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# Exploration of Appropriate Media for Satisfying the Information Needs of Future Community of African Farmers

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## **Exploration of Appropriate Media for Satisfying the Information Needs of Future Community of African Farmers**

### **Introduction**

Success in almost all life's endeavors depends on access to the right information at the appropriate time and format. Access to reliable, timely and relevant information can help significantly and in many ways to reduce level of risk and uncertainty and empower one to take good decisions. Farming, as part of Agriculture, has been the major means of livelihood and the mainstay of the economy of African countries. During the colonial and post-colonial era, it provided employment for more than 60% of the labour force and accounted for over 65% of the GDP of the economy in the continent.

Agriculture is considered to hold the key to economic development for most Sub-Saharan countries including Nigeria and Ghana. Even though in Nigeria specifically, other sectors such as the: manufacturing, oil/petroleum, and services sectors were contributing to the total output of the economy during the era mentioned in the above paragraph, agriculture remained the most prominent followed closely by the services sector. According to Olukunle (2013) the Nigerian government was able to execute investment projects through earnings from agricultural product exports during the period. Export commodities such as cocoa, rubber, cotton, palm oil, palm kernel, groundnut and coffee played prominent roles in the economic development by providing the needed foreign exchange for capital development projects. The petroleum sector at that period was in the third position.

However, the introduction of petroleum into the nation's export trade in the 1970s altered the structure of the export trade. The oil sector, which made negligible contribution to the economy in the 1960s, became more prominent than the other sectors in the 1970s and had since then remained the mainstay of the nation's economy while the share from the agricultural sector including agricultural output by farmers had continued to decline. Agriculture is now seen as the business of the poor and less privileged in the Sub-Saharan African countries. This ugly agricultural turnout had propelled the government in both Nigeria and Ghana into taking remedial steps in the form of instituting new policies and programs aimed at restoring the agricultural sector to its former place of pride in the economy. Several agricultural development programmes such as; Farm Settlement Scheme, River Basin Development Authority, Agricultural Development Programme, Tractor and Equipment Hiring Scheme, National Accelerated Food Production Programme, etc, instituted to further assist farmers in African countries yielded no result.

Similarly, there is no gainsaying about the fact that technological evolution has brought about radical transformation on the quality and quantity of information made available to users. There is globally acknowledged exponentially geometrical increase on the available information resulting from several researches carried out in the area of agriculture including its related fields. Notwithstanding these enormous quantity of information made available following the technological evolutions coupled with the government efforts, farmers still suffer continued decline in their level of agricultural output. This in recent time is been

majorly attributed to lack of access to basic agricultural knowledge and information thereby substantiating the saying that information availability might not automatically translate into information accessibility. The situation also brings questions such as the following to mind; what could be hindering the farmers from having access to the avalanche of agricultural information available for them? Could it be that these information are provided in a format difficult for them to utilize? Is it the medium of communicating the information that is the problem? A solution finding venture into what could be done to avert future community of African farmers from experiencing same challenge led the researchers into this study focusing on exploring the most appropriate format and media for providing and communicating agricultural information to future community of African farmers.

### **Objectives of the study**

The general objective of this study is to explore the most appropriate format and media for providing and communicating agricultural information that would help future community of African farmers in achieving increasing output/ high farm yield.

The specific objectives are to;

1. Establish the demographic characteristics of the farmers in Nigeria and Ghana
2. Establish agricultural information needs of the farmers in Nigeria and Ghana
3. Identify the available sources of agricultural information to the farmers in Nigeria and Ghana
4. Ascertain the extent of use of these agricultural information sources by the farmers
5. Establish factors militating against effective utilization of the agricultural information sources
6. To identify formats and media preferred by African farmers for agricultural information communication

### **Research questions**

- RQ1. What is the demographic characteristics of the farmers in Nigeria and Ghana?
- RQ2. What are the agricultural information needs of farmers in Nigeria and Ghana?
- RQ3. What are the available sources of agricultural information to the farmers in Nigeria and Ghana?
- RQ4. To what extent do the farmers use these agricultural information sources?
- RQ5. What are the factors militating against effective utilization of these agricultural information sources?
- RQ6. What are the formats and media preferred by African farmers for agricultural information communication?

