Crop farmers' level of utilisation of agricultural information from *Agbe afokosoro* radio farm broadcast in Ogun state, Nigeria

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Abstract
The need to better the position of agricultural farm radio broadcast presupposes that it is evaluated continuously, hence, this study ascertained utilisation of agricultural information from *Agbe afokosoro* agricultural radio programme among crop farmers in Nigeria. A two-stage sampling procedure was used to randomly select 132 crop farmers. Data was collected on farmers' socioeconomic characteristics, access to, appropriateness and level of utilisation of agricultural information from the programme. Data was analysed using mean, standard deviation, chi square and correlation analysis at p=0.05. Results indicate that farmers' mean age and household size were 47.1± 10 years and 6 ± 3 persons respectively, were mostly male (64.4%) and had primary school education (35.6%). Crop farmers had adequate access to information on land preparation ($\bar{x}$=0.99), organic farming ($\bar{x}$=0.95), harvesting of crops ($\bar{x}$=0.98), and adjudged information from the broadcast as appropriate for their enterprise. Crop farmers utilised information on land preparation ($\bar{x}$=1.7), organic farming ($\bar{x}$=1.5), harvesting of crops ($\bar{x}$=1.6), integrated pest management techniques ($\bar{x}$=1.6) and site selection for crop production ($\bar{x}$=1.5). Respondents' income (r=0.0228) and farm enterprise (χ^2=0.069) were significantly related to their utilisation of agricultural information from the radio farm broadcast. It is concluded that the programme fulfilled the expectations of both the broadcast station and farmers as it was rated as accessible, appropriate and useful by farmers. Farmers' enterprise should be considered in future agenda of the radio farm broadcast.
Keywords: Agricultural information, farm broadcast, agricultural information access, appropriateness and utilisation

INTRODUCTION

Radio has a significant role to play in agricultural research dissemination due to gap between the agricultural researchers and the farming population that are regarded as end users. According to Food and Agricultural Organisation (FAO) (2010), the gap between research community and rural farmers becomes more manifest when one considers the large distances that separate researchers from rural farmers, language and diversity of cultures making it even more difficult for the research information to reach the intended audiences.

With radio broadcasting debut for development information dissemination (precisely weather report) on AM radio in Madison, in January 1921, radio broadcast for development news and agricultural information has come a long way. Perhaps, it is in light of this that the USAID (2012) asserts that it offers hope for overcoming the limitations of traditional extension, and well-positioned to represent the voice of the community. With advances in technology and the explosion of mobile phones in even some of the most remote areas of the globe, USAID (2012) concluded that the opportunities to further leverage radio's potential are now greater than ever.

In Nigeria, radio farm broadcast is conveniently traceable to the early 1960s when various regional governments in Nigeria, through the communication units of the ministries of agriculture, introduced the farm broadcast (Olajide and Amusat 2012). Subsequently, all national agricultural intervention programmes till date have made use of radio as potent tool of touching base with the targets and beneficiaries of development oriented programmes in health, agriculture and environment. With the growth in community radio stations in Africa over the past 20 years and about a decade now in Nigeria as well as the emergence of many community radio stations courtesy of the Federal Radio Corporation of Nigeria (FRCN), radio technology has the potential to completely transform the relationship between listeners and content providers.

Many Africa's governments lack resources to educate farmers about new agricultural practices and technologies that can help them increase their productivity and incomes. In Nigeria, for example, there is one government agricultural extension agent to every 3,000 farmers, giving each farmer less than 30 minutes of time with an agent per year (Bolarinwa and Yahaya, 2011; Olajide, 2011) and this seems to have worsened farmers' situation in accessing current agricultural information (Olajide, 2011). To circumvent this obvious lapse, various communication media are being used to transmit agricultural information to farmers in line with national policy on agriculture. The communication media include farm magazine, leaflets, newsletters, newspapers, pamphlets, radio and television, among others (Dare, 1990). Radio is the most preferred tool of mass communication in Nigeria as evident in the findings of previous studies (Yahaya, 2002; Zaria and

Omenesa, 1992; Omenesa, 1997; Ekumankama, 2000). Omenesa (1997) observes that radio programmes are usually timely and capable of extending messages to the audience no matter where they may be as long as they have a receiver with adequate supply of power. The absence of such facilities as road, light and water are no hindrance to radio. Similarly, such obstacles as difficult topography, distance, time and socio-political exigencies do not hinder the performance of radio. He further observes that illiteracy is no barrier to radio messages since such messages can be passed in audience's own language. Another advantage of radio programme is that it can be done almost anywhere through the use of a tape recorder (Nwuzor, 2000). It is probably because of these advantages of radio that it has been accorded a high priority as a means of reaching farmers.

