WAREHOUSE RECEIPT SYSTEM: A SOLUTION TOWARDS SMALLHOLDER FARMERS’ FINANCIAL CONSTRAINTS?

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Abstract
This study is on the contribution of warehouse receipt system in improving smallholder farmers’ access to financial services. A cross sectional design was used whereby 80 smallholder farmers in Hai and Siha districts in Kilimanjaro were covered. Both quantitative and qualitative techniques were used to analyze the data. The results showed that males have awareness and participate more in the WRS than females however, most of their farms are small. Motives found to influence smallholder farmers to join WRS included price, access to credit and access to market although most of the farmers participate into WRS to access credit. Moreover, level of farming technologies adoption among the smallholder farmers found to have increased significantly after joining the WRS. Generally the WRS improves the general socio-economic wellbeing of the smallholder farmers. Based on these findings, it is recommended to increase sensitization efforts among the smallholder farmers in order to enable larger spectrum of the community members becoming aware of the WRS practice and policy maker should deliberately intervene to strengthen the capacity of WRS.

Keywords: Warehousing, Farmers, WRS, Tanzania

INTRODUCTION
Tanzania is an agricultural dependent country. Agriculture accounts for 24.1% of the GDP and approximately 80% of Tanzanians are employed in this sector (URT, 2013). The sector also contributes to about 21% of Tanzania’s exports (URT, 2013). However Tanzania’s agricultural sector has experienced distinct periods with varying production performance, including rapid
growth, rapid decline and stagnation. This sector in particular smallholder farmers are faced with lack of efficient, sustainable and widely accessible financial systems. In Tanzania smallholder farmers refers to farmers cultivating a farmland of the size between 0.9 to 3.0 hectares.

The existing formal financial institutions have extensive infrastructure, system and funds that are mainly accessible to the urban population and not rural smallholder farmers. Historically, formal financial institutions have been reluctant to finance agricultural-related activities. This is due to the uncertainty of external factors such as high and covariant risks, missing markets for risk management instruments and lack of suitable collateral (Cocciarelli et al, 2010 : Onumah, 2010). Therefore progress in promoting agriculture financing has generally been slow or limited though the interest remains high.

The Government of Tanzania has attempted to enhance smallholder farmers to increase their access to credit by establishing several policies. These policies include National Strategy for Growth and Reduction of Poverty (NSGRP), National Microfinance Policy 2000, Cooperative Policy 2002, Tanzania Agriculture Policy 1997 and Agricultural Marketing Policy 2008. Likewise several programmes have been initiated including Agriculture First Resolution (Kilimo Kwanza), Tanzania Agricultural Sector Development Program (ASDP), Tanzania Agriculture Productivity Program, Agriculture Sector Development Strategy (ASDS), District Agricultural Development Plan (DADP) and Tanzania Agriculture and Food Security Investment Plan (TAFSIP).

These efforts have resulted to the creation of an enabling environment, the provision of proactive support to private operators, farmers’ organizations, NGOs and CBOs who supply inputs and credit to smallholder farmers as well as ensuring a strong regulatory mechanism. Because of these efforts, The Warehouse Receipt System (WRS) emerged as a way of getting around this financing problem by linking small holder farmers with financial institutions.

Warehouse receipt is a proven instrument for allowing farmers, traders, processors and exporters to obtain finance secured by goods deposited in a warehouse (Höllinger, Rutten, & Kiriakov, 2009). The system allows agricultural producers and processors to obtain working capital by using agricultural products stored in licensed warehouse as collateral (Forestier & Bryde, 2002).

In Tanzania, the WRS is operating with both commercial banks and Savings and Credit Cooperative Societies (SACCOS). SACCOS are democratically controlled semi-formal financial institutions aims at meeting financial needs of its members (Mlowe and Kaleshu, 2009). They play a key role on financial related matters for the smallholder farmers by issuing different types of loans with different maturity periods. These include business loans for agro-input dealers, agricultural loans and emergency loans for farmers.

