Auditing Information and Knowledge Accessed and Utilised from Community Resource Centres in Bunda District, Tanzania

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Abstract

The study audited information and knowledge accessed and utilised from Community Resource Centres (CRCs) in Bunda district, Tanzania. Using a mixed methods research approach, the study audited the knowledge and information available, accessed and utilised by rural communities. The study found that the established CRCs in the district under review have yet to yield positive results in terms of the accessibility and usability of information and knowledge that meet specific expectations of rural-based poor. The information available, accessed and utilised in the wards surveyed, were too insufficient to bring about significant rural development. On the other hand, the results indicate that there are some positive and promising indicators associated with the establishment of rural resource centres in Bunda district. Thus, there is an urgent need to re-think and re-orient the development thrust and deploy community resource centres towards redressing the situation and supplementing development information and knowledge that are not covered by other outlets. Doing so can, in turn, help enhance productivity in agriculture and small businesses that many of the poor in Bunda are engaged in to alleviate poverty and accelerate the pace towards the achievement of the Millennium Development Goals (MDGs).

1. Background to the study

To-date, several initiatives in Tanzania seek to enhance access to and utilisation of information and knowledge through the establishment of rural community resource centres in a bid to accelerate poverty reduction. These initiatives include the Millennium Development Goals (MGDs) Acceleration Framework and MGD Localisation Projects piloted in four districts of Bunda, Bukoba, Uyui and Morogoro in Tanzania. These projects aimed to shorten the timeframe for hitting the targets and improving the well-being of the majority of Tanzanians. Thus, the authorities mapped out the information flow at the national, regional secretariat, Local Government Authority (LGA) and sub-district levels in Tanzania to come up with concrete interventions. The mapping involved examining the kind of information flowing from the Local Councils to the wards and villages. The mapping exercise established that public access to information was neither reliable nor effective as the supply of information by the MDAs constituted the only major means for accessing information. In fact, the demand for information by citizens was generally less emphasised and perceived to be unimportant (see Milanzi &

Mwisomba, 2008).Consequently, the MDG Acceleration Framework (MAF) on poverty and hunger reduction among Tanzanians was developed in 2011.

For effective MAF implementation, baseline survey conducted in Bunda identified several bottlenecks: the absence of strategies linking the findings and output of agriculture research institutions with farmers' everyday practices; low budget allocation to agriculture and agricultural research and development; low level of Information and Communication Technology (ICT) infrastructure, particularly in rural areas; and inadequate capacity for co-operative Savings and Credit Co-operatives (SACCOs) and farmers' groups to mobilise financial services. On the whole, the mapping results established a big gap in the sharing of information at all the levels. The proposed solutions to these shortcomings include regular knowledge sharing; demonstration and capacity-development for farmers groups in new agricultural technologies and good practices by extension workers and agriculture service centres; and credit mobilisation through SACCOs and the private sector. The baseline report further underscored the fact that peasants wanted to be informed about the availability of farm implements and other agricultural services, rainfall patterns, crop calendar as well as producer prices. They also wanted to know how to secure agricultural loans. As such, the study has called for the establishment of resource centres at ward offices with all the required accessories aimed to address the problem of access to and use of information and knowledge (see also Milanzi & Mwisomba, 2008). In consequence, community resource centres such as Kibara, Mugeta and Kisorya were established in 2011. The potential contribution of the community resource centres towards enhancing the accessibility and usability of information in the production process is not clearly known. In fact, the empirical evidence is inadequate. As such, the present study audits the information accessed and utilised from CRCs by the communities. Specifically, it examines the available, accessed and utilised information in addition to the challenges to accessing and utilising information.

2. Related literature

Information is an important ingredient in attaining competitive and sustainable development in both developed and developing countries. Information on the price market, agricultural inputs, pesticides, crop species, weather, production and credit and loans has a great potential of contributing the development of rural communities. According to Harande (2009), prosperity, progress, and development of any nation depend upon the ability to acquire, produce, access and use pertinent information. Generally, information services are multi-dimensional and serve as a binding thread among different groups of rural dwellers. In fact, information services empower people by providing them with knowledge, which is necessary in solving practical problems.

Indeed, information constitutes the lifeblood of any society, which is vital in activities of both rural and urban communities. Bell (1974) asserted that dependence on information to create innovation and change places high premium on the ability of developing countries to access and use information for sustainable and competitive development of the society. In this regard, Harande (2009), Mtega and Ronald (2013) contend that countries globally cannot develop without reliable access to and use of relevant development-related information among rural communities because 75 to 80 percent of the people in developing countries live in rural areas and need positive and relevant information, which prompts and directs their attention in their daily activities.

In recent decades, community resource centres have constituted an alternative avenue for bridging the information and knowledge gap resulting from the information divide. Some of the community resource centres have benefited from information-based technologies that facilitate the provision of information and knowledge services whereas others still operate traditionally (Mtega & Malekani, 2009). These community resource centres help to minimise the information gap in rural and marginalised urban areas (Gomez & Hunt, 1999; Latchem & Walker, 2001). Accordingly, these centres provide telephone and fax services, e-mails, internet (Esterhuysen & Jensen, 2001; Etta & Wamahiu, 2003) and other information on health, agriculture, business, extension services, and livelihoods (Seong-Ho & Yoo-Jick, 2012; Lwoga, 2010; Giggey, 2001). These community centres also foster the use of ICTs for community development and provide information services to communities, communication services to communities and training on the use of computers in addition to demonstrating methods of carrying out different activities (Prado, 2009; Ojo, 2005). Rahman and Bhuiyan (2016) found that community centres have fared well in improving rural people's livelihoods at large, with the emerging middle class being major beneficiaries. The authors also observed that the centres contribute to the socio-economic development of rural Bangladesh as rural communities get access to information on agriculture, health, education, legal, human rights, tourism, environment, disaster management, employment, m-banking, and science and technology information through community centre. Furthermore, rural communities have access to internet services, stationary, video conferencing and learning. This empirical evidence attests to the fact that rural communities have access to different socio-economic information through the community centres which, in turn, improves their livelihoods and knowledge.

