

Relevance of Vernacular Radio Stations' Agricultural Programs in Utilization of Agricultural Information among Farmers in Molo Sub County, Nakuru Kenya**Teresia Wacheke^{1*}, Dr. John Ndavula², Dr. Peter Koome³**¹Masters of Development Studies Student- Community Development – St. Paul's University, 8 Moi Ave, Nairobi, Kenya²Department of Communication St. Paul's University, 8 Moi Ave, Nairobi, Kenya³Department of Social Sciences St. Paul's University, 8 Moi Ave, Nairobi, Kenya***Corresponding author**
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Abstract: The purpose of this study was to assess the relevance of vernacular radio stations' agricultural programs in influencing utilization of agricultural information among farmers in Molo Sub County, Nakuru Kenya. Agricultural sector provides a livelihood for about 80% of Kenya's population and employs more than 70% of the rural population hence it remains valuable for the provision of food and employment opportunities. Vernacular radio stations, as part of mass communication, has a wider audience in rural areas compared to other forms of media outlets. Therefore, they have led to the passing of novel information on agriculture to farmers in Molo Sub County, Nakuru Kenya. This study adopted a cross-sectional survey research design whereby 8,445 households in Molo sub-county were targeted. Cluster sampling method was used to determine the number of participants that was selected through systematic sampling. The target population was 155 respondents in Molo Sub County Nakuru Kenya and the response rate was 94.9%. A Questionnaire was used to collect data and pilot testing was done in Subukia Sub County Nakuru, Kenya. Descriptive statistics showed that 83.9% of the respondents listen to the agricultural program while 16.1% disagreed to listening to agricultural activity. The study established that there exists a statistically significant relationship between demographic characteristics, relevance of agricultural programs, institutional factors and utilization of agricultural information ($r = 0.644$; $p < 0.05$, $r = 0.503$; $p < 0.05$, $r = 0.463$; $p < 0.05$) respectively. The study concluded that demographic characteristics had a very high influence in the utilization of agricultural information among farmers in Molo Sub County, Nakuru Kenya. This deduced that radio agricultural programs are useful to farmers in Kenya and have greatly influenced their farming practices. The study recommended that there is a need for more effort in providing agricultural information programmes to farmers.

Keywords: Vernacular Radio Stations, Agricultural Programs, Utilization of Agricultural Information.

INTRODUCTION

Agricultural sector remains the backbone of Kenya's economy in terms of food and employment in spite of growing urbanization. Kenya National Bureau of Statistics [1] found that agriculture contributes about 25% to the Gross Domestic Product of Kenya and for most of the rural population it is the main source of revenue. Unfortunately the agricultural sector in Kenya is not giving as much output as it is expected and the low yield may be credited to lack of adoption of the new agricultural technologies and poor farm management. According to Kenya Food Security Steering Group [2], there is a worrying trend in food production in the country due to a blend of issues such as lack of information on proper farming techniques, poor farming methods, continued subdivision of agricultural land, and weak support systems from stakeholders on food security. Agriculture is becoming

information sensitive making access to information a requirement and a valuable resource for agricultural development. Information and communication are vital for the efficient shift of innovations and technologies that are designed to improve agricultural production. FAO [3] argues that in order to achieve sustainable agriculture development, increased transmission of knowledge and information at every stage of agricultural production chain is paramount. Radio is acknowledged as an important medium for communicating predominantly within the rural populations of developing countries [4]. Radio programmes have been used widely in rural areas because majority of rural farmers can afford radio set and radio programmes are quick in disseminating information regardless of inadequate supply of power, power failure or poor infrastructure such as absence of good road. Studies have shown that although most of

the rural farmers are uneducated they understand communication in their local/vernacular language [5]. Proper packaging and dissemination of agricultural information is vital for agricultural development and vernacular radio programs are at the apex of information sharing and network formation for farmers. A study by Kamade [6] found that vernacular agricultural programs educate farmers on better farming practices and modern farming techniques that improve production quality.

