



Original Article

Interactive Radio Programming and Gender Perspectives in Agricultural Knowledge Sharing: A Study of Women Crop Farmers in Dodoma City, Tanzania

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This study examines the accessibility of interactive radio-based agricultural information for women crop farmers in Dodoma City, Tanzania. With a focus on face-to-face interviews, supplemented by Focus Group Discussions (FGDs) and key informant interviews, the research involved 32 purposively selected individual participants. The study uses content analysis to unveil a limited interaction between radio programmers and women crop farmers in Dodoma City. Identified barriers include a scarcity of radios and mobile phones, absence of electricity for device charging, domestic responsibilities, fear of spousal disapproval, non-contact by programmers, voucher purchase costs, and language obstacles. The findings underscore the need for intervention to enhance women's engagement with radio programs. The study recommends that the Tanzania Communications Regulatory Authority (TCRA) addresses financial constraints hindering women's interaction. This aligns with the TCRA's commitment to prioritizing information consumer interests. Additionally, the Ministry of Education, Science, and Technology is urged to empower schoolgirls by providing agricultural education through secondary levels. Such initiatives can foster improved access to vital agricultural information for women crop farmers in Dodoma City, contributing to their socio-economic development.

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INTRODUCTION

With its extensive coverage frequencies, radio stands out as a prominent communication device. It is the preferred means of communication for accessing and disseminating crucial information to farmers in developing countries (Abubakar *et al.*, 2010; Parvizian *et al.*, 2011). This information equips farmers with the ability to address immediate challenges and needs (Udeanya *et al.*, 2019). Radio program content facilitates collaboration between users and providers, allowing them to share knowledge and experiences for agricultural development (Willems, 2012). The involvement of users in developing radio program content leads to the creation of relevant content for them (Hampson *et al.*, 2016). This collaborative approach in radio programming helps farmers learn more, fosters knowledge-sharing about farming methods, and encourages the adoption of sustainable practices (Komodromos, 2020). This underscores the importance of considering gender in radio content development.

Interactive radio programs have emerged as powerful tools for facilitating community development and empowerment. They enable listeners and radio programmers to collaborate, creating a platform for sharing valuable information and experiences. These programs provide a voice for marginalized community members, particularly locally (Bello & Wilkinson, 2017). They also offer a means for disenfranchised communities to express themselves (Komodromos, 2020).

Interactive radio programs play a vital role in promoting knowledge sharing, particularly in the context of agricultural practices. Farmers are encouraged to adopt sustainable and innovative farming methods, enhancing their knowledge of agricultural topics through active participation in these programs (Komodromos, 2020). The concept of participation, as defined by Rowe and

Frewer (2005), involves the exchange of information between an organization and the public through interaction. The enhancement of farmers' knowledge on agricultural topics should be based on exchanging information through social dialogue within the radio, recognizing their demands, information or knowledge needs, concerns, power positions, and feelings. Interactive radio programs enhance farmers' knowledge of agricultural topics and foster a sense of community engagement, collaboration, and shared learning, contributing to more sustainable and resilient agricultural practices.

Within interactive radio programs, competent farmers participating in the agricultural radio programming process are often recognized as valuable opinion resource persons (Ndonima *et al.*, 2021). This recognition emphasizes the importance of tailoring radio content to meet the specific demands, information or knowledge needs, concerns, power positions, and feelings of the farming community. The acknowledgment of competent farmers as opinion resource persons tailors radio content and empowers them to serve as role models and sources of inspiration for fellow farmers, fostering a supportive and informed agricultural community.

Despite the potential of interactive radio-based agricultural information, a significant research gap remains regarding how gender considerations are integrated into the programs. Gender dynamics are crucial factors to consider in such initiatives, given the distinct roles, needs, feelings, concerns, different power positions, and contributions of men and women in society. Gender, in this context, refers to socially constructed concerns related to the abilities, contributions, roles, and involvement of individuals in socio-economic issues (Madaha, 2018).

