Information Needs for Rice Farmers and Agricultural Development in Yobe State, Nigeria

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Abstract
The study investigated the information needs for rice farmers and Agricultural development in Yobe state Nigeria. It also represents an attempt to establish the nature of information resources which the rice farmers used to improve their production. In part of this study some important element from which the chapter was built were captured such as background to the study which dealt with meaning and significance of information, meaning of information needs from the perspective of conscious and unconscious needs, meaning of information use, farming as well as rice farming; it also stated the problem from which the research topic (title) was build, research objectives were also captured. The study reviewed concepts as well as literature related to this study. Quantitative research methodology using questionnaire as the main instrument for collecting data was used and research technique used is the descriptive survey research design in form of cross-sectional method. The population of the study is twenty one thousand four hundred (21,400) out of which 17,200 respondents from fourteenth L.G.As sampled was used by the researcher in this study, hence 377 was drawn as sample size of the study. Data collected via questionnaire was tabulated and analyzed using descriptive statistics. For descriptive data, table, frequency distribution, percentages was used to organize and summarize the data through the use of SPSS version 16.0. The findings of the study indicated that: information on irrigation, best seeds, insecticides and diseases control weather conditions, as well as agricultural credits or loans were the most prominent information needed by the rice farmers. The findings of the study also indicated that rice farmers used family and parents, personal experiences as the most preferred information sources. The study established the extent to which the available information sources and resources used by the respondents. The result revealed that (132:41.0%) used to the large extent. The findings also revealed that the respondents' level of satisfaction in the use of information sources and resources was satisfactory. The respondents also pointed out lack of electricity, financial problems and lack of available information sources and resources as the major challenges associated with their information needs and use. The respondents further suggested several recommendations on addressing the challenges hindering the rice farmers in accessing their agricultural information.

Keywords: *Information needs, Rice farmers, Agriculture, Fadama, Information use, Extension education.*

Introduction

Background of the study

Information can be referred to a problem-solving mechanism that students, researchers, farmers, policymakers, managers, etc. Require every day and use to increase in understanding, decrease or clear uncertainty and to solve one problem or the other Fashola, Imolehin and Wakatsuki (2017). Information is the act of informing or the condition of being informed; it is the knowledge derived from investigation, study or instruction that enables the individuals and groups bridge the gap in knowledge resulted from information lack or adds to an existing knowledge. Information as a concept could be solely related and intimately connected with the concept of uncertainty. Information in whatever type is obtained whenever uncertainties occur or exist in one's mind, relevant information then is regarded by an individual as the only mechanism that bring clarification or reduction to the level of uncertainties that exist within an individual mind (Opara, 2010).

In a real life situation, information plays a significant role in reducing level of uncertainties, because it gives to an individual a clear vision and explanation and alternatives to choose from. It also assists in decision making process. It also assists in satisfying a need. Information facilitates opening up and providing opportunities for people, enabling them to make use of these opportunities to shape their own lives. People need information in order to be able to play active roles in life and to regulate or reduce tension and be free from ignorance (Ballantyne, 2005 and Oyedum, 2010). Equally, Harande (2009) submits that information is raw material for development for both urban and rural dwellers. The prosperity, progress and development of any nation depend upon the nation's ability to acquire, produce, access and use pertinent information. The flows of information have become important due to the fact that communication has increasingly become a highly complex socio-cultural phenomenon, which is affecting a wide range of activities in all human endeavours. As a facilitating mechanism therefore, information helps rice farmers to facilitate their farming capability. This will help them to alleviate or reduce poverty within their localities because farming is the main source of income and provides higher percentage of employment opportunity in the rural areas.

Rice farmers need information to clear or alter probabilities, and reduce higher level of uncertainties in one aspect of farming or the other. They need information on how to manage their farmers after harvesting, they need information on new modern method of farming such as new method of fertilizer application, new pesticide method, planting method, best rice seeds to plant etc. Aina's (2006) study reported that information needs of farmers includes information on the improved seeds, information to modern processing technology and market information. Similarly, other types of information needed by the rice farmers include: information on agricultural credits or loans; information on insecticides and diseases control; information on birds control, information on storage and seed treatment, information on cultivation mechanism etc.

Information use can be characterised as an intellectual activity which is manifested through various thoughts and deeds. The information use or use of information contain decision-making and problem solving, forming a personal point of view, sharing information to others, and creating new knowledge. Information use refers to the "end" activity of information work dealing with consumption and utilization of information by individuals, groups or organisational needs. Rice farmers use available information accessed from information sources and resources that are available to them to make

decision or solve problem of one aspect of their farming activities or the other. For example, rice farmers use the available information to decide on which type of rice seed is the best among the seeds in terms of fertilizer resistance, in terms of duration, in terms of which one has the best price in market etc. Rice farmers can also use available information they have to clear or alter probabilities by testing which fertilizer is the best, which pesticides and insecticide is the best among others.

In more general term, farming can be referred to the systematic raising of useful plants by human management. Food production is the main reason for farming, but cultivated plants also furnish substances useful as textile fibres, dyestuffs, and medicines etc. Meanwhile, farming can simplify be as deliberate planting of seeds and other plant materials. Whereas in more specific term, rice farming can be defined as the systematic and deliberate planting, raising and managing of rice seeds for the purpose of producing sufficient food for people in all nations.

