The Role of Community Information Centres (CIC) in Enhancing Farmers' Access to Information: A Case Study of CIC Models in Morogoro Region, Tanzania

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Abstract

This paper presents the findings of a study which was conducted in Morogoro region to identify farmers' current information needs. It also examines an approach that could enhance farmers' access to and use of agricultural information with a view to promoting the practice of proactive information acquisition for empowerment and improved livelihoods. The study set out a participatory action research to pilot models for stimulating the proactive practices in accessing and utilising agricultural information. The model which was employed for this study evolved from the Village Information Centres (VIC) model and gave way to Community Information Centres (CIC) given the realisation that VICs have application and relevance to broader communities that may not necessarily be village-based. The study found that farmers' information needs are not necessarily related to agricultural activities taking place at that particular time in a particular area. In some cases, exposure to information brought about information needs that were not expressed in the first place. This also implies that in some situations exposure to information is needed to stimulate a demand for information. The content, presentation style and language used were among the determinants influencing the demand for particular information. The study found adequate levels of literacy among smallholder farmers such that they could effectively access and make use of printed information. The findings also demonstrate the presence of reading skills that are otherwise underutilised. In conclusion, the study advocates for "pulled information" phenomenon as opposed to "pushed information" in building sustainable knowledge acquisition skills among smallholder farmers.

Keywords: Community Information Centres, Smallholder Farmers, Information Needs

1. Introduction

Information poverty has been identified as a contributory factor to poverty, especially in rural communities, as it leads to lack of empowerment and confidence in decision-making and consequently socio-economic deprivation. The need for information in rural communities has been identified to rank high among key areas that require intervention in the Agricultural Sector Development Strategy [ASDS] (URT, 2001: ix). However, given the initiatives that have been attempted to address the information needs of the rural communities, what remains to be addressed are approaches that are appropriate, effective and sustainable (Kullaratne, 1997).

In an attempt to address this challenge, the National Strategy for Growth and Reduction of Poverty (NSGPR) has advocated for establishing and strengthening Community Information Centres as a measure for providing cost-effective information services for improving information welfare for rural communities (URT, 2005_a: 18). It is in the light of the observations above, that concepts, policies and approaches for meeting the information needs of rural communities remain an attractive research subject.

This paper reports selected findings from a research which was conducted from 2005 to 2008 in Morogoro region, Tanzania. The research was motivated by the existence a wide range of literature indicating the information gap relating to agricultural information for farmers, as generated from research for the improvement of rural livelihoods, as cited by, among others, (Ochieng, 2004 ; URT, 2001: 7; Laizer, 1999: 58; Matee and Mollel, 1990; ISNAR, 1989). In addition, discussions with some farmers during agricultural exhibitions ("Farmer's day") revealed farmers' craving for agricultural information and a desire for printed agricultural materials to meet their information needs. As Manda (2002) and Mascarenhas (1992) point out, the information sector still faces a number of challenges in a bid to make a meaningful contribution to agricultural development. One of the challenges is how to play an active role in enabling farmers to become proactive in information seeking rather than remaining passive recipients of information, as it appears to be the case in most extension-driven information delivery initiatives.

Studies demonstrate that there is a wide range of printed materials that could be used by farmers in many agricultural research and outreach institutions. However, these have not yet

been taken beyond boundaries of the institutions of their origins. Even for some of the extension materials that are disseminated, the majority have a limited circulation. The abundance of useful agricultural information in research institutions, on the one hand, and the existence of unmet information needs among farmers, on the other hand, pose a challenge of innovating ways of narrowing the gap between sources of agricultural information and the small-scale farmers.

Admittedly, the extension services have over the years made a significant contribution in this arena, but given the scope of the challenge, it is imperative that other innovative ways are developed to complement such extension services. These services have characteristically employed to a large extent the "push" strategy whereby farmers are furnished with information without paying particular attention to the type and category in demand. The "pull" strategy, on the other hand, may inspire and empower farmers to play a proactive role in acquiring and utilising information because with "pulled information" phenomenon, target agents are exposed to a wide range of information resources from where they only pick and internalise what adds value to their needs.

The objective of this study was, therefore, to identify the farmers' current information needs, identify constraints in accessing information and examine an approach that would enhance access to and use of agricultural information with a view to promoting the practice of proactive information acquisition for empowerment and improved livelihoods.

