Developing Country Studies
ISSN 2224-607X (Paper) ISSN 2225-0565 (Online)
Vol.6, No.10, 2016

Multiple Roles of Community Cereal Banks on Promoting Income of Smallholder Farmers in Central Tanzania

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Abstract
The basic necessities of rural people such as food, clothes, shelter, basic literacy, primary health care, and security of life and their property cannot be achieved if their income is not improved. Increase in the income will guarantee their capacity to meet the costs of such important needs for their lives. This paper examines the contribution of Community Cereal Banks (CCBs) in improving income of smallholder farmers in the central parts of Tanzania. Five CCBs were visited in Dodoma and Manyara regions. Simple random sampling technique was used to obtain 120 beneficiaries who were interviewed. Focus Group Discussions, In-Depth Interviews, and Semi-structured questionnaires were used for data collection. CCBs offered better cereal prices to smallholder farmers as compared to price offered by other cereal business speculators. Technical trainings on production provided by different NGOs through the CCBs influenced increase in farm productivity to more than half of the smallholder farmers. 82% managed to increase annual income due to services received from the CCBs and 59% of them were women. However, CCBs relied on few sources of income used as capital to support provision of mandated services. While offering better prices to smallholder farmers for their cereals, for the purpose of fulfilling their social obligations to the community; they ended up benefiting the farmers while deteriorating their working capital. Selling at high season what they purchased from the farmers during low season at discounted rate, unknowingly put CCBs out of the business in the next season. Their capacities in business management remain to be one of the major setbacks to be addressed.
Keywords: Community Cereal Banks, Smallholder Farmers, cereals, central Tanzania, lean period, Income.

1.0 Introduction

Community Cereal Banks (CCBs) are common structures found in many parts of the world especially Africa. They have been established in countries such as Benin, Burkina Faso, Cameroon, Chad, Gambia, Ghana, Guatemala, Haiti, Kenya, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Niger, Senegal, Tanzania, and Uganda. A study conducted by Kent and Berg in 1991 revealed that there were 3,300 cereal banks in the Sahel (Berg and Kent, 1991), and it was estimated that the number increased to about 4,000 by the year 1998 with half of them found in Burkina Faso (Kent, 1998).

CCBs are village cooperatives that buy, store and sell basic food grains (CRS, 1998). They are a combination of warehouses and financial institutions, where farmers can deposit their harvest, before selling it when market prices are rising (Moers, 1999). These storehouses allow community members to access food staples year-round, enabling them to survive poor harvests, price hikes and other environmental and economic shocks (UNDP, 2012). According to Bakari and Pons (2011); community cereal banks have four main objectives. They provide better marketing services for farmers and consumers at village level, reduce post-harvest losses, strengthen village-level organizational capacity, and create village-level emergency food stocks. These structures are also regarded as post harvesting grain management initiatives established and operating within local communities, owned and managed by community members themselves and it is a typical farmer focused approach providing improvement on storage techniques for grains mainly maize, sorghum and paddy, an on field community instrument for enhancement of social safety nets on food security, price stabilization in favour of producers and micro finance linkage (Bakari & Pons, 2011).

In different communities of smallholder farmers where cereal banks have been commonly used their mode of operation is tuned according to the desire of the community members themselves. But at the end they have to add value to the farmers produce through providing better prices and storage services, cater for farmers liquidity requirements during lean period when farmers have high cash demand to meet their daily life costs and ensure food security at the family and community levels. According to the United Nations Food and Agricultural Organization, community cereal banks operate in such a way that grain is bought from the village when the prices are low, just after harvest; it is stored until it is needed, and then sold to the villagers at reasonable price (FAO, 2005). Everyone in the community benefits as in one aspect the villagers are paid a better price for their grain, when the market prices are low, and they then have money in their pockets to pay their taxes, school fees, and other expenses. In another aspect when the market prices are high and granaries are empty, community members can buy grain from the cereal bank at a price they can afford (FAO, 2005).

