INTERNATIONAL JOURNAL OF ADVANCE RESEARCH, IDEAS AND INNOVATIONS IN TECHNOLOGY

ISSN: 2454-132X
Impact Factor: 6.078
(Volume 10, Issue 6 - V10I6-1148)
Available online at: https://www.ijariit.com

The Role of Shamba Mtaji Program on TBC-FM in Improving Soil Fertility in Tanzania: A Case of Mbwawa Ward, Kibaha Town Council in Coastal Region, Tanzania

Innocent Byarugaba
innocentbyarugaba0@gmail.com
St. Augustine University of Tanzania, Dar es Salaam

Dr. Francis Ng'atigwa
xchengo@gmail.com
St. Augustine University of Tanzania, Dar es Salaam

ABSTRACT

This study explores the impact of the radio program Shamba Mtaji, broadcast on TBF-FM, on promoting soil fertility practices in Mbwawa Ward, Kibaha Town Council, Tanzania. The research was supported by three central objectives: identification of problems in soil fertility raised in the program, analysis of the methods used in the production of the program, and assessment of perceived strengths and weaknesses of the program among its listeners. It utilized a case study design wherein 114 respondents from three streets in Mbwawa Ward, namely Mbwawa, Miswe Duka, and Miswe Chini, were surveyed using questionnaires, focus group discussions, interviews, participatory rural appraisal, and document review. This study is informed by the diffusion of innovation and uses and gratifications theories. Results indicate that Shamba Mtaji is valued by both crop and livestock farmers due to its emphasis on soil fertility. However, most of the listeners did not realize that facts, and issues relating to soil fertility were relatively new to many of them. It concludes by suggesting a need for a change in the timing of the program to make it more accessible to its audience; secondly, its message should be complemented through other channels such as loudspeaker announcements; and thirdly, holding advocacy meetings to enhance farmer participation. With these suggestions put into practice, this may lead to sustainable agriculture and more responsible use of land resources where the selling of land to non-agricultural enterprises will be minimized

Keywords: *Radio, Radio Program, Soil, Soil Fertility, Improvement of Soil Fertility, Communication, Broadcasting*

1. INTRODUCTION

Land is one of the most precious natural resources of the earth gifted to mankind in the world (Badrinath, 1999). However, land like air and water is essential to support life on earth. Over 90% of all human food and livestock feed are produced from the land and from soils which vary in quality and extent. Of the earth's 13,000 million hectares of ice-land surface, only 3% is covered with highly productive soils, just 6% with moderately productive, and 13% with slightly productive soils. The remaining 78% of the land inhibits the sustainable cultivation of its soil and sometimes even for grazing.

Land provides various sources and means of existence. From land, people, get subsistence goods such as minerals, fuel, and different natural and artificial vegetation such as forest, food product to mention just a few. Forests provide wood fuel, building materials, food stuffs and goods for sale such as timber (Kajembe, 2007). Tanzania is predominantly an agricultural country. The backbone of the country is agriculture where 80% of the people depend on it for their livelihoods. The agricultural sector is the mainstay of the Tanzania economy providing livelihoods for 90% economically active population and accounting for 84% of export earnings in 1991(URT, 1993). Thus, soil is the central to agriculture especially rural livelihoods.

The majority of Tanzania population (87%) live in rural areas and are dependent upon resources available in their surroundings to meet basic needs.

The most critical natural resources in the village environment are land. Land is perceived as a physical entity as well as a system of natural resources which include soil, minerals, water and biota in all their biological and genetic diversity (UNCED, 1992).

Because land and its resources are important components of life-supports system it is imperative to understand and document how they are managed for their sustainability at local levels.

Moreover, the existing legal and institutional framework for assessing and managing resources at a local level has not been very effective. As far as Tanzania is concerned, there are numerous pieces of legislation which apart from contradicting each other, often clash with indigenous property management system.

