

Agricultural Information Use as Determinant of Farm Income of Women in Benue State, Nigeria

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Abstract

Agricultural information when provided and utilized improves practices, farm income, living conditions and agricultural development. In spite of the current agricultural extension services, income level of farm women is commonly described as low. This study adopted survey design, using multistage sampling technique and questionnaire to gather information from 500 women in Benue state. The study found out that agricultural extension agent, farmers' union, and Agricultural Institutions, government projects, mobile phones and other farmers were major information sources consulted. On the overall, rural women's use of agricultural information was slightly above average with information on market location and farm implements mostly used. Further, majority of rural women made considerably low farm income. Use of agricultural information had effect on rural women's farm income. The study recommends provision of more productivity related information and need for Nigerian rural development strategies to reflect creation of enabling environment for farm income generation among women.

Keywords: Rural women, Agricultural Research Information utilization, Farm income, Benue state, Information.

1. Introduction

Agriculture is a major source of employment and wealth for the Nigerian populace especially those at the rural areas where it is a survival means for them especially women. In agriculture, women maintain high participation in many African countries as they constitute 55% and 50% of food crop producers in Nigeria and Ghana respectively (Ugwu, 2009 and Osie & Nkrumah, 2008). They are observed to provide its major labour requirement, processing and sales of farm produce. However, compared to the male farmers, the average Nigerian woman farmer is observed to lack access to productive resources such as agricultural information. In agriculture information is key in determining extent of productivity as farmers' need to upgrade to current practices for higher yield and income. This justifies the agricultural extension services provided by the Government. Some benefits of information use among farmers are increased farm size, access to credit, reduction in rigour of farming work, improved farm yield, provision of revenue and increased productivity. But Adereti, Fapojuwo and Onasanya (2006) notes that improved packages on agricultural production are not adequately used by farmers therefore it not far from being logical to conclude that poor exposure and use of farmers to appropriate agricultural research information could be a major reason for low yield and income recorded by Nigerian farmers (Ekumankma and Nkankwo 2002 and Olawepo, 2010). This implies that continuous traditional farming practices and slow growth rate in agriculture in Nigerian may not necessarily mean nonexistence on of agricultural information but probably the nonuse of information by the majority in agriculture that is, the women farmers. Therefore it is important to investigate information use in order to understand its relative influence on farm income level of women farmers.

2. Statement of the Problem

Unlike the conventional role of women being housekeepers, they now participate in economic activities such as farming with the purpose of supporting the living standard in their homes. They are consequently found to participate in agricultural extension service aimed at disseminating relevant agricultural research information to farmers for better farming practices as well as improve farmer's living standard. Unfortunately, questions still arise on whether rural women use agricultural research information as literature reveals that their productivity (farm income) can still be described as low when compared to their male counterpart. It is in the light of this, that this study investigates the interplay between agricultural research information and farm income of rural women in Benue state, Nigeria.

3. Objectives of the Study

The study investigated the relationship between agricultural research information use and farm income of rural women participating in crop farming in Benue state, Nigeria. To attain the aim of this study the following specific objectives were generated:

1. Identify sources of agricultural information consulted by women in Benue state.
2. Identify the types of agricultural information used women in Benue state.
3. Find out the farm income of women in Benue State.
4. Determine the effect of agricultural information use on farm income of women in Benue state

4. Research Questions and Hypothesis

1. What are the agricultural information sources consulted by women in Benue state?
2. To what extent do women use agricultural information in Benue state?
3. What is the farm income of women in Benue state?

The study raised and tested one hypothesis at 0.05 significance level:

Utilisation of agricultural research information has no significant effect on women's farm income in Benue state.