In many places community cereal banks establishment and their operation in early days before they assume full responsibility has been solely through the support of external financing institutions with sometimes not at all or little community members support. According to Kent (1998), the model of cereal bank operation is

that; a sponsoring agency - usually an NGO helps finance the construction of a small warehouse to be used for grain storage. The outside sponsor provides construction materials while the villagers provide unskilled labour. The sponsoring agency also gives a grant or loan to start operations and the cereal bank's management committee uses the money to purchase cereals at the time of the year when prices tend to be lowest and then stores the grain in sacks in the village warehouse. In later days when cereals become scarce and prices tend to be at their highest, the cereal bank sells its grain stock in the village. The price is usually set a level above the price at which grain was originally purchased but below the current free market price and the revenues are used as a revolving fund to refinance the operation the following year (Kent, 1998).

Although there can be as many forms of cereal banks as possible depending on their way of functioning and the objectives of their creation, they all seem to share some common characteristics (Oxfam, 2009). In many areas of its operations for the purpose of providing services to the members and other beneficiaries in the surrounding community, cereal banks appear to be consisted of a physical structure or building (a warehouse in which different types of cereals are stored), members (who mostly own the physical structure and its operations through buying shares), a board of governors (selected by the members which is responsible for overseeing cereal bank operations), a management team (recruited by the board of governors and operate on payment bases), a financial or credit system which operate as the revolving fund to serve both members and non-members, and a sharing of resources belonging to the cereal bank but collectively owned by the members.

This study assessed different roles of community cereal banks and their contribution towards improving income of smallholder farmers in central parts of Tanzania where Dodoma and Manyara regions are found. Smallholder farmers in this regard are farmers found individually or organized in younger age groups, have relatively low level of education and knowledge on farming, use poor technologies, have lower level of managerial aptitude and diminishing attitudes towards farming, have small farm holdings and less equipment. They also experience low standard of living and socio-economic status, do not participate more in organizations and have lower contact with information sources. They are marginalized farmers in terms of geography, assets, resources, markets, information, technology, capital, and non-land assets (Murphy, 2012).

Smallholder farmers in many parts of the world, including Tanzania, experience a lot of challenges which interfere with their initiatives to increase farm productivity and hence prop up their income. Some of these challenges are; change in climatic conditions, inadequate supply of agricultural inputs, using poor technology of production, low level of education and knowledge on farming, lower level of managerial aptitude, low crop prices as well as post harvest losses due to poor storage facilities and pest damage. Community cereal banks have been introduced in different parts around the world for the purpose of enabling small scale farmers confront with some of these challenges. In Tanzania these structures are also found in rural areas of Dodoma and Manyara regions where this study was conducted. They operate in different ways to support small holder farmers tackle some of the problems hindering their good performance in agricultural activities they perform.

The food security project evaluation report delivered by Intermon Oxfam in 2005 which involved a study conducted to some selected Community cereal banks in Dodoma and Morogoro regions, revealed some positive effects of Community Cereal Banks to the community. The study recorded that CCBs contributed to reduce storage damage due to pests, hence increased safe storage duration from at least 1 to 7 or more months. Also farmers were assured with financial support from CCB initial capital. However; this report delivered did not sufficiently capture the role that CCBs played to promote small scale farmers who are the beneficiaries of the services rendered by these cereal banks in terms of increasing their income and assuring them with food security throughout the year. This is from the fact that the study was carried out immediately after the CCBs were established and by that time they were not yet in full operation. Some years have now passed since when these structures were established and there have been a lot of functions that these institutions carried out. The functions include, but not limited; storage of surplus grain, seeds storage, loans provision on grain guarantee and inputs supply on credit base. Moreover; documentation of strengths and weaknesses, best practices, factors for success and failure are key aspects for people wanting to replicate the idea. All of these have not yet been properly documented. This creates the need for conducting other studies, probably of the nature described in this paper, so as to come up with relevant data that describe the extent to which community cereal banks are useful in contributing to rural poverty reduction in Tanzania through increasing their income.

2.0 Methodology

This study was conducted in five villages which were deliberately selected because each of these villages had at least one CCB. Four of them (Chalinze, Chitego, Makoja and Manchali) are found in Dodoma region while one village (Dosidosi) is found in Kiteto district of Manyara region, just at the last end where Manyara region borders Dodoma region. Chitego and Dosidosi villages are situated in the north of Kongwa District, 65Km from Dodoma to Morogoro highway. Chalinze and Manchali are situated on the way along Morogoro-Dodoma road. Makoja village is about 20 kilometres away from Chalinze on the way to Mpwapwa district headquarters. These areas where CCBs studied are situated have similar context. The communities in the area are crop producers by

majority. Some of the households keep livestock mainly cattle and goats. The climate in the area is semi arid but with fairly reliable rains that start in November to March. The climate favours production of maize and millet which are major crops both for food and cash. Groundnuts, sunflower, bambara nuts, sesame and beans are also grown as cash crops but at lower scales.