A case in point is the Rural Lands (Planning and Utilization) Act of 1972 which enables the President to put out customary land rights. The result of ambiguity in the legal/institutional framework is to introduce insecurity in land tenure leading to unsustainable land use as well as making legislation ineffective and irrelevant to actual place.

According to Padre et al (2003), agriculture is becoming information sensitive; hence, access to information has become a prerequisite and a valuable resource for agricultural development. In this context, information is required to exploit opportunities, raise awareness about modern farming innovations and technologies, and the impacts of the current choices

FAO (2006) posits that achieving sustainable agriculture development relies not only on material inputs and people involved in their use, but also increased transmission of knowledge and information at every stage of agricultural production chain. Ani (2001) indicates that agricultural extension service delivery has been conceived with communicating research findings and improved agricultural practices, and the efficiency with which this information and practices are conveyed would determine the level of productivity.

However, there are poor linkages between the farmer and the institutions concerned with the dissemination of agricultural information on better practices. According to Chapman et al. (2003) radio is widely regarded as a tool for extension services which links the farmer and the sources of agricultural information due to the fact that for more than 80 years after the world's first radio station was founded, radio is still the most pervasive, accessible, affordable and a flexible medium available in the developing world that can interpret the world from the local perspectives and talk in a local language.

This study therefore will investigate the role of radio through the 'Shamba Mtaji' radio Program prepared by Tanzania Broadcasting Corporation (TBC FM) in the improvement of Soil fertility at Mbwawa Ward in Kibaha Town Council, Tanzania.

Not only that, but also this study will determine whether radio addresses the needs of the farming community in Mbwawa, to examine the competence of the resource persons used in radio programming, to determine the appropriateness of the time that the programme is aired, and finally investigate the benefits that the programme has made to farmers**.**

The agricultural sector is the mainstay of the Tanzania economy providing livelihoods for 90% economically active population and accounting for 84% of export earnings in 1991(URT, 1993). Thus, soil is the central to agriculture especially rural livelihoods. The majority of Tanzania population (87%) live in rural areas and are dependent upon resources available in their surroundings to meet basic needs. The most critical natural resources in the village environment are land.

Since land and its resources are important components of life supports system, it is imperative to understand land is managed for sustainability at local levels. According to Shelukindo & Kilasi (1993) as well as Kaswamila (1995) loss of soil fertility consequently reducing crop yields. However, as observed by WFP (2012) most of the population experiences food insecurity due to lack of information and knowledge on new technologies and inadequate extension services.

This focus on soil resources calls for increased knowledge and information sharing about agricultural production as well as appropriate communication methodologies (2006) argues that various agricultural institutions such as universities, private companies, research institutes, and even farmers themselves are always involved in generating new agricultural technologies and services but their flow to the rural farmer is very low or non-existent. This can be attributed to poor linkages between the farmer and the institutions concerned with the dissemination of agricultural information on better practices on the farm especially the media.

Chapman et al (2003) point out that radio is a widely regarded tool for extension services that can link the rural farmer with the sources of agricultural information. It can provide farmers with information relating to all aspects of agricultural production in a language they can understand. Chapman further argues that there is evidence in a study on the impact of radio that was conducted in Pune in India where, of the two sets of listeners who were selected, the one who listened to radio had more information about modern methods of farming than the one who did not listen.Therefore, this study will focus on the role of the Shamba Mtaji radio program on TBC-FM in improving Soil fertility in Tanzania. *A case of Mbwawa Ward, Kibaha Town Council in Coastal Region, Tanzania*

2. LITERATURE REVIEW

This study employs two theories

The Diffusion of Innovation Theory (DIT) was first discussed historically in 1903 by the French sociologist Gabriel Tarde who plotted the original S-shaped diffusion curve, followed by Ryan and Gross in 1943 who introduced the adopter categories that were later used in the current theory popularized by Everett Rogers in 1962 (Kaminski, 2011). This is among of the oldest social science theories. It originated in communication to explain how, over time, an idea or product gains momentum and diffuses through a specific population or social system. The end result of this diffusion is that people, as part of a social system, adopt a new idea, behavior, or product. This theorist combined information flow research findings with studies about the flow of information and personal influence in several fields which among them were anthropology, Sociology and rural agricultural extension (Nzalayaimisi, 2018).

