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Information Needs of Agricultural Extension Workers for Agricultural Activities in Kano State

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Abstract

This study examined the information needs and challenges of Agricultural Extension Workers in Kano State, Nigeria, with a view to identifying the specific information requirements essential for effective agricultural service delivery. Using the Krejcie and Morgan sample size determination framework, 295 extension workers were selected from a total population of 1,265 extension workers across the three zones of the Kano State Agricultural and Rural Development Authority (KNARDA). Data were collected using a structured questionnaire and analysed using frequencies and percentages with the aid of SPSS version 16.0. The findings revealed five critical and previously under-reported information needs of agricultural extension workers, namely: information on animal breeding, postharvest technology, cultivation mechanisms, animal health, and fertilizer application. The study contributes to the fields of agricultural extension and information management by highlighting the specific information gaps that must be addressed to enhance extension service delivery. Based on the findings, the study recommends that relevant agencies should provide appropriate information resources and services in libraries and information centres; government should employ professional librarians and information personnel; adequate funding should be allocated to extension services; and information communication technologies such as computers and internet access should be provided to extension workers to facilitate their work.

Keywords: Information, Information Needs, Agricultural Extension Workers, Agricultural Activities, Kano State

Introduction

Agriculture plays a vital role in the economies of many developing countries, including Nigeria, contributing significantly to Gross Domestic Product (GDP), employment, and export earnings. In Nigeria, agriculture serves as a primary source of food, employs more than half of the population, generates foreign currency through exports, and provides raw materials for manufacturing and processing industries, thereby contributing to poverty reduction (Mohammed, 2016; FAO, 2014). The importance of agriculture in Nigeria cannot be overemphasised; therefore, there is a need for the government and all relevant stakeholders to strategise in order to ensure the provision of effective agricultural information capable of transforming the agricultural sector and the nation at large. This should include an understanding, exploration, and total transformation of agricultural activities by the nation's Agricultural Extension Workers so as to realise the full potential of the sector.

Agricultural extension services involve "the transfer of agricultural information and technology to farmers and similarly transferring information from farmers to agricultural researchers" (Pazvakavambwa & Hakutangwi, 2015, p. 218). This means that extension workers serve as intermediaries between farmers and agricultural researchers. Their major role is the provision of agricultural information services to farmers, thereby assisting farmers in increasing their production. They are expected to make research findings available to farmers, who in turn bring their problems to the notice of Agricultural Extension Workers for onward transmission to agricultural scientists and administrators (Mugwisi, 2013). However, in order to perform this duty effectively, Agricultural Extension Workers require relevant information to meet their tasks of providing effective agricultural services that can impact the sector and the nation at large.

Information need, therefore, is a feeling of an inadequate state of knowledge. When one feels that the information at hand is insufficient to carry out one's duties, an information need arises (Chowdhury, 2014). Extension workers, as the main source of information to farmers, require various forms of information to attend to farmers' needs. Consequently, extension workers consult different information sources and resources to satisfy their information needs.

Literature Review

Concept of Information Need

Information need is a condition in which certain information contributes to the achievement of a genuine or legitimate information purpose. According to Wilson (2013), information need is a relationship that obtains between information and information purposes. It refers to what an individual or group of people require in order to play a role, to meet a particular task, or to participate properly in a social process.

Green (2017) identifies four general conclusions about the concept of need:

i. A need is always instrumental it involves reaching a desired goal, which may be to satisfy individual curiosity or which may be based on some pre-existing need like passing an examination.

ii. Needs are usually contestable, which makes them differ from wants.
iii. A need is related to the concept of necessity, in such a way as to carry more moral weight to the level of making a distinction between primary and secondary needs.
iv. A need is not necessarily a state of mind, and it is possible to be unaware of one's true needs.

Information need, which is often understood in information science, evolves from a vague awareness of something missing and focuses on locating information that contributes to understanding and meaning (Case & Given, 2016).