Warehouses in rural areas are likely to enable smallholder farmers to access finance from SACCOS by formalizing their crops as collateral, which will assist SACCOS in evaluating loan
requests (Coulter and Onumah, 2002). Since in warehouse receipt system, the financial institution shifts its credit risk from the borrower to the warehouse operator, the financial strength of the warehouse operator and effective legal and regulatory system is crucial (Höllinger et al., 2009).

It is evidenced that, the licensed warehouses are available in areas where SACCOS have considerable experience. Despite of their innovative approach SACCOS are constrained with insufficient loanable funds and low liquidity. Therefore, they have not fully helped the smallholder farmers in solving their agricultural financial problem (Onumah, 2003). Based on the agency theory relationship between SACCOS and WRS might be associated with opportumism. In line with the above theory SACCOS are likely to employ governance mechanisms for controlling and monitoring the warehouses to overcome opportumism. Because of this relationship SACCOS are likely to monitor warehouse operators to assure loan performance. Also SACCOS are expected to monitor movements in the market value of the crops and using margining and price risk management instruments (Coulter and Onumah, 2002). This might increase monitoring costs which may have influence on smallholder farmers’ access to credit.

Therefore much have to be desired, because rural farmers are still facing difficulties in accessing credits. This raises concern that the role of financing smallholder farmers in rural areas has not yet been adequately addressed. Therefore, the aim of this study is to analyze the contributions of the WRS in facilitating smallholder farmers in accessing credit from financial institutions.

**Statement of the Research Problem**

Sustainable provision of financial services to smallholder farmers by formal financial institutions continues to be hampered by many problems (Coulter et al, 2002). These problems include high intermediation costs, peculiar difficulties in the financial environment, missing markets for risk management instruments and lack of suitable collateral. Also few formal financial institutions actually understand the most common economic activities in rural areas, i.e. agriculture, and those who understand are reluctant to serve the agricultural sector given its seasonality and the inherent risks of farming (Mahieux et al, 2011).

The introduction of warehouse receipt (WR) was expected to reduce these problems to smallholder farmers. However, WRS is still unavailable to most of smallholder farmers who are faced with cumbersome lending procedures. Several studies done on WRS have been concentrating on marketing of agriculture produce. These include study by (Onumah and Temu, 2008: Hollinger et al, 2009) which centred on the contribution of WRS in marketing of produce in the liberalised market. Furthermore, the study by (Onumah, 2001) centred on the contribution of WRS in enabling farmers accessing financial services in financial institutions generally. This
study will focus particularly on Tanzania rural SACCOS which have different ownership and management structure compared to other financial institutions.

However most of these efforts have failed to improve the access to financial services by smallholder farmers. Hence, little has been done to understand the problems which smallholder farmers are facing. Therefore, there is a need to find out the extent in which WRS can enable access to financial services among smallholder farmers in order to improve their farming activities and general socio-economic wellbeing.

Research Objectives & Question
The general objective of this research is “To empirically assess and document the role of warehouse receipt system as a means to improve smallholder farmers’ access to finance with evidence from Hai and Siha districts”. The study has following specific objectives:

i. To assess the profile of smallholder farmers in the two districts.
ii. To identify the motive behind for smallholder farmers choosing WRS
iii. To identify how WRS facilitates the smallholder farmers to obtain credit from financial institutions.
iv. To identify the smallholder farmers level of farming activities after accessing credit through WRS.

The study will be guided by the following research question:
“Does the WRS facilitate the smallholder farmers to access financial services in order to improve their activities?”

LITERATURE REVIEW
Warehouse Receipt System in Tanzania
The warehouse receipt system was introduced in Tanzania in 2005 with the pilot crops of coffee and cotton. The project was piloted in Kilimanjaro, Mbeya, Shinyanga, Ruvuma, Kigoma and Arusha regions. Initially five warehouses and three banks participated in the project. Depositors in these warehouses included primary cooperatives, farmers’ business groups, traders, exporters, processors, individuals and corporate bodies. The Government facilitated the entire process of setting legal framework which resulted to the formation of Warehouse Receipt System of 2005 and its regulation of 2006.

