Co-decided agriculture information radio program needs. A Case Study of Women Crop Farmers in Dodoma City, Tanzania

ABSTRACT

The shift from top-down radio programming to co-decision-making, aimed at capturing listeners' needs, has been significant. However, there is a notable gap in studies assessing how gender considerations factor into radio programming for listeners' needs. This study addresses this gap by investigating co-decided agricultural radio program needs, specifically focusing on women crop farmers in Dodoma City, Tanzania. Utilizing a sample of 32 participants selected purposively for in-depth face-to-face interviews, supplemented by Focus Group Discussions (FGDs) and key informant interviews, the study employed content analysis to analyze the collected data. The findings reveal variations in co-decided agricultural information radio programs among radio programmers, indicating a lack of alignment with the specific needs of women crop farmers. The study emphasizes the oversight of women crop farmers' agricultural information needs in programmed radio content, attributing it to the absence of agricultural information needs assessments by communication stakeholders. In light of these findings, the study recommends that agricultural communication stakeholders conduct comprehensive assessments of agricultural information needs for effective and inclusive radio programming.

Keywords: Co-decided agricultural programs, women crop farmers, information needs

BACKGROUND

Radio, with its extensive coverage frequencies, is a preferred communication device for providing crucial information to farmers in developing countries, particularly in addressing their daily challenges. To capture the interest of listeners, it is essential for radio programs to tailor information based on the needs and problems of the audience, engaging them in a co-deciding process rather than relying on one-way content preparation (Abubakar et al., 2009; Parvizian et al., 2011; Udeanya et al., 2019).

Co-decision, defined as decisions made collectively rather than by isolated individuals, plays a pivotal role in involving listeners in expressing their views on daily problems and proposing solutions (Michelis, 2018). Despite the potential of co-decision, a notable research gap exists regarding how gender considerations factor into the development of listeners' needs by radio programmers. Gender dynamics, encompassing distinct roles, needs, feelings, concerns, power positions, and contributions of men and women, are crucial in these initiatives (Madaha, 2018).

For instance, in Tanzania, gender inequality in the division of household labor is evident, with women often burdened with more responsibilities, making them time-poor (Feinstein et al., 2010). Recognizing these gender dynamics is crucial for tailoring agricultural radio programs to address the specific needs of women crop farmers, allowing them to effectively use their limited time to access relevant agricultural information.

This paper contends that by incorporating co-decision in addressing the agricultural information needs of women crop farmers, limited time can be utilized effectively for

receiving pertinent information. The research focuses on investigating co-decided agricultural information radio program needs among women crop farmers in Dodoma City, Tanzania.

The study's findings have the potential to guide decision-makers and stakeholders in agricultural information communication, helping them identify and rectify existing weaknesses. Ultimately, empowering women crop farmers with the necessary knowledge and technologies can lead to their professional engagement in agriculture, contributing to sustainable development at both local and global levels.

Theoretical framework

Crop farmers in the Central Zone of Tanzania engage in agricultural activities primarily for income generation. To enhance the adoption of agricultural technologies, both governmental institutions and non-governmental organizations (NGOs) have been disseminating agricultural information through radio and television to these farmers (Mpehongwa, 2009; Chilimo et al., 2008). However, the majority of these organizations have not tailored their information dissemination to the specific needs of male and female crop farmers. The information required is crucial for the successful adoption of technologies by both genders. Information need is defined as the type of information individuals seek and desire through written or vocal means (Faibsoff and Ely, 1974).

Furthermore, individuals' information needs are influenced by their level of expertise, ignorance about a subject, and cognitive processes for interpreting information (Naumer& Fisher 2020). People control their definition of information through various means, encompassing all possible avenues (Chai, 2004). The content of the information is of primary concern, and information is considered objectively necessary if it serves a specific function (Roja, 2018). This definition empowers individuals to shape their information requirements and desires, which are intricately connected to their work activities (Chen & Lu, 2020). In media representation, stakeholders may hold power by controlling access to information that aligns with their needs, with co-deciding on program content being a significant means to address crop farmers' information needs (Lee, 2007; Hampson et al., 2016).