Rice is rapidly becoming a major food and it assumes in the near future that will become first largest and dominant food in Nigeria, Africa and world at large. Fashola, Imolehin and Wakatsuki (2007) are of the view that rice is among the four largest crops (millet, maize and sorghum) produced in Nigeria. Rice can be prepared quickly and with less energy requirements compared to other type of crops. But, the importance of rice in Nigeria is no longer the matter of discussion, rather how can the country like Nigeria meet the national demands, reduce import of rice and be self-sufficient especially at this era when the country is in need of rice farming and production.

According to some literatures with regard to this study, Nigeria can meet the national demands and reduce importing of rice and become self-sufficient. It is from the researcher's belief that this can be achieved if the rice farmers in the country are provided with adequate, accurate, reliable, timely etc. information that leads them to the satisfaction of their needs for information. Rice farmers need more agricultural and farming inputs in order to process those inputs to provide more outputs.

The Problem Statement

Agriculture/farming, as generally believed, holds the key to economic growth of many nations. There are indeed a consensus among Nigerian policy makers, development partners and experts in agriculture that the wealth of the country can substantially be derived from agricultural production (Opara, 2010). Farmers need to be informed and educated about improved agricultural practices to enable them to increase their productivity and income. In other words, rice farmers need various types of information for better rice productivity which includes information on weather trends, information on irrigation, information on best seed to plant, information on marketing etc. This will help them make decision about what crops to plant and where to sell their products and buy inputs. Despite the enormous benefits derivable from agriculture, the average Nigerian farmers lack access to the most basic social amenities, as well as lack of improved information on the varieties of inputs and modern information farming implements. Yet, it is in the researcher's belief that rice farmers in Nigeria have a greater role in national development. It is further argued that while agricultural productivity in developing countries continue to decline despite technological innovations, the population of these countries continues to expand beyond food production capacities. This problem could be attributed, among others, for hindering rice farmers in meeting their information needs and in the use of information sources/resources in accessing their agricultural information.

The objectives of the study

The main objectives of this study are:

1. To find out the information needs of rice farmers in Yobe state.
2. To find out the types of information sources and resources used by the rice farmers
3. To determine the extent to which the rice farmers use available information sources and resources.
4. To determine the level to which the available information sources and resources satisfy the rice farmer's information needs.
5. To identify the challenges encountered by the rice farmers in meeting their information needs and in the use of information sources and resources.
6. To suggest possible measures in overcoming the identified challenges.

Literature Review

The concept of information need

Information need or "need for information" is a factual situation in which there exists an inseparable interconnection with information' and need.' Information originates and generated because there exists a need or an interest. According to Hughes (2006) and Cole (2008) the content of information is of primary concern. The information objectively necessary for realizing a function is the objective information. Such information need of users have to be satisfied. It may be emphasized that information need is an objective need i.e., they are oriented towards reality, practice and task. They also added that need is want of something, which one cannot well do without.

From the above definitions and justification on information needs by scholars the question here is that, what are the conditions for concluding that a particular person has a need for information? Whether the awareness of the need for information is either necessary or sufficient for saying that the need exists? Whether the presence of a desire for information is necessary condition for saying that there exists a need for information? Is the lack of information a necessary or sufficient condition for concluding that the information need exists? According to Savolainen (2008) the presence of a purpose for the user of information leads us to conclude that it is needed. Thus the presence of what might be called an 'information purpose' is a necessary condition of information need. To him there are two necessary conditions of information need — (i) the presence of an information purpose; and (ii) the information in question contributes to the achievement of the purpose. Savolainen (2008) also noted that the users do not always need the information requested by them. They lack a genuine purpose for the use of information. This implies that the claim rests upon a judgment about the user's information purpose. The judgment is required to see whether the information in question contributes to the achievement of the information purpose. Idle curiosity may not be a legitimate reason for information need. To him the attribution of information need requires the making of value judgment. And this can be done through proper investigation and assessment that gives the conclusion that an individual or organization has a purpose for the need of certain items of information.

In line with this research therefore, the rice farmers in Yobe state will also need their own type of information to stimulate new ideas of farming, update their knowledge and experiences in farming. So also need information on new method of farming (modern method) in order to improve their farming capability.

The Concept of information use

The concept of information use or use of information is just like a concept of information needs or needs of information which divides researchers and scholars views in terms of its meaning and uses. Use refers to the actual systematic implementation of a scientifically sound, research-based innovation with an accompanying process to access the outcomes of the change (Merriam Webster's Online Dictionary, 2016). Some researchers like Kari (2008) for example relate information use as the seeking behaviour that leads to the use of information in order to meet an individual's needs. While other scholars like Savolainen (2009) experienced that the concept of information use concentrated on information about information sources and on understanding their properties i.e. the basic assumption of this was to determine the reliability of the information, based on the features of the sources. In another argument, other groups of researchers agreed that there are terminological problems associated with the concept of information use, because the term was related and synonymous to such expressions as knowledge use, knowledge utilization, information utilization and information processing, and their meaning is often not clarified. Therefore, the main objective of this study based on the above argument and opinions of the researchers on information use is to find out the information use by rice farmers in Yobe state. The objective is to go through all the notions of information use in connection to and from the perspective of information sources and resources. Spink and Cole (2006) and Savolainen (2009) maintain that the simplest way of examining the information use of an individual is from the perspective of how people approach sources of information and adopt information available in them. Spink and Cole (2006), added that determining information use in the sense of acquiring a document, and information studies, is one of the most popular; even though, on the other hand, most implicit, ways of understanding information use.

