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THE EFFECTIVENESS OF SOURCES OF INFORMATION AND FARMERS' AWARENESS OF FARM PRACTICES IN RURAL COMMUNITIES OF KADUNA STATE, NIGERIA

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ABSTRACT

In this study, the sources of information, rural farmers' awareness on some recommended technologies and recommendations on farm practices were examined. A total of 125 farmers who grew improved maize were sampled, and based on their responses, data analysis was carried out using descriptive statistics. The three objectives of the study were, (1), to identify the relevant sources of extension information available to rural farmers, (2) to examine the extent of usefulness of sources of extension information to rural farmers; and (3) to establish respondents' awareness of selected technologies/recommendations. Findings reveal that the relevant sources of extension information available to rural farmers were; radio, extension agent, fellow farmer, agricultural shows, village heads, slides/films, traders, written materials and television (T.V.) In addition, findings show that most of the farmers found the sources of extension information identified useful except for television and slides/films which were considered not very useful. Further findings reveal that majority (95%) of farmers were aware of the recommended practices/technologies on the following, improved maize, seed rate, seed dressing, plant spacing, fertilizer application, post-harvest processing, and storage. In addition, the study shows that the highest number of farmers adopted the selected technologies/recommendations occasionally, followed by those frequently, not at all and rarely, in that order.

KEY WORDS: Awareness, farm practices, rural farmers, improved maize, sources of information.

INTRODUCTION

Rural farmers are usually beset with myriads of problems and limitations one of which centre on adoption of technologies/recommendations generated through research. According to Egharevba (1983), farmers are often confronted with a lot of problems which serve as hindrance to their adoption of recommended practices. Adoption of technologies, in a farmer's view, is not as easy as its developers often assume, rather it is a challenge the outcome of which may be uncertain. For, no matter the efficacy of the technology, whenever it is put in the farmers' field, it is under another test entirely.

In Nigeria, over the years, concerted efforts have been made severally by Governments (at Federal, State and Local levels), international and private organizations, research institutes, etc to intervene in ensuring that research-based technologies/recommendations reach the farmers in general, and the rural farmers in particular. However, in the process, various strategies have been employed toward safely getting technologies delivered to them. Hence, the adoption of new crop varieties in West Africa has been achieved basically due to the use of information mechanism (Blench, 1998).

There is a relationship between information and awareness in securing adoption of an innovation. Matthews-Njoku (2003a) established a strong link between knowledge about technologies and adoption based on findings on cassava technologies and adoption study. In a study in Nigeria, Williams (1969) revealed that extension worker is the most frequently identified source of awareness of recommended farm practices. Voh (1981), in a village study in Nigeria, further revealed that most farmers studied became aware of the selected recommended farm practices through the extension worker, followed by radio and village head. Yazidu (1973) found out that most farmers had chosen radio as their source of awareness of improved practices, followed by the extension worker, village head and traders – in that ascending order.

The processes and stages that innovation passes through, before its eventual adoption by farmers, are worthy of some measure of consideration. Discussing the model of direct personal communication, Albrecht *et al.*, (1989) advanced the following essential components: *Contents* (a major function of communication), *Self-revelation* (the intended and involuntary exposure of self-sender), *Relationship* (the interaction between sender and receiver), and *Appeal* (a message is expected to facilitate a change of behaviour). In the foregoing model, if all the processes were successfully gone through, it is assumed that the expected ultimate goal is the adoption of the technology by the farmer. However, there are other stages to undergo before a farmer is assumed to be ready or competent to positively consider adoption of a given technology. According to Van de Ban and Hawkins (1993), diffusion processes entails the following, (1) *Awareness* (2) *Interest or information* (3) *Evaluation or application* (4) *Trial*, and (5) *Adoption*.

