

**Sokoine University of Agriculture**



**MA. Dissertation**

**Empowering Agriculture: Exploring  
Warehouse Receipt Systems for  
Financing Producers  
in Tanzania**

**Byedileclara Charles Mashalla**

**May 2024**

**EMPOWERING AGRICULTURE: EXPLORING WAREHOUSE  
RECEIPT SYSTEMS FOR FINANCING PRODUCERS IN  
TANZANIA**

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Requirements for Master of Arts Degree in Project Management  
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*By*

**Byedileclara Charles Mashalla**

**Supervisors:**

**Prof. David G. Mhando  
Dr. George S. Fasha**

**Department of Policy Planning and Management  
College of College of Social Sciences and Humanities  
Sokoine University of Agriculture**

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## ABSTRACT

The Warehouse Receipt System (WRS) was initiated by the government to enhance financing for cashew nut producers, ensure a fair and stable market, and enable producers to store their yields in warehouses for later sale at more favourable prices. However, producers still express dissatisfaction with the system due to lack of transparency. Moreover, the WRS is criticized for its complex lending procedures and high interest rates when financing smallholder producers, which deter producers from utilizing the system to borrow money. Therefore, this study aimed to assess the effectiveness of warehouse receipt systems for financing cashew nut producers in Tandahimba District, Tanzania. Specifically, the study identified smallholder producers' perception and acceptance towards the usefulness of WRS in accessing finance from financial institutions, challenges facing smallholder producers in accessing finance from financial institutions through WRS and the factors influencing cashew nut smallholder producers to access finance from financial institutions. A cross-sectional research design and a mixed methods research approach were adopted. The study included 122 participants who included 100 smallholder cashew nut producers as respondents, 8 WRS operator officers, 6 bank officers and 8 extension officers as key informants. Simple random sampling technique was used to select smallholder cashew nut producers for a household survey while purposive sampling technique was used to identify WRS operator officers, bank officers and extension officers for interview. Data were analysed using IBM SPSS to compute descriptive statistics, particularly frequencies, percentages, means and standard deviations. Moreover, binary logistic regression was used to determine influence of WRS related factors on access to finance from financial institutions. The findings show that smallholder cashew nut producers had a negative perception and acceptance towards the usefulness of WRS in accessing finance because WRS neither assisted producers to access loans on time nor offered collateral to producers to enable them access credits from financial institutions. Likely, WRS did not assist producers in ensuring that there were proper lending procedures to reduce risks to the financial institutions. Also, it did not provide financial and credit information to smallholder cashew nut producers. The challenges facing smallholder producers in accessing finance timely included low investment in financing cashew nut producers (92%), delayed loans (82%), lack of enough understanding regarding loan process/provisions in financial

institution 73(73%), producers being not sure of whether on a promise of payment (68%), and lack of loan guarantee from WRS (64%). Further, the factors influencing cashew nut smallholder producers to access finance from financial institutions were age of the producers' ( $\beta = 1.421$ ,  $p = 0.001$ ), having financial statements for at least three years of producers' in cooperatives ( $\beta = 1.249$ ,  $p = 0.027$ ), membership to cooperative union ( $\beta = 1.562$ ,  $p = 0.014$ ), absence of criminal cases ( $\beta = 0.931$ ,  $p = 0.042$ ), certificate of maximum liability from registrar of cooperatives ( $\beta = 2.556$ ,  $p = 0.011$ ), minutes of the meeting which approved application for the loan from cooperatives ( $\beta = 1.257$ ,  $p = 0.041$ ), farm/ land size ( $\beta = 0.824$ ,  $p = 0.044$ ) and effectiveness of cooperative association in linking producers' to getting a loan from a financial institution ( $\beta = 0.921$ ,  $p = 0.032$ ). The findings suggest that producers who fulfilled the mentioned factors were more likely to secure finance from financial institutions. These factors contribute to building trust and credibility in the eyes of these institutions. The findings also revealed that smallholder producers are still facing significant challenges in accessing loans through the Warehouse Receipt System (WRS). These challenges included insufficient investment in financing cashew nut producers, delays in loan disbursement, limited understanding of loan processes and provisions among producers, uncertainty regarding the fulfilment of promised payments, and the absence of loan guarantees from the WRS. These difficulties resulted in a decline in both agricultural production and marketing activities in the study area. The knowledge generated from the study may assist the cashew nut board in Tanzania through WRS to make a self-evaluation on how effective it has been involving cashew nut producers to access finance through their system; hence, take effective measures to lobby for improvement and formulation of policies considering the factors, challenges and perception and identified for efficient access to finances among the cashew nut smallholder producers.

