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Cereal Banks or Seed Banks? An Experience from Makoja Arid Village, Dodoma, Tanzania

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Abstract
Cereal Banks, though important, have failed to become sustainable. The banks have always been requiring close monitoring support or subsidies from an outside agency, but collapse when outside monitoring and subsidies end. Such trend has brought worries and made Cereal Banks labeled negative. Failing to become self-sustaining has called for an inventory to analyze the Cereal Bank benefits realized by the communities. In 2012, a cross section study was done involving 80 households in Makoja Village, Dodoma Region. Makoja Village communities are poor, living in arid land and are chronically food insecure. Surprisingly, significant proportion (89 %) of the respondents acknowledges the Community Cereal Bank as the source of seeds to next season. Poor Makoja Community views the Cereal Bank as the Seed Bank to ensure availability of seeds hence food availability. Cereal banks are essentially not failed attempts but rather require continuing support to ensure production and food security of engaged community. The international development community should explore various outputs realised as benefits by engaged communties before terming them unsuccessful. However, there is a need to increase a pace to promote Community Seed Production Systems to assure improved crop production and household food security.
Keywords: Cereal Bank, Seed Bank, Food Insecurity

1.Introduction

Primarily, cereal banks are meant to prevent farmers from over-selling at low prices buying back at high prices, to avoid exploitation by middlemen and help surplus producing farmers to find a better market for their grain (Mukwana 2003). Cereal Banks were established in the Sahel region due to the droughts of the early 1980s, and are increasingly important way to increase food aid impact (Berg and Kent, 1991). In Tanzania, Non-Government Organizations supported the Government to establish Cereal Banks in Dodoma Region and Morogoro Region in Tanzania during 2003 (Lay Volunteers International Association, 2010; Berg and Kent, 1991). Among the beneficiaries of the program executed in Dodoma region, is Chamwino District Council, of which many villages are food unsecured due to unfriendly climatic (arid) factors (Lay Volunteers International Association, 2010). Cereal Banks however, have proved institutionally unsustainable, tending to progressively de capitalize and disappear once outside support is removed.

In 2009, WFP and Care established exclusively women-operated cereal banks to help ensure the availability of grain supplies year round, helping protect against market speculation, and enabling even the poorest women to purchase food for their families during times of scarcity. The women are expected to repay the loans, but at very low interest rates and only after they have harvested their own crops (Alyward, 2013). Though challenged basing on sustainability, cereal banks play their role as community-led grain distribution projects that store grain after harvests, and then loan grain when food is scarce during what is known as the 'lean season.' (Aylward, 2013). Draught and famines alomg the Sahel region affecting more that 18 million people have pushed organizations such as the World Food Program (WFP) and Care to joining forces in creating all-women-managed cereal banks in villages throughout the Sahel that not only help protect against seasonal famine, but also empower women as agents of food security in their communities. The droughts of the early 1980s witnessed the increment of NGOs and a lot of food aid to the region embrassing the concept of Cereal Banks as it appealed to both providers of food aid, governments and villagers as seemed to increase the food aid impact.

Due to their nature of operations, community cereal banks are facing various sustainability challenges and rarely continue working. While Cereal Banks are meant to serve populations vulnerable to food shortages, they are required to sustain (CRS, 1998). Community Cereal Bank in Makoja village, Dodoma Region was revived during 2009 by the support of INADES FORMATION TANZANIA (GIZ PROJECT), to capacitate

women in adapting to climate change in Tanzania.

Dodoma Region had been noticed among the poorest regions regions in Tanzania, characterised by low agriculture productivity (arid land), massive unemployment, increasing population density and experiencing malnutrition incidences higher that national average (Mwakipesile 2012; Msaki *et al,* 2012; Ndanga, 2012). Gogo people, the natives in Dodoma Region are basically agro pastorals, are vulnerable and do face shocks to weather which impact on the food supply (Matunga 2012; Mwamfupe, 2012; Ndanga, 2012;Sakai 2012).

