



Assessing the Role of Library-Extension Service Linkage for Information Retrieval by Rural Farmers in Osun State, Nigeria

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ABSTRACT: Extension services have been instituted by public institutions to provide information in a language that farmers can understand and use. Investigations have revealed the ratio of extension worker to farmers in Nigeria as very low. In order to make information accessible to most farmers, Library-Extension Service Linkage model was developed. This study therefore, examines this linkage using rural farmers from Osun State, Nigeria. About 42 villages/towns were identified to be located very close to Library institutions, and out of them four villages/towns were purposively selected. This study used a three stage multi-sampling procedure, in which both purposive and simple random sampling techniques were used to select the villages/towns. Lists of farmers having access to information from extension agents, libraries and other information networks helped to select 250 respondents. Descriptive statistical tools were used to analyze the quantitative data, while Multiple Linear Regression (MLR) analysis was used to analyze the influence among variables. Mean age of respondents was 37.72 years, Modal class of ages 30-49 years. Neighbours and friends were the major (39.2%) source of agricultural information network systems of farmers in the area of study. Respondents contact with development agents like extension agents was about 60% at least once in six months, 24% with librarians and 4% with scientists/trainers from institutions. The study also shows that 91.8% of information sought after from library/librarians by farmers was met, compared with 62.3% from extension agents. For effective linkage public libraries should establish community information departments with the aim of providing information to rural users. Repackage information must be tailored to meet the information needs of rural inhabitants.

Keywords: Information Network System; Library-Extension Service Linkage; Effective Information Rural Inhabitants, Osun State, Nigeria.

JoST. 2011. 2(2): 37-54.

Accepted for Publication, October 10, 2011

INTRODUCTION

Over 75% of the population in Nigeria live in the rural areas and depend on subsistence agriculture (ANAP, 2006; Akinyosoye, 2006). Most farmers in Nigeria have little or no basic education. They are mainly illiterates; they cannot read and write in any language (Aina, 2006; Onwubiko, 1999; Ikpi, 1989). Evidence from literature have shown that less than 10% of the labour force in the developed countries is engaged in agriculture, yet they are able to feed their nations and export the rest to other parts of

the world including Africa (Renwick, 2010; IWS, 2010; Kursat *et al.*, 2008; Oksana, 2005; Ramasamy *et al.*, 1999; Radhakrishna and Thomson, 1996; Chambers, 1983). But in Africa, where an average of 70% of the labour force is engaged in agriculture, the continent is food self-insufficient. Most countries in Africa, particularly Nigeria import food to supplement the local production. Past studies have identified that one of the major factors responsible for this unfortunate situation is the inadequate supply

of effective information to farmers (Boodoo-Dhun, 2010; Richardson, 2006; Salomon and Engel, 1997; Bufford, 1990; Aboyade, 1987).

Information is said to be a resource that must be acquired and used for the improvement of agricultural production. There are several problems militating against dissemination of effective information to rural farmers in Africa (Deribe, 2007; Adams, 2005; Adekunle *et al.*, 2004, Mchombu, 2004). 'Information poverty' is common in rural areas in Africa as is often difficult for rural people to obtain relevant and timely information. Distance to the information source can be considerable, and poor transport and communications infrastructure make access to information difficult. Also, such information is often in written form, limiting its access for the many farmers who have low literacy level. It is also difficult for rural communities to share information beyond face-to-face contact, thus inhibiting access to information available outside their locality. Equally important, indigenous knowledge is seldom documented and stored, and thus ultimately lost (Kursat *et al.*, 2008).

In addition, past studies have shown that farmers in Nigeria cannot use the print word as a vehicle for disseminating information; rather, information dissemination is by personal contact (Onwubiko, 1999; Aina, 1995; Oladele, 1987). To bridge these problems of inadequate supply of information to farmers both public and private institutions identified roles of extension services to be important in this regards with expectation of meeting these needs. Unfortunately, the ratio of an extension worker to farmers is very low. For example, in the 1980s it ranged between 1: 10,000 to 1: 25, 000 in Nigeria (Aina, 2004), although there is no current statistics on the ratio but it is certainly much worse than what obtained in the 1980s (Akinyosoye, 2006; Aina *et al.*, 1995). Thus, the extension worker cannot be effective in disseminating agricultural information to farmers in Nigeria through personal contacts. A farmer may never come in contact with an extension agent in five years (Anholt and Zijp, 2006).

