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Access and Preference of Agricultural Innovations delivery to Farmers using Mass media in Yola-North and Yola-South Local Government Areas, Adamawa State Nigeria

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Abstract

The study examined agricultural innovations delivery using mass media to farmers in Yola-North and Yola-South Local Government Areas of Adamawa State, Nigeria respectively. Primary data were generated from the respondents using well-structured and non-structured questionnaires respectively. Snowball sampling, purposive sampling and systematic sampling techniques were employed to select 50% (126) respondents from a total population of two-hundred and fifty-two registered (252) farmers in the study area. Descriptive (percentages, frequencies, and tables.), inferential statistics (Chi-Square model) were employed in examining and achieving the stated objectives. The study revealed that there were three (3) Television stations, five (5) Radio stations and one (1) printed media station in the study area, and the respondents had access to all. The result indicated that, the calculated Chi-square value was greater than tabulated ($\chi^2 = 33.44 > \chi^2 = 10.60$) at 2 degree of freedom and 5% level of significance, hence, the decision was to reject the null hypothesis (*Ho*) and to accept the alternate hypothesis (H_1). Some identified constraints such as inability to respond to source of innovations immediately associated, poor weather forecast information etc., more is still needed to be done by all stake-holders: government, private sectors, and researchers, like-wise the end-users themselves so that a lot will be achieved. The study therefore recommends a public-private partnership for a sustainable developmental trend in agricultural information delivery in Adamawa State in particular and Nigeria in general. The study therefore concludes that, despite the mass media especially the nine (9) mass media stations located in the State, the mass media had played a role in influencing agricultural information delivery, productivity, and well-being of the respondents in the study area.

Keywords: Analysis, Access, Preference, Agricultural innovations, Mass media, Farmers

Introduction

Mass media methods in agricultural information dissemination generally, are useful in reaching wide audience at a very fast rate at the same time. They are useful as sources of agricultural information especially delivery of agricultural innovations to farmers and as well constitute methods of notifying farmers of new developments and emergencies. Mass media can be especially helpful for mobilizing attention, and getting issues on the public agenda and for keeping them there by repetition and broadcasting of reminders. In other words mass media offer relatively good opportunity to help create awareness of and or interest in certain issues, including agricultural programmes (Ani *et al.*, 1997).

On Nigerian agricultural landscape, the major media systems that have a lot to contribute are radio, television and the print media. Available information shows that Nigeria have a well-developed and virile broadcasting system when compared with other developing countries. However, the great potentials of these media for farmers in agriculture are yet to be fully exploited for reasons as aforementioned earlier and also, ranging from high cost of transmission to the absence of proper framework within which to integrate the media into the agricultural development agenda. However, the media system in Nigeria are highly centralized and clustered in urban areas. Consequently, very little of the needed information and or innovation reach the farmers especially those in the rural communities, where

most of the population live and where the actual farming is taking place.

A major task in agricultural development is the transfer of improved technologies to farmers which if appropriately done usually translates to increased productivity, income and better living standard to the end users. Although extension institutions and various sources of information exist in almost every developing country, the coverage of farm families is very limited. Food and Agricultural Organization reported that in many developing countries, wide adoption of research results by majority of farmer's remains quite limited (FAO, 2001).

This therefore, calls for a system which allows adequate information flow from researchers to farmers and vice-versa. People in less industrialized countries like Nigeria have limited access to mass media for several reasons; for example many people especially women, are illiterate. For written mass media in other words print media, such as newspapers and pamphlets to mention but a few, it is evident that audiences need to be able to read. Because many farmers are illiterate in some situation, this pose an important limitation to its usage. According to this, is that newspapers often are not distributed in rural areas. Many of them do not cover agricultural programmes and even when available, may be too expensive for most farm families (FAO, 2001).

With the evolvement of National Agricultural Extension System (NAES) over six decades ago from a rudimentary pre-colonial export crop-focused service, through a Federal Ministry of Agriculture (FMA) extension unit services, and the States-wide Agricultural Development Projects (ADPs) which are the primary agencies responsible for public extension delivery at the grassroots in Nigeria, one could deduce from observation over the years that there have been successes recorded in extension service delivery to an extent but much more is needed to be done.

Agricultural extension delivery in Nigeria were mainly carried out in the past as observed over the years by contact between extension agents and farmers (interpersonal communication); by radio, television, audio-visuals, films (electronic media); by bulletins, pamphlets, posters, leaflets, circulars, newsletters, (print media) through agricultural organisations or agencies in the public and private sectors respectively. With the advent of information communication technology (ICT) globally in the recent past, mass media (electronic and print) such as radio, television, audio-visuals, films, mobile phones, internet and pamphlets, newsletters, magazines, newspapers, circulars, posters, leaflets, billboards, journals respectively became veritable instruments used in the dissemination of agricultural ideas, information, messages, innovations and or technologies to a large number of farmers over a vast area at a very short time period.