While subsistence farming is dominant in Dodoma, food crops are maize, sorghum, pearl millet and sweet potatoes (Matunga 2012). Cash crops include sunflower, groundnuts, simsim, finger millet and peas (Matunga 2012), Livestock keeping occupies the second important position to farming whereas cattle, goats, sheeps and donkeys are kept (Mwamfupe, 2012). Of recent, changes of climatic conditions and loss of soil fertility have led to low productivity hence exacerbating poverty (Ndanga, 2012).

1.1 Cereal Banks and Marketing functions

Mukhwana (2003) reported that market reforms in Africa have expanded opportunity and reduced inefficiency in key areas of agricultural activity, but the broad-based growth in farm productivity and incomes have not materialized. Despite market liberalization, smallholder farmers continue to pursue livelihood strategies featuring highly diversified, low input, subsistence oriented production practices with low net returns. The welfare of the poor is intimately tied to reliability and efficiency of acquiring food and accessing markets to generate cash income. A pressing question in the wake of market reform is if afterall, the liberalized agricultural markets work for the poor in Africa at current (Mukhwana, 2000).

Small holder grain producers have been unexeptional to the "good season, poor market dilemma" discouraging production of substantial crop surpluses. Immediately following good harvests, commodity prices are extremely low and few facilities are available to smallholder farmers to store their crops for several months required for more favorable (and equitable) returns (Mukhwana 2003). Opportunistic middlemen complicate this situation by offering to purchase the surplus maize, but pay extremely low gate prices to farmers who lack capital, access to market information and transport (Coulter *et al,* 2000). To smallholder farming households, seasonality means flactuation in food availability, food prices, food accessibility and food security (Msaki and Hendriks, 2013).

1.2 Operationalisation of Cereal Banks

Cereal bank operationalisation can be related to location, mainly with three typologies. Some Cereal Banks are situated in roughly self-sufficient agricultural zones, buying cereals locally, store them locally and sell them locally. The other types of Cereal Banks are those situated in villages that suffer from chronic cereals deficits, purchasing cereals outside the village then bring them back to sell locally. The last type of Cereal Banks are those located in villages that produce significant cereal surpluses, usually purchasing grain in their own village, store it and try to sell it later to outsiders.

Many variations exist on this basic model. As reported by CRS, (1998), some Cereal Banks are more active traders, buying and selling throughout the year. In Chad, the initial credit to the Cereal Banks has been mainly seasonal, with loan repayment required after each year's harvest. In Niger, many Cereal Banks operate on an in-kind basis - the Cereal Banks lend their cereals out to their members in-kind during the hungry season. The members are then supposed to repay these loans in-kind after the harvest.

The existing trading service have been operating under two dimensions of grain trading namely spatial arbitrage and temporal arbitrage. While *spatial arbitrage* involves distributing grain around the country to the places where it is most needed, *temporary arbitrage* involves storing grain so that it can be distributed over time, that is, made available at the times when it is most needed (CRS, 1998).

1.3 Challenges to Sustainability of Cereal Banks

While the census done in 1991 realized that there were at about 4,000 cereal banks established in the Sahel, (Berg and Kent, 1991), approximately 3,000 have effectively been out of business (CRS, 1998). Due to their nature of operations, community cereal banks are facing various sustainability challenges and rarely continue working. While Cereal Banks are meant to serve populations vulnerable to food shortages, they are required to sustain. As reported earlier, the initiative taken by WFP and CARE during 2009 was targeted to poor women to ensure the availability of grain supplies year round, helping protect against market speculation, and enabling even the poorest women to purchase food for their families during times of scarcity. The women are expected to repay the loans, but at very low interest rates and only after they have harvested their own crops.

Analysis of margins and competetive structure of the market have been challenging sustainability of Cereal Banks. Normally, both farmers and traders send their stock where high margins are realised. While the analysis of margins can be conducted more easily, the competative structure of markets is morw tricky, relying to a number of participants engaged in the commerce, choices of buyers and sellers, price fixing arrangement and

effective barriers to entry keeping others totally shut out when profits are attractive (CRS, 1998).

