

Accessibility and Utilization of Agricultural Information: The Role of Communication Media in the Delivery of Information to Farmers in Nigeria

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Abstract

World over, Information is considered as a development resource. While to some view it as a strategic tool that aided development of many nations, be it developed or developing one. Even although this paper recognises the importance of information to human life, but however argued strongly that communication media through which such information is generated and conveyed is equally important but seems under estimated or neglected by the key actors. Realising fully the role of such media in the delivery of information to smallholder farmers in particular and to the entire farmers family in general cannot be disputed. This principally formed the basis of this paper. It explore the significant contributions of communication media for agricultural development especially shedding light on how best these media can be revitalised for for their optimum use by the extension agents for conveying information to the smallholder farmers for the nation's development especially for meeting the vision of the government for attaining food sufficiency in the country. For the paper to achieve its noble objectives, conceptual definition were identified and operationally defined. The rationale for consideration of media in information generation and delivery to farmers is highlighted. The paper equally discusses the types and characteristics of media used for agricultural information delivery services to farmers as well as the strategies that could promote the use of communication media by the smallholder farmers were equally discussed by the paper. Hence, the paper discusses the challenges as factors that could discourage the use of communication media and subsequently leveraging on proposed strategies for minimising the aforementioned challenges for future prospects and development especially for attaining food sufficiency in country.

Keywords:-Information; Accessibility, Utilization, Agricultural information; Communication media; Smallholder farmers, food sufficiency.-Nigeria.

Introduction

Agricultural information is an important factor that interacts with other factors of production. Productivity of other factors, such as land, labor, capital and managerial ability, can equally be improved by relevant, reliable and useful information. Information supplied by extension, research institutes, educational institutions and agricultural organizations helps farmers make better and informed decisions. Therefore, there is a need to understand the functioning of a particular agricultural information system in order to manage and improve it so as to meet up with aspirations and needs of the farmers (Demiryurek et al., 2008).

Information within the hands of the farmers means empowerment through control over their resources and decision-making processes. It can be noted however, that being an effective and efficient delivery system of essential information and technology services facilitates the clients' critical role in decision-making towards improved agricultural production, processing, trading, marketing. Food and Agriculture Organization (FAO, 2005) Points out that information is very important for rural development because well communicated information could resulted in improving the income of farming community and subsequently lead to raising agricultural productivity. Achieving sustainable agricultural development is less based on material inputs (e.g., seeds and fertilizer) but relied more heavily than on the people involved in their use. For achieving sustainable food sufficiency in the country, there is the need to focus on human resources for increased knowledge and information sharing about agricultural production, as well as on appropriate communication methodologies, channels and tools that can effectively and efficiently yeild better result (Maningas et al. 2000).

Agricultural information is considered as an essential input to agricultural education, research and development and extension activities. Different kinds of information are required by different kinds of users for different purposes. The potential users of agricultural information include government decision-makers, policy-makers, planners, researchers, teachers and students, program managers, field workers and of couse the most primary ones are farmers (Zaman, 2002). No matter what value the information has to farmers must be appropriately communicated using ideal media. In most cases, if information is available, there is sometimes a greater need to package and repackage it for onward dissemination from generators to recipients with the intention of getting feedback. To get to the recipient or audience, one needs a system, i.e media as a channel through which information can be delivered. To reach the recipient, the media has to be available, accessible and

relevant. Once this is done, communication has taken place. Next, is to follow the actions of the recipient to find out if the communicated messages and ideas have had the intended effect (Omosa, 1998).

According to World Development Report (2008), it states that “in the agriculture-based countries, which include most of the Sub-Saharan Africa, agriculture and its associate industries are essential to growth and to reduce mass poverty and local insecurity....., submitting that using agriculture as the basis for economic growth in the agriculture-based countries requires a productivity revolution in smallholder farmers”. Despite the enormous benefits derivable from agriculture, the average Nigerian farmer lacks access to the most basic social amenities, as well as lacks improved information on the varieties of inputs and modern farming implements. Yet, it is in the researchers’ belief that smallholder farmers in Nigeria have a greater role in national development. It is further argued that while agricultural productivity in developing countries continues to decline despite technological innovations, the population of these countries continues to expand beyond food production capacities. This problem could be attributed, among others, to the inappropriate choice of communication media and consequently ineffectiveness in information delivery, among others (Aina: 2006).