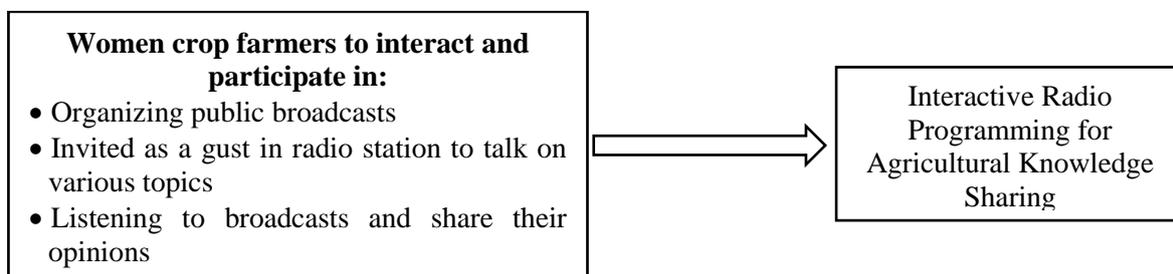
For instance, in Tanzania, there is a notable disparity in the agricultural labor force, with

women comprising 52% compared to men's 48%. According to the National Bureau of Statistics (NBS) (2017), women also shoulder the majority of household responsibilities, accounting for 54% compared to men's 46%. These statistics underscore the need to address gender disparities within the agricultural sector and the relevance of tailoring information dissemination to specific gender needs.

The central argument of this paper is that engaging with women crop farmers in the collaborative development of agricultural radio programs can lead to the broadcast of more pertinent and inclusive agricultural information. This research aims to investigate access to interactive radio-based agricultural information, focusing specifically on the case of women crop farmers in Dodoma City, Tanzania. The findings of this study have the potential to inform decision-makers and agricultural information communication stakeholders, enabling them to identify and address existing weaknesses. Ultimately, this could empower women crop farmers with the necessary agricultural knowledge and technologies to engage professionally in the field of agriculture, contributing to sustainable development at the local and global levels.

Conceptual Framework

Figure 1: Conceptual framework



EMPIRICAL LITERATURE REVIEW

The exploratory study conducted by Bamigboye and Osunkemle (2021) on listeners' participation in community radio media content highlighted that not all listeners have the opportunity to be active contributors to information consumption and views. The study revealed a lack of grassroots

THEORETICAL FRAMEWORK

The study utilized Feminist Theory (FT) in communication suggested by Gaye Tuchman 1978 to address gender issues, particularly focusing on the underrepresentation of women in media. According to feminist theory, the persistent gender gap in media representation is attributed to women's limited authority in shaping media content (Cuklanz, 2016). The study also incorporated the Democratic Participant Media Theory proposed by Professor Denis McQuail 1987 to guide the analysis of this study. The theory emphasizes universal media access and freedom of expression, advocating for the inclusion of diverse voices in media content creation. The theory also emphasizes widespread media access, freedom of communication, and community involvement (Asemah *et al.*, 2022). The theory states that access to the media should be granted to all members of society. The theory insists on the decentralization of the media where all groups, communities, and individuals can own, have access to, and operate small media organizations. It encourages the engagement of community members in planning broadcasts, utilizing local resources, and incorporating diverse perspectives into the content creation process.

participation and maximal involvement of listeners in community radio station activities. Specifically, listeners are not engaged in producing media content or organizational decision-making but participate in public spheres and debate forums.

Ndonima *et al.* (2021) investigated the role of radio agricultural programs on farmers' education in Benue State, Nigeria. The study found that respondents perceived resource persons used in radio agricultural programs as competent, indicating that experts were invited as guests and sources of agricultural information for farmers.

In the study on farmers' involvement in radio programs by Hampson *et al.* (2016), efforts were made to ensure women's voices were heard on air by actively inviting them to call in and establishing a dedicated phone line for their participation. However, the study also identified challenges women crop farmers face, such as cultural factors and security concerns hindering their involvement in radio programming, with married women being restricted by their husbands during evening broadcasts.

Kansiime *et al.* (2022) investigated challenges and capacity gaps in smallholder access to digital extension and advisory services in Kenya and Uganda. The study found that female and elderly farmers encountered difficulties in accessing and owning radios, faced language barriers, and experienced timing conflicts with other activities. These findings align with a study by Megerssa *et al.* (2020) on challenges faced by smallholder farmers in Southern Ethiopia, revealing issues related to the inappropriate timing of radio program broadcasts and language barriers.

Mtega's (2018) study on the usage of radio and television as agricultural knowledge sources in the Morogoro Region of Tanzania demonstrated that the level of education influences the use of radio as a source of agricultural knowledge. The study also revealed that women, engaged in home activities after farm duties, encounter challenges related to radio control and ownership. Okoroma *et al.* (2020) studied the utilization of the "radio farmers" program in IMO State, Nigeria, identifying a lack of interactivity between listeners and program presenters, a lack of electricity, and language barriers as serious obstacles to acquiring information through radio.