In conclusion, for information to satisfy the requirements of use, it must have the following attributes: accuracy which implies that information is free from mistakes; timeliness — which means that recipients can get information when they need it; and relevance — which also means the information is relevant to the needs of the user and that it answered the users' questions of what, why, who and how? If information attained those attributes, then it can be utilized for the development of individual and organization (Okiy, 2003). Early research identified use with the complete adoption of information in its original form, but nowadays, it was noted that only a part of information is often used, and it is not internalized directly, but through interpretation, i.e. how people interprets sense data or the informational features of things.

Information Needs of Rice Farmers

Information needs represent gaps in the current knowledge of the user. In day-to-day work, lack of self-sufficiency constitutes an information need. Each category of people or individuals has their own peculiar needs for information. Information is considered an essential element or pillar in agricultural development programs, but according to Ahmed (2016) in Ozowa (1995) Nigerian farmers hardly feel the impact of agricultural innovations either because they have new access to such vital information or because it is poorly disseminated. Over the years, deliberate inefforts through, efforts have been by donors and African countries to bring about agricultural development without much to show for it. Much of the failures can be attributed to the adapted transformation approach to agriculture, which is characterised by the introduction of a wide variety of large-scale farming and processing

technologies. It is however, noted that there is now a shift in emphasis from the big scale transformation approach to the small scale improvement strategy approach, which is attuned to African age-long farm practices.

Ahmed (2016) in Ozowa (1995) emphasises that no one can categorically claim to know all the information needs of farmers, especially in an information dependent sector such as agriculture where there are new and rather complex problems facing farmers every day. It is safe to assert that the information needs of Nigerian farmers revolve around the resolution of problems, such as pest hazards, weed control, labour shortage, soil erosion etc.

The information needs of farmers as noted by Ahmed (2010) may be grouped into five of:

1. Agricultural inputs
2. Extension education
3. Agricultural technology
4. Agricultural credit and
5. Marketing information

Modern farm inputs are needed to raise small farm productivity. These inputs may include fertilizers, an improved variety of seeds and seedlings, feeds, plant protection chemicals, agricultural machinery and equipment and water. Agricultural machinery and equipment according to Iwena (2012) refers to farms machinery and impalement which includes tractors, ploughs, harrows, cultivators, ridgers, planters, harvesters, shellers, sprayers etc. An examination of the factors influencing the adoption and continued use of these inputs will show that information delivery is a very important factor. It is a factor that requires more attention that it now gets. The increase of farmer's family member demands was faced to the need of the demand of information of modern farming to increase the management capability in yielding competitive products from the efficient farmers.

According to previous arguments on information needs, there are number of factors that constitute a need such as political, economic, agricultural, educational etc. factors. In other words, all needs arise in order to solve the problem of one of the above mentioned factors or the others. Prasad (2005) also maintained that, users' categories have different needs for information depending upon their functions, responsibilities and duties. According to him, information needs vary distinctly among the categories of user groups. For instance, in a study carried out by Mokoos (2005) while studying information needs and information seeking behaviour of women in 3 villages in Botswana revealed that, most of the respondents need information on health related matters. They seek information regarding particular diseases, such as ways of contracting the diseases and their treatment tips. The study also identified the respondents sources of information may include informed networks such as friends, neighbours and relatives for what they believed to be reliable information.

This is similar to the findings of Wesseler and Brinkman (2007) who asserted that information needs of rice farmers are centered on production. About 75% are interested in information on soil and land management and 67% interested in information related to agricultural and rural credit. On another side, Okwu and Omoru (2009) identified information needs of women farmers in Benue State to include the following: improved variety of crops, new cropping systems, new irrigation methods, fertilizer application, and pesticide application, better farm production processing methods, improved marketing system and better storage system.

More so, Meitei and Devi (2009) argue that rural farmers are not getting the right information at the right time, leading to slow development of agricultural activities. They further stated that, in order to provide timely, appropriate and relevant

information to farmers, it is necessary to classify their information needs.

In their study, Adeogun, Olawoye and Akinbile (2010) opined that, the younger farmers would most likely be willing to spend more time to obtain information on improved technologies than old farmers. Similarly, in respect of the farmers' level of education, the findings indicated that many of the rice farmers (58.75%) had attained primary level of education. And then followed by those who attained secondary education level (28.75%) and those who had not attained any formal education (12.50%). This implies that majority of the rice farmers are literate and their level of education affects information accessibility, comprehension and adoption of new agricultural innovations and practices (Ama and Dille, 1999).

From the above literature and observations by different researchers this study concludes that heterogeneous nature of the rice farmers is the factor that affects them to need different information on farming. It was observed that some of the farmers need information on seeds varieties, information on marketing, weather conditions, soil fertility etc. While others need information on pest and disease management, best time to plant, storage and transportation etc. It is to note that whatever kind of information the rice farmers need, in one way or the other they need it in order to improve their farming in terms of sustainability and produce quality output and better farm productivity.

The study also observed that majority of the rice farmers need information on marketing, weather conditions and information on agricultural credit or loan. Then why? May be this has to do with the fact that market information is the end or perhaps second to the end processes of information needs cycle of the rice farmers as indicated in the conceptual framework of this study. Market is where the product is sold and gets profit from what the farmers produce in their farming. And hence they earned money from the product they sold that enables them to solve their day-to-day problem. On the other hand, the information on weather condition also help farmers to know better about the best time to plant the crop as well as to be able to prepare the land for better plantation. Agricultural loan or credit on the other side has to do with fact that most of the farmers in the rural areas had lower level income. Majority of them cannot be able to maintain the money generated from what they sold during harvesting period up to the land preparation and planting period. Talk less about application of fertilizer, most of the farmers in rural areas buy the fertilizers only on credit or borrow money from family and friends in order to buy the bags of fertilizers. Therefore, agricultural credit or loan will no doubt help them to prepare more lands for planting, apply more fertilizer in order to get more rice productivity.

