

**ROLE OF WAREHOUSE RECEIPT SYSTEM (WRS) IN ENHANCING SMALLHOLDER PRODUCER ACCESS TO CREDIT FACILITIES FROM FINANCIAL INSTITUTIONS: A STUDY OF ITUNUNDU PADDY FARMERS IN IRINGA DISTRICT COUNCIL, IRINGA, TANZANIA**

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Access to credit has been a key challenge to the majority of smallholder producers in most of the African countries. The use of warehouse receipt system for stored produce as collateral for accessing credit can enable smallholder producers to access loans from financial institutions, while allowing them to postpone their sales when prices are low particularly during harvesting period. Access to credit can lead to increased investment in the agricultural sector which in turn will result into increased production and productivity for smallholder farmers, stimulating economic activities in rural area and bring about positive change to the rural populations due to increased incomes.

This study seeks to assess the relevance warehouse receipt system on the smallholder producers in accessing credits from financial institutions, timeliness of the credit issuance and measuring the level of participation of the financial institution in warehouse receipt system.

Qualitative and quantitative data of a representative of 340 respondents from four farmer groups were taken through interview with the aid of structured questionnaires and focus group discussion. Qualitative data were gathered from the financial institutions directly involved with the warehouse receipt system through key informant interview. The quantitative data were analyzed using descriptive and inferential statistics.

The result indicated the importance of the warehouse receipt system to the smallholder producers as its adoption increases their access to credit facilities, market period extension, marketing price, household income and reduction in post-harvest loss. The lack of access to improved technologies has posed a difficulty for the financial institutions in disbursing credits to smallholder producers on a timely basis. The participation of the financial institutions were

placed on the average level because financing a warehouse receipt system requires huge funding and the institutions are limited with funds.

**Keywords:** Credit, Warehouse Receipt System, Financial Institutions, Smallholder Producers

## INTRODUCTION

Agricultural systems have been liberalized in most African countries since the 1980s. Prevalent interventions by the state in provision of farm inputs, agricultural credit and produce marketing systems have been reduced and the scope for private sector provision of agricultural services expanded. The interventions became an unsustainable fiscal burden, contributed to real decline in producer prices as producers often bore the cost of such programmes, and failed to produce significant increase in per capita food production (Akiyama et al., 2001).

Tanzania's economy is mostly dependent on the agricultural sector which accounts for about 25% of the GDP, 85% of the total employment, 95% of the food consumed, and 30% of the foreign exchange earnings (UNEP, 2007; URT, 2010).

According to the available data, 75% of Tanzanians are rural dwellers with the highest poverty level, which is twice those living in urban areas (Human Development Report, 2011). PHDR 2009 reported that about 50% of all Tanzanians live in Poverty and 37.6% of all Tanzanians live in absolute poverty (below one dollar per person per day).

It is argued (Andrew and Maghembe, 2011) that agriculture plays a vital role in unlocking people out of poverty. This has been possible through growing several crops such as coffee, cotton, cashew nut, sisal, tobacco, tea, pyrethrum, sugarcane and cloves, which have been the main cash crops; and maize, sorghum, millet, rice, grain legumes, cassava, banana and wheat, which have continued to be the principle food crops.

As at 2016, Tanzania had over 44 million hectares of arable land with only 33 percent of this amount in cultivation, poor population of smallholder farmers who dwells in rural areas dominates production in the agricultural sector; and therefore smallholders are an important driver of economic growth and poverty reduction (Worldbank, 2017).

Smallholder farmers have very limited access to markets and lack facilities to store their produce (IFAD, 2012). This results to selling of their excess produce when the prices are low during harvest time. Smallholder farmers lack access to obtaining credits for their agricultural

activities from financial institutions that requires what the farmers cannot provide like collateral (Towo and Kimaro, 2013).

The adoption of Warehouse Receipt System gives smallholder farmers the opportunity to increase market efficiency, develop flow of information, better access to finance, combat price risks and ensures food security (ACT, 2007; KENFAP, 2011).

According to IFAD 2012, Warehouse Receipt System enables farmers to store their produce till the prices are good for selling, ensures collective bargaining, facilitates access to credit from financial institutions through registered farmer groups at minimal conditions and affordable interest rates. This has considerably increased productivity, incomes, access to education and better health care services, building of modern houses and acquiring other assets.

The Warehouse Receipt System (WRS) was established as a means of solving financial problems faced by smallholder farmers by linking them with financial institutions. This structure allows farmers and processors obtain working capital by using produce stored in the licensed warehouse as collateral (Forestier and Bryde, 2002). However, these formal financial institutions have extensive infrastructure, system and funds that are mainly accessible to the urban population and not rural smallholder farmers (Aryeetey, 2008).

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).

