmers had issues with the extension agent. According to these rural farmers, access to information is limited due to few extension agents which often channel or provide training and information opportunities to farmers.

**Table 03: Maximum Likelihood Estimate of the Logit Model**

Variables	B	SE	Wald	Significance
Age (X <sub>1</sub> )	-0.152**	0.062	5.985	0.05
Marital Status (X <sub>2</sub> )	-3.275**	1.467	4.983	0.05
Household Size (X <sub>3</sub> )	-0.113	0.087	1.692	NS
Level of Education (X <sub>4</sub> )	0.028	0.084	0.112	NS
Income Level (X <sub>5</sub> )	0.000	0.000	0.029	NS
Farm Experience (X <sub>6</sub> )	0.055	0.056	0.975	NS
Cooperative Farm Association (X <sub>7</sub> )	2.952***	0.794	13.83	0.01
Farm Size (X <sub>8</sub> )	-0.203	0.216	0.885	NS
Contact with Extension Agent (X <sub>9</sub> )	-0.192	0.213	0.817	NS
Number of Information Accessed (X <sub>10</sub> )	-0.018	0.082	0.047	NS
Sample Size	90			
-2 Log Likelihood	61.658			
Cox and Snell R Square	0.488			
Nagelkerke R Square	0.658			

Source : Field Survey, 2015

\*\*\* Significant at 10% Probability Level, \*\*Significant at 5% Probability Level, \*Significant at 1% Probability Level

**Table 04: Problems Encountered in Accessing Agricultural Information among Rural Women Farmers in the Study Area**

Problems Encountered	*Frequency	Percentage
Lack of ICTs Centers	30	33.00
Lack of Agricultural Libraries	28	31.00
Cost of Transport to Agricultural Centers	09	10.00
High Cost of Some Media Equipment	21	23.00
Inadequate Infrastructure (Electricity)	10	11.00
Few Women Extension Agent	12	13.00
Accessible Road to Extension Officers	09	10.00
Lack of Supervision by Field Assistance on Delivery Information	05	04.00

Source: Field Survey, 2015 \*Multiple Responses

***Suggested Solutions to Problems Enumerated by Rural Women Farmers in the Study Area.***

Table 05 shows the result of possible solutions to problems enumerated by rural women farmers in the study area. The result reveals that 6 percent of the rural women farmers suggested that women may not be able to frequently use public internet cafes instead mobile phones can provide an alternative means of gathering and exchange information. Short messages services

(SMS) technologies allow information to be sent directly to women with mobile phones. Rural women farmers suggested that the existence of poor quality or inadequate power supply will inevitably impact negatively on access to agricultural information. Also, more women farmers should be involved in extension activities, so as to provide the needed services and information for agricultural production.

**Table 05: Suggested Solutions to Problems Enumerated by the Rural Women Farmers in the Study Area**

Suggested Solutions	Frequency	Percentages
Provision of ICTs	06	06.00
Provision of Agricultural Libraries	35	39.00
Provision of Infrastructure (Electricity)	15	22.00
Provision of Female Extension Agents	12	16.00
Reduction of Cost of Information Devices	05	06.00
Support from Government Field Assistance	10	11.00

Source: Field Survey, 2015

## **CONCLUSIONS AND POLICY IMPLICATIONS**

The print media is the major source of agricultural knowledge and information, followed by audio-visuals (television and radio). Age, marital status, and member of cooperative/farm association were found to have positive and significant influence on access to agricultural knowledge and information. Rural women farmers as well as their men counterparts participated in productive activities such as agricultural productivity, household welfare, and economic growth. However, rural women farmers are undervalued and marginalized in agriculture, economic analysis, and policies formulation. Women are generally seen as economically inactive whereas their men counterparts occupy the central position in decision making. Policy makers and administrators typically still assume that rural women roles are supportive in nature, possibly as farmers' wives, where men are the farmers. In Nigeria, specifically in the 1965, a farmer is defined as an adult male; they have the right of agricultural produce from the farm. Such classification excludes women (FOS, 1966). It is important to note that sixty percent of labour for agricultural subsistence and food production in Africa were supplied by women. Women play important role in agricultural production. The goal worldwide is to achieve sustainable agricultural development. In order to achieve environmental, economic, and social significant benefits, it is good to know that access to agricultural knowledge and information is important, and needed at local,

national and global levels. Investments are needed in many areas such as information, keeping records, monitoring and evaluation, observations, and observation equipment. These are needed by farmers to significantly respond to changing circumstances in achieving sustainable agricultural development. Skills are needed, compost making, mechanical control of weeds, pesticides application using spot methods, risk assessment are whole sets of farming ideas needed to achieve sustainable agricultural development.

## **RECOMMENDATIONS**

- (i) There is the need for more female agricultural extension agents to be trained and made available for rural women farmers. Farm inputs and modern technologies are needed to remove drudgery in farming currently experienced by the rural women farmers.
- (ii) Accessible road should be provided within community so that the rural women farmers can easily convey themselves to the extension offices and farms.
- (iii) Agricultural knowledge and information can be distributed effectively through farm libraries if provided in the village under the supervision of field assistance. This is because most rural women farmers had formal education.

- (iv) Media organizations, communities, private agricultural organization, Agricultural Ministries, and agencies, extension units should be well coordinated for effective delivery of agricultural knowledge and information to rural women farmers in the study area.

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