Focus Group Discussions (FGDs), In-Depth Interviews (IDIs) with key informants, and Semi-structured questionnaires were used for data collection. Both primary and secondary data were collected in this study. Primary data were obtained from households of small scale farmers who are members of the CCBs and those who are non members provided that they would have at least benefited in one way or the other from services provided by the CCBs. In-Depth Interviews were conducted with CCB leaders, village local government leaders and district authorities. Secondary data were obtained from existing literatures and websites. A sample 120 smallholder farmers was reached during the survey. It was composed of members of CCBs and non-members who managed to access at least some of the services rendered by the CCBs found in the villages. The sample composition was such that 101 (equivalent to 84 %) were CCB members while the remaining 19 respondents (equivalent to 16 %) were non - CCB members, but at least benefited from one or more services provided by the CCBs in the study area.

Non-probability and probability sampling techniques were used in the due course of selecting the respondents. They specifically involved purposive and simple random sampling. Simple random sampling was used to obtain members and non-CCB members who are beneficiaries of the services provided by the Cereal Banks. Purposive sampling was used to select village government officials from members of the Village Council (VC) who were found in the villages in which community cereal banks situated. Semi- structured questionnaires were used to collect data from small scale farmers benefited from the services provided by the cereal banks regardless of the fact whether they are members or not. All two categories of respondents answered the same set of questions. In-depth interviews were used to collect detailed information from CCB leaders and local governments' officials from the villages, wards and districts in which the cereal banks were found.

Two categories of Focus Group Discussions (FGDs) were conducted. The first composed of ten CCB members who were founders of Chitego Community Cereal Bank which was the first CCB to be established in the year 1998 as compared to other visited cereal banks. The second one comprised seven village government members from the villages where CCBs are situated. They helped in clarifying some emerged contentious issues as well as generating additional information. Questions asked were thoroughly discussed by group participants. The consensus on the relevant question was reached and honoured after majority of participants supported it. Documentary review was part and parcel of the entire study and was done to obtain secondary data on cereal banking concept and its origin in Africa especially south of the Sahel and also to obtain some experiences on the performance of community cereal banks in some countries of Africa. The review involved journal articles, studies, and various project reports.

3.0 Results and Discussion

This section shows the results and discussion of the findings of the study. It gives some explanations on the extent to which Community Cereal Banks performed the fundamental and other emerged functions and the way those functions influenced income of small scale farmers who were either members of the Community Cereal Banks or non - members but benefited in one way or the other from the services that cereal banks provided.

3.1 Marketing Centre for cereals

Most of the objectives for establishment of cereal banks in many parts of Africa especially in the south of Sahel relate to providing better marketing services of cereals for farmers and consumers at the village level (Kent, 1998). It was found during this study that sometimes Community Cereal Banks buy grains from the farmers during the harvesting season with the expectation to sell later when cereal prices increase and hence obtain profit. In this regard they play roles of being local cereal markets for the grain producers at the community level. The survey revealed that, to some extent CCBs managed to perform this function in some years. Figure 1 shows the distribution of respondents who were able to use community cereal banks as local grain markets at times of high cash requirements, which mostly fall in the period immediately after harvesting season and sometime during crop production season when there are lot of production activities which require money to meet production costs on the farm.

Figure 1. Distribution of respondents used Community Cereal Banks as Local Grain Markets in a period of five years (2007 - 2011)