2. Methodology

2.1 Research design

The study set out an action research to pilot models for stimulation among the farmers in accessing and utilising agricultural information for development purposes. The study was employed the Community Information Centres Model, herein used as synonymous with the Village Information Centres (VICs).

The study used a combined research method framework whereby both qualitative and quantitative data were collected concurrently. Three instruments were used. They included the questionnaire surveys, focus group discussions and a longitudinal intervention study in which the trial models of VICs were established, put into use, monitored and evaluated

through a participatory approach. During the intervention study, document collection and improvement, and monitoring and evaluation visits were carried out. During these visits, informal and formal discussions were conducted, followed by reflection which formed the basis for subsequent improvements in the collection and management of the VIC model according to the participants' experiences in the respective villages. Towards the official end of the research an impact assessment was conducted, which made use of a questionnaire, focus group discussion (FGD) and information acquisition test to have an empirical basis for recommending the VIC as models for the stimulation and promotion of the practice of proactive information seeking.

2.2 Area and population of the study

The study was conducted in three out of six districts of Morogoro region, namely Morogoro Rural, Mvomero and Ulanga. Morogoro region was selected because of the diversity of its agro-ecological endowments and farming systems. The population of the study comprised smallholder farmers who constitute the majority (about 80%) of the population, with agriculture as their main economic activity.

2.3 Sampling method

A multi-stage purposive-stratified simple random sampling technique was used to draw a sample of the districts and wards that were involved in the study. One village was selected from each ward where 60 farmers were drawn from each village, hence making a sample of 600 farmers. The number of districts and villages selected for the intervention stage was reduced from three to two and from ten to four for the districts and villages respectively to obtain smaller samples to allow for active participation.

2.4 ***The pre-intervention survey***

A cross-sectional survey was carried out for a situation analysis. The survey was carried out to benchmark the study parameters as far as access to information by smallholder farmers is concerned.

2.5 The intervention

The research intervention stage was participatory action-oriented in nature. Action research was contemplated because of the intention of demonstrating a practical difference to the participants' practice of acquisition of information.

2.6 Assessment of impact, awareness and acceptability of the VIC

The third stage was aimed at assessing the farmers' awareness and acceptability of the VIC. It was also used to determine whether the intervention had made an impact on individual participants and the community at large. The assessment also included two control villages.

2.7 Visits for monitoring of the VIC

Visits to the VIC were done once a month to monitor and evaluate how the VIC were being used in different villages and who used them. In this regard, logbooks were used to register the user profile and fill in user preferences and comments.

2.8 Focus Group Discussions

The FGDs were conducted in the villages as a triangulation method and to verify the information obtained in the survey and also to capture preliminary indications of the research intervention impact. Two FGDs were held for each VIC.

2.9 Pre- and Post-intervention agricultural information tests

The test was administered in the four villages under intervention and in two control villages at two different times during the study period: one at the beginning of the intervention and the second before the official end of the research in each village. In the control villages, the tests were administered at the beginning of the intervention and after all other villages had had the post-intervention test.

2.10 Impact, awareness and acceptability of the VIC

The questionnaire was administered with 240 randomly selected farmers in the four villages under the intervention to determine their level of awareness of the existence of the VIC, their attitude, acceptability and limitations, and any other opinion regarding the VIC.

2.11 The control villages

The control villages did not have any intervention measure except for the knowledge test that was conducted twice. The purpose of having the control villages was to find out whether there would be any difference in the information that the farmers had between the villages under intervention and the control villages at the end of the research.

3. Results and discussion

3.1 General Overview

The study was originally projected to involve ten villages in Morogoro, Mvomero and Ulanga districts. The villages were later reduced to four villages, namely Dihinda and Melela in Mvomero district and Kongwa and Kiroka in Morogoro Rural district, where the VICs were established and monitored. The two control villages were Milengwelengwe (Control 1) in Morogoro Rural district and Wami Sokoine (Control 2) in Mvomero district. This study demonstrated the existence of unmet needs regarding information resources in general and of agricultural information resources in particular. The agricultural information and knowledge paucity appears to be a function of a number of factors including geographical and functional isolation.