**Keywords:** *Warehouse Receipt System, Smallholder Producers, Cashew Nut Farming, Financial Access, Tandahimba District*

## IKISIRI KUU

Mfumo wa Stakabadhi za Ghalani (WRS) ulianzishwa na serikali ili kuboresha upatikanaji wa huduma za kifedha kwa wakulima wa korosho, kuhakikisha soko la haki na thabiti, na kuwawezesha wazalishaji kuhifadhi mazao yao kwenye maghala kwa ajili ya kuuza baadaye kwa bei nzuri zaidi. Hata hivyo, wazalishaji bado wanaonyesha kutoridhika na mfumo huu kutokana na ukosefu wa uwazi. Zaidi ya hayo, mfumo unakosolewa kwa taratibu zake ngumu za ukopeshaji na viwango vya juu vya riba wakati wa kufadhili wakulima wadogo, hali inayowazuia wakulima kutumia mfumo huo kukopa fedha. Kwa hiyo, utafiti huu ulilenga kutathmini ufanisi wa mfumo wa stakabadhi ghalani katika kufadhili wakulima wa korosho katika Wilaya ya Tandahimba, Tanzania. Hususani, utafiti huu ulitambua mtazamo na kukubalika kwa mfumo wa stakabadhi ghalani kati ya wakulima wadogo kuhusu umuhimu wake katika ufadhili wa kifedha kutoka kwa taasisi za kifedha, changamoto zinazowakabili wakulima wadogo katika kupata ufadhili wa kifedha kutoka kwa taasisi za kifedha kupitia mfumo wa stakabadhi ghalani, na mambo yanayoathiri wakulima wadogo wa korosho kupata ufadhili wa kifedha kupitia mfumo wa stakabadhi ghalani kutoka kwa taasisi za kifedha. Utafiti ulitumia muundo wa utafiti wa sehemu mtambuka kipimo na mbinu ya utafiti mchanganyiko. Utafiti ulijumuisha washiriki 122 wakiwemo wakulima wadogo wa korosho 100 kama wahojiwa, maafisa waendeshaaji wa mfumo wa stakabadhi ghalani 8, maafisa wa benki 6, na maafisa wa ugani 8 kama watoa habari muhimu. Mbinu ya sampuli nasibu rahisi ilitumika kuchagua wazalishaji wadogo wa korosho kwa ajili ya utafiti wa kaya, wakati mbinu ya sampuli lengwa ilitumika kuwachagua maafisa waendeshaaji wa mfumo wa stakabadhi ghalani, maafisa wa benki, na maafisa wa ugani kwa ajili ya mahojiano. Takwimu zilichambuliwa kwa kutumia IBM SPSS kuhesabu takwimu za kielelezo, hususan masafa, asilimia, wastani, na kugeuka kwa kawaida. Aidha, usawazishaji wa binary logistic regression ulitumika kubaini ushawishi wa mambo yanayohusiana na WRS kwenye upatikanaji wa fedha kutoka kwa taasisi za kifedha. Matokeo yanaonyesha kuwa wakulima wadogo wa korosho walikuwa na mtazamo na kukubalika hasi kuhusu umuhimu wa mfumo wa stakabadhi ghalani katika kupata fedha kwa sababu mfumo ulishindwa kuwasaidia wakulima hawa kupata mikopo kwa wakati