An examination of the available literature indicates that a number of studies, for example, Onu (1992), Akande (1999), Aina (2007), Eamin and Roknuzzaman (2012), has found variables that influence agricultural information use by farmers. Some of the results of these studies have shown that the socio-economic and personal characteristics of farmers have some positive relationships with the use of agricultural information. Diachronically these researches, despite their scope and depth, were carried out through approaches, such as the relationship between one and a combination of other attributes except the use of communication media for agricultural information. This is in spite of the fact that the low literacy and high poverty levels of these small holder farmers could militate against their access to, and use of, communication media for agricultural information. Synchronically then, it is in view of this gap that this paper becomes imperative as an attempt to examine the communication media used by extension agents for the delivery of agricultural information to smallholder farmers in Kano State, Nigeria.

Conceptual framework

Communication is not only a part to us but central to human interactions and activities. It is the most basic and one of the earliest activities of human beings (Agbamu, 2006). Different scholars have offered different meanings to the concept of communication. Communication is a process by which information is passed from source to receiver (Adams 1984). In similar vein, Age (2009) defines communication as a process in which the participants create and share information with one another in order to reach mutual understanding. In this process, emphasis is on the interactive process of information sharing overtime to the ways in which participants interpret and understand information. While in another perspective, communication is a dynamic and cyclical process by which a message or information is initiated or conceived by a source (or sender) who decodes and purveys it through certain channels to a receiver who decodes the message and, consequently, shows some effect and acts upon it by giving feed back to the sender that it has been received and understood or other wise (Age, Obinne and Demenongu, 2012).

From the above definitions, it is clear that no acceptable definition of the term ‘communication’ was agreed upon the world over. Therefore, the meaning of communication is as diverse as the authors’ differences in background, exposure and perception. Most of the above definitions however, imply the involvement of actors, verbal utterances, messages, the means of transferring information and an expected change in mood in general. For instance, from the definition of communication it has been emphasised that the essence of communication is to bring about changes or the modification of the receiver’s behaviour in terms of knowledge, attitudes or skills. In other words, the desired effect of communication is alteration in the overt and covert behaviour of individuals. As good as the definitions are, little defect could be observed. The intellectual defect of these definitions, from present day conception, is that communication is seen as a one-way process whereby the receiver of information or idea is passive. These definitions inadvertently present the view that the communication process is a linear phenomenon in which the receiver of an idea is inactive.

Communication, therefore, is not a one-way process, as Agbamu (2006) argues substantially, but that it is a two-way process in which the sender and the receiver of information are seen as active participants who are involved in an exchange process and, therefore, swap roles. From the forgone, it is now clear to state that successful communication is achievable when the sender and the receiver of message exchange ideas, facts, feelings or information (messages) through a channel (media) that has the capacity to transmit or transfer the message sometimes with the meaning inferred (Agbamu 2006). In another perspective, Adams (1982) has since defined media as any materials, objects, instruments or systems which serve to communicate information, including leaflets, farming press, other written and printed materials, all types of cinema films, radio and television and the video system. Communication Media, be it print, electronic or ‘new’ media, is hardware and software technology, as well as technique/presentation, art as well as science and skills as well as perspectives. Media consolidates the performing arts, literary arts and fine arts. It is also used in providing farmers with

agricultural information for farm improvement (Desai, 2008).

Media for the delivery of information to farmers

Communication media is, therefore, a vital tool in any organization, including extension service organizations. It is the “never or system” (Ogunbameru: 2001). This makes organizations hire and permit their members to cooperate and coordinate communication. Ogunbameru (2001) posits that to communicate effectively, we need to be familiar with the communication process and all the factors involved. Knowing these factors can help us to plan and analyse situations, solve problems and in general do better jobs. It is, therefore, pertinent for extension workers to use the desired media for disseminating information on certain innovations in such a manner that those farmers can easily understand, remember, apply and use.