To accurately identify the needs of intended listeners, a co-decision approach is essential, given the differing needs of males and females for agricultural information (Chen & Lu, 2020). The absence of women's voices in defining and creating radio program content hampers their access to information (Carpentier &Servae, 2002; Bertolini, 2004). The study employs Feminist Theory in communication to highlight gender issues, emphasizing the lack of women's authority in media representation (Cuklanz, 2016). Post-feminism, as a part of this theory, asserts that feminism is no longer necessary, considering that its objectives have been achieved, a perspective challenged by the study.

In addressing gender issues in agricultural information media construction, the study incorporates the Uses and Gratification theory, one of six theories explaining individual differences in mass communication (Ong'ong'a, 2023). This theory, emphasizing a listener-centered approach, posits that listeners actively choose and interpret media to satisfy their needs and desires (Mehrad & Tajer, 2016). It asserts that listeners play an active role in shaping their media consumption and integrating it into their lives, focusing on psychological needs components to overcome obstacles hindering the achievement of fundamental objectives.

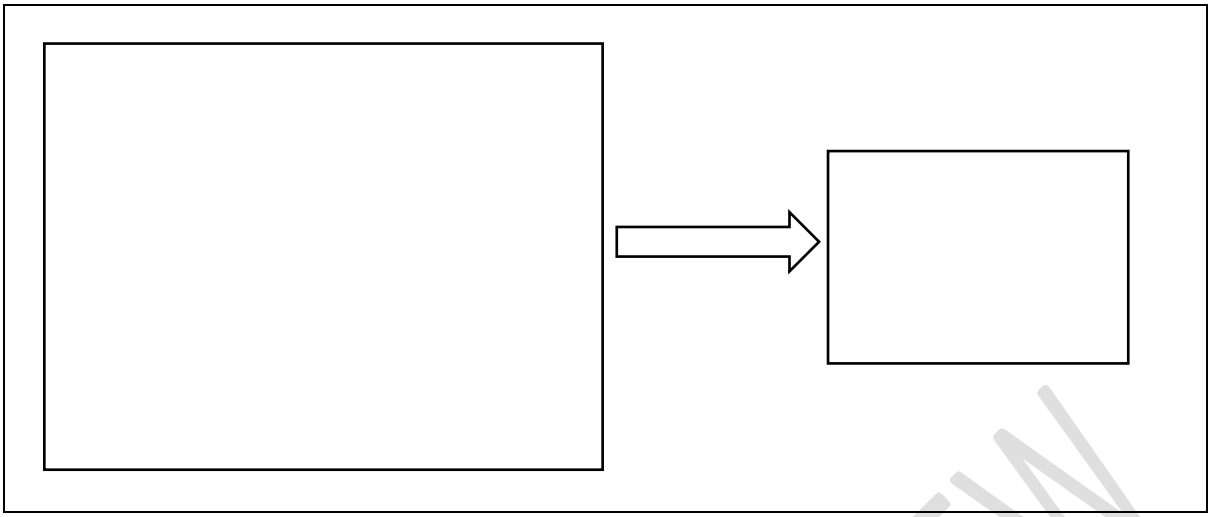

Figure .I. Conceptual framework

Empirical Literature Review

Haumba and Kaddu (2021) conducted research examining the information-seeking behavior patterns of family farmers and household food security. Their findings revealed that farmers express a need for information on Good Agronomic Practices (GAPs), encompassing topics such as improved seeds, marketing strategies, fertilizer use, post-harvest processing, and preservation techniques. Similarly, Agwu and Anugwa (2018) explored the information-seeking behavior of rural women in Bayelsa State, Nigeria, concerning household food security. The study highlighted women's demand for information on productive resources like land, inputs, and capital, as well as crop management activities including irrigation, weeding, fertilizer application, planting distances, and pest and disease management involving herbicides and insecticides.