Similarly, Mtega and Ronald (2013) and Yongling (2004) observe that information and knowledge services extended to rural communities through a mixed model, which include service station, community resource centres, farmers' homes and other means of information provision and dissemination suitable for the rural-based society. Telecentres and rural information resource centres exemplify information service stations. Moreover, farmers may access information as they acquire agricultural inputs as well as from farmers' associations. Abdullahi (2009) contends that despite its potentiality, the provision of and access to development information and knowledge in Africa is so dispersed that it becomes increasingly difficult to access and retrieve crucial information. The principal victims of these developments tragedy have been rural communities. Mwantimwa (2012) argues that, apart from being income-poor, Tanzania's rural communities, which depend mainly on agriculture, are also information-poor, a combination that contributes to their disempowerment and lack of confidence when it comes to making rational decisions, a situation that in turn results in socio-economic deprivation. In the same vein, Matovelo *et al*. (2007) argue that farmers in Tanzania generally lack ample empowerment to solve their agricultural problems using information and knowledge emanating from the innovations. Why such trend?

Mtega and Malekani (2009) found that the telecentres in Tanzania were still in their infancy and most did not offer adequate information to communities living in rural areas. In fact, most of these centre still faced challenges that made it difficult to meet people's expectations. Moreover, a study by Manda and Mkhai (2015) found that there was poor access and connectivity to access ICT services and resources in Babati municipality. The authors further observed that local government officials and workers were neither adequately knowledgeable nor skilled in ICT application. Also, most of community resource centres in rural areas lack facilities (Seong-Ho & Yoo-Jick, 2012). They also had to contend with lack of uninterrupted power supply, locally relevant contents and contents in local languages, and lack of steady connectivity (Rahman & Bhuiyan, 2016), knowledge on the part of centre operators (Lwoga, 2010). These handicaps undermine the effectiveness of these community centres. This literature review demonstrates that there are few studies (e.g. Mtega & Ronald, 2013; Lwoga, 2010; Mtega & Malekani, 2009; Matovelo *et al*., 2007; Matovelo, 2008), which have focused on information services in rural Tanzania. Despite the insights provided by these studies, it is not clearly understood how the information was accessed and utilised to determine its impact on the socio-economic activities of rural communities in Bunda district. Therefore, the present study audits the kind of information accessed and utilised because the knowledge gained in the selected community resource centres

in Bunda District can make a significant difference, its impact and the challenges on the production process.

3. Research methodology

A mixed methods (quantitative and qualitative) research approach was used to audit information accessed through Community Resource Centres (CRCs) and utilised in Mugeta, Kibara and Kisorya wards of Bunda district. This approach was adopted to provide deeper insights into and facilitate the triangulation of different types of data gathered in the field. The quantitative data was collected using predetermined research instruments (the survey) that yielded statistical data on facilities available, frequency of using information resources in the CRCs. Qualitative data, on the other hand, was collected using an interview protocol and focus group discussions (FGDs). In this regard, the use of open-ended questions generated qualitative data on opinions, perceptions and attitudes that enriched the study findings.

3.1 Study area and sampling procedures

The information audit study was conducted in Bunda district. The units of investigation and analysis for the study were the district council, wards, villages and individuals (district, ward, village executive officers, village leaders, extension officers and farmers).Bunda was purposively selected on the basis of its participation in the MDG Acceleration Framework initiative in Tanzania. Moreover, it is one of the four districts taking part in the pilot MDG Localisation Project in the country. The study was conducted in three (3) wards of Mugeta, Kibara and Kisorya. Mugeta, Kibara and Kisorya wards were purposively selected as research settings. In these wards, nine (9) villages were involved in the study. These villages are located in places implementing the MAF and MGD localisation projects. The villages were purposively selected using the following criterion: the village should either be one with a community resource centre or has an established CRC nearby. This criterion was used because one of the overriding issues in this survey was assessing the accessibility of these community resource centres among the targeted information-users. In all, 93 respondents were included for the study. Specifically, 56 beneficiaries of the MAF project participated in the study, eight district executives, three project co-ordinators (MAF & MDG Localisation), six extension officers, 13 village leaders, and seven representatives from associations, co-operative societies and CSOs. The respondents from the district and wards were selected using purposive sampling whereas respondents from villages were chosen using simple random sampling. Purposive sampling was used to select a set of respondents because it allowed the selection of individuals identified to

possess information of value to the study due to their strategic placement. Accordingly, simple random sampling was used to select respondents who were deemed capable of representing a large population, hence generate representative data.

3.2 Data collection methods

Both secondary and primary data were collected in the course of conducting this study. Secondary data were obtained from various relevant publications, documents and reports. These crucial and relevant documents included the Bunda MAF Project Baseline Report (2012) and the Country Reports on the Millennium Development Goals (2010, 2008). Primary data, on the other hand, was collected using a questionnaire, observations, interviews and FGDs held with different groups from the district council, Mugeta, Kibara and Kisorya wards. The study used a beneficiary survey with both quantitative and qualitative elements. The questionnaires were administered by the researcher among56 MAF project beneficiaries. Accordingly, an interview guide with open-ended questions was used to gather data from key informants. The key informants were drawn from the district council, wards and villages, taking note of their respective roles in the community in Bunda. Furthermore, to obtain more contextual data, FGD sessions were conducted. In each village, two group discussions were organised: one for ward and village extension officers and leaders, and the other for MAF Project beneficiaries.