### **Significance of the study**

The result of this study will expose the factors affecting adequate utilization of agricultural information by the African farmers thereby helping the government, Agricultural Extension Officers, libraries and other stakeholders involved in information provision to the farmers with the knowledge of the formats and media of information communication most suitable for future community of African farmers.

The outcome on their information needs will also enrich the bodies mentioned above with the knowledge of their needs thereby serving as a guide in their packaging of information for the farmers.

The overall outcome of the study will enable the achievement of improved agricultural output by future community of African farmers.

This work will also be useful to researchers and students who will want to carry out further research in this area of study.

### **Scope of the study**

This study is concentrated on farming in the areas of plant and crops only. Animal husbandry or areas related to the rearing of animals is not covered in this study. The geographical scope for the study is limited to African countries; Nigeria and Ghana.

### **Literature review**

#### **Information and Information needs of farmers**

Information is a vital resources that determines success or otherwise in one's life endeavour or work activity. It equips one with the knowledge needed to overcome challenges and take the appropriate step at the right time. According to Ukachi (2015) information has been generally accepted as an important resource for individual growth and survival. It is the realization of the place of information in goal's attainment that recently gave it the position of the fifth factor of production. Every individual, notwithstanding the professional affiliation, needs information to excel in his area of specialization. It is against this backdrop that Chen, Liu and Yang (2011) asserts that information is becoming a more important resource than material and energy; and that somebody who can obtain more information will occupy the dominant position in the social competition.

Farmers who in the concept of this paper are individuals concerned with the cultivation and production of farm animals, food and cash crops need information in other to be efficacious in their work activities and also achieve high farm yield. Information has a vivacious role to play in enhancing and sustaining agricultural production of any nation. According to Oladele (2006) information is vital for increasing agricultural production and improving marketing and distribution strategies. The ability of farmers to achieve the ultimate goal of optimal production depends to a great extent on their effective utilization of available agricultural information. Agricultural information creates awareness among farmers about plants and crops species, plant diseases, existence of credit facilities, agricultural technology, innovative practices, and marketing opportunities.

Farmers need information in the areas of selecting the seed/plant species, plant diseases and control, available credit facilities, mechanized system of farming, storage facilities, and packaging and marketing of their products. Achebe and Lucky (2013) opines that farmers on their own part need to know how to increase their yield, how to use new techniques and the findings of contemporary agricultural research and how to operate in changing market and credit situation. Mashroofa and Senevirathne (2014) restated that farmers need information to

identify the cost, storage, usage, varieties of newly introduced seeds, pesticides, and weather in order to get maximum yields and best production. To be able to satisfy these needs, information must be provided for the farmers in a format most appealing and comprehensive to them.

### **Sources of agricultural information and factors militating against effective utilization**

There are varying sources of information made available to farmers. Aina (1990) cited by Bello and Obinne (2012) opined that agricultural information sources covers all published and unpublished knowledge on general aspects of agriculture and consists of innovations, ideas, technologies, and agricultural policies. These sources are accessed by farmers via different communication channels. It must be emphasized that the viability of a source depends on its ability to satisfy the information needs of the users. Ukachi (2007) emphasized that the speculated and realistic benefit desirable from a source makes that source useful and sustainable. Presently, the prevailing existing sources of information include; radio, television, trade associations, age group, extension workers, friends, relatives, public libraries, posters, handbills, pamphlets, mobile phones, etc. However, recent studies that investigated agricultural information use by farmers still found out that majority of these information sources are grossly underutilized by the farmers (Bello and Obinne, 2012; Ugwoke, 2013 and Alan & Haque, 2014). Considering the socio- cultural background of farmers, the most likely suitable source of information for them should be in audio-visuals formats while the communication channel is inter-personal.

