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INFORMATION SOURCING, ORGANIZATION AND DISSEMINATION BY AGRICULTURAL EXTENSION WORKERS IN ADAMAWA STATE AGRICULTURAL DEVELOPMENT PROGRAMMES (ADADP)

ABSTRACT

The study was conducted to find out about the information sourcing, organization and dissemination by agricultural extension workers in Adamawa state agricultural development programmes. The objectives were to identify the sources, organization and dissemination of information by extension workers in ADADP. The research instruments used were questionnaire and interview. A proportionate stratified sampling technique was used to obtain the sample for the study. Ninety-three (93) subjects were used for the study. Data collected were presented in frequency tables and percentages. Analysis and discussions were made to each table and figure. Findings of this study revealed that most extension workers in ADADP sourced different types of agricultural information, they however mostly source information on livestock production, crop production/protection, application of inputs like fertilizers, pesticides and herbicides. Because most of the agricultural information sourced are in document form, they were organized alphabetically by subject and chronologically by date. The study also revealed the absence of qualified and trained staff to manage the agricultural information, as this is left in the hand of extension personnel. Agricultural information sourced were disseminated to the farmers mostly through direct contact and field demonstration in vernacular/native languages. The study concludes that Agricultural Extension Service (AES) was conceived to extend research based findings and information on agriculture to the farmers towards improving their agricultural produce and standard of living. This information gap between researches and advancement in technological process is filled by agricultural extension workers being the information disseminators to farmers. Based on the findings several recommendations were made which include agricultural extension workers should be encouraged to disseminate information to farmers using the dominate language in the state and through modern technologies like the Radio/Television Services, so that information can reach the farmers living in the remote areas easier and cheaper and at the appropriate time. The authority of Adamawa State Agricultural Development Programme should provide library infrastructure so that agricultural information sourced could be organized, stored and manage properly. A librarian should also be employed to manage and organize the information sourced properly so that having access to such sources can be easier and consequently save the time of the user. They Adamawa state agricultural development programme should improve agricultural extension services by removing all bottlenecks or challenges faced by extension workers in their effort to source and disseminate appropriate agricultural information to farmers.

Introduction

Agriculture remains the mainstay of almost all economies of the sub-Saharan African which Nigeria is not an exception. In Nigeria agriculture

had been the most effective and viable sector in revenue generation to the economy before the advent of the oil and gas sector. It is now second to oil and gas in terms of revenue generation, and contribution to national gross domestic product (GDP) and first in all employment opportunities in the country. This view was highlighted by President Goodluck Jonathan (2012) when he averred that agriculture accounts for about forty percent (40%) of Nigerians gross domestic product (GDP) and over seventy percent (70%) of all employment. The sector also increases productivity which drives down rural poverty and revive rural economy. In addition, Ugwu and Kanu (2012) also stated that more than seventy percent (70%) of Nigerian population depend on agriculture and provides subsistence farming for two-third of Nigerians who are low income earners.

The history of agriculture in Nigeria can be traced as far back as when man started living in the area. Jibowo (2005) however divided the history of agriculture in Nigeria into three different periods; pre-colonial, colonial, and post-colonial periods. The pre-colonial period involved mainly the introduction of crops and livestock production practices. During the colonial era conscious efforts were made by the British colonialist to increase agricultural production through the provision of improved varieties of seeds and training to farmers. During this period the British established the Department of Botanical Research in 1893 popularly known as Moore Plantation in Ibadan, the establishment of the unified Department of Agriculture in 1921, the kwara irrigation scheme in 1926 and the Niger Agricultural Project in 1949. The post-colonial saw the establishment of Federal Ministry of Agriculture with its extension component in 1967 following the creation of twelve states out of the four regions. All these efforts were made because of the relevance of agriculture to the people and the Nigerian economy at large. The states created were not also left out in the establishment of State Ministries of Agriculture with extension units as vital area to enlighten the farmers on the use of agricultural inputs.