Expectations from the media as vehicle of change is not over stated ever in human history (Desai, 2008). Desai further asserts that the literature of the last five decades since the ‘passing of traditional societies’ clearly shows the evidences that communication media contributed to national development. Media can play a significant role to bring about economic, social, political and behavioural changes in any given society of course farm families inclusive. But the traditional ‘public service’ role of media has undergone a dramatic change in developing societies like Nigeria. Therefore, for farmers to benefit from such media, they must first have access to them and learn how to effectively utilize them in their farming systems and practices. This should be the function of agricultural extension agencies in Nigeria. These extension agencies make use of different approaches, means and media in transferring improved agricultural technologies and innovation to the end users (farmers). For instance, discussing on the significance of media to farmers in particular and agricultural enhancement and development in general, mass media methods, in agricultural information dissemination generally, are useful in reaching a wide audience at a very fast rate. They are useful as sources of information to farmers and as well constitute methods of notifying farmers of new developments and emergencies. They could equally be important in stimulating farmers’ interests in new ideas and practices (Ani, 2006). Mass media are important in providing information for enabling the rural community to make informed decisions regarding their farming activities, especially in the rural areas of developing countries (Lwoga, 2010).

It has been emphasised that extension work can be made easier and the member of individuals reached can be increased by the use of media. To further support the point mentioned above, Obinne (2004) explains that the use of media for communicating agricultural information enables extension staff to operate more effectively and further attract relievers to motivate them. Communication has a lot of importance to humans. The following points tell the various ways in which it attains such importance. For instance, it is used to:

1. Express and Exchange ones’ Ideas.
2. Express one’s feelings
3. Proffer order, information, advice, instruction, suggestion, request, appeal, and complaint.
4. Motivate and inspire others.
5. Warn people.
6. Demand something
7. Persuade others and Build stronger relationships and bonds with others
(Mohammed,2016p.143-44)

Types and Characteristics of communication media for the delivery of information to farmers

The likely question that could emerge here is, what are the types and characteristics of communication media used to deliver information to smallholder farmers for their farming development? To address this question, the paper explore a number of studies that has been conducted and reported appropriately. Such studies include that of Heshmatollah, Karim and Reza (2008) who reported various media for sourcing and dissemination of information to farmers. Others are that of Sa’adi.(1998), Tural and Noojipady (2002), Arokoyo (2003), Chizari and Dinpanah (2005), Maddox and Mustain (2003) and Prakasha (2003) and Rogers (2005) whom defined the message source as an individual or institution that originates the message and others explained that the message source can be different in each country. Ekoja (2003) shows that extension agents, neighbours, other farmers, opinion leaders and organized groups can be sources of information for farmers in Nigeria. Nouri (2003) explain that internet and wireless telephone can be seen as a new source of information in Iran (Nouri, 2003). Annerose (2003) indicated that mobile, internet and electronic publications can be as new sources of information for farmers in Senegal (Annerose, 2003). According to Ekoja (2003), all the channels of communication are not preferred equally by farmers. Preference depends largely on the farmers who have been sensitized to a particular media. On the other hand, Rogers (2003) explains that the most commonly used media of communication include mass media (radio and television), print media (pamphlets, brochures, newspapers, labels and magazines) and inter-personal media (seminars, demonstrations, field days, exchange visits and agricultural shows), among others. Farmers’ use of different sources of information is an important way in the adoption-diffusion research in extension education (Ahmed, Idrees and Naem, 2009).

Communication media in agriculture, according to Agbamu (2006), refers to planning and management of agricultural information and methods for effectively communicating agricultural information in order to bring about desired changes in farmers' behaviour and their farming practices for improved living. Furthermore, he clarifies that extension communication involves both agricultural and non-agricultural issues, such as an adult education programme, youth development, environmental protection and rural health extension. In terms of scope, agricultural communication involves the use of media to communicate information on crop production and protection, soil management/conservation, livestock production, farm management, forestry, fisheries, agro-genetic products, agro-chemical, post-harvesting techniques, farm mechanization and other agricultural description (Ani, 2005). Discussing on the nature of agricultural communication, Agbamu (2006) highlights that a lot of effort is required to make an audience understand and get convinced about the agricultural innovation being promoted. The usual motive of agricultural communication is to get farmers to accept a given technology and influence them to adopt it in the hope that it will improve their situation and consequently enhance their income.