Some studies have indicated that some socio-economic and institutional factors impacted significantly on farmer's adoption of innovations (Atala, 1980; Iwueke, 1991, Njoku, 1991, and Voh, 1979). Rogers and Shoemaker (1971), while examining the characteristics of innovation and its rate of adoption, identified three degrees, namely, Relative advantage; Compatibility; and Observability – all of which are able to lead to fruitful adoption. Some studies on socio-economic characteristics of farmers have been able to establish positive relationship with adoption. For example, Atala (1988), identified some independent variables (farmer's characteristics) that influence adoption, namely, age, household size, formal education, literacy, level of living, social participation, use of sources of information, upland farm size and ownership of lowland farms. Others identified were, farm labour, tenure status, farm income, community status, cosmopoliteness and awareness. Agwu's (2004) findings show the use of insecticides to control pest on cowpea farms had the highest adoption score, while farm size and level of formal education positively and significantly influenced adoption of improved cowpea technologies.

The conclusion of Meert *et al*., (2005) in a study on Belgian farmers, suggested search for information and sources of knowledge and professional attitude as components needed by farmer in development of both on-and off-farm pluri-activity and diversification. It is observed that some countries are yet to consider the importance of knowledge transfer via reviewed extension services (Rivera, 2001) in spite of the apparent fact

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that knowledge and capital are strong factors for success within the new economic context

Drawing a measure of correlation between adoption and information, Tripp (2001), while projecting into the future of agricultural technology policies for rural development, postulates that most of the new technologies that will be introduced to farmers for adoption will be essentially "information-intensive" This further lends credence to farmers' education, literacy level and ability to comprehend and manage the technologies Moreover, it has been shown that inadequate knowledge of the technologies could prevent farmers from adopting recommended technologies (Chikwendu *et al*., 1996).

There are quite a number of technologies generated on maize (*Zea Mays* L.) as in other crops. Out of the estimated 140 million hectares of maize grain used for its production world-wide, about 96 million hectares emanated from the developing world. (Pingali and Pandey, 2000). Research in maize is giving more value and impetus to its production (CIMMYT, 2004). Indeed there has been a phenomenal increase in maize production in West and Central Africa Maize is widely cultivated in Nigeria especially in the northern region. It takes the third position after sorghum and millet in terms of area of cultivation and consumption. Maize is cultivated by Nigerian farmers in various types including traditional, modern cultivars and hybrids Many of the maize grown today are however derived from research whether it be open-pollinated varieties (OPVs) or hybrids. It is cultivated as either food crop or cash crop. The annual growth rate in area cultivated to maize in Nigeria was 3.5% and the annual gain in production was estimated at 5.3%.

Hybrid maize is more widely cultivated Research results on maize have demonstrated that hybrid maize is capable of out-yielding the best of open-pollinated varieties by as much as 30% (Kim, 1997) Furthermore, research reports have indicated that with adequate agronomic attention to hybrid maize, it has become more manageable for an average farmer (Iwuafor, 1997) Furthermore, research conducted by Sasakawa Global 2000 Project, while introducing hybrid maize to farmers in Kaduna State, Nigeria reported significant results of high yields and reduction in fertilizer usage (Valencia *et al*., 1997).

METHODS

This study is therefore focused on improved maize growers (farmers) in two villages, namely, Kaya and Dan-Ayamaka (located in Giwa and Kudan Local Government Areas of Kaduna State, northern Nigeria). The villages are located in the Guinea Savannah ecological zone which is recognized for cultivation of maize – a major staple food crop in the diets of its inhabitants. A total of 910 farmers, drawn from a list, representing the sample frame, were identified from the two villages, out of which 420 grew improved maize Out of this, a total of 125 farmers (i.e. 75 and 50 respondents from Kaya and Dan-Ayamaka, respectively) were randomly selected for this study The respondents were administered with pre-tested structured questionnaire, followed by interview The data obtained from the administration of questionnaire and interviews were decoded, analyzed and interpreted