Previous studies and literature have identified the crucial role of Library-Extension Service

Linkage in the provision of useful information to large number of farmers (Aina, 2006, Leeuwis, 2003; Nissen and Levitt, 2002; Umali and Dina 1994; Schiefer, 1992). The library as a public service agency is known in the provision of information to all users, regardless of status, given the fact that they are located within a reasonable range in many rural areas of Nigeria. Past studies have identified the crucial role extension workers or agents played in the provision of effective information to rural farmers (CILIP 2010; IWS, 2010; Gholamreza and Naser, 2005; Leeuwis, 2003; DFID, 1999; Van den Ban and Hawkins, 1996; Shin and Evans, 1991; Thurstone, 1976). Therefore, it is hypothesized that a linkage between the extension agent and public library may alleviate the information dissemination problem of rural farmers in Nigeria and complement the work of extension agent in the provision of effective information. This model of Library-Extension Service Linkage has been discovered to be an effective way of reaching out to large farmers in disseminating effective information (IWS, 2010; Aina, 2006; Pettigrew, 1996). Past works on Library-Extension Service Linkage revealed that apart from personal contacts often used by extension agents in disseminating information to farmers, they also utilise other methods such as agricultural shows, posters, radio/television broadcasts, farming magazines, motion paucities/slides, etc. These other methods are within the purview of libraries, yet there is no evidence to show that the libraries are substantially involved either directly or indirectly in the provision of information to farmers in Nigeria. This is a research relevance that needs to be investigated. In a study carried out by Aina (1995) on agricultural information networks of 258 farmers in Nigeria, the study revealed that only 5% of the farmers obtained information from librarians. The study of Katunmoya (1992) and Aina (2006) advocates for public libraries in the provision of effective information services to the community. These studies suggested that public libraries should establish community information departments with the aim of providing information to rural users. In line with this

reasoning, the work of Aina (1986) involving 73 extension workers and 72 literate farmers in Ibadan, Nigeria, found out that 61.6 % of the extension workers and 77.8 % of the farmers surveyed, agreed that librarians could be used to disseminate commercial, legal and social information to farmers. In the same study, 83.3% of the farmers and 21.9% surveyed agreed that librarians could be used to answer simple reference queries on agricultural problems. Based on these premises above, this study is undertaken to examine the Role of Library-Extension Service Linkage and how far this hypothesis has been able to improve access of effective agricultural information system of rural farmers in Osun State, Nigeria.

Theoretical Framework

Information has been identified as one of the resources required for the improvement of agricultural production (CILIP, 2010; Kursat *et al.*, 2008; Aina, 2006; Leeuwis, 2003; Samuel, 2001). It is defined as the data for decision-making. It is said to be a resource that must be acquired and used in order to make an informed decision. The library as a public service agency is known in the provision of information to all users. Those who possess and have access to appropriate and timely information could make a more rational decision than those without. Agricultural information system should be the basic component of extension institutions' task and must be incorporated into their long and short term plans. Literature review on information flow in agricultural extension indicated that, information is vital for rural people, which they can use to improve their productivity, income

and welfare and to manage the natural resources, on which they depend, in a sustainable way (Renwick, 2010; Deribe, 2007; Adekunle *et al.*, 2004, Das Manju, 1995). Information and its dissemination is a subject of considerable importance to rural population. In this study agricultural information is conceptualized as data for decision-making and a resource that must be acquired and used by farmers in order to make an informed decision. Samuel (2001) and Aboyade (1987) opined that librarians are expected to repackage information materials which have been tailored to meet the information needs of rural inhabitants in a language and format that they would understand. Onwubiko, (1999) and Oladele (1987) argued that Information to be repackaged could be sourced from published materials, raw data collected by research institutes, government statistical service, and online information and even from people's own corpus of indigenous knowledge. These authors concluded that librarians must have the capability "to identify the sources of information of value to the farmers from useful sources. Information has to be supplied to farmers in a format that would be comprehensible to them, repackaging must be done in consideration of the prevailing illiteracy, cultural divergence and idiosyncrasies of the small rural farmer. Having adequate well-presented information will improve the efficiency of rural development projects and programs. Based on this and similar areas of conceptual constructs; analyzing library -Extension system linkages and agricultural information network output of farmers were considered under this investigation.

METHODOLOGY

Description of the Study Area

This study was undertaken in Osun State, South western, Nigeria. The choice of the study site was primarily based on secondary information that Osun State, Nigeria has the largest number of traditional towns and second largest number of small-scale farmers in Nigeria (FRN, 2007;

Osun State in Focus, 2007). In addition, the State has the lowest ratio of an extension worker to farmers in South western, Nigeria (FRN, 2007). Osun State is an inland state in South-western Nigeria with headquarters at Osogbo. The present Osun State was created in 1991 from the old Oyo State. The state's name was coined out

from the River Osun, the venerated natural spring which is the manifestation of the Yoruba goddess of the same name. Osun State is divided into three federal senatorial districts, each of which is composed of two administrative zones. The state consists of thirty Local Government Areas (LGAs), the primary (third tier) unit of government in Nigeria. There are two cropping seasons in the State; short rainy season (March to April) and main rainy season (June to September). The short raining season is mainly used for land preparation and planting long cycle crops such as Maize and seedbed preparation. The main raining seasons are used for planting of annual crops like Maize, Cassava; Cereal crops like Vegetable crops, perennial crops such as Cocoa, Timber. Livestock also play a major role in the provision of livelihood couple with crop production in the areas of the mid highlands and lowlands of the State.