Malhan and Rao (2009) avers that agricultural extension is aimed at promoting agricultural development by providing information on improved production technologies and their adoption. In this electronic age, they are required to make farmers aware of the use of the Internet in information transfer. This can help farmers keep abreast with rapidly changing agricultural trends. Achebe and Lucky (2013) also stated that the channels of information used by farmers are commonly classified as follows:

- Mass media: Such as radio, television, newspapers, leaflet and trade lunch etc., from government or commercial sources
- Personal contact with Extension workers and representatives of commercial firms either on an individual basis or in small groups and,
- Personal contacts with other farmers

However, for the purpose of this study, the information sources alongside the channels for communicating them are grouped as follows;

- a. **Interpersonal:** Family members, friends, Trade association, Non-Governmental Organizations, Other farmers, Workshop/ Seminar, Community leaders
- b. **Mass media:** Television, Radio, Newspapers, Cinema, Magazines, Billboards
- c. **New Technology:** Internet, Mobile phone (for calls and text messages), Social media (e.g. Facebook group, Twitter, etc.), Listserve/ Professional online group

- d. **Library:** Published Agricultural research outcomes, Agricultural textbooks, Pamphlets and Manual, Bulletin and Newsletters, Exhibition and Displays, Film shows, Current awareness services
- e. **Extension support:** Extension Agent advisory visits, Field days, Demonstration/Trainings, Agricultural film shows, information leaflets

### **Methodology**

The exploratory research design was adopted for the study. Multi-stage sampling technique was also adopted in selecting the sample. First, the purposive sampling technique was adopted in selecting farmers that are involved in the area of plant and crop farming only. Farmers involved in animal farming were not selected as the study did not cover that area. Secondly, the simple stratified random sampling technique was employed in selecting 10 farmers each from 10 different villages in Nigeria and Ghana, respectively, bringing the total number from each country to 100. The sample size for the study therefore is 200. The instruments for data collection were structured questionnaire and oral interview. The oral interview was used to complement the questionnaire as the researchers observed that many of the farmers in both countries communicate better in oral discussions than in written ones. The researchers personally administered the instruments in their respective countries. The oral interview was guided by the interview schedule constructed by the researchers based on the research questions. The interview outcome was recorded by noting the respondent's responses on a paper. Prior to the interview, the respondents were told the purpose of the study and made to understand that the outcome will create room for packaging of information products and services that will help them to achieve increased agricultural output. They were equally made to realize the need for them to be sincere in their responses. The questionnaire collection period lasted two weeks. Data collected were analysed using simple percentages and frequency count and presented in tables and figures.

### **Result and discussion of findings**

#### **Demographic characteristics of respondents**

**Table 1. Demographic characteristics of respondents**

<b>Characteristics</b>	<b>Frequency (%)</b>
<b>Sex</b>	
Male	138 (69)
Female	62 (31)
<b>Age</b>	
0-20yrs	21 (10.5)
21-40yrs	59 (29.5)
41-60yrs	88 (44)
Above 60yrs	32 (16)

<b>Educational qualification</b>	
No formal education	9 (4.5)
Primary education	61 (30.5)
Secondary education	112 (56)
Diploma	13 (6.5)
Degree	5 (2.5)
<b>Farming experience</b>	
0-10yrs	42 (21)
11-20yrs	75 (37.5)
20-30yrs	68 (34)
Above 30yrs	15 (7.5)

Data from Table 1 above revealed that 69% of the respondents were males while the remaining 31% were females. The males domination found out in this study could be as a result of the fact that farming in Africa is heavily tasking and energy sapping as it is majorly done manually. Mechanized farming is not yet common in this part of the world.

The result also indicated that majority of the farmers fall within the age bracket of 41-60years (29.5%), followed by those within the age bracket of 21-40 years old (44%) while those above 60years old (16%) came third and those between the ages of 0-20years old constituted 10.5% of the entire population. The predominance age of this farmers around 41-60 indicated that this occupation is dominated by individual who possibly had tried other means of livelihood during their prime age before finally venturing into farming. This finding corresponds with the result of the study carried out by Apata (2010) in which the age dominance by farmers was 41-50 years old. The least number of farmers established in the age category of 0-20 years old could also be as a result of the fact that majority of the people within this age bracket are in pursuit of their education.