The Ogun State Broadcasting Corporation OGBC), Abeokuta has been broadcasting *Agbe afokosoro* for the past seventeen years (since 1997). The programme uses dual language (English and Yoruba) and spans fifteen minutes from 7:30pm to 7:45pm every Wednesday of the week. It uses several formats (interview, discussion and lecture) and had broadcast agricultural information covering site selection, land preparation, crop rotation practice, organic farming and harvesting of crops. Therefore, its contribution to providing access to agricultural related information especially to crop farmers is not in doubt. However, level of utilisation of agricultural information disseminated through this medium is not certain. The obvious limitation of radio in overt behaviour change presupposes that its programme on many areas of human endeavour be continuously investigated to better position such programme. It is in the light of the above that this study answered the following research questions:

1. What are the socioeconomic characteristics of crop farmers in the study area?
2. What agricultural information has been accessed by crop farmers from the agricultural radio programme?
3. How appropriate is the agricultural information accessed by crop farmers through the radio programme?
4. What is the level of utilisation of agricultural information accessed by crop farmers from the radio programme?

METHODOLOGY

The study area was Ogun state, Nigeria. All registered crop farmers with the Ogun State Agricultural Development Programme (OGADEP) formed the study population. A two-stage sampling procedure was used to select respondents for this study. Firstly, two (Abeokuta and Ijebu-ode) out of four ADP zones in the state were randomly selected. The two zones have a total of 87 cells with 1,305 registered crop farmers. In each cell, 5% of all registered crop farmers were randomly selected in the second stage resulting in 132 crop farmers used as sample for the study. Key variables measured were access to, appropriateness of and level of utilisation of information from the radio farm broadcast. A content analysis of types of information on crop production disseminated through the farm broadcast in six months prior to the time of this survey was carried out. Based on this, a list of crop production related information was generated as basis for assessing access, appropriateness and utilisation of information from the farm broadcast. For access, lists of crop production information were presented to the respondents and were asked to indicate Yes or No to express whether they have obtained information in these areas from the radio broadcast and a score of 1 and 0 were assigned respectively. For appropriateness, farmers were asked to rate the information received as very appropriate, appropriate and not appropriate with scores of 2, 1 and 0 assigned respectively. Level of utilisation of the information of *Agbe afokosoro* (dependent variable) was measured by asking the respondents to indicate their level of utilisation of the information on a 3-point scale of always, sometimes and never utilised and was scored as 2, 1 and 0 respectively. Data collected was subjected to both descriptive (frequency counts, percentage distribution, mean and standard deviation) and inferential statistics (Chi-square and Pearson Product Moment Correlation (PPMC) at p=0.05

RESULTS AND DISCUSSION

Crop farmers' socioeconomic characteristics

Information on respondents' socioeconomic characteristics in Table 1 shows that respondents' age distribution ranged between 20 to 75 years with the mean age at 47.1 ± 10 years. More than one-third (34.8%) of the respondents fell between the ages of 30- 39 years, while only 9.9% were above 60 years of age. This implies that farming populace constitutes very active people despite threat posed by rural-urban migration. The table further reveals that while males were 64.4% of the respondents, females were 35.6%. This suggests that more males than females are involved in crop farming in the study area. This supports the findings of Azarian, Hassan and Samba (2012) who reported that there are more males than females in their study of agricultural information disseminated through radio among Malaysian farmers. Table 1, in addition, indicates that 50.4% had household size of 4-6 persons with mean household size of 6 ± 3 persons. This is similar to the

findings of Bankole, Adekoya and Nwawe (2012) that the mean household size of farmers was 6 persons. This might be because agriculture is generally a labour intensive venture hence encourages large family size which is usually used as source of labour especially in crop farming. Educational level of respondents in Table 1 reveals that only 18.2% had no form of formal education. A higher percentage (35.6%) of the respondents had primary education, 28.8% had secondary education while 17.4% of respondents had tertiary education. majority did not go beyond secondary school. Table 1 further shows that 77.3 % of the respondents had been engaged in agricultural production for more than 17 years, while only 22.7% of the respondents had been in farming for 17 years or less. This supports the findings of Ugwuja (2011) whose study shows that majority of farmers have experience in agriculture for above 15 years. Further findings reveal that 8.3% could not estimate how much they earned annually from agricultural production. However, majority (42.4%) of respondents earned between N200, 100 to N300, 000 worth of local currency annually from agricultural activity, while less than 13.0% earned above N300,000 annually from agricultural activities. This implies that, in spite of disincentive for agriculture, especially in Nigeria due to over reliance on foreign earnings from sale of crude oil, agriculture provides leverage for smallholder farmers in many and varied agricultural enterprises, including crop farming. This is in line with the findings of Ango, Ibrahin, Yakubu and Alhaji (2014) who found that farmers earned up to between N22, 100 to N32, 000 monthly from their various engagements in agricultural activities.