WRS involve the issuing of Warehouse Receipts (WR) by the warehouse operator, as evidence that specified commodities of stated quantity and quality have been deposited at a particular location by a depositor. The warehouse operator holds the stored commodity by way
of safe custody. If the depositor requires financing, he/she can obtain an advance from a bank using the warehoused crop as collateral. The depositor (borrower) will be required that payment for the commodity is channeled through the financing bank. The bank in turn deducts the loan advanced, accrued interests and other charges before crediting the account of the depositor with the balance. A depositor has to pay storage and where applicable collateral management fees.

WRS provides a way of getting around the reluctance of the financial institutions to finance the agricultural related activities. Moreover, the WRS has increased export earnings from agricultural production and marketing, improved income of the smallholder farmers and strengthen institutions as well as improve local human resources capacity to operate effectively in a liberalized market economy.

Determinants of Choosing Warehouse Receipt System
According to (IFAD, 2012) in Tanzania, smallholder farmers have very limited access to markets and lack facilities to store their produces. As a result, they are forced to sell their surplus produces during the harvest season, when farm gate prices are low. Moreover, smallholder farmers’ in rural areas lacks ability to obtain credit for their agricultural activities from formal financial sector like banks which requires collateral that farmer cannot provide. ACT (2007) and KENFAP, (2011) contends that WRS enable farmers to facilitate trade, increasing market efficiency, improve flow of information, easing access to rural finance, mitigating price risks, and enabling cost effective management of public food reserves.

Under WRS smallholder farmers are able to store their produce and sell them to the market when prices are better-off. Farmers are also facilitated to access credit from financial institutions through SACCOS at minimal conditions and low interest rates and this has resulted into increased productivity. This increase has positive effect on farmers’ incomes including improved access to education and health, building of new and modern housing and purchase of other assets (IFAD 2012). Furthermore, it has promoted collective bargaining and selling among the farmers and farmer groups. Also Degu et al., (2000) contends that farming activities such as planting, fertilizer application, weeding, insecticide application, harvesting, and processing are mainly carried out by men. However, the WRS is likely to increase women participation in farming activities.

Demand and Access of Financial Services by Smallholder Farmers
Access to financial services, is an absence of price or non-price barriers in the use of financial services. Improving access, then, means improving the degree to which financial services are available to all at a fair price (Bougheas et al., 2004). It is easier to measure the use of financial
services since use can be observed, but use is not always the same as access. Access essentially refers to the supply of services, whereas use is determined by demand as well as supply forces.

Users of financial services can be distinguished from non-users. Non-users are those who have access, but they choose not to use financial services. They do not use financial services for cultural or religious reasons or because they do not see any need. These non-users include households and enterprises that prefer to deal with cash without any promising investment projects. On the other hand are involuntarily excluded despite demanding financial services, do not have access to them. This group includes households and enterprises that are considered un-bankable by financial institutions. Second, there might be discrimination against certain population groups based on social, religious, or ethnic grounds.

Third, the contractual and informational framework might prevent financial institutions from reaching out to certain population groups because the outreach is too costly to be commercially viable. Finally, the price of financial services may be too high or the product features might not be appropriate for certain population groups. Smallholder farmers could be involuntarily excluded due to lack of appropriate products or services. They may need simple transaction accounts and might be reluctant to take out loans that require them to pledge their personal assets as collateral. This can be minimized by the use of WRS.

**Accessing Finance through the Warehouse Receipt System**

Tanzania Warehouse Licensing Board (TWLB) defined a warehouse receipt system as a system that governs, administers and facilitates the use of warehouse receipt for tracking ownership and taking out short-term loans against a commodity. The warehouse operator holds the stored commodity by way of safe custody; implying he is legally liable to make good any value lost through theft or damage by fire and other catastrophes but has no legal or beneficial interest in it (Coulter *et al.*, 2002). However, in case of liquidation, the warehouse operator’s creditors will not be able to seek recourse to the commodities stored as legal title remains with the depositor or *bona fide* holder of the receipt. The only exception is the warehouse operator’s lien covering outstanding storage costs.