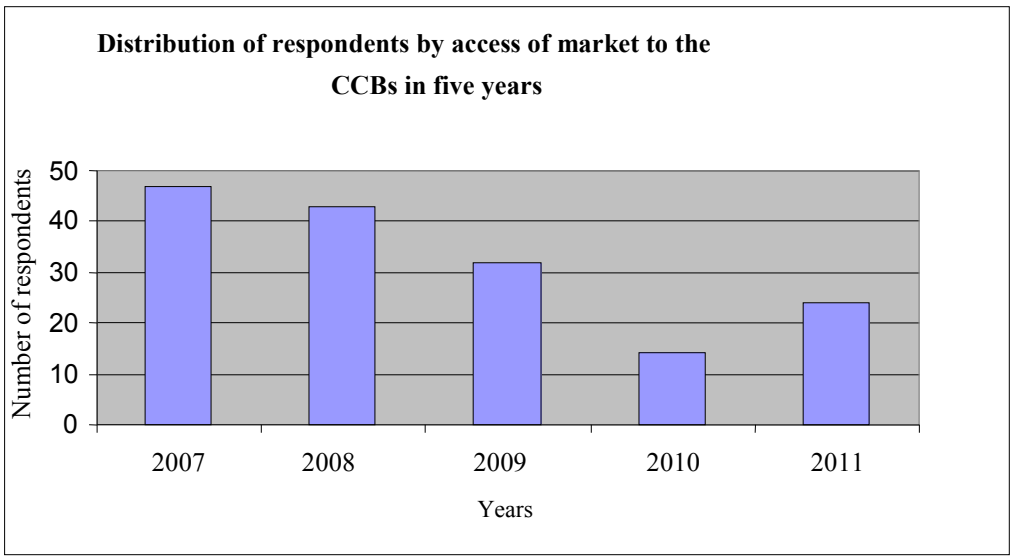

Figure 1 above indicates that, out of 120 respondents who were interviewed during the survey, 47 respondents corresponding to 39.2% of the total respondents accessed market service from the CCBs in the year 2007. The trend decreased transiently to 43farmers (35.8%) in the year 2008, 32 farmers (26.6%) in the year 2009 and 14 farmers (11.7%) in the year 2010. In 2011 the number of farmers who accessed this service again slightly increased to 24 which constitute 20.0% of the total farmers. Generally community cereal banks in the study area managed to serve for this purpose of providing market services to the smallholder farmers although it was in small proportions as the findings revealed for the selected period of five years. But in so doing CCBs significantly contributed towards reducing market volatility to agricultural produce such as cereals, a challenge which exacerbates a significant number of rural households often fall rapidly into poverty (Potter & Desai, 2014), a problem which is contributed by many factors but among them being lack of access to profitable markets for smallholder farmers produce.

It was established during the Focus Group Discussions and In-depth interviews that CCBs could not do much in performing this function due to lack of capital. They did not realize very substantial amounts of profits from the grain business they were doing. But so interesting was the high price for cereals which CCBs offered in purchasing grain from the community members as compared to individual grain business speculators involved in grain business from within or outside the area served by the community cereal banks. Manchali CCB, for example; managed to purchase a single bag of groundnuts at Tanzanian shillings (TAS) 15,000.00[1] in year 2007 as compared to TAS 12,000.00 offered by other business speculators. In the year 2010 some CCBs in the study area purchased grain during harvesting period (June-July) at an average price of TAS 20,000.00 for a bag of maize or sorghum while the market price was TAS 18,000.00. CCBs sold maize or sorghum grain during growing period (Feb – March) at an average price of TAS 30,000.00 while the market price was TAS 35,000.00. In this regard community cereal banks sold the cereals at a discount rate of about 14.3% when compared to the actual market price at which they could decide to sell their cereals. This partly seems to be; as argued by Msaki and others (2015); community cereal banks tendency to fulfill social obligations, meanwhile doing grain business.

This practice seems to be similar for many CCBs that are involved in doing grain business in Africa and more specifically in the south of Sahel. By lending or selling grain to customers at below market rates just at 10% discount rate, 900 out of 1500 cereal banks established ran bankrupt in Burkina Faso between 1991 and 1998, and similar situation occurred in Niger where 90% went out of business (Kent, 1998).

These findings show that community cereal banks as one category of rural institutions do not really operate fully as business entities for the purpose of generating profit. They do mostly stand just for providing services to the community. If the business attitude and spirit is not inculcated in the day to day conducts of managers of such rural institutions and the members as well, these village structures cannot last longer after their establishment.

3.2 Provision of Dividends to CCB Members

During the survey it was found that to a certain extent community cereal banks generated certain amounts of

[1] 2,200 Tanzanian Shillings (TAS) is equivalent of 1 USD.

profit from grain business conducted. Out of the profit obtained from cereal bank functioning, part of it could be distributed as dividends to the cereal bank members who invested some shares to add to the working capital on which CCBs conduct their business. Table 3.1 below shows the distribution of respondents by amounts of bags (100kgs) of cereals which were distributed as dividends to members in the selected period of five years.