Radio in the rural communities is best suited to use vernacular language because official languages are not often used as much since a greater part of the population is uneducated and their focus is on obtaining livelihood [7]. Vernacular radio allows contextualization of the information in terms of ecological characteristics of the region. These programmes have been hailed for their relevance and wide audience nature enabling farming community participation in agricultural programs. The importance of vernacular radio discussing farming issues in the accent of the local community cannot be overemphasized. Girard [8] argues that local radio verbalizes the local community accent and language. Farmers have varied information needs required to make decisions in their day to day farming activities. In 2012 The Government of Kenya recommended promotion of technology adoption, improvement in food security, household incomes among others yet a survey by Kenya Horticulture Competitiveness Project 2013 indicated that the constraints that affect agricultural production are: high cost of inputs, low technical knowledge on agronomy and operation of equipment. Farmers in the rural communities rely on rain-fed agriculture and as a result, food production follows a single trend; pests and diseases on crops whereas control are very expensive and there is no organized marketing channel for produce when in high supply. This therefore highlights the gap that exists between the availability of technologies and sustainable agricultural development; indicating a lack of knowledge and information utilization by farmers and other stakeholders.

Utilization of agricultural information emanates from farmers decisions to use a new technology through comparing the uncertainties that come with the benefits of a given technology and the adopting costs [9]. Understanding these influencing factors is necessary for agricultural growth and for the generation of technology dissemination. There are a number of local language radio stations in Kenya some of which have agricultural programmes that target farmers in rural Kenya. These programmes feature a variety of agricultural content that appeals to the farmer. The question that arises is how effective these programmes are to farmer and whether they achieve their intended purpose and how can they be improved to meet the farmers' needs. Olorunnishola *et al.*, [10]

noted that a wide gap exists between knowledge available for improved technology and putting that knowledge in to practice which affects food production increase. Agricultural technologies have been generated and disseminated through various channel yet the information is not utilized. The need to gain a deeper understanding on the determinants of utilization of agricultural information on farmers is of essence and motivation behind this study. The research study investigated agricultural programmes on vernacular radio stations and farming practices of farmers in Molo Sub County. It further sought the attitudes of the farmers towards the programmes, assess how the farmers use of the agricultural information to improve farming methods and explored on how agricultural programmes can be improved to best suite farmers' needs.

LITERATURE REVIEW

Relevance of radio's agricultural programs

A one-way communication process cannot be used as effective communication in the process of development as there is need for feedback and constant exchange of information between communities, partners and interest groups, and official entities [3]. Therefore agricultural programs are designed in a way that it is appealing to the target audience. The style of presentation, simplicity of how the information is communicated, use of expert, accessibility of the program all aim at attracting the farmers. For agricultural programmes to be more effective, the producers should involve farmers in their production as a style of presentation so that the farmers can use these programs as a platform to address agricultural issues that affect them. This translates to the relevance treatment of the radio agricultural programs on farmers. Local and community based media plays a great role in enabling rural communities to access information in their local languages. Ekoja [11] notes that habitual transmission of radio agricultural programmes disseminates important information about new farming methods to farmers and as farmers receive helpful information on radio; they are able to apply the new techniques gradually improving farming methods. Agricultural information is obligatory to reach farmers and agriculturists in order to meet up their needs. Understanding farmers' information needs aids in designing suitable programs, policies, and organizational innovations. Assessments of information needs provide designers of programs with the capacity to develop interventions for users with information needs that are specific [12]. The radio's nature of delivery –talk that is carried through all radio formats appeal to the audience differently. Myers [13] observed that the radio content of a development nature will work on radio better than it would on television since radio better communicates ideas that are complex and adds value to the imaginations listeners' of the listeners.

Radio programmes attracts large following from the audience if the programs are well produced, this will also depend on the content, format or style, use of experts and presentation. Myers [13] further observes the challenges development content on radio faces; the want to generate programmes on a tight budget, meaning that potential of high impact educational programs which require keeping hold of teams of dedicated writers, experts, editors, technicians are too costly to produce for communities and as such, the programs are produced by separate production houses and funded by government and donor aid. It is not surprising, therefore, that the African airwaves have live studio-based programs, that is, call-in programs, news, and live studio discussions [13]. A study done by Ango *et al.*, [14] on Radio Agricultural Programmes showed that, 26.7% of the farmers in the study area achieved knowledge of agricultural practices through the use of agricultural programs aired by radio programs. 17.8% of the farmers accounted to have received knowledge and information on the prevention of post-harvest losses and a 16.7% of the farmers indicated to have received knowledge on appropriate and accurate fertilizer and treatment application for various animal diseases. There was an indication that 11.1% gained knowledge on how to access agricultural credit and other loans facilities and 8.9% of the farmers gained knowledge and information on control measures for insects, diseases, and pests. The research reported that only 2.2% of the farmers did not gained any type of knowledge on agricultural activities as a result of the agricultural programmes aired. These finding of the research clearly showed that the farmers in the study area gained knowledge from the aired programs on radio. The acquired knowledge positively impacted the farmer's agricultural practices.

