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ACCESS AND USE OF AGRICULTURAL INFORMATION IN MULEBA AND MISENYI DISTRICTS, TANZANIA

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ABSTRACT

The type of information currently provided in Tanzania and the methods by which it is conveyed isolates rural areas, and makes its usage very problematic. This isolation is associated with the poor growth of peoples' economy in the rural communities. This paper explores the usage of agricultural information as an indicator for rural agricultural development and a tool for combating environmental degradation. The broad goal of the paper was to assess the status of the usage of agricultural information in combating environmental degradation in Muleba and Misenyi Districts. The study employed a case study design and combined both qualitative and quantitative methods. Data were collected using interviews and observations as well as documentary sources. The findings reveal that the most used agricultural information is soil preservation, the life cycle of fish, market and weather conditions. Radio was the mostly applied source of information while Extension Officers used seminars, farm field schools (shamba darasa) and leaflets in disseminating information. The challenges identified revealed include lack of time to access information, inadequate information sources, lack of searching skills, cost of information, geographical isolation, difficult technical languages, technological limitations, poor internet connectivity and lack of Information and Communication Technology skills.

Keywords: *Usage of Information, Access to information, Agricultural information, Muleba and Misenyi, Kagera Region.*

1.0 INTRODUCTION

1.1 Background Information

According to Swai (2013) information which is related to data carries meaningful content. Therefore, if information is meaningfully applied, it enables people to making right decisions. It increases peoples' efficiency and productivity. Consequently, timely access of, or usage of relevant information in rural and urban areas improves the communities' livelihood (Lwoga, 2011). Bell (1986) as cited by Harande (2009. 16) also supports this idea by noting that technical innovations, social economic development and cultural changes depend on the effectiveness of access and usage of information sources.

Rural areas are characterized as remote settings and geographically limited localities. The limitations are among other factors that hinder effectiveness and efficiency in accessing and delivering relevant information. According to Lwoga (2011) the major factors that hinder effectiveness and efficiency of the rural communities to access and use relevant information include: inadequate information sources, lack of searching skills, information costs, geographical isolation and inappropriate time for access information. In line with that (Gardner, et al., 2012) adds technophobia, individual level barriers, technological barriers, organizational barriers and the geographical limitations which cannot be controlled.

In human settlements, a rural setting is usually categorized by low human population and vast built poor infrastructures in comparison to the urban areas (Daudu & Igbashal, 2009). These rural areas are noted for limited usage of agricultural information and, as a result agricultural activities are poor. Batie (2013) underscores this point by adding that rural communities' access to relevant information becomes extremely difficult due the impractical information services available in Tanzania. Despite the fact that rural regions are sources of food for the urban population, delivering agricultural information to support the sector is still a problem. Sheto, (2008) argues that in Tanzania about 90% of printed publications are disseminated mostly in urban hubs and only 10% for rural areas. Therefore, the development of Tanzania's rural areas, including Muleba and Misenyi requires people's access to relevant and more diverse information, to enable them to become more critical in evaluating that information for making better decisions and producing better results (Gardner *et al.*, 2012). Etebu, (2009:8), corroborates that, access to, and use of information is necessary for improving rural people's livelihood. Like other rural areas in Tanzania, Muleba and Misenyi Districts received less than one percent of agricultural information with the concentration on agrological farming (Batie, 2013)

Agricultural information is a vital resource for agricultural development (Meyer & Boon, 2003). The information needed includes planting, treatment of seeds, soil conservation issues, prevention of plants, best livestock keeping practices, use of fertilizers, farm machinery related issues, proper storage of farming products, marketing, and information of

agricultural activities. Identification of the information needs is the first stage, but accessing and using them is another thing which depends on availability of the information sources and necessary skills for retrieving them. In this regards, the process of agricultural information seeking involves a number of activities including: identifying information sources, consulting the sources and accessing information as well as evaluating them for better results (Etebu, 2009). Likewise, access to, and use of agricultural information in the rural areas in Tanzania is meant to reduce risk and uncertainty in the sector. It increases knowledge, technical skills and capacity to individuals in transforming and diversifying farming, livestock and fishing activities.