The warehouses are available in areas where Savings and Credit Cooperative societies (SACCOS) have considerable experience. Once the harvesting season begins, SACCOS’s managers submit a loan application to the bank. The warehouse manager issues a receipt to the farmer when the produce has been deposited in the warehouse. The farmer can use this receipt to obtain a loan from the SACCOS of up to 70 per cent of the value of the deposited stock. Farmers can then wait for better prices before the product is sold.
In an effective warehouse receipt system, participating farmers deliver their product to an accredited warehouse and receives a warehouse receipt. Under the law, the receipt is deemed to be a negotiable instrument and as such may be freely exchange, traded or sold. As a result, the farmer is not forced to sell the product at unattractive seasonable prices in order to ease cash constraints.

According to Budd (2001), for the WRS to be effective, the rights, liabilities and duties of each party to a warehouse receipt must be clearly defined. Receipts must be freely transferable by delivery and endorsement. Holders of receipts must have the right to receive stored goods or their fungible equivalent if the warehouse defaults or its business is liquidated. And the lender should be able to determine before granting the loan, if there is a competing chain.

For warehouse receipt to be accepted by traders and banks, there must be a performance guarantees for warehouses. This guarantees that the goods stored exist in quantities specified by the receipt and in the same or better than that on the receipt (Onumah, 2001). Without such guarantees farmers and traders will be unwilling to accept receipts as collateral for financing agricultural inventories.

**The Conceptual Framework**

Figure 1: Framework of the WRS as a Solution to Smallholder Farmers Accessing Financial Services

This study intended to find out the contribution of WRS as a solution to smallholder farmers financial services. Based on the conceptual framework, the study focuses on two main aspects i.e. the entire process of warehouse receipt system and the outcomes to the smallholder farmers. It is expected that the WRS as a process will facilitate access to financial services. This will significantly contribute to improve farming technology, improve produce, improve income, creation of other income generating activities and increase deposits.
RESEARCH METHODOLOGY

Research Design

The study used cross sectional survey design where data were collected at a single point in time. This research design enables the researcher to collect data from different groups of respondents at a time. In addition, the method gave room to make comparisons among different groups of respondents to see how dependent variable relates with independent variables. Data collected were used for simple description purposes as well as for determine relationships between variables.

Description of the Study Area

The study was conducted in Hai and Siha Districts, Kilimanjaro region where 83% of communities are engaged in agriculture mostly coffee, maize and vegetable farming. The choice of these areas was due to the fact that the researchers had worked as research assistants in Hai district on the research titled, “Coffee marketing in a changing agricultural policy environment”, where they found the WRS not used by most of smallholder farmers. This develops an interest to find more about the practice. The selection of the study area was also because of its convenience to the researchers’ working place hence enabling easy data collection process. Moreover, most of the studies on WRS have been done in other regions including Manyara, Mtwara, Rukwa and Katavi which raised a need to study about the same system in Kilimanjaro region specifically in Hai and Siha districts.

Sample Size

Respondents were selected from the sampling frame of smallholder farmers in Hai and Siha district. The sample size consisted of 80 smallholder farmers randomly selected from two SACCOS. This sample was assumed to be enough for obtaining the information required because of the homogeneity of the population concerned. Eight (8) key informants involved in the study including 1 extension officer from each ward, 1 warehouse manager and 2 employees from each SACCOS.

Sampling Techniques

Purposive sampling was used in the selection of the SACCOS practicing WRS whereby one SACCOS from each district was picked. In Siha district, Umoja Magadini SACCOS in Gararagua ward was chosen while in Hai district, Jitegemee SACCOS in Machame South ward was selected. Members of these SACCOS who were identified to be smallholder farmers using WRS as a means of obtaining credit from financial institutions were randomly selected. Key
informants were selected purposively which included extension officers, warehouse managers and SACCOS employees.