Radio's unique characteristics like pervasive and its penetrative nature makes it the preferred media channel for extending agricultural information. The nature of its delivery, like the talk shows appeal to the different audience differently. Myers [13] observes that radio content of a development nature works well on radio programs than television because radio is superior for conversing multifarious ideas and has supplementary value of the imaginations of the listeners. In the developing countries the power of the radio as an effective medium to project the information and knowledge related to agriculture is acknowledged [15]. In Kenya, vernacular stations have played a major role in dissemination agricultural information according to their audience needs. Odira [16] examined the functions and impact of radio broadcasting towards improving farm production in rural Kenya that involved a case study of Radio Nam Lolwe in Kakelo location in Homa Bay County. According to his findings it was revealed that other than the poor reception of the alternative radio stations acting as a main catalyst as to why majority of the farmers from the region opted for Radio Nam Lolwe,

they were also prompted by their need to access agricultural related information and programs.

In Senegal, radio carries better quality development programmes and caters well for local languages compared to the under-resourced community stations [13]. Media has a critical role to play in development. Chadra [17] study notes that media plays a major role in empowering small scales farmers to take control of different aspects of their agricultural production. Srampickal [18] stated that the mass media provide a vast reservoir of knowledge and information that serves as a tool for development and complements other development approaches. Radio programs have proved over time to be one of the most effective mediums in promoting agriculture and development in rural areas. Radio communication for rural communities or specifically farming communities takes an interactive approach and thus enabling effective dissemination of skills, knowledge and information to farmers, extension service providers and other stakeholders. Studies done on dissemination of agricultural information affirms that, media such as print, radio, information and communication technologies tools have been known to be effective in dissemination of information to farmers over time. this implies that vernacular radio can be used to pass on development messages to farmers as the main goal is to empower rural communities with relevant, timely and accurate information that is necessary for decision making and improvement of livelihood.

Agricultural Information on smart and better farming methods, fertilizer and improved seeds, timely planting, better and improved harvesting methods, marketing, soil conservation, post-harvest handling and diversification on radio agricultural programs enlightens farmers. It gives them an opportunity to intermingle with each other and other relevant authorities for instance extension workers, experts on crop and animal through format like live talk shows, phone in programs. The programs can also be used to rally people towards community development work such as construction of valley dams, cattle dips, protected wells and immunization of animals Nakabugu [15]. Previously, agricultural researchers and extension workers used conventional communication channels to disseminate agricultural information to farmers and other stakeholders [19]. However, radios programs have scored high in popularity and listenership because of their special and focus in broadcasting to local audience in local languages [20].

An article by Fia [21] reported that in Ghana through radio programs farmers recognize the importance and are enthusiastic to devote in the precise submission of fertilizers. They as well know how to plant in rows with the right spacing and the best ways

to manage their farms. Post-harvest handling practices were reported to have improved, with many farmers testifying on use of modern storage methods. The agriculture ministry in collaboration with commercial radio stations helped to get better the awareness and skills of small-scale farmers in the sustainable production and post-harvest treatment of high quality staple foods. Accordingly, through the skills learnt from the radio programs, farmers were reported to have increased yields through intensification and good agronomical practices which in turn enabled them to sell to formal markets and even invest their income. Development information through the radio programs aims at changing people's attitudes, educating them on better ways of achieving set goals, imparting new ideas or knowledge, and generally empowering them to take better decisions that will improve their livelihood. Nabusoba [22] did a study on the impact of radio agricultural programmes on small-scale farmers the case of "Mali Shambani" Programme on KBC Radio. According to the research findings, respondents agreed that agricultural programme featured topics that are relevant to their agricultural activities. Among the respondents, 24 out of 31 farmers indicated that they participate in the programme through calling and sending SMSs and that the programme content focuses on farming practices they engage in and in addition new farming techniques they are likely to practices. According to the farmers the program offered specific subjects of interest such as; where to get farm inputs, certified seed, pest control among others. The production team that produces "Mali Shambani" program added that they try to ensure relevance the of programme content by seeking guidance from agriculture experts. They involve agriculture officers when they plan the programme schedule.