On the other hand, lack of access to information among communities is addressed by the African Union (AU) 2063 Development Agenda that sets 17 aspirations with three dimensions (economic, social and environment). Agricultural information provision is also linked with the International Federation of Library Associations and Institutions (IFLA) Strategic Plan and is reflected in the key initiative of Tanzania Development Vision 2025. Indeed, to support these initiatives libraries and information services stand in the right position to enable achievement of the entire UN 2030 Agenda by ensuring the effective dissemination of information to the end users. Libraries, therefore, are responsible for making sure that no one is left behind and to give everybody a fair opportunity for accessing information (UN, 2012).

1.2 Statement of the Problem

Despite the fact that information plays a key role in socio-economic development in Muleba and Misenyi (Kamba, 2011) the status on the usage of agricultural information in these areas is not yet established. Studies conducted by Boon (2003), Etebu (2009) and Lwoga (2011); and Meyer (2011) reveal that Tanzania's rural areas have limited access to the right agricultural information. The assessment and mapping study conducted by Economic and Social Research Foundation (ESRF) reports that parts of Kagera Rural, particularly Muleba and Misenyi Districts were among the areas that had a gap in knowledge sharing and communication of agricultural information (Khasan, 2014). The author also noted that Muleba and Misenyi districts lack access of agricultural information sources as well as inadequately extension services.

Kamba (2011) makes it clear that agricultural information provision and dissemination in rural areas should be facilitated through regional or district socio-economic development projects. These projects are usually expected be funded by the Government or non-Governmental Organizations (Shatto, 2008). However, Gardner, *et al*. (2012) argues that these projects were unsuccessful because the initiators did not give dissemination of agricultural information the first priority. As such the farmers did not have adequate information to enable them to farm profitably. However, the factors associated with the failure to disseminate adequate information and limited access to and use of information for agricultural development have not yet been adequately studied. The study therefore aimed to find out the status of access and use of agricultural information in the study area

1.3 Objectives of the Study

The study was guided by three specific objectives**:**

i. To assess the types of agricultural information usage in the study area;
ii. To determine sources of agricultural information in the study area;
iii. To identify challenges facing community on the usage of agricultural information in the study area and how to overcome those challenges.

1.4 Significance of Study

The findings of this paper will contribute to the existing body of knowledge on the status of access and use of agricultural information in the study area. Likewise the paper provides an appropriate source for addressing the challenges hindering the usage of agricultural information.

2.0 LITERATURE REVIEW

In general, rural area or countryside is a geographic area that is located outside towns and cities (Swai, 1998). Rural and urban stand for different places, the two terms are totally different from each other in terms of earnings, working, population and services as well as using geographical classifications (https://www.doi.gov/sites/doi.gov/files/migrated subsistence/board/upload/Rural-Comments-Determination-Process.pdf.) In human settlements, an urban region is usually categorized by high human population and vast human built infrastructures in comparison to the areas surrounding it. Etebu, (2009) underscore that the rural youth population is usually low compared to that in urban areas. According to Omonona (2010) the young generations in rural areas have higher demands for information compared to the elders.

2.1 Status of rural development in Tanzania

Tanzania, like many other developing countries faces challenges in improving the rural population lives (Othman, *et al.*, 2004). In Tanzania, rural areas are still predominantly subsistence-based agriculture which grows at 3% per year, employs 80% of the workforce and accounts for around 50% of both GDP (Othman *et al.*, 2004).The NRI (2011) report in the 2001/2002 Development Policy Framework (DPF) emphasised the need for further enhancing information usage in rural areas as a poverty reduction strategy in Tanzania. Another strategy used to promote information in agriculture was the Agricultural Sector Development Strategy (ASDS I, 2001); the Rural Development Strategy (RDS) as well as the Agricultural Sector Development Programme (ASDP, 2006/2014). However, despite the various strategies being used to promote rural information services in Tanzania, still access and use of the information is inadequate (Othman *et al.*, 2004 & Lwoga et. al., 2010), lack or absence of information negatively affects rural development.