The study has shown that Community Information Centres (CICs) can serve as effective information resources outlets for farmers. Moreover, the CICs proved feasible and effective convergence points for self-motivated learners to meet for socialisation and peer education.

3.2 Profile of the respondents

3.2.1Age and gender distribution

A total of 600 smallholder farmers were interviewed. Out of these, 349 (58%) were men and 251 (42%) were women. As indicated in Fig. 1, the majority of the respondents, 318 (53%), were aged 28 - 47 years.

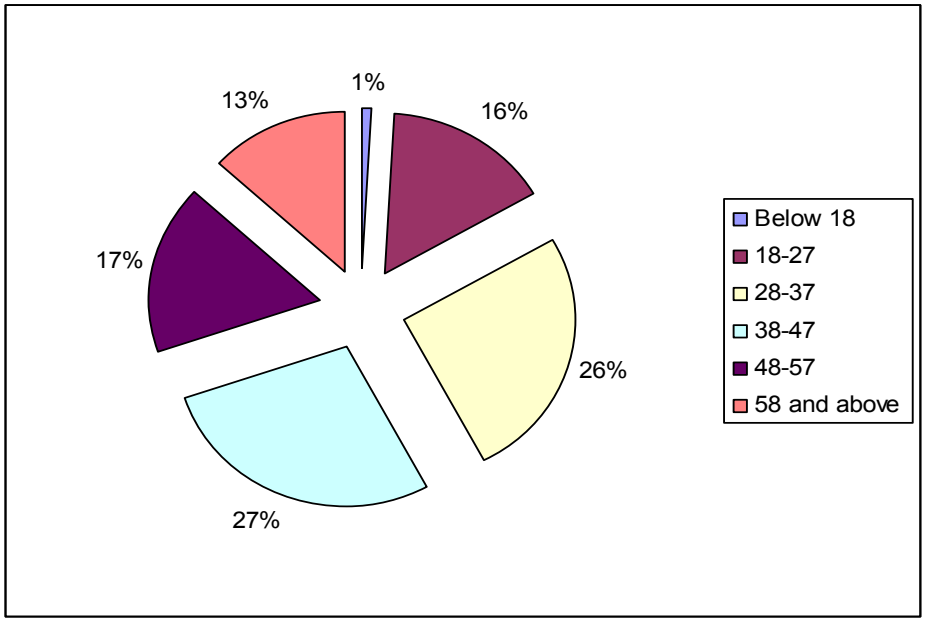


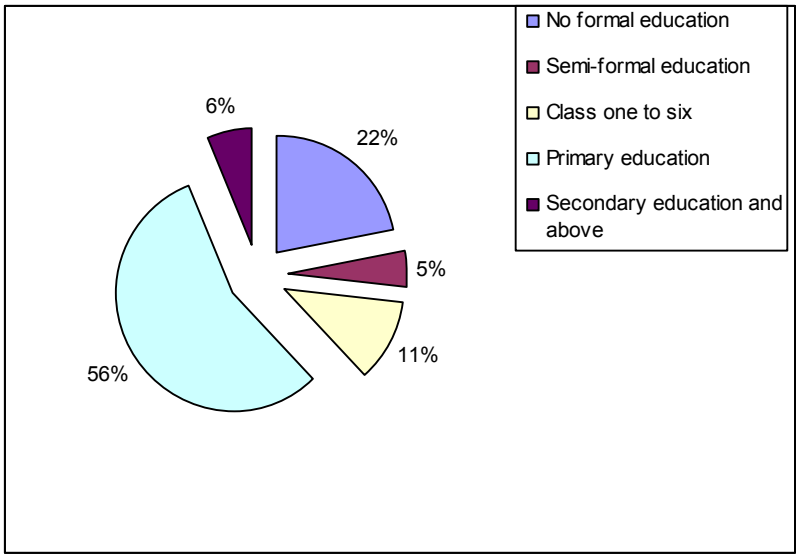
Figure 1: Distribution of age of the respondents

The finding was particularly interesting given the fact that this 28-47 age bracket is normally the most economically active and, therefore, would be willing to participate in the research. It was also assumed that it would be easier to encourage this group to practise reading simple or short instructions as a way of acquiring information and knowledge than elderly farmers.

3.2.2 Education and functional literacy

A majority of the respondents, 76 percent (454 out of 600), had attended some form of school and reported to be literate as indicated in Fig. 2.