Furthermore, Roja (2018) investigated the information needs of rural women farmers in Garani village, Tumkur District, Karnataka. The study disclosed that a significant proportion of women farmers sought information on seed availability (39.58%), pesticides (18.75%), and fertilizer (16.67%). The majority of the women farmers emphasized market-oriented agricultural production in their information needs related to farming activities.

Jira's study in 2020 found that 45% of women preferred listening to the radio in the evening, while 35% favoredthe morning times. Additionally, Kalamkar et al. (2022) explored the listening behavior of community radio listeners, revealing that approximately 53.33% of respondents tuned in daily during the morning, afternoon, or evening. The study indicated that about 70% preferred listening at home, compared to 37% who listened in the fields.

Moreover, Kamala's research in 2021 assessed women's participation in community radio in Iringa Municipality, Tanzania. The findings showed that women had preferences for morning (69%), afternoon (19%), evening (5%), and night (7%) sessions. In terms of language preferences, Jira (2020) discovered that 79% of women preferred the local language. This observation emphasized the advantage of using local languages on radio programs for effective communication with the audience.

Contradictory to these studies, Mogambi and Ochola's (2015) research on community radio and women's empowerment among pastoralist communities in northern Kenya found that many women rely on a communication medium that utilizes the local Samburu language. The study emphasized that a station exclusively using the local language proved to be an appropriate medium for women, especially when deeper explanations were needed to enhance their participation in the program.

Despite the varying results of these studies, the present research aims to focus on women crop farmers in Dodoma City, specifically addressing their agricultural information needs, the optimal broadcast times, and the preferred language for effective communication.

METHODOLOGY

Description of the study area

The research was carried out in Dodoma region, Tanzania, specifically in five streets within three out of the 41 administrative wards. The selected wards were Makutupora, Chihanga, and HomboloBwawani, all from the Hombolo division. The chosen streets included Azimio and Mchemwa from Makutupora ward, Chihanga and Maendeleo from Chihanga ward, and HomboloBwawani B from HomboloBwawani ward.

The decision to focus on this study area was deliberate, driven by the fact that farmers in this region had access to agricultural information through community radios in Dodoma. The researcher chose this area as part of efforts to address the challenge of providing sustenance for the large population in the city. Dodoma has experienced an influx of people engaged in non-agricultural activities, particularly after the official declaration of Dodoma as the national capital of Tanzania in 2015. This demographic shift underscores the importance of empowering women crop farmers with agricultural knowledge to make optimal use of the available arable land for increased production.

The study aimed to gain insights into the specific agricultural radio program needs identified by women crop farmers in Dodoma, Tanzania, with the goal of enhancing their production capabilities.

Figure 2. Map of Dodoma indicating the examined region (Highlighted in green - Hombolo Division).

Research design and Data collection

The study employed a purposive sampling method to select 32 participants, all of whom were women crop farmers with a minimum of two years of agricultural experience. The primary data collection method involved in-depth face-to-face interviews with these participants. Additionally, information was gathered through Focus Group Discussions (FGDs) and key informant interviews.

The participants chosen for the study were women actively engaged in agricultural activities for at least two years. To ensure a comprehensive understanding, five Focus Group Discussions (FGDs) were conducted, each comprising eight participants from different streets. This diverse group composition aimed to gather varied perspectives on the study's focal points.

Furthermore, three Key Informants from radio stations broadcasting agricultural programs in Dodoma City were consulted. These informants represented Dodoma FM (98.4), Alternative FM (92.9), and Mwangaza FM (90.8). The data collected focused on three main themes: women crop farmers co-decided agriculture information program needs (theme 1), co-decided time to listen to agricultural information radio program needs (theme 2), and co-decided language preferences when airing agricultural information (theme 3).

Sampling procedures and data analysis

The researcher arranged a meeting with the City Urban Farming Officer (CUFO) to gather general information about the agricultural characteristics of wards in Dodoma. With the CUFO's assistance, three wards out of the forty-one were purposefully selected based on their marginalized status and arable land availability compared to neighbouring wards. The choice was also influenced by the fact that farmers in these selected wards could easily access agricultural information through community radios in Dodoma.