Materials and Methods

The study employed quantitative research methodology from the paradigm of positivist school of thought. Kamba (2014) asserted that in this type of methodology the researcher decide what to study, ask specific questions, collect quantifiable data and analyze the data using statistical techniques in unbiased and objective manner. According to this methodology research is value-free, the social actor do not manipulate variables of the study according to his wish; rather the researcher is only the ability to study the variables independently and guided by the tested theories and hypotheses.

Research design is a plan or blueprint which specifies how data relating to a given problem should be collected and analyzed. It provides a procedure outlined for the conduct of any given investigation.

This study employs a cross-sectional survey design. A cross-sectional survey design is

a research design which collects data through questionnaire or personal interview with members of an identified population especially when population of the study is large. In another view, Birwal (2013) asserted that cross-sectional survey method is used in research work for collecting and analyzing data obtained from a large respondent representing a specific population collected through highly structured and detailed questionnaire or interview. It is also useful for gathering information on the background, behavior, beliefs or attitudes of a large number of people. Indeed, survey design of quantitative research design is one of the designs in which data is collected with aid of unbiased data collection instrument (e.g. questionnaire) from the members of identified population. Another advantage of using this type of design is, the researcher can visit and revisit issues so as to correct, corroborate or validate facts, evidence or data. Meanwhile, in this type of design there is always the possibility of recourse to the source of information or data if need be (Abdul-Maliq, 2006).

Population and Sample Size

The research population is described as "all conceivable elements, that is, it is the totality of items, objects, persons, issues or observations who share at least a common attribute or characteristics on which the research is centred. Therefore, this will have to be identified and described.

The average number of participants in every single farmer's association according to the YOSADP's statistics was fifty (50) farmers. Then if this number (i.e. 50) is multiplied by the number of rice farmers association for each local government as indicated in table 1, it gives the number of farmers for each local government as outlined below. Which in sum, the population of both Fadama and S.S.I rice farmers were twenty-one thousand four hundred (21,400). The population of the study are outline in table 1:

Table 1: Population of the Study and Distribution of Rice Farmers Association in the state

S/N	Name of L.Gs	No. of Fadama Rice Farmers	No. of Small Scale Irrigation Rice Farmers	Total
1	**Bade**	1250	3200	4450
2	**Fika**	2000	-	2000
3	**Fune**	-	450	450
4	**Bursari**	150	-	150
5	**Gujba**	1100	-	1100
6	**Gulani**	1300	250	1550
7	**Geidam**	600	-	600
8	**Damaturu**	-	1100	1100

9	**Karasuwa**	250	-	250
10	**Jakusko**	1000	450	1450
11	**Nangere**	3000	1200	4200
12	**Potiskum**	1000	-	1000
13	**Tarmuwa**	-	450	450
14	**Nguru**	400	200	600
	Total	**12,900**	**8500**	**21,400**

Source: Yobe State Agricultural Development Programme (YOSADP): Statistics of 2019

Data Collection Instrument

This study adopted questionnaire as a means or instrument for collecting relevant data from the respondents. According to Muhammad (2015), questionnaire is a document containing questions and other types of items designed to solicit information appropriate to analyze. A questionnaire is an assemblage, an array or a set of questions, which are embodied normally in one document of which there are many copies in order to provide information for a specific purpose.

The use of questionnaire in research process is very important and may perhaps be the most efficient and at times the only method or instrument through which reliable and less bias information from large population of the study can be generated. In other words, it is the only instrument used to collect numeric data. Numeric data according to Encyclopedia of Library and Information Science (2006) refers to the data that can be presented and analyzed statistical, coded, or graphically displayed. The questionnaire was named "farmers questionnaire and will contain seven (7) sections with sixteen (16) questions respectively.

Sample Size and Sampling Techniques

A sample is a small amount or proportion of a total population selected to represent the total. In research, it is not always possible to use the whole research population; therefore a population sample is often used instead of the entire population. It was therefore, the wish of this study to draw a sample from the research population. In selecting the sample size for this study, the Research Advisors (2006) table of determining the sample from a population was used to determine the sample size from the population of this study.

According to Research Advisors (2006), the sample size of the population of rice farmers for this study was three hundred and seventy seven (377). A sample size of 377 was therefore, drawn from the total research population of twenty one thousand four hundred (21,400) rice farmers and fourteen (14) local governments in the state as well as for each local government area sampled.

Method of Data Analysis

Data presentation was normally done through tables of raw data, frequency distribution, diagrams, etc. Data is expected to be presented as neatly and as logically as is suitable. Data will be presented in line with the structure of data collection instruments.

The analysis of data collected from the respondents for this study was analyzed using descriptive statistics and inferential statistics.

Descriptive statistics is the study of those concepts and procedures that are used to organize, summarize, and interpret data, which includes the use of percentages and frequency distribution or counts and graphical representation if possible.

Results and Discussions

The study indicated that, the majority of the respondent are male and it constitute (99%) it also shows the average age of the respondent as; 20yrs – 30 yrs., 31yrs – 40yrs, 41yrs - 50 yrs. and 60 and above. That is 22.05%), 49.38% and 28.57% respectively, as can be seen in the tables1 0& 1.1 below,

Table 1.0 Demography of the respondents (N=322).