## WAREHOUSE RECEIPT SYSTEM

FAO (1995) stated that warehouse receipt finance uses securely stored goods as loan collateral. It is sometimes called “inventory credit”. This gives farmers, traders, processors and others to deposit their produce in a well secure warehouse against a receipt certifying the deposit of certain quantity, quality and grade of produce. The receipt can be used by the depositor as collateral to request a loan from the financial institution.

This receipt gives the depositor the authority to withdraw a particular amount and quality of the produce at any time from the warehouse. The warehouse manager ensures the safety and quality of the deposited produce. This receipt would be forwarded to the financial institution in charge of that particular warehouse, a loan that equates a certain percentage of the deposited produce is given. At the peak of the marketing period, the depositor sells to an interested buyer who either directly pays the bank or pays the depositor who then pays the bank.

When the financial institution receives the fund or an acceptable payment instrument (e.g., a confirmed Letter of Credit), the financial institution gives the receipt to either the depositor or the buyer depending on the agreement, who then submits the receipt to the warehouse for the release of the produce.

If there is a case of loan default, the financial institution uses the receipt to acquire the produce, sell and uses to return to offset the loan. (Höllinger, Rutten and Kiriakov, 2009).

Labuini *et al.*,(2012) stated the merits of adopting the use of warehouse receipt system. Firstly, “facilitating trade by assisting in assembling and reducing information asymmetry between counter-parties”. The warehouse operator gives information on records available, on demand from major buyers and ensures delivery of commodities.

Secondly, “enhancing marketing efficiency in agricultural markets by facilitating transparent trade in agricultural commodities between producers and large traders or processors thus reducing the marketing chain and margins”. The warehouse receipt provides longer time of storage to be able to stabilize variation in prices and reduce post-harvest losses.

Thirdly, “easing access to rural finance through deposits from farmers and traders”. If the cost of credit reduces, it will help to strengthen trade transactions and possible risk.

Fourthly, it helps in check listing price risk. “It helps as a better and transparent price discovery mechanism for farmers’ produce. The system will facilitate development of simple mechanisms by which producers, lenders and traders can secure a floor price by locking in a fixed future price”.

Fifthly, “Cost-effective management of public food reserves”. Warehouse receipt system helps farmers with better prices, it gives opportunity to farmers to store their produce and later sell when the price is better off.

## FINANCIAL INSTITUTIONS

Bee 2007 and Akinboade 2000 explained that Tanzania adopted Structural Adjustment Programme (SAP) in the early 1980’s along with the Economic Recovery Programmes (ERPs) to bring about changes in economy by improving private sector development which was not managed well under the state controlled economy.

The financial sector was adjusted through the liberalization of interest rates and the support of the idea of bringing in the privately owned banks whereby achieving financial development. Financial reform supports the theory that financial development is the backbone of economic development by influencing investment and business, and improving resources allocation

(Hassan, Sanchez, & Yu, 2011; Wolde-Rufael, 2009; Bee, 2007; Kessy and Urio 2006; Odhiambo, 2005; Darrat, 1999).

After the financial reform, encouraging outcomes were noticed in the financial sector, especially in the improved financial supports throughout the country (Bee, 2007; Kessy & Urio, 2006; Akinboade, 2000).

Akinboade (2000) reported that after the financial reform around the 1990's, the number of commercial banks increased from three (3) to fourteen (14), this practice continued for twenty (20) years thereabout and this made the financial sector experience a great development in terms of increasing number of deposit banks, other financial institutions and microfinance banks.

Central Bank of Tanzania (BOT) reports as at 2012, the total number of formal financial institutions were 45 (32 national deposit money banks, 8 regional deposit money banks and 5 licensed financial institutions). At the commencement of the reform, only formal financial institutions were the main targets until it was realized that majority of Tanzanians who are rural dwellers were not benefitting from the development of deposit money banks systems

Bee (2007) and Kessy and Urio (2006), explained the reasons the rural dwellers were not benefitting from the development of deposit money banks as; most of these institutions were situated in the urban areas due to the available infrastructures needed for their security. Secondly, their clients could not afford the collaterals required by the financial institutions to reduce risk on their part because of the high poverty level in Tanzania and informal ownership of assets such as land, for these reasons, it was then observed that microfinance institutions were the functional model which can help to expand financial intermediation (used interchangeably with financial intermediation (used interchangeably with financial service, financial deepening and financial development) in the rural areas. It has been established that microfinance institutions are those that provides financial services such as microcredit to the poor and low income earners citizens.

Satta (1999) reported that there is proof of the positive impacts financial reforms brought on the size of Tanzania's financial systems.