Sampling Technique

Obafemi Awolowo University (OAU) and Joseph Ayo Babalola University (JABU) were purposively selected to represent public and private library services provider respectively. These two library institutions as public service agencies are known in the provision of information to all users, and they are located within a reasonable range of the study areas. About 42 villages/towns were identified to be located very close to these institutions, and out

of them four villages/towns were purposively selected based on their closeness to the institutions. These villages/towns are Modakeke and Ile-ife (for OAU) as well as Ikeji-Arakeji, and Ipetu-Ijesha (for JABU). This study used a three stage sampling procedure, in which both purposive (non-probability sampling) and simple random sampling techniques (probability sampling) to select the villages/towns close to these institutions.

In the first stage, about 40 identified Farmers Associations (FAs) were put in order of their closeness to these institutions and accessibility to information, and out of them four FAs were purposively selected based on the criteria stated above. To identify the sampling frame of the study, in the second stage, list of households heads having access to information from extension agents was taken from Agricultural Development Programme, ADP office and also those that have visited public libraries. While list of farmers identified to have obtained information from other sources were located with the help of enumerators and village leaders, from which the sample respondents were drawn. In the third stage, from lists of farmers having access to information from extension agents, libraries and other information networks, 298 respondents were sampled randomly, but only 250 were useful for subsequent analysis (Table 1).

Table 1: Distribution of sampled respondents by FAs in the study area

| Farmer Association Villages / Towns | Total Number of Households (HH) | Number of HH access to information networks | No. of respondents in the sample |
|-------------------------------------|---------------------------------|---|----------------------------------|
| Modakeke | 1255 | 681 | 68 |
| Ile-Ifè | 2810 | 1025 | 100 |
| Ipetu-ijesha | 1158 | 789 | 79 |
| Ikeji-Arakeji | 805 | 511 | 51 |
| Total | 6028 | 3006 | 298 |

Data Type and Data Source

Data collected for this research were both quantitative and qualitative in nature. In line with the scope of the study, primary data were

collected. Data had been gathered through interview, discussions and observations. The quantitative data sources include personal characteristics, socio-economic factors,

situational factors, constraints and opportunities of agricultural extension services in reaching farmers. The sources of qualitative data were key informants, extension officials, village leaders, libraries/librarians, NGO workers and, groups of farmers.

Methods of Data Analysis

Descriptive statistical tools of means, percentages, frequencies, and standard deviations were used to analyze the quantitative data. Also used were cross tabulation to capture the cross effects of these variables. The qualitative data were partly analyzed on spot during data collection to avoid omission and to be able to fill the gaps in the quantitative data. Multiple Linear Regression (MLR) analysis was used to analyze the influence among variables (*i.e.* single dependent variable and several independent variables) with the object of using the independent variables whose values are known to predict the single dependent value (Hair *et al*, 1998).

According to Browen and Starr (1983), the regression equation takes the form:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + \dots + b_{16}X_{16} \tag{1}$$

Where:

- Y= Dependent variable
- x = Independent variable
- a = y intercept
- b = the slope of the line

Estimation procedure

Following the completion of the data collection, the responses were coded and entered into SPSS

version 15.0 for analysis. Before estimating the models, multi-co linearity analysis was carried out among the explanatory variables to avoid co linearity problem.

Variables and their definitions

Dependent variable

The dependant variable of the study is the Agricultural information Network output in terms of knowledge. The variable is operationalized as knowledge of farmers on daily good farm management practices. In order to measure the farmers’ level of knowledge about effective farming practices ‘teacher- made type’ test was developed. Salient features of this technology were selected in consultation with the concerned ADPs Office, Library representative and Ministry of Agriculture. Then suitable questions were framed to invoke responses from the farmers about the selected salient features. The various items were selected for the knowledge test in respect of effective farming practices and these were given weights as per their importance.

Independent variables

For this study, 16 independent variables were hypothesized to influence the dependent variable. Out of these variables 10 were continuous and 6 were discrete. Independent variables include the personal characteristics, socio-economic factors, situational factors and psychological factors of farmers that may influence the dependent variables. The selection of independent variables is based on the past research and published literature related to the study (Renwick, 2010; Aina, 2004; Adekunle *et al.*, 2004; Schiefer, 1992).