Furthermore, Evans *et al.* (2022) found in their research that the majority of respondents (89.5%) had received some basic form of education, indicating a positive indicator of farmers' ability to process radio agricultural information and find solutions to their production problems.

METHODOLOGY

A qualitative case study research design was employed in this study due to its ability to study in-depth and detailed information using a variety of data collection procedures such as in-depth interviews, key informant interviews, observations, FGDs, and face-to-face interviews (Yin, 2009; Creswell, 2014). The data were collected until a data saturation point was attained. Data saturation is a qualitative data collection technique originating from grounded theory, referring to collecting qualitative data until no newer information is obtained (Charmaz, 2006). A limited range of interviews (9–17) or focus group talks (4–8) can achieve saturation (Hennink & Kaiser, 2022).

The researchers observed the following steps. In the first step, the researchers conducted a Key Informant Interview with the Dodoma City Urban Farming Officer. The interview focused on obtaining general information, including the agriculture sector, across the city. With the assistance of the Officer, the researchers purposively selected three out of forty-one wards in the city. The selection was based on the characteristics of being marginalized with arable land for agricultural activities compared to other nearby wards. The second criterion was that farmers in the wards could receive agricultural information broadcasted through community radios available in the city. The third criterion was the engagement of some of the inhabitants of the ward in agricultural activities. The selected wards were Makutupora, Chihanga, and Hombolo Bwawani from the Hombolo division (see Figure 4). The selected streets include Mchemwa, Azimio, Maendeleo, Chihanga, and Hombolo Bwawani B

Plate 1: Participants of FGD at Maendeleo Street

In the second step, the Dodoma City Urban Farming Officer communicated with Agricultural field officers in the identified wards to collaborate with the researcher in contacting study participants. Before going directly to the respective wards, the researcher coordinated logistics with Agricultural field officers in the respective wards on how data would be collected on different days.

In the third step, data were collected through in-depth face-to-face interviews, lasting about 30-40 minutes per participant depending on the speed of the study participants' replies and how the researcher probed to gather more information. In-depth face-to-face interviews were used to understand how women crop farmers interact with radio programmers to address their agricultural information needs (theme 1), the challenges limiting women crop farmers' interaction with radio programmers (theme 2), and how these challenges can be solved (theme 3).

On the first day of the third step and under the assistance of the Makutupora ward Agricultural field officer and the first research participant, the researcher used purposive and snowball sampling to identify other study participants. On that day, six women crop farmers from Mchemwa village were interviewed. The participants interviewed had engaged in agricultural activities for at least two years. Moreover, one Focus Group Discussion (FGD) with eight experienced women crop farmers in agriculture from the village was

