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RESEARCH ARTICLE

AN ASSESSMENT OF AGRICULTURAL INFORMATION NEEDS OF WOMEN RICE (*ORYZA SATIVA)* FARMERS IN THE EASTERN AGRICULTURAL ZONE OF KOGI STATE, NIGERIA

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ABSTRACT

This study assessed the agricultural information needs of women rice farmers in the eastern agricultural zone of Kogi state, Nigeria. It specifically ascertained the information needs score of women rice farmers in the area of technical, socioeconomic and cultural; identified the different sources of information available to women rice farmers in the area and identified the constraints in accessing agricultural information by women rice farmers in the study area. A three staged random sampling was used to select 180 women rice farmers for the study. Findings revealed that women rice farmers in the area needed information on appropriate crop mixture (mean score = 2.5), planting techniques (mean score = 2.1) and the types of rice variety that is tasteful (mean score = 2.1). The major sources of obtaining agricultural information identified by women rice farmers are neighbours/fellow farmers (47.8%), village meetings (29.4%) and radio/T.V (28.3%). The major constraints encountered by women rice farmers in accessing agricultural information include inadequate/poor feeder roads (mean score = 3.6), unstable electricity supply (mean score = 3.5) and inadequate fund to acquire information (mean score = 3.5). It was recommended among others that, agricultural extension agencies should take note of the information needs of women rice farmers particularly in areas of appropriate crop mixture, planting techniques, tasteful rice variety and endeavour to step up their services in these areas of need.

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INTRODUCTION

Nigeria agricultural production is no doubt dominated by small holder farming system. The farms are dominated by small scale farmers who are responsible for about 95% of total production (Daramola, 2004). Additionally, the agricultural system has in the time past suffered limited access to adequate information, credit facilities, modern technology farm inputs and inefficient use of resources. Indicatively, the involvement of women in agricultural production is of significance to Nigeria's economic development. Women make up some 60-80 percent of agricultural labour force in Nigeria, depending on the region and they produce two-thirds of the food crops (United Nations Development Programme, UNDP, 2013). Women in Nigeria engage in various farming activities such as planting, weeding, hoeing, harvesting, threshing and winnowing of agricultural products as well as the processing, storage and marketing of these farm produce. Many of these women farmers in the country are also directly involved in the production of some important crops such as rice, yams, maize, cassava, groundnut, among others. Similarly a good number of women in rural areas undertake many responsibilities concerning care and management of farm animals like poultry, goats and sheep (Okwu and Umoru, 2009). Rice (*Oryza Sativa)* is one of the most staple foods in Nigeria. Rice is very popular because of its high carbohydrate content which is an essential element for energy, human development and body growth. Rice has been a good partner to mankind. The adaptations in terms of ecological, economical and technological changes around rice facilitated this partnership between man and rice (Braun, 2006). This said "partnership" can be maintained through identifying the information needs of rice farmers. Case (2009) described information need as an individual's or group's desire to locate and obtain information to satisfy a conscious or unconscious need. For women rice farmers to adopt a new agricultural technology, they must be aware of the technology, have valid and up-to-date information on the technology, the applicability of the technology to their farming system and receive the technical assistance necessary to adopt the technology (Asiabaka *et al*., 2001). Rice production related information needs by women farmers could be in any of these

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areas; technical needs, socioeconomic needs, cultural needs, among others. If women rice farmers are provided with information on these needs they will thrive well with its multiplier effect on increased productivity. Most of the rural women rice farmers in the study area are using their traditional methods to produce rice for family consumption and probably for marketing. Agricultural information is required to enhance efficient and effective utilization of productive resources and help solve other problems emanating from the farm. However, there is scanty of information pertaining to the agricultural information needs of women rice farmers that could be used to design appropriate extension intervention in the eastern agricultural zone of Kogi state, Nigeria. This study is therefore an attempt to assess agricultural information needs of women rice farmers in the eastern agricultural zone of Kogi state, Nigeria. Pointedly, it ascertained the information needs score of women rice farmers in the area of technical, socioeconomic and cultural; identified the different sources of information available to women rice farmers in the area and identified the constraints in accessing agricultural information by women rice farmers in the study area.