Agricultural Extension Services (AES)

Agricultural Extension Service (AES) was conceived to extend research based findings and information on agriculture to the farmers via agricultural extension workers with the aim of improving their agricultural produce and standard of living. It is expected to be the largest organization in an agricultural activity being the major sources of information to farmers.

Concept and Role of Agricultural Information in Agricultural Development Programmes

Ajewole (2016) categorized the definition of information into three. The first is the scientific and technical information (STI). This is within the domain of scientific and technological communities. The second is socio-cultural which viewed information as knowledge, which is transferable in the conduct of various activities. In the third category, information is perceived as a basic resource and an indispensable

and irreplaceable link between a variety of activities, intellectual and material, in the service of society, institutions and individuals. Information therefore can be regarded as a processed data which has meaning, purpose and relevance in decision making. So, timely availability of relevant information is vital for effective performance of managerial functions such as planning, organizing, leading and control. Tadesse, (2018) define agricultural information as the various sets of information and messages that are relevant to agricultural production activities of farmers such as crop production and protection, animal production and management, and natural resource production and conservation. For the purpose of this study agricultural information therefore refers to agriculture related data which are transformed into meaningful and useful context or form for effective decision making in agriculture or farming related activities.

The role of agricultural information in increasing agricultural production in Adamawa State as a whole may not be possible to quantify but there is no doubt that effective agricultural information services contributes significantly to agricultural production. Through agricultural information farmers can adopt new technologies or farming systems, know when to plant and harvest, which crop to produce and which animal to rear and where to sell. It is also through agricultural information farmers can know where to acquire Bank facilities and other farming inputs, as well as how to control pest and diseases.

Information Needs of Agricultural Extension Workers

Agricultural Extension Workers (AEW) are known to be the link between agricultural researchers, information systems and farmers. Therefore information needs of AEW basically depend on the information needs of the researchers and the farmers, because AEW exchange information among themselves, i.e. from researchers to farmers and vice versa. The information needs of extension workers according to Mugwisi, Ocholla and Mostert, (2016) includes; range management, animal breeding, agricultural engineering, dairy farming and plant breeding, horticulture, crop production and protection, plant diseases, pests control, climate change and soil fertility. Extension workers need market-related information, to advise farmers particularly on selling their produce in order to help the farmers reduce loss. FAO (2005) asserts that accurate and timely agricultural marketing information also enables farmers to make more informed decisions and minimizes the loss that would be caused by the overproduction of certain commodities.

Information sources are tools that can possibly meet the information needs of different categories of extension workers. They are the information carriers while the extension worker is the medium through which agricultural information is passed to the farmers. There are different source of information but what matters are 'what' sources are available and relevant to the different categories of extension workers, and what sources of information are useful for their different sourcing methods and choices.

Hence authentic and reliable information source makes that source useful and sustainable to the user. Information sources of agricultural extension workers may differ depending on the type of service they render. But however, most studies conducted by scholars on the matter revealed some similarity of information sources of extension workers. Farooq, et al (2017) asserted that the main information sources of agricultural extension workers include publication, Agricultural Research Institutes, Television/Radio, Training and visit of Agricultural Officers to farmers. Similarly, Alfred and Odefadehan (2017) reveals that the various information sources of extension workers include their organizations, individual associates, local, national and international seminars, workshops, trainings, print and electronic media, telecommunication, and internet services.

Adamawa state agricultural development programme came into being with the following main objectives;

- i. to improve Agricultural Extension Services for regular agronomic, livestock, fisheries, and forestry advice to small scale farmers via village agricultural extension workers.
- ii. to establish a central agricultural inputs supply unit for an efficient distribution of seeds, fertilizer, agrochemicals and other farm inputs throughout the state.
- iii. to construct rural feeder roads to enhance rural communities in the areas of inputs delivery and produce evacuation to required areas
- iv. to provide water for small scale irrigation, human and livestock consumption through drilling of boreholes, tube wells, wash boreholes, cement wells and livestock ponds.