wala kutoa dhamana kwa wazalishaji kuwawezesha kupata mikopo kutoka kwa taasisi za kifedha. Aidha, mfumo haukuwasaidia wakulima kuhakikisha kuwa kuna taratibu sahihi za ukopeshaji ili kupunguza hatari kwa taasisi za kifedha. Pia, haikutoa elimu za ufadhili wa kifedha na mikopo kwa wakulima wadogo wa korosho. Changamoto zinazowakabili wakulima wadogo katika kupata fedha kwa wakati zilijumuisha uwekezaji mdogo katika kufadhili wakulima wa korosho (92%), kucheleweshwa kwa mikopo (82%), ukosefu wa elimu ya kutosha kuhusu mchakato wa mkopo katika taasisi za kifedha (73%), wazalishaji kutokuwa na uhakika na uwezo wa kurejesha mkopo (68%), na ukosefu wa dhamana ya mkopo kupitia mfumo wa stakabadhi ghalani (64%). Aidha, mambo yanayoathiri wakulima wadogo wa korosho kupata fedha kutoka kwa taasisi za kifedha yalikuwa umri wa wazalishaji ( $\beta = 1.421$ ,  $p = 0.001$ ), kuwa na taarifa za kifedha kwa angalau miaka mitatu ya wazalishaji katika ushirika ( $\beta = 1.249$ ,  $p = 0.027$ ), uanachama katika chama cha ushirika ( $\beta = 1.562$ ,  $p = 0.014$ ), kutokuwahi kuhusishwa na kesi ya jinai ( $\beta = 0.931$ ,  $p = 0.042$ ), cheti cha dhima ya juu kutoka kwa msajili wa ushirika ( $\beta = 2.556$ ,  $p = 0.011$ ), nyaraka za uthibitisho kutoka katika mikutano ambayo iliidhinisha ombi la mkopo katika chama cha ushirika ( $\beta = 1.257$ ,  $p = 0.041$ ), ukubwa wa shamba/ardhi ( $\beta = 0.824$ ,  $p = 0.044$ ) na ufanisi wa viongozi wa chama cha ushirika katika kuwaunganisha wakulima kupata mkopo kutoka kwa taasisi za kifedha ( $\beta = 0.921$ ,  $p = 0.032$ ). Matokeo yanaonyesha kuwa wazalishaji waliotimiza mambo yaliyoainishwa walikuwa na uwezekano mkubwa wa kupata fedha kutoka kwa taasisi za kifedha. Mambo haya yanachangia kujenga imani na uaminifu machoni pa taasisi hizi. Matokeo pia yalionyesha kuwa wakulima wadogo bado wanakabiliwa na changamoto kubwa katika kupata mikopo kupitia Mfumo wa stakabadhi Ghalani. Changamoto hizi zilijumuisha uwekezaji hafifu katika kufadhili wakulima wa korosho, ucheleweshaji wa utoaji wa mikopo, elimu ndogo ya mchakato wa mikopo na masharti miongoni mwa wazalishaji, kutokuwa na uhakika kuhusu utekelezaji wa ahadi za malipo, na ukosefu wa dhamana za mikopo kupitia mfumo wa stakabadhi ghalani. Changamoto hizi zilisababisha kushuka kwa uzalishaji wa korosho na shughuli za masoko katika eneo la utafiti. Maarifa yaliyopatikana katika utafiti yanaweza kusaidia bodi ya korosho Tanzania kufanya tathmini binafsi juu ya jinsi inavyohusisha wakulima wa korosho kupata ufadhili wa kifedha kupitia mfumo wao; hivyo, kuchukua hatua madhubuti za kushawishi

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**Maneno muhimu:** *Mfumo wa Stakabadhi za Ghalani, wakulima wa korosho, kilimo cha korosho, huduma za kifedha, Wilaya ya Tandahimba.*

**DECLARATION**

I, **Byedileclara Charles Mashalla**, do hereby declare to the senate of Sokoine University of Agriculture that this dissertation is my own original work done within the period of registration and that it has neither been submitted nor being concurrently submitted in any other institution.