Every rational person in daily life, from time to time, needs to know about many things concerning them, such as the availability, quality, and cost of consumer goods and services, health and welfare services, education and training facilities (Choo, Detlor, & Turnbull, 2004). For the daily running of a household, one may need practical information on functionalities like cooking, gardening, and house maintenance. Because of this, different categories of people need different types of general information to satisfy their intellectual curiosity, which might be information on current affairs, social and political events, legal matters, and financial matters. In order for these needs to be satisfied, individuals consult various information sources (newspapers, television, etc.), retrieving information that matches their queries, depending on their needs (Choo, Detlor, & Turnbull, 2004). This is also true in the case of extension workers; as the main source of information to farmers, they are expected to have specific information needs. It is therefore important to identify the various information needs of extension workers so that relevant information can be made available for their use in order to perform their jobs better and improve agricultural activities.

According to Choo, Detlor, and Turnbull (2004), information needs are frequently thought of in terms of a person's cognitive needs gaps or anomalies in the state of knowledge or understanding that may be represented by questions or topics. This means that a person feels in need of information because of the feeling of an inadequate state of knowledge. Rosenfeld and Morville (2012) observe that information needs can vary widely, and each type of information need causes users to exhibit specific information-seeking behaviour. Different categories of people need different forms of information depending on individuals' specialisation. According to Chowdhury (2014) and Ikoja-Odongo and Mostert (2016), an information need may arise when an individual recognises that his or her current state of knowledge is insufficient to cope with the task at hand, to resolve conflicts, or to fill a void in some area of knowledge.

From an information retrieval perspective, Chowdhury (2014) identifies the characteristics of an information need or needs as follows:

i. An information need is a relative concept that depends on numerous factors and does not remain constant but changes over a period of time.
ii. Information needs vary from person to person, from job to job, subject to subject, and organisation to organisation.

iii. Information needs are largely dependent on the environment; for example, the information needs of those in the academic environment may differ from those in business or industry.
iv. Information needs often remain unexpressed or are poorly expressed.
v. Information needs often change upon the receipt of some information.

According to Hjørland (2017) and Kaniki (2013), a user's information needs may be influenced by education, economic status, geographical location, availability of information systems and services, awareness of the availability of information systems and services, research, personal role in social life, culture, recreation, or may be professionally oriented, and may be more or less conscious or acknowledged. This statement conforms with the situation of extension workers in Nigeria, since their major role is the provision of relevant information to farmers, which will help in increasing agricultural activities. Devadason and Lingham (2016) provide additional dimensions of influence as the use to which the information will be put and the legal and regulatory systems surrounding the user. Hjørland (2017) highlights the need to distinguish between the concept of need and the concept of demand, explaining that while the demand for documents in a library may be low because the library is inaccessible to the user, the user's information needs will exist nevertheless. This statement is true considering the situation of farmers in Nigeria; their needs will still exist even if the extension workers fail to perform their expected roles. This is why the researchers feel that it is crucial to identify the information needs of the extension workers, because it is only by doing so that they will be able to attend to the farmers' needs, which in turn will help in transforming the agricultural sector and the nation at large.

Information need may be recognised as the existence of uncertainty in decision-making. Information need also refers to the extent to which information is required to solve problems as well as the degree of expressed satisfaction or dissatisfaction with the information (Ehikhamenor, 2015). Extension workers, however, need a lot of information to be able to solve farmers' problems, and this is why they are able to express their dissatisfaction with the amount of relevant and needed information made available to them.

Wilson (2013) opined that information needs are influenced by a variety of factors such as the range of information sources available; the uses to which the information will be put; the background, motivation, professional orientation, and individual characteristics of users. Other factors are socio-political, economic, legal, and regulatory systems surrounding the users, as well as the consequences of information use. The quality of information sources available to the users is also important because relevant sources are most likely to yield useful information.

To talk about information requirements is to determine the needs of the users. This statement conforms with the situation of extension workers; as information professionals, they are expected to have some information needs, and because of these needs, they tend to consult different information sources to satisfy their information needs and to discharge their duties well. Kumar (2010) opines that determining the needs of the users means knowing their requirements for information. In order to determine their requirements, it is essential to know the following: who the users are, their background (qualification, mastery of language, areas of research and specialisation), and the purpose for which they need the information.

According to Laloo (2012), need means what a person ought to have, a circumstance under which something is lacking, that which one cannot do without, and that which is necessary for an organism's health and wellbeing. He further stated that "information need" is a difficult concept to define, to isolate, and especially to measure. It involves a cognitive process, which may operate on different levels of consciousness and hence may not be clear even to the inquirer himself. Information needs can therefore be better understood if the concept of 'need' is clearly defined.