The three objectives of this study are

- To identify the frequency of rural farmers' access to relevant sources of extension information
- To examine the extent of usefulness of sources of extension information to rural farmers, and
- To establish the farmers' awareness of some farm practices

RESULTS AND DISCUSSION

Objective 1:

The background problem in this study was identification of relevant sources of extension information available to rural farmers and their frequency of accessing them Based on the findings, some relevant sources of extension information were identified by the respondents This study had attempted to investigate the frequency of the respondents' access to available relevant sources of extension information, namely, radio, television (T.V.), written materials, village head, agricultural shows, extension agent, fellow farmers, slides/film shows and traders

This study's findings in table 1 reveals that, for radio majority of the respondents accessed it on both daily (62) and weekly (61) bases while only one (1) respondent accessed it on seasonal basis This indicates that radio was widely used

Table 1: Distribution of respondents by the frequency of sourcing extension information

Source of information	Daily	Weekly	Bi-weekly	Monthly	Bi-monthly	Seasonally	Never	Total
Radio	62	61	0	0	0	1	0	125
Television	0	1	0	0	0	0	124	125
Written materials	93	0	1	1	5	25	0	125
Village head	22	46	3	14	19	17	4	125
Agric. shows	0	0	0	0	2	106	17	125
Extension agent	0	20	5	5	22	52	21	125
Fellow farmer	86	8	7	7	1	14	2	125
Slides/films	0	0	0	0	1	69	55	125
Traders	0	70	4	0	0	36	15	1125
Total	263	206	20	28	50	320	238	1125
Rank	2nd	4th	7th	6th	5th	1st	3rd	

by the farmers in rural areas as reported in some earlier studies (Chikwendu *et al* 1996 and Yazidu, 1973) For television (T V), almost all the respondents (124) never had access to it while only one (1) had access to it on weekly basis. This shows inadequate use of television for sourcing extension information by the rural farmers in the areas studied.

Furthermore, findings on written materials shows majority of the respondents (93) had daily access to it followed by 25 who had frequent access seasonally The frequency of the 93 respondents is not far-fetched as written materials were accessible in prints for farmers to consult/read. The village heads were consulted by the respondents on weekly basis by 46 respondents, followed by 22 on daily basis, 19 bi-monthly 17 seasonally, and 14 monthly. This shows the cordial attitude of the respondents to their village heads for sourcing extension information

The results of findings on agricultural shows revealed the majority of respondents (106) had access to it on seasonal basis. This is apparent as most agric shows are usually carried out at harvest periods i e when the crops are the maturity stage ready for farmers to show case to others

Specific to extension agents, majority of the respondents (52) frequently had access to extension information through extension agents (EAs) on seasonal basis This shows how poor the activities of the extension agents were in the rural areas studied The results further revealed that 21 respondents had no access to EAs while 21 had access on bi-monthly basis, 20 weekly, 5 bi-weekly and 5 monthly.

Fellow farmers provided some interesting and astounding revelations. Results show 86 of the respondents attributed their derivation of extension messages from their fellow farmers. This shows the high level of interaction and intimacy between the respondents as they passed extension information among themselves frequently Results on slides/films show that the respondents did not frequently have access to it The 69 respondents that had access to it did so seasonally followed by the 55 who did not have access to it at all

Specific to traders, 70 respondents had access to it weekly This shows that a weekly market schedule was the tradition in the areas studied, and the farmers used such avenue to contact traders on information concerning improved maize However, from the results on table 1 36 respondents had access to traders on seasonal basis, 15 never had at all and only 4 had it bi-weekly

Overall, therefore, the findings in table 1 show that the majority of the respondents (28.44%) had access to sources of extension information on seasonal basis, followed by those on daily basis (23.38%), and then those who had none (21.16%), those on weekly basis (18.31%), those on bi-monthly basis (4.44%), those on monthly (2.49%) and those on bi-weekly basis (1.78%) – in that order The findings therefore give an impression of poor access of the respondents generally to both extension massages and their sources of getting them