Traditional media was discovered several years ago as a means of development and educational communication (FAO, 2009). It has remained a significant tool in the process of motivating people in the desired direction. It is the most appropriate media for bringing about changes in attitude, as it is in formal and unscripted in nature. This, in turn, helps rural farmers to accept social changes. For example, the traditional media helps to create awareness about the need for cleanliness in your neighbourhood. It can be the most effective in rural areas, tribal areas and among illiterates, as they may not understand the language of modern communication. In fact, traditional media is nothing but the tool of communication having special characteristics to express the socio-cultural, religious moral and emotional needs of the people of society to which they belong (FAO, 2009).

In Nigeria, various types of communication media are being used to transmit agricultural information to farmers in line with the National Policy on Agriculture. The communication media include farm magazine, leaflets, newsletters, newspapers, pamphlets and radio and television, among others (Dare, 1990). Others are "extension agents, individual farmers, farmer-to-farmer, contact, print media in the form of newspapers, magazines, newsletters, leaflets, pamphlets, and posters and electronic media such as radio, television, films, slides and film strips exist and have been widely used to disseminate information to farmers" (Oyekunle, Apantaku, Adebayo and Azeez, 2007). In the same vein, Information and Communication Technology (ICT) gadgets such as the Global System of communication service popularly called GSM Internet and its related services, etc. are increasingly being used as powerful tools for improving the delivery of agricultural information and services. As a broad tool for providing local farming communities with scientific knowledge, ICT heralds the formation of knowledge societies in the rural areas of the developing world (Shark et al, 2004 in Mohammed 2016p.144). The communication media used by farmers are commonly classified by Adam (1982) as follows:

1. Mass media, such as radio, television, newspapers leaflets, etc. from government or commercial sources.
2. Personal contact with extension workers and the representatives of commercial firms, either on an individual basis or in small groups.
3. Personal contact with other farmers, among others.

Most research on the effects of different media of communication directed towards farmers has been conducted in economically advanced countries, for instance:

1. The degree of farmers' contact with different communication media at different stages in the adoption process, and
2. The effects of different media on the different categories of adopters (Adams: 1982).

In a similar manner, Obinna (2002) and Ani (2005), among others, have reported the following types of communication media that are used to deliver agricultural information to smallholder farmers by extension agents as presented in the table 1 below:

Table 1:Types of Communication Media

S/N	DEMONSTRATION	PRINT	ELECTRONIC	BROADCAST
1.	Mass fluid day/oral media	Posters and charts	Slides and overheard and opaque projections.	Radio broadcast
2.	Individual contact	Photographs and drawing	Chalkboard, fanned board and magnet board.	Television programme broadcast
3.	Specimen	Posters	Film strips with soured commentary	Motion pictures
4.	Models	Notice Board		Loudspeaker (vehicles).
5.	Lecture speeches	Newspaper/magazines.		Falk traditions, songs
6.	Demonstration block flip book)	Drawing/Diagrams		Sound films television
7.	House to House visit	Circulars		Telephone call
8.	Farm visit	Bulleting issuing		
9.	Agric show	Letter		
10.	Trade fair	Leaflet		
11.	Exhibitions	Brochure		
12.	Informal contact			
13.	Lecture speeches	Newspaper/magazines.		Folk traditions, songs
14.	Demonstration block flip (book)	Drawing/Diagrams		Sound films television
15.	House to House visits	Circulars		Telephone calls

Source: Obinna (2002) and Ani (2005)

While discussing about the features of communication, Agbamu (2006) has identified the following as some of its characteristics:

1. Communication is basically a process which is continuous and dynamic. It is not static, rather it is an ever changing act. It is a process that has no end; it is a by-product of interaction among and between individuals.
2. Communication employs channels to convey messages.
3. It involves the interdependence of persons because it is a two-way process. The sender of a message will become a receiver when the initial receiver responds to the message. There are participation and feedback in a communication encounter.
4. Communication can also take place within an individual, i.e. where the individual processes raw sensory data into consumable information (interpersonal communication)
5. It takes place at many levels and primarily involves expression, interpretation and response.
6. Communication can take a non-verbal form when symbols are involved or used.
7. The effectiveness of communication varies from one communication situation to another.