Table 3.1 Respondents by Bags of Cereals Distributed as Dividend

Years	Number of respondents received dividend	Percentage (%) of the total respondents	Total Number of bags CCB offered as dividend	Price per bag (TAS)	Monetary value of the total dividend
2007	27	22.5	13.5	15,000.00	202,500.00
2008	27	22.5	11.5	15,000.00	172,500.00
2009	27	22.5	27.0	30,000.00	810,000.00
2010	27	22.5	27.0	37,500.00	1,012,500.00
2011	0	0.0	0.0	0.00	0.00
Total			**79.0**		

The study revealed that out of 120 respondents who were interviewed during the survey, 27 respondents amounting to 22.5% of the total respondents were able to get dividends from the profit that CCB generated in the grain business for about four consecutive years. Dividend was given to members only in a year when CCB operations managed to generate profit. This dividend was distributed to community cereal bank members in the form of cereals and not as solid cash. When converted to cash basing on the market price for a bag of the cereals in the respective years, the 13.5 bags distributed as dividend in the year 2007 worth TAS 202,500.00 as the price per a single bag was TAS 15,000.00. The price remained the same for year 2008 and hence 11.5 bags dispersed worth TAS 172,500.00. In the year 2009 the price per a single bag of cereal stood at TAS 30,000.00 and hence 27 bags distributed to members as dividend worth TAS 810,000.00. Price for a single bag of cereal in 2010 went high up to TAS 37,500.00 and that is to say, 27 bags of cereals disseminated to members in this year was equivalent to TAS 1,012,500.00. In monetary values these were total dividends provided. With the exception of year 2008, the figures show increased trend in the total amount of dividends distributed to the deserved CCB beneficiaries. Increase in selling price was due to their practices to store grains in the warehouses for even more than six months until peak seasons when cereal prices went up and get satisfied that, when they sell their produce, they would generate profit which in turn enabled CCBs provide dividends to the members. Although in small proportions, dividends distribution to those deserved smallholder farmers was a good sign that CCBs were doing business and generated profit that could also flow back to those who had invested to the working capital of the cereal banks. This creates sense of ownership among the users which is essential for sustainability.

3.3 Increase in farm productivity due to cereal banks services

Increase in productivity was evaluated by assessing increase in the number of bags of cereals that a smallholder farmer was able to harvest after the cereal banks have had started to offer different services to them for the purpose of enabling increase in farm productivity. This amount harvested was compared to previous number of cereal bags the same farmer managed to produce before the introduction of CCBs in the study area. 1 bag of cereals such as maize, millet or sorghum is equivalent to 100 kilograms.

When asked whether they managed to increase farm productivity as a result of various services that community cereal banks offered, respondents had different perceptions.

More than two-fifths of the total respondents (73) acknowledged that they had really managed to increase farm productivity as a result of services that community cereal banks provided to community in the study area. Out of these, 26 respondents (21.6%) were males while remaining 47(39.2%) were females. About 47 respondents (39.2%) of the total respondents who were interviewed for the purpose of this study refused that they had not in any how managed to increase farm productivity as a result of services that community cereal banks provided. Out of these, 28 members amounting to 23.3% of the total respondents were males while 19 making 15.9% of all interviewed respondents were females.

Table 3.2 below shows the distribution of respondents as to either they had increased farm productivity as a result of the services that cereal banks provided since when they were established or not.

Table 3.2 Respondents by Farm Productivity

Category of respondents	Number of respondents increased farm productivity	Percentage (%)	Number of respondents not increased farm productivity	Percentage (%)	Total number of respondents
Females	47	39.2	19	15.9	66
Males	26	21.6	28	23.3	54
Total	**73**	**60.8**	**47**	**39.2**	**120**

The results from table 3.2 above indicates that more than half of the respondents who were interviewed during the survey (60.8%) managed to increase farm productivity as a result of services they received from Community Cereal Banks in the study area. They accredited that seeds were treated and stored in the cereal banks and remained intact for use in the next cropping season. When planted in the next farming season the germination capacity was very high and the produce also went up. Storage of cereals in the cereal banks and selling them at periods of greater grain demands when prices were high enabled farmers to get surplus income which enabled them to purchase necessary farm inputs such as pesticides and fungicides for pests and fungi control to rescue their plants from pests and fungi attacks. The trainings on the best use of organic manure provided through the cereal banks by some NGOs such as INADES Formation-Tanzania and the Lay Volunteers International Association (LVIA) contributed so much in solidifying their farming skills. Anomalously, a farmer who used organic manure to add value to his/her farming land got more yields when compared to an ordinary peasant who did not apply organic manure, as it was revealed during the Focus group discussion.