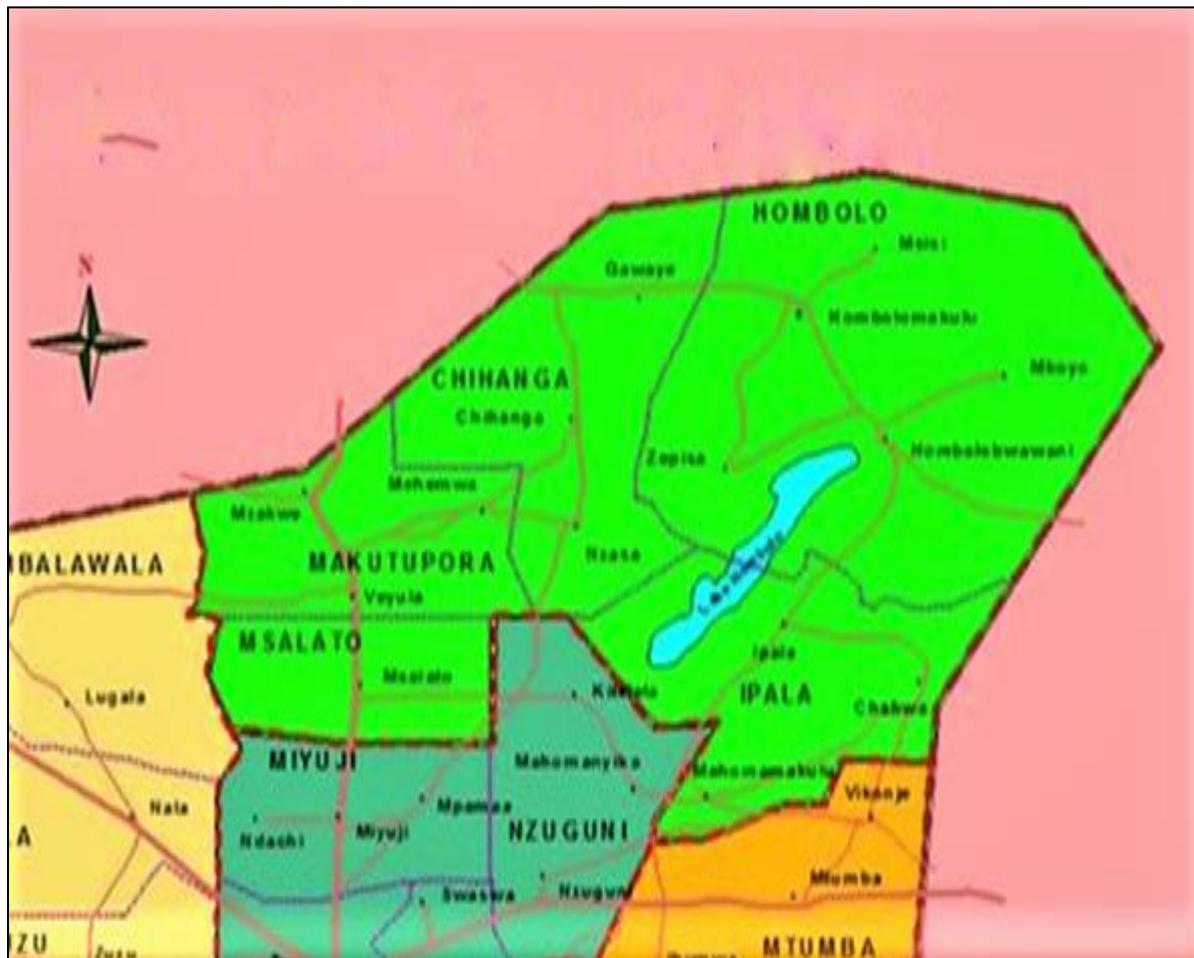
Plate 2: Participants of FGD at Hombolo ward

conducted to supplement the data before moving to another village.

On the second, third, fourth, and fifth days of the third step, data were collected from Azimio, Maendeleo, Chihanga, and Hombolo Bwawani B, respectively, using the same procedures. A data saturation point was reached after interacting with 30 women crop farmers individually. However, the researcher continued to interview two more participants to check for any new information. Moreover, an additional three Key Informants, radio programmers broadcasting agricultural programs located in Dodoma City, were contacted individually to supplement the data on the study topic. Key informants who participated were Dodoma FM (98.4), Alternative FM (92.9), and Mwangaza FM (90.8).

The fourth step, involved data analysis. Overall, the collected data were qualitative, leading the researcher to use content analysis to analyze the data according to the study objective and themes (Yin, 2009; Creswell, 2014). The researchers focused on making propositional generalizations of the findings involving making a summary of interpretations and claims of the participants of the study. The generalization was further complimented through researchers' personal experiences referred to as "naturalistic generalizations." Afterward, the two theories were used, as a lens, to further analyze the study findings (Creswell, 2014).

Figure 2: Dodoma City map showing the studied area (Hombolo Division with green color)



RESULTS AND DISCUSSION

Demographic Characteristics of the Study Participants

Overall, the educational level of the study participants varies from no education to secondary education (see *Table 1*). The marital status of the participants varied, including individuals who

were married, widowed, and divorced. The main sources of income reported by the participants include agricultural activities (reported by all participants), small businesses (reported by thirteen participants), livestock keeping (reported by six participants), and charcoal burning (reported by two participants).

Table 1: Demographic characteristics of the study participants

| Participants Age | % | Education Level | % | Marital Status | % | The main source of income | % |
|------------------|----|-----------------|----|----------------|----|---|----|
| 20-39 | 10 | No Education | 13 | Married | 22 | Crop Farming | 32 |
| 40-59 | 20 | Primary | 18 | Widowed | 7 | Supplementing main income source with livestock keeping, charcoal burning, and small business | 22 |
| 60-79 | 2 | Secondary | 1 | Divorced | 3 | | |

Women crop farmers cultivate a variety of crops, such as pearl millet, sunflower, groundnuts, sorghum, maize, cowpeas, cassava, and Bambara

nuts. The reasons for growing these crops include their ability to tolerate drought and suitability to the available land. Some of these crops are

common in the farmers' areas, making it easy for them to access seeds. These crops are cultivated in different acreages, with most farmers growing between 1/4 acre and 4 acres. Agricultural extension services are obtained from government agencies (Agricultural Field Officers, Tanzania Agricultural Research Institute (TARI)), Non-Governmental Organizations (NGOs) like the Diocese of Central Tanganyika (DCT), radios, and informal agricultural information.