A new paradigm for agricultural extension delivery and or dissemination became evident globally through the usage of mass media This has been the practice in the developed countries (United State of America, Europe and Some part of Asia) over the years but not widely applicable in the developing countries such as Nigeria in general and Adamawa State in particular. This could be attributed to inconsistencies of government policy on agricultural development, literacy level of the end-users, low-level technology input, low-level private sector participation, poor and moribund agricultural infrastructures. The weak research-extension-farmer-inputs linkage system (REFILS) compounded by the deficiencies in the research organization and management could also be a contributory factor that must be mentioned.

Trends in Nigeria's agricultural development scenario in recent time shows that mass media have tremendous potentials for agricultural information dissemination and are increasingly becoming veritable instruments for transforming agriculture in the country to the level expected, but what happens to problems identified earlier in the study area that may likely hinder dissemination of information to farmers through the mass media? What type of mass media organisations are available in the study area? Do farmers have access to agricultural innovations through the mass media in the study area? These are some likeable questions that arose from the research problem identified in the study area. The study hypothesized that farmer's access to agricultural innovations through the mass media in Yola-North and Yola-South LGA's is insignificant

One is in a good position to state the problem of this study that the great potentials of mass media in Adamawa State for farmers in agriculture are yet to

be fully exploited for reasons ranging from high cost of transmission to the absence of proper framework within which to integrate the media into the agricultural development agenda. However, the media system in Nigeria and Adamawa State in particular are highly centralized and clustered in urban areas. Consequently, very little or none in some instances of the needed information and or innovations reach the farmers especially those in the rural communities, where most of the population live and where the actual farming takes place. Based on the foregoing, the general objective of this study was to examine the delivery of agricultural innovations to farmers through mass media in the study area and the specific objectives were to describe the types of mass media organizations identified in the study area; and determine farmer's accessibility and preference to agricultural innovations delivery through mass media in the study area.

Materials and methods

Study Area

The study was conducted in Yola-North and Yola-South local government areas (LGAs) of Adamawa State, Nigeria in the year 2019. Yola-North LGA, with Jimeta as the administrative center of Adamawa State, Nigeria, is located along Longitude 9^0 13'48"N and Latitude 12^0 17'36"E (Adebayo, 2014). The area lies in the hot climatic Guinea Savannah zone of Nigeria, with an annual rainfall of 958.99mm. August and September are considered as the wettest months, the dry season is between November and April with a temperature range of between 39°C to 45°C (Adebayo, 1999). Yola-North LGA has a population of 198,314 (National Population Commission, 2006). When projected based on 3.18% growth rate/year, in the year 2020, the estimated population was 317,166 people. More than 80% of households in the area are smallholder farmers growing crops such as maize, sorghum, millet, soybeans and cassava (Adebayo, 2014). In recent time's rice, maize and vegetables crops are cultivated on a wider scales by farmers in the area.

Yola-South LGA with Yola as the traditional seat and State capital lies between latitudes 9^0 13' North and 9^0 12' North of the equator and between longitudes 12^0 28' East and 12^0 30' East of the Greenwich Meridian within an area of about 1139.1 square kilometers. Yola South LGA has a population of 196,197 (NPC, 2006). When projected based on 3.18% growth rate/year, in the year 2020, it was 313,780 people. It has a tropical type of climate marked by distinct dry and raining seasons. The dry season commences in November and ends in April; while the wet season is from May to September. Yola, being the capital city for the *Fombina* Fulani's, has good breeding center for cattle, sheep and goats. A lot of fishing is also done at lakes Gerio and Njuwa along the river Benue valleys.

Method of Data Collection

Data of the study were elicited through the use of structured and non-structured questionnaires. Two set of questionnaires were developed and administered. One for the farmers selected, that is, those that constituted the sample size and the other for agricultural programme directors, editors and or programme presenters radio, television and print media houses identified within the study area. The instrument (questionnaire) used for the study was validated before administered to the respondents.

Data Analysis

A combination of descriptive and inferential statistical tools were employed to analyze the obtained data. The following analytical tools were used to achieve the stated objectives of the study. Descriptive statistics which involves the use of the measures of central tendency such as tables, frequency distribution, and percentages were used to achieve objectives i and ii, respectively while inferential statistic was used to the hypothesis that was formulated in the null form. The Chi-Square model is thus expressed as:

$$\chi^2 = \sum \frac{(F_0 - F_e)^2}{F_e}$$

Where:

χ^2 = Chi Square Calculated

F_0 = Observed Frequency

F_e = Expected Frequency

The level of significance used was 5% (0.05)

The Degree of freedom df = (n-1) where n = total number of variables (Radio, TV, and Print)

Hence, the decision rule was that, if the calculated value of Chi-Square is greater than the table value, the H_O hypothesis should be rejected, otherwise accepted.