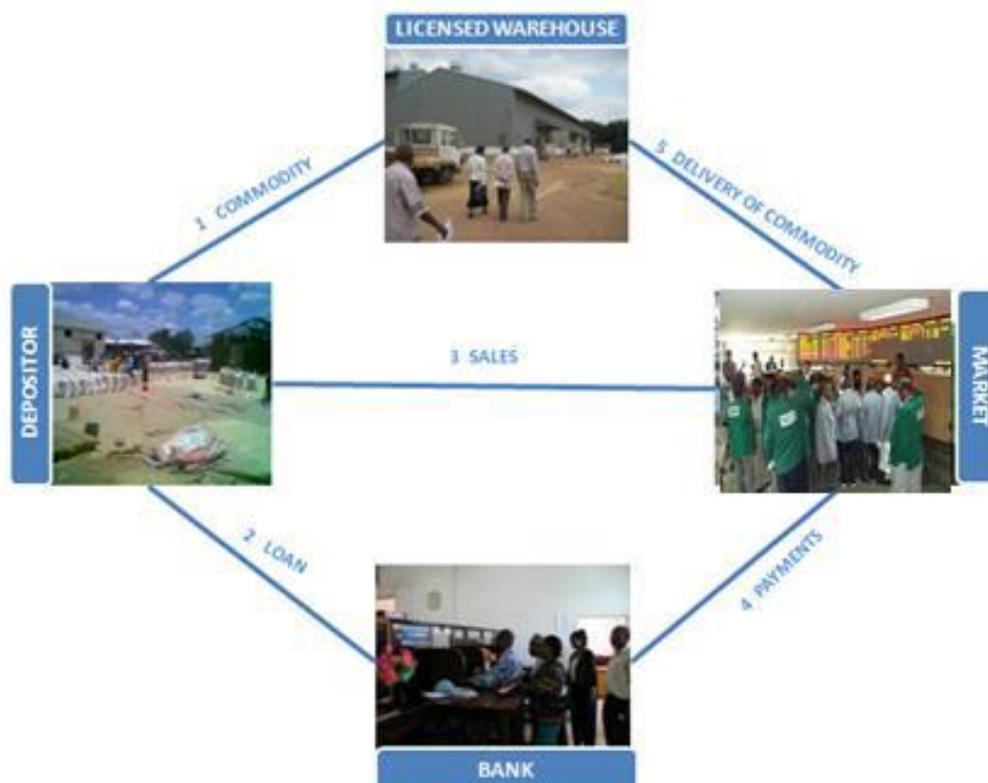
Generally, it's been observed that microfinance and formal financial institutions have done a great job in financial intermediation by increasing access to finance to many of the citizens.

#### Objectives of the Study

The main aim of this study is to access the Role Of Warehouse Receipt System (WRS) in Enhancing Smallholder Producer Access to Credit Facilities from Financial Institutions: A Study of Itunundu Paddy Farmers in Iringa District Council, Iringa, Tanzania.

The study has the following specific objectives:

- To analyze the relevance of WRS on the smallholder producers
- To identify challenges that cause slow adoption of WRS by smallholder farmers.
- To assess the level of financial institutions participation in WRS
- To measure the timeliness of the credit payment process to the smallholder farmers



Source: Tanzania Warehouse Licensing Board Operational Manual

## METHODOLOGY

This chapter covers the description of the type of survey adopted in the study. It is expected to define the population, the sample size as well as the sampling technique adopted in selecting the sample size. Sources of data collection, data analysis and data presentation are part of the research design. This research is designed and aimed at Accessing The Role of Warehouse

Receipt System In Enhancing Smallholder Producers Access To Credit Facilities From Financial Institutions: A Study Of Itunundu Paddy Farmers In Iringa District Council, Iringa, Tanzania.

Questionnaire was administered in a survey conducted among the WRS benefitting farmer groups

Itunundu Ward is a ward in Iringa Rural District comprising of Itunundu village, Kimande village and Mbuyuni village. It's a ward with plains and valleys, it borders the Ruaha National Park. Itunundu is an administrative ward in the Iringa Rural district of the Iringa Region of Tanzania. According to the 2002 census, the ward has a total population of 18,962 (Population and Housing Report, 2002).

Iringa's economy is backed by agricultural activities accounting for 85% of it's total GDP (NBS, 2013).

This study used four farmer groups which are;

- Itunundu AMCOS
- Kimande SACCOS
- Tungane Group
- Twitange Group

All the above groups serves as sampling framework.

Primary data were collected with the aid well-structured questionnaire by using *KoBoCollect* v1.140a application (part of KoBoToolbox) developed by Harvard Humanitarian Initiatives.

Purposive sampling was done in the four farmer groups, they are all WRS beneficiaries.

340 questionnaires were administered in each of the farmer groups, FGD was done with the leaders of each group and KII was carried out with the credit managers of MUCOBA bank and CRDB bank (being the major financiers of WRS in that ward).

The type of data to be collected include: Socio-economic data, Information on the relevance of WRS on the smallholder producers, Information on the challenges that is causing slow adoption of WRS, Information on the timeliness of the credit payment process to the smallholder farmers, Information on financial institutions participation in the WRS.