Interactive Ways With Radio Programmers

The results from all sources including in-depth face-to-face interviews, FGDs, and Key Informant Interviews reveal that women crop farmers' interaction with radio programmers in the radio programming process is still low. This was revealed by the study results which found that twenty-two out of thirty-two study participants had never interacted with radio programmers in any community radio programming process. These participants had never interacted with radio programmers to organize public broadcasts, were invited as guests on radio stations to talk on various topics, and even shared their opinions after broadcasts. Moreover, the study results found that 1 out of thirty-two study participants had interacted with radio programmers and participated in both organizing public broadcasts, being invited as a guest in the studio to talk on various topics, and listening to broadcasts and sharing their opinions. The participant participated in organizing public broadcasts by being visited by radio programmers on the farm fields by conducting face-to-face interviews while agricultural information demands were recorded. Also, the participant had been interacting with radio programmers by being invited to the radio stations as a special guest to run the program together. Furthermore, the participant used to interact with radio programmers by listening to the broadcasts, sharing opinions, and asking for clarification after agricultural information was broadcast. Likewise, 9 out of thirty-two had interacted with radio programmers in organizing public broadcasts only. Participants mentioned that they had been visited by radio programmers

on their farm fields to conduct face-to-face interviews while their agricultural information concerns were recorded only. Furthermore, low interaction between women crop farmers and radio programmers was presented during FGDs at Hombolo Bwawani B, Azimio, and Maendeleo Streets. Participants agreed that they are not interacting with radio programmers since they are not in contact with radio programmers. In addition to that, one Key informant said:

"In our radio station, we interact only with knowledgeable women crop farmers by inviting them at the station to participate in hot topics like who sells agricultural produce at family levels" (Mwangaza FM radio programmer, on 14 March 2023).

The study results imply that radio programmers do not involve women crop farmers in all processes when developing agricultural information for community radio programs. This aligns with (Bamigboye & Osunkenle, 2021; Ndonima *et al.*, 2021) who found that radio listeners are not involved in the creation of media output or organizational decision-making but few of them participate in public spaces and debate forums.

Interactive Challenges

The study found that challenges limiting interaction between women crop farmers and radio programmers still exist. Reported women crop farmers' challenges were grouped into three categories as follows;

Organizing Public Broadcasts Challenges

The study results found that women crop farmers face many challenges that limit them from interacting with radio programmers to organize public broadcasts. This was revealed by the study participants who mentioned that they are naturally busy with household responsibilities to the extent of not having time to interact with radio programmers to organize public broadcasts. Furthermore, fear of their husbands was also mentioned as a challenge. Participants reported that it is prohibited for married women to speak

on behalf of the family (taboos). Moreover, other study participants who have ever participated in organizing the public broadcast process mentioned the challenge of never being contacted by radio programmers. Participants mentioned that they have not yet contacted radio programmers to give their agricultural information reactions and demands.

The study results imply that women crop farmers are not free to participate and interact with radio programmers to express their agricultural information demands. The study result is similar to that of Hampson *et al.* (2016), who found that women face cultural factors and security concerns when participating in radio programming.

Invited as a Guest In the Studio to Talk on Various Topics Challenges

The study results found that women crop farmers face challenges related to language barriers and spousal disapproval. Participants who faced the challenge of language barrier as a main challenge mentioned that they are not conversant with the Swahili language which is commonly used by radio programmers. Moreover, those with spousal disapproval challenges mentioned that they are not allowed by their husbands to go into the studio to talk on various agricultural topics.

Listening to Broadcasts And Sharing Their Opinions Challenges

The study results found that women crop farmers face many challenges that limit them from listening to broadcasts and sharing their opinions. Among the challenges mentioned are many household responsibilities which limit their time to listen to broadcasts and share their opinions. Moreover, other study participants mentioned the challenges of the cost of purchasing vouchers to call radio programmers to share their opinions and radio and mobile phone ownership. Study participants mentioned that they do not have radio and mobile phone assets to listen to agricultural broadcasts and share their opinions. Moreover, the study participants mentioned that they do not have electricity to charge radios and mobile phones. Also, study participants mentioned the language

barrier as a challenge. Participants who mentioned the language barrier as a challenge mentioned that they are not conversant with the Swahili language which all radio station programmers commonly use.