Sources of Data
The study collected both primary and secondary data. Primary data were collected from smallholder farmers and key informants by using structured questionnaires, focus group discussion, interview and personal observation. Secondary data were obtained from the publications in libraries, SACCOS reports; ward warehouses reports, ward extension officers reports as well as reports from DADP and other agricultural programs found in the study areas.

Data and Collection Methods

Questionnaire
Structured self-administered questionnaires with both open and closed ended questions were used for data collection. Primary data including amount of loan issued to farmers, knowledge of farmers on the importance of using WRS, accessibility and training related to the use of WRS as a means of getting loans were collected. Secondary data collection include amount of loan outstanding, number of farmers borrowing from SACCOS through WRS and trend of the farmers produce stored in the Warehouse for various periods.

Focus Group Discussion
In this study focus group discussion was conducted in order to obtain the in-depth information from Umoja Magadini SACCOS credit committee and smallholder farmers. The method enabled researchers to obtain opinions on WRS and financial services. The group consists of 3 credit officers and 4 homogenous smallholder farmers.

Interview
Furthermore, unstructured interview was conducted to seek information from extension officers, SACCO's employees and warehouse managers. The method enabled the researcher to be more informed on WRS as a way of accessing financial services to smallholder farmers.

Personal Observation
Field observations by data collection team was carried out to verify some of the smallholder farmers' responses and record whatever they could have not reported/not provided in the questionnaire such as smallholder farmers commitment in farming activities, lifestyle of smallholder farmers using the WRS and their general living conditions including housing, sanitation and health condition.
Tools for Data Analysis

Descriptive analysis was used whereby quantitative and qualitative data collected were cleaned and analyzed by the aid of Statistical Package for Social Science (SPSS) and Excel. These packages used for analysis in order to obtain the quantitative description of the information. The results be obtained were in the form of mean, sum, percentages and frequencies.

For the determinants of choosing WRS, regression analysis was applied. The model was used to identify the motives of small holder farmers to choose the WRS. The dependent variable in this model was summation of the motives identified by a particular farmer. Each motive was assigned a value of 1 and a value of zero if otherwise. Factors considered were, increasing market efficiency, improve flow of information, easing access to finance, mitigating price risks, enabling cost effective and management of food reserves. The independent variables which were used in the model and their hypothesized effects are presented in table 1 below;

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Measure</th>
<th>Hypothesized effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender of the farmer</td>
<td>1=male; 0=Female</td>
<td>+</td>
</tr>
<tr>
<td>Land owned</td>
<td>Acres</td>
<td>+</td>
</tr>
<tr>
<td>Access to credit</td>
<td>1=access; 0=no access</td>
<td>+</td>
</tr>
<tr>
<td>Access to storage facility</td>
<td>1=access; 0=no access</td>
<td>+</td>
</tr>
<tr>
<td>Access to market</td>
<td>1=access; 0=no access</td>
<td>+</td>
</tr>
<tr>
<td>Price</td>
<td>Price of output measured in Tshs</td>
<td>+</td>
</tr>
</tbody>
</table>

Thematic content analysis was used for analysis of the data collected through focus group discussion and interview. Data are presented in, graphs, histograms and frequency distribution tables.

FINDINGS AND DISCUSSION

Characteristics of Respondents

Gender of Respondents

The study findings discovered that, the participation in the Warehouse Receipt System constitute 62.5% males and 37.5% females. The participation for males is almost doubled. This means the awareness and participation in the WRS is higher for males than females while the general population consists of more females than males. Therefore, a deliberate efforts has to be made in order to enable more females participate in the WRS system.
**Age of Respondents**
Respondents interviewed range between the ages of 18 to 65 years. Age 18-38 constitute 9.4% of all respondents, 31-45 years constitute 50% of all respondents while the age above 45 years constitutes 40% of all respondents. The implication of the above statistics is that majority of the population who participate in the WRS are of the middle age between 31 to 45 years. From the Focused Group Discussion, it was revealed that, the participation of the young population is very minimal as shown above mainly due to the negative attitudes towards agriculture as a whole and inadequate emphasize by the government in commercializing agriculture in particular.