In order to achieve the objectives of the AADP, the Programme is divided into various departments with specific schedules of duties to perform and easy coordination as follows: -

- i. Programme Managers Office
- ii. Finance and Accounts
- iii. Planning, Monitoring and Evaluation
- iv. Agricultural Extension and Technical Services
- v. Fadama and Engineering Services
- vi. Rural Institution Developments
- vii. Administration and Supplies

In Adamawa state Agricultural Development Programme, agricultural extension services department is vested with the responsibility of informing the farmers through the extension workers on recent agricultural research findings on either land preparation, cultivation, planting period, improved seeds, climatic factors like rainfall range, desertification problems, use of modern implements, fertilizer application, pest control and even market prices of agricultural produce. However, the successes of such extension services depend on how the extension workers enhance the flow of information. This can be

determined by the information provided, which should be based on the relevancy, accuracy, timeliness, and appropriateness to the farmers needs and utilization.

Problem Statement

Information transfer to farmers is the utmost mission of the Agricultural extension workers in Agricultural Development Programme (ADP), farmers are expected to be keen to learn and know a lot on farming practices from the information disseminated to them. Ideally, the primary responsibilities of agricultural extension services are to inform and educate farmers to accept recent agricultural research findings so as to improve their standard of living through the transfer of improved farming practices. But because the farmers reside in remote areas and mostly uneducated, research findings cannot easily reach them without an effective information dissemination system. Functionality of such information dissemination systems like extension workers, libraries and information centers are therefore very essential for effective performance of Agricultural Development Programme.

Agricultural Extension workers are not only supposed to be the link between agricultural researchers and farmers but also serve as the engine of Agricultural Development Programmes. They are expected to source information from researchers and their organizations (ADPs) for onward transfer to farmers. On the other hand, they are equally expected to bring back any information to the researchers and the ADPs. Hence, because of the important role played by Agricultural Extension Workers in Agricultural Development Programmes, it is very important to understand and periodically evaluate them. It is also important to know the various ways they source information from, how they organize the information sourced and ultimately how they disseminate it.

In addition, effective organization of information resources is highly needed and this depends on the availability of skilled and experienced extension personnel or information professionals to plan, process, store in an organized manner, and disseminate the information appropriately and timely to the farmers. Allahyari (2018) noted that the basic problem of agricultural information resource organization is that of lack of skilled personnel, especially the field personnel to satisfy the requirements of sustainable agriculture. This inadequacy of organizational skills among extension workers according to him lead to the failure of having an organized information resource centres and consequently having access to these resources becomes difficult to farmers. Hence, the Extension Services Department quest to disseminate agricultural information for the purpose of adopting new research findings so as to improve productivity in agriculture and well-beings of farmers becomes impossible. Therefore, to address the above observed problems, there is the need to find out how Agricultural Extension Workers in Agricultural Development Programmes, particularly in AADP source, organize and disseminate agricultural information to farmers with a view to increasing their agricultural productivity which will consequently improve their standard of living.

Summary of related literatures Reviewed

From the review it was observed that agricultural extension work in Nigeria started during the colonial period which was carried out in form of apprenticeship to farmers, with the main aim of tackling the stagnation of agricultural production and reduce food import, by attending to the major constraints such as generation and dissemination of information on improved agricultural technologies among others. The World Bank collaborated and worked with the Government of Nigeria and other development partners so as to help strengthen and reorganize the extension services, with the objectives of helping the farmers improve their income and standard of living, and making the services more efficient. However, these objectives could not be achieved because the place of extension in the administrative machinery of the ministry was a very small unit until the establishment of the Agricultural Development Programme (ADP). The location was low in the hierarchy of the ministry and that it was not involved in decision-making and extension workers do not have favourable and definite pattern in extension work. To achieve these objectives Nigeria must have an effective legislated policy document on agricultural extension.

The review also revealed that the main function of agricultural extension workers is to disseminate agricultural information on improved farming technologies to farmers with a view to increase their agricultural productivity and living standard. Agricultural extension workers serve as an intermediary or go between or even link between agricultural development institutions such as research institutes, universities, colleges of agriculture and farmers. It was also revealed that an extension worker is needed to explain and pass across new technologies to farmers and also teach them on how to adopt and improve production and income as well, although this depends largely on information exchange between and among farmers and a broad range of other actors.