Information flows in many directions; it could be in the direction of top-down, from the bottom stratum of a social milieu to the upper hierarchy of personalities in a society. Alternatively, information can flow from one part of a town to the other or among people of similar characteristics.

There are four (4) major types of communication, the vertical, the horizontal, the diagonal and the cyclical dimensions. In vertical communication, the source of a message is someone of higher or lower status and the receiver some body that belongs to an opposite stratum in a social stratification (a top-down or bottom up communication situation).

Agricultural communication in the context of agricultural extension services is a process by which extension workers exchange attitudes, and share knowledge and skills on behalf of their organizations with the farm family through a medium that each understands and uses the message. Agricultural communication often takes place within the agricultural knowledge system, which is made up of synopsis and subsystems, as identified by Agbamu (2006) thus:

1. Technology Development System (Researchers),
2. Technology Dissemination Sub- System (Extensionists)
3. Technology Utilization Sub-System (Farmers and Users).

For instance, agricultural extensionists communicate with technology developers (researcher), and extension workers communicate with other farmers. In a similar vien, field extension workers communicate with farmers as individuals and as a group. Farmer to farmer communication does flourish and researchers also

communicate with farmers as the end-users of technology. A technology in this context is productive in terms of increased output or saving in cost over an established practice. It could be machines, equipment in a given process in production, an improved agricultural practice, improved generic materials and the technique of performing an operation. Communication will not occur between each of the agricultural communicators and receivers through the simple transfer of agricultural technology but through a certain channel or media.

Strategies for the promotion of communication media use

A number of discussions on the literature regarding how best to encourage and promote the use of communication media for the delivery of information to smallholder farmers to improve in their farm decision have been explored by the paper, some of which including that extension agents' and farmers' communication factors include human relations, communication behavior and skills, and role performance should be accorded serious priority by the agents. The factors, according to Waisboard (2006), Agbamu (2006), Olowu (1989) could either enhance or jeopardize the success of a development programme. It therefore means that they are salient to effectiveness of messages.

Although farmers usually have rich knowledge of local conditions and valuable practical knowledge or experience of how best to successfully exploit their environment, they require timely and innovative information generated from research and development to cope with exigencies of weather and pestilence should be promoted and enhanced by extension agencies and all those concern (Correa et al, 1997 cited in Ziip 2002).

In another perspective Olawoye (1996) observed keenly that agricultural messages could enhance the productivity of farmers when they have access to it. Jonston (1986) observed that extension programmes have been largely tailored to provide sufficient information that is relevant to rural farmers. Mass media communication therefore, should be a major concern in the dissemination of agricultural information. A mass media is a form of technological apparatus which is capable of reproducing the same message simultaneously for a large number of people over a given period of time. This may be through large printing press, broadcasting transmitters, film-camera, bill board exhibitions and audio-visuals. The last decades have witnessed a growing awareness of the importance of mass media in the development of agricultural productivity overtime (Davies 1992 as cited in Olowu and Oyedukun, 2000). Similarly, different sources and channels of agricultural information can play an important roles to meet this requirement. Television, radio, newspaper, magazines and the other sources and channels of agriculture information should also be given proper attention (Yadav, Khan and Kumar, 2011). Radio and television have been more extensively used in most developing countries. Television clubs or groups in India, Sudan, Ivory Coast, Uganda and Brazil have been successful in transferring and spreading of information to farmers (Wele, 1991). Radio rural forums, radio listening groups and clubs as an extended strategy have been introduced in many countries, including Nigeria (Dimelu and Anyawu, 2004). As one of the most powerful and the fastest communication media, radio reaches different people at all levels that understand the language(s) of transmission etc, should be promoted more seriously.

With the development of Information and Communication Technology (ICT) gadgets, such as mobile phones popularly called GSM, Internet and its related services, etc, are increasingly being used as powerful tools for improving the delivery of agricultural information and services. As a broad tool for providing local farming communities with scientific knowledge, ICT heralds the formation of knowledge societies in the rural areas of the developing world (Shark et al, 2004). This can be continuing to harness and integrated in to programme and strategies of providing state of the art information to smallholder farmers for farming improvement and development.