It was also established that majority of the farmers 56% possess secondary school education as their highest educational qualification followed by those that have primary education (30.5%). For years of experience in farming, the study found that those that have had between 11-20years and 21-30years constituted the highest number with the percentages of 37.5 and 35 respectively. The implication of this finding is that the respondents have had considerable years of experience in the field and as such, are professionally qualified to make meaningful contribution in relation to farming.

### **Agricultural information needs of the farmers**

To establish the agricultural information needs of farmers in the two countries, the respondents were provided with a table containing varying areas of information needs for

farmers and requested to select the ones applicable to them. Their responses is tabulated below.

**Table 2. Agricultural information needs of the farmers**

<b>Information needs</b>	<b>Frequency</b>	<b>percentage</b>
Varieties of seeds/ plants	188	94
Availability of fertilizers	200	100
Weed control	108	54
Pest control	168	84
Irrigation	-	-
Weather	68	34
Plant diseases and control	124	62
Subsidy availability	163	81.5
Mechanized system of farming (New trends)	102	51
Credit facilities (Loan)	108	54
Government policies	39	19.5
Storage facilities	98	49
Marketing opportunities	76	38

The overall outcome as shown in Table 2 above indicates that the farmers need information in almost all the areas presented in the table. The reason could be related to the desire to take an action that will help in increasing their farm outputs/yields. Specifically, all the farmers indicated interest in fertilizer availability information while 94% of the entire study population need information on varieties of seeds/ plants. Pest control got a population acceptance value of 84% as it is a pressing need of the farmer. The need for information on subsidy availability (81.5%) could be necessitated by the fact that these farmers are not getting returns on investment. The information needs on plant diseases and control (62%) and weed control (54%) are desired by farmers following the need to reduce losses suffered as a result of these factors. Credit facilities (54%) also got high acceptance value. This is obviously necessitated by the need to increase capital investment in their farms and also acquire new tools that could make work easier for them as could be seen from the indicated information need on mechanized system of farming (New trends) (51%). The findings in this study corresponds with the findings in the study carried out by Ogboma (2010) which indicated that fish farmers needed information in all areas of the occupation because of the urge to improve and increase yield. The study also found out that the least needed information by the farmers is information related to government policies (19.5%). The most likely reasons for this could be their level of education including the belief that government impact is minimally felt by these farmer.

#### **Sources and extent of use of agricultural information by the farmers**

To ascertain the sources including the extent of use of agricultural information sources by the farmers, the respondents were provided with a table containing varying information sources and requested to indicate the extent to which they utilize them. The information sources were categorized into the five (5) broad groups provided in the literature review area. Their responses were analysed and presented below.