Sex	**Frequency**	**Percent (%)**
Female	1	1%
Male	321	99%
Total	322	100

Table 1:1 Age of the respondent (N=322).

AGE	**Frequency**	**Percent (%)**
20yrs – 30yrs	71	22.05
31yrs – 40yrs	159	49.38
41yrs – 50yrs	92	28.57
Total	322	100

Table 1:2 Farm Size of the respondent (N=322).

Farm Size	**Frequency**	**Percent (%)**
Less than 5 acre	175	54.3
5-10 acre	90	28.0
11-15 acre	15	4.7

16-20 acre	8	2.5
21 and above	8	2.5
No response	26	8.1
Total	**322**	**100.0**

Table 1.2 indicates that more than half (175:54.3%) of the respondents had less than 5 acre, followed by (90:28.0%) who had 5-10 acre and (15:4.7%) of the respondents had 11-15 acre, while 8(2.5%) of the respondents claimed having 16-20 acre. Other (8:2.5%) respondents claimed having 21 and above. However, (26:8.1%) of the respondents declined to indicate their farm size.

Table 1. 3 Types of Information Needs of Rice Farmers

	List of the Information needs	Frequency	Percentage (%)
a.	Information on weather condition	83	25.8
b.	Information on irrigation	185	57.5
c.	Information on cultivation mechanism	47	14.6
d.	Information on pesticide	107	33.2
e.	Information on best seeds	133	41.3
F	Information on planting methods	58	18.0
G	Information on agricultural credits or loans	57	17.7
H	Information on insecticide and diseases control	87	27.0
I	Information on fertilizer application	77	23.9
j.	Information on birds control	76	23.6
k.	Information on harvesting method	25	7.7
l.	Information on storage and seed treatments	35	10.9
m.	Information on market/price	25	7.7
n.	Information on soil and land management	30	9.3
o.	Others	4	1.2

As indicated by table 1.3, farmers were given list of information from which they are asked to choose the types of information they need. Less than half (83:25.8%) of the respondents opined that they need Information on weather condition. More than half (185:57.5%) of the respondents opined that they need Information on irrigation. Less than half (47:14.6%) of the respondents opined that they need Information on cultivation mechanism. Also, less than half (107:33.2%) of the respondents opined that they need Information on pesticide. Many (133:41.3%) of the respondents opined that they need Information on best seeds. Moreover, (58:18.0%) of the respondents opined that they need Information on planting methods. Less than half (57:17.7%) opined that they need Information on agricultural credits or loans. Many (87:27.0%) of the opined that they need Information on insecticide and diseases control. Less than half (77:23.9%) of the respondents opined that they need Information on fertilizer application. Also, less than half (76:23.6%) of the respondents opined that they need Information on birds' control. About (25:7.7%) of the respondents opined that they need Information on harvesting method. Moreover, (35:10.9%) of the respondents opined that they need Information on

storage and seed treatments. Less than half (25:7.7%) of the respondents opined that they need Information on market/price. Many (30:9.3%) of the respondents opined that they need Information on soil and land management. While (318:98.8%) of the respondents opined that they did not need other types of information not mentioned by the researcher.

Table 1.4: The Level of the Information Needs Preferred among Rice Farmers

Information needs	Level of information needs					Total	
	Highly needed Freq (%)	Needed Freq (%)	Fairly Needed Freq (%)	Not Needed Freq (%)	No response Freq (%)	Freq (%)	
Information on weather condition	51(5.8%)	25(7.8%)	222(68.9%)	21(6.5%)	3(0.9%)	322(100%)	
Information on irrigation	167(51.9%)	101(31.4%)	32(9.9%)	17(5.3%)	5(1.6%)	322(100%)	
Information on cultivation mechanism	53(16.5%)	127(39.4%)	90(28.0%)	37(11.5%)	-	322(100%)	
Information on pesticide	118(36.6%)	51(15.8%)	87(27.0%)	24(7.5%)	-	322(100%)	
Information on best seeds	90(28.0%)	77(23.9%)	80(24.8%)	37(11.5%)	-	322(100%)	
Information on planting methods	113(35.1%)	120(37.3%)	64(19.9%)	10(3.1%)	-	322(100%)	
Information on agricultural credits or loans	149(46.3%)	87(27.0%)	44(13.7%)	8(2.5%)	-	322(100%)	
Information on insecticide and diseases control	99(30.7%)	111(34.5%)	64(19.9%)	24(7.5%)	24(7.5%)	322(100%)	
Information on fertilizer application	122(37.9%)	78(24.2%)	48(14.9%)	31(9.6%)	43(13.4%)	322(100%)	
Information on birds control	99(30.7%)	80(24.8%)	89(27.6%)	28(8.7%)	26(8.1%)	322(100%)	

Information on harvesting method	88(27.3%)	123(38.2%)	64(19.9%)	26(8.1%)	21(6.5%)	322(100%)	
Information on storage and seed treatments	83(25.8%)	88(27.3%)	78(24.2%)	39(12.1%)	34(10.6%)	322(100%)	
Information on market/price	161(50.0%)	97(30.1%)	36(11.2%)	9(2.8%)	19(5.9%)	322(100%)	
Information on soil and land management	125(38.8%)	109(33.9%)	54(16.8%)	7(2.2%)	27(8.4%)	322(100%)	

Majority (222:68.9%) of the respondents indicated that they Fairly need Information on weather condition, while (51:5.8%) indicated that they highly need Information on weather condition. (25:7.8%) of the respondents need Information on weather condition. (21:6.5%) of the respondents indicated that they do not need Information on weather condition. It was only (3:0.9%) of the respondents who declined to respond to the question on the level of their need of Information on weather condition. Majority (167:51.9%) of the respondents indicated that they highly need Information on irrigation, while (101:31.4%) indicated that they need Information on irrigation. (32:9.9%) of the respondents fairly need Information on irrigation. (17:5.3%) of the respondents indicated that they do not need Information on irrigation. It was only (5:1.6%) of the respondents who decline to respond to the question on the level of their need of Information on irrigation.