To fulfill their social mandate, Cereal Banks have been providing better marketing services to their customers by lending or selling them grain at belowmarket rates, tending to lose money, decapitalize themselves, and eventually go out of business. Cereal Banks being "social organs" have been sustaining through close monitoring support or subsidies from an outside agency, but collapse when outside monitoring and subsidies end (CRS, 1998).

Despite challenges paused upon sustainability of Cereal Banks, there should be various socio economic benefits realised by poor communities engaged. Thorough analysis of benefits realised by communities engaged with Cereal Banks is pertinent to encourage both stakeholders, be it the Governments, Non Government Organisations, Changing Agencies and Relief Agencies not to pull out support to Cereal Banks. The current study is done at the wake of the economy of affection whereby peasantry in Africa is questioned whether to be rationale or moral. For Cereal Banks to survive requires several questions to be provided with answers. Are there other factors rather than marketing factors that are hindering the sustainability of the Community Cereal Banks? Are the communities involved not rational enough to realize the benefits obtained from the cereal banks? Should the engaged stakeholders continue to support initiatives such as community cereal banks (is it rational)? What are the gaps between what is treated as objective and the scientific basis for policy-making?

Understanding well the dynamics behind community Cereal Banks will reduce gaps and discrete manipulations on what the international development community tends to take for granted as it devices strategies and policies for poverty reduction and similar goals (Hyden, 2013; Kamanzi, 2007). Looking at things in involved communities' perspective is an important element to be considered while evaluating the importance of ventures such as Cereal Banks.

2 Methodology

At about 78 % of Chamwino district residents are engaged in agriculture and livestock keeping. Chamwino district residents are involved in producing millet, as food crops while groundnuts, sunflower, and simsim are cash crops. Conducting such a study in Makoja village has been pertinent to understand how useful the Cereal Banks have been to poor farming households in arid lands. Administratively, Makoja Village is devided into nine Sub Villages namely Muungano, Mapinduzi, Magomeni, Majengo, Gongolamboto, Mwongozo, Butiama, Mageuzi A and Mageuzi B. The Makoja Village Cereal Bank is situated at Muungano Sub Village.

The survey done in 2012 employed structured and semi- structured interview to collect data. A cross section study drew a sample of eighty (80) households from Makoja Village (Kothari, 2004). Purposively, while a half of the sample (40 households) were members of Cereal bank, 40 households were non-members of Cereal bank. Both members and non-members made use of the Cereal Bank. While members of the cereal bank benefited from soft loans and dividend obtained as profits from various operations carried by the Cereal Bank, non-members just benefited by keeping their harvest and obtain them in the future date at reasonable price. Specifically, household data regarding scale of agriculture production, food security, expenditure and income, welfare indicators and the utilization of the Cereal Banks were collected. The sampling was keen to engage various household strata including those of welfare and headship. Household heads were the interviewee.

In depth-interviews were conducted to the Chairperson, treasurer and secretary of the bank, as key informants. The collected from the primary source using the structured questionnaire was summarized, edited and coded before analyzing them. Quantitative data was analyzed using Statistical Package for Social Sciences (SPSS Version16).

Descriptive statistics such as frequencies and percentages was used to obtain the variability and central tendencies of variables. Analysing households key demographic and socio economic variables was important to understand povery prevailing in Makoja community. Assesing land allocated to agriculture production was key to identify important crops to Makoja residents. Number of meals consumed by each household during the period of less and plenty was important to realise the extent and variation of food insecurity across the seasons. The number of villagers engaged in various economic activity and income generated from each activity was done to rank to importance of each activity. Prices available while making use and not making use of Cereal Bank was important to measure the inpact of such institute to food availability and marketing promortion. Inventing the magnitude of various realised benefits such as keeping seeds have been the focus to the current paper.