The review noted the agricultural information needs of extension workers from the various works consulted to be similar. Among such works consulted include that of Anaeto (2016) who revealed that the information need of extension workers ranges from rainfall ranges, farm problems such as pest and disease outbreaks, crop protection and production, livestock management, planting periods, weeding, and method of fertilizer applications. Other information needed include the use of insecticides and herbicides, micro-credit facilities, market prices of product, erosion control, and desertification among others.

It has also been observed from the review that the information sources of agricultural extension workers largely depend on the type of tasks or services they perform. However, despite the little differences of their information sources, Alfred and Odefaden (2017), and Koyenikan (2018) has collectively observed that majority and prominent of information sources of extension workers remains the same and this includes publication or print sources, trainings/workshops, Agricultural Research Institutes, libraries and departmental collections, internet services, senior agricultural officers and specialists, Televisions and Radios among others. It was also observed that while Wilson notes that extension workers source their

information as a result of recognition of needs and this was done through purposive and passive methods, Oladele (2016) observed that some source their information through face-to-face communications with other stakeholders while others source it through the formal information systems, such as libraries, information centres, trainings and workshops as well as computer-oriented information systems.

The review revealed that with adequate information resource collection, processing, storage, dissemination and use of modern information and communication technologies, effective management of agricultural information sources can easily be possible as contributed by IAALD. The association added that capacity building of human resources is also necessary to provide the know-how to manage these resources properly. However, this can only be achieved with the support of enabling Government policy to guide the management of these resources.

It has been observed from the review that, in the Nigerian setting majority of the people engaged in agriculture are mostly illiterate and do not benefit from information in print word, which is the most effective way of disseminating information to various agricultural information users, especially farmers, hence it was done through physical contact, Radio and Television stations. Although, Oladimeji (2016) agreed that the mandate of disseminating agricultural information in Nigerian rests with National Agricultural Extension and Research Liaison Service (NAERLS) and the Agricultural Development Projects (ADPs), he however disagree that farming activities broadcast on radio and television are most favoured by farmers, rather he noted that the diversity of the languages in Nigeria pre-supposes that for farmers to have access to agricultural information through the radio and television, and that the language of presentation should be based on the language of the listeners.

From the review it was noted that the dissemination of agricultural information has not been effective due to some constraints and challenges encountered by extension workers. These includes lack of enough budgetary allocation, weak linkages between Government and extension workers, lack of adequate and qualified human resources and enabling policy to guide the extension work. Others include lack of working facilities or tools, inappropriate information content and above all lack of farmer's acceptability to new research findings among others.

Research Method Adopted

This study adopted survey research method. Survey method according to Glasow (2015) involves collection of information from the population of a study through responses to questions. Survey research method was chosen because it can handle large amounts of data from different varieties of samples and also well suited to gathering demographic data that describes the composition of the population. It is also an efficient method in systematic collection of data from a broad spectrum of individuals. The respondents of this study are posted all over the State, thus the use of the survey method will enable the researcher to reach them at relatively cheaper cost. The survey research methodology was adopted

because it enables the researcher to confirm the objectives of the study and accurate description of a situation with a view to correcting the inadequacies.

Population of the Study

The population of the study is made up of all the three hundred and four (304) supervisory extension officers and village extension workers serving in the 21 Local Government Area offices (blocks) of Adamawa State Agricultural Development Programme. The twenty-one (21) local Government area offices (i.e 21 blocks) were divided into three zones called Zonal office and named; Zone 1, Zone 2, and Zone 3. The zonal offices are managed by Zonal Extension Managers. A Supervisory Extension Officer who is answerable to the Zonal Extension Manager oversees the affairs and activities of the sub-supervisory areas or cells. The distribution of the extension workers per local government area or Block was based on the population density of the farm families or farmers. The total population of the supervisory extension workers and village extension workers under study stood at two hundred and nineteen (219). See table 3.1 below. (OFAR Trails and Extension Activities, 2012)

Table 3.1, Distribution of Extension Workers by Local Government Area or Block.