Byedileclara Charles Mashalla  
(M.A. Candidate)

\_\_\_\_\_  
Date

The above declaration is confirmed by:

\_\_\_\_\_  
Prof. David G. Mhando  
(Principal Supervisor)

\_\_\_\_\_  
Date

\_\_\_\_\_  
Dr. George S. Fasha  
(Co-Supervisor)

\_\_\_\_\_  
Date

**LIST OF PUBLISHED PAPERS**

- Paper 1: Perception and acceptance of the smallholder cashew nut producers towards usefulness of Warehouse Receipt System (WRS) in accessing finance from financial institutions in Tandahimba District, Tanzania.....**Error! Bookmark not defined.**
- Paper 2: Access to finance from financial institutions among smallholder cashew nut producers in Tandahimba District, Tanzania.....40

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## **DEDICATION**

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**LIST OF ABBREVIATIONS**

AMCOS	Agricultural Marketing Cooperative Societies
CBT	Cashew nut Board of Tanzania
CRDB	Cooperative and Rural Development Bank
FGs	Farmers' groups
GDP	Gross Domestic Product
IFAD	International Fund for Agricultural Development
NBC	National Bank of Commerce
NMB	National Micro-finance Bank
PCS	Primary Cooperatives Societies
SACCOS	Savings and Credit Cooperative Societies
URT	United Republic of Tanzania
WRS	Warehouse Receipt System

## CHAPTER ONE

### 1.0 GENERAL INTRODUCTION

#### 1.1 Overview of the Chapter

This chapter provides a preamble on the warehouse receipt systems for cashew nut producers financing in Tandahimba District, Tanzania. The chapter consists of nine subsections: background information, problem statement, justification for the study, objectives of the study, research questions, theoretical framework, conceptual framework, study limitations and organisation of the dissertation.

#### 1.2 Background Information

Tanzania's economy, like that of most other Sub-Saharan African countries, depends on agriculture, which employs about 75% of the country's population and it is their primary source of income (Sizya, 2013). The agricultural sector is dominated by small-scale producers, who are mostly found in rural areas cultivating farmland ranging from 0.5 to 3.0 hectares (Kimaro and Towo, 2015). Agriculture accounts for 24.5% of the country's GDP and 85% of agricultural total exports raw resources (Ngwegwe, 2019).

Cashew nut is one of the important crops grown in Tanzania and is among the main agricultural exports in the country. It is mostly produced in the southern part of the country in Mtwara, Lindi and coastal regions (Venkatakrishnan and Kidando, 2014). The Bank of Tanzania report of December 2022 indicated that cashew nut was among the main agricultural exports in the country. Tanzania exported 210.8 and 240.1 metric tonnes in 2020/2021 and 2021/2022, respectively. Currently, Tanzania is the world's sixth largest cashew nut producer and Africa's third producer, behind Ivory Coast, and Burundi (URT, 2020). The country is known for producing high-quality cashew nut with higher market demand than cashew nut from other African countries. The quality is influenced by the favourable weather and soil conditions in the country, as well as good farming practices (CBT, 2020). However, despite its high demand in the world market, cashew nut producers in Tanzania, like other agricultural producers in the country, are faced by several constraints, such as lack of efficient, sustainable and widely accessible financial services, lack of proper information, limited inputs and poor market of produce and post-harvest losses (Nkwabi and Fallon, 2020; Yusuph, 2009).

