PREFERRED CHANNELS OF AGRICULTURAL INFORMATION DISSEMINATION FOR AGRICULTURAL STUDENTS BY NATIONAL AGRICULTURAL EXTENSION RESEARCH AND LIAISON SERVICES, AHMADU BELLO UNIVERSITY, ZARIA

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ABSTRACT

This study investigated the preferred channels of agricultural information dissemination for agricultural students by National Agricultural Extension Research and Liaison Services (NAERLS), Ahmadu Bello University, Zaria. The study aimed at finding out the preferred channels of disseminating agricultural information to agricultural science students and the challenges agricultural science students faced in the channels of agricultural information dissemination by NAERLS, ABU Zaria. The study adopted quantitative research method using descriptive research design. The population of the study was 995 and a sample size of 320 was drawn for the study from agricultural science students in Faculty of Agriculture, ABU, Zaria. Questionnaire was the instrument used. In order to incorporate all respondents in all levels, proportionate stratified random sampling technique was used in selecting respondents for the study. Data collected were sorted and analysed using frequency tables, simple percentages and descriptive mean of Standard Deviation. Findings revealed that agricultural science students of Ahmadu Bello University Zaria preferred most of the channels of agricultural information dissemination. But they are also faced with attendant challenges. Consequently, the study recommended that NAERLS should enhance their services alongside the dissemination channels in order to boost satisfaction. Also, efforts should be intensified on creating a pact between NAERLS, their international agencies and their immediate environment which they are expected to serve on the available services to mitigate the challenges faced.
Keywords: Information Dissemination, Empowerment, Agricultural Extension Information

Introduction

Dissemination of information to intended user marks the climax of Information provision, but greatly depends on the channels used in disseminating the information. Information dissemination is a calculated and deliberate attempt by an individual or a group to reach a target audience for purposes such as empowerment, Self-reliance, health, education, etc.). Dissemination of information is central to all discipline while the success of effective dissemination is highly hinged on the most patronized channel. There are different information dissemination channels that offers diverse users with opportunity to receive information not minding geographical boundaries. Therefore, information dissemination channels are critical for information users especially in the teaching, learning and research of university students who are the anticipated researchers, scientists and professionals in the field of agriculture.

In Nigeria, particularly, the National Agricultural Extension Research and Liaison Services (NAERLS) is saddled with disseminating agricultural innovations and information

services for improved production. But due to complacency towards essential agricultural information dissemination, knowledge, research and production has dwindled. The country now supplements its agricultural production for imports of food and agricultural materials from other countries (Anderson, 2010). The place of agricultural information dissemination to students cannot be overemphasized because access, retrieval and awareness of such information sources are necessary bearing in mind that such disseminated information are reliable and dependable because they emanate from reputable institutions established by government for such noble purposes such as agricultural information provision, dissemination and services.

Problem Statement

Viable Agricultural information dissemination (AID) is supposed to occupy a central place in agricultural development, research response and knowledge sharing with all agricultural stakeholders. The students in particular have agricultural information needs for empowerment, support and as path to prosperity. It implies that, information dissemination is cardinal to these group of upcoming leaders in the field of agriculture. Despite these assurances, they are faced with limited choices because of the dearth of information that have emanated and disseminated particularly by NAERLS whose primary mandate is to disseminate information on agricultural innovations, best practices, production yields, market trends and research packages. Could this be blamed on the undergraduate students of Ahmadu Bello University, Zaria finding it difficult to embrace agriculture for their empowerment knowing they have limited choices in national job security?

This study becomes necessary to find out from students their preferred agricultural information disseminating channels and constraints from NAERLS, Ahmadu Bello University, Zaria, Nigeria and as it affects them on empowerment choices.

Research Questions

The following research questions were raised for the study:

1. What are the preferred channels for accessing agricultural information services by agricultural science students in NAERLS?
2. What challenges do agricultural science students face in utilizing agricultural information services in NAERLS, ABU Zaria?