Objective 2:

The second objective of this study was aimed at examining the degree of usefulness of sources of extension information available to the rural farmers Further findings from this study have shown the following (See table 2)

Table 2: Respondents' assessment of usefulness of sources of extension information

	Excellent		Good		Fairly good		Poor		Not sure		Total	
Source of ext. info	**No**	**%**	**No.**	**%**	**No**	**%**	**No**	**%**	**No**	**%**	**No**	**%**
Radio	94	75.2	31	24.8	0	0	0	0	0	0	125	100
Television	0	0	4	6.4	3	2.4	40	32	78	62.4	125	100
Written material	2	1.6	43	34.4	53	42.4	0	0	27	21.6	125	100
Village head	0	0	68	54.4	55	44	0	0	2	3.2	125	100
Agric. Shows	1	0.8	59	55.2	62	49.6	0	0	3	2.4	125	100
Extension agent	2	3.2	78	62.4	12	9.6	19	15.2	14	11.2	125	100
Fellow farmer	44	35.2	52	41.6	6	4.8	13	10.4	10	8	125	100
Slides/films	2	3.2	59	47.2	27	21.6	2	3.2	35	28	125	100
Traders	0	0	41	32.8	50	40	17	13.6	17	13.6	125	100

(1). Radio

Findings in this study reveal that majority of farmers 94 (75.2%) considered radio as an excellent source while 31 (24.8%) of them perceived it as good. Thus, most of the respondents adjudged radio as a veritable tool in sourcing extension information. This finding is in agreement with earlier studies which put radio as a strong tool for agricultural information (Chikwendu *et al*.,1996 and Yazidu, 1973). Also, Onyibe *et al*., (1999) reported that radio and television (the media) have been employed as a strategy of passing extension information to farmers who produced maize in the marginal zones of Nigeria.

(2). Extension agent

The majority of the respondents 78 (62.4%) considered as good the sourcing of extension information through extension agent. This lends credence to their having been exposed to extension practices over the years(especially through extension workers). Also the 19 respondents (15.2%) who described as poor the usefulness of extension agents might have done so because of the low level of performance of the extension agents and low satisfaction of the farmers.

(3). Fellow farmer

Most of the respondents considered fellow farmers excellent 44 (35.25%) and good 52 (41.65%) sources of information respectively This shows the high level of interaction that exists among them This further agrees with Bellon's (2000) observation that farmer-to-farmer diffusion of information and technology usually occurs within a "social network" Similar report was made by Onyibe *et al*. (1999)

(4). Village head

From the findings, the majority of the respondents considered the usefulness of village head in sourcing extension information as good 68 (54.4%) and fairly good 55 (44%) It could be inferred here that the respondents being villagers have close proximity to their village heads who could be in good position to pass on to them relevant extension information

(5). Agricultural shows

Findings further revealed that most of the farmers rated as good 59 (55.2%) and fairly good 62 (49.6%) the usefulness of agricultural shows as a means of getting their

extension information This reveals a moderate role of organized agricultural shows in the rural areas to facilitate the sourcing of extension information by farmers

(6). Traders

It is evident from the findings that the respondent considered traders useful in sourcing their extension information. According to data analysed, they considered as good 41 (32.8%) and fairly good 50 (40%) the use of traders This could be attributed to the high level of interaction between the traders and the respondent farmers.