3.3 Data processing and analysis

During the analysis process, the data was organised categorically and chronologically. It was then reviewed repeatedly and continually coded. Data analysis involved both qualitative and quantitative techniques. Quantitative data were analysed using the SPSS and Excel software to yield descriptive statistical data. Descriptive statistical tools were employed to determine the difference, strength and trend of different variables. Qualitative analysis in the form of descriptions and narratives helped to further increase our understanding of the results stemming from the quantitative data.

4. Analysis and discussion

This section analyses and discusses the findings of the study on auditing information and knowledge accessed and utilised in the CRC in the Bunda district.

4.1 Demographic Information

In all, 56 respondents took part in the survey and 37 key informants were interviewed and participated in FGD. Descriptive statistics and one sample test were performed to measure the level of significance on the gender aspect as indicated in Table 1:

Table 1: Respondents in the Ward*Village*Gender

Ward (n = 56)	Village	Gender		Sample test
		Male	Female	
Mugeta n = 21	Mugeta	17 (89.5%)	2 (10.5%)	t = 21.409
	Kyandige	1 (100%)	0 (.0%)	
	Nyang'aranga	1 (100%)	0 (.0%)	
	Total	19 (90.5%)	2 (9.5%)	
Kibara n = 14	Mwibara	3 (75%)	1 (25%)	
	Kibara 'A'	4 (66.7%)	2 (33.3%)	
	Kibara Stoo	1 (33.3%)	2 (66.7%)	df = 55
	Kibara 'B'	0 (.0%)	1 (100%)	
	Total	8 (57.1%)	6 (42.9%)	
Kisorya n = 21	Kisorya	14 (70%)	6 (30%)	
	Masaunga	1 (100%)	0 (.0%)	
	Total	15 (71.4%)	6 (28.6%)	
Total		48 (85.7%)	8 (14.3%)	*p* = .000

Source: Field Data (2014)
Note that sample test is for gender only

The results suggest that the majority (75%) of the MAF beneficiaries are from Mugeta and Kisorya. Only 25 percent came from Kibara. A sample test on the gender reveals that there is a significant difference [t = 21.409, df = 55, *p*-value = .000] between the males and females involved in the survey. Moreover, the results show that the majority (85.7%) of the respondents were males as most of MAF beneficiaries also happened to be male.

4.1.1 Age of Respondents

The respondents were asked to indicate their age. The results in Table 2 show that 15 (26.6%) of the respondents aged between 39 and 48 years, 11 (19.6%) were aged between 29and 38 and another 11 between 49-58, 10 (17.8%) more than 59 years and nine between 19 and 28 years old. These were MAF beneficiaries in Mugeta, Kibara and Kisorya wards in rural Bunda:

Table 2: Age group of respondents

Age group (n = 56)	Frequency	Percent
19-28	9	16.1
29-38	11	19.6
39-48	15	26.6
49-58	11	19.6
59+	10	17.8
Total	**56**	**100**

Source: Field Data, 2014

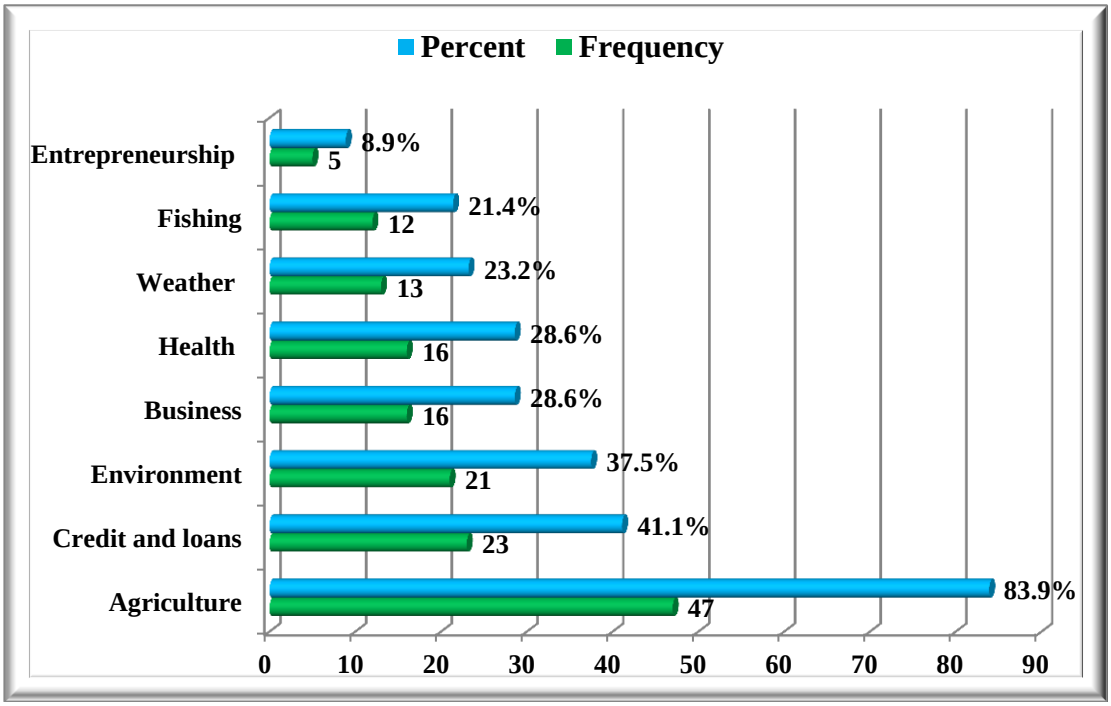
Age-wise, the findings indicate that the greater part (81.9%) of the MAF beneficiaries from the selected villages were aged between 19 and 58.The least (17.8%) of the respondents were aged more than 59 years.