List of Independent variables and Measurements

| S/N | Variables | Measurements | Expected signs |
|-----|----------------------------------|---|--|
| 1. | Age (X ₁) | Measured in terms of number of years of age. | negative relationship |
| 2. | Marital Status (X ₂) | This indicates whether respondents are married, unmarried, single, or widowed. This data was operationalized through scoring system labelled from questionnaire | positive relationship among married respondents Educational level |

| | | | |
|----|-----------------------------------|---|---|
| 3. | Educational Level (X_3) | Education refers to the level of formal and non-formal education and this was scored in terms of ability to read and write and enrolment in primary, secondary schools or above. | positively affects use of information. |
| 4. | Communication Skills (X_4) | Communication skill is referred to as the ability to express ideas effectively in written or spoken form, and the ability to listen attentively. This variable was measured using list of items selected through systematic procedure. | Communication skill was anticipated to have positive relationship |
| 5 | Positiveness (X_5) | Defined as a person's quality that is characterized by displaying certainty, acceptance, or affirmation. It was measured by respondents' willingness to discuss agricultural matters with other farmers. It was operationalized as 1 for Yes and 0 for No | The variable was assumed to have positive relationship |
| 6 | Income (X_6) | Operationally defined as the value of the products of the household after home consumption and income obtained from off-farm and non-farm activities that are expressed in Naira per year. | The income level was anticipated to have a positive relationship |
| 7 | Size of land holding (X_7) | This refers to the area of cultivated land possessed by the respondents or their families. It was assumed that the larger the farm size, the better the farmer has access to use combination of technological packages on the land. | Therefore, it was hypothesized that land size has a positive relationship |
| 8 | Family size (X_8) | The size of the family of the respondent measured in terms of total number of members in the family including aged persons and children. | family size was assumed to have positive relation |
| 9. | Radio Ownership (X_9) | The farmers who own radio and listen to programmes or news have the opportunity of getting more agricultural information. It was operationalized as 1 for Yes and 0 for No and | Information network positively. |
| 10 | Social participation (X_{10}) | This refers to the involvement in social activities and membership of respondent in various formal and informal organizations, either as member or as an office bearer. It was measured in terms of membership or official status in any formal or informal organizations, along with the | Social participation was expected to have positive relationship with the dependent variable |

| | | | |
|----|---|---|--|
| | | frequency of participation and type of organization in which the farmer is a member using the scale developed by Trivedi and Pareek (1964) with slight modifications. | |
| 11 | Information Seeking behaviour (X ₁₁) | This was defined as the degree to which the respondent was eager to get information from various sources on different roles he performs. This was measured in terms of how much information was sought, how frequently and from where the information was sought. | Information seeking behavior was assumed to have positive relationship |
| 12 | Cosmopolitaness (X ₁₂) | This is the degree of orientation of the respondents towards outside of the social system to which he belongs. It is measured in terms of frequency of visits to outside his village and the purpose of such visits. | Expected to have positive relationship |
| 13 | Attitude towards development agent (X ₁₃) | Defined as the degree of positive or negative attitude of farmers towards Development Agent. This variable was measured using a Likert type scale (Thurstone, 1976). | anticipated to have a positive relationship |
| 14 | Sharing of available information (X ₁₄) | Defined as the extent to which respondent shared the information with others including family members, friends or neighbors, extension agent, etc. | anticipated to have a positive relationship |
| 15 | Access to credit (X ₁₅) | Access to credit has impact on level of utilization of recommended technological packages and this in turn will expose respondents to different information. | variable was assumed to have a positive relationship |
| 16 | Extension participation (X ₁₆) | It was measured using a weighted index. | variable was assumed to have a positive relationship |

RESULTS AND DISCUSSIONS

Descriptions of personal characteristics of the sample respondents

Personal Characteristics include the variables related to personal characteristics such as age, marital status, and level of education, communication skill, family size and sharing the information with others. The distribution of

sample respondents based on their personal characteristics is presented in Table 2.

Age of the respondents

Farmers ages ranges from 16 to 65 years old. The mean age was 37.72 years with the standard deviation of 11.25 years. Findings revealed that

farmers aged 30-49 years were the majority (61.3%) followed by age group 15-29 years (25.6%) and age group 50-65 years (13.1%). The mean age of respondents reflected an active age group. The implication of this is that any innovation can be well received by this age group as well as be aggressive to unpleasant situations.

Marital status

Result shows most of the respondents (58%) were married and living with their spouses, while 27.2% were single. The proportion of married respondents was much larger than both the single and the widowed. This thus indicate a cooperation between husband and wives to come together and earned a good living. Access to useful information by this couple could be jointly considered come out with the best decisions.

Level of education

Education is one of the important variables, which increases farmer's ability to acquire process and use agriculture related information. Low level of education and high illiteracy rate is typical in developing countries like Nigeria. In fact, education level of farmers is assumed to increase the ability to use agriculture related information in a better way (Aina, 2006). Therefore, in this study, educational level is a variable helping exposure to information and its utilization. As indicated in Table 4, 19.2% of the sample respondents were illiterates, 11.3% were able to read and write and 36.0% had post-primary school. This implies that for information to be effective, it must be provided in a language that the respondents will be able to understand it and use it

Communication skill of the respondents

Communication skills in this study referred to as the ability to express ideas effectively in written or spoken form, and the ability to listen attentively. The respondents were categorized into three communication skills levels. The study revealed that there is significant difference between the three categories of respondents. As indicated in Table 2, revealed that about 90% of the respondent had medium and high level of communication skill respectively. This finding portend that effective information can be easily diffused and exchange with one another.