Aninweze (2014) has highlighted much on need and, to him, need represents an imbalance or lack of adjustment between the present condition or situation or status quo and a new or changed set of conditions assumed to be more desirable. More simply, 'need' may be looked at as the difference between what is and what ought to be, hence implying a gap between these two conditions. This conforms with the situation of extension workers in Nigeria, as it was observed by the researchers; the information being made available to the extension workers is not actually the type of information they need which will help them in assisting the farmers to improve overall agricultural activities and to deal with the problems in hand, thus creating a gap. Aboyade (2015) made it clear that information needs relate first to the main characteristics of the people what they are and what is important to them. The needs reflect the social, cultural, political, and economic dimensions of their development and aspiration. This statement implies that individuals differ and so also their approach to issues. The approach people use in tackling assigned tasks or issues varies depending on who is involved. The statement by Aboyade (2015) conforms with the situation of Agricultural Extension Workers in Nigeria; their characteristics, needs, and what is important to them need to be identified so that they can provide farmers with relevant information to improve their farming activities and their lives.

Igwe (2012) in his study classified information needs in the following order:

1. Educational and academic information needs
2. Political information needs
3. Job opportunities and business information needs
4. Economic information needs
5. Social and entertainment (arts) information needs
6. Agricultural, geographical, and environmental information needs
7. Medical and health information needs
8. Scientific and technological information needs
9. Religious and cultural information needs
10. Legal and human rights information needs
11. International and global information needs

Agricultural Extension and Information Needs

Van den Ban and Hawkins (2015) defined extension as involving the conscious use of communication of information to help people form sound opinions and make good decisions. They explained extension systematically as a process which helps farmers to analyse their present and expected future situations; helps farmers to become aware of the problems which can arise in such an analysis; increases knowledge and develops insight into problems; helps to structure farmers' existing knowledge; helps farmers to acquire specific knowledge related to certain problems, solutions, and their consequences so that they can act on possible alternatives; and helps farmers to evaluate and improve

their own opinion-forming and decision-making skills. This statement does not fully conform to the situation of Agricultural Extension Workers in Nigeria, as they often serve as mere visitors on farms; they are hardly provided with the right information that will enable them to attend to farmers' needs. They are not given the right information and opportunity to interact with the farmers so that they can assist them in different aspects of their lives, not only in improving their farming activities.

As revealed by Mugwisi (2013), the major role or duty of agricultural extension workers is the provision of agricultural information to farmers, thereby assisting farmers in increasing their production. They are expected to make research findings available to farmers, who in turn would bring their problems to the notice of agricultural extension workers for onward transmission to agricultural scientists and administrators. This means that extension workers serve as intermediaries between farmers and agricultural researchers; they are expected to bridge the gap between them by making research findings available to farmers. In order to perform this duty effectively, it is expected that agricultural extension workers require relevant information to meet the tasks at hand.

According to Foti, Nykudya, Moyo, and Chikuvire (2017) and Encanto (2016), the aim of all agricultural extension endeavours is to transfer agricultural information that will enhance the productive capacity of farmers and improve their ability to deal with their problems and take advantage of new opportunities. The extension workers are expected to perform this duty well to ensure improved agricultural activities.

According to Wesseler and Brinkman (2012), Development Agents (DAs) include local state agencies (Agricultural Extension workers and administrators) or NGOs, whose information needs are relative to farmers' and organisational needs at grassroots level. They need skills to acquire and present information without imposing it (including repackaging). This statement is true because the information needs of extension workers are tied to those of farmers; since they are the ones that deal with farmers, they understand their needs better and ought to understand what they want and what they do not want. That is why the information needs of extension workers need to be identified and given priority so as to ensure the transformation of the agricultural sector and the nation at large.

The studies conducted by Aina (2015) identified that farmers need agricultural information for the purpose of understanding how to apply fertilisers, insecticides for pest and disease control, planting materials, and credits and loans, and the Agricultural Extension Workers provide this information to them. Therefore, there is the need to provide extension workers with all this information so that they can convey it to farmers for proper farming activities.