**Education Level**
Community members participating in the WRS are not of the same education level. Participants are ranging from primary education to the university education. Among all respondents, 59.4% are with primary education, 34.4% are with secondary education, 3% are with diploma education and 3% are with advanced diploma/university education respectively. If you visualize critically the above findings, you will realize that majority of the population involving into WRS are with primary education followed by secondary education.

The diploma level, advanced diploma/university education constitutes very low percentages. The information from Focused Group Discussion was that, as people get more education there is a tendency of running away from agricultural activities looking for other survival options particularly formal employment and business related activities. As a result, it has led to low participation of people with higher educational attainment levels in the WRS because primarily they are not participating in agricultural production.

**Marital Status**
In terms of marital status, majority of the respondents interviewed are married which constitutes about 87.5%, while 9.4% of all respondents are widow and 3.1% are single. This raised a great concern in all SACCOS visited whereby people who are single are less interested in participating in the WRS and one of the major reason pointed out by the most of the interviewees was less family obligations which single families have.

**Awareness of Warehouse Receipt System**
In all areas visited, majority of the community members (90.6%) are aware of Warehouse Receipt System. Very few community members (9.4%) among the total respondents are not aware about the system. This mean there is a general awareness of the system but of course
more efforts are needed to enable the entire community members to become aware of the system.

Source of the Information
When community members asked as to where do they obtained the information, the responses were as follows; 56.3% obtained the information from SACCOS, 21% of the total respondents obtained the information from the World Food Programme, 6.3% got the information from village meetings and 3.6% obtained the information from different trainings attended.

For this matter, it means that SACCOS are the fundamental source of the WRS information and other development initiatives related activities. It was also pointed out by respondents during Focused Group Discussion that, being a SACCO’s member is a stepping stone towards socio-economic success and forum for different information such as new economic opportunities, marketing and pricing of different goods and services.

Farm Size before and after the Adoption of the WRS
The general concern about farm size before the adoption of the WRS is that, farm size ranges between 0.5 hectare per household (the minimum size) and 10 hectares per household (the maximum size). But after the adoption of the WRS, farm size changed from 0.5 to 1 hectare as a minimum size and from 10 to 20 hectares as a maximum farm size in average. One among the factors for the changes include new technology adoption, increased income, market availability and reliability as well as other benefits obtained from the system as far as external economies of scale is concerned.

Motive behind Farmers to Choose WRS
The study revealed that smallholder farmers were faced with lack of sustainable market, low prices and wrong measurement when selling their produce. The warehouse receipt system was therefore established to enable farmers to store their produce in which they were entitled to a loan of 75% of the prevailing price. In case of borrowing, the 25% remained is used as collateral whereby a loan provided is of three to four month at the interest rate of 2.5% to 3% per month. Farmers have to meet the storage costs and collectively agree when to sell their produce which shows the importance of WRS. During the Focus Group Discussion in Umoja Magadini SACCOs, one of the participants pointed out that “our survival depends on the WRS if it was not the presence of WRS we could not be able to embark seriously and successfully on agriculture”.
Respondents had different reasons as to why do they use the WRS. Their reasons differ from one smallholder farmer to another. The results indicate that respondents are using the system as a source of loan. This is because when smallholder farmers have access to credit, they can get resources to buy inputs which are important in increasing their productivity. The results therefore call for the need to increase awareness among smallholder farmers on WRS so as to enable larger spectrum of farmers to be involved. Moreover the results indicate that male farmers are likely to use WRS than the female farmers probably because most farms are owned by men and at the same time most of the SACCOS members are males.

Access to the market was also important determinant. This could be because when the market is guaranteed to the farmers, they can easily market their produce at low costs. The result implies that more warehouses should be set up to store farmers produce to wait for the better price. Warehouse facilities may also offer other services such as training farmers on the time they should sell their produce in order to get higher prices.