Information Network of Farmers

Information source and its use pattern were analyzed to assess information exchange in a particular direction. Information network and exchange were compared on the basis of many different characteristics (Table 3). Results from Table 2 show that, neighbours or friends were the major and the first important source of information for the farmers. According to this study, other farmers (other than neighbours or friends) serve as the second important information source. The survey result showed that the third and fourth major sources of information were rural radio programmes and Development Agents respectively. Leaflets & folders, NGOs, demonstration and field days training serve as the least important sources of information respectively. This is probably because they never had access to them. This is evidenced by the fact that farmers in the study areas do not have much access to institutional formal services, since they are confined to home and neighbourhood. Similar results obtained by Saito and Boodoo-Dhun, (2010); Deribe (2007); Dereje (2005) and Weidemann (1990) identified that neighbour and colleagues are the major and the most important farmers' source of information.

Table 2: Distribution of sample respondents based on their personal characteristics (N = 250)

| Personal characteristics | Features | Frequency | Percent |
|---|--------------------------|------------------|----------------|
| Age of Respondents | 15-29 (Younger) | 75 | 30.0 |
| | 30-49 (Middle) | 127 | 50.8 |
| | 50-65 (older) | 48 | 19.2 |
| | Total | 250 | 100.0 |
| Marital Status | Single | 68 | 27.2 |
| | Married | 145 | 58.0 |
| | Widowed/Separated | 37 | 14.8 |
| | Total | 250 | 100.0 |
| Level of Education | Illiterate | 48 | 19.2 |
| | Can read and write | 52 | 20.8 |
| | Primary School | 60 | 24.0 |
| | Secondary School | 63 | 25.2 |
| | Post-secondary School | 27 | 10.8 |
| | Total | 250 | 100.0 |
| Communication Skill | Low | 25 | 10.0 |
| | Medium | 98 | 39.2 |
| | High | 127 | 50.8 |
| | Total | 250 | 100.0 |
| Family Size | 1-3 | 47 | 18.8 |
| | 4-6 | 141 | 56.4 |
| | 7-9 | 39 | 15.6 |
| | Above 9 | 23 | 9.2 |
| | Total | 250 | 100.0 |
| Radio Ownership | No | 93 | 37.2 |
| | Yes | 157 | 62.8 |
| | Total | 250 | 100.0 |
| Size of land holding in Acres | 0.1-1.99 | 78 | 31.2 |
| | 2.0-3.5 | 107 | 42.8 |
| | Above 3.5 | 65 | 26.0 |
| | Total | 250 | 100.0 |
| Sharing of available info. with others | Share to a low extent | 51 | 20.4 |
| | Share to a medium extent | 131 | 52.4 |
| | Share to a high extent | 68 | 27.2 |
| | Total | 250 | 100.0 |

Value of information from sources

Table 4 shows that information from Development Agents, (development agents include among others; extension agent and librarians) other farmers (other than neighbours or friends), and rural radio programs were the 1

to 3rd most valuable source of information respectively by respondents. This might be because these information sources were the most frequently accessible to the respondents in the study area, which resulted in higher degree of perceived credibility.

Table 3: Information Network of Farmers (N=250)

| Information source | Frequency of Use | | | | | | Score | Rank |
|--------------------------------|------------------|------|-----------|------|--------|------|-------|------------------|
| | Never | | Sometimes | | Always | | | |
| | N | % | N | % | N | % | | |
| Neighbour/ Friends | 28 | 11.2 | 105 | 42.0 | 98 | 39.2 | 231 | 1 st |
| Other Farmers | 31 | 12.4 | 115 | 46.0 | 75 | 30.0 | 221 | 2 nd |
| Rural Radio Program | 91 | 36.4 | 53 | 21.2 | 53 | 21.2 | 197 | 3 rd |
| Development Agent | 45 | 18.0 | 85 | 34 | 58 | 23.2 | 188 | 4 th |
| Farmer's Cooperative | 105 | 42.0 | 23 | 9.2 | 51 | 20.4 | 179 | 5 th |
| Farmer's Association | 87 | 34.8 | 25 | 10.0 | 47 | 18.8 | 159 | 6 th |
| Input Supplier Organization | 115 | 46.0 | 15 | 6.0 | 28 | 11.2 | 158 | 7 th |
| Leaflets & Folders | 102 | 40.8 | 31 | 12.4 | 18 | 7.2 | 151 | 8 th |
| NGOs | 111 | 44.4 | 11 | 4.4 | 25 | 10.0 | 147 | 9 th |
| Demonstration & Field days | 103 | 41.2 | 21 | 8.4 | 14 | 5.6 | 138 | 10 th |