4.1.2 Level of education

It was observed that the majority (46: 82.1%) of the MAF project beneficiaries had primary school education. An insignificant number and percentage respectively (8: 14.3%; 2: 3.6%) had secondary and college education. On the whole, the majority of rural dwellers in the area under study in Bunda district had a low level of education. This trend suggests that rural communities in Mugeta, Kibara and Kisorya might not prioritise higher learning education and vocational training for their personal improvement, let alone value education the same way as educated communities would. To make matters worse, communities in the villages surveyed have poor access to vocational training such as VETA for self-development. Accordingly, the socio-economic disparities between rural and urban areas tend to encourage the rural-to-urban drift of the rural educated population.

4.2 Information and knowledge gaps to be filled

The provision of relevant information and knowledge is essential in the identification and analysis of the information and knowledge wants and needs of such target communities. In this regard, the respondents were asked to identify their information needs. Figure 1presents the information gaps:



Source: Field Data (2014)
Figure 1: Information gaps to be filled

The villagers indicated that they had experienced a need for information to solve various development-related problems. The rural communities in Mugeta, Kibara and Kisorya had great demand for information on modern farming techniques (e.g. new varieties of seeds, pesticides, and incentives) and modern livestock-keeping techniques (e.g. disease and treatment) in a bid to increase their production. They also need information and knowledge on accessing soft loans. In fact, access to credit and loans is one of the headaches they have to contend with despite the mushrooming of financial institutions in Tanzania. Furthermore, the respondents also cited the need for environmental information (types of trees that are drought-resistant) to curb the threat of severe environment destruction. Other kinds of information in demand include business (e.g. market prices), health (e.g. care services for the people with HIV/AIDS), weather, fishing and entrepreneurship information and knowledge. In this regard, the district director said:

> Our people in Bunda need information related to the environment (pollution, tree planting, and protection of water sources). For example, all producers (e.g. farmers) and processors (e.g. owners of Bunda Oil and ORAM) should have knowledge on environmental issues. Also, they need information on the colleges and universities available for their children, development projects such as MAF and market prices for fish and cotton in local and international markets for the comparison.

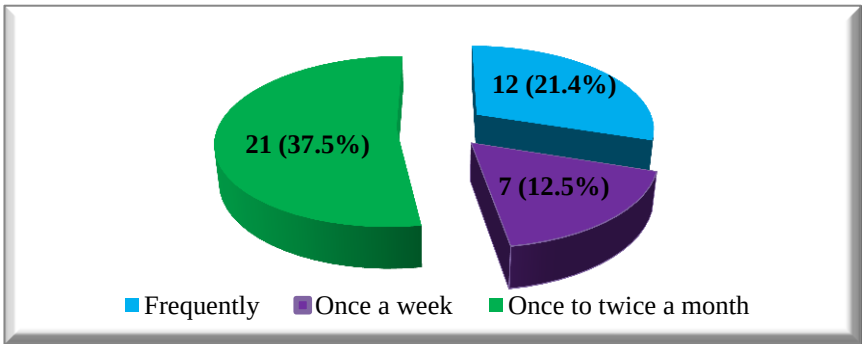
In the same vein, the district commissioner said:

> The villagers need knowledge on the use of nature resources and ecosystem. Diverse knowledge on production: fish and bee-keeping, and sweet potatoes (i.e. *viazilishe*) and knowledge on rain water harvesting to enhance production.

In other words, there are many gaps in the provision of timely and appropriate information among the target communities that need to be filled. These findings also imply that access to, use of and sharing of information in the wards and villages surveyed remain problematic. A recent study by Rahman and Bhuiyan (2016) also found that rural communities in Bangladesh need different kinds of information on health, agriculture, education and environment.

4.3 Awareness and frequency of using CRC

An empirical result suggests that the majority (48: 85.7%) of the respondents agreed that they were aware of the CRC in their respective villages. Only eight (14.3%) indicated that they were unaware of its existence. In other words, deliberate efforts have been made to raise awareness among the villagers on the existence of these resource centres. The majority of the respondents, who were aware of these centres, came from Mugeta and Kibara wards. Resource centres in these two villages were officially opened and functioning whereas the one in Kisorya was still under construction. Accordingly, 40 (71.4%) of these respondents indicated that they had visited the resource centre, whereas only eight (14.3%) had never visited the centre. With regard to the frequency of use, the data indicate that 21(37.5%) used it once-to-twice a month, 12 (21.4%) frequently and seven (12.5%) once a week as Figure 2 illustrates:



Source: Field Data (2014)
Figure 2: Awareness on the existence of CRC

These results show that a noticeable percentage (37.5%) of the respondents visited the resource centre once-to-twice a month, 21.4 percent do so frequently and an insignificant percentage (12.5%) did so once a week. In all, the findings signify that the majority of the respondents do not frequently visit the centre. This irregularity is attributable to inadequate information on resources to access and use, the distance and shortage of facilities. These findings concur with Seong-Ho and Yoo-Jick's (2012) findings to the effect that the users visit the centre once-to-twice a month for accessing health and attending community meetings. These entail that the rural communities visit and use community resources centres occasionally.