Figure 2: Distribution of respondents by types of education



However, a follow-up question revealed that the actual number of respondents who had attended formal school classes, i.e. class one up to secondary school or above, was 440 (73%). It was found that the respondents who completed primary school level formed the majority 337 (76%) of those who had been to formal school classes. This implies that 76 percent of all the farmers had functional literacy.

Comparing the levels of education between gender revealed that 79 percent (or 275) of all the men (n = 349) and 66 percent (or 165) of all women (n = 251) had attended formal classes. The dominance of male farmers in the relatively better educated category is not a surprising finding because of cultural and historical gender imbalances in Tanzania's education system (Mbilinyi *et al*., 1991: 5-6). However, recent developments indicate that there is a positive change towards gender balance in education particularly at the primary school level (UNDP, 2012), and this has resulted in increased educational opportunities for women.

4. Determining the information needs of farmers

Two approaches were used to establish the farmers' information needs: (1) The critical incident approach (Mchombu, 1993; Kaniki, 1995) and (2) the needs in relation to innovations, ideas or technologies they wished to know more about.

In the critical incident approach, the information needs were established as reflected by revelations of the problems experienced by the farmers during three preceding farming seasons as summarised in Table 1.

Table 1: Problems identified as most disturbing during three preceding farming seasons

Most disturbing problem	*Respondents who indicated a particular problem as most disturbing*		
	N	Frequency	Percentage
Rodent infestation	540	266	49.3
Crop diseases	502	310	61.8
Bad weather	497	178	35.8
Frequent deaths of local chickens	467	191	40.9
Lack of money to buy implements	461	14	3.0
Lack of market for the produce	459	55	12.0
Diseases of other livestock	453	76	16.8
All others (e.g. pests, lack of transport, etc.)	533	208	39.0

The assumption in this case was that some of these problems could probably have been overcome by having access to information and knowledge. Almost all the farmers (97.5%) reported facing problems and wished they had information and knowledge on how such problems could be addressed.

4.1 Information needs determined by farmers' wishes

The second approach required the respondents to indicate any agricultural innovation, idea, or technology that they probably had heard of and would have wished to know more about. Some of the needs were found to be specific to a particular village, probably because of slight variations in agricultural activities. A total of 510 farmers (85%) responded to the question. Their information needs were grouped into ten subjects as illustrated in Table 2:

Table 2 Summary of farmers' unmet information needs

Subject area	*Frequency and percentages of subjects as mentioned by farmers*	
	Frequency	Percentage
Modern agriculture	440	73
Control of crop diseases	256	43
Better seeds	243	40.5
Control of livestock diseases	240	40
Food processing & preservation	120	20
Vegetable growing	100	17
Use of fertilisers	87	14.5
Weed control	73	12
Irrigation agriculture	67	11
Beekeeping	15	2.5

As is apparent from their responses, among other needs, there was an indication by most of the respondents of the need for "Modern or Modernising Agriculture" which in Kiswahili was taken to mean "Kilimo cha Kisasa". This Kiswahili term tends to have very broad meaning such as information on methods for controlling crop diseases or information about "better seeds" and so on. Moreover, as kind of a paradox, new information needs emerged as farmers got exposed to information resources in the VIC.

6. Availability of information resources

An assortment of relevant printed materials was sought and gathered from four agricultural-related institutions that were visited, namely Sokoine University of Agriculture (SUA), Ministry of Agriculture and Food Security (MAFS), INADES (l'Institut Africain pour le Développement Economique et Social), an NGO dealing with farmer information, and MVIWATA (Mtandao wa Vikundi vya Wakulima Tanzania), a network of smallholder farmers in Tanzania. The materials in the form of booklets, pamphlets, leaflets, magazines, newsletters and posters were collected and organised into different agricultural subjects.

An attempt was also made to determine whether the respondents owned or held any form of reading materials as a source of some form of information. It was revealed that 89.6 percent of those who responded to this question (344 out of 384) had some printed information materials at home. It was also found that 35 percent (120 out of 344 farmers) of those who owned the materials were women.

The materials were categorised into six groups according to nature of content. It was revealed that agricultural materials were penultimate in frequency with respect to the types of reading materials which respondents kept in their homes (see Table 3).