3 Results and Discusion

3.1 Background to Makoja Community

Understanding the socio economic background of the involved households is potential to portray and relate the importance of Community Cereal Bank to Makoja community. It is also important to determine the potential of the alternatives uses the Cereal Bank can provide to the involved community. Household socio economic

variables are also necessary to determine poverty prevailing in Makoja Village.

The majority of the respondents were adults. While there was no household head with age below 18 years old, at about 69 % were above 65 years old. The sampling was gender responsive where 57.5 % of respondents were females and 42.5 % of respondents were males respectively. The majority 75 % were married connoting the responsibilities they bear to upkeep their families. At about 62 % of the population attended formal schooling therefore could read and write connoting being able to adopt new technologies and methods during various rural development interventions.

The mean household size for the household was found to be 5 ± 2. The research also found out that 91.25 % of the houses were roofed by Aluminum corrugated sheets, 100 % of the walls made by unburnt bricks but 82.5 % of the house floors were just soils. While unburnt brick are made by the villagers themselves, and does not require fuel wood for burning, the Aluminum corrugated sheets have been necessary requirement to resist strong erratic rains. The majority use of unburnt bricks and not having woods or cemented floors might be the sign of poverty persisting in the community (Mwakalila, 2005).

3.2 Household Incomes and Expenditure of Makoja Villagers

Selling of labor and livestock was consecutively done by 55 % and 51 % of households earning a total of 73,852 TAS and 858,414 TAS per annual respectively (See Table 1).

Table 1: Households Annual income

Source of income	**Number of Households involved**	**Annual income (TAS)**			**Order of importance**	
		Minimum	Maximum	Mean	Households engaged	Income generated
Employment	1	270000	270000	270000	11	7
Selling crops from own harvest	77	15000	1700000	422454	1	5
Kiosk	13	50000	1800000	510153	7	2
Hair Salon	1	60000	60000	60000	11	
Selling livestock	41	25000	15700000	858414	3	1
Transporting with motorcycle (boda boda)	16	20000	3000000	422812	5	4
Selling Labor in other households farms	44	9000	300000	73852	2	11
Hiring bicycle	13	13000	600000	125461	7	10
Tailoring	3	100000	960000	446666	9	3
Selling own produced Tomato	17	12000	480000	86000	4	
Selling own produced vegetable	3	36000	300000	178666	9	8
Selling baobab collected by household	15	20000	200000	72200	6	13
Selling water	3	20000	130000	73333	9	12
Firewood selling	13	20000	100000	46153	7	14
Food vending	5	100000	980000	396000	8	6
Remittance	2	150000	200000	175000	10	9

Avoiding conglomeration of the data and distortion of the information, analysis on daily household income was done versus household size. The analysis showed that at per capital income of about 96.2 % of the households was below 1 dollar a day (up to 1583 TAS/day). This revealed that only 3.8 % of the households were relatively non poor in Makoja village. Income poverty existed in Makoja village, restricting the community to manage savings.

To avoid blanketing and exaggeration of the information with regards to the importance of Income Generating Activities (IGA's), the ranking of the IGAs was done. The Ranking of the Income Generating Activities was done using two criterion; the first one being the number of households engaged in the activity and the second criteria being income generated from the specific IGAs.

With regards to the number of households involved, selling crops from own harvest was the important IGA performed by most households. Following selling crops in order of importance, selling labor in other household farms, selling livestock, selling tomatoes and transporting using motorcycles (boda boda) have been activities to attract income to most households. Only a single household had his member depending on employment as one of the IGAs. Depending on selling crops, selling labor in other household farms, selling livestock, and selling tomatoes which are own produced portrayed peasantry existing in Makoja Village. Both strategies relate subsistence economy prone to climate change, precipitating poverty and with greater need of the

Cereal Bank.

In other way round, selling livestock was the IGA attracting large sum of money followed by kiosk (selling household consumables), tailoring, boda boda and selling crops. Save for selling livestock and crops, the analysis revealed that such ventures attracting large sums of money involved small proportion of community members. Income poverty persist in Makoja Village.