Table 1: Distribution of crop farmers by their socioeconomic characteristics

Variable		Frequency	Percentage
Age (years)	20-29	11	8.3
	30-39	46	34.8
	40-49	40	30.3
	50-59	22	16.7
	60 and above	13	9.9
Sex	Male	85	64.4
	Female	47	35.6
Household size	1-3	27	20.6
	4-6	66	50.4
	7-9	29	22.1
	10-12	9	6.9
Education	No formal education	24	18.2
	Primary education	47	35.6
	Secondary education	38	28.8
	Tertiary education	23	17.4
Farming experience	≤15 years	30	22.7
	16 – 30	50	37.9
	31 – 45	35	26.5
	≥46	17	12.9
Income (annual)	≤100,000	31	23.5
	101,000-200,000	28	21.2
	201,000-300,000	56	42.4
	. ≥301,000	17	12.9

Source: Field survey, 2013

Crop farmers' access to crop production information from *Agbe afokosoro* radio farm broadcast

The result in Table 2 shows crop farmers' access to crop production information from the farm broadcast. With a grand mean of 0.87; farmers had adequate access to information on land preparation ($\bar{x}$ =0.99), organic farming ($\bar{x}$ =0.95), harvesting of crops ($\bar{x}$ =0.98) and soil conservation for crop production ($\bar{x}$ =0.90). However, other information types like site selection for crop production (0.88) and improved fertilizer application in irrigated crop production ($\bar{x}$ =0.88) can be adjudged to be averagely accessed by crop farmers while access to information on integrated pest management techniques ($\bar{x}$ =0.63), effect of climate change on crop production ($\bar{x}$ =0.81) and crop rotation practice ($\bar{x}$ =0.84) were low. The probable explanation for the trend observed may be largely due to the fact that perhaps while issues related to climate change and integrated pest management are emerging issues in agriculture, other issues are regular features of a typical rural farm broadcast in Nigeria (Badiru 2013; Badiru and Adekoya, 2014). On a general note, *Agbe afokosoro* radio farm broadcast has fared well in providing relevant crop production information to farmers in the study area.

Table 2: Crop production related information accessed through *Agbe afokosoro* radio farm broadcast by crop farmers

Types of information	Mean	Standard Deviation
Site selection for crop production	0.88	0.32
Land preparation	0.99	0.92
Crop rotation practice	0.84	0.36
Organic farming	0.95	0.23
Harvesting of crops	0.98	0.14
Integrated Pest management	0.63	0.48

Types of information	Mean	Standard Deviation
techniques		
Effect of climate change on crop production	0.81	0.39
Improved fertilizer application in irrigated crop production	0.88	0.32
Soil conservation for crop production	0.90	0.30
Grand Mean	**0.87**	

Source: Field survey, 2013

Appropriateness of crop production information accessed through *Agbe afokosoro* radio farm broadcast by crop farmers

Available information on the appropriateness of crop production information accessed from *Agbe afokosoro* (Table 3) suggests that crop farmers found most of the information appropriate. Against the grand mean of 1.1, all listed information types were found to be appropriate by the farmers. However, information on land preparation ($\bar{x}$ =1.5), organic farming ($\bar{x}$ =1.4) and harvesting of crops ($\bar{x}$ =1.5) were found to be more appropriate than others. Though, the higher mean values for land preparation and harvesting may have thrown up surprises against the backdrop of the fact that these are farming activities that farmers engage on a regular bases; it equally provides basis for judging the appropriateness of the information as farmers are knowledgeable on what operates in these farming activities. Any slip on the part of programme presenter on these activities could be easily faulted by the farmers. For appropriateness values of organic agriculture information, it is a common knowledge that lots of information is disseminated in recent years about organic agriculture as a means of encouraging farmers to practice it. Juxtaposing the quality of information from other sources with what obtains in *Agbe afokosoro,* the appropriateness rating by respondents could have informed their judgement of quality of information from *Agbe afokosoro.* Without pre-empting what the picture of utilisation of such information looks like, it can be deduced that these respondents must have put some of these information to use.

Table 3: Distribution of farmers based on appropriateness of crop production information accessed through *Agbe afokosoro* radio farm broadcast by crop farmers

Types of information	Mean	Standard Deviation
Land preparation	1.5	0.55
Organic farming	1.4	0.55
Harvesting of crops	1.5	0.54
Site selection for crop production	1.2	0.44
Integrated Pest management techniques	1.0	0.35
Effect of climate change on crop production	1.2	0.40
Crop rotation practice	1.2	0.41
Improved fertilizer application in irrigated crop production	1.1	0.49
Grand Mean	**1.1**	

Source: Field survey, 2013

Utilisation of crop production information accessed through the *Agbe afokosoro* radio farm broadcast by crop farmers