Table 3: Types of information materials available in respondents' homes

Type of information material available	***Possession of information materials in respondents' homes***		
	N	Frequency	Percentage
Newspapers	361	211	58.4
Religious publications	359	182	50.7
Health publications	359	162	45.1
Recreational publications	358	164	40.8
Agricultural publications	359	135	37.6
Government and political	359	121	33.7

With respect to this observation, it is probable that the presence of certain types of information in the respondents' homes could either be a function of the perceived need for the materials or most likely a function of the relative differences in the initiative and innovativeness in the disseminating printed materials by respective advocacy agencies of both governmental and non-governmental organisations. This appears to be particularly the case with respect to health and religious materials that are normally distributed en masse during health campaigns and religious meetings.

An attempt was also made to determine the sources and means by which farmers obtained printed information materials that they had in their possession. The majority of the respondents (86.6%) said they received no information materials from researchers. It would

appear that researchers who made visits to villages do not necessarily bring reading materials for farmers with them. Probably this is one avenue that is significantly underutilised in dissemination of information materials.

7. Farmers' attitudes towards printed information

An attempt was made to gain an insight into the farmers' attitudes towards the role of recorded and printed matter as sources of information to address their information needs. The majority of the respondents (91.3%), that is, 532 out of 583, irrespective of their reading abilities, regarded printed materials as a useful source of information on agricultural knowledge and skills. This finding seems to underscore the importance of printed sources of information for keeping farmers informed and encouraging the habit of active acquisition of information. As reported earlier (Matovelo *et al*., 2006), preferences of farmers in this research were similar to farmers in Uganda and Ghana, where farmers preferred printed information to other formats, arguing that they could be used for reference once the extension staff had gone or a radio programme was over (Carter, *op. cit*.).

8. Farmers' information-seeking practices

The study also explored alternative approaches to cultivating the attitude of proactive information acquisition by farmers. It was established that, although the literacy rate is reported to be fairly high, the percentage of farmers getting information through printed materials is as low as 24 percent (130 out of 534 farmers). This finding suggests that despite the ability to benefit from printed materials being potentially high, access to such materials remained severely limited. In such a scenario, there is a role to be played by information professionals to complement the current role being played by extension staff and NGOs.

9. Farmers' reading habits

The study also attempted to establish whether farmers who had functional literacy skills read anything at all at any moment during their daily activities. It was found that slightly more than half of the respondents, 255 (55%), read once in a while (once in several months), 126 (27%) read something at least once a week, whereas 84 (18%) of all literate farmers never read anything (see Figure 3).

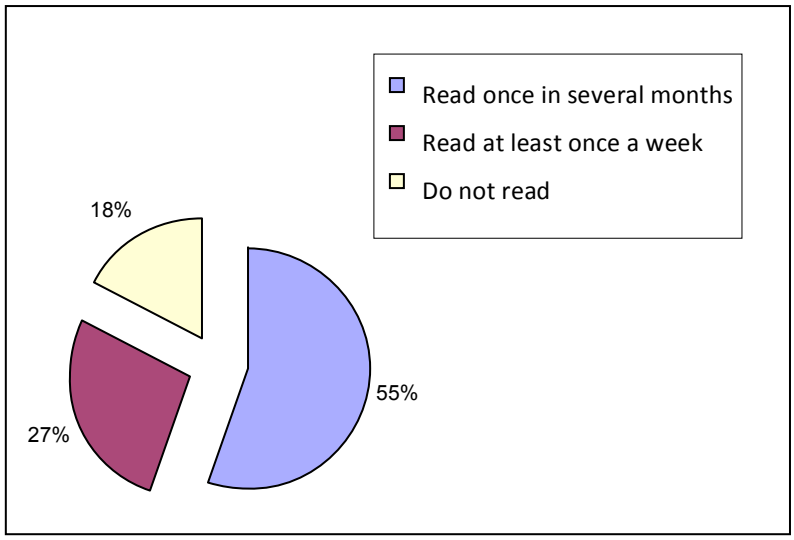


Figure 3: Reading habits of the respondents

Some people with functional literacy skills were unable read any materials due lack of reading materials as indicated by 43 (51.8%) out of 84 respondents; lack of time for reading 27 (31.7%); difficulties in reading meaningfully 13 (15.3%); sight problems 11 (13.1%); and lack of interest 10 (12%). Only one respondent (1.2%) felt that reading may not benefit him. Lack of perceivable benefit could also be a reason for lack of interest in reading. It is also possible that the low frequency of reading could be attributed to the perceived benefit that is realised out of reading.