MATERIALS AND METHODS

The study was carried out in the eastern agricultural zone of Kogi State, Nigeria. The four agricultural zones as delineated by the Kogi Agricultural Development Project (KADP) are zones A, B, C, and D. Zones B and D are situated in the eastern flank of the state known as the Igala – Bassa land. The two other agricultural zones are zone A located in Kogi west and C located in Kogi central. Geographically, Kogi East is located between latitudes $06^{0}05^{1}$ – $08^{0}00$N and longitudes $06^{0}07^{1}$ – $07^{0}05^{1}$E (Ocholi, 2015). Zones B and D comprises of Nine (9) Local Government Areas namely; Ankpa, Bassa, Dekina, Ibaji, Idah, Igala-mela/Odolu Ofu, Olamaboro and Omala. Majority of the inhabitants in the study area are farmers, including women.

Major arable crops grown in the area are rice, yam, maize, cassava, millet, guinea corn, bambaranut, pigeon pea, oil palm, citrus, mango and cashew. Major livestock that are reared are cows, goats, sheep and poultry. A three staged sampling technique was used for the study. In stage one, three (3) Local Government Areas (LGAs) were purposively selected from the nine (9) LGAs of the eastern agricultural zone. These are Idah, Bassa and Ibaji. The LGAs were selected due to the level of rice production in the areas. In stage two, three (3) rice farming communities were randomly selected from each LGA to give nine (9) rice farming communities. In stage three, twenty (20) women rice farmers were randomly selected from each rice farming community. A total of 180 women rice farmers were used for the study. Primary data obtained for the study were analysed using descriptive statistics and mean score from Likrt type of scale.

The information needs score of women rice farmers in the area of technical, socioeconomic and cultural and constraints faced by women rice farmers in accessing agricultural information were achieved using mean score from a four point Likert type of scale. Likert scale was developed by Rensis Likert in the 1930s to measure the mean scores of variables. The four point Likert type of scale used is as specified below:

For information needs score:

Opinion Point

Very Strong Need (VSN) 4
Strong Need (SN) 3
Need (N) 2
No Need (NN)1

For constraints, the Likert scale is specified below:

OpinionPoint

Very Serious (VS) 4
Serious (S) 3
Not Serious (NS)2
Not a Constraint (NC)1

The mean response to each item was calculated using the following formula:

$$\overline{X} = \frac{\sum FX}{N}$$

Where: $\overline{\times}$ = means response, $\sum$ = summation, F = number of respondents choosing a particular scale point, X = numerical value of the scale point and N = total number of respondents to the item.

RESULTS AND DISCUSSIONS

Socioeconomic Characteristics of Women Rice Farmers: Relevant socioeconomic variables described in this study area presented in Table 1. The average age of 42 years among women rice farmers could considered as active and productive age requisite to carry out various activities in rice production. Majority (72.8%) could read and write while 27.2% do not have any form of formal educational training. The high level of literacy recorded among women rice farmers in the area could facilitate their access to information on various rice production practices such as planting time, improved varieties, spacing, harvesting period and other innovations. This level of literacy is however lower when compared with a formal educational level of 86% reported by Afolami *et al* (2014) among rice farmer sin Ekiti state. The mean household size of 7 members per household is the same to what was recorded by Ibitoye *et* al (2012) among rice farmers. It is expected that, members of the household will serve as source of labour on rice farm. The average year of rice farming was 15 years. The years spent in rice farming could positively influenced farmers' ability to access and understand the information necessary for rice production. This agrees with Maurice (2014) who reported similar result among *Fadama* farmers in Adamawa state. The mean farm size of 1.2 hectares and average annual income from rice farming of ₦85, 377.77 implies that rice production among women in the study area is still at the subsistence level. The low percentage of women access to extension workers could be associated to small and scattered rice farm land owned by these women rice farmers. This implies that the farmers might not seek any advice from the extension workers. This agrees with Adejoh (2014) who pointed out that farmers with larger farm business in terms of acreage will work closely with extension workers for advice and useful information. Extension agents help farmers in accessing agricultural information for improved productivity.