METHODOLOGY

A cross sectional survey research design was used where 8,445 households in Molo sub-county were

targeted. Cluster sampling method was used to determine the number of participant that will be selected through systematic sampling. A total of 155 respondents were involved in the study 34 participants from Arimi ward, 11 from Mutamaiyu, 76 respondents from Turi ward and 34 participants from Kiambiriria. Primary data was collected through the use of a questionnaire. A Questionnaire was developed by the researcher, validated by experts in development studies, and pilot tested in Subukia sub-County. Descriptive statistics such as percentages and frequencies were used to summarize data while inferential statistics such as correlation coefficient was used to test relationship between variables. It was established that there exists a statistically relationship between demographic characteristics, relevance of agricultural programs, institutional factors and utilization of agricultural information ($r = 0.644$; $p < 0.05$, $r = 0.503$; $p < 0.05$, $r = 0.463$; $p < 0.05$) respectively.

FINDINGS

Access to agricultural radio programs

This study was interested in the determinants of utilization of agricultural information by farmers in the study area by determining the farmers' access to the agricultural radio programs. Among the mass media means of communication, radio is found to be the most important means of communicating agricultural information to the rural farmers.

Agricultural radio programs

This study sought to determine the respondents' access to radio sets. This study assessed the listenership of the agricultural programs by considering respondents opinion on radio agricultural programs they listen to and the frequency of the listenership. Table 1 shows the proportion of the respondents with access to radio.

Table-1: Proportion of respondents with access to a radio

Response	Frequency	Percentage (%)
Yes	143	96.6
No	5	3.4
Total	148	100

Source: Field Data (2018)

Radio as an important type of mass media plays a vital role of enlightening farmers about government agricultural policies and dissemination of agricultural information to farmers. Based on this importance, many rural farmers are fond of having transistor radio through which they are able to listen to both agricultural and non-agricultural information. Majority of the respondents indicated that they owned a radio set (96.6%) while only (3.4%) revealed they did not own a radio set. This implied that most of the farmers had access to radio, which is termed as step

forward towards having access to information hence ownership of radio set by farmers is an important factor that indicates the physical availability of the medium and exposure of famers to radio agricultural programmes.

Listenership of radio agricultural programs

Further, the famers were asked to indicate whether they listened to radio agricultural programs. The study found that 81.1% of the respondents listen to agricultural program while 18.9% disagreed to

listening to agricultural activity. The study shows that most of the respondents listen to agricultural

program as a source of education to improve their farm produce. The findings are shown in the Table-2.

Table-2: Proportion of respondents listening to agricultural program

Response	Frequency	Percentage (%)
Yes	120	81.1
No	28	18.9
Total	148	100

Source: Field Data (2018)

In terms of listenership, this study determined that farmers in the study area listen to agricultural programmes from various radio stations such as Inooro FM, Kameme FM, Kass FM, Change FM and Coro FM

Regularity of listening to the radio

The respondents were asked to indicate how often they were listening to the radio agricultural programs. From the findings most of the farmers 81.7% indicated that they were listening to the radio on daily basis due to the convenience of the time the programs are aired while others 9.7% indicated that they were listening to the programs weekly and another 9.7% indicated they listen to the agricultural programs almost monthly.

Convenient Time for Listening to Agricultural Programmes

A convenient time to listen to any agricultural programme is very essential but time sacrificing for

farmers. Rural farmers were mostly found to have been engaged with either farm or domestic activities throughout the day. Therefore for effective results, any agricultural programme has to be aired at the convenient time of the farmers.

As indicated in the result of Table-2, majority (84.2%) of the farmers indicated they preferred and listened to agricultural programmes during the morning hours of the day, 6.7% of the farmers listened to the agricultural programmes in the evening hours and 2.2% of the farmers were found listening to radio agricultural programmes both in the morning and evening hours.

The majority of the farmers listened to agricultural programmes in the morning hours of the day due to the fact that almost all the farmers were engaged with either farm or domestic activities in the afternoon and evening hours of the day.

Table-3: Time of listening to radio agricultural programme

Time	Frequency	Percentage (%)
Morning hours	101	84.2
Evening hours	16	13.3
Morning and evening hours	3	2.5
Total	120	100.0

Source: Field Data (2018)

Relevance of the radio agricultural program

The usefulness of research results is generally achieved through an efficient mechanism of information transfer to the appropriate target –farmers [23]. The transfer of the information to the target audience at the required time could only be achieved by the use of mass media depending on the purpose and the number of farmers to be reached.