The annual expenditure of the households' income in various requirements was assessed. It has been revealed that the sampled population spent 58.8 % of their income on food (see Table 2).

Table 2: Household Expenditures in Makoja Village

Households Expenditure	Respondents	ANNNUAL EXPENDITURES (TAS)			
		Proportional on expenditure (%)	Minimum	Maximum	Mean
Food	80	58.84	50000	700000	237887
Dressings	62	16.00	2100	400000	90540
Education	66	9.21	2000	800000	73110
Household Consumables	79	8.34	1000	130000	33806
Religious donations	57	5.87	2000	100000	23368
Beverages	31	4.61	1400	235200	27567
Ceremonies	56	3.29	2000	100000	16517
Civic obligation	72	3.00	3500	50000	10506
Health & Medical	79	1.94	5000	50000	6518

The households spending over a half of their income in purchasing food suggests existing poverty and other two scenarios. The first scenario is that what is locally produced cannot take the household throughout the year. The second scenario is that food produced was poorly stored, managed or marketed. All in all, the findings suggested that Cereal Banks can offer solutions to food insecurity persisting in the rural arid areas. Spearman's correlation done between household incomes and household expenditure was 0.754** ($p \leq 0.01$). Households with relative more income had relatives more expenditure. Household expenditures are therefore function to household income. As many households were revealed to have relatively low income, chances to earn savings are limited to such community. Makoja Village is a poor community.

3.3 Crop Production and Household Food Insecurity in Makoja Village

Data relating to the size of land allocated to produce each crop was collected and analyzed to understand the importance of each crop grown in Makoja village. Respondents were subjected to a question how many acres do you have, this question was posed in order to find out the average acreage of cultivating land at households in Makoja Village (See Table 3). The findings showed that most households were involved in growing millet, sunflower, groundnuts and simsim. Findings also showed that Simsim occupied relatively large land sizes followed by cowpeas, maize and ground nuts.

Table 3. Crops Cultivated and Their Importance

Crop cultivated	**Households involved**	**Land allocated (acres)**			**Importance of crop**	
		Min	Max	Mean	Number of households	Land allocated
Simsim	46	0.5	20	3.3	4	1
Groundnuts	53	0.5	10	2.0	3	4
Maize	27	1	6	2.4	5	3
Cowpeas	3	1	10	2.7	6	2
Millet	70	1	2	1.3	1	5
Sunflower	58	1	10	2.7	2	2

Crop production mix showed that households were more interested in crops which can perfom well under severe rainfalls such as millet and simsim as well as crops which could have relatively better marketing outputs (storage, pricing).

While there are several methods of measuring food insecurity, the number of meals taken by households is a quick and simple indicator to household food insecurity. As it is presented in Table 4, only a half of the households had three meals a day during the period of plenty (June – August).

Table 4: Households Food Insecurity

Number of Meals during the period of plenty (June – August, 2011)		
Number of Meals per day	Frequency	Percent
ONE - TWO	40	50
THREE	40	50
Total	**80**	**100.0**
Number of meals during the period of insufficient (Jan – March, 2012)		
Number of meals per day	Frequency	Percent
ONE	75	93.8
TWO	5	6.3
Total	**80**	**100.0**

The study also revealed that while 93.8 % of the sampled households took a single meal during the period of less (January - March), only 6.3 % of the sampled households took two meals per day. This therefore explained that although there is food insecurity is seasonal, at about a half of households in Makoja are chronically foods insecure.

3.4 Importance of the Cereal Bank to Makoja Community

Most farming households were interested to deposit millet and sunflower in the Cereal Banks (see Plate i).

Plate 1. Collecting sunflower at the Makoja Cereal Bank

As shown in Table 5, farmers have always been fetching good prices while using a Cereal Bank.