Table 1. Distribution of Respondents According to Socioeconomic Characteristics

Socioeconomic variables		Frequency	Percentage	Mean
A.	Age (years)			
	20 – 35	30	16.7	
	36 – 45	50	27.8	
	46 – 55	45	25.0	
	56 – 65	42	23.3	
	66 – 75	13	7.2	
	Total	180	100	42 years
B.	Educational Status			
	No formal education	49	27.2	
	Primary education	34	18.9	
	Secondary education	44	24.4	
	Tertiary education	53	29.4	
	Total	180	100	
C.	Marital Status			
	Single	29	16.1	
	Married	143	79.4	
	Divorced	07	3.9	
	Widowed	01	0.6	
	Total	180	100	
D.	Family Size (Number)			
	1 – 5	66	36.7	
	6 – 10	98	54.4	
	11 – 15	16	8.9	
	Total	180	100	7 members
E.	Secondary Occupation			
	None	82	45.6	
	Civil service	53	29.4	
	Trading	18	10.0	
	Food processing	27	15.0	
	Total	180	100	
F.	Farming Experience			
	1 – 10	69	38.3	
	11 – 20	56	31.1	
	21 – 30	37	20.6	
	31 – 40	18	10.0	
	Total	180	100	15 years
G.	Farm Size			
0.1	– 1	43	23.9	
1.1	– 2	79	43.8	
	2.1 – 3	55	30.6	
	3.1 – 4	03	1.7	
	Total	180	100	1.2 hectares
H.	Extension Contact			
	Yes	35	19.4	
	No	145	80.6	
	Total	180	100	
I.	Income from Rice Farming	33	18.3	
	10000 – 50000	102	56.7	
	50001 – 100000	22	12.2	
	101000 - 150000	20	11.1	
	150000 – 200000	03	1.7	
	Above 200000	180	100	85, 377.77
	Total			

Source: Field Survey, 2016

Information Needs Score of Women Rice Farmers

The distribution of respondents according to their level of information needs in the area of technical, socioeconomic and cultural is presented in Table 2. The result shows that women rice farmers in the area indicated a very strong need for appropriate crop mixture in rice production. This was evident in an information need score of 2.5. For instance, the cultivation of rice-bean cultivated along rice bunds and terrace-margins in midhills in other part of the world. Additionally, some farmers in other parts of Nigeria plants yams on the mound, rice in the furrow, and maize, okra, melon, and cassava on the lower parts of the mound. Mounding is beneficial because it increases the volume of soil available to root crops. The rationales for crop mixtures are that they may be relatively more profitable than sole cropping, the difference between the marginal value product of resources and the opportunity cost of the resources being insignificant; they are consistent with the goals of security and year-round subsistence needs; they may alleviate adverse conditions in the ecosystem; and they may maximize the space, water, and nutrients available.

Some of these benefits can be further promoted by good tillage practices, based on the principle of minimizing disturbance of the ground and vegetative cover. The practice of minimum tillage, with ample crop residues left on the soil surface, has great potential. For appropriate crop mixture in upland rice, rice is usually planted one week before the other crop. Cassava was observed to be the major crop intercropped with rice by 40.6% of all the farmers while the lowest % of farmers intercropped rice with vegetable (10.9%). Another important area of information need indicated by women rice farmers in the area is information on the variety of rice that is tasteful with a need score of 2.1. Worldwide there are 40,000 varieties of rice, species name *Oryza sativa.* There are also varieties of African rice, species name *Oryza glaberrima*, and *Zizania spp.*, sometimes called Canada rice or wild rice.

Sources of Information Available to Women Rice Farmers

Major source of information identified by women rice farmers in the area is presented in Table 3. The result showed that neighbours/feel farmers ranked 1st as the major source of agricultural information available to women rice farmers in the area. Fellow farmers give their colleague information on various rice production practices such as time of planting, plant spacing, use of improved varieties and other innovative practices. This finding agrees with Yahaya (2001) reported that women farmers usually get agricultural information on improved technologies from their husbands and fellow women. The result further shows that women rice farmers in the area indicated village meetings as an important source of getting agricultural information. This finding is also associated with information from neighbours/fellow farmers. Women rice farmers in the area obtain agricultural information for improved and better production practices during village meetings usually organized by farmers, especially those in a cooperative society or other farming association. Radio and television (TV) ranked 3rd as sources of agricultural information among women rice farmers in the area.

The role of radio and television as source of agricultural information cannot be overemphasized as it can convey messages in farmers' local dialect. This finding agrees with Adejoh (2014) who reported that majority (85.63%) of rural farmers in Kogi State preferred to seek their agro-information from radio. This finding further supports an earlier study by Adejo *et al,* (2010) when they said that radio is the most popular ICT facility especially in rural communities because it is considerably cheap to buy and communicates useful agricultural messages to a large number of people at relatively low cost and faster rates. The low percentage of women farmers having extension agents as their sources of agricultural information agrees with the findings of Matarmi (1991) and Osuman (1997) who observed that male farmers have more access to agricultural information through extension agents than the female farmers do.