2.2 Strategies used to promote agricultural information in rural regions Tanzania

Tanzania rural depends on agricultural extension services in the provision of knowledge, information, experiences and technologies to farmers to enable them to increase and sustain productivity and for their improved wellbeing and livelihoods (NRI, 2011). The delivery of quality agricultural extension services in Tanzania has been a center of attention for a long time. Given the fact that the majority of Tanzanians live in rural areas and depend on small-scale agriculture for their livelihood and employment (URT, 2006).The Government's efforts have been geared towards improving production and productivity so as to attain food security and sufficiency at household and national levels. These efforts are in line with the targets of the National Development Vision 2025 which envisages achieving high quality livelihood through, among other things, food self-sufficiency and food security (URT, 1996). However, even with the provision of agricultural extension services in rural Tanzania, still the access and usage of agricultural information is insufficient (Rutatora and Matee, 2001 & Etebu, 2009)

2.3 Information needs of rural communities in Tanzania

Momodu (2010) reveals that, societal needs are satisfied through various kinds of services, each of which requires information as an input. Information is regarded as raw material for development for rural dwellers (Raju, 2008. Daudu & Igbashal (2009) argue that the prosperity, progress, and development of any nation depend upon the nation's ability to obtain, produce, access and use relevant information. However, Bernard (2011) informs that there are different information needs in the community which are associated with social economic development. Moreover, studies of meta-analysis investigated the agricultural information needs of rural communities. Studies by Lwoga (2009) and Mtega (2016) reveal that there are different information needs for markets, weather, credits, inputs, and soil classification and animal and crop husbandry practices. Consequently, if these information needs are met, there will be an effective usage of information, hence individual awareness for better decisions will created. Unfortunately, the rural community members are not equipped with the best knowledge to enable them to be aware of their information needs and be able to select reliable information sources (URT, 2010).

2.4 Information sources employed in rural areas

Enabling rural people to access relevant information requires them to have appropriate information sources (Lwoga, 2011). An information source refers to the point in which information can be accessed. Daudu & Igbash (2009) note that information comes from either internal or external sources. These sources might be people or organizations, in either printed or electronic format. Internal information sources originate from within a particular organization or community while external information sources are from the outside (Momodu, 2012). Studies conducted to identify agricultural information sources revealed sources such as village leaders, agricultural extension officers, neighbours and friends, family/parents, radio, TV and internet (Aina, 1998; Bernard, 2011 & Raju, 2000). Other information sources identified were books, brochures, films, leaflets, newspapers and magazines (Swai, 1998, Chapman, 2003, Nkebukwa, 2007), Etebu, 2009 and Msofe, 2014). However, in spite of the many sources for information identified in these studies, the rural communities still lack the necessary skills to identify right sources and to apply them for making the right decisions.

2.5 Challenges in information access and use in the rural areas in Tanzania

Rural regions are characterized as the remote areas geographically; these regions usually are limited by location itself. However, the information services provision in rural areas is limited by various factors language used during information repackaging being more technical and not easy to understand ; inadequate funds for paying for information; high level of illiteracy due to lower education levels; lack of reading culture among communities; inadequate numbers of extension agents which is due to distance from the rural communities; and lack of awareness of information sources (Raju, 2000; Othman, et al., 2004 and Shetto, 2008; Nkebukwa (2007), Lwoga, et, al., 2011; Msofe, 2014 and Mtega, 2016). However, Shah (2008) in the study of Collaborative Information Seeking Behaviour identifies differences in gender, age, education levels, and social economic status as limiting factors for information seeking and sharing. These limitations are also among

other factors that hinder effectiveness and efficiency in the provision and delivery of relevant information in rural areas. Generally, individuals in rural areas are faced with a number of challenges which result in having problems in accessing information to meet their needs (Gardner *et al.*, 2012).