The primary data were collected through the use of well-structured questionnaires, and administered by well-trained enumerators in the study area. The study covers WRS beneficiaries from Itunundu ward, Iringa Rural District, Tanzania.

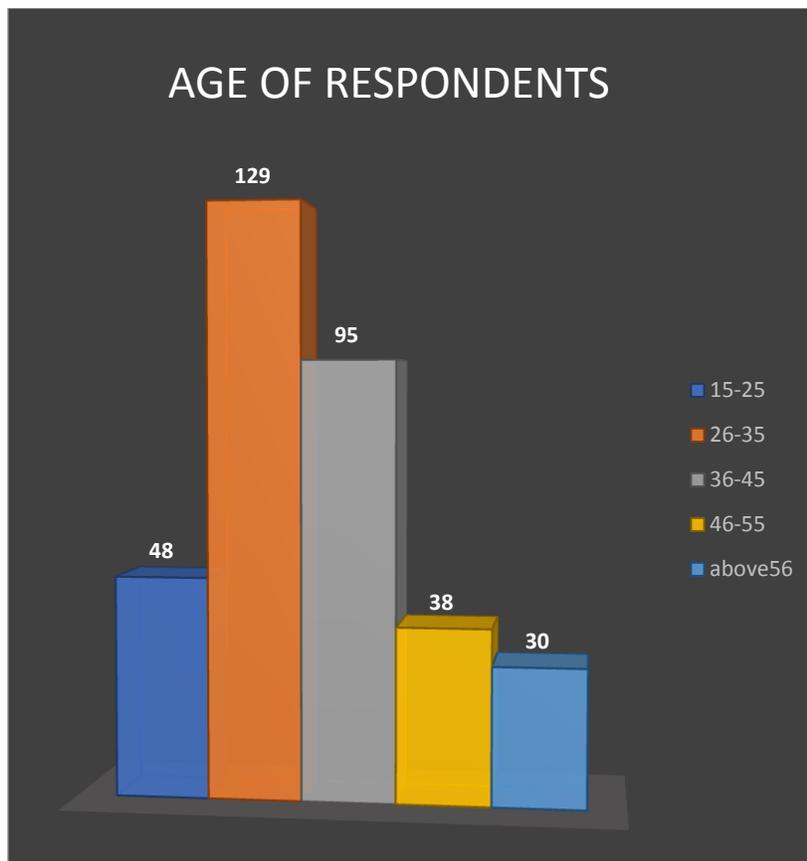
Secondary data were obtained from the records made available by the MIVARF, through relevant reviews and publications, text books and publications of the Iringa Rural District Council Socio-Economic Profile 2013

## RESULTS AND DISCUSSION

### Socio-Economic Characteristics of the Respondents

AGE RANGE	PERCENTAGE (%)	FREQUENCY
15-25	14	48
26-35	38	129
36-45	28	95
46-55	11	38
56 & ABOVE	9	30

Table 4.1.1: age of respondents



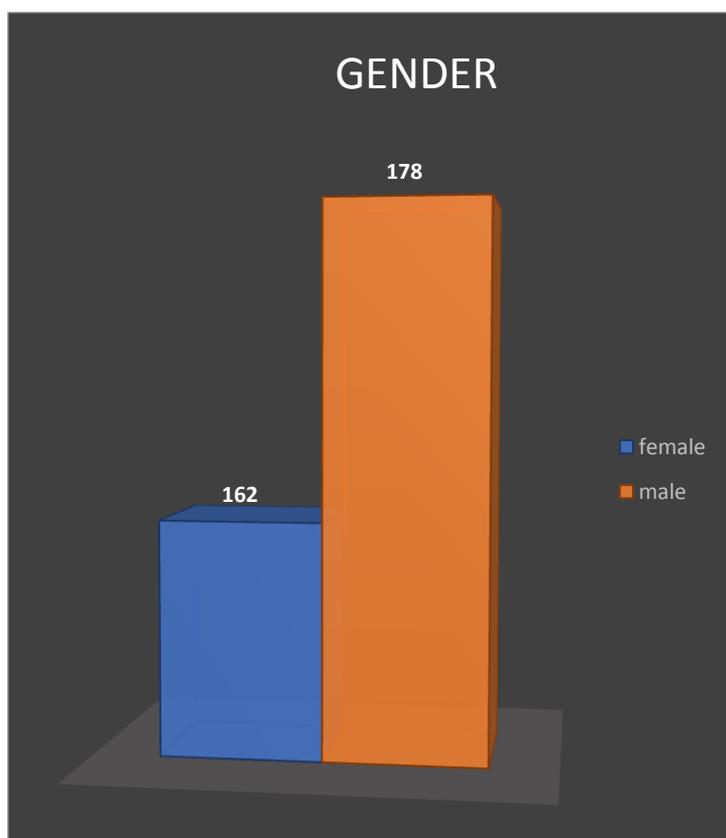
Source: Field Survey 2018

Table and figure above shows that the ages of the respondents ranges from 15 years to more than 56 years. Age range 26-35 and 36-45 falls on the highest frequency (129) and (95) also

with the highest percentage (38) and (28) respectively which implies that the respondents were in the active and productive age range. Age has been found to determine how active and productive the individual would be, which implies that majority of the beneficiaries, in the studied area are energetic and still able to do manual work and it can be concluded that the beneficiaries are in their “working age” and as such the likelihood of moving out of poverty and food insecurity is high.