Utilisation of information in the context of this study refers to the extent to which information derived from the programme is used by respondents in their crop farming enterprise. The result in Table 4 shows that with the grand mean of 1.4; land preparation ($\bar{x}$ =1.7), organic farming ($\bar{x}$ =1.5), harvesting of crops ($\bar{x}$ =1.6), integrated pest management techniques ($\bar{x}$ =1.6), site selection for crop production ($\bar{x}$ =1.5) had high utilisation. The picture presented in utilisation of crop production information accessed from *Agbe afokosoro* though was similar to what obtains in their assessment of access to such information from the radio programme, it slightly differs from what obtains in the appropriateness assessment by the respondents. Whereas information on land preparation, organic farming, harvesting of crops and soil conservation for crop production were adjudged as easily accessible, all information types were considered appropriate by the respondents. It therefore implies that *Agbe afokosoro* lived up to the expectations of both the broadcast station and the farmers.

Table 4: Utilisation of Crop production information accessed through *Agbe afokosoro* radio farm broadcast

Types of information	Mean	Standard Deviation
Land preparation	1.7	0.55
Organic farming	1.5	0.60
Harvesting of crops	1.6	0.55
Site selection for crop production	1.5	0.60
Integrated Pest management techniques	1.6	0.55
Effect of climate change on crop production	1.3	0.63
Crop rotation practice	0.8	0.51

Types of information	Mean	Standard Deviation
Improved fertilizer application in irrigated crop production	1.1	0.61
Soil conservation for crop production	1.2	0.55
Grand Mean	**1.4**	

Source: Field survey, 2013

Relationship between selected socioeconomic characteristics of crop farmers and their utilisation of agricultural information from the radio farm broadcast

Results in Table 5 reveals that while, respondents' income (r=0.0228) and farm enterprise (χ^2=0.069) were significantly related to their utilisation of agricultural information from the radio farm broadcast, respondents' religion (χ^2=0.69), marital status (χ^2=0.68), sex (χ^2=0.50), membership of farmers' association (χ^2=0.60), household size (r=0.16), age (r=0.82) and years of engagement in farming enterprise (r=-0.00), were not significantly related to their utilisation of information from the radio farm broadcast. This implies that while respondents' income and type of farm enterprise influence their utilisation of information from the radio broadcast, neither respondent's marital status, sex, household size, membership of farmers' association, age and years of engagement in farming enterprise influenced their utilisation of information from the radio farm broadcast. This is plausible if one considers the innovation cost factors in putting to use some information disseminated by the radio farm broadcast. In addition, the type of enterprise vis-à-vis information disseminated will go a long way to determine whether such information will be put to use. If information disseminated by the radio farm broadcast addresses issues of arable crop farmers, other crop farmers who are regular listeners might be incapacitated to put such information to productive use.

Table 5: Statistical analysis of respondent's socioeconomic characteristics

Variable	χ^2-values	r-values	Degree of freedom	p-value	Remark
Sex	0.059		1	0.500	Not Significant
Education	0.073		5	0.870	Not Significant
Marital status	0.105		3	0.689	Not Significant
Membership of association	0.055		1	0.608	Not Significant
Farm enterprise	0.069		5	0.000	Significant
Income		0.228		0.012	Significant
Age		0.820		0.348	Not Significant
Farming experience (years)		-0.058		0.580	Not Significant

Level of Significant=0.05

Relationship between appropriateness and the utilisation of agricultural information from the radio farm broadcast

Available data in Table 6 indicates that there was a significant relationship between information appropriateness and utilisation of agricultural information from the radio programme (r=0.628). If one considers the descriptive data on appropriateness of information from *Agbe afokosoro* farm broadcast which signifies that all information types are considered appropriate, this does not defile any logic as inappropriate information will only amount to waste of all resources (man-hour, fund and air time) ploughed into its broadcast.

Table 6: PPMC Analysis of respondent's appropriateness of information and of utilisation of information from the radio programme

Variable	r-value	p-value	Remark
Appropriateness vs. utilisation	0.628	0.00	Significant

CONCLUSION AND RECOMMENDATIONS

Available data from this study suggests that most crop farmers are relatively young and active, averagely educated, mostly male with minimal household size. Crop farmers accessed information on land preparation, organic farming, harvesting of crops and adjudged information from the broadcast as appropriate. Crop farmers equally utilised mostly information on land preparation, organic farming, harvesting of crops, integrated pest management technique and site selection for crop production. Respondents' income, farm enterprise and appropriateness of the information determine their

utilisation of agricultural information from the radio farm broadcast. It is concluded that *Agbe afokosoro* lived up to the expectations of both the broadcast station and the farmers, therefore, farmers' enterprise should be considered in future broadcast agenda of the radio farm broadcast. The programme should also provide information on possible credit sources for farmers so that they could access such to boost investment in their crop enterprise.

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