3.0 RESEARCH METHODOLOGY

3.1 **Research Design**

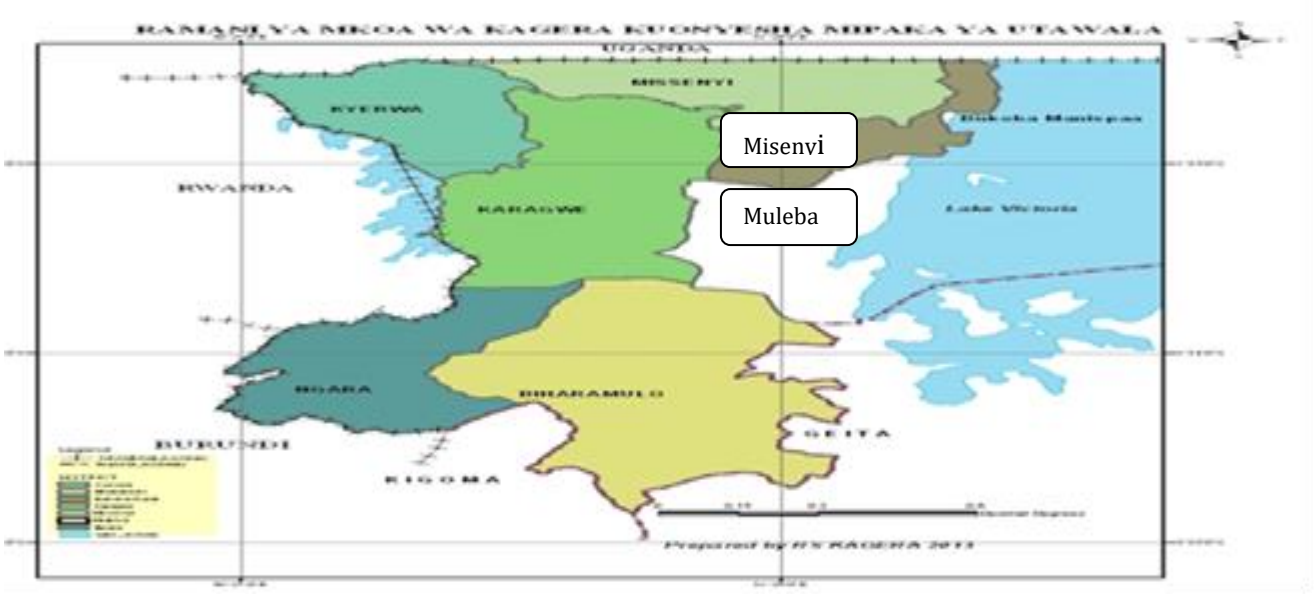
A cross-sectional research design was employed in this study. The design allows a researcher to collect data once (Kothari, 2007). The study was conducted in Misenyi and Muleba, using both qualitative and quantitative research methods.

3.2 Description of the Study Area and Justification

Kagera Region is one of Tanzania's 31 administrative regions (National Bureau of Statistics, 2015). The Region is located on the Northwestern shores of Lake Victoria. The regional neighbors are Uganda, Rwanda, Burundi and Kenya. According to the 2012 National Census, the region had a population of 2,763,329. The main economic and industrial activities in Muleba and Misenyi are agriculture and pastoralism, while the main commercial products are sugarcane, coffee, green bananas *(matoke*), maize, beans and fishing at small scale due to the distance from the water bodies (Nzuki et al,. 2010). Traditionally, Men in Muleba and Misenyi deal with banana and coffee farming, collecting firewood, livestock keeping, tree cultivation, house construction and production of banana brew traditional called (*omulamba*, *orubisi*, *omunanasi*) and local Konyagi spirit- *(embandule*). All these activities are meant for domestic use and also to generate income for family members. These activities count for 70% of the Region's Gross Domestic Product (Bamwenda, 2012).

However, even though Muleba and Misenyi receive an average rainfall of 800mm to 2,000 mm per annum still there is high rate of growth in poverty, and also low poor production which are a result of gender inequalities and environmental degradation trends. Access to information in Tanzania was approximately 80% of print publications disseminated only in urban centers, serving less than 17% of the population in rural (Shetto, 2008& Mtega, 2016). These authors also argue that inadequacy or unequal distribution of published information in the study areas reduces opportunities in their productive activities and accelerates the low literacy levels that, in turn, result in poor individual economic status

The selection of Muleba and Misenyi districts based on the fact that, the two districts were among areas which have been identified in various studies as having a big gap in agricultural information sharing, (Raju, 2000; Rutatora and Matee, 2001;Othman, et al., 2004 and Bamwenda, 2012).