GENDER	PERCENTAGE	FREQUENCY
MALE	52	178
FEMAL	48	162

gender of respondents



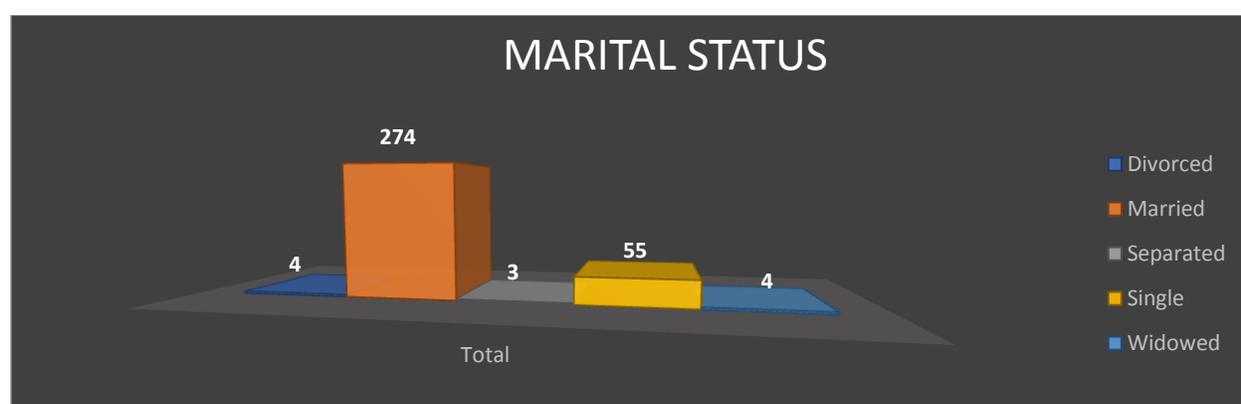
Source: Field report 2018

Table and figure above presents the gender information, it shows that majority of the farmers belonging to these groups are male( 52%). This shows that women are lagging behind in the use of warehouse receipt system to access credit from financial institutions.

According to FGD held with some women in the study area, it was revealed that they don't have access to own a land, this resulting to them not being able to farm on their desired farmland and blocking their access to credit facilities.

MARITAL STATUS	PERCENTAGE	FREQUENCY
Divorced	1.2	4
Married	81	274
Separated	0.9	3
Single	16.2	55
Widowed	1.2	4

Marital Status of Respondents

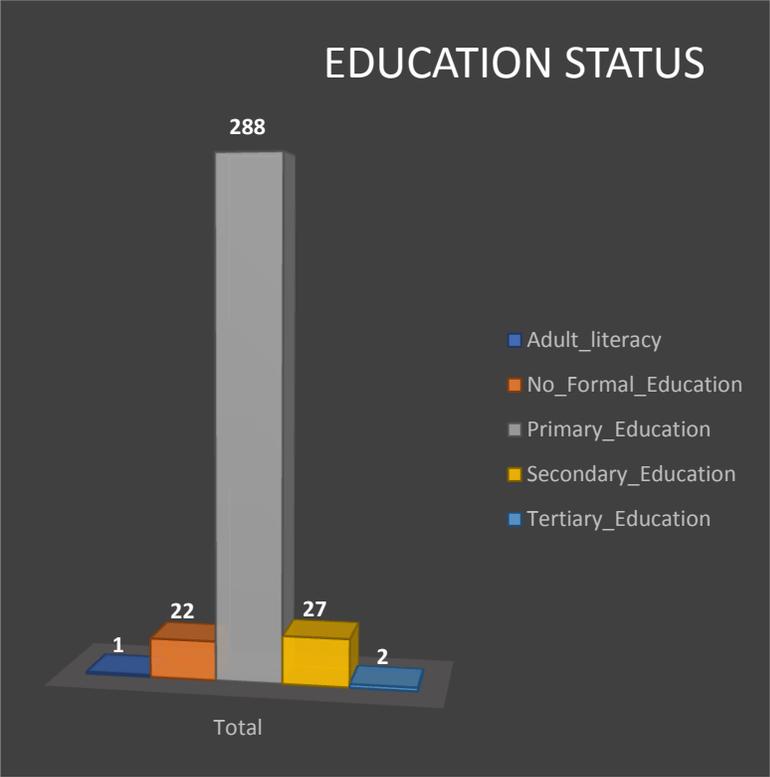


Source: Field Report 2018

From the table and figure above, it shows the marital status of the respondents, it presents 81% to be married, 16.2% to be single, 1.2% to be divorced, 1.2% to be widowed and 0.9% to be separated. It shows that the married took the highest percentage in the respondents because marriage comes with responsibilities in the African settings.