Challenges and way forward

No development has ever happened all over without encountering one form of challenge or the other so also communicating agricultural information to smallholder farmers. The following were identified as challenges that could discourage extension agents to deliver effective and efficient information to farmers using various communication media.

1. Absent of increase in funding for public information could not allow for an increase in the accessibility of public information to farmers.
2. Absent of Pro-smallholder farmers policy may not encourage promote them to benefit more on the planning and implementation of government programme todo with small farmers and their needs of course media for communication agricultural information to them.
3. Lack of knowledge of agricultural information by extension agents may weaken the support for public information which is a major priority in agriculture.
4. Higher illiteracy rate(absent of western education) and cultural differencies among smallholder farming community in Nigeria could negate them from accessing state of the arts media such as internet GSM, and related divices for agricultural information for their farms decisions
5. Infrustructural constarints such as poor access road among farming communities could not encourage

stakeholder to deliver agricultural messages and information to smallholder family especially in remote rural areas of the country.

6. Absent of ICT based agriculture could not allow access to recent and up-to-date information such as internet based information etc among other.
7. Extension agencies and agents in most cases do not accord much priority to the needs of smallfarmers but rather provide information without accomodating their needs this could not yeild best and better results
8. the information exchange (communication) through networks(extension agencies,research institute, educational institute, farmers etc) among the system components is critically important for the successful technology generation and information transfers at the moment is lacking

Conclusion

In conclusion, a number of issues related to agricultural information and communication media by extension agents to deliver agricultural information to farmers in Kano state has been discussed by the paper. Conceptual issues and rationale for media considerations in communication of agricultural information has been dealt explored, role of the media in agricultural information delivery, their types and characteristics has been highlighted and discussed. Similarly, strategies on how best to promote the use of the media for the delivery of information to smallholder farmers as well as the challenges as factors that negate the use of communication media in information delivery to farmers has been explored and measures on how best to minimise the challenges identified were equally proffered by the paper for betterment and more importantly for attaining food sufficiency in the country.

Having discussed some of the constraints for effective application and use of communication media for agricultural information to farmers, the following could serve as startegies for addressing the challenges identified:

1. Government should accorded priority to agriculture in general and extension communication of new technologies in particular especially to smallholder farmers thereby providing sufficient fund for attaining food sufficiency in the country
2. Pro-smallholder farmers policy should be enacted to catter for the general well being of farmers and their needs information and communication media inclusive
3. There should be training opportunities for extension agents to keep face with developmentin the field and be able to sources for more information that could assist farmers not only to address their immediate but their future needs.
4. There should be continuing education opportunities for smallholder farmers to be able to appreciate western education as this will go along way in addressing most of their reading and writting concerns.
5. For effective dissemination of agricultural information in rural communities by construction of good access roads that would lead to all the remote rural communities in the country.
6. Majority of the rural farmers are not having access to most of the required agricultural information. Therefore, application of ICT-based agriculture information support systems is very much important for the dissemination of agricultural information and technological knowhow by rural farming community.(Mohammed,2016p242-5).
7. The information must be based on farmers' needs, internet used as a mode to transfer the advanced agricultural information to the farming community. Farmers can be illiterate and speak a local language and they are not expected to use the system directly respectively. So these conditions also should be considered when implementing better information systems for agriculture and rural people.
8. The information exchange (communication) through networks (extension agencies,research institute, educational institute, farmers etc) among the system components is critically important for the successful technology generation and information transfers need to be ensured and practiced for deveopment of smallholder farmers and farming in general.
9. Farmers community at all level should accord serious priority to information in their daily farm decision as this will go along way in attracting government and other donor agencies to dedicate more funding for agriculture in the country particularly for assisting smallholder farmers development.
10. For easy access and effective utilization of agricultural information in this digital age, there is the need for the establishment of information centers. Such information centers would be able to provide the rural farmers with the desired agricultural information in a format that would be comprehensible to them, taking into cognizance the prevailing high illiteracy rate, cultural differences and limited technology (Aina, 2007).

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