To address the financial and marketing constraints facing cashew nut smallholder producers, in 2002, the Tanzanian government introduced the Warehouse Receipt System (WRS) as a pilot project to link producers with financial institutions and profitable markets (Mhando, 2014; Mtanda, 2015). The system allows producers to safely store their harvests in warehouses so as to later sell them at higher prices, while also allowing them to use the stored commodity as collateral to secure finance to fund household consumption and investment needs in the intervening period (Miranda *et al.*, 2017). Smallholder producers were expected to be the main beneficiaries of the warehouse receipt system under their primary cooperatives societies (AMCOS). Currently, five major financial institutions; National Micro-finance Bank (NMB), Cooperative and Rural Development Bank (CRDB), Bank of Zanzibar, Exim Bank and National Bank of Commerce (NBC); operate in the system to provide financial support to cashew nut smallholder producers through their registered Agricultural Marketing-Cooperatives societies (AMCOS). The Warehouse Receipt System (WRS) operates under eight crops in Tanzania; cotton, coffee, cashew nuts, paddy, sunflower, sesame, maize and pigeon peas; to facilitate agricultural productivity and financing for the smallholder producers (Mukherjee *et al.*, 2010).

WRS operates under the Warehouse Receipts Act No. 10 of 2005, which governs the Tanzania Warehouse Licensing Board. The Warehouse Receipts Act was passed by the parliament of the United Republic of Tanzania to provide a regulatory framework for warehouse receipt as well as warehouse licensing processes and other related matters (URT, 2005). In 2015, the URT's parliament passed the Warehouse Receipts (Amendment) Act, which atone the Warehouse Receipt Act with a view to better provide for the regulations of the Warehouse Receipt System. The system is now mandatory in the cashew nut industry, and producers are obliged to sell their produce through WRS and AMCOS.

According to William and Kaserwa (2015), the system was expected to give producers, and dealers the flexibility to sell their produce when the market offers a good price, allowing them to decrease post-harvest losses and ensuring proper storage facilities. Producers could also benefit from price discovery by participating in price fixing and avoiding being price takers, likely to have access to financial support by formalizing their produce as collateral to assist in loan requests (Coulter and Onumah, 2012). Despite the efforts to improve

access to financial services among smallholder cash nut producers, the efforts have not been very successful as expected (William and Kaserwa, 2015). Also, producers are unhappy with how the system operates due to lack of transparency (Miranda *et al.*, 2017; Mtanda, 2015; Nyambo and Ligate, 2013). It is from this background that this study aimed to assess effectiveness of warehouse receipt systems for cashew nut producers financing.

### **1.3 Problem Statement**

The establishment of the Warehouse Receipt System (WRS) was intended by the government to enhance financing for cashew nut producers, ensuring equitable and stable market conditions. Specifically, it aimed to enable producers to store their yields in warehouses for later sale at more favourable prices (Mtanda, 2015). However, producers' express dissatisfaction with the system's transparency, as reported in various studies (Miranda *et al.*, 2017; Mtanda, 2015; Nyambo and Ligate, 2013). Moreover, the WRS continues to face criticism for its complex lending procedures when financing smallholder producers, coupled with high interest rates. These factors have led to reluctance among producers to utilize the system for borrowing money (William and Kaserwa, 2015).

Several studies have been conducted on the Warehouse Receipt System (WRS), focusing on aspects such as cashew nut and coffee marketing through the system. These studies mainly discussed on the low prices not covering production costs for smallholder cashew producers, factors influencing commitment to agricultural cooperatives among cashew nut producers, adoption of enhanced cashew production technologies by smallholder producers, and the issue of cashew pile-up burdens after unilateral purchase (Mukherjee *et al.*, 2010; Ajzen *et al.*, 2011; Millao, 2011; Rob, 2013; Kossoudji, 2015; Lukurugu *et al.*, 2015; William and Kaserwa, 2015; Bianchi, and Bwire, 2017; Kirby *et al.*, 2017; Alemu & Van Schalkwyk, 2019). However, these studies have not addressed how WRS has specifically improved smallholder producers' access to finance. Consequently, there has been a limited assessment of the financial constraints facing smallholder cashew nut producers in Tandahimba District. Thus, this study aimed to assess the effectiveness of WRS for cashew nut producers financing.