Source: Lake Zone Investment Forum (2014)

3.3 Sampling and sampling procedure

Purposive and convenience sampling techniques were used to select respondents. Purposive sampling was based on characteristics of intended population that are of interest, which enabled the researcher to get quick responses from 28 respondents from Broadcast and Media industries, while convenient sampling was used to select the 32 respondents from Extension Officers. The method was chosen because the it was the easiest and the most convenient way of recruiting the sources of the primary data, given the geographical limitations in the study areas. Therefore, 540 respondents were distributed to include 60 respondents from fishermen, 180 pastoralist, and 300 peasant farmers.

3.4 Data collection methods and instruments

Secondary data was collected through documentary reviews. Primary data was collected through interviews and questionnaires, and focus group discussions and observation. For face to face interviews, the researcher interviewed Government Extension Officers as key planners for increasing livestock health and promotes the effective agricultural progress. The researcher also conducted interviews with pastoralists and extension officers in Kiswahili. The interviews for pastoralists and focus groups. The study instruments included questions about livestock holdings, the availability of animal health resources (for example, access to medicines, cattle dips, and extension services), incidences and management of disease in livestock herds, and climate change perceptions. Questionnaires with Extension Officers focused on job responsibilities, geographic area of responsibility, livestock diseases of importance, and ways to ameliorate the impact of livestock disease in their area. Priority diseases of concern for livestock health were identified by ranking counts of diseases or syndromes reported by pastoralists and extension officers. A total of six hundred (600) respondents were involved in the study.

3.4 Data processing and analysis

Data collected was analysed both quantitatively and qualitatively. Quantitative data was analysed by using the Statistical Package and Service Solution (SPSS) version 22.0 to derive frequencies and percentages. Descriptive statistics was also used to give a summary of distribution of responses, so as to be able to classify and explain the association among and between the variables. Inferential statistical analysis was undertaken through cross-tabulation of dependent variables with independent variables. This helped to assess if the associations were statistically significant. Qualitative data from face to face interviews and observation were labeled and transcribed.

4.0 FINDINGS AND DISCUSSIONS

4.1 Background Characteristics of respondents

The findings in Table 1

40.1% were female and 59.9% were male. The majority of respondent who participated in agricultural kind of activities were male (59.9%). It was also confirmed during the interview when the researcher was told by the agricultural extension officers that *" men are more involved in agriculture related activities because is a hard task that needs energetic people*" …" but women are engaged in other domestic activities" One male respondent in Misenyi informed the researcher that;

"…the initial farming process is basically done by males while women are more involved in multiple tasks like planting and harvest as well as engaging in trade and marketing, caring for family members and maintaining their homes…"

Plate I and 2 shows women participating in agricultural activities

The researcher observation also collaborated with the finding as it was noted that very few women were engaged in farming. This was possible because during the time when data was collected it was the period of preparing farms. The implications of this finding is that, these rural women often performing and managing multiple livelihood activities including producing and tending animals, agricultural crops, processing and preparing food, collecting firewood and water, engaging in trade and marketing, caring for family members and maintaining their homes.

Table 1: Respondents' Age by gender (n=600)

Ages ranges * Gender Cross tabulation			
	Male	**Female**	**Total**
18-28 years	138 (23%)	32 (5.3%)	170 (28.3%)
29-39 years	99 (16.5%)	2 (0.3%)	101 (16.8%)
40-50 above	121 (20.1%)	208 (34.6%)	329 (54.8%)
Total	**358 (59.6%)**	**242(40.3%)**	**600 (100%)**

The age category was not among the objectives of this study in Table 1. However, the author found it was important to understand the age distribution due to the fact that age contributes in making a choice on the usage of information. The age ranges of the majority of students who were involved in the study were from 40 to 50(55%). The implication of the finding is that in the study area older people were engaged in agricultural related activities while young people were involved in other jobs and business activities in town.