(127:39.4%) of the respondents indicated that they need Information on cultivation mechanism, (90:28.0%) indicated that they fairly need Information on cultivation mechanism. (53:16.5%) are highly need Information on cultivation mechanism. About 37(11.5%) indicated that they do not need Information on cultivation mechanism.

Majority (118:36.6%) of the respondents indicated that they highly need Information on pesticide, (87:27.0%) indicated that they fairly need Information on pesticide. About (51:15.8%) indicated that they need Information on pesticide, and (24:7.5%) of the respondents do not need Information on pesticide.

(90:28.0%) of the respondents indicated that they highly need Information on best seeds, (80:24.8%) indicated that they fairly need Information on best seeds. (77:23.9%) need Information on best seeds. (37:11.5%) indicated that they do not need Information on best seeds.

Majority (120:37.3%) of the respondents indicated that they need Information on planting methods while (113:35.1%) indicated that they highly need Information on planting methods. (64:19.9%) indicated that they fairly need Information on planting methods, (10:3.1%) do not need Information on planting methods.

(149:46.3%) of the respondents indicated that they highly need Information on agricultural credits or loans. (87:27.0%) indicated that they need Information on agricultural credits or loans. (44:13.7%) of the respondents fairly need Information on agricultural credits or loans

(8:2.5%) indicated that they do not need Information on agricultural credits or loans.

Majority (111:34.5%) of the respondents indicated that they need Information on insecticide and diseases control, while (99:30.7%) indicated that they highly need Information on insecticide and diseases control. (64:19.9%) indicated that they fairly need Information on insecticide and diseases control, (24:7.5%) of the respondents do not need Information on insecticide and diseases control. It was only (24:7.5%) who declined to respond to the question.

More than ⅓ (122:37.9%) of the respondents indicated that they highly need Information on fertilizer application, while (78:24.2%) indicated that they need Information on fertilizer application. (48:14.9%) of the respondents fairly need Information on fertilizer application, then (43:13.4%) declined to response. Only (31:9.6%) indicated that they do not need Information on fertilizer application.

(99:30.7%) of the respondents indicated that they highly need Information on birds control, while (89:27.6%) indicated that they fairly need Information on birds control. (80:24.8%) need Information on birds' control, (28:8.7%) indicated that they do not need Information on bird's control. It was only (26:8.1%) of the respondents who declined.

(123:38.2%) of the respondents indicated that they need Information on harvesting method, while (88:27.3%) indicated that they highly need Information on harvesting method. (64:19.9%) of the respondents fairly need Information on harvesting method, (26:8.1%) indicated that they do not need Information on harvesting method. It was only (21:6.5%) who declined to respond.

(88:27.3%) of the respondents indicated that they need Information on storage and seed treatments, while (83:25.8%) indicated that they highly need Information on storage and seed treatments. (78:24.2%) of the respondents fairly need Information on storage and seed treatments. (39:12.1%) indicated that they do not need Information on storage and seed treatments. It was only (34:10.6%) who decline.

Majority (161:50.0%) of the respondents indicated that they highly need Information on market/price, while (97:30.1%) indicated that they need Information on market/price. (36:11.2%) indicated that they fairly need Information on market/price, and (19:5.9%) did not indicate their level of need of Information on market/price. Also (9:2.8%) of the respondents indicated that they do not need Information on market/price.

Moreover, (125:38.8%) of the respondents indicated that they highly need Information on soil and land management, while (109:33.9%) indicated that they just need Information on soil and land management. (54:16.8%) indicated that they fairly need Information on soil and land management. This is followed by (27:8.4%) who declined to respond to the question, while 7(2.2%) of the respondents indicated that they do not need Information on soil and land management.

Table 1.5: The Types of Information Sources used by Rice Farmers in assessing their Agricultural Information

S/N	List of Information sources	Frequency	Percentage (%)
a.	Family/parents	227	90.5
b.	Radio	78	24.2
c.	Personal experience	157	48.8
D	Neighbours and or friends	64	19.9
E	Agricultural extension officers	126	39.1

F	Village leader	46	14.3
G	Farmers groups	143	44.4
H	Television	27	8.4
I	Library and information centre	46	14.3
J	Ministry of agriculture	49	15.2
K	Local government officers	32	9.9
L	Non-governmental organisations	81	25.2
M	Workshops and seminars	46	14.3
N	Training	53	16.5
O	Internet	35	10.9
p.	Others	28	8.7

Farmers were asked to indicate the sources that provide information to them about rice farming and (227:90.5%) indicated that family/parents provide information to them about rice farming. In addition, (78:24.2%) indicated that Radio provide information to them about rice farming. Furthermore, about half (157:48.8%) of the respondents indicated that Personal experience information to them about rice farming. (64:19.9%) of the respondents indicated that Neighbors and or friends information to them about rice farming.