Table 5. Prices Obtained while Using or Not Using Cereal Banks

Crop	Without Cereal Bank arrangement		With Cereal Bank Arrangement	
	Lowest price (TAS)	Highest price (TAS)	Lowest price (TAS)	Highest price (TAS)
Millet	25287	31250	35337	39550
Maize	24600	30000	40560	46550

Findings revealed that the price elasticity of demand of both millet and sunflower with is higher while using a Cereal Bank. This implied that the community rather used the Cereal Bank to sell their crops enjoying reduced transaction cost and avoiding middlemen.

Apart from the price elasticity itself, the research revealed that both the minimum and maximum price of millet and sunflower while sold without Cereal Bank arrangement was lower as compared to while sold under Cereal Bank arrangement. Cereal Bank is potential to improve income and hence livelihood of rural farming households.

A multiple response analysis presented in Table 6 showed the realized benefits of Cereal Bank to households in Makoja Village. Most households admitted that Cereal Banks are important to assure food availability during the period of less.

Table 6: Realized Benefits of Cereal Bank (Multiple Response)

Benefits of Cereal Bank	Responses		
	N	% Responses	% Households
Food availability	80	18.2	100.0
Market opportunity	69	15.7	86.3
Soft food loans	37	8.4	46.3
Availability of seeds	71	16.2	88.8
Provide dividend	33	7.5	41.3
Cheap food during hunger seasons	72	16.4	90.0
Provide food safety in store	54	12.3	67.5
Extension education	23	5.2	28.8
Total	**439**	**100**	**100**

Assuring seed availability during the planting season was the fourth most important aspect of Cereal Bank to Makoja Communities. A significant proportion of surveyed population (89 %) admitted that the Cereal Bank has been an important source of seed. Makoja Villagers normally obtain their seed stock from the last year's own harvest. Makoja villagers admitted that keeping seed as part of the stock stored in Cereal Bank assures the availability of seed as they are sometimes destroyed by vermin and rodents while kept in their homes. Makoja Villagers admitted that they tend to consume all food reserve kept in their homes not saving for seed stock. The experience in Small holder Community Seed Production System shows that seed stock tend to be consumed as food during the period of draught and food shortages (CTA, 2000).

Despite development of new, stress tolerant crops well to be adopted seed for small holder farming condition, farmers does not access to improve seeds and are still recycling exhausted seeds that have been cultivated for generations resulting into poor yields and food insecurity (Zulu, 2004). A shown in the Tanzania Report on The State Of Plant Genetic Resources For Food And Agriculture (2009), the informal seed sub-sector has continued to be the major source of seed supply for the majority of farmers in Tanzania. More than 90% of the seeds sown by farmers are seeds saved on their own farms. Informal seed supply has failed due a number of reasons such as inefficient extension services and lack of credit facilities for farmers. Lack of sufficiently suitable varieties that are acceptable to small scale farmers and inaccessibility to seed are also suggested to such trend (Tanzania Report on The State of Plant Genetic Resources for Food and Agriculture 2009).

Makoja villagers view Cereal Bank as the appropriate place to store part of their stock as seeds as it is safe from vermin such as rodents who always destroys stock at their homesteads. Assuring that they have the same cultivar they are used to make them prefer using the stock from their harvest and not to go out and buy maize in markets for seed purpose. The surety that seed is available during the period of planting which is also the period of less have been reported to be the comparative advantage of storing seeds in Cereal Banks. Under well-established Community Seed Production Systems, sourcing the seeds, transporting the seeds to producers, sourcing other facilities such as fertilizers, training of seed producers, quality control, cleaning, storing packaging and marketing are outputs to be delivered by seed producers, seed companies and Non-Government Organizations (Banziger *et al,* 2004).