Agricultural Extension Workers have to work hard to address agricultural workers' (farmers') needs, and they have to realise that information should be translated from foreign languages to languages spoken by peasant farmers. The application of this policy can ensure information-for-life service (Tshabalala, 2016). The extension workers can only perform this role when their information needs are identified and provided through the right information sources, and this is why the researchers embarked on this study in order to bridge the gap between extension workers, agricultural researchers, and other relevant stakeholders.

FAO (2014) opined that "private companies' new agricultural technologies are generated by research institutes, universities, and by farmers themselves. Agricultural extension services are expected to disseminate them among their clients, but due to poor linkages

between research and extension, the adoption of new agricultural technologies by farmers in the developing world is often very slow and most research is not focusing on the actual needs of farmers" (p. 17). This statement conforms to the situation of Agricultural Extension Workers in Kano State, where most of the information made available to them does not cater to their needs, as most of the researches are not focusing on their actual information needs, which in turn affects the farmers because the Agricultural Extension Workers cannot actually provide them with the right information they need to increase their production, hence creating a gap.

Roling (2018) looks at extension by identifying the following common elements or conceptions:

- Extension is an intervention through which the change agent or extension worker formulates, implements, and evaluates objectives and strategies.
- Extension depends on communication as an instrument to induce change through the transfer of information.
- Extension effectiveness depends on the willingness of people to be persuaded, and it is not an instrument which can force people to do things against their will.
- Extension as an instrument is usually deployed in institutions, e.g., in government departments, voluntary agencies, commercial companies, and member associations.

This means that Extension Workers supply information about agricultural policies and the reasons for them, and endeavour to stimulate certain developments considered desirable. An example would be encouraging farmers to guard against issues like environmental pollution through the proper use of pesticides. One of the roles of extension workers is to be timely aware of the changes in their environment which offer new opportunities for agricultural development but which also cause threats. Choosing the goals of an extension program includes judgment, and the organisation is to contribute to the development of agriculture in their area by helping farmers on which kinds of developments in agriculture are possible and sustainable and which are not, for example with respect to new technologies. Topics that come to the fore include poverty alleviation and issues of funding, planning, and globalisation. Swanson and Rajalahti (2015) caution that as governments consider how to strengthen their extension systems in order to achieve their national agricultural development objectives, they need to consider how these different extension functions relate directly to their overall goals.

As clearly seen from the literature reviewed, information need arises when one feels that the information at hand is inadequate to perform one's role, or the feeling of an inadequate state of knowledge. Extension workers, as the main source of information to farmers, are expected to have information needs to be able to help farmers increase their farming activities and also in decision-making. This is why the researchers feel the importance of identifying the information needs of the extension workers so as to be able to provide the needed, relevant, and timely information to the farmers, which is capable of transforming the agricultural sector and the nation at large.

Statement of the Problem

Agricultural Extension Workers globally play significant roles in the transformation of the agricultural sector and society at large. This is made possible through access, dissemination, and/or transfer of agricultural information via agricultural extension services. As the focus on improving agricultural growth to alleviate poverty is recognised,

there has been much discussion over the past decade on the need to improve the performance of agricultural extension and advisory services (Birner et al., 2016). Eicher and Swanson, as cited in Pazvakavambwa and Hakutangwi (2015), noted that Agricultural Extension Workers ensure the transfer of agricultural information and technology to farmers for use in production and marketing decisions and similarly transfer information from farmers to agricultural researchers. The major role or duty of Agricultural Extension Workers is the provision of agricultural information to farmers, thereby assisting farmers in increasing their production. They are expected to make research findings available to farmers, who in turn bring their problems to the notice of Agricultural Extension Workers for onward transmission to agricultural scientists and administrators. In order to perform this duty effectively, Agricultural Extension Workers require relevant information to meet their tasks (Mugwisi, 2013).

Despite these key functions and roles, unfortunately, observations by the researchers have shown that Agricultural Extension Workers in developing countries are not provided with the right information. There is a lack of close working rapport between agricultural research organisations and extension workers. Extension workers are merely visitors to research stations, while farmers remain unfamiliar with the farming realities on the ground, and only a few rural Extension Workers have access to agricultural information, who are supposedly responsible for the transfer and dissemination of research findings to rural farmers. This assertion is supported by Swanson (2017), Rivera (2011), and Pazvakavambwa and Hakutangwi (2015). In Nigeria, therefore, it appears that there is a need for an increase in the amount of knowledge made available to Agricultural Extension Workers. Akinbile and Otitolaye (2018) note that Agricultural Extension Workers are only conversant with a few information sources, and efforts should be made to upgrade their knowledge in as many sources as possible to ensure skilful use of these sources for efficient diffusion of agricultural knowledge.