Table 1.5 also revealed that 126(39.1%) of the respondents indicated that Agricultural extension officers provide information to them about rice farming. In addition, (46:14.3%) of the respondents indicated that Village leader information to them about rice farming. Furthermore, about half (143:44.4%) of the respondents indicated that Farmers groups information to them about rice farming. (27:8.4%) of the respondents indicated that Television information to them about rice farming.

The table also revealed that (46:14.3%) of the respondents indicated that Library and information center provide information to them about rice farming. Also, (49:15.2%) of the respondents indicated that Ministry of agriculture information to them about rice farming. Furthermore, about half (32:9.9%) of the respondents indicated that Local government officers information to them about rice farming. Moreover, (81:25.2%) of the respondents indicated that Non-governmental organizations provide information to them about rice farming. Furthermore, about half (46:14.3%) of the respondents indicated that Workshops and seminars information to them about rice farming. (53:16.5%) of the respondents indicated that Training information to them about rice farming.

Table 4.5 also revealed that (35:10.9%) of the respondents indicated that Internet provide information to them about rice farming. In addition, (28:8.7. %) of the respondents indicated that other information resources provide information to them about rice farming.

Table 1.6: The Types of Information Resources used by Rice Farmers

Information Resources used by Rice Farmers	Frequency	Percentage (%)
Books	64	19.9
Newspapers and magazines	52	16.1

Posters of agriculture	160	49.7
Bulletin/leaflets of agriculture	70	21.7
Journals of agriculture	39	12.1
Others (specify....	39	12.1

Table 1.6 indicated that (64:19.9%) use books for information about rice farming. (52:16.1%) of the respondents use Newspapers and magazines and (160:49.7%) of the respondents use Posters of agriculture for information about rice farming. (70:21.7%) of the respondents use Bulletin/leaflets of agriculture for information about rice farming. However, (39:12.1%) use Journals of agriculture for information about rice farming. (39:12.1%) opined that they use other information resources not mentioned for information about rice farming.

Table 1.7: The extent to which the available information sources provided are used by the rice farmers (=322).

Extent	**Frequency**	**Percent (%)**
Very low extent	29	9
Moderate extent	23	7.1
Large extent	132	41.0
Very large extent	121	37.6
No response	17	5.3
Total	**322**	**100.**

Table 1.7 shows the extent to which information sources used are by the rice farmers and many (132:41.0) of the respondents rated their use of information sources to a 'large extent' this is followed by (121:37.6%) of the respondents who rated their extent of use of information sources 'very large'. (23:7.1%) rated their extent of use of information sources 'moderate' and about (29:9%) rated their extent of use of information sources 'little'. (17:5.3%) of the respondents decline to respond.

Table 1.8: The Level to which Available Information Sources Satisfy the Information Needs of Rice Farmers (N=322).

Level of Satisfaction	**Frequency**	**Percent (&)**
Not satisfactory	8	2.5
Fairly satisfactory	29	9
Moderately satisfactory	76	23.6
Satisfactory	161	50.0
highly satisfactory	45	14.0

No response	3	.9
Total	**322**	**100.**

Table 1.8 shows the level to which information sources satisfy the information need of the rice farmers and half (161:50.0%) of the respondents rated the information sources satisfactorily, while 76(23.6%) rated the information sources moderately satisfactory. Followed by (45:14.0%) of the respondents who rated the information sources highly satisfactory. (29:9%) of the respondents rated the information sources fairly satisfactory, then (8:2.5%) of the respondents rated the information sources not satisfactory and it was only (3:0.9%) who did not respond.

Table 1.9: Challenges associated with information needs and use of rice farmers(N=322).

S/N	Challenges	Frequency	Percentage (%)
a.	Outdated information/too old information	29	9.0
b.	Language barrier	69	21.4
c.	Lack of awareness	156	48.4
d.	Financial problems	166	51.6
e.	Poor format of information carrier	51	15.8
f.	Limited number of radios and television sets	269	83.5
g.	Inadequacy of facilities	83	25.8
h.	Inadequate number of extension agents	156	48.4
i.	Lack of professionals and personnel trained in agricultural information	60	18.6
j.	Lack of available information sources/resources	270	83.9
k.	Untimely provision of information	246	77
l.	Lack of electricity	290	90.1
m.	Lack of and/or high cost of ICTs facilities in rural areas	262	81.4
n.	Others	14	4.3

Table 1.9 indicates that (29:9.0%) did not regard outdated information/too old information as a challenge associated with information needs and use. Less than half (69:21.4%) of the respondents considered language barrier as a challenge associated with information needs and use. (156:48.4%) considered Lack of awareness as a challenge associated with information needs and use. More than half (166:51.6%) of the respondents, considered financial problems as a challenge associated with information needs and use. About (51:15.8%) regard poor format of information carrier as a challenge associated with information needs and use. Majority (269:83.5%) of the respondents indicated limited number of radios and television sets as a challenge associated with information needs and use. Moreover, 83(25.8%) regard Inadequacy of facilities as a challenge associated with information needs and use. However, almost half (156:48.4%) regard inadequate number of extension agents as a challenge associated with information needs and use.