Moreover, the probability of the smallholder farmers to choose WRS significantly increases with the increase of prices, which is used as a proxy for income. The findings imply that the higher prices to the farmers are, the more they can be able to buy equipment and other resources required for the farming activities. Farmers with higher income are also able to quickly obtain market information and price information because they have the ability to attend meetings and other interactions. Whereas access to storage facility was not significant, there was a positive relationship between the storage facility, market access and higher prices. Size of the land and access to storage facility were not significant, however the sign of the coefficient was positive, which show that these variables may be important and should therefore not be neglected.

It was further revealed that, in the two selected SACCOS, 43.5% of all respondents interviewed contended that they have been using WRS for about 3 to 5 years while 40.6% pointed out that they have used the WRS for a period between 1 to 2 years. They further said that, the system has led to lots of socio-economic advancement generally but specifically it has...
resulted into the improvement in production, marketing, pricing and it has also acted as their source of loan for other activities.

**Facilitation of WRS to Farmers in Accessing Financial Services from SACCOS**

The study revealed that the WRS enables smallholder farmers accessing credits and savings from the SACCOS.

**Access to Credit Services**

Among all respondents interviewed, 90.6% explained that they normally do obtain money for different activities through borrowing from the SACCOS while 9.4% do not borrow money from SACCOS. Though, all of them are active participants in the Warehouse Receipt System. Members pointed out that, borrowing helps them to participate in agriculture because during farming season majority are broke and not capable to afford buying farm implements.

Members of the SACCOS do take loan for different purposes. About 25% do take loans for improving their farm activities, 18% for maize production, 6.3% for rice farming, 9.4% for small business activities, 9.4% for land acquisition, 6.3% for horticultural production and 3.1% for paying school fees for their children. Members who are using the WRS pointed out that, loans obtained from different sources are helping them very much in offsetting different payments as a result, enabling them engaging actively in production and finally in the WRS.

Forty percent of all interviewees (40%) contended that, they borrowed money for the last time in 2012 while 37% of all respondents agreed to have borrowed money for the last time in 2012 and about 9.4% borrowed money in 2011 to be used for different activities mainly farming activities. Respondents contended that, the minimum amount to be borrowed in their SACCOS for the contemporary time is Tshs100, 000/= and the maximum amount is Tshs 10,000,000/= per person after he/she has fulfilled all the necessary prerequisites.

**Access to Saving Services**

The study established that 62.5% of the farmers use saving service with the average of Tshs 232,325/=.

The reasons for savings were revealed to include developing farming activities, establishing small scale business, guarantee for loan, school fees and building residential houses (figure 2). The sole provider was Savings and Credit Cooperative Societies (SACCOS). Lack of access to saving services by 38% was attributed by lack of the knowledge to use the service and discouraged to use it due to the previous experience.
Figure 2: Reasons for Farmers to Save

Adoption of Technologies before and after Joining WRS

The study shows that the level of adoption of all technologies before a smallholder farmer joined WRS was significantly low compared to the current level of adoption of technologies after joining WRS. The biggest difference was observed on the use of improved seed varieties, which has led to an increase in the level of adoption from 53.1% to 75% after joining WRS (Figure 3).

A more than 15% increase in the level of adoption of technologies after WRS was observed particularly in practicing spacing, fertilizer application and in the use of pesticides. Techniques like spacing do not require high capital inputs from the farmers, although they can bring about significant yield increase. These technologies may require more labor input and capital needs which may be difficult to be met by smallholder farmers, although they may lead to tremendous yield increase.
Generally, the level of adoption for all technologies is low. This is evidenced by the decrease of harvest from average of 2770 Kgs in 2008 before joining WRS to 2570 Kgs in 2012 after joining WRS. The low levels of adoption of technologies require adequate efforts from the smallholder farmers to improve on the production. Much investment of resources is required for the training of farmers in using the technologies like fertilizer/manure and pesticides application. This can also apply to all other technologies farmers had tried to adopt in order to improve the production in the districts.