Literature Review

Channels of Agricultural Information Dissemination

The channels used for agricultural information dissemination cannot be down played in students' developmental stages. Anaeto, (2012), Hybells and Weaver (2015) perceived effective information dissemination channel as a means to general livelihood that raises standard for better and meaningful ways of life. With much harp on best practices in agriculture, agricultural knowledge shared showed transition from the traditional interpersonal methods such as on-farm demonstrations and conferences, to mass media methods, such as publications, computer-assisted instruction, home study and interactive video and tele dissemination (Al-sharafat, 2012). Earlier, Hybells and Weaver (2015) observed that the use of mass media (television, radio telephones, newspaper apps) and ICT facilities have the potential to greatly increase the efficiency of individual practitioners of agriculture, in this case students, so channels of dissemination is a sine qua non for effective information use.

In view of the above, there is an urgent need to determine the most preferred channels students elicit to access agricultural information. Bello and Schwartz, (2012) in their study on the determination of preferences for available agricultural information transfer, noted that, designing effective and efficient method of information dissemination aided extension workers in reaching out to students. Bachu (2013) stressed that the channels of agricultural information dissemination enhance adoption and acceptability of practices. Therefore, the development and testing of agricultural information channelling and system based on Agricultural Information Dissemination System (AGRIDS) is vital to agricultural production practices by students.

Anderson and Feder (2012) reported that, an effective Agricultural Information Dissemination (AID) channel is necessary for transferring of information which consolidates Farmer Decision Support Framework (FDSN). FDSN is a framework created to assist both producers and users of agricultural information in transfer and access to information. The dissemination of information collected from sources such as publications, websites, agricultural advisors etc around the globe are channelled through FDSN in order to meet the needs of students.

Bachu (2013) averred that students prefer the customized information channels for their local situation particularly crop production. A probable premise of student's expectations disseminating information through these sources and distributing it cannot be ruled out because Mathur and Sinha (2013) argued that it is often with less challenge. Also, the Internet as channel for information dissemination is patronised by innovative students who use information dissemination technology to seek information and conduct their agricultural businesses as well as make informed decisions.

Similarly, Fedale (2010) reported that with the growth and adoption of Information and Dissemination Technology (ICT) as channels of agricultural information dissemination in 2009, World Bank statistics showed that considerable population preferred mobile phones as channels of agricultural information dissemination. This is seen to have facilitated disseminating agricultural information to students. Also, the usefulness of effective approach to disseminating agricultural information using technology generation and dissemination is widely acknowledged by Nagel (2009), Fedale (2010), Swanson & Peterson (2013) and Roling (2013), as second to none in reaching the students although they are sometimes criticized as abstract.

To this effect, Diepeveen (2008) explores the holistic focal points for effective channels of flow of agricultural information dissemination between students and the extension bodies. These components used in analyses of these channels in agricultural information dissemination

consist of technology generation, technology transfer, technology utilization, and technology policy (Sand, 2014). Mostly they are established by governments to improve and enhance agricultural information dissemination between students and extension personnel. Their functions and linkages related to the flow, channel and feedback of technology and information in the system which defines the component (Wheeler 2008). Diepeveen (2008) outlined the ways of disseminating agricultural information for effectiveness and noted that they are not far from planning, administration and implementation of research activities to develop, assess, adapt and test improved agricultural technology for farmers and other users.

However, because the natural environment strongly influences information dissemination between extension planning and operations, Friedman (2011) suggested that proper channelling of technological needs of students in different agro ecological zones is essential for consideration for effectiveness. Differences in temperatures, rainfall, soil types, evapo-transpiration, should reflect in the diversity of farming conditions and production systems which could improve effective channels of agricultural information dissemination modes. Schrams (2010) put forward that agricultural information dissemination channels should mostly encompass face-to-face training, training products such as manuals and videos, or information and dissemination technologies (ICTs), such as radio and short message services (SMS). Contado (2009) sees the most effective systems as two-way dissemination channels that combine different modes which is why a successful agricultural information dissemination system can be described in terms of how dissemination channels flows, why and how.