Table 2. Information Needs of Women Rice Farmers N = 180

Information Needs	VSN	SN	N	NN	INS
Technical Needs					
1. Improved variety of rice seeds	18 (10)	20 (11.1)	37 (20.6)	105 (58.3)	1.7
2. Planting techniques in swamps	25 (13.9)	23 (12.8)	71 (39.4)	61 (33.9)	2.1**
3. Soil fertility management	17 (9.4)	25 (13.9)	50 (27.8)	88 (48.9)	1.8
4. Weed control methods	22 (12.2)	22 (12.2)	56 (31.1)	80 (44.4)	1.9
5. Appropriate crop mixture	51 (28.3)	34 (18.9)	50 (27.8)	45 (25.0)	2.5*
6. Appropriate crop mixture in upland	46 (25.6)	42 (23.3)	40 (22.2)	52 (28.9)	2.5*
Socioeconomic Needs					
7. Access to fertilizer	17 (9.4)	8 (4.4)	40 (22.2)	115 (63.9)	1.6
8. Sources of improved variety of rice	17 (9.4)	18 (10.0)	78 (43.3)	67 (37.2)	1.9
9. Market opportunities for the rice	15 (8.3)	17 (9.4)	64 (35.6)	84 (46.7)	1.8
10. Access to other inputs such as agrochemicals and finance	18 (10.0)	16 (8.9)	48 (26.7)	98 (54.4)	1.7
Cultural Needs					
11. Types of variety that is tasteful	18 (10.0)	41 (22.8)	64 (35.7)	57 (31.7)	2.1**
12. Employment of man-day labour	17 (9.4)	8 (4.4)	40 (22.2)	115 (63.9)	1.6

Source: Field Survey, 2016NOTE: Values in parenthesis are in percentages
VSN = Very Strong Need, SN = Strong Need; N = Need and NN = No Need, INS =Information Need Score* and ** = Strong Need and Need respectively.

Table 3. Sources of Information to Women Rice FarmersN = 180

Source of Information	Frequency*	Percentage	Rank
Neighbours/Fellow Farmers	86	47.8	1st
Extension Agents	11	6.1	7th
Radio and T.V	51	28.3	3rd
Print Media	12	6.7	6th
Agricultural Universities/institutes	13	7.2	4th
Village Meetings	53	29.4	2nd
Cooperative Societies	13	7.2	4th

Source: Field Survey, 2016* = multiple responses

Table 4. Mean Score on Constraints to Accessing Agricultural Information by Women Rice farmers

Constraints	Response				MS
	VS	S	NS	NP	
i. inadequate fund to acquire information	106	54	16	4	3.5
ii. language barrier	35	67	36	42	2.5
iii. inadequate information source	69	81	23	7	3.2
iv. inadequate extension personnel	76	79	10	15	3.3
v. low literacy level	58	74	12	36	2.9
vi. high cost of ICTs	58	90	11	21	3.0
vii. unstable electricity supply	108	57	6	9	3.5
viii. inadequate/poor feeder roads	116	58	6	0	3.6

Source: Field Survey, 2016. VS = Very Serious, S=Serious, NS = Not Serious, NP = Not a Problem, MS= Mean Score

Constraints in Accessing Agricultural Information by Women Rice Farmers

The constraints encountered by women rice farmers in accessing agricultural information are presented in Table 4. Finding on poor feeder road network could play a significant role in limiting agricultural information from extension agents. It could also affect information from fellow farmers for improved rice production. This finding agrees with Dauda *et al.,* (2009), who reported poor feeder roads, inadequate road network between the rural areas where agricultural production mainly takes place, lack of appropriate on farm and off-farm storage facilities and poor rural electrification as bane to farmers' accessing agricultural information.

Inadequate extension was also a serious constraint identified by the respondents. This finding is not surprising as most of the women rice farmers did not have access to extension agents. It is expected that extension agents could increase farmers' access to information needs in rice production. Finding on low literacy level could be associated with technical information needs such as the use of mobile phones and other devices to obtain agricultural information for improved rice production which invariably requires some level of education.

Conclusion and Recommendations

Access to agricultural information is a prerequisite for improved crop productivity. Information among women rice farmers were mainly obtained from their fellow farmers,

village meetings, radio and television. The women rice farmers did not have expected access to professional extension agents. Indicatively, women rice farmers in the eastern part of Kogi state needs information on appropriate crop mixture, rice planting techniques and the variety of rice that is tasteful. Based on the findings, the following recommendations were made:

- Agricultural extension agencies should take note of the information needs of women rice farmers particularly in areas of appropriate crop mixture, planting techniques, tasteful rice variety and endeavour to step up their services in these areas of need.
- Lack of electricity and poor feeder roads provided in rural areas should be addressed by relevant bodies for increased productivity.
- Importantly, considering women's designated roles in agricultural production efforts, agricultural information to farmers should be gender specific and sensitive.

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