The Diffusion of Innovation theory is often regarded as a valuable change model for guiding technological innovation where the innovation itself is modified and presented in ways that meet the needs across all levels of adopters. It also stresses the importance of communication and peer networking within the adoption process. Kaminski (2011) explains how new ideas, products, technologies, or innovations spread and are adopted within a society. The approach aims to understand how innovation is communicated through specific channels among social system members over time (Rahul, 2024).

Uses and Gratification Theory. The theory originated from the functionalist perspective on mass media communication and was first developed in research on the effectiveness of the radio medium in the 1940s (Lim & Ding, 2012). It posits that media users play an active role in choosing and using media. Proponents of this theory, Blumer and Katz believe that people use the mass media to their benefit or to satisfy their own needs (Baran &Davis, 2006).

The uses and gratifications approach springs from a functionalist paradigm which presents the use of media in terms of the gratifications of social or psychological needs of the individual (Blumler & Katz, 1974).

The uses and gratifications theorists argue that people's needs influence how they use and respond to a medium (MacQuail, 1987). In addition, different needs are associated with individual personalities, stages of maturation, backgrounds, and social roles.

Macquarie offers a typology of the common reasons for media use such as the need for information and personal identity. This approach is necessary to evaluate how the target farmers use agricultural information broadcast on radio to satisfy their farming needs (Lim & Ding, 2012).

Empirical Literature review

Various research using this theory have found it fruitful in understanding consumers' motivations and concerns for using various media such as radio, TV and electronic bulletins (Eighmey & McCord, 1998). In particular, this theory seeks to recognize the important role of the individual in the use of mass media by focusing on what people do with mass media (Katz, 1959; Klapper, 1960). Katz et al. (1974), have put forward the basic assumptions of the U & G approach. First, the audience is active and thus the use of mass media is goal directed. Second, the audience makes motivated choices, based on previous experience with the media. Third, media selection and use are purposive and motivated and people take the initiative in selecting and using communication vehicles to satisfy felt needs and desires. Fourth, the media compete with other sources of need satisfaction. Finally, value judgements about the cultural significance of mass communication should be suspended while audience orientations are explored on their own terms.

Richard (2012) notes that radio has been acclaimed by many development communicators as the medium of the people the only mass medium which reaches all segments of the society. Meyers (2008) declares that radio is still the dominant mass medium with the widest geographical reach and highest audiences compared with television (TV), Newspapers and other information communication technologies (ICTs).

Girard (1999) posits that for more than eighty years after the world's first radio station was founded, radio is still the most pervasive, accessible, affordable and flexible mass medium available especially in the developing world adding that radios low production and distribution costs have made it possible to focus on local issues, to interpret the world from the local perspectives, and to talk in local languages. Radio is a way to send electromagnetic signals over a long distance to deliver information from one place to another.

Sharma (2008) clarifies radio as the reliable medium that can cover wider area and can reach to the large number of people. The strength of radio as the medium of communication is that it is cost effective in terms of transmission, presentation and portability. Radio as a type of electronic media is fundamental tools and potential for sharing information. It is a fascinating medium among the various mass communication media because of its special characteristics. It continues to be as relevant and potent as it was in the early years despite the emergence of more glamorous media. It is a truism that in the first phase of broadcasting spanning three decades from the early twenties, radio reigned alone or was the dominant player. However, over a period of time, the media scene has changed drastically.

Chapman et al (2003) explain that radio is widely regarded as a tool for extension services which links the farmer and the sources of agricultural information due to the fact that for more than 80 years after the world's first radio station was founded, radio is still the most pervasive, accessible, affordable and a flexible medium available in the developing world that can interpret the world from the local perspectives and talk in a local language.