Generally, in agricultural information dissemination, both interpersonal dissemination channels and mass media have been widely applied to disseminate information. Okwu&Obinne (2009) suggested that whichever preferred channels of dissemination to be adopted should be inclusive to cover extension agents, students, farmer-to-farmer contact, mass media newspapers,

magazines, posters, smart phones, radio, television, film, slides and file strips. Okwu&Obinne(2009) further concluded that a popular generalization in disseminating research information is that interpersonal dissemination is more effective in agricultural information dissemination than mass dissemination. They argued that mass media utilization, though necessary to achieve economies of scale, are inferior to personal contact as means of disseminating information students on utilization of agricultural information.

Challenges in Agricultural Information Dissemination

Information dissemination channel for whatever purpose is not without challenge. In developing countries like Nigeria, technologically, the use of mass media in agricultural information dissemination in the absence of education, technical skills, appropriate infrastructures and material resources is unlikely to yield result. Even though literacy level is not a pre-requisite for the use of electronic media, it cannot be effectively used in multi-lingual societies therefore constitute a challenge for students (Sallam 2012). Also, the mass media outfits, according to Lionberger and Gwin (2015), constitute unusual top-down structures with limited scope for student's participation in the process of general information dissemination and access and also exhibits challenge in the inability to narrow geographical distance without obvious bias.

Interpersonal mode of agricultural information dissemination to students on its part has the challenge of being costly in terms of workforce requirements, time and clientele's movement compared with mass media (Aker, 2010). Wheeler (2010) and Anderson & Feder (2012) observed that such interpersonal visits could simply degenerate into personal services or into personal visits. Abduallhi (2013) argued that there are bound to be problem in dissemination channels if the extension agents are in disparity in handling dissemination technologies.

In the broadcasting industries, Ozowa (2011) noted that poor reception quality is one of the obvious constraints in the use of broadcasting media in disseminating agricultural

information. This has affected the flow between students and extension services. For many extension workers, tapping additional income sources is a question of physical survival. Therefore, quality performance is further impeded by policy, integrity, low educational qualifications and lack of advancement possibilities (Swanson, Farmer and Bahal, 2014).

An understanding of AID's challenges is an important step in planning effective information dissemination activities and coordinating them with research. Poor linkages between research and extension agents are major constraints in technology flow in many countries (Al-sharafat 2012, kaimowitz, Syder and Engel 2014; Eponou 2016). The linkage problems are of two types: those affecting feedback from students to research and extension and those relating to coordination and cooperation between research and extension. In both cases, extension managers can improve the situation by developing a linkage strategy and allocating responsibilities and adequate resources to curb these challenges.

Methodology

Quantitative research method was adopted for the study using survey research design. This is because it is flexible, economical and suits numerical processes of data collection, analyses and interpretation (Meriwether 2013). Also, its choice was based on the fact that the research relied primarily on the collection of quantitative data. The targeted population for the study was the whole 995 undergraduate student of the Faculty of Agriculture, Ahmadu Bello University Zaria, Kaduna state comprising 100 to 500 levels as at 2017/2018 academic session. The researcher adopted a proposed table of sample size determination by Cohen, Manion & Morrison (2011) and that of Research Advisors (2013). They proposed that if the population of a study spans between 900 and 1,000, a sample size of 278 can be drawn conveniently with a confidence level of 95% and a margin error of 5%. To this effect and to minimize error, a sample size of 320 respondents was drawn. Proportionate stratified random sampling technique was used to select the sample size because the respondents are in different levels. Hence, strata number divided by

total population multiplied by total questionnaire administered to arrive at copies of the questionnaires distributed to a stratum. While the copies of the questionnaires per strata divided by total questionnaire multiplied by hundred to arrive at percentage distributed per strata (Research Advisors, 2013).