Local Government/Supervisory Block	Number of Extension Workers
Yola north	10
Yola south	11
Numan	11
Mayobelwa	10
Jada	12
Ganye	11
Fufore	12
Demsa	10
Tongo	10
Girei	11
Song	10
Gombi	11
Hong	10
Michika	10
Madagali	10
Mubi north	10
Mubi south	11
Maiha	10
Guyuk	10
Shelleng	10
Lamurde	9
No. of Supervisory Extension Workers	21
Total number of extension workers	219

Source: *OFAR Trails and Extension Activities (2012)*

Sample Technique

The nine stratified local government supervisory areas (blocks) in each of the three Zones were arranged alphabetically and were purposively selected since their primary assignment and objectives they tend to

achieve is the same. A proportionate stratified sampling technique was used to select three local government supervisory areas, giving a total of three local governments from each of the three zones making a total of nine supervisory areas out of the twenty-one supervisory areas in the State. This means the total number of supervisory and village extension workers of this selected supervisory areas automatically forms the sample population of the study. The number is found adequate because it is sufficiently large enough to be a representative or generalization of the study population.

Table 3.2, Selected Sample Population from the Three Zonal Supervisory Areas.

S/NO	ZONE 1	S.E.W	V.E.W	ZONE 2	S.E.W	V.E.W	ZONE 3	S.E.W	V.E.W
1	Mubi North	1	11	Yola North	1	11	Numan	1	10
2	Mubi South	1	10	Yola South	1	10	Ganye	1	10
3	Michika	1	12	Gombi	1	10	Guyuk	1	10
4	TOTAL	3	32		3	31		3	30
5	GRAND TOTAL								93

Types of Agricultural Information Sourced by Extension Workers in AADP

Table 4.1: Types of Agricultural Information Sourced

S/N		Yes		No	
		Freq.	%	Freq.	%.
	Types of agricultural information sourced				
1	Crop production/protection	132	89.8	15	10.2
2	Livestock production	135	91.8	12	8.2
3	Agro-forestry production	114	77.6	33	22.4
4	Application of inputs (fertilizers, pesticides, etc)	135	91.8	12	8.2
5	Agricultural credit facilities	96	65.3	51	34.7
6	Market prices	94	63.9	53	36.1
7	Improved seed varieties	120	81.6	27	18.4
8	Soil fertility and land degradation	102	69.4	45	30.6
9	Desertification	96	65.3	51	34.7
10	Planting period	132	89.8	15	10.2
11	Weeding period	132	89.8	15	10.2
12	Harvesting period	118	80.3	29	19.7
13	Pest and disease control	120	81.6	27	18.4
14	Plant diseases	120	81.6	27	18.4

Method Adopted in Sourcing Agricultural Information by Extension Workers in AADP

Table 4.2: Methods adopted in sourcing agricultural information by extension workers in AADP

SN	Methods adopted in sourcing agricultural information	Yes		No	
		Freq.	%.	Freq.	%.
1	Discussion with farmers association	130	88.4	17	11.6
2	Based on personal observation and experiences	99	67.3	48	32.7
3	Based on identification of farmers information needs	64	43.5	83	56.5
4	Based on findings of research result (prints and internet)	68	46.3	79	53.7
5	Discussion with community leaders and elders	90	61.2	57	38.8

Organization of Agricultural Information Sourced by Extension Workers in AADP

Table 4.3: Organization of Agricultural Information Sourced by Extension Worker

SN	Organization of Agricultural Information Sourced	Yes		No	
		Freq.	%.	Freq.	%.
1	Using library's classification scheme	87	59.2	60	40.8
2	Alphabetically by author	107	72.8	40	27.2
3	Alphabetically by subject	121	82.3	26	17.7
4	Chronological order by date	119	81.0	28	19.0

Ways Agricultural Extension Workers in AADP Disseminate Agricultural Information to Farmers

The research question seeks to find out ways agricultural extension workers in AADP disseminate agricultural information to farmers. Table 4.4 shows the distribution of their response rate.