10. Gender differentials in reading

The extent to which respondents practised the habit of reading was slightly different for male and female farmers (see Figure 4).

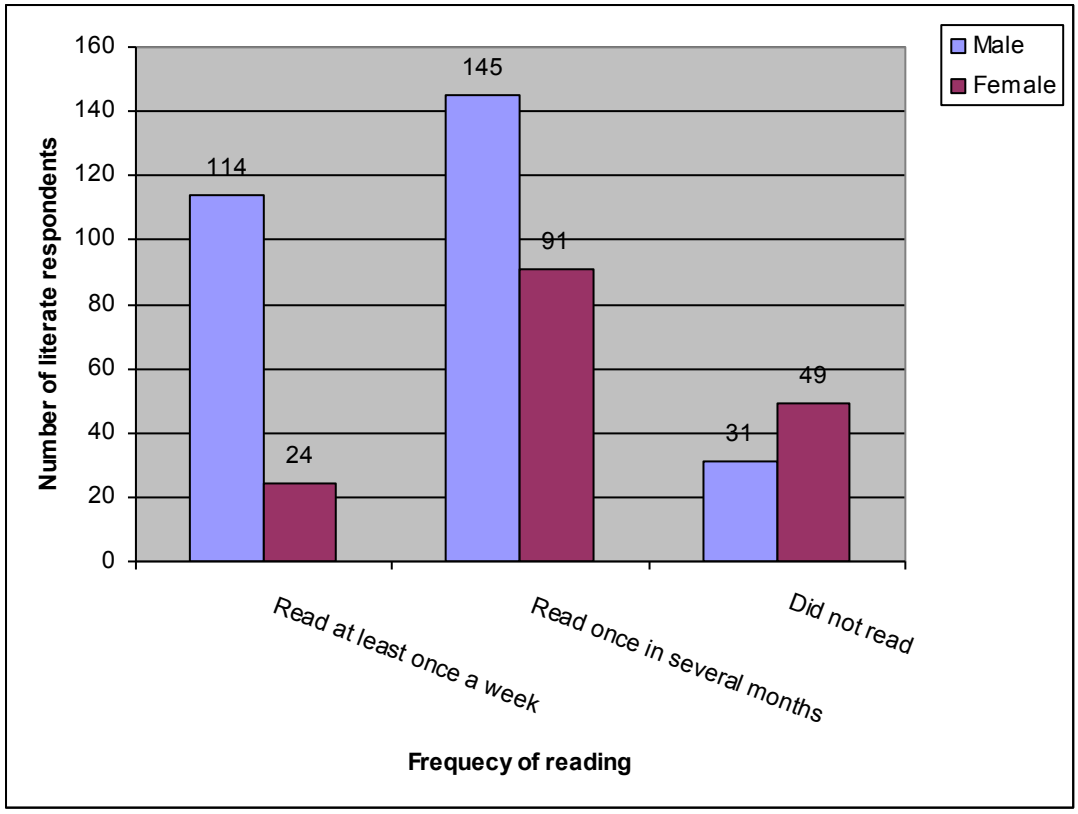


Figure 4: Gender differentials in reading among respondents

Figure 4 shows that although a total of 114 (40.4%) of all literate male farmers read at least once a week (n=282), only 24 (13.9%) of literate female farmers had the same frequency of reading (n=172). Out of 80 literate respondents who had no habit of reading anything at all, 31 (38.7%) were men and 49 (61.3%) were women. In most rural households women are captive to domestic chores, hence having less time to spare for reading. This may warrant gender consideration when planning for the dissemination of information to farmers.

11. Preferred format and language of printed materials

The study investigated the preferred format of reading materials. It was found that most farmers preferred short text publications in the form of leaflets, posters and booklets rather than books with detailed information. The majority of the respondents, 538 out of 595 (90.4%), preferred materials printed in Kiswahili. Only 57 (9.6%) respondents preferred materials in ethnic/indigenous languages. This finding is not surprising since Kiswahili, being the national language, is enforced as the medium of instruction in all public primary schools and is widely spoken throughout the country.