A self-developed and vetted questionnaire was used for collection of data for the study. Face and content validity test were conducted to ascertain the validity of the instrument while the reliability was based on Cronbach's Alpha Coefficient Reliability Index at 0.833. This means that the instrument is reliable since the index is above 0.5.

A total of 320 copies of the questionnaire were directly administered to the students. This was done by the researcher and four research assistants from the Faculty of Agriculture. The distribution of the questionnaire was face to face to and in the faculty, lecture rooms in Samaru, campus. This exercise spanned 6 weeks because the different levels were taken one at a time to ensure optimal return. The data collected from the field was analysed using descriptive statistics of mean and standard deviation, frequency tables and percentages.

Findings and Discussions

Table 1: Preferred channels of Agricultural Information Dissemination by Students

N	Statements	Respondents			Total	Mean	SD
		P	NP	UD			
1	I prefer Recommended Practices	238(80%)	60(20%)	0(0%)	298	3.65	1.03
2	I prefer Newsletter	217(72.8%)	79(26.5%)	2(0.6%)	298	3.15	1.12
3	I prefer Extension Bulletins	203(68.1%)	95(31.8%)	0(0%)	298	3.89	0.98
4	I prefer Extension Agents	195(65.4%)	103(34.5%)	0(0%)	298	2.92	0.88
5	I prefer Reports	199(66.7%)	92(30.8%)	7(2.3%)	298	2.89	0.83
6	I prefer Extension	205(68.7%)	83(27.8%)	10(3.3%)	298	3.89	0.82

	Publications						
7	I prefer Leaflets	200(67.1%)	97(32.5%)	1(0.3%)	298	2.95	0.88
8	I prefer Pamphlets	197(66.1%)	101(33.8%)	0(0%)	298	2.73	0.90
9	I prefer Television Sets	215(72.1%)	78(26.1%)	5(1.6%)	298	3.88	1.61
10	I prefer Newspaper Articles	212(71.1%)	84(28.1%)	2(0.6%)	298	2.65	0.81
11	I prefer Researches	235(78.8%)	63(21.1%)	0(0%)	298	3.47	0.81
12	I prefer Mails	215(72.1%)	83(27.8%)	0(0%)	298	2.58	0.94
13	I prefer Agricultural Shows	184(61.7%)	114(38.2%)	0(0%)	298	3.58	0.82
14	I prefer Guides	184(61.7%)	105(35.2%)	9(3.0%)	298	2.58	0.97
15	I prefer Field Days	215(72.1%)	83(27.8%)	0(0%)	298	2.55	0.67
16	I prefer Telephones	190(63.7%)	102(34.2%)	6(2.0%)	298	3.45	1.49
17	I prefer Training and Visits	220(73.8%)	77(25.8%)	1(0.3%)	298	2.39	0.64
18	I prefer Workshop and symposium	212(71.1%)	85(28.5%)	1(0.3%)	298	3.21	0.54
19	I prefer Personal Contacts	191(64.0%)	82(27.5%)	25(8.3%)	298	3.19	0.66
20	I prefer Reviews	102(34.2%)	171(57.3%)	25(8.3%)	298	3.19	0.64
21	I prefer Radio Sets	180(60.4%)	100(33.5%)	18(6.0%)	298	3.17	0.40

Source: Field Study, 2018

Key: P=Preferred; NP=Not Preferred; UD=Undecided; SD=Standard Deviation

From Table 1, all the items stated for the respondents in order to assess their preferred dissemination channels of agricultural information services in NAERLS are of mean values shown above. Table 1 revealed that in general, respondents preferred most of the channels of disseminating agricultural information to agricultural student. However, it is obvious that 238 (80%) with mean value of ($\overline{x}$=3.65; SD1.03) is observed for recommended practices and, 235 (78.8%) with mean value of ($\overline{x}$=3.47; SD0.81) for researches are most preferred. The result also

revealed 220 (73.8%) with mean value of ($\bar{x}$=2.39; SD0.64) for training and visits, while 217 (72.8%) with mean value of($\bar{x}$=3.15; SD1.12) for newsletter. Also, reviews and radio sets at 102 (34.2%) with mean value of($\bar{x}$=3.19; SD0.64), 180 (60.4%) with mean value of ($\bar{x}$=3.17SD0.40) respectively.