3.4 Increase in smallholder farmer's income

Respondents were asked during the study to explain if Community Cereal Banks operations in the study area enabled them to increase their income as compared to previous years when the cereal banks were not in place. Table 3.3 below shows the distribution of respondents as to whether they had managed to increase their annual income as a result of Community cereal banks functioning in the study area or not.

Table 3.3 Respondents by Increase in Income

Category of respondents	Number of respondents increased income	Percentage (%)	Number of respondents not increased income	Percentage (%)	Total number of respondents
Females	58	48.3	8	6.7	66
Males	40	33.4	14	11.6	54
Total	**98**	**81.7**	**22**	**18.3**	**120**

Table 3.3 above indicates that 98 respondents, corresponding to 81.7% of the total respondents accredited that they increased annual income as a result of services that community cereal banks provided to the community in the study area. Out of these 98 respondents, 58 respondents (59.2%) were females while the remaining 40(40.8%) were male respondents. 22 respondents (18.3%) of the total respondents who were interviewed in this study had not in any how increased annual income due to the services that community cereal banks provided. Out of these; 8 respondents, amounting to 6.7% of the total respondents were females while 14 respondents making 11.6% of all interviewed respondents were males.

The results from table 3.3 above portrays that large proportion of the respondents who were interviewed during the survey (81.7%) managed to increase annual income as a result of services they received from Community Cereal Banks in the study area. Not only that but also the study indicates that most of these smallholder farmers who managed to increase their annual income due to CCBs establishment and their operationalization in the study area were women, amounting to 59% of those acknowledged to have their income increased due to CCB services.

The study went further to assess the extent to which annual income of the farmers increased. The respondents were asked to evaluate their level of income five years back immediately after the introduction of the community cereal banks and five years later after CCB operationalization in the study area. The income evaluation was based on the amount of harvests they managed to get after farming season and the market price of the crops five years ago and similar criteria were also used to evaluate the level of annual income five years after CCBs establishment and operationalization in the study area.

Table 3.4 below shows the distribution of the respondents as per their level of annual income five years before.

Table 3.4 Respondents by Annual Income five years before

Annual income in 2007 (TAS)	Number of respondents	Percentage
200,000-250,000	53	44.2
250,000-300,000	15	12.5
300,000-400,000	10	8.3
400,000-500,000	5	4.2
500,000-600,000	6	5.0
600,000-2,000,000	9	7.5
Total	**98**	**81.7**

Table 3.4 above indicates that 53 respondents who make about 44.2% of the total respondents interviewed during the study (120) and 54% of those acknowledged to have their income increased (98), had an average income ranging from TAS 200,000 to 250,000 annually five years back just after establishment of the community cereal banks when the cereal banks were yet at the beginning stages of their service provision to the

community. Out of the interviewed respondents 15 (12.5%) had an annual income ranging from TAS 250,000 to 300,000 while 10 respondents (8.3%) had income level ranging from TAS 300,000 to 400,000. Also 5 respondents making 4.2% of the total respondents had average annual income level of TAS 400,000 to 500,000 and 6 respondents (5.0%) had annual income ranging from TAS 500,000 to 600,000. Moreover, 9 respondents constituting 7.5% of the total respondents had average annual income ranging from TAS 600,000 to about 2,000,000. These results show that out of the 98 respondents who acknowledged having their average annual income increased as a result of the CCBs operationalization in the study area, majority of the respondents; 78 of them making 79.6% had an average income levels ranging from TAS 200,000 to 400,000. Very few respondents; 20(20.4%) had annual income above TAS 400,000.

After five years of CCB operations in the study area, the respondents recorded different annual income levels as it was found during the survey.

Table 3.5 below shows that none of the respondents had average annual income of TAS 200,000 to 300,000. 4 respondents who make 3.3% of the total respondents interviewed during the study had an average income ranging from TAS 350,000 to 400,000 annually five years after establishment of the community cereal banks. 44 respondents (36.7%) had an annual income ranging from TAS 400,000 to 450,000 while 7 respondents (5.8%) had income level ranging from TAS 450,000 to 500,000. Also 3 respondents making 2.5% of the total respondents had average annual income level of TAS 500,000 to 600,000 and 13 respondents (10.8%) had annual income ranging from TAS 600,000 to 800,000. Moreover, 27 respondents constituting 22.5% of the total respondents had average annual income ranging from TAS 800,000 to 2,000,000.