Agricultural Extension Workers, as the main source of agricultural information to farmers, need a lot of relevant information resources, services, and effective strategies for utilising the resources and services in order to satisfy their information needs and provide the needed agricultural services capable of transforming the agricultural sector and the nation at large. This is what prompted the researchers to embark on this study on the information needs of Agricultural Extension Workers for agricultural activities in Kano State.

Objectives of the Study

The main objective of this study is to explore the information needs of Agricultural Extension Workers for agricultural activities in Kano State, Nigeria.

Research Questions

The study was guided by the following research question:

1. What are the information needs of Agricultural Extension Workers for agricultural activities in Kano State?

Methodology

In an attempt to achieve the objective of this study, the researchers adopted a quantitative methodology using a cross-sectional survey research design. The population of this study comprised 1,265 Agricultural Extension Workers in the three zones of the Kano State Agricultural and Rural Development Authority (KNARDA): Gaya zone, Rano zone, and Dambatta zone. The Krejcie and Morgan (1970) sample size determination formula was used to determine the sample size, and the calculated sample size for this population was 295.

A structured questionnaire was used as the instrument for data collection. The questionnaire was validated by experts in Library and Information Science and Agricultural Extension, and its reliability was established through a pilot test, yielding a Cronbach's Alpha coefficient of 0.714, which is acceptable for social science research (George & Mallery, 2019). The questionnaire contained 24 items in the form of closed-ended questions.

A proportionate sampling technique was applied to administer a total of 295 copies of the questionnaire, out of which 276 were retrieved, representing a 93.5% response rate. The data collected were analysed using frequencies and percentages with the aid of Statistical Package for Social Sciences (SPSS) version 16.0.

Data Analysis and Presentation of Findings

Response Rate

A total of 295 copies of the questionnaire were administered to the respondents. The summary of their responses is presented in Table 1 below.

Table 1: Response Rate

Response Rate	Frequency	Percentage
Administered	295	100%
Returned	276	93.5%
Not Returned	19	6.4%

Source: Field Survey, 2020

Table 1 shows that out of 295 copies of questionnaires administered, 276 (93.5%) copies were duly completed, retrieved, and found usable, while 19 (6.4%) copies were not retrieved. This shows a high return rate of 93.5%, which is significant enough for analysis in this study. According to Babbie (2016), a 50% response rate is regarded as adequate, 60% as good, 70% as very good, and 80% and above as excellent. Therefore, the analysis for this study is based on the 276 retrieved copies of the questionnaire.

Information Needs of Extension Workers for Agricultural Services

Table 2: Information Needs of Extension Workers for Agricultural Services

S/N	Types of Information Needs	Yes		No	
		Freq	%	Freq	%
1	Information on Soil fertility	79	28.6	197	71.4
2	Information on Horticulture	150	54.3	126	45.7
3	Information on Soil classification	42	15.2	234	84.8
4	Information on New seed varieties	90	32.6	186	67.4
5	Information on Irrigation and drainage	115	41.7	161	58.3
6	Information on Poultry	229	83.0	47	17.0
7	Information on Agricultural economics	218	79.0	58	21.0
8	Information on Plant breeding	77	27.9	199	72.1
9	Information on Plant pathology	67	24.3	209	75.7
10	Information on Dairy farming	69	25.0	207	75.0
11	Information on Plant diseases and pest control	245	88.8	31	11.2
12	Information on Postharvest technology	247	89.5	29	10.5
13	Information on Animal health	236	85.5	40	14.5
14	Information on Fertilizer application	230	83.3	46	16.7
15	Information on Animal breeding	255	92.4	21	7.6
16	Information on Agro forestry	95	34.4	181	65.6
17	Information on Agronomy	85	30.8	191	69.2
18	Information on Range management	130	47.1	146	52.9
19	Information on Crop protection	208	75.4	68	24.6
20	Information on Agricultural engineering	105	38.0	171	62.0
21	Information on Climate change	218	79.0	58	21.0
22	Information on Farm mechanization	118	42.8	158	57.2
23	Information on Policy development	40	14.5	236	85.5
24	Information on Advisory information	44	15.9	232	84.1