The finding was confirmed when one of respondent told the researcher that,

> *"People migrate from the village to cities because in cities there are more facilities and opportunities than in the villages"….these opportunities involve employment, better education and treatment amenities for increased quality of life….*

4.2 Types of agricultural information usage

The finding as presented in Table 2 indicates that the majority or 51% of respondents access information related to soil preservation. The implication of the finding is that the use of soil preservation- related information helps the community to increase knowledge to develop agricultural services. The role of soil preservation information is to enhance rural people in scientific cultivation methods as the sources for increasing food production and supporting crop rotation. The information provided during an interview with farmers collaborates with the finding that soil information increased their agricultural production for food consumption. In addition, the Extension Officer at Muleba told the Researcher that, f*or example,. Community seminars enable the participants to become aware of producing ligno-cellulosic biomass through establishment of energy plantations on agricultural surplus/marginal soil without affecting the environment".* Furthermore, use of information enhances converting degraded/decertified soils to restorative land use for biodiversity and improving the environment. Another Extension Officer in Muleba informed that using the right information on soil preservation in rural regions helps farmers to develop farming/cropping systems which improve water use efficiency and minimize risks of water pollution, contamination and eutrophication, as well as reacting reserves for species preservation, recreation and enhancing the aesthetic value of soil resources. The implication of the finding is that the community in the study area to some extent uses information as the most valuable resource and potential ingredient for the advancement of agriculture and other decision making.

Plate 3 shows community participation in an agricultural seminar at Muleba

Table 2: Types of agricultural information used in the study area (n=300)

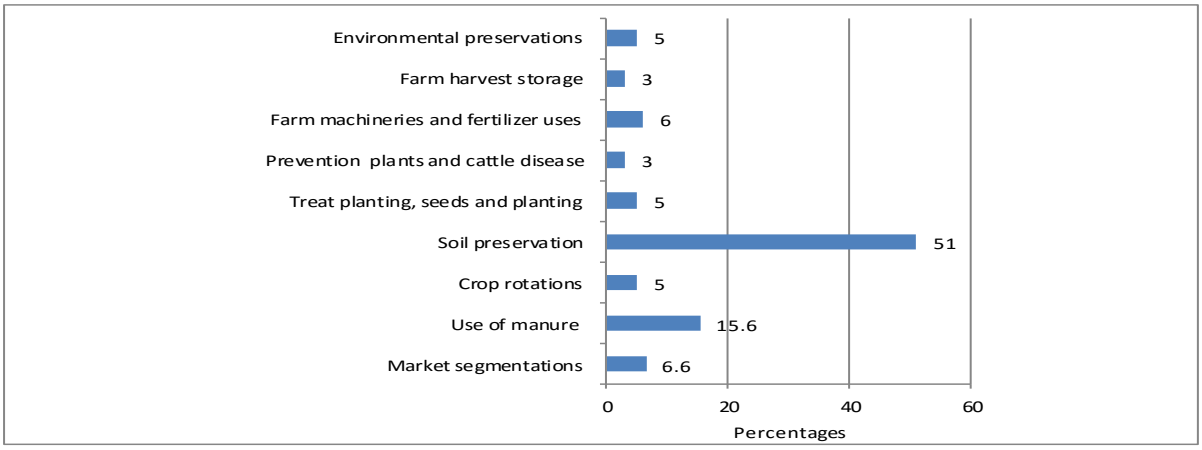


Table 3: Types of Information Accessed and Used by Fishermen N=60

The majority of respondents (33.3%) mostly used information on fishing life cycle and weather conditions. (The implication of this finding is that this kind of information helps the community in the study area to track climate change throughout the year. They are then able to analyse the adaptive capacity of the fishing community to deal with climate fluctuation. In relation to environmental care information enhances cultural and ecological adaptations on a continuum in space and time.

In protecting the life of fish, information informs people on the dangers associated with the use of small mesh gillnets and seines to catch small fish such as haplochromis. People therefore become knowledgeable on using only the larger gillnets appropriate for Tilapia, as well as uses of hooks. Therefore, informing people about the best fishing technologies promotes and reduces the fishing industrial damages.