Table 4: Value of Information from Sources (N=250)

| Information source | Perceived Value of Information | | | | | | Score | Rank |
|--------------------------------|--------------------------------|------|-------------------|------|---------------|------|-------|------------------|
| | Not Valuable | | Somewhat Valuable | | Very Valuable | | | |
| | N | % | N | % | N | % | | |
| Development Agents | 33 | 13.2 | 43 | 17.2 | 121 | 48.4 | 191 | 1 st |
| Other Farmers | 27 | 10.8 | 80 | 32.0 | 83 | 33.2 | 190 | 2 nd |
| Rural Radio Program | 57 | 22.8 | 53 | 21.2 | 71 | 28.4 | 181 | 3 rd |
| Farmer's Association | 41 | 16.4 | 62 | 24.8 | 75 | 30.0 | 178 | 4 th |
| Neighbour/ Friends | 92 | 36.8 | 31 | 12.4 | 52 | 24.8 | 175 | 5 th |
| Farmer's Cooperative | 83 | 33.2 | 27 | 10.8 | 51 | 20.4 | 161 | 6 th |
| Input Supplier Organization | 109 | 43.6 | 21 | 8.4 | 29 | 11.6 | 159 | 7 th |
| Leaflets & Folders | 110 | 44.0 | 16 | 6.4 | 26 | 10.4 | 152 | 8 th |
| NGOs | 95 | 38.0 | 18 | 7.2 | 15 | 6.0 | 128 | 9 th |
| Demonstration & Field days | 98 | 39.2 | 15 | 10.0 | 13 | 5.2 | 126 | 10 th |

People need both technical knowledge and awareness-raising information. These types of information/knowledge are not separate from other areas of life. They are part of the development process. In the process, information and knowledge become a development resource. This information resource gives the community power over their environment and life in general (Mchombu, 2004).

Sharing of available information

Sharing of available information is the extent to which respondents shared the information with others including family members, friends or neighbours, extension agent, etc. Accordingly, respondent in the study are willing to share information with one another as 79.8% shared information, the extent to which respondents shared information with others was 16.9%, 71.9%, and 11.3% for low, medium and higher extent categories respectively. The majority of farmers were sharing information with others to a medium extent. This thus implies that access to effective information by one could be easily reached to majority of the respondents.

Distribution of sample respondents was based on their frequency of contact with Development Agents DAs; Extension Agent, Library/librarian/ Scientists from public/private institutions. Eight-eight percent had contact with development agents (Table 5). With regard to the frequency of contact with DAs, 3.2%, 7.2%, 10.1%, 32%, 88.0% of respondents had been visited by DAs once in a week, once in two weeks, once in three weeks, once in four weeks and once in six months respectively. Results presented from Table 5 also revealed that contact with extension agents by the farmers was about 60% at least once in six months, 24% with librarians and 4% by scientists/trainers from institutions. The findings of this result are similar with the conclusion of Anholt and Zijp (2006) that a farmer may never come in contact within an extension agent in five months. Findings revealed that farmers had more contact with extension agents than any of the other DA's on weekly bases (2.4%), fortnightly (4.0) and over three weeks (6.0%), once in 4 weeks (18.0%) and once in six months (60.0%)

Table 5: Distribution of sample respondents based on their frequency of contact with Development Agents DAS (N=250)

| Features/ visits by development agent | Responses | | | | | | | | | |
|---|--------------|------------|-------------|------------|--------------------|-------------|--------------------|-------------|---------------------|-------------|
| | Weekly basis | | Fortnightly | | Once in 3 weeks | | Once in 4 weeks | | Once in 6 months | |
| | N | % | N | % | N | % | N | % | N | % |
| Extension agent | 6 | 2.4 | 10 | 4.0 | 15 | 6.0 | 45 | 18.0 | 150 | 60.0 |
| Librarians/ Library sources | 2 | 0.8 | 8 | 3.2 | 10 | 4.0 | 30 | 12.0 | 60 | 24.0 |
| Training from Ministry/Govt Rep. NGOs, Dev. Agencies | 0 | | 0 | | 0 | | 5 | 2.0 | 10 | 4.0 |
| Total | 8 | 3.2 | 18 | 7.2 | 25 | 10.0 | 80 | 32.0 | 220 | 88.0 |

Distribution of respondents based on type of Information identified/need of the farmers and level of access to such information.

Technical support, input supply and theoretical information were type of institutional/extension support services farmers mostly received from development agents in the study area. Findings revealed that out of the 44.2% of the information sought from extension agents, 27.5% were met. Similarly, 18.3% were identified as information required from library/librarians but 16.8% were actually accessed. Information from others such as friend and association, respondents seeks 4.1% but was only able to retrieve 1.4%. Further analysis revealed that 91.8% of information sought after from library/librarians by farmers was met, compared with 62.3% from extension agents (Table 6). This finding thus confirms the importance of library/librarian in conveying effective information to farmers although access to this institution was very low.

Influence of independent variables on agricultural information network output of farmers.