4.4 Information available and accessed in CRC

One of the objectives of the study on information audit was to examine the kind of information available in the area under review to understand what rural people regularly access and use. Table 3 summarises the kinds of information available in and accessed from CRCs:

Table 3: Information and knowledge available and accessed

Info & knowledge	Frequency	Percent
Farming	40	71.4
Environment	19	33.9
Health	17	30.4
Business	17	30.4
Political	13	23.2
Education	7	12.5

Source: Field Data (2014)

The findings suggest that the majority (71.4%) of the respondents cited information on farming notably on new crops, poultry-keeping and fish ponds. In Mugeta, many of the farmers accessed information on growing sunflower, whereas in Kibara and Kisorya they accessed information on rice and poultry-keeping. Other kinds of information regularly accessed and used include information on the environment (33.9%), business (e.g. credits and loans) and health-related (30.4%), politics and education. It was observed that different kinds of information were displayed in the CRCs and village offices such as farming practices, health, business and protection of wildlife. Despite introducing the CRCs in the villages under study, the findings reveal that the information available accessed and used from the CRCs was still severely limited in scope and diversity. Rahman and Bhuiyan (2016) in their study found that more kinds of information such as m-banking, insurance, human rights, disaster management, and legislation were accessed from the multi-purpose community centres in rural Bangladesh.

4.5 Available facilities for resource centre users

Availability of and access to facilities and resources in the established CRC potentially has a bearing on the use of these resources. Thus, the study sought to establish the kind of facilities available at the CRCs. Table 4 indicates the ICT facilities available in the CRCs:

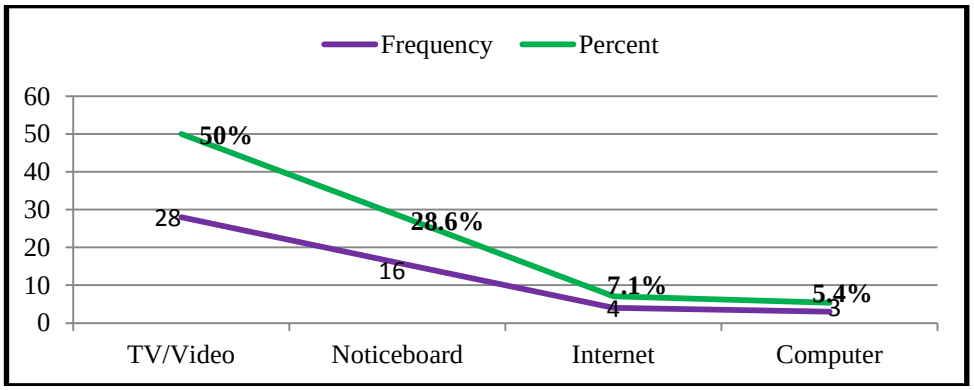
Table 4: Facilities and resources available in the CRC

Type of facilities	Mugeta	Kibara	Kisorya	Total
TV	**1**	1	1	3
Computer	1	1	1	3
Modem	1	1	1	3

Printer	1	1	1	3
DVD player	1	1	1	3
Tables	2	5	5	12
Chairs	3	5	5	13
Satellite Dish	1	1	1	3

Source: Field Data (2014)

On the whole, the findings reveal that there is poor access to facilities and resources. In fact, it shows that there is a disproportional relationship between the facilities available and the target population surrounding the resource centre. The data indicates that access to the computer for the villagers is often limited. In the resource centres under study, the facilities and resources available for villagers were inadequate. More significantly, in all the three wards, MAF plans are underway for improving information access through mobile phones, which will be distributed to the farmer groups. The respondents indicated the kind of facilities they had ever accessed and used at the centre. Half (28: 50%) of the respondents indicated having accessed TV/video programmes at the centre. Other respondents (16: 28.6%) indicated that they have accessed information on the wall notice-board of the centre. Indeed, at all the village offices surveyed there was no modern notice-board. As a result, the notices were posted on the walls of the different buildings. Also, the internet and computer were hardly used by the villagers. It was observed that the computer and internet were mainly used by the extension officers. Figure 3shows the trend of using facilities and resources available in the CRCs:



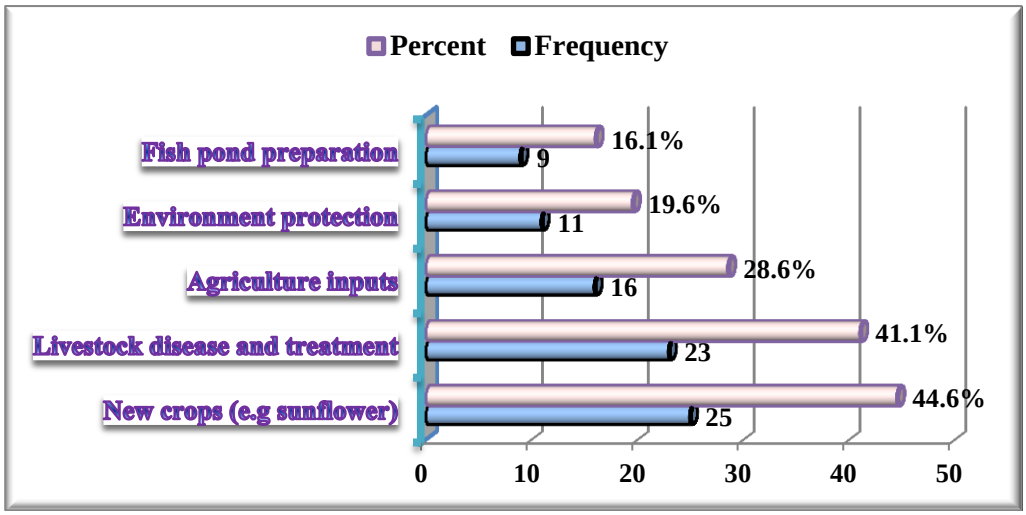
Source: Field Data (2014)
Figure 3: Facilities and Resources Accessed in CRCs