The Cereal Bank is a potential Seed Bank to poor Makoja community which lacks improved seed services/ supplies. The Christian Council of Tanzania (CCT) and the Diocese of Central Tanganyika (DCT) have been promoting the Community Seed Production Systems in Tanzania and Dodoma respectively (Moyo *et al,* 2009). There is a need to increase the pace of promoting Community Seed Production System which has already started in some regions and Dodoma in particular to assure improved production and household food security. Community seed production systems continues to be attractive to farmers as it is assured to survive, provide strong linkage between research, quality and slightly more commercial dimension (CTA, 2000). The impact of village and community seed banks has been very positive and there is a need to expand their coverage with a view to enhancing the injection of improved practices into the informal seed sector (CTA, 2000). As component of Community Seed Production systems, village seed banks have emerged to support storage, considering better pest control, minimizing mechanical admixtures and monitoring seed quality (CTA, 2000).

The current findings add the importance of Cereal Banks towards "our way" which is perhaps not realized widely and by the supporters of Cereal Banks. As discussed earlier, Cereal Banks have been suggested to be important in stabilizing grain markets and food availability. "Our way" looking of things (Kamanzi, 2007), is an important element to be considered while evaluating the importance of ventures attracting attention from both stakeholders such as cereal Banks. Consideration of benefits realized in "our way" is important before terming the ventures not sustainable or useless.

4. Conclusions and Recommendations

The Makoja Community equally realizes the Cereal Bank as the source of seed for the next season. Understanding the way Makoja Community looks at the Cereal Bank is important while assessing for the

benefits of such venture. While Cereal Banks have been termed as not sustainable, sustainability of smallholder agricultural production through the availability of seeds should be realized a benefit where improved seeds systems and improved seeds are not available. Increasing the pace of promoting Community Seed Production System is important to assure improved crop production and household food security in such poor communities.

5. References

1. Alyward C (2013). Innovation of the Month: Cereal Banks Protect Against Famine and Empower Women Across the Sahel. WORLDWATCH INSTITUTE http://blogs.worldwatch.org/nourishingtheplanet/innovation-of-the-month-cereal-banks-protect-against-famine-and-empower-women-across-the-sahel/ visited on October 2013
2. Banziger M, Setimela PS and Mwala M. Designing a Community-Based Seed Production Scheme. Theme; Understand the Seed System in ; Sentimela PS, Monyo E, and Banzinger M. (Eds) 2004. *Successful Community Based Seed Production Strategies.* Mexico D.F CIMMYT.
3. Berg E and Kent L (1991). The Economics of Cereal Banks in the Sahel. Consultancy Report Prepared for USAID. Bethesda, Maryland, USA, Development Alternatives Inc.
4. Coulter J, Mukhwana, EJ, Burnett D and Walker J (2000). A feasibility study on the development of a warehouse receipt system in the grain sector of Western region of Kenya, A consultancy report for the World Bank. 67 pp.
5. CRS (1998). Community – level Grain Storage Projects (Cereal Banks). Why do they rarely work and what are the alternatives? Workshop held on January 19 – 22, 1998 Hotel Alafifa, Dakar, Senegal. Sponsored by CRS with Funding from USAID/OFDA
6. CTA (2000). The Role of Smallholder Farmers in Seed-Production Systems. Analysis of the general seed situation in the participating countries. Summary Report and Recommendations of a CTA Study Visit Zimbabwe, 15-26 February 1999. CTA. The Netherland.
7. Hyden G (2013).The Economy of Affection: Vanishing or Still Alive? Key note paper on Economy of Affection Conference. August 2013. Prepared by Fukui Prefectural University and University of Dodoma. VETA Hotel, Dodoma. Tanzania.
8. Lay Volunteers International Association (2010). Solidarity and international cooperation association**;** FOOD SECURITY PROGRAM.
9. Matunga B N (2012). Moral Economy: Ensuring Food Accessibility and Changing Food Preference for Vulnerable Group in Agro-Pastoralist Villages, Central Tanzania. Rural Development Policy and Agro-Pastoralism in East Africa. In Proceedings of 4th International Conference on Moral Economy of Africa. 22 -24 August 2011, University of Dodoma. (Eds). Sugimura, K; Mwamfupe D; and Tsuruta T. Fukui Prefectural University – Japan.
10. Moyo SE, Rohrbach DD and Mgonja MA, New Partnership to Strengthen Seed Systems in Southern Africa. Innovative Community Commercial Seed Supply Models. Theme; Understand the Seed System in ; Sentimela PS, Monyo E, and Banzinger M. (Eds) 2004. *Successful Community Based Seed Production Strategies.* Mexico D.F CIMMYT.
11. Msaki MM and Hendriks SL (2013). Do Food Quality and Food Quantity Talk the Same? Lesson From Household Food Security Study in Embo, South Africa. Journal of the American College of Nutrition, Vol. 32, No. 3, 165–176. Taylor & Francis Group, LLC
12. Msaki MM, Nyankweli EM, Malila MN and Lifuliro CS (2012). Moral Strategies to survive household food insecurity in Tanzania: A case of Mtumba and Hombolo villages. Rural Development Policy and Agro-Pastoralism in East Africa. In Proceedings of 4th International Conference on Moral Economy of Africa. 22 -24 August 2011, University of Dodoma. (Eds). Sugimura, K; Mwamfupe D; and Tsuruta T. Fukui Prefectural University – Japan.
13. Mukhwana, EJ (2003). Using Community Based Cereal Banks to Improve Smallholder's Access to Markets in Kenya. African Crop Science Conference Proceedings, Vol. 6. 718-721. Kampala.
14. Mukhwana, EJ (2000). Food Policy and its impacts on Agricultural Productivity and household income in a liberalized and privatized economy in Western Kenya. AGREN newsletter 41: 21 – 26.
15. Mwakipesile, A (2012) *Conservation in Semi –Arid Environment: Experience of Hifadhi Ardhi Dodoma (HADO).* Rural Development Policy and Agro-Pastoralism in East Africa. In Proceedings of 4th International Conference on Moral Economy of Africa. 22 -24 August 2011, University of Dodoma. (*Eds*). Sugimura, K; Mwamfupe D; and Tsuruta T. Fukui Prefectural University – Japan.
16. Mwamfupe D (2012). The role of Social Capital in the Establishment and Growth of Non –Farm Activities in Kongwa District, Tanzania. Rural Development Policy and Agro-Pastoralism in East Africa. In Proceedings of 4th International Conference on Moral Economy of Africa. 22 -24 August 2011, University of Dodoma. (Eds). Sugimura, K; Mwamfupe D; and Tsuruta T. Fukui Prefectural University – Japan.