Multiple Linear Regression (MLR) Analysis was used to capture the Influence of independent variables on agricultural information network output of farmers. A MLR model was fitted to estimate the influence of the hypothesized independent variables. SPSS version 15 was used for analysis

A set of 16 independent variables (10 continuous and 6 discrete) were included in the model and used in MLR analysis. These variables were selected on the basis of theoretical explanation and the results of various empirical studies (Deribe 2007; Hair *et al.*, 1998). Table 7 shows that, out of the 16 factors considered in the model, only 7 variables were found to be significantly influencing on farmers' knowledge of good farming practises at 0.05 levels of significance. These variables include educational level (X_3), Income (X_8), Radio Ownership (X_9), information seeking behaviour (X_{11}), attitude towards Das (X_{13}), access to credit (X_{15}) and Development agents/extension

participation (X_{16}). The Multiple Correlation Coefficient ($R = 0.665$) indicates that the relationship between knowledge of good farming and the continuous independent variables is quite strong and positive. The value of coefficient of determination ($R^2 = 0.715$) and adjusted R^2 of 0.614 implies that about 61% of the variation in knowledge of effective farming is explained by the independent variables in the model.

Past studies have shown that annual income is an important variable explaining the characteristics of households (Kursat *et al.*, 2008; Gujarati, 1995). In this study it was hypothesized that, farmers whose earning is relatively high could be participating in technology packages and this in turn will expose them to new information. Analysis of the study findings revealed that annual income was positive and significant in explaining effective access to information on good farming practises. The output of regression analysis ($X_3 = .19$) indicated that 1 unit increment in annual income would bring 0.19 increments in the knowledge of good farm management. Other variables that were positive and significant include Radio Ownership (X_9), information seeking behaviour (X_{11}), attitude towards DAs (X_{13}), access to credit (X_{15}) and Development agents/extension participation (X_{16}). A one unit increment in Radio ownership, Information seeking behaviour and attitude towards DAs would bring about 0.18, 0.19 and 0.72 improvement in the knowledge of high-quality farm management respectively. These imply that as the ability of farmers to express ideas effectively to others and the ability to listen to others attentively increases, and their knowledge about the activities being performed also increases.

Access to credit regression coefficient of $X_{15} = 0.65$ indicates access to credit was positive and significant determinant of farmer's knowledge of good farm management practice, a unit increase in access to credit would be accompanied by an increase in the knowledge of effective farming by 0.65 units. This means that increased access to credit increases utilization of recommended technological

Table 6; Distribution of respondents based on type of Information identified/need of the farmers and level of access to such information.

| Information identified /need by farmers | Extension source/access | | Public Libraries/Librarians | | Others (friends, association) | |
|---|-------------------------|------------------|-----------------------------|-------------------|-------------------------------|-----------------|
| | Need (%) | Accessed (%) | Need (%) | Accessed (%) | Need (%) | Accessed (%) |
| Technical support | 108 (43.2) | 87 (34.8) | 35 (14) | 30 (12) | 15 (6) | 4 (1.6) |
| Theoretical information | 80 (32) | 35 (14) | 78 (31.2) | 75 (30) | 10 (4) | 2 (0.8) |
| Technical support | 101 (40.4) | 85 (34) | 20 (8) | 15 (6) | 5 (2) | 1 (0.4) |
| Experience sharing | 201 (80.4) | 153 (61.2) | 48 (19.2) | 41 (16.4) | 8 (3.2) | 3 (1.2) |
| Technical. input supply and experience sharing | 137 (54.8) | 85 (34) | 56 (22.4) | 46 (18.4) | 6 (2.4) | 2 (0.8) |
| Experience sharing | 106 (42.4) | 49 (19.6) | 43 (17.2) | 38 (15.2) | 10 (4) | 5 (2) |
| Theoretical information & Input supply | 95 (38) | 75 (30) | 62 (24.8) | 48 (19.2) | 8 (3.2) | 5 (2) |
| Input supply | 152 (60.8) | 43 (17.2) | 10 (4) | 0 | 2 (0.8) | 1 (0.4) |
| Technical support & Theoretical information | 107 (42.8) | 62 (24.8) | 101 (40.4) | 95 (38) | 10 (4) | 3 (1.2) |
| Technical support. Theoretical information and input supply | 78 (31.2) | 56 (22.4) | 41 (16.4) | 35 (14) | 15 (6) | 5 (2) |
| Input supply and experience sharing | 85 (34) | 46 (18.4) | 15 (6) | 5 (2) | 6 (2.4) | 2 (0.8) |
| Technical support. Theoretical information and experience sharing | 75 (30) | 49 (19.6) | 80 (32) | 75 (30) | 28 (11.2) | 10 (4) |
| Total | 1325 (44.2) | 825(27.5) | 548 (18.3) | 503 (16.8) | 123 (4.1) | 43 (1.4) |