Further, the one respondent during the interview with the Researcher informed that,

> *"Through information available people are aware of illegal fishing, using banned gears and small-meshed nets which were prevalent and considered to be detrimental to the sustainability of the fishery".*

Another, fisherman from Misenyi (Male) informed the Researcher that,

> *"The use of information in the sector becomes important because fishery is still undergoing tremendous changes since the familiarizing fish harvesting methods previously unknown in the area, and which raised the environmental concern "*

The implication of the finding is that the communities of Muleba and Misenyi became aware of the recommended fishing methods involving the use of sophisticated modern equipment such as fishing gears. It also includes the use of fishing nets with regulated mesh sizes, motor propelled machines, diesel marine engines, trawlers and ships for commercial fishing.

Table 2: Types of Information Accessed and Used by Pastoralists (n=180)

Types of information	**Frequencies**	**Percentages**
Life cycle of cattle	25	13.8%
Information on credit/ loans	35	19.4%
Diseases , Cow dung preservation and processing	5	2.7%
Markets	40	22.2%
Modern ways of keeping cattle	20	11.1%
Cattle disease and treatments	20	11.1%
High breed cows; planting	15	8.3%
Total	**180**	**100**%

Information related to markets is mostly used by pastoralists in Misenyi and Muleba, that is, 22.2%. The implication of the finding is that in the study area for the pastoralists having information on markets helps them to sell products provided by their livestock (for example, milk, skins, and meat). Livestock are a form of productive capital, providing a stream of desired goods and services, including milk (the primary food for most pastoralists in our study region), blood, manure and transport as well as reducing the stress resulting from climatic changes and drought.

During the interviews with pastoralists in Misenyi, One pastoralist (male) informed that,

> *"In fact, climatology characteristics such as ambient temperature and rainfall patterns have great influence on pasture and food resources availability cycle throughout the year, and types of disease and parasite outbreaks among animal population".*

4.3 Sources of agricultural information (Farmers) and fishermen

The majority of peasants and pastoralist respondents (60%) revealed the radio as the information source used mostly. Similarly, radio (55.5%) was also revealed by pastoralists as the prominent source used to disseminate information. While, extension offices and media industry identified seminars as the predominant source used to disseminate information. The prominence of radio as a forum for information dissemination was based on the fact that, it reaches a larger percentage of the people irrespective of their location; it promotes the level of awareness of the people on socio-political and economic issues and it also enables people to be adequately informed about programs and activities of the community and government.

The same information was confirmed when respondents from Broadcast and Media in Muleba informed the Researcher that, radio programs are usually timely and capable of extending messages to a large audience no matter where they are. Similarly, broadcast and media respondents in Misenyi added that, Mass media offers the most effective channels of communicating agricultural messages that increase and influence positive behaviour of the audiences. *".... broadcast media remain a vital part of development and farming systems, These programmes result in heightened farmer awareness and, consequently improve production in the agricultural sector as well as reduce the environmental degradations in the study area*….". It was also noted that, the prominence of the radio was promoted by the availability of the community radio in rural areas which are broadcasted in native languages (for example, Radio Kasibante).

However, Seminars were also identified by the majority (26%). The implication of the finding is that seminars and training are provided at a time that is convenient for the targeted participants. As confirmed by the Agricultural Extension Officer and media industry in Misenyi, the provision of seminars aims at raising the environmental consciousness of the participants while seeing to it that environmental knowledge and skills for redressing the situation are imparted.

Table 3: Information sources used to disseminate information in the study area (n=600.)