EDUCATION STATUS	PERCENTAGE	FREQUENCY
Adult Literacy	0.3	1
No Formal Education	6.5	22
Primary Education	85	288
Secondary Education	8	27
Tertiary Education	0.6	2

Education Status of Respondents



Source: Field Report 2018

Table and figure above shows that only 0.3% of the respondent attended adult literacy class, 6.5% has no formal education, 85% attended primary school, 8% has secondary education while just 0.6% has tertiary education. As it is, 85% attended primary school followed by 8% of those that went to secondary, it implies that the higher they go in education, the more they leave farming activities and look for other means of survival other that agriculture. This leads to low participation of people with higher education in WRS.

The Relevance of WRS on the Smallholder Producers

Do you think WRS is beneficial to you?	Percentage	Frequency
Yes	59.7 203	203
No	40.3 137	137
<b>Total</b>	<b>100.0340</b>	<b>340</b>

Is WRS beneficial?

Table above shows that 203 (59.7%) of the participants claimed that WRS is beneficial to them while 137 (40.3%) of the participants claimed that WRS is not beneficial to them. This implies that majority of the participants claimed that WRS is beneficial to them.

According to the FGD held with the leaders of each of the farmer groups, they all commented that WRS is very beneficial to them.

The credit managers of MUCOBA and CRDB bank also made the same comment about how beneficial WRS has been to farmers.

Ways in which WRS is beneficial

Ways in which WRS is beneficial	Frequency	Percent
Reduce post-harvest losses	170	50.0
Increase profits due to extended sales		
Secured storage facilities		
Increased access to credits		

Ways in which WRS is beneficial	Frequency	Percent
Reduce post-harvest losses	13	3.8
Increase profits due to extended sales		

Table 4.2.3

Ways in which WRS is beneficial	Frequency	Percent
Reduce post-harvest losses	9	2.3
Increase profits due to extended sales		
Secured storage facilities		

From the tables above, it shows ways in which WRS is beneficial to the participants. It shows that 170 (50.0%) of the participants noted that WRS benefited them in four major ways which include reduction of post-harvest losses, increase profits due to extended sales, secured storage facilities and increased access to credits. Also, 13 (3.8%) of the participants claimed that WRS benefited in two major ways which are reduction of post-harvest losses and increase profits due to extended sales while 9 (2.3%) of the participants claimed that WRS benefited them in three major ways which are reduction of post-harvest losses, increase profits due to extended sales and secured storage facilities.

Identification of Challenges That Causes Slow Adoption of WRS

Challenges faced in the warehouse	Frequency	Percent
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Transportation from farm to the warehouse	328	99.4
Theft in the warehouse	2	0.6
Post-harvest challenge like (packaging, storing, keeping of varieties etc.)	73	21.5

#### Challenges faced using the WRS

Table above shows that 328 (99.4%) of the participants claimed that a major challenge faced in the warehouse is transportation from farm to the warehouse, 73 (21.5%) claimed they experience post-harvest challenge like (packaging, storing, keeping of varieties etc.) while 2 (0.6%) claimed that they experience challenge of theft in the warehouse. This implies that the major challenge experienced is transportation from farm to the warehouse which could be as a result of high cost of transportation and bad road network since many of the roads leading from farm to warehouse are bad and damaged, so it make transportation difficult.

#### Measuring the Timeliness of the Credit Payment Process to the Smallholder Farmers

Do you have access to credit through WRS?	Frequency	Percent
Yes	327	96.2
No	13	3.8
Total	340	100.0

#### Access to credit

Above table shows that 327 (96.2%) of the participants claimed that they have access to credit through WRS while 13 (3.8%) claimed that they do not have access to credit through WRS. This implies that majority of the participants have access to credit through WRS.

According to the FGD held with the leaders of each group, it was said that only those that had defaulted at one time or the other are the once that do not have access to credit.

Challenges in accessing credit	Frequency	Percent
Delay in fund release	194	57.1
Delay in fund release, Bureaucratic procedures	38	11.2
Delay in fund release, other challenges	60	17.6
Bureaucratic procedures, other challenges	36	10.6
Other challenges	12	3.5
Total	340	100.0

#### Challenges in accessing credit

In the above table the challenges in accessing credit are listed. It shows that 194 (57.1%) of the participants claimed that the main challenge in accessing credit is delay in fund release, 60 (17.6%) of the participants claimed that delay in fund release and other challenges related to accessing credit are the challenges they encounter in accessing credit, 38 (11.2%) claimed that delay in fund release and bureaucratic procedures are challenges related to accessing credit, 36 (10.6%) of the participants claimed that bureaucratic procedures and other challenges are challenges related to accessing credit. This implies that majority of the participants claimed that delay in fund release is the major challenge they encounter in accessing credit.