Table 7: Coefficients of regression function

| Variables | Coefficients | | T | Sig. |
|--|----------------|-------------|-------------|-------------|
| | B | Std. Error | | |
| Constant | -4.01 | 1.03 | 3.91 | .001 |
| X ₃ – Educational level | .19* | .04 | 5.40 | .000 |
| X ₈ – Family size | .71* | .16 | 4.35 | .000 |
| X ₉ – Radio ownership | .18** | .06 | 2.95 | .003 |
| X ₁₁ – Information seeking behaviour | .19** | .07 | 2.70 | .004 |
| X ₁₃ – Attitude towards development agent | .72** | .27 | 2.66 | .005 |
| X ₁₅ – Access to credit | .65*** | .29 | 2.27 | .019 |
| X ₁₆ – Extension participation | 1.47*** | .67 | 2.18 | .021 |

* Significant at 0.01, ** Significant at 0.05, *** Significant at 0.10
R = 0.715, R² = 0.665, adjusted R² = 0.614, F = 28.61 P = 0.000

packages which exposes farmers to different new information.

Similarly, the output of the regression analysis ($X_{16} = 1.47$) of Development Agents/Extension participation revealed that one unit increment in extension participation would bring about 1.469 units increment in the knowledge of farmers regarding effective farm management. This implies that, frequency of contacts or visits of development agents/extension agent to farmer is very important for update in the knowledge and skill of farmers on farm technologies, practices or activities. Thus, the availability of development agents/extension participation in the rural areas is of a paramount importance to

farmers. Moreover, development agents/extension participation improves the knowledge and increases concern of farmers about agricultural activities.

The major constraints identified in agricultural information network of farmers in the study areas include among others are: low participation of farmers in extension packages and extension programmes; poor access to credit; distance of market place and absence of alternative market for products; poor road networks for transportation of farm produce, low contribution of DAs, extension methods as source of information.

CONCLUSIONS

Neighbours and friends are the major and the first important source of agricultural information network systems of farmers in the area of study. Farmers in the study areas do not have much access to institutional formal services, since they are confined mostly in their areas and neighbourhood. Findings from this study revealed that contact with development agents by the farmers resulted in effective information on good farming practises. However, contact with development agents by the farmers like extension agents was about 60% at least once in six months, 24% with librarians and 4% by scientists/trainers from institutions. The finding of this result is similar with the work of Anholt and Zijp (2006) that a farmer may never come in contact with an extension agent in five months. This thus shows that respondents have no regular contact with development agents for effective agricultural information, thus limiting the necessary technical support to them.

The study also shows that 91.8% of information sought after from library/librarians by farmers was met, compared with 62.3% from extension agents. This finding thus confirms the importance of library/librarian in conveying effective information to farmers. It is therefore recommended that library/librarians should be involved in the appropriate agricultural extension intervention strategies in the

provision of effective and technical support to farmers. In addition, the prevailing illiteracy, cultural divergence and idiosyncrasies of the small rural farmer situation should be considered in other to design appropriate extension communication methods to fill the information gap.

About 80.8% of the respondents can read and write and this is translated into importance of seeking for effective information. This study revealed that 90% has communication ability and 79.6% willing to share information, 62.5% has Radio and listen to information. The study also revealed that farmers faced various constraints such as lack of access to credit to purchased required inputs for increase production. Strengthening local micro-finance institutions can improve access to credit facilities, and organizing farmers in radio listening groups for sharing their knowledge on effective information.

This study has shown the importance of library/librarians in the provision of effective information to farmers if there is effective linkage. Moreover, extension services in Nigeria has been established and found mostly in rural areas of Nigeria as evidenced in past studies (Kursat *et al*, 2008; Aina, 2004). It is therefore necessary to develop effective Library-Extension Service Linkage to boost information that will be

available to rural farmers. To achieve these linkage public libraries should establish community information departments with the aim of providing information to rural users. Repackage information materials which have been tailored to meet the information needs of rural inhabitants in a language and format that they would understand will be at these centres. These information materials would be used for both problem solving and awareness.

It is recommended that formal linkage between the various agricultural departments within the locality and the public library be established (if there is none in existence). Extension agents could also disseminate agricultural information directly to farmers and libraries. Also, farmers could bring information related problems to the library and extension agencies. As evidenced from this study it is suggested that there is also the need for libraries and extension agents to identify information gate keepers among the rural farmers. The gate keepers, who would live with their fellow farmers, would be the first point

of contact when there are problems in the farms. These gatekeepers would be regularly supplied with agricultural information by libraries. The library is expected to be in a position to supply the necessary information materials that would meet the needs of extension workers. Libraries are also expected to create bibliographic tools of relevant and appropriate agricultural information to extension agents which they could use in the location of relevant and accurate agricultural information. As advocated by Aina (2006) that if libraries could complement agricultural extension workers in the dissemination of agricultural information to farmers in Africa, there might be some improvement in agricultural productivity in Africa, inspite of the dearth of agricultural extension workers in Africa. The use of public librarians to complement agricultural extension workers in the dissemination of agricultural information to farmers would boost agricultural productivity in Africa.

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