This indicated that the most preferred channel of agricultural information services dissemination to agricultural science students is mainly through recommended practices, researches and training and visits. This could be adduced to the fact that most information dissemination channels in the academic to reach the vast majority of the populace are through recent research publications via trainings. The findings therefore established that the choice of channel of information dissemination or dissemination is critical to dissemination of information and creation of knowledge especially when it comes to reliance and development of the society.

Challenges faced in Agricultural Information Dissemination

Table 2: Challenges in Agricultural Information Dissemination

S/N	Statements	Frequency	Percentage(s)
1	Fear of Technology (Technophobia)	250	83.9
2	Publicity Problems	200	67.1
3	Efficacy of channels	220	73.8
4	Improper Orientation	270	90.6
5	Translations Problems	152	51.0
6	Language Barrier	160	53.7
7	Distortions in Flow of Information	30	10.1
8	Literacy about channels	170	57.0
9	Delay on Information publication	220	73.8
10	Lack of Feedback Mechanism	178	59.7
11	Infrastructure	150	50.3
12	Weak Linkages	140	47.0
13	Limited Current Trends Information	200	67.1

14	Political Instability	210	70.5
15	Socio/Cultural Factors	100	33.6

Source: Field Study 2018

The findings in Table 2 revealed that there are challenges faced in communicating agricultural information, Lack of proper orientation topped with 270 (90.6%) followed by fear of technology adoption 250 (83.9 %). Delay in information delivery and cost ties with 220 (73.8%) followed by political instability 210 (70.5). Publicity problem and limited current trends on information also tied with 200 (67.1%). Others are lack of feedback mechanism 178 (59.7), literacy about channels 170 (57.0), language barrier 160 (53.7%), translation problems 152 (51.0%), infrastructure 150 (50.3%), socio/cultural factors 100 (33.6%) and distortion in flow of information 30 (10.1%) Table 4.7 further indicates distortion in flow of information 30 (10.1%) and socio cultural factors 100 (33.6%) as lower ratings among the challenges.

From the responses, it is evident that dissemination of agricultural information to agricultural science students is hindered by several challenges. Form translation problem to language barrier makes it difficult comprehending instructions on some publications. Furthermore, lack of appropriate institutional framework and inappropriate technology is another factor in the process of disseminating agricultural information (Eponu, 2016). He argued that most of the technologies were designed without taking into consideration the realities of developing countries that grapples with power and unfavourable government policies. Also, most of these technologies are expensive. Land possession, income, lack of linkages between the government agencies charged with the responsibility for implementing the scheme and research institute in terms of management are also among factors that hinder full dissemination of agricultural information services to students (Centre for Technical Agriculture, 1996).

Conclusion

From the analysis and the summary of the findings, it could be concluded that Agricultural Information are disseminated by NAERLS and the services are of great importance to agricultural science students. It is also concluded that the students are interested in agricultural information dissemination and services for reliance. It was noted that agricultural science students have come to terms with the relevance and usefulness of channels in agricultural information dissemination. However, many of the students from the findings have agreed in this study that dissemination of agricultural information is bedevilled by challenges as seen in the study hampering its effectiveness on the students. If well oriented and harnessed, these services will go a long way in helping students in their quest for reliance on agriculture.

Recommendations

Based on the findings and the conclusion arrived at, the following recommendations were made:

1. ABU electronic bill boards and Frequency Modulation Station (FM) should be increased in size and number, strategically placed and used as channels of agricultural information dissemination to students.
2. Flow and linkages of Agricultural information generation and dissemination by NAERLS and its zones should be enhanced, overhauled in all ramifications to mitigate the challenges of information dissemination to students.

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