Table 4.4: Ways of Agricultural Information Disseminated to Farmers

S/N	Ways of Agricultural Information Dissemination to Farmers	Yes		No	
		Freq.	%.	Freq.	%.
1	Research pamphlets/newsletters/posters	85	57.8	62	42.2
2	Radio	84	57.1	63	42.9
3	Direct contact with farmers	126	85.7	21	14.3
4	Using film shows	73	49.7	74	50.3
5	Demonstration to farmers on the field	121	82.3	26	17.7
6	Library services (books, journal and magazines)	51	34.7	96	65.3
7	Television	77	52.4	70	47.6

The research question also sought to find out the personnel managing the agricultural information generated.

Table 4.5: Personnel Responsible for Managing the Agricultural Information Sourced

SN	Personnel Responsible for Managing Agricultural Information Sourced	Yes		No	
		Freq.	%.	Freq.	%.
1	Professional librarian	47	32.0	100	68.0
2	Para-professional librarian	49	33.3	98	66.7
3	Trained extension personnel	107	72.8	40	27.2
4	Untrained extension/record personnel	87	59.2	60	40.8
5	Do not know	67	45.6	80	54.4

Table 4.6: Challenges Affecting Agricultural Information Dissemination to Farmers

S/N	Challenges Affecting Agricultural Information Dissemination to Farmers	Yes		No	
		Freq.	%.	Freq.	%.
1	Poor road network to visit farmers	121	82.3	26	17.7
2	Poor staff mobility system	116	78.9	31	21.1
3	Lack of prompt payment of allowances and other logistics	123	83.7	24	16.3
4	Lack of strengthened farmer association	119	81.0	28	19.0
5	Persistent security threats	123	83.7	24	16.3
6	Lack of acceptability of new research findings	123	83.7	24	16.3
7	Disproportionate extension workers to famer family ratio	129	87.8	18	12.2
8	Poor motivation of extension worker for effective functioning	132	89.8	15	10.2
9	Poor funding of extension activities	135	91.8	12	8.2

CONCLUSION AND RECOMMENDATIONS

From the data analysis and summary of the major findings, the study concludes that Agricultural Extension Service (AES) was conceived to extend research based findings and information on agriculture to the farmers towards improving their agricultural produce and standard of living. This information gap between researches and advancement in technological process is filled by agricultural extension workers being the information disseminators to farmers. This study observed how Agricultural Extension Workers in Adamawa State Agricultural Development Programmes (AADP) source, organize and disseminate agricultural information to farmers with a view to increasing their agricultural productivity which will consequently improve their standard of living. To achieve this, there is the need to have effective information dissemination systems like libraries and information centers where the information sourced can be stored, organized and disseminated easily and quickly. There is also the need to have qualified and trained personnel who can manage the information sourced properly.

Recommendations

Based on the major findings of the study, the following recommendations are put forward.

Stake holders of the Adamawa State Agricultural Development Programme should provide all necessary and sustainable incentives and logistics, such as prompt payment of staff allowances and improved mobility systems, enough funding, etc for the extension services department so that sourcing of agricultural information by extension workers in the state can efficiently and effectively be carried out.

- i. Agricultural extension workers in AADP should adopt the method of using information and communication technologies (ICT) such as internet services in sourcing agricultural information.

- ii. The authority of Adamawa State Agricultural Development Programme should provide library infrastructure so that agricultural information sourced could be organized, stored and managed properly. A librarian should also be employed to manage and organize the information sourced properly so that having access to such sources can be easier and consequently save the time of the user.
- iii. Agricultural extension workers should be encouraged to disseminate information to farmers using the dominant language in the state through modern technologies like the Adamawa Radio/Television Services, so that information can reach the farmers living in the remote areas easier and cheaper and at the appropriate time.
- iv. The Adamawa state agricultural development programme should improve agricultural extension services by removing all bottlenecks or challenges faced by extension workers in their effort to source and disseminate appropriate agricultural information to farmers.

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