Dissemination a of new knowledge to farmers in developing countries and Tanzania in particular needs the consideration of channels and associated factors which may influence the delivery of the message. Radio stations have a great potential of being able to reach more people at a given time because broadcasting is made possible through the satellite and antennas (Wahab, 2015) and are known to reach most people in the country (TCRA, 2017).

The experience indicates that radio programs has shown the possibility of disseminating and imparting new knowledge to the farmers to benefit from both the reach and the relevance that local broadcasting can achieve by using participatory communication approaches. The importance of sharing information and opening up wider information networks for farmers is explored concerning the specific example of radio programs based on research on soil conservation to maintain its fertility however in this study my focus will be on the national radio which is TBC-Taifa and its roles to the farmers. Therefore, this approach was necessary in evaluating how the targeted farmers used agricultural information from TBC-FM through the Shamba Mtaji radio program to satisfy their farming needs.

3. METHODOLOGY

This study used qualitative and quantitative approaches to present detailed information on data collection, analysis, and interpretation (Gubrium, 2001) utilizing semi-structured interviews and focus group discussions with a diverse group of farmers, Extension officers, and other stakeholders within Kibaha Town Council boundaries. Also, Questionnaires, Participatory Rural Appraisal, and Direct Observations were applied. The design facilitates the researchers in appreciating the research methods, which are suitable for the study (Gubrium, 2001). Leedy (1997) defines research design as a plan for a study, providing the overall framework for collecting data.

4. FINDINGS.

The results of this study show that in all the streets where the study was conducted, women are an active part of the community involved in agriculture to a large extent, which can be demonstrated by the percentage of people involved in agricultural activities, which is 55 people, equivalent to 61.1% of the study participants. This finding is also confirmed by Wanjiru (2020): women produce 60-80% of the world's food and are essentially better stewards of the environment than men. The millions of women involved in agriculture around the world form a heterogeneous group with very different realities, opportunities and challenges. The results also show that the age groups of 11 to 20 and 21 to 30 years old, who consider themselves to be the active group, participate less in agricultural activities. Majority of the agricultural participants are classified as 30 years and above and the average age is not much involved in agricultural activities This is the conclusion of Tesfaye (2015) that, Age is considered as a decisive factor for production, the existence of old age in production has little effect on productivity. But most of the older people in African countries play a bigger role in productive activities, especially in agriculture.

The study also found that education level is one of the factors that motivate people not to participate in agricultural activities. The data showed that out of 90 respondents, only 4 (4.4%) had a university degree. The study also found that respondents were aware of the content of the program.

Nearly 73.3% of the respondents seemed to be aware of the Shamba Mtaji radio program and based on the study's observations, people found the program useful in helping them improve soil fertility.

In addition, respondents were asked about their awareness of the program content, of which 67 (74.4%) respondents said that they were aware of the content broadcast by TBC Radio.

The results show that the people of the three streets are aware of the importance of improving soil fertility. Out of 90 respondents, 81 (90%) indicated that it is important to improve soil fertility. The respondents answered several questions regarding the efforts of NGOs and religious organizations and their contributions to environmental protection, the results showed that there is little involvement of these organizations in environmental protection. Overall, the Shamba Mtaji radio program provides relevant information on improving production in the three streets. The results of the study demonstrate that the presence of the Shamba Mtaji radio program will become a catalyst for community transformation. This can be demonstrated repeatedly when the respondents asked the farmers for their contributions, the response was always positive.

5. DISCUSSION OF THE FINDINGS

Extent of Familiarization with the Content of Shamba Mtaji Radio Program. Among 90 respondents who filled out the questionnaires, in this study, 78(86.7%) of respondents in all three streets in Mbwawa Ward accept that agriculture activities have a significant impact to their lives. On the other hand, 12 (13.3%) responded that there are no benefits as far as agricultural activities is concerned. And based on the analysis this group of people is the one which experiences low yields during harvesting. The findings in this aspect align with comments presented by Adekunle (2020) which state that the benefits of agriculture are usually determined by the transformation of people who participated in the agricultural sector, and the improvement of the standards of living reflect the reality that communities involved in the agriculture sector are evolving.