The table indicates that (60:18.6%) regard lack of professionals and personnel trained in agricultural information as a challenge

associated with information needs and use. Majority (270:83.9%) of the respondents considered Lack of available information sources/resources as a challenge associated with information needs and use. Furthermore, (290:90.1%) of the respondents considered Lack of electricity as a challenge associated with information needs and use. Also (262:81.4%) of the respondents considered Lack of and high cost of ICTs facilities in rural areas as a challenge associated with information needs and use. The table finally indicates that (14:4.3%) of the respondents choose other challenges such as fear of losing control to the government officials etc.

Table 1.10: Appropriate measures as solutions to the problems facing rice farmers in accessing agricultural information

S/N	Recommended Measures	Frequency	Percentage (%)
a.	Extension agents should be adequately employed	163	50.6
b.	Employed personnel should be trained and retrained	132	41.0
c.	Information sources center such as library of agriculture in almost every L.G.A should be provided	250	77.6
d.	Agricultural programs carried out by some radio and television stations should be expanded	255	79.2
e.	Workshops and seminars should be frequently organized by government and or non-governmental organizations (NGOs) to enlighten the farmers about new methods of rice farming	201	62.4
f.	Modern facilities that improve and ease the way of doing thing should also be considered by government and other stakeholders	55	17.1
g.	Farmers should be provided with current and timely information in all aspect of farming i.e. from land management up to the harvesting stage	234	72.7
h.	Agricultural credits or loans without interest by government, banks of agriculture, bank of industries or other concern agencies should be given to the rice farmers	169	52.5
i.	Provision and standardization of electricity together with provision of ICTs facilities in rural areas should also be considered by concern agencies	222	68.9
j.	Others	15	4.7

Table 1.10 shows that (163:50.6%) of the respondents opined that extension agents should be adequately employed. 132(41.0%) of the respondents opined that employed personnel should be trained and retrained as appropriate measure of the problems they are facing in accessing agricultural information. It also revealed that (250:77.6%) of the respondents opined that Information sources center such as library of agriculture in almost every L.G.A should be provided as appropriate measure in solution of the problems they are facing in accessing agricultural information. (255:79.2%) of the respondents opined that agricultural

programs carried out by some radio and television stations should be expanded as appropriate measure in solution of the problems they are facing in accessing agricultural information.

Furthermore, (201:62.4%) of the respondents opined that Workshops and seminars should be frequently organized by government and or non-governmental organizations (NGOs) to enlighten the farmers about new methods of rice farming as appropriate measure in solution of the problems they are facing in accessing agricultural information.

Less than half (55:17.1%) of the respondents opined that Modern facilities that improve and ease the way of doing thing should also be considered by government and other stakeholders as appropriate measure in solution of the problems they are facing in accessing agricultural information. The result also indicate (234:72.7%) of the respondents opined that farmers should be provided with current and timely information in all aspect of farming i.e. from land management up to the harvesting stage as appropriate measure recommended by farmers.

More than half (169:52.5%) of the respondents opined that agricultural credits or loans without interest by government, banks of agriculture, bank of industries or other concern agencies should be given to the rice farmers as appropriate measure in solution of the problems they are facing in accessing agricultural information.

Majority (222:68.9%) of the respondents opined that Provision and standardization of electricity together with provision of ICTs facilities in rural areas should also be considered by concerned agencies as appropriate measure of the problems they are facing in accessing agricultural information. Only (15:4.7%) recommended other measures they think appropriate in overcoming the identified challenges.

Conclusion

This study investigated information needs for rice farmers and agricultural development in Yobe state. The targeted variables (population of the study) of this study were Fadama and Small Scale Irrigation rice farmers in the state. Data gathered from this study empirically revealed a number of findings and issues of interest to both small scale farmers, researchers, agriculturalists, policymakers, information scientists and all agricultural stakeholders; part of which include that the study had revealed the information needed by rice farmers as well as various types of information sources and resources used in providing rice farmers in Yobe state with agricultural information for farming practices and development. Equally, another interesting issue revealed by this study is to do with the level to which the information sources and resources used by the rice farmers as well as the extent to which the information sources and resources satisfy their information needs.

Moreover, a number of challenges that negated the rice farmers from meeting their information needs and from accessing and use of information sources and resources that are available (perhaps some) had also been identified by the study. And equally measures aimed at minimizing the identified problems were recommended for improvement and development.

Finally, farmers of any kind and rice farmers in Yobe state in particular are urge to know that farming today is technologically based and requires farmers to learn and adopt these new technologies, so as to cope with the challenges associated with olden ways of doing something. This will no doubt enable them to compete with their peers in developing neighbor states, countries and others in the developed countries of the world for general farming development that would result in improved food production, income and, above all, to meet the national

demands, to reduce rice import and be self-sufficient.

Recommendations

With regards to the findings of the study, the following recommendations were made:

Provision of relevant agricultural information to farmers is perceived as the surely responsibility of extension agencies and staff. Therefore, extension agents and staff should be adequately employed. Employed personnel should be trained and re-trained so as to meet with the modern technological innovation that facilitates the ways of carrying out things especially with cause and effect of ICTs. As this will go a long way in promoting farmers' use of different types of information sources and resources and facilitate access to such sources and resources. Farmers as the main targets and beneficiaries of agricultural information should be involved in programmes that affect them, especially those that are aimed at promoting information provision strategy to farmers, so as to give their input on how such programs can achieve their set objectives.

Adequate funding is required which includes agricultural credits in form of soft loans or subsidy should be provided by banks of agriculture, bank of industries, rice processing companies, individuals etc. to enable and encourage rice farmers to buy necessary farm inputs and modern equipment's.

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