Sources used in Agricultural (farmers) and fishing sector (N=330)	Frequency	Percent (%)
Radio	198	60.0
Televisions	10	3.0
Newspapers	20	6.0
Books	5	1.5
Journals	5	1.5
Pamphlets	5	1.5
Websites	5	1.5
Brochures	42	12.7
Sources used by Pastoralists N=180	Frequencies	Percent (%)
Radio	100	55.5
Televisions	10	5.5
Newspapers	20	11.1
Books	5	2.7
Journals	5	2.7
Pamphlets	5	2.7
Websites	5	2.7
Brochures	30	16.6
Sources Used by extension officers and Media Industries N=90	Frequencies	Percent (%)

Seminar	8	26.0
Shamba Darasa	5	16.6
Flyers	3	10.0
Extension agents	2	6.0
Leaflets	5	16.6
Day-to-day rural activities	2	6.0
Discussion groups	3	10.0
Researchers visits	2	6.0

4.4 Challenges facing communities on the usage of agricultural information

The majority of responses (50%) revealed geographical location as the major factor. The geographical challenge can be explained by the fact that location plays a vital role in the availability of information as well as its usage. In the same vein, the Extension Officer confirmed the finding that, rural infrastructures in rural do not capitalise on its growth since some places have a distinct advantage over others. However, other challenges in rural agricultural information usage in the study area. These were gender inequality, household income, lack of searching skills, cost of information, difficult technical language, and technological limitations, problem of internet connectivity and lack of ICT skills. Also, the during interview with peasant farmers, the Researcher was told that due to the location of the study area, the Districts lack mobile networks and radio frequencies in some areas are unstable, and consequently, the community turned to radio and television broadcasted from Rwanda, Burundi, and Uganda. The absence of these, therefore, reduces efforts for the access and usage of information in the surveyed area.

Challenges hinders the effective use of agricultural information in the study area shown it Table 4.

Table 4: Challenge facing people in accessing and using information in the study area

Challenges N=-600	**Frequencies**	**Percent (%)**
Lack of time	40	6.6
Inadequate of information sources	100	16.6
Lack of skills,	30	5.0
Cost of information	30	5.0
Geographical isolation	300	50.0
Difficult technical languages	20	3.3
Technological limitations	40	6.6
Problem of internet connectivity	20	3.3
Lack of ICT skills	30	5.0
Total	**600**	**100**

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

Information provision in Tanzania is still isolating the remote rural areas. This isolation is associated with the poor growths of peoples' economy in the rural areas. Consequently, this leads to rural people to remain illiterate due to the information poverty in their areas. This study revealed that the rural population is mostly represented by elders because young people migrate to towns looking for other activities such as petty businesses which are different from agriculture Moreover, the findings have revealed that, the peasant farmers prefer information on soil preservations, while fishermen use information related to the life cycle of fish, Pastoralists prefer information on the way of keeping cattle as well as weather conditions. Furthermore, findings have revealed radio as a major tool for disseminating information in the area. The findings have also revealed that information poverty in rural areas leads to environmental degradation. The findings have further highlighted some challenges such as low literacy levels, lack of suitable information services and lack of technical competencies, gender inequalities, household income, lack of searching skills, cost of information, difficult technical languages, and technological limitations, problem of internet connectivity and lack of ICT skills. All these challenge hinder effective access to information in the community in the studied areas.

5.2 Recommendations

The recommendations are made based on the findings from the study and the Researcher's own views, as follows:

- There is the need for the Government through its respective authorities to motivate youth so that they may remain in rural areas and participate in agricultural production. Improving the social services and economic infrastructures such as industries in rural areas that could enable the youth to obtain employment and motivate them to stay there.
- Extension Officers need to encourage the community to employ additional types of information instead concentrating only on soil conservation, fish life cycles, cattle keeping, and weather conditions.

- There is the need for the information provider to promote and impart skills on the use of other sources of information such Seminars, Farm Field Schools (*Shamba Darasa*), Flyers, Day-to-day rural activities, Discussion groups, Researchers visits; all these are user friendly for all. They need as well to promote the use of both formal and informal participative methods such as social and religious events, cultural (traditional dances) and political events.

- Librarians need to simplify and repackage the available information so that it can be understood by all levels of the society, as well as preparing effective outreach programs and organizing information in such a way as to facilitate easy retrieval.

- There is the need for the government officers to schedule a frequent in-service training and orientation for newly employed extension agents basically on the types of crops produced in their work destinations.

- Public and private or community libraries need to organize and deliver information through collaborative efforts.

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