**Table 3. Sources and extent of use of agricultural information by the farmers**

S/N	Information sources	Very often (%)		Occasionally (%)		Never (%)	
		Nigeria	Ghana	Nigeria	Ghana	Nigeria	Ghana
<b>Interpersonal</b>							
1	Family members	191(95.5)	196 (98)	9 (4.5)	4 (2)	-	-
2	Friends	178 (89)	184 (92)	22 (11)	16 (8)	-	-
3	Trade association/ union	42 (21)	60 (30)	26 (13)	21 (10.5)	132 (66)	119 (59.5)
4	Non-Governmental Organizations	-	-	-	12 (6)	200 (100)	188 (94)
5	Other farmers	118 (59)	142 (71)	54 (27)	48 (24)	28 (14)	10 (5)
6	Workshop/ Seminar	-	-	4 (2)	7 (3.5)	196 (98)	193 (96.5)
7	Community leaders	27 (13.5)	23 (11.5)	38 (19)	44 (22)	135 (67.5)	133 (66.5)
<b>Mass media</b>							
8	Television broadcast	22 (11)	48 (24)	48 (24)	79 (39.5)	130 (75)	73 (36.5)
9	Radio broadcast	38 (19)	72 (36)	53(26.5)	102 (51)	109 (54.5)	26 (13)
10	Newspaper	-	-	18 (9)	14 (7)	182 (91)	186 (93)
11	Cinema	-	-	-	-	200 (100)	200 (100)
12	Magazines	-	-	16 (8)	20 (10)	184 (92)	180 (90)
13	Billboards	-	-	6 (3)	12 (6)	194 (97)	188 (94)
<b>New Technology</b>							
14	Internet	-	-	12 (6)	11 (5.5)	188 (94)	189 (94.5)
15	Mobile phone calls and text messages	45 (22.5)	42 (21)	62 (36)	68 (34)	93 (46.5)	90 (45)
16	Social media (e.g. Facebook group, Twitter, etc.)	-	-	36 (18)	58 (29)	164 (82)	142 (71)
17	Listserve/Professional online group	-	-	-	8 (4)	200 (100)	192 (96)
<b>Library</b>							
18	Published Agricultural research outcomes	-	-	-	-	200 (100)	200 (100)
19	Agricultural textbooks	-	-	-	-	200 (100)	200 (100)
20	Pamphlets and Manual	-	-	7 (3.5)	21(10.5)	193 (86.5)	179 (89.5)
21	Bulletin and Newsletters	-	-	7 (3.5)	28 (14)	193 (86.5)	172 (86)
22	Exhibition and Displays	-	-	-	-	200 (100)	200 (100)
23	Film shows	-	-	-	-	200 (100)	200 (100)
24	Current awareness services	-	-	-	-	200 (100)	200 (100)
<b>Extension support</b>							
25	Extension Agent advisory visits	-	-	19 (8.5)	38 (19)	181 (90.5)	162 (81)
26	Field days	-	-	-	14 (7)	200 (100)	186 (93)

27	Demonstration/ Trainings	-	-	-	-	200 (100)	200 (100)
28	Agricultural film shows	-	-	-	-	200 (100)	200 (100)
29	leaflets	-	-	6 (3)	24 (12)	194 (97)	176 (88)

The result provided in Table 3 shows that sources of information accessed via interpersonal communication were mostly patronized by the farmers both from Nigeria and Ghana. Family members with the values of 95.9% and 98% followed by friends 89% and 92% respectively for Nigeria and Ghana had the highest acceptance scores. It was established in the study that another source via which the farmers both in Nigeria and Ghana often access agricultural information is through their fellow farmers (59% and 71% respectively). The study also found out that Non-governmental organizations and Workshop/ Seminar were not effective sources of information for the farmers from both countries.

For the agricultural information transmitted through the mass media, 11% of the respondents from Nigeria indicated that they access information via the Television often while another 24% responded occasionally. This result is slightly different from the response obtained from Ghana where 24% of the respondents accepted Television to be often while another 39.5% indicated that it is occasional. Radio on the other hand had slightly higher acceptance percentage rate for Nigeria and Ghana, respectively; 19%: 36% for very often and 26.5% and 51% for occasionally. This general low utilization of the sources accessed via the mass media was confirmed from the oral interview to be as a result of poor power supply experienced in these countries.

The response in relation to information sources accessed via new technologies shows that it is only mobile phones that received high acceptance value on being effectively utilized by the farmers. The others are grossly underutilized. Social media as an information source accounted for 18%: 29% while the Internet accounted for 6%: 5.5% occasional uses by Nigeria and Ghana respectively. This poor patronage could result from lack of fund to buy data including possession of inadequate technical skills. The interview outcome on this issue also corroborated with the questionnaire findings. It revealed that the obvious reason why mobile phones are effectively utilized is that majority of these farmers now have mobile phones as there are moderately priced android and smart phones made available in almost all markets in African. Ksoll and Aker (2016) also affirmed that the widespread growth of mobile phones coverage worldwide has offered new potential for increasing rural household access to information and public and private transfers.

On the other hand, agricultural information sources accessed via the library received the worst acceptance value. Farmers from both Nigeria and Ghana unanimously indicated that libraries are rarely utilized by farmers. The Interview outcome with the farmers revealed that the farmers see the library more as a formal setting for formal education. They assume that libraries are exclusively set up for educated people who either use them in advancing their education or for research purposes. This finding about the library as the least source of information for farmers in this study corroborates with the outcome of Dauda, Chado and

Igbashal (2009) study which identified that library had low percentage patronage as a result of the elitist nature of the library.