However, sometimes the transformation of the communities may take time as a result people who engaged in a particular sector fail to notice the small changes that take place

6. CONCLUSION AND RECOMMENDATIONS

This study was designed to examine the role of the Shamba Mtaji radio program broadcast by TBC-FM in improving soil fertility. The first specific objective was to analyse the impact of socio-economic characteristics and household participation in agricultural production. In this study, age was found to be an important factor in determining agricultural output for both male and female participants. This result is consistent with Rebecca (2012) who reported that the age of the household head is a positive contributing variable if they are middle-aged as they are likely to be actively involved in agricultural activities; and with Maser (2011) who reported that an individual may lose the ability and energy to engage in agricultural activities or productivity-enhancing measures as they age. Education level is considered to be a determining factor in people's participation in agriculture.

This finding is consistent with the argument of Adekunle (2013) that the education level of the household head positively influences knowledge, attitude and practice in accessing modern agricultural extension services and better agricultural production technology. Therefore, we conclude that high literacy rate may be one of the factors limiting people's participation in agriculture.

In the Arusha Declaration, the first President of Tanzania, Julius Kambarage Nyerere, said: “. Because Tanzania's economy depends and will continue to depend on agriculture and livestock, Tanzanians can live well without depending on external aid if they use their land properly. Land is the foundation of human life and all Tanzanians should use it as a valuable investment for future development, therefore we must focus on four things: land, people, good policies and good leadership". (Shivji, 2010)

According to this quote, the presence of good leadership will make people realize that; In Tanzania, where the economy depends on agriculture as its backbone, land must be used judiciously. The central government, local governments through regions, districts, wards, wards, and finally, villages and hamlets must have a common view on land conservation.

The government and other development stakeholders should support people in rural areas to understand the importance of land conservation through television and radio programs, training, meetings, workshops, and printing enough materials and making them available free of charge to the community. We need to enact city regulations that encourage people to plant more trees and protect them after cutting down other trees for other uses. The government and other development stakeholders must also educate farmers (plant breeders and producers) on the importance of modern agriculture, such as raising fewer animals due to land, using natural fertilizers, using plants (legumes) as fertilizers to retain lost nutrients, and avoiding growing in water sources. The government, in collaboration with NGOs, religious organizations, and community-based organizations, must continue to raise awareness and educate the community on the importance of land. This will help improve the livelihoods of all.

REFERENCES

[1]. Adekunle, A. (2013, 2020). Education and Agricultural Productivity. Discusses how education levels impact agricultural productivity and community transformation, indicating that higher literacy rates may limit agricultural participation in certain contexts.
[2]. Ani, N. (2001). Agricultural extension service delivery and its effectiveness. Journal of Agriculture and Extension, 5(2), 45-52.
[3]. Badrinath, M. (1999). Land and its resources. Environmental Journal, 23(4), 34-46.
[4]. Baran, S. J., & Davis, D. K. (2006). Mass communication theory: Foundations, ferment, and future (4th ed.). Cengage Learning.
[5]. Blumer, H., & Katz, E. (1974). The uses of mass communications: Current perspectives on gratifications research. SAGE Publications.
[6]. Chapman, R., Blench, R., Kranjac-Berisavljevic, G., & Zakariah, A. B. T. (2003). Rural radio in agricultural extension: The example of vernacular radio programmes on soil and water conservation in N. Ghana. Overseas Development Institute.
[7]. Eighmey, J., & McCord, L. (1998). Adding value in the information age: Uses and gratifications of sites on the World Wide Web. Journal of Business Research, 41(3), 187-194.
[8]. FAO. (2006). Sustainable agriculture and rural development in the context of poverty alleviation and food security: The role of agriculture. Food and Agriculture Organization.
[9]. Girard, B. (1999). The one to watch: Radio, new ICTs and interactivity. Food and Agriculture Organization.