After identifying the study areas, the City Urban Farming Officer coordinated with Agricultural field officers in the chosen wards for the researcher to contact study participants. Before heading to the respective wards, logistical arrangements were made with Agricultural field officers on how data collection would occur on different days.

To maintain homogeneity, the researcher, with the help of the Makutupora ward Agricultural field officer and research participants, employed purposive and snowball sampling techniques on the first day. Six women crop farmers from Mchemwa village were individually interviewed, with each interview lasting 30-40 minutes. Additionally, a Focus Group Discussion (FGD) was conducted with eight experienced women crop farmers from the village.

Subsequent days involved data collection from Azimio, Maendeleo, Chihanga, and HomboloBwawani B Streets, following the same procedures. Data saturation was achieved after individual interactions with 30 women crop farmers. However, two more participants were interviewed to ensure comprehensive coverage. The total number of interviews reached 32, meeting the criteria for data saturation of (9–17)interviews or focus group talks of (4–8) (Hennink& Kaiser, 2022).

To supplement the study, three Key Informants—radio programmers broadcasting agricultural programs in Dodoma—were individually contacted on different days. The qualitative data collected underwent content analysis to align with the study's objectives and themes.

RESULTS AND DISCUSSION

Demographic and socio-economic characteristics of the study participants

The study participants exhibited a diverse range of educational backgrounds, spanning from formal education to no formal education, and their marital statuses varied between being married, widowed, and divorced. The number of household members among the participants ranged from 2 to 8. Agricultural activities were identified as the primary source of income for all participants. In addition to agriculture, small businesses such as selling vegetables, livestock keeping, and charcoal burning were reported as supplementary sources of income.

The participants' experience in agricultural activities varied significantly, ranging from 4 to 47 years. The commonly cultivated crops served multiple purposes, including providing cash, serving as staple food, and being used as leguminous crops. Notable crops grown included pearl millet, sunflower, groundnuts, sorghum, maize, cowpeas, cassava, Bambara nuts, and grapes. These crops were cultivated across different acreages, ranging from 1/4 acre to 4 acres. The selection of these crops was influenced by their ability to withstand drought conditions and their widespread cultivation, making access to seeds easier.

Various sources of agricultural information were reported by the participants, including the Government, Non-Government Organizations (NGOs), radio stations, personal experiences, and learning from neighbors. Government agricultural information sources included Agricultural Field Officers (AFOs) and researchers from institutions like TARI (Tanzania Agricultural Research Institute). Among NGOs, the Diocese of Central Tanganyika (DCT) was highlighted as a significant agricultural information source in the study area.

1. **Co-decided agriculture information needs**

Respondents were inquired about the agricultural topics that would motivate them to listen to radio programs. The findings indicate a distinct preference among women crop farmers for educational content related to Good Agricultural Practices (GAPs) and weather conditions. When it comes to good agronomic practices, participants highlighted concerns regarding fertilizer application, the use of improved seeds, horticultural knowledge, optimal plant population, marketing strategies, and post-harvest information.

Explanations on preferred good agronomic practices were as follows;

Fertilizer Usage: Participants in the study who expressed a preference for this information clarified that they possess a small plot of land. They mentioned cultivating for every season, which led to soil infertility. Additionally, they highlighted the challenge of maintaining a limited number of animals that generate insufficient organic fertilizers. Consequently, they

emphasized the need for guidance on using inorganic fertilizers to complement the limited organic fertilizers currently available to them.

*Improved seeds and their proper sources:*Study participants expressed the need for enhanced seeds as they currently experience low yields. Those who sought improved seed information clarified that they resort to using local seeds for farming because the improved seeds available through agro-dealers are both expensive and counterfeit. Participants emphasized the preference for local seeds over incurring unnecessary costs. One participant highlighted the problem of low yield associated with the use of local seeds, specifically addressing the issue of "*Mapungu*" and "*Mabarwe*" in the local vernacular, referring to infertile seeds in pearl millet and sorghum. The participant explained that these seeds have a low germination percentage, leading to reduced plant populations and consequently lower yields.