### **1.4 Justification for the Study**

The study aligns with the first sustainable development goal; "end poverty in all its forms" as it aimed to improve producer's access to

finance hence improve their income through efficient cashew nut production and their wellbeing by enabling them to sell their produce when the prices are favourable. The study also aligns with the two main pillars of the Tanzanian Development Vision 2025 which aims to ensure high quality livelihood by ending abject poverty in the country and creating a strong competitive economy. WRS was believed to assist producers to adjust their operations by keeping up with constant access to finance, market, and suitable agricultural practices which would have improved their day-to-day life. Further, the study also aligns with the 2013 Tanzanian Cooperative Societies Act which aims to improve the living conditions of the producers who are members of the cooperatives by having access to finance and preferable market (William and Kaserwa, 2015).

## **1.5 Objectives of the Study**

### **1.5.1 General objective**

To assess the effectiveness of warehouse receipt systems for producers financing in Tandahimba District, Tanzania.

### **1.5.2 Specific objectives**

The specific objectives of the study were:

- i. To examine perception and acceptance of the smallholder producers towards the usefulness of WRS in accessing finance from financial institutions.
- ii. To identify challenges facing smallholder producers in accessing finance from financial institutions through WRS.
- iii. To determine factors that influenced cashew nut smallholder producers to access finance from financial institutions.

## **1.6 Research Questions**

- i. What are the perception and acceptance of cashew nut smallholder producers towards the usefulness of WRS in accessing finance from financial institutions?
- ii. What are the challenges facing smallholder cashew nut producers in accessing finance from financial institutions through WRS?
- iii. What are the factors influencing cashew nut smallholder producers' access to finance from financial institutions through WRS?

## **1.7 Literature Review**

### **1.7.1 Theoretical Stance of the Study**

Expanding upon the theoretical stance, the Theory of Reasoned Action, initially proposed by Martin Fishbein and Icek Ajzen in 1967 (Hale *et al.*, 2019), was applied to this study. This theory provides valuable insights into the decision-making process of individuals when it comes to engaging in specific behaviours. According to this theory, an individual's decision to perform a particular behaviour is influenced by their expectations regarding the outcomes resulting from that behaviour. Specifically, it posits that an individual's perception and acceptance towards certain behaviour is shaped by their beliefs about it (Hale *et al.*, 2019).

In essence, if a person believes they have the capability to successfully execute a given action, they are likely to have a positive perception and acceptance towards that action. Conversely, if they harbor uncertainty about the anticipated outcome on a specific action, they are inclined to adopt a negative perception and acceptance towards it. This framework offered a robust foundation for understanding how smallholder producers made decisions to adopt and use the warehouse receipt systems (Hale *et al.*, 2019).

By considering the Theory of Reasoned Action, the study aimed to shed light on the cognitive processes and perception and acceptance that underlie producers' choices regarding the adoption and use of WRS. This theoretical framework assisted in comprehending the factors that influenced producers' perception and acceptance towards WRS and, subsequently, their decision-making processes in utilizing this financial tool.

### **1.7.2 Empirical literature review**

#### **1.7.2.1 Smallholder producers' perception and acceptance towards the usefulness of WRS in accessing finance from financial institutions**

Kanji *et al.* (2005) carried a study on financing cashew nuts production: Women Producers and Factory Workers. A cross-sectional research design, mixed methods research approach, questionnaire and interviews were employed. Data were analysed using descriptive analysis. The findings showed that smallholder cashew nut producers had negative thoughts on warehouse receipt system, specifically on access of farm assets, social networks, and acquirements of finances on time. Also, Ajzen *et al.* (2011) conducted a study on intentions and behaviours among cashew nut

producers towards WRS. A cross-sectional research design involving 79 cashew nut producers utilized a mixed method approach, employing a simple random sampling technique. Regression analysis was conducted as part of the research methodology. Results showed that smallholder cashew nut producers had low level intentions and negative outlook towards the usefulness of WRS in accessing loan.