Sampling Techniques

Systematic sampling, snow-ball sampling and purposive sampling techniques were employed for the study. The study population consisted of lists of registered farmers in the two LGAs of the study and was used as sampling frame. A sampling fraction *k* was computed from the identified or constructed sampling frame. This was done to enable drawing of sampled farmers that listen to agricultural innovations through radio programmes (radio listening group), sampled farmers that watched television programmes (TV group viewers) and those that read newspapers (print readers group). These groups together with agricultural programme editors, directors and or programme presenters in media houses of radio, television and print that were purposely selected, constituted the sample size of the study. Hence, a total of 126 respondents from 252 population of farmers in the study area were selected (Table 1)

Table 1: Distribution of selections based on Radio, Television, Print media and sample of registered Farmers proportionately selected

Types of Mass media	Number of stations	Mass media group	Farmers size (50%)	Sample
Television	3	NTA, Yola ATV, Yola Gotel TV, Yola	64	32
Radio	5	Binkola online, Yola ABC, Yola Gotel comm, Yola Pulaaku FM, Yola Radio Nigeria, Fombina FM, Yola	102	51
Print	1	Adamawa Press Ltd	86	43
Total	**9**		**252**	**126**

Source: Survey data, 2019

Results and Discussion

Table 2: Distribution based on selection of identified mass media organisations identified in the study area

Media Stations	Frequency	Percentage
Television station	3	33
Radio station	5	56
Printed media station	1	11
Total	**9**	**100**

Source: Survey data, 2019

Table 2 is a summary of results on the identified and selected mass media organisations located in the study area, majority (56%) are of the electronic media (radio) which may be attributed to its vast reach to large number of farmers at the same time simultaneously at a fast time and at low cost. Next to it the television 33% identified in the study area, though more educative than the radio as it impact on two sense organs (seeing and hearing) during delivery of information to its viewers, however it's costly and inadequate. Electricity supply in rural Nigeria might be a serious limitation. A little proportion (1%) is the printed media which has a lot of limitations such as high cost of establishment, inadequate reach to end-users, only meant for literate farmers. This finding was corroborated to by various authors, Ogunbameru, (2001); Buba, (2003); Ani, (2004); Fadama, (2005); Ariyo *et al.* (2013); studies at different locations at different point in time reveals major source of agricultural

technologies through mass media was radio which accounted for majority (60.19%) who expressed that radio cut across the literacy barriers required in books, newspapers, journals, bulletins, pamphlets, etc. Radio in essence does not require higher educational qualification or background to be effective.

Table 3: Chi-square (χ^2) result on accessed and preferred sources of agricultural innovations by farmers through mass media stations in the study area

Variables (n)	df (n-1)	alpha level	χ^2calculated	χ^2tabulated
Radio				
Television				
Print	**2**	**0.05**	**33.44**	**10.60**

Level of Significance at 5% (0.05)
Degree of freedom (df) = 2
Calculated χ^2 = 33.44 greater than Tabulated χ^2 = 10.60 at 5% level of significance. Hence the decision was to reject the null hypothesis and accept the alternate stated as accessibility and preference of farmer's sources of agricultural innovations through mass media in study area is significant.

Table 3 results portrays summary of Chi-Square analysis of respondent's access and preferred sources of agricultural innovations through the mass media available in the study area, calculated χ^2 = 33.44 was greater than Tabulated χ^2 = 10.60 at 5% level of significance. In other words, the respondents had access and preference to agricultural innovations from all identified mass media stations in the study area. Ariyo *et al.* (2013) study, reveals that radio and television (TV) are with high proportion (46.3%) and some proportion (29.6%) were found to be more available and accessible to the respondents, followed by telephone with small proportion (11.1%). Internet and print media were available and accessible with low and few proportions (7.4%) and (5.6%) respectively. The availability of mass media and their accessibility to the respondents determine the extent to which the farmers obtained technology through mass media. Ani, 2004; Craig, 2001 and Munyua, 2000 are in tandem to result of this finding.

Conclusion

With eight mass media stations located in the State and delivering agricultural information to their clientele farmers and the end-users responding positively as stated in the study is a developmental progress. More is still needed to be done by all stake-holders: government, private-sectors, and researchers, like-wise the end-users themselves. A public-private partnership is highly recommended for a sustainable developmental trend in agricultural information delivery in Adamawa State in particular and Nigeria in general.

Recommendations

The following are recommended:

1. A vigorous awareness campaign on the importance of mass media agricultural innovations delivery to farmers in the State should be process, carryout and effected to its logical end. This will definitely ginger the minds of the stakeholders
2. A definite policy on agricultural technology dissemination to farmers in the State by enacting bye-laws linking all mass media stations to sustainably deliver agricultural information to farmers daily
3. Department of Agricultural Extension in State University should work out modality of leading in campaign of delivery of agricultural innovations to farmers in the State by creating a rural radio for the benefit of teaming farmers in the State and a success story attainment in a short period of time.

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