Source: Field Survey, 2020

As indicated in Table 2 above, extension workers were asked to indicate the types of information they need. The majority, 255 (92.4%), of the respondents indicated that they need information on Animal breeding. This is followed by 247 (89.5%) who indicated that they need information on Postharvest technology, while 245 (88.8%) indicated that they need information on Plant diseases and pest control. Furthermore, 236 (85.5%) of the respondents indicated that they need information on Animal health, and 230 (83.3%) indicated that they need information on Fertilizer application.

The table also indicates that 229 (83.0%) of the respondents need information on Poultry, while 218 (79.0%) need information on Climate change, and 218 (79.0%) need information on Agricultural economics. This is followed by 208 (75.4%) of the respondents who need information on Crop protection, and 150 (54.3%) who need information on Horticulture.

Less than half, 130 (47.1%), of the respondents need information on Range management; 118 (42.8%) indicated that they need information on Farm mechanization; 115 (41.7%) need information on Irrigation and drainage; 105 (38.0%) need information on Agricultural engineering; and 95 (34.4%) need information on Agro forestry.

More than one-quarter, 90 (32.6%), of the respondents need information on New seed varieties; 85 (30.8%) need information on Agronomy; 79 (28.6%) need information on Soil fertility; 77 (27.9%) need information on Plant breeding; and 69 (25.0%) need information on Dairy farming.

Less than one-quarter of the respondents indicated that they need information on Plant pathology (24.3%), Advisory information (15.9%), Soil classification (15.2%), and Policy development (14.5%).

These findings demonstrate that extension workers need different types of information in order to execute their roles effectively. The findings show that the information most needed by them includes information on Postharvest technology, Plant diseases and pest control, Animal health, and Fertilizer application, among others.

Discussion

This study investigated the information needs of agricultural extension workers for agricultural activities in Kano State. The discussion is based on the main objective and research question of the study. A quantitative research methodology, employing a cross-sectional survey design, was adopted through the use of a questionnaire administered to the respondents. Two hundred and ninety-five copies were administered, out of which 276 were returned and found useful for the study. This indicates an appreciable response rate that lends credibility to the findings of the study.

Regarding the information needs of Agricultural Extension Workers for agricultural services in Kano State, the study revealed that extension workers need various types of information in order to attend to farmers' needs. This finding corroborates the studies of Aboyade (2015), who noted that the characteristics, needs, and what is important to extension workers need to be identified so that they can provide farmers with relevant information to improve their farming activities and their lives. It was found that the major information needed by the extension workers is information on Animal breeding, followed by information on Postharvest technology, Plant diseases and pest control, Animal health, Fertilizer application, Poultry, Agricultural economics, and Crop protection.

This finding is consistent with the study conducted by Taiwo, Adeleke-Ibrahim, and Akinbile (2025), which examined information needs and seeking behaviour of agricultural extension agents in Lagos State, Nigeria. The study found that the major information needs of the respondents were livestock production management and community health development. Similarly, a study in Edo State, Nigeria, found that a majority (71.6%) of respondents indicated their need for information with respect to climate change and adaptation measures.

The findings also align with the study by Yakubu, Abubakar, Atala, and Muhammed (2024), which assessed the use of ICTs among extension agents in Kano State, Nigeria. The study concluded that the benefits of ICTs were not fully utilised by extension workers in the state due to factors associated with low income, ICTs training, awareness, and access. This suggests that even where information is potentially available, extension workers may face barriers in accessing it.

The study's findings on the specific information needs of extension workers in Kano State particularly in areas such as animal breeding, postharvest technology, and fertilizer application have significant implications for agricultural extension policy and practice. These information needs reflect the realities of agricultural production in Kano State, where livestock production and crop cultivation are major economic activities. The finding that information on animal breeding was the most needed (92.4%) is particularly significant, given the importance of livestock to the economy of Kano State. This is consistent with the findings of Sani, Mamman, and Adejare (2025), who assessed training needs of agricultural extension personnel in Northwestern Nigeria and identified knowing extension approaches and needs assessment tools as high-priority training needs.