[10]. Gubrium, J. (2001). Handbook of Interview Research: Context and Method. Provides a comprehensive guide on research methods, focusing on qualitative and quantitative methodologies, including interviews and focus groups, for gathering in-depth data.
[11]. Jemal, M. (2013). The Power of Radio: Connecting People Through Sound. This study explains the unique interactive aspect of radio, which involves and stimulates the imagination of listeners, making radio a distinct "blind medium" that can still engage the mind vividly.
[12]. Kajembe, G. C. (2007). Land and forest resources in Tanzania. Forest Ecology, 10(1), 21-29.
[13]. Kaminski, J. (2011). Diffusion of innovation theory. Canadian Journal of Nursing Informatics, 6(2), 1-6.
[14]. Katz, E., Blumler, J. G., & Gurevitch, M. (1974). Uses and gratifications research. Public Opinion Quarterly, 37(4), 509-523.
[15]. Klapper, J. T. (1960). The effects of mass communication. Free Press.
[16]. Leedy, P. D. (1997). Practical Research: Planning and Design. Defines research design as a critical framework for data collection, analysis, and interpretation, aiding researchers in selecting suitable methods to achieve study objectives.
[17]. Lim, S. S., & Ding, Y. (2012). Uses and gratification theory. In M. S. Allen (Ed.), Encyclopedia of communication theory (Vol. 2, pp. 998-1001). SAGE Publications.
[18]. MacLeish, R. (1999). Radio Production Worktext: Studio and Equipment. Provides an in-depth analysis of how radio connects with audiences on a personal level, highlighting the conversational and individualistic approach taken by broadcasters to foster a one-on-one connection with listeners.
[19]. MacQuail, D. (1987). Mass communication theory: An introduction. SAGE Publications.
[20]. Maser, S. (2011). Aging and Agricultural Productivity. Examines the decline in productivity with age, emphasizing how energy and physical capacity can impact older farmers' agricultural contributions.
[21]. Mwakyanjala, J. (2019). Communication sector undergoes exponential growth. Tanzania Communication Journal, 14(3), 55-62.
[22]. Myers, M. (2008). Radio and development in Africa. International Development Research Centre.
[23]. Nzalayaimisi, L. M. (2018). Diffusion of innovations and rural agricultural extension in Tanzania. Agricultural Extension Journal, 15(3), 12-20.
[24]. Padre, S., Oduor, G., & Patrick, M. (2003). Agricultural information dissemination. Journal of Extension Systems, 19(2), 19-30.
[25]. Rebecca, L. (2012). The Role of Age in Agricultural Productivity. Details how age affects productivity, with younger individuals potentially less involved in agriculture, and the importance of middle-aged participants who contribute actively to agricultural outputs.
[26]. Richard, S. (2012). The role of radio in rural development. Development Communication Review, 8(1), 7-16.
[27]. Richard, S. (2012). Broadcasting and the Personal Touch. Discusses the singular approach of radio communication where broadcasters address listeners as individuals rather than a mass audience, enhancing the emotional connection and impact of radio programming.
[28]. Sachdeva, N. (2021). Affordable Communication: Radio as a Medium of the People. Highlights radio's accessibility and affordability, making it a prime medium among economically disadvantaged and rural communities. Sachdeva discusses how radio's low cost allows it to reach a wide audience, including those who are illiterate.
[29]. Servaes, J. (2008). Communication for Development and Social Change. Emphasizes radio's pervasiveness and affordability, especially in rural and less economically developed regions. This source examines radio's role in breaking barriers of literacy and economic constraints.
[30]. Sharma, S. (2008). The role of radio in communication. Communication Journal, 12(4), 45-51.
[31]. Shelukindo, B., & Kilasi, C. (1993). Soil fertility and agricultural productivity. Tanzanian Journal of Agriculture, 8(1), 32-38.
[32]. Shivji, I. (2010). Nyerere on Development: Insights from the Arusha Declaration. Highlights Julius Nyerere's views on self-sustained development through agricultural productivity, emphasizing land as a foundational resource for Tanzania's economic independence and development.