One of the objectives of this study was to assess the relevance of agricultural program to farmers by looking at the simplicity, the content style of presentations and use of expert on the programs.

Simplicity of the agricultural programs

The main essence of creating awareness through radio programming is to make the farmers aware and convincing through appropriate captivating format which subsequently convince the farmer to adopt the innovation. Table 4 shows farmers' attitudes towards the simplicity of agricultural programs aired. 91.7% of respondents strongly agreed that the programs are simply enough for them to understand. This may be due to the fact that most of them speak and hear the local language the agricultural programmes broadcasts with. A 6.7% of respondents agreed that the programs were simple enough for them to understand and only 1.6% disagreed.

Table-4: Famers' attitudes towards Simplicity of agricultural Programs

Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
The agricultural programs are simple to understand	110 (91.7%)	8(6.7%)	0(0%)	2(1.6%)	0(0%)

Source: Field Data (2018)

Content of agricultural program

Table-4 of the result indicated that 57.5% of the farmers strongly agreed that radio agricultural programmes aired information relevant in their agricultural activities, 24.1% of the farmers agreed that the radio agricultural programmes were relevant to them, 16.7% of the farmers were neutral that the radio agricultural programmes were partially relevant to their agricultural activities while only (1.7%) of the farmers

were of the opinion that the radio agricultural programmes were not relevant to their agricultural activities. The finding implied that radio agricultural programmes are relevant as a result of the knowledge gained that helps in improving their agricultural activities since 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.

Table-5: attitudes towards relevance of agricultural Programs

Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
The content is relevant to my agricultural activities	69 (57.5%)	29(24.1%)	20(16.7%)	2(1.7%)	0(0%)

Source: Field Data (2018)

Style of presentation

To arouse the interest and create awareness among the listeners, radio stations normally adopt and present their programme in different formats. As indicated in Table 5 of the result, majorities (89.2%) of the farmers strongly agreed with the format of the agricultural programmes that is presented through presentation and discussion by an expert and or farmers that have succeeded in their farming, 8.3% of

the farmers agreed they listened to the agricultural programme through interviewing experts in the radio, while 2.5% of the farmers testified that they did not have views of how agricultural programs aired. This implies that majority of the farmers' listened to agricultural programmes that were presented through discussion or in interviews format which is more appealing and captivating to the farmers.

Table-6: Famers' attitudes towards the style of presentation of agricultural Programs

Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
The format used to present the program is suitable	107(89.2%)	10(8.3%)	3(2.5%)	0(0%)	0(0%)

Source: Field Data (2018)

DISCUSSION**Influence of relevance of radio's agricultural program on utilization of agricultural information**

The second objective of the study was to examine the relevance of radio agricultural program to farmers. Relevance was measured in terms of simplicity, the relevance of content of the programs and the style or format of presentation the radio agricultural programs uses. Simplicity of the program was measured in respondents' attitude and views towards their favorite agricultural programs. Majority of the respondents indicated the programs were simple enough for them to understand as they used language and terms that they could easily identify. In terms of relevance of the content, the majority of the respondents indicated that they strongly agreed the content aired by the agricultural programs is relevant to

their farming activities further suggesting that the programs invites experts.

A majority of the respondent reported that radio agricultural programs use suitable formats, which are mostly talk shows and discussion from experts and successful farmers. Qualitative data revealed that simplicity of the radio agricultural programs, style or format of presentation access and airing relevant content had increased the degree of adoption of technologies and new knowledge. The study established that the farmers had been able to use information from the programme to improve their farming practices, the farmers had learnt correct and proper application of fertilizer, appropriate treatment for various animals diseases Prevention of post-harvest losses and access to credit and loan facilities.

There exist a significant positive relationship between relevance of agricultural programs and utilization of agricultural information.

CONCLUSION

Radio agricultural programs are useful to farmers in Molo Sub County and have greatly influenced their farming practices. The farmers have learnt new farming skills from the program, new technology and gained knowledge on various farming methods. Radio program can be effectively used to supplement other sources of agricultural information where agricultural extension officers cannot reach. Institution factors such as access to credit facilities, development of infrastructures and provision of farm inputs at fair prices all enhance utilization of agricultural information among farmers.

RECOMMENDATION

The study recommended that there is a need for more effort to be put in providing agricultural information programmes to farmers through radio especially in the morning hours and evening hours, which are convenient times for the farmers.

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