The study also reveals that extension workers need information on postharvest technology (89.5%) and plant diseases and pest control (88.8%), indicating the importance of addressing postharvest losses and pest management challenges in the state. These findings align with the work of Foti, Nyakudya, Moyo, and Chikuvire (2017), who emphasised that the aim of agricultural extension is to transfer information that enhances farmers' productive capacity and improves their ability to deal with problems and take advantage of new opportunities.

However, the study found that relatively few extension workers identified needs for information on policy development (14.5%), advisory information (15.9%), and soil classification (15.2%). This may indicate either a lack of awareness of the importance of such information or a perception that these types of information are less immediately relevant to their day-to-day work with farmers. This finding warrants further investigation, as agricultural policy information can be crucial for helping farmers access government programmes and subsidies.

The study's findings also underscore the importance of information sources and accessibility. As noted by Jerome, Owolabi, Segun-Adeniran, Aregbesola, Owolabi, and Eyiolorunshe (2024), information provision to agricultural extension agents by public libraries is crucial for national development. The current state of poverty and hunger in Nigeria could be reduced if current, relevant, and up-to-date information were provided by libraries to the concerned agencies.

Conclusion

The main objective of this paper was to explore the information needs of Agricultural Extension Workers for agricultural activities in Kano State, Nigeria. This paper is considered significant because it reveals the specific information needs of agricultural extension workers for agricultural activities in Kano State. It is of relevance to a number of stakeholders in the agricultural sector and the nation at large in terms of accessing relevant information resources for effective agricultural service provision. In addition, it will also help them to improve the transfer and dissemination of relevant information to farmers, which in turn will lead to increased agricultural activities and improved food security.

The study concludes that Agricultural Extension Workers in Kano State have diverse information needs, with the most critical being information on animal breeding, postharvest technology, plant diseases and pest control, animal health, and fertilizer application. These information needs reflect the agricultural realities of Kano State and the challenges faced by farmers in the state.

Recommendations

Based on the findings of this study, the following recommendations are made:

1. Relevant agencies, including the Kano State Agricultural and Rural Development Authority (KNARDA) and the Ministry of Agriculture, should provide appropriate information resources and services in libraries and information centres to meet the identified information needs of extension workers.
2. The government and relevant agencies should employ professional librarians and other information personnel to manage agricultural information resources and facilitate access to relevant information for extension workers.
3. Government and other stakeholders should provide vehicles to extension workers to ease transportation to rural areas for effective service delivery. Studies have shown that a very low extension officer-to-farmer ratio and high demand for transport facilities are constraints to service delivery by extension officers.
4. Adequate funding should be allocated to extension services to enable the acquisition of information resources, training of personnel, and provision of necessary facilities. Research in Northwestern Nigeria has identified lack of funding (74.8%) and unavailability of resources (75.2%) as major constraints faced by extension personnel.
5. Information should be provided to extension workers on time, and extension workers should be friendly and approachable to farmers to facilitate effective information transfer.
6. The government should construct good roads leading to rural areas to improve accessibility for extension workers. Poor infrastructure has been identified as a major constraint to the use of various information sources in Africa.
7. Basic equipment such as computers, internet access, and other information communication technologies should be provided to extension workers to facilitate access to and dissemination of information. A study on ICT use among extension agents in Kano State found that the benefits of ICTs were not fully utilised due to low income, lack of ICTs training, awareness, and access.
8. Information should be made available in languages that are understandable to both extension workers and farmers. Research has shown that agricultural programmes should be aired in the local languages of farmers for better understanding of information.
9. Regular training and retraining programmes should be organised for extension workers to update their knowledge and skills in information access and utilisation. The study by Sani, Mamman, and Adejare (2025) recommended continuous professional development, particularly in ICT skills, basic communication, and modern extension techniques.
10. Government and non-governmental organisations should recruit additional extension personnel to reduce the current disproportionate extension-farmer ratio. Research has shown that addressing this ratio would significantly improve the effectiveness of agricultural extension services.

11. Closer collaboration between agricultural research institutes and extension services should be established to ensure that research findings are effectively transferred to farmers. Poor linkages between research and extension have been identified as a major reason for slow adoption of new agricultural technologies in developing countries (FAO, 2014).

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