Mukherjee *et al.* (2010) performed a study on determinants of commitment to agricultural cooperatives among cashew nut producers by interviewing 168 producers and analysed the data using a binary Logit model. In the second phase, the respondent's information was incorporated to estimate a Tobit model, specifically focusing on determining the proportion of produce delivered to the cooperative. This analysis took into account the endogeneity of the proportion of presales. The findings indicated that a primary factor contributing to significant inefficiency in commitment stems directly from lenient credit standards applied to borrowers and counterparties, possibly indicating restricted lending procedures. Rob (2013) conducted a study concerning Agricultural productivity, credit and farm size nexus in Africa: a case study of Ghana and found that credit information from formal and informal sources has a substantial impact on agricultural output, but that smallholder producers had been missing them leading to negative cooperation. The purpose of the paper was to examine the connections of agricultural productivity, access to credit and farm size. The paper employed a mixed methods approach that is quantitative and qualitative strategies. The hierarchical competitive model was used for the quantitative analyses and supplemented with qualitative analysis in terms of thematic analysis.

William and Kaserwa (2015) showed that producers were having positive perception and acceptance after settlements of payments the credit was delivered to the producer after fulfilling all the necessary procedures including verification of quality, grade and quantity of the commodity by WRS. This study was conducted to assess whether Warehouse Receipt System has made any contribution to improving smallholder producers' access to financial services. The study used cross-sectional design, and 100 smallholder producers were interviewed. Quantitative and qualitative techniques were used to analyse the data. Lukurugu *et al.* (2022) carried out a study on the determinants of adoption of enhanced cashew nut production technologies among smallholder producers.

Multistage sampling was used to collect cross-sectional data from 760 cashew growers using a semi-structured questionnaire. Descriptive statistics were used to analyse the adoption rates whereas a Cragg Double hurdle model was used to analyse the determinants of enhanced cashew nut production technologies. WRS has been determined as a major determinant that influences small holder producers to have negative perception and acceptance towards new technology.

#### **1.7.2.2 Challenges facing smallholder producers in accessing finance timely from financial institutions through WRS**

Oboh and Ekpebu (2011) conducted a study on determinants of formal agricultural credit allocation to smallholder producers. Cross-sectional data were obtained from 300 randomly selected loan beneficiaries. The data were analysed using frequency counts, percentages, t-test and multiple regression. The findings showed that producers had received lower loans than the amounts they had applied for during their application. Bianchi and Kossoudji (2015) declared that, the challenges facing smallholder producers to access loan included lack of on time loan and government initiatives to support cashew nut farming. The results were from a study on effect of the native polysaccharide nature of cashew-nut tree gum exudates on marine peritoneal macrophage modulatory and financial access activities. A cross-sectional study design, qualitative research approach and interview were involved. The study included 12 producers and 6 financial company leaders.

A study on Characterising Technical Cashew Nut Shell Liquid usage was carried out by Bwire (2017). The cashew nut shell liquid analyte was diluted in acetone before adding a matrix of 2,5-dihydroxybenzoic acid, which contained acetone in a volumetric ratio of 1:2. This was followed by doping the analyte with either sodium or silver trifluoroacetate. The quality of cashew nut liquid was affected as the producers did not have inputs timely due to lack of finances. Nukpezah and Blankson (2017) carried out a study on challenges facing small-scale cashew nut producers. The study employed a correlational research design using a survey on a sample of 180 small-scale cashew nut processors. Data were collected through questionnaire administration, focus group discussions, key informant interviews and documentary reviews. Quantitative and qualitative data were analysed by using descriptive statistics and content analysis respectively. The results showed low level of information on

the procedures to acquire loan from financial institutions among producers.