*Proper plant spacing:*Participants in the study revealed that they previously employed a method of broadcasting seeds, particularly maize while cultivating extensive fields with oxen-driven plows. The cited reasons included a lack of awareness regarding the optimal plant spacing and the urgency to save time. The participants clarified that excessive seed usage sometimes led to suboptimal yields due to an incorrect plant population.

Furthermore, two participants in the Makutupora and Chihanga wards emphasized the importance of this knowledge. They clarified that their familiarity with appropriate plant spacing was limited to pearl millet, as they had received training through the Conservation Agricultural initiative (Kilimohifadhi) facilitated by the Dioceses of Central Tanganyika. These participants noted that currently, the majority of farmers in their wards are well-versed in proper plant population for pearl millet, thanks to the efforts of DCT in disseminating pearl millet production technologies through lead farmers.

In contrast, the situation in the HomboloBwawani ward, where the Diocese of Central Tanganyika is not active, is quite distinct. Participants from this ward expressed the need for knowledge in nearly all crop categories, highlighting the disparity in agricultural awareness and practices between the two areas.

*Agricultural market information:*Agricultural market information was found to be lacking among participants, as they expressed a lack of awareness regarding suitable avenues for selling their agricultural produce and determining recommended prices. Consequently, they have been selling their products to local buyers at undervalued prices.

Weather condition information

Participants expressed satisfaction with receiving agricultural information from radio stations regarding crop selection based on expected weather conditions. This information was deemed essential for adapting to changing weather patterns. Similarly, in focus group discussions at Azimio and Mchemwa villages, participants unanimously highlighted their need for information on Good Agronomic Practices (GAPs), including improved seeds, agricultural markets, weather conditions, and adaptation strategies.

Key informants were queried about the agricultural information broadcasted to meet the specific needs of women crop farmers. In response, radio programmers stated that they broadcasted agricultural information with a broad approach, aiming to reach all farmers irrespective of gender. One key informant mentioned, "*We used to align our broadcasts with the cropping calendar, sharing information on planting seasons, improved seeds, and fertilizer during specific periods, while market prices were addressed during off-seasons*" (Mwangaza FM radio programmer, March 14, 2023). Another key informant highlighted the profit-oriented nature of their radio, stating, "*As our radio is driven by business goals, we broadcast agricultural information based on stakeholders who want to promote their inputs, irrespective of the cropping calendar. For instance, an agro-dealer might pay us to create awareness about the seeds they sell, and that becomes our agricultural information focus*" (Alternative FM radio programmer, March 15, 2023).

The study's findings suggest a lack of consideration for the specific needs of women crop farmers by agricultural radio programmers when planning information broadcasts. Consequently, these programmers tend to broadcast general agricultural information throughout the value chain, assuming it caters to the needs of all farmers, including women. This oversight results in women crop farmers missing out on pertinent information related to productive resources like land, inputs, and capital, as well as crucial crop management practices such as irrigation and meteorology. This discrepancy has been noted as a crucial need in previous studies (Haumba&Kiddu, 2021; Agwu &Anugwa, 2018; Roja, 2018).

2. **Co-decided time to listen to agricultural information needs**

Participants in the study were asked about the time they would prefer to tune in to radio broadcasts containing agricultural information and the reasons behind their preferences. Two distinct time sessions emerged as popular choices: night-time and afternoon. Out of the 32 participants, 30 expressed a preference for listening to radio programs between 20:00 and 22:00 hours at night. The rationale behind this choice varied, with some mentioning the convenience of being at home with their entire family during that time. Conversely, others favored the afternoon slot from 14:00 to 18:00 hours because they were available at home and not returning to their farm fields in the evening. Those opting for afternoon and evening sessions cited the opportunity to relax at home during those times.

Interestingly, none of the study participants indicated a preference for morning sessions, attributing this to their busy household responsibilities during that period. These responsibilities included preparing children for school, cleaning utensils, and tidying up their homes before heading to the farm fields.