12. Preferred places and methods for accessing printed materials

Respondents were also asked to select the place they would most prefer for the location of reading materials from amongst four proposed places: village government office, schools, social clubs and places of worship. The majority, 521 out of 585 respondents (89.1%), chose the village government office. The single major reason was because most of them were more centrally located than other places. The centrality of the village government offices was also helpful with respect to the location of other facilities such as shops and markets that are normally available within the same location, making it convenient for the users of the facilities. In addition, it was also probably because the village offices were more open to the public unlike the other alternative places, such as places of worship, schools, and social clubs that were restrictive.

13. Pre- and post- intervention knowledge testing

Participants were subjected to a simple test to find out their level of knowledge about basic information concerning selected agricultural activities before and at the end of the intervention.

A total of 338 and 367 farmers participated in the pre- and post-intervention test, respectively. These figures include participants in the two control villages. The total number of farmers who attended the meeting and the actual number of those who participated in the test, as well as the distribution of their scores for each village, are as indicated in Table 4:

Table 4 Results of the Test: distribution of participants' scores

Village name		*Dihinda*	*Melela*	*Kongwa*	*Kiroka*	*Control 1*	*Control 2*
Total No. of attendees to the meeting	Pre	165	97	103	87	124	98
	Post	141	110	120	75	112	101
	Difference	-24	13	17	- 12	- 12	16
No. of	Pre	63	43	59	41	70	62

participants	Post	65	52	66	51	72	61
	Difference	2	9	7	10	2	-1
Lowest	Pre	6	3	2	3	8	3
scores %	Post	8	2	9	19	6	5
	Difference	2	- 1	7	16	- 2	2
Highest	Pre	74	61	64	62	76	65
scores %	Post	96	72	98	86	78	61
	Difference	22	11	34	24	2	-4
Average	Pre	38.5	31.5	29.5	35	39	33
scores %	Post	51.5	40.8	46.8	50.2	40.2	32.5
	Difference	13	9.3	17.3	15.2	1.2	-0.5
Scores	Pre	32	26	19	29	35	21
above 50%	Post	56	48	47	51	33	24
	Difference	24	22	28	22	- 2	3

Table 4 indicates a clear difference between the intervention and the control villages, particularly with respect to the highest scores, average scores and percentage of participants who scored more than 50 percent for the pre- and-post intervention tests. The post-intervention scores in almost all the villages under intervention were more than 30 percent higher than the pre-intervention scores. On the other hand, both control villages showed a negligible difference between the pre- and post-intervention scores. The observed difference most likely resulted from the access to relevant information available at the VIC. In this respect, the only obvious difference between villages under intervention and the control villages was exposure and use of the VICs.

Likewise, the average score rose by more than 25 percent in all intervention study villages, and for Kongwa village the increase was more than 40 percent. This marks a clear improvement of performance in all the villages under the intervention study, unlike the control villages where the average remained more or less the same between the two tests, that

is, at the beginning and at the end of the study period. It can, therefore, be inferred that access to and use of information that was available at the VIC was an underlying reason behind the increase in post-intervention scores in the study villages.

14. Conclusion

This study explored an intervention approach that could stimulate, cultivate and promote proactive information acquisition to enhance access to and use of agricultural information by smallholder farmers. The study found that smallholder farmers have diverse information needs that have not been met. Information content, presentation style and language used were among determinants influencing the demand for particular information. The study also established the presence of adequate reading skills and literacy levels among smallholders, enough to effectively make the use of printed information that is highly underutilised. In view of this finding, information professionals have a challenge and an opportunity to assume a role which is complementary and parallel to extension workers. Specifically, they have a greater role to play in encouraging farmers to proactively seek information by teaching them "how to fish rather than giving them fish". In the process, farmers would acquire useful information search skills for sustainable knowledge building, which is the function of "pulled information" phenomenon rather than "pushed information". Having demonstrated that VICs are relevant, appropriate and effective tools for enhancing access to and use of recorded agricultural information, as well as inculcating proactive information seeking behaviour, it is recommended that VICs be mainstreamed into the village government body so that they can be truly owned by the respective communities. The presence of the VIC as one of the facilities in the village could be a further motivation for propagating the practice of information acquisition by farmers.

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