As the majority of the villagers in Mugeta, Kibara and Kisorya have poor access to information facilities, their use of the internet and computer accessories was severely limited probably because the MAF projects are still in their infancy in terms of setting up these resource centres and their facilities. Other immediate obstacles could be financial constraints to purchasing the facilities. Indeed, the rural farmers who depend on rain-fed agriculture with low harvests and poor markets cannot afford to buy computer accessories of their own. Accordingly, the respondents were asked to identify what works well in the Community Resource Centres. The

results indicate that 26 (46.4%) of the respondents from Mugeta and Kibara wards identified TV/video shows as one of the facilities and programme that work well in their respective resource centres. Also, they indicated that the notices were a useful as they carried different kinds of information for the villagers' knowledge. Moreover, the resource centres were increasingly becoming focal points for exchanging information and knowledge largely related to farming and livestock-keeping and environment management. Other kinds of information on health were ineffectively exchanged and disseminated through the resource centre.

4.6 Usefulness of information available at the resource centre

Despite the shortcomings that were presently associated with the centres, the respondents indicated that there are different kinds of information disseminated and exchanged through the centre in Mugeta and Kibara. The results indicate that some information was readily available to the target audience in the villages surveyed. Figure 4 shows the kind of information that the respondents identified as useful and available through the resource centre:



Source: Field Data (2014)
Figure 4: Useful information and knowledge in the resource centre

Generally, the findings suggest that a noticeable percentage (44.6%) of the respondents agreed that information on new crops such as sunflower and new varieties of paddy was disseminated by extension officers through the centre. Some of the participants in the FGD in Mugeta reported that their extension officer was innovative by introducing the demonstration plots for sunflower in two villages. Moreover, they stressed that their extension officer provided different advice on the types of species and fertilisers. Also, information on livestock disease and its treatment was found in print format (posters) displayed on the wall. For example, piglet and goats disease posters were displayed on the resource centre walls. Information on agriculture inputs, the

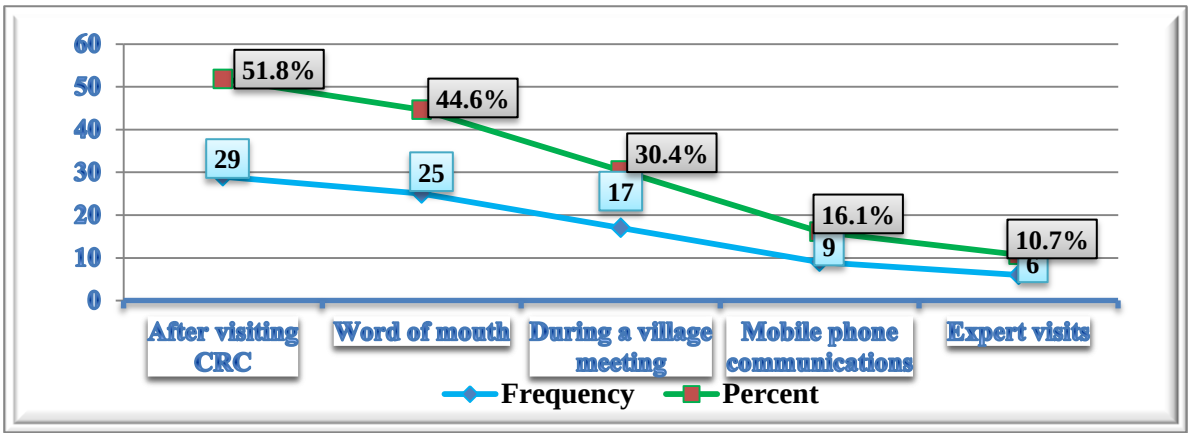
environment and fish pond preparation techniques were accessible through extension services. Generally, the word of mouth was a predominant channel for enabling information flows and exchange in all the villages surveyed in Mugeta, Kibara and Kisorya wards. Additionally, in the villages under review villagers had recourse to different kinds of indigenous knowledge (IK) available that that they have been banking on for generations. In Mugeta, some used local knowledge in bee-keeping, treating animals and storing seed grains. This implies that IK can also be used in improving farming and development in general. The participants of FGD in Mugeta also acknowledged that there are different kinds of information that they accessed and used on the availability of seeds, instruction on planting of crops, weeding, types of diseases and treatment from the extension officers. Mugeta, Sanzate, Rakana and Nyang'aranga villages have registered better performances in adopting new knowledge on growing sunflower than Tingirima and Kyandege. One of the respondents explained:

> You can have a lot of money without knowing what to do with it. But if you have information and knowledge you can invest in productive activities. Our centre helps us to some extent.

This statement reveals that information and knowledge are more important than money. Indeed, appropriate and relevant information and knowledge on farming, social protection and environment in accessible format and channels are highly required in the villages surveyed in Bunda. In this regard, Lwoga (2010) supports farmers have visited their centres to look for agricultural information to gain requisite knowledge. This shows that farmers visit their centres when they are aware of the information available and, hence, the knowledge to be gained there.