5. Literature Review

Nigeria as a developing country appears to have not maximized the potentials of their agricultural industry due to reasons like lack of good agricultural practices, political instability and unsuitable environment. According to Yahaya and Akinboye (1998), production of relevant technologies, diffusion and adoption of innovation by farmers are key to any form of agricultural development. The Nigerian government has addressed the situation by establishing related institute of research and universities of agriculture and technology as well as the extension system that is mainly described as communicative. Tadesse (2008) defined agricultural research information to include agricultural messages, agricultural technologies passed on via extension services among actors in the agricultural extension system. Thus one will not be wrong to define agricultural research information as messages communicated, received and understood; a collection of data or data whose conclusion is drawn from research activities carried out by an organized or established body which is fundamental to socio-economic development at individual, community and national levels. Hanrade (2009) reiterated that "prosperity, progress, and development of any nation depend upon the nation's ability to acquire, produce, access, and use pertinent information". Agreeably, authors share the view that for rural populace to assume responsibility for development it is important for them to have productive resources including access to relevant and desirable information (Okiy, 2003).

Several studies in agricultural information include those that have examined the overall preferences for or use of agricultural information or information sources by farmers. Ofuoku, Emah and Itedjere (2008), examined information use among fish farmers and found out that information relating to stocking and preservation technique were mostly used while sources used include extension agents, other farmers, farmers' group, universities, research institutes and Non-Governmental Organization. Information need of rural women converge around home and family care, farm activities and income generation for supplementing family's income and general wellbeing. Through the Nigerian agricultural extension system agricultural research information is passed on to farmers specifically to women farmers via the Women in Agriculture (WIA) groups. The focus of the extension system is to use communication channels to help people and communities identify potential improvements to their practice thereby increasing their productivity as well enhance agricultural and rural development. These benefits and more have inspired farmers to seek, access and utilize agricultural research information in their activities.

Women although traditionally perceived to be 'home keepers' and men 'bread winner' are currently seen to be participating in various income generating activities majorly to support their family income thus meeting personal and family need. This is also evident in the Nigerian rural communities where women engage in farming so as to generate income. Income is defined as receipt of remuneration, payment or wage from work or service rendered (Peppenocir, 1977 in Siddique, Batool and Farooq, 2009). With the existence of economic necessities, more women participate in economic activities including: farming (planting, weeding, harvesting, processing and marketing of farm produce) as well as poultry and livestock farming primarily to generate more income as a supplement for family's income. May, Karugia and Ndokweni (2007) affirmed that aside agriculture representing an important source of revenue for producers and processors in developing countries, agriculture remains an important source of livelihood for both rural and urban population especially for women and as such, represent an important option for improving their living conditions. In Paskistan, women generate income through their outside the home economic activities mainly through agriculture. This serves as a major source of income among rural household by making a contribution of about seventy percent (70%) in their household income (Siddique, Batool and Farooq, 2009). The same study found out that women employment positively affects the family's socio-economic status. This affirms that women especially the rural ones in developing countries participate in agriculture primarily for income purposes and indirectly contribute to the national productivity.

For income generation purposes women are faced with numerous challenges. These include lack of business awareness, low technical skill; lack of knowledge about local markets and access to them, lack or limited access to productive resources including: credit/ capital, technology, education, training and information. All these have hampered their income generating activities thereby showing that their social and economic development is not only an issue of equalizing men and women but rather an issue of individual and national socio-economic development.

For socio-economic development to take place in any nation it is important to provide citizens with

productive resources, one of such which is information resource. However, women's socio-economic independence depends not only on equal access to productive resources but also on ownership and control over productive resources and access to public goods such as infrastructure, health care education and training and so on, as well as access to income generating activities. Perhaps one major factor responsible for poor income generation among rural women is the insufficient and nonuse of relevant agricultural research information at their disposal.

6. Methodology and Development of Instrument

The methodology used in this study was survey in nature. Based on the figure available at the Benue State Agricultural and Rural Development Authority (BARNADA) at the time the study was conducted, a population of 2000 women was spread across the State's Agricultural Development zone namely A, B, and C. Using a multi-stage sampling technique, a sample size of five hundred (500) women were drawn. 500 copies of a self-designed questionnaire titled "Agricultural Research Information Use and Income Generation" was used for data gathering. Four hundred and sixty (460) were duly completed and thus analyzed. Therefore the study had a 92% response rate. Data gathered was analyzed using both descriptive and inferential statistics.