17. Ndanga J P (2012). *Household Economy of the Wagogo: Contribution of income diversification in income poverty reduction to smallholder farmers in Dodoma – Tanzania.* Rural Development Policy and Agro-Pastoralism in East Africa. In Proceedings of 4th International Conference on Moral Economy of Africa. 22 -24 August 2011, University of Dodoma. (*Eds*). Sugimura, K; Mwamfupe D; and Tsuruta T. Fukui Prefectural University – Japan.
18. Sakai M (2012). *Famine and Moral Economy in Agro Pastoralist Society: 60 years of Rainfall Data analysis.* Rural Development Policy and Agro-Pastoralism in East Africa. In Proceedings of 4th International Conference on Moral Economy of Africa. 22 -24 August 2011, University of Dodoma. (*Eds*). Sugimura, K; Mwamfupe D; and Tsuruta T. Fukui Prefectural University – Japan.
19. Kamanzi A (2007). "Our way" Responding to the Dutch Aid in the District Rural Development Programme of Bukoba, Tanzania. African Studies Centre African Studies Collection, Vol. 4. Leiden. The Netherlands. pp 244.
20. Kothari CR (2004). Research Methodology; Methods and Techniques, Second Edition New Age International Publishers
21. Tanzania Report on The State of Plant Genetic Resources for Food and Agriculture 2009. Dar es sallam.
22. Zulu E. Foreword. Sentimela PS, Monyo E, and Banzinger M. (Eds) 2004. *Successful Community Based Seed Production Strategies*. Mexico D.F. CIMMYT.

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