4.7 Means of awareness of services available at CRC

There were different ways through which villagers become aware of the facilities and resources received by the centre. Figure 5 presents means through which this awareness is raised among community members on the kind of resources received at the resources centre:

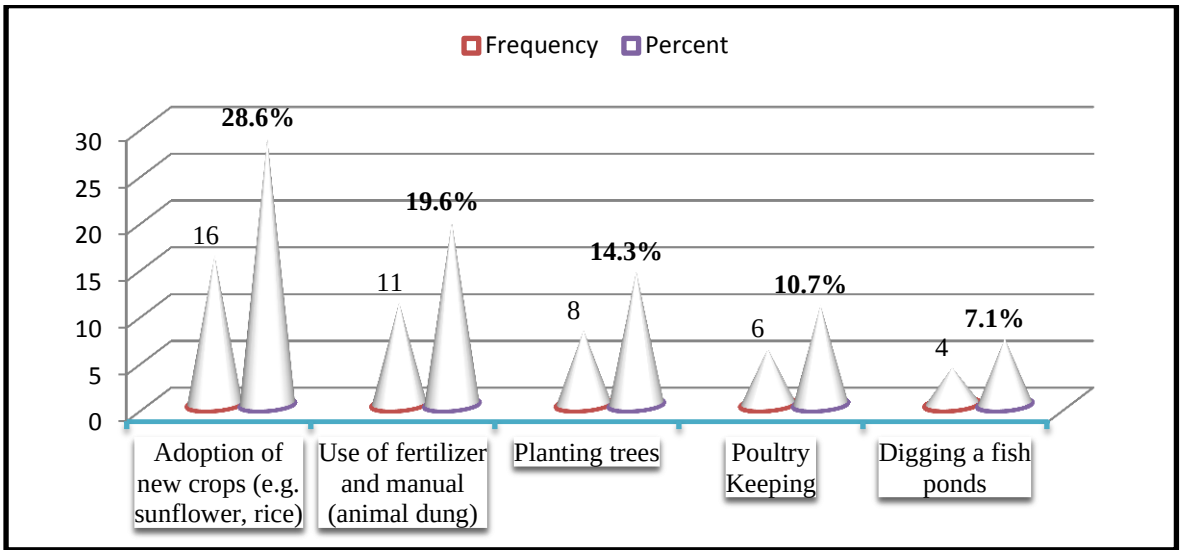


Source: Field Data (2014)
Figure5: Means of awareness of the services available at CRC

The findings show that a significant percentage (51.8) of the respondents became aware of the facilities, information and knowledge only after paying a visit to the resource centre. In the meantime, 44.6 percent indicated that they receive information from other villagers and officers through the word of mouth, 30.4 percent did so after attending village meetings. A few other respondents became aware through mobile phone communication and expert visits. On the whole, the word of mouth (e.g. grapevine) still remains an important source and channel of information in all the villages surveyed.

4.8 Results of utilising information and gained knowledge from CRCs

The respondents were asked to provide some success story resulting from their use of the CRCs. Figure 6 summarises the results:



Source: Field Data **(**2014)
Figure 6: Results of using the resource centre

The findings indicate that more than a quarter (28.6%) of the respondents said they had already adopted new types of crops. In Mugeta, sunflower crops have been adopted by different farmers, whereas in Kibara and Kisorya they have decided to cultivate a new variety of paddy. Also, the finding on this aspect indicates that other respondents have started to use fertiliser and manure which they had formerly not done. There were also a few respondents who pointed out that they have also participated in tree-planting after benefiting from the centre. This result was found to be more pronounced in Kisorya than in Mugeta and Kibara. Also, poultry rearing and preparation of fish-ponds were observed in all the villages as some of the economic ventures

sprouting in the villages surveyed. Figures 7, 8 and 9 exemplify some of the knowledge applied after benefitting from the information centres:

Figure 7: Traditional Fish-pond at Mugeta

Figure 8: Modern Fish-pond at Kibara

Figure 9: Chicken Rearing at Kibara

The District Director provides a summary of the significant changes taking place in the area:

> The farmer's have accepted growing sunflower crops, new variety of paddy and millet are the success of the Community Resources Centre and the MAF Project at large. In the coming years, there will be more success in the production of the newly-introduced crops, especially after the installation of sunflower processing equipment.

Similarly, the district commissioner attested to the positive developments associated with the resource centres in the following statement:

> Through the use of ICTs, we managed to have statistics for cotton crop production. The mind-set of the farmers on sunflower production is changing; they are adopting new ways of farming. Community resource centres enhance information-sharing in our villages.

Also, one of participants of FGD in Mugeta narrated:

> Sunflower is a newly-introduced crop in our village. The acceptance is very high. Despite its recent introduction, it has produced promising results. The installation of the [sunflower processing] machines is in the pipeline... the market for sunflower products have yet to be identified. The accelerating factors include information from the resource centre. Sunflower is fully accepted.

Generally, the findings signify that the proper use of the Community Resource Centre and the agricultural extension services could bring about a positive socio-economic impact on the rural dwellers in Bunda with far-reaching implications for their lives, as well as poverty alleviation. The study also found that the formation of farmers' groups in the villages surveyed is also well-appreciated. For example, there are various groups which have opted to keep poultry, whereas others have decided to develop modern fish-ponds for fish farming.