Timeliness of Credit	Frequency	Percentage
Yes	51	15
No	289	85
Total	340	100

Timeliness of access to credit

Table above explains that 85% said they don't get the credit issued at the right time while the remaining 15% said they get the issued at the right time to meet the intended purpose. The issue of prompt access to credit is a very big one among the smallholder farmers.

The responses from the financial institutions (MUCOBA Bank and CRDB Bank) stated the reasons for possible delay in issuance of credits;

- They have several groups they are servicing and the credit issuance is on the basis of first come, first serve.
- It's not easy on their path carrying about physical cash, they are solving this by introduction of mobile banking which will make credit issuance easier and faster.
- Most of these farmer groups only apply for credit without submitting the required documents for processing the credits. Without these documents, their loans can't be processed

The documents are as follows;

- Audited financial statement of the group
- Tax clearance certificate
- CVs of the board members
- Information of group members
- About 25% deposit in their account

Independent Sample T-test Showing Access to Credit among Gender of Respondents

DV	Gender	N	X	SD	Df	T	P
	Male	178	1.0730	0.26093			
Access to credit					338	3.562	<.05
	Female	162	1.0000	0.0000			

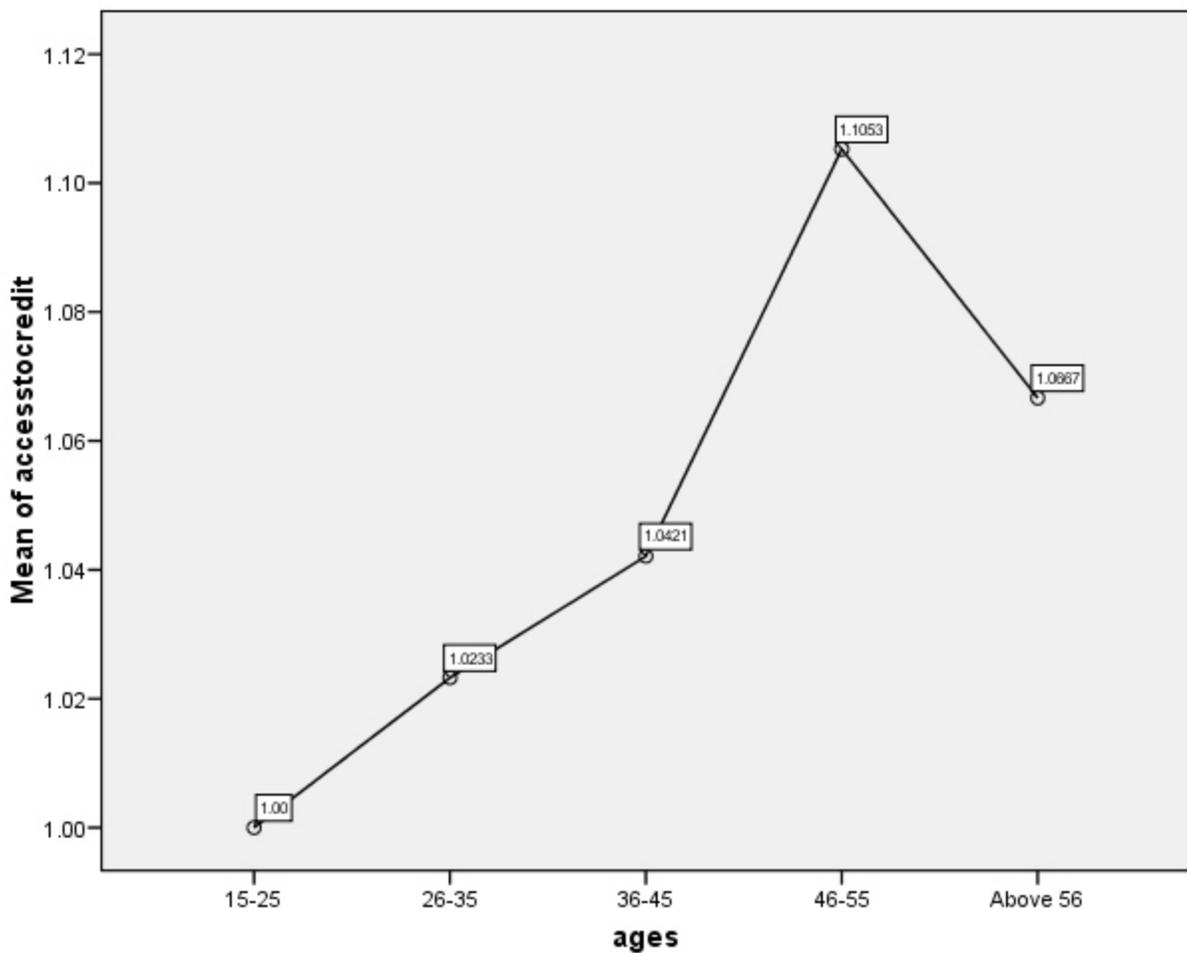
T-test showing difference in access to credit among gender of participants