(7). Written materials

Most of the respondents perceived as good 43 (34 4%) and fairly good 53(42.4%) the usefulness of written materials as a source of extension information This might be due to the use of fliers, posters and hand-bills (usually used for dissemination of extension messages) among the respondents

(8). Slides/films

Slides/films was considered by the respondents as good 59 (47 2%) and fairly good 27 (21 6%) in sourcing extension information by the rural farmers studied This rating might not be unconnected with the low level of use of high technology driven mechanism like slides and films in disseminating extension messages to rural areas

(9). Television

The majority of the respondents, according to findings in this study, considered the usefulness of television (T.V.) as source of extension information poor 40 (32%) and not sure 78 (62 4%) This might be due to the fact that many of the respondent farmers did not possess television sets nor have access to it Some of the reasons for this low performance on television might be due to high cost of a television set, lack of electricity to villages to be used to generate power, few programmes being broadcast on television and the language used for the broadcast are usually not in the respondents native language This is in agreement with the findings of Adekoya *et al.*, (2002) which show that only 4 4% of respondents studied were introduced to beekeeping through television/newspaper

Objective 3:

The third objective of the study was to establish the respondents' awareness of some selected technologies/recommendations. The results show the distribution of respondents' awareness of selected technologies/recommendations on improved maize (Table 3) The technologies/recommendations to which farmers were aware of were (1) Improved maize, (2) Seed rate, (3) Seed dressing, (4) Plant spacing, (5) Fertilizer application (6) Herbicides, (7) Pesticides, (8) Post-harvest processing, and (9) Storage

Table 3: Respondents' awareness of selected technologies/recommendations on maize.

	YES		NO		TOTAL	
Technology/Recommendation	**No**	**%**	**No.**	**%**	**No**	**%**
Improved maize	125	100	0	0	125	100
Seed rate	125	100	0	0	125	100
Seed dressing	125	100	0	0	125	100
Plant Spacing	125	100	0	0	125	100
Fertilizer application	124	99.2	1	0.8	125	100
Herbicides	112	89.6	13	10.4	125	100
Pesticides	97	77.6	18	22.4	125	100
Post-harvest processing	125	100	0	0	125	100
Storage	125	100	0	0	125	100

Findings from this study shows that all the farmers 125 (100%) were aware of the following technologies/recommendations; improved maize, seed rate, seed dressing, plant spacing, and post-harvest processing. In addition, majority of the respondents (99.2%, 89.6% and 77.6% respectively) were quite aware of the recommendations on fertilizer application, herbicides and pesticides This shows that there is high level of awareness among the farmers in the areas studied It could therefore be safe to infer that the nine relevant sources of extension information identified in this study by the respondent farmers have facilitated their awareness of technologies and recommendations on farm practices in maize production. Thus, this finding further corroborates Onyibe *et al.*, (1999)'s report which found the media (radio and television), extension agents, field day and farmer-to-farmer as effective means of creating awareness for maize production technology.

CONCLUSION(S)

From this study, the following conclusions have been reached;

(1). There are relevant sources of extension information available to rural farmers on improved maize, namely; radio, extension agent, fellow farmer, agricultural shows, village heads, slides/film shows, traders, written materials and television.

(2). The rural farmers were able to assess the degree of usefulness of the sources of extension information available to them, and considered most of them very useful

(3). That the rural farmers were largely aware of the recommended technologies/recommendations on, improved maize, seed rate, seed dressing, plant spacing, fertilizer application, herbicides, pesticides, post-harvest processing and storage

RECOMMENDATIONS

Based on the findings from this study, the following recommendations are proffered

(1). Rural farmers should be given adequate and periodic enlightenment campaigns on the importance of relevant sources of extension information available for their consultation and benefits In particular, the following sources are worthy of note are extension agent, radio, traders, fellow-farmers and written materials.

(2). Rural farmers should be given enlightenment to be always prepared to assess the impact of sources of extension information available to them, and their degree of usefulness to their farming activities These are valuable information which could be useful for extension staff, researchers, the media and governments

(3) Governments(s) and private organizations should intensify their efforts toward making rural farmers more aware of recommended farm practices Media houses in particular should serve as a veritable avenue for this purpose.

(4). In addition to awareness, rural farmers should be given encouragement and conducive atmosphere to adopt available recommended farm practices so as to enhance their income, output and productivity

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