Table 3.5 Respondents by Annual Income five years after CCB operations

Average annual income of respondents in 2011(TZS)	Number of respondents	Percentage (%)
200,000-250,000	0	0.0
250,000-300,000	0	0.0
350,000-400,000	4	3.3
400,000-450,000	44	36.7
450,000-500,000	7	5.8
500,000-600,000	3	2.5
600,000- 800,000	13	10.8
800,000-2,000,000	27	22.5
Total	**98**	**81.7**

These results from table 3.5 show that out of the 98 respondents who appreciated having their average annual income increased due to the CCBs operations five years later in the study area, majority of the respondents; 94 of them making 95.9% had an average income levels ranging from TAS 400,000 to 2,000,000. Only 4 respondents corresponding to 4.1% of the 98 respondents had annual income below TAS 400,000. As Msaki and others (2013) argued, and substantiated by these findings; undoubtedly, CCBs have been very potential in improving income and the general livelihoods of majority of the proportion of the rural population which make effective use of these village based structures. Because most of the poor people in rural areas of Africa have low total and monetary income (Poulton et al, 2006), this vital contribution of cereal banks to livelihood of the rural people in central parts of Tanzania can be a replicable case to some other regions especially in those needy areas of the country side.

Focus Group Discussion and In-Depth Interview revealed out that the increase in average annual incomes of the smallholder farmers which was observed five years later after the CCBs operations in the study area was a result of three factors. One was increase in farm productivity registered by individual farmers in different years. Second was high price for cereals offered by the buyers at which the farmers sold their crops using CCB as selling centers. Third factor was change in attitude and behaviour of smallholder farmers to store their cereals in the warehouses and wait for good price at peak seasons during which they would sell their produce. This was time for high cereal demand in the study area as well as outside the territory. Storing their produce in The CCBs and wait for better prices at peak seasons had a very positive outcome in increasing farmers' income as it appears in the findings and substantiated by one farmer who said;

"*We small holder farmers have been suffering from low prices of cereals offered by the middlemen who used to come and buy cereals from individual farmers before these cereal banks were introduced. Due to high cash demand we normally faced in these times immediately after harvest, we could not afford even to negotiate the price they offered because we feared they could disappear and no one else could buy our cereals. Nowadays we store our grains in CCBs waiting for better prices and they provide us with soft loans to meet some household needs such as; buying clothes, pay for our children school fees, buy uniform , shoes and exercise books for them and even pay for our medical services when we are sick. Although they have small capital, Community cereal banks sometimes purchase our cereals at better prices as compared to other cereal speculators. But sometimes just using the CCBs as meeting points between outside buyers and smallholder farmers, CCBs remain to be an*

umbrella protecting us from buyers who have a tendency of offering low prices at the expense of smallholder farmers' low capacity to negotiate".

3.5 Sources of income for the CCBs

As far as sources of income are concerned the visited Community Cereal Banks continued to rely on; grain storage charges, membership fee, entrance fee, interest for food borrowing as well as profit realized from grain selling when price goes high. Some of these sources were not in use at the moment when the survey was carried out. So income for supporting CCBs' transactions was realized from few sources of income which cereal banks managed to sustain. With regard to profit making out of the grain business within the CCBs, only little amount was realized and this applied only to some few Community Cereal Banks. Others did not manage to recognize profit in all the years of operation since when they were established.