7. Analysis of Result

7.1 Research Question One: What are the agricultural information sources consulted by women in Benue state?

Table 1: showing information sources consulted by the Respondents

Sources of Agric. Research Info.	Mean Score	Standard Deviation (std.)
		n = 460
Extension agents/services (BARNADA)	3.98	1.07
Farmers' Unions/Cooperative	3.55	1.35
Agric. Institute/University	3.54	1.36
Other Govt. Projects	3.33	1.39
Mobile/Cell phone	3.09	1.50
Other farmers	3.05	1.34
Bulletins/ Newsletter	2.92	1.49
Extension posters	2.83	1.38
Family members	2.80	1.38
Radio	2.65	1.42
Internet	2.64	1.30
Newspaper or magazines	2.61	1.38
Input dealers/ suppliers	2.43	1.25
Extension Manuals	2.33	1.28
Library	2.26	1.24
Film / Slide Projection	2.14	1.33
Television	2.08	1.35
NGOs	1.93	1.22

** BARNADA: Benue state Agricultural and Rural Development Authority

From Table 1, mean score reveals that extension services (mean= 3.98), farmers' union (mean= 3.55), agricultural institute (mean= 3.54); while the least consulted information sources are: Non-Governmental organization (mean= 1.93) television (mean= 2.08) and Film/Slide projection (mean= 2.14).The implication of this finding is that women mostly seek agricultural information through interpersonal medium. Unfortunately, the library, which should be the store house of research outputs, is one of the least consulted information source among the women. But it is worthy to note that mobile phone has gained considerably high acceptability as an information source among the women.

7.2 Research Question 2: To what extent do women use agricultural information in Benue state?

Table 2: Agricultural Research Information used by Respondents

TYPES OF AGRICULTURAL RESEARCH INFORMATION USED BY RURAL WOMEN IN BENUE STATE	Mean	n=460 Standard Deviation
Where to sell my farm produce	3.46	1.02
Improved or new farm implements	3.45	1.21
How to apply fertilizer on my farm land	3.41	1.08
Better processing methods	3.40	1.05
Improved seeds	3.34	1.12
Better storage methods	3.33	1.23
Sustainable land management practice	3.32	1.18
How much to sell my farm produce (pricing farm produce)	3.29	1.17
Better harvesting methods	3.25	1.30
New cropping system	3.25	1.17
How to get loan for my farming business	3.25	1.16
Best environmental practices	3.21	1.20
How to get inorganic fertilizer	3.19	1.09
Soil preparation	3.18	1.32
Activities of other farmers are doing	3.13	1.24
New irrigation methods	3.10	1.26
How to get farm labour	3.02	1.26
Pest management	2.51	1.36

The mean score on table 2 revealed women use information on market location(mean= 3.46), farm implements (mean= 3.45) and fertilizer application (mean= 3.41). On the other hand, the use of pest management information was rated slightly below average (mean= 2.51).This implies that agricultural information use among women may be described as moderate, requiring more effort in promoting information use among women. It is also important to note that women used more of production and sales related information, thus information providers may attain better success if related information is provided in the rural communities.

7.3 Research Question 3: What is the farm income of women in Benue state?

Table 3: Farm Income of Respondents

n=460

Income range	Frequency(n=460)	Percent (%)
<=0	62	13.5
1-50,000	115	25.0
50,001-100,000	86	18.7
100,001-150,000	73	15.9
150,001-200,000	36	7.8
above 200,000	88	19.1
Total	460	100.0

Table 3 showed the calculated farm income of respondents with majority falling in the range of N1-50, 000 (25.0%), closely followed by those having the income of above N200, 000 (19.1%) and few of them found within the 150,001-200,000 (7.8%) income range.

7.4 HO1: Utilization of agricultural research information has no significant effect on women's farm income in Benue state.