4.9 Challenges to utilising information and knowledge in the CRCs

The CRCs in the selected wards were not immune to the challenges that undermine the effective utilisation of information and knowledge for rural development. Really, there were different challenges to accessing and utilising information and knowledge for rural development in the villages under study as Table 5 demonstrates:

Table5: Challenges to accessing and utilising information in CRCs

Types of obstacles and challenges (n = 56)	Frequency	Percent
Space in CRCs	30	53.6
Conflict of interest among village leaders	26	46.4
Shortage of info and knowledge resources	24	42.9
Shortage of infrastructure (e.g. ICTs, chairs etc.)	21	37.5
Distance from one village to another	16	28.6
Time to utilize CRC	15	26.8
Shortage of staff	9	16.1

Source: Field Data (2014)

On the whole, the findings suggest that more than half (53.6%) of the respondents indicated that space was the main problem when it comes to utilising CRCs. This was followed by those who mentioned conflict of interest among village leaders (46.4%), shortage of information and knowledge resources (42.9%), and infrastructure such as ICTs and chairs (37.5%). Other challenges were the distance from one village to another, time constraints to utilise CRC and shortage of qualified staff to operate the CRCs. During the interview, the district director said:

> Poor infrastructure such as roads impedes the agriculture sector and the movement of information and knowledge. Not only that, the acceptance of new knowledge on production process is a challenge. For example, some of the villagers are willing to adopt the sunflower crop whereas others are not.

Similarly, the district commissioner explains that:

> Access to, use of and sharing of information is impeded by the following: many farmers are still reluctant to change their mind-set, bureaucracy in information and knowledge flow leads to untimely information and knowledge, other officers avoid using ICT facilities and untimely information provision. As a result, 80 percent of agriculture incentives were not utilised in 2011/2012 due to untimely information.

Generally, the potential contribution of information services to the fulfilment of the information needs of the rural dwellers in the selected villages in Mugeta, Kibara and Kisorya wards is hindered by different obstacles and challenges. The results suggest that inadequate information and knowledge resources and sources, untimely information, and bureaucracy are some of the critical obstacles. Other respondents cited the lack of transparency in the development of

information and knowledge on the part of village leaders, as well as the poor physical infrastructure and reluctance to adopt new knowledge in some quarters as other impediments the villagers had to contend with. On the other hand, one farmer in Kisorya reported that extension services were not as close to the farmers as they should be. The results of the FGD with district heads of department indicate that low knowledge and skills, unreliable electricity supply, poor physical infrastructure, unsustainable new programmes and projects, funding problems, use of the top-down approach, low level of technology, shortage of expertise, negative perceptions of some political leaders on the use of ICTs, and a lack of awareness among district officers were identified as the main barriers to accessing and using information with the villagers. In fact, lack of awareness, skills, knowledge, funds (Lwoga, 2010), lack of locally relevant contents in local languages, lack of uninterrupted power supply (Rahman & Bhuiyan, 2016) and inadequate ICTs facilities undermine the effectiveness of the community centres in developing countries.

5. Conclusion and interventions for scaling up

Despite concerted commitment to and efforts by the government of Tanzania to transform rural areas through the MDG localisation projects and the MDG Acceleration Framework (MAF) initiatives, inadequate information and knowledge remains a largely rural phenomenon with the rural communities in the country failing to enjoy the significant improvements. Although the results signify some positive and promising indicators stemming from the establishment of the rural resource centres, the available information and knowledge in the wards and villages surveyed is not sufficient to bring about significant rural development. These findings imply that the rural communities in Bunda are aware of the problems dogging them and even some of the possible solutions towards solving them. Yet, the community resource centres are equipped with limited infrastructures and resources. Also, lack of information experts and limited space reduce the effectiveness and efficiency of these centres. Consequently, access to, use of information and knowledge on poverty reduction, social protection and environmental management remains largely problematic. Indeed, the provision of irrelevant, inappropriate, and untimely information and knowledge in a non user-friendly package cannot help to make a difference for the rural dwellers in their decision-making and their socio-economic interaction and transaction. A well-equipped centre with adequate infrastructure, information and knowledge resources, a close link with sources and enough space, will improve the accessibility and usability of information and knowledge on poverty reduction, social protection and environmental management. In fact, tangible and measurable socio-economic development can accrue from the effective and sustained promotion of the community resource centres and other information resources and sources. The following are recommendations to scale CRCs up in the study area:

- There is a need to involve actively all rural development actors, that is, both governmental and non-governmental organisations, civil society organisations, religious organisations and other private sector players in the process of information and knowledge creation, processing and dissemination.
- In the light of the high number of people owning a radio, it would be much cheaper to use the radio for information and knowledge sharing;
- Due to the high penetration of mobile phones, it should be considered seriously as a knowledge dissemination and even creation tool on a grand scale. Bulk SMS could be used for urgent mass communication and reminders about meetings, the weather, wildlife protection, farming season, health and environment;
- The district council should employ information specialists to manage community resource centres instead of the current extension and village executive officers;
- There is a need to instal solar energy to increase the accessibility and usability of ICTs facilities.
- Also, information and knowledge training is important and must be taken as a priority matter; and
- There is a need to provide the necessary equipment such as internet-connected computers, a printer, scanner, photocopy machine, modem, TV, DVD player, radio, CDs, and DVDs and other facilities;

On the whole, the Tanzania government can proactively deploy a bottom-up approach to help rural communities to get opportunities to participate much more actively in their own development process by benefiting from information and knowledge available locally in forms they can easily access and retrieve to catalyse their socio-economic improvement.

6. Acknowledgement

My sincere appreciation goes to the Economic and Social Research Foundation (ESRF) of Tanzania for covering all the field costs. I am grateful for the generous financial support. Specifically, my heartfelt thanks go to the ESRF staff, notably Mrs. Margareth Nzuki, Mr. Abdallah K. Hassan, and Mr. John Kajiba for their tireless advice and willingness to work with me. Thank you so much.

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