During focus group discussions in Azimio and HomboloBwawani B streets, participants unanimously agreed on their preference for the night-time slot (20:00-22:00 hours) due to the presence of all family members at home.

Key informants were also queried about the timing of agricultural radio programs and the reasons for their choices. One informant mentioned broadcasting information in the morning to target energetic farmers in their fields. Another informant highlighted a Sunday broadcast at 6:00 in the morning, repeated at noon, assuming people would be at home before and after church.

The study revealed that the current timing of agricultural information broadcasts did not effectively reach all women crop farmers due to divergent time preferences. Those not taking radios to their fields missed out on crucial information. This finding aligns with Kalamkar et al. (2022) study, emphasizing that most radio listeners prefer tuning in at home rather than in their fields.

The study suggests that radio programmers air agricultural information at times not favored by women crop farmers in the study area. It echoes Megerssa's (2020) findings that night is optimal for radio tuning when farmers are fatigued. However, it contradicts Jira's (2020) study, which indicated a preference for morning and evening listening among women, and Kamala's (2021) research, which found preferences across all times of the day.

3. Co-decided language to use when airing agricultural information needs

Study participants were asked about their language preferences for agricultural radio programs, revealing three primary groups: those who liked both Swahili and the vernacular (gogo), those who exclusively preferred Swahili, and those who opted for the vernacular (gogo) alone. Among the thirty-two participants, fifteen expressed a preference for both Swahili and the vernacular, thirteen favored Swahili only, and the remaining four leaned towards the vernacular (gogo) exclusively.

Those desiring both Swahili and the vernacular pointed out challenges understanding agricultural terminology in Swahili alone, underscoring the need for the vernacular language for translation. Conversely, those favouring Swahili exclusively cited its status as a national language and their better comprehension. Participants showing a preference for the vernacular (gogo) language emphasized the sense of connection and understanding when information was presented in their mother tongue.

During focus group discussions at HomboloBwawani B, Azimio, Mchemwa, and Maendeleo streets, participants unanimously expressed their appreciation for agricultural information broadcast in both Swahili and the vernacular (gogo). They suggested the presence of language interpreters during agricultural programs to translate Swahili words into the vernacular for those less proficient in Swahili.

Key informants were asked about the language used for broadcasting agricultural information and the rationale behind the choice. One informant explained that their radio station was authorized by the Tanzania Commission Regulatory Authority (TCRA) to broadcast in Swahili only, citing legal restrictions on using any other language.

These results imply that not all women crop farmers receive agricultural information via radio, as the preferred language may differ from that used by radio programmers. Therefore, it is recommended that radio programmers consider incorporating both Swahili and vernacular languages in agricultural broadcasts to effectively reach all women crop farmers in the area. This aligns with Ochola's (2015) findings, emphasizing the use of local languages alongside the national language for a more profound explanation of issues, and is supported by Jira's (2020) study, highlighting the advantage of using local languages on the radio for effective communication.

CONCLUSION

The study highlights a significant gap in addressing the agricultural information needs of women crop farmers within the radio programming landscape. The current approach by radio programmers, aiming to reach all farmers without specific consideration for gender differences, results in overlooking the unique requirements of women engaged in crop farming. As a consequence, critical aspects such as the content of agricultural information, the timing of broadcasts, and language preferences are not adequately addressed for women crop farmers.

To bridge this communication gap, it is essential for agricultural communication stakeholders to conduct thorough assessments of the agricultural information needs, ensuring a comprehensive understanding of the specific requirements of women crop farmers. By incorporating gender-sensitive strategies into radio programming processes, stakeholders can tailor their communication efforts to effectively meet the diverse needs of both male and female farmers. This proactive approach will not only enhance the relevance and impact of agricultural information but also contribute to a more inclusive and equitable dissemination of knowledge within the farming community. Ultimately, such measures will pave the way for a more targeted and responsive agricultural communication strategy that aligns with the diverse needs of women crop farmers.

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