Extension support was equally not effectively utilized. The Extension Agents were found by the study to be very few and could not function effectively.

### **Factors militating against effective utilization of agricultural information**

The responses on the Factors militating against effective utilization of agricultural information by the farmers is tabulated in Table 4 below.

**Table 4. Factors militating against effective utilization of agricultural information**

<b>Factors</b>	<b>SA (%)</b>	<b>A (%)</b>	<b>D (%)</b>	<b>SD (%)</b>
Illiteracy	22 (11)	48 (24)	57 (28.5)	73 (36.5)
Language of presentation	14 (7)	52 (26)	80 (40)	54 (27)
Poverty	46 (23)	78 (39)	46 (23)	30 (15)
Unavailability of information materials in audio-visual format	64 (32)	102 (51)	34 (17)	-
High cost of Agricultural information materials	-	138 (69)	59 (29.5)	3 (1.5)
Inconsistent power supply affecting utilization of TV and Radio	27 (13.5)	78 (39)	69 (34.5)	26 (13)
Insufficient agricultural Extension officers	63 (31.5)	137 (67.5)	-	-
Exorbitant cost of data subscription for Internet access	81 (40.5)	119 (59.5)	-	-

Where SA= Strongly Agree, A= Agree, D=Disagree and SD=Strongly Disagree

The responses obtained established that exorbitant cost of data subscription for Internet access as well as inadequate numbers of agricultural Extension officers are the major constraint to farmers' information access. Unavailability of information materials in audio-visual format accounted for about 84% of the problem, poverty 62%, inconsistent power supply 52.5, illiteracy 34% and Language of presentation 33%. The findings corroborates with the result of Ogunbeni, Wakilu and Olateju's (2013) in which they identified the following as major problems encountered by farmers in accessing information: inadequate contact to extension agents (61.3%); inability to use media and tools of information (68.8%); low level of education (59.4%), etc.

### **Preferred formats and media for agricultural information communication by the farmers**

During the course of the interview, the respondents were asked the formats and media for information communication most preferred to them for receiving agricultural information. They unanimously responded that they would prefer information in audio and audio-visual formats. None of the respondents indicated interest in information resources in print formats. They were also of the view that the medium of transmission could be the local television channels, radio, film recordings on DVDs, YouTube films shared via mobile technologies within a group created specifically for this purpose.

### **Conclusion and Recommendations**

Information undoubtedly is relevant in the achievement goals. This is because it does not only help in reducing level of risk and uncertainty but empowers one to take the right decisions; it is crucial to the attainment of success. The study has established that farmers in Nigeria and Ghana need information in almost all aspect of farming but especially in the area of availability of fertilizers and subsidy. The major sources of agricultural information greatly utilized by the farmers are family members and friends through interpersonal communication while the library is rarely utilized. Exorbitant cost of data subscription for Internet access, provision of insufficient Agricultural Extension workers and non-provision of information resources in audio-visual formats were identified as the highest factors militating against farmer's effective utilization of agricultural information.

The study therefore recommends the following:

- The number of extension workers should be increased to ensure effective coverage of the farming zones thereby enhancing the benefits accruable from their presence in the communities
- The library should work together with the extension workers and other stakeholders in providing current agricultural information to farmers and also repackage agricultural information resources into farmer's preferred format of audio-visual. Same should also be translated into their local languages. This will encourage the farmers to effectively utilize the information resources
- Agricultural information dissemination currently carried out via television and radio especially in Ghana should be emulated by other African countries. This could be supported by organizing routine outreach programme centred on agricultural information dissemination. Mobile public address system should also be adopted in disseminating information to this group to avert access limitation by electric power supply
- The government, banks and other financial institutions should support farmers financially by either providing them with loan facilities or subsidy.
- Provision of highly illustrates magazines, manuals, handbills and pamphlets should be made for the farmers.

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