Apart from technology adoption, it was further revealed that 71.8% of the farmers managed to establish other income generating activities from the loans offered by the SACCOS. Establishment of these activities is also attributed to training offered by the SACCOS. Activities established include planting permanent trees, small scale business, horticulture and livestock keeping (figure 4).
SUMMARY

Tanzania is an agrarian economy which accounts for more than 24% of the Gross Domestic Product and providing employment opportunity to more than 80% of the rural population. The agricultural sector is primarily dominated by smallholder farmers who are faced with inadequate, sustainable and accessible financial systems. The Warehouse Receipt System (WRS) emerged as a means of overcoming the above financial related problems, a means of improving agriculture and producers/ smallholder farmers’ financial constraints.

The study intended to assesses and document the role of WRS as a means to improve smallholder farmers financial services. Specifically, it intended at assessing the profile of smallholder farmers in two districts, identifying the motive behind for smallholder farmers to choose the WRS and identifying how the Warehouse Receipt System facilitates the smallholder farmers in obtaining credits from financial institutions.

The findings revealed that, the WRS has played a tremendous role in facilitating agricultural related activities and reducing the magnitude of poverty among the individual concerned. There are some minor variations between gender, marital status, educational level and age of an individual in relation to the WRS practice. Specifically, people with low education
are more active than otherwise ceteris peribus. Likewise, people of middle age participate more in the WRS than old and young people.

When comparing participation in the system on the basis of marital status, it was found that married people are more vibrant in the WRS than single smallholder farmers. Findings also revealed that, the reasons for smallholder farmers joining the WRS differ from one smallholder farmer to another. Some join the system in order to get loan, others are interested with market and the rest are interested with good price for their produce.

CONCLUSION
The use of WRS has shown a positive implication to the smallholder farmers mainly in rural areas irrespective of educational level, marital status or gender of an individual concerned. But specifically, there are some minor variations on the use of the system based on age, gender, marital status and educational level among the smallholder farmers participating in the WRS. With respect to the awareness of the WRS, majority of the members in the study area are aware (more than 90%) and few are not aware of the system though efforts are underway to enable all members becoming aware. With regard to the motive for farmers choosing the WRS, majority (70%) are using the system as a source of loan, others are using the system in order to acquire markets for their produces while the rest are using the system in order to obtain good price when the produce sold. Furthermore, the WRS goes with technological adoption basically aiming at increasing the output hence improving the general socio-economic wellbeing of the smallholder farmers.

IMPLICATIONS FOR FUTURE RESEARCH
This study was conducted in Hai and Siha districts in Kilimanjaro region, another study should be conducted in other regions like Dodoma and Singida where the practice is not in existence in order to make comparisons on different aspects which in one way or another affects the WRS such as educational level of an individual, age, marital status, farm size, level of technological adoption and gender of an individual just to mention few.

RECOMMENDATIONS
The study aimed at assessing the role of the warehouse receipt system as means to improve smallholder farmers’ access to finance with evidence from Hai and Siha districts. Generally based on the financial constraints encountered by smallholder farmers in acquiring financial services; this study is very imponderable initiative essentially aiming at improving agriculture among the smallholder farmers but ultimately eradicating poverty hence improving the livelihood status of the individuals concerned.
Based on the study findings the followings are recommended for future improvement;

- There is a need to increase sensitization efforts among the smallholder farmers in order to enable the larger spectrum of the community members becoming aware of the WRS practice and therefore using it as a tool towards poverty reduction and at the end of the day improving their socio-economic livelihood status.

- A deliberate intervention from the government is needed to strengthen the capacity of WRS. This can be done through opening more opportunities for loans, ensuring better prices for different products and training community members on better WRS practices.

- Smallholder farmers have to increase their farm size in order to get more produce which its multiplier effect shall give them more money and as a result they will be in a position to improve their socio-economic status.

REFERENCES


KENFAP, (2011). The role of Warehouse Receipt System and Financial Services in Improving Produce Marketing by Smallholder Farmers in Kenya KENFAP