Results from table above shows that there is a significant different in access to credit among gender of respondents ( $t(338) = 3.562, p < .05$ ), such that male respondents score higher on access to credit ( $X = 1.0730, S.D = 0.26093$ ) compared to female respondents ( $X = 1.0000, S.D = 0.0000$ ) which implies that access to credit is higher among male respondents than female respondents. This implies that male respondents have more access to credit compared to female respondents.

DV	Age (years)	N	Mean	SD	Sum of Squares	df	MS	F	Sig
Access to credit	15-25	48	1.0000	0.0000	0.296	4	0.074	2.027	0.090
	26-35	129	1.0233	0.15130	12.207	335	0.036		
	36-45	95	1.0421	0.20189	12.503	339			
	46-55	38	1.1053	0.31101					
	56 and above	30	1.0667	0.25371					

ONE-WAY ANOVA of Age Groups of Respondents with Access to Credit

The result in table above shows that there is no significant differences in access to credit among age groups at  $[F(4, 339) = 2.027; P > .05]$ . This implies that respondents within the age of 15-25 years with (Mean= 1.0000, SD= 0.000) do not have significant difference in access to credit compared to respondents within the age of 26-35 years with (Mean= 1.0233, SD= 0.15130) and respondents within the age of 36-45 years with (Mean= 1.0421, SD= 0.20189) and respondents within the age group of 46-55 years with (Mean= 1.1053, SD= 0.31101) and respondents that are 56 years and above with (Mean= 1.0667, SD= 0.253371) . This means that access to credit is not significantly different among the age of the respondents.



ONE-WAY ANOVA showing access to credit among age group of participants

Accessing Financial Institutions Participation

When the credit managers of MUCOBA bank and CRDB bank were asked about their perceptions as regards the adoption of warehouse receipt system by smallholder farmers, they said *warehouse receipt system is a right way for farmers to have better prices for their produce*

(MUCOBA credit manager) also, the CRDB credit manager said *it's a very beneficial product to smallholder farmers as it gives them access to financial services.*

In their report, Alderman and Shively 1996 perceived the warehouse receipt system gives farmers better access to market and financial services.

USAID 2007 reported that drought, flood, unstable market price, pest infestation are some of the risks financial institutions take to service a warehouse.

It was also established during the interview the MUCOBA credit manager said some of the risks includes; *forgery (presentation of false documents), fluctuating market price, human and natural disasters.* On the other hand, the CRDB credit manager also analyzed some of the risks: *integrity of the warehouse manager, lack of warehouse fumigation, unstable market price.*

The credit managers (MUCOBA AND CRDB) were asked how they monitor the credit given to serve its intended purpose. In their response, they said they organize financial management training for the smallholder farmers, they sometimes pay for their farming inputs instead of giving the farmers physical cash, organize capacity building to help the farmers.

In the interview, the credit managers were asked if their institutions have the capability to influence more farmer groups adopt the use of WRS for their produce. They responded by saying they don't have such influence but they engage stakeholders like warehouse licensing board members, political and spiritual leaders to talk to the farmers concerning the adoption of WRS.

Generally, the participation of the financial institutions were placed on the average because they are not fully into funding the system. This results from lack of enough funds on the part of the financial institutions.

## CONCLUSION

Smallholder farmers are faced with inadequate, unsustainable and inaccessible financial systems. The Warehouse Receipt System (WRS) emerged as a means of overcoming the above financial related problems, facilitating agricultural related activities and reducing the magnitude of poverty among the smallholder farmers.

Against all odds, the warehouse receipt system has been revealed to have positive implication on rural smallholder farmers except for little variation in the use of the WRS on the basis of gender. It was discovered in this study that the male have more access to credit than their female counterpart in the study area. Tanzania is a patriarchal state where women don't own

landed properties, they depend on men for any activities on the land. Most of these women prefer to go into petty trading and other small scaled businesses.

The case of slow adoption of WRS is largely based on improper information about the benefits and the activities of 'middlemen' it was investigated that these middlemen buys the producers with 'good offer' which the smallholder producers sees as much more better than the process of using a WRS because of the almost immediate gain.

Transportation and its cost is also part of reasons some smallholder farmers give in to the middlemen as they come with their own vehicle to load the farm produce

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