4.0 Conclusion and Recommendations

This study revealed out that Community Cereal Banks played a significant role to the community of smallholder farmers in Dodoma and partly Manyara region. To a certain extent the realized increase in smallholders income due to cereal banks operations, managed to contribute towards famers efforts of fighting against poverty in the rural areas by ensuring that they at least have income to meet the basic necessities in their lives such as food, clothes, shelter, basic literacy, primary health care, and security of life and their property. Some of the challenges that smallholder farmers encountered in their endeavours to produce cereals for both food and cash such as farm inputs shortage, lack of knowledge and skills for production and absence of warehousing facilities for storing their produce while waiting for better prices and also control post harvest losses due to cereal attacks by different pests, were tackled through the use of cereal banks established in their villages. At times of great cereal demands, good price offered by CCBs themselves as cereal buyers or other buyers from outside the villages who used cereal banks as centers to purchase cereals from farmers who stored cereals in the CCBs on some contractual arrangements made by cereal bank leaders, enabled them to earn relatively more income after selling their farm produce. Trainings offered by different development partners in the study area to the smallholder farmers using CCBs as the medium enhanced their farm production techniques, which is important factor to increase farm productivity. CCBs played a vital role in reducing post harvest losses by providing storage facilities to the farmers through the community managed and owned warehouses. Storing cereals in the CCBs waiting for better prices sometimes later had always been adding value to farmer's crops as farmers earn more income when they sell cereals five or more months after harvesting season, when other economic factors remain constant. Prices for cereals tend to be low immediately after harvest and hence selling at this time leads to earning little income. These warehouses were also used as marketing centers for varieties of crops. This potential role of the CCBs contributed much towards addressing the market challenge for different varieties of farm commodities which smallholder farmers produced in rural areas of central Tanzania. CCBs in the study area provided better and stable prices for farmers' crops as compared to other grain business speculators. CCBs were considerably treated as centers for training famers to improve farm productivity and impart to them knowledge and practical skills for ensuring food security at both household and community level.

During the survey it was also found that many cereal banks have had diversified their services. At the time when they were established they started to offer very few services to the members such as storage services for surplus cereals and seeds for the next farming season. But as new demands for other services emerged in the community and operating capital grew as a result of increased contributions from the members, CCBs opted to offer other services such inputs credits to smallholder farmers and markets services for cereals produced by the members and non CCB members residing in the villages. This trend of CCBs ability to diversify their operations and services to communities is a good sign reflecting their flexibility nature, and that when other different development partners join their efforts through improving the institutional capacities in the business and managerial aspects of CCBs operations, their impact could be appreciated and felt by many other rural farmers with strong desire to improve their livelihoods and ultimately get out of the poverty snare. With the serious challenge among smallholder farmers to timely access market information, CCBs could be facilitated to play such a role of being rural market information centers for the farmers. With the shortage of adequate storage facilities for strategic grain reserves in the country, such community owned and managed warehouses could be established in rural areas such as those found in the southern highland regions of Tanzania which produce cereals in huge quantities and facilitated to preserve food for strategic purposes at community levels to guarantee food security. In areas where community members have unnecessary cereal consumptions due to cultural practices such as preparing local brews and food for mass consumption when conducting initiation ceremonies, these village community cereal management structures could be used to control such villagers' unnecessary and uneconomic food utilization behaviours which in turn causes food shortages to many rural households with such cultural practices. Moreover, CCBs have physical structures (buildings), well structured system through which they are governed, management team with some basic managerial and financial management capacities,

constitutions directing and informing various decisions made, well defined membership structure and the members themselves. All these constitute a body of assets adequate to be supported by financial institutions such as commercial banks with the desire to support smallholder farmers to do away with a challenge of accessing micro credits to enable them afford the costs of farm inputs such as quality seeds, fertilizer and farm machineries or other technologies for land cultivation, sowing, weeding and harvesting.

However, as the study discovered that most of the CCBs had managers with low managerial and technical capacities, there is a need for different development partners such as Non-Governmental Organizations as well as the governments at district, regional and national levels to look for ways through which these community cereal banks can be supported to develop viable and implementable business plans which would enable them change their attitude from operating as social institutions towards being fully fledged business entities operating commercially but with a moral obligation to return back part of the profit made to the society by fulfilling some social corporate responsibilities to the community after generating profit from the cereal business. However, an appropriate operation model needs to be designed which will enable CCBs operate successfully in such a circumstance. This is another area requiring further researches to be done.

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5.0 Acknowledgements

I wish to register my sincere thanks and gratitude to three different groups. First and foremost, my family for providing me with attractive environment which enabled compilation of this work. Second, my fellow staff members at the Institute of Development Studies, Mzumbe University in Morogoro-Tanzania for their encouragement and tireless support when I was at different stages of collecting data from different sources to fulfill my ambition to accomplish this task. Third, my fellow PhD students at the College of Humanities and Development Studies, China Agricultural University in Beijing, China; for giving me advice and share their authorship experiences when I was in the final stages of producing this article.

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