This implies that women crop farmers need to be empowered with education and provided with funds to cover costs for interaction with radio programmers. This will enable them to voice their needs on agricultural aspects. The study results are similar to the study done by (Megerssa *et al.*, 2020; Kansiime *et al.*, 2022; Mtenga 2018; Okoroma *et al.*, 2020) who found that language barriers, radio ownership and control, and limited time are challenges for women farmers to access agricultural information through radio.

During the Focus Group Discussion session at Azimio Street participants agreed that they are facing challenges related to the language barrier, lack of vouchers to call radio programmers, and lack of electricity services to charge radios and mobile phones to interact with them.

In addition to that, one Key informant said:

“When interacting with women crop farmers’ challenges related to the language barrier, lack of confidence, scare their husbands (taboos), untrusting radio programmers and need of gifts like money are common” (Mwangaza FM radio programmer, on 14 March 2023).

These findings are similar to the findings of a study done by (Hampson *et al.*, 2016) who found that; women face challenges related to husbands’ prohibitions and are illiterate in using Information, Communication, and Technology (ICT) when interacting with radio programmers (Hampson *et al.*, 2016). Moreover, the study results are similar to that of (Komodromos, 2021) who found that; inability to read, lack of confidence, poverty, and traditional gender roles limit women crop farmers from interacting with radio programmers.

Ways to Solve Challenges for Strengthening Interaction

To strengthen interaction between women, crop farmers and radio programmers, study participants recommended different interventions as follows:

In organizing Public Broadcasts

The study found that twenty-three out of thirty-two study participants had never interacted with radio programmers to organize public broadcasts. Generally, these study participants showed the need to interact with radio programmers to give their agricultural information demands. To remove such challenges, participants suggested frequent visits to be done at their homes or farm fields by radio programmers to capture their agricultural information demands. With these visits issues on what programs to broadcast, when, in what language, and what mechanism to use will be captured.

Invited as a Guest in the Studio to Talk On Various Topics and Challenges

The study results found that thirty-one out of thirty-two had never been invited as a guest in the studio to talk on various topics. These study participants who face such challenges recommended education empowerment to strengthen interaction with radio programmers. Study participants mentioned that with education they will be confident and be able to talk on various agricultural topics without facing language barriers.

Listening to Broadcasts and Sharing Their Opinions Challenges

The study found that thirty-one out of thirty-two were never involved in both listening to broadcasts and sharing their opinions at the same time. The study found that common challenges relate to economic barriers (money), and ignorance. Study participants suggested free calling services to be established by radio stations. They explained that, with free calling services challenges on the cost of purchasing vouchers to call radio programmers to share their opinions will be detached. Moreover, study participants suggested being empowered with alternative solar charging assets for those with no electricity at

home to charge their communication properties. Furthermore, study participants who faced language barriers proposed the use of language interpreters when listening to listen to agricultural broadcasts and sharing their opinions.

Also, during FGDs at Azimio Street, participants recommended the establishment of free calling services by radio stations after agricultural information aired to reduce cost limitations for those who need information clarification. In addition to that, one Key informant said:

‘To minimize challenges related to women crop farmers’ interaction, education for girls at least they attain secondary education level to build their confidences, remove language barrier and societal taboos challenges are vital’ (Alternative FM radio programmer, on 14 March 2023).

This implies that empowering women crop farmers in terms of building their confidence will enable them to voice their agricultural information demands. The study findings align with those of Mtenga (2018) who found that a basic form of education is a positive indicator of the farmer’s ability to process radio agriculture information and find solutions to their production problems.

CONCLUSION

The study concludes that interaction between agricultural information radio programmers and women crop farmers is still low. Different interventions are highly needed to ensure adequate women crop farmers’ interaction with radio programmers. Such interventions include covering some costs that limit women crop farmers to interact with radio programmers in various stages by the responsible authority thus; the Tanzania Communications Regulatory Authority (TCRA). Moreover, the government through the Ministry of Education, Science and Technology should empower girls by providing agricultural science subjects when they are at the secondary education level. This will be an asset for them in the future regardless various household responsibilities they will have in their

families which may limit searching information on agricultural technologies.

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