Table 4: Effect of Information Utilisation on Rural Women's farm Income

	Sum of Squares	Df	Mean Square	F	Sig.	Remark
Regression	57.149	1	57.149	20.906	0.000	
Residual	1252.025	458	2.734			
Total	1309.174	459				Sig

R²=0.044

Adj. R² = 0.042

**p<0.5

Table 4 showed that the effect of utilisation of Agricultural information on farm income of rural women in Benue State. Although use of agricultural information had positive influence on farm income of rural

women the effect could be described as very minimal just 4.2%. Thus the null hypothesis was rejected and alternative accepted.

8. Discussion of Findings

Agricultural research information has play continuing significance in ensuring agricultural productivity as well as providing means of survival for Nigerian rural populace. Its use within the agricultural sector has undoubtedly received much attention as much effort is exerted to ensure an effective dissemination through the Nigerian agricultural extension system. This trend was revealed in the study as almost all rural women acquire relevant agricultural research information from the State's extension services. It is important to note that a surge in agricultural research information has been occasioned to the presence of Information and Communication Technologies (ICTs) such as radio, television and mobile phones in the Nigerian rural communities as it supports information dissemination or extension efforts. This is in consonance with findings of Ajayi, (2003); Banmeke and Ajayi (2007) and Zaid and Popoola, (2010). It is also an indication that sourcing for agricultural research information will most probably be on the ascendancy in Nigeria particularly from mobile phones.

Majority of the rural women are users of agricultural research information although at a slightly above average level. Importantly, the trend revealed in this study, as regards the types of agricultural research information utilised by rural women agrees with the opinion of Ajayi (2003) who argued that the pattern of agricultural information use by women farmers may not be unconnected to their close contact with agricultural extension agents. The rural women use more information related with planting, sales and pricing. This is an indication that rural women's involvement in agriculture may not be far from their income generation or survival activities.

It was also revealed in the study that expected output from information use, fund, suitability with current practice, labour required for implementation, implementation skill, ease of comprehension and farmers' positive attitude towards information or innovation were the major factors hindering rural women from use of agricultural research information. Interestingly, the first four factors borders on resource maximization, that is ability the derive much from the most minimal resources invested. This trend corroborates the findings of Banmeke and Ajayi, (2007) who opined that lack of social amenities and low level of education were major constraints in information utilisation among women in South West Nigeria.

It was also revealed in the study that rural women were majorly found to belong to the low income group. This relates to the findings of Gurung (2008) who states that women farmers were of low socio-economic status. This may imply that Nigerian rural populace still experience low income generation in spite of possible agricultural research information provision to them thus the need to create better income generating or enabling environment for improved living standards to be. Lastly study revealed minimal effect of information use on income generation of the rural women in Benue state. This may have policy implication of ensuring enhanced information use so as to attain higher income generation among rural women in Benue state. This relates with the findings of Agheneza (2011) that until women are placed in a productive system in which environmental management, social institutions, good administration, good income-generating activities and good agricultural practices are closely linked, it is unlikely to attain improved status of Ngie's rural women farmer's socio-economic condition.

9. Conclusion and Recommendation

Use of agricultural research information is undoubtedly a requirement for development among Nigerian rural populace as farming is one major occupation prevalent in these areas. It is important to mention that the level of agricultural research information use by rural women can still be likened to be on the average in spite of their relatively high information sourcing activities. From all indication, the finding of this study suggests that rural women use agricultural research information and are poised to increase their use level but for factors such as expected outcome, finance, implementation labour requirement, implementation skill, that have possibly hindered them from making maximum derivation of information use. The rural women appear to have low farm income generation which is apparently as a result of varieties of agricultural research information available and used by them. To improve the situation, there is a need for Nigerian rural development strategy and policy to reflect the provision of more productivity related information as well as provide enabling environment for appropriate information use and income generation activities. It is therefore recommended that;

- Rural information providers should reassess their strategies for providing agricultural research information as the use of emerging technologies especially the mobile phone may translate to better service provision.
- Extension agents need to shift from providing more crop biased information to rural women as the use of productivity related information will enhance rural women's socio-economic status.
- Nigerian Government and other development concerned agencies need to create enabling environment for higher farm income generation by rural women.

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