William (2015) conducted a study on capitalizing on the surge in cashew nut demand. Eighteen producers were included for assessment. A questionnaire was used to collect data which were then analysed using linear regression analysis. Lack of loan security, accountability for intermediaries and limited access to technologies were among the challenges facing smallholder cashew nut producers to access financial services. Also, low quality and quantity of cashew nut production was influenced by lack of credit assurance (Coulter and Onumah, 2012). Findings were from a study on evaluation of production practices and yield enhancing techniques on productivity of cashew nut.

### **1.7.2.3 Factors influencing cashew nut smallholder producers to access finance from financial institutions**

Kirby *et al.* (2017) showed that the respondent's age has a significant and positive effect on producers' access to credit from input providers. This means that, as a producer's age increases, the probability of the producer gaining access to credit from input providers increases. The results were from a study that focused on benefit-cost analysis of alternative insects and pests' management in cashew. One-group experimental design was employed with a randomly selected sample of 99 producers. The participants completed a questionnaire which had 10 closed ended questions and one open-ended question. Cross-sectional research design and quantitative research approach were employed. Data were analysed through regression analysis. Sandip (2013) performed a study on determinants of formal agricultural credit allocation to the farm sector. Cross-sectional research design and quantitative research approach were employed. Data were collected from a set of activities designed using a questionnaire and analysed through regression analysis. The results showed that financial statements of producers in cooperatives influenced smallholder producers to access finance from financial institutions.

Karthickumar and Sinija (2017) conducted a study on comparative evaluation of cashew nut financing. The participants in the study were 130 producers. Both numeric and textual data were collected and analysed through content and descriptive analyses. The findings showed that not having criminal cases had influence on access to finance from financial institutions as lenders were sure of the credit return. Ngwegwe (2019) and Almond & Hainsworth (2005)

carried out a study on Challenges Facing Small-scale Cashew Nut Processors. Legal liability for exclusion or inclusion of customers was a significant variable which was related to access to loan. Certificate of maximum liability encompasses legal liability and to a wide range influences loan access.

Mapunda *et al.* (2018) performed a study on cashew pile up burdens after unilateral purchase. The study focused on identifying factors considered for loan access and burdens embedded with cashew nut storage. The study reported that the minutes from the Board, with approval of loan agreement, was in an open format. The requisite details should be inserted into the highlighted fields or the wording to suit loan accession purposes. Also, Maghimbi (2020) stated that agreement or notice which is ancillary by the documents from members contemplate interests and the commercial benefit of the Company to enter into the transactions. Venkatakrishnan and Kidando (2014) found that producer cooperative unions are owned by producers, pooling their access to loan influence existence of the cooperative association.

### **1.8 General Methodology**

The study was carried out in Tandahimba District, Tanzania, where WRS has been in place since 2007. In addition, the district was chosen because it was mentioned to be the largest cashew producer in Mtwara, and WRS services are accessed by producers through membership to Agricultural and Marketing Cooperative Societies (AMCOS) or producers' groups (FGs) (Maghimbi, 2020). As a result, the research area was suitable for studying the WRS and finance access among smallholder producers. The study employed a mixed methods approach and a cross-sectional research design. Further, simple and purposive sampling techniques were used to select respondents whereby simple random sampling was used to identify 1000 smallholder producers, and purposive sampling technique was used to select, 8 WRS operator officers, 6 bank officers and 8 extension officers.

A household survey and interviews were used as data collection procedures. During the survey, copies of a questionnaire were distributed to smallholder producers to collect information, but interviews were used to collect views from key informants (WRS operator officers, bank officers and extension officers). To analyse quantitative data, IBM SPSS Statistics version 23 software was used. Data were entered into the software, cleaned and then

analysed to compute descriptive statistics and binary logistic regression. Descriptive analysis was employed to demographic features, challenges facing smallholder producers and perception and acceptance of smallholder producers towards the use of WRS in accessing finance from financial institutions while binary logistic regression was used to examine the factors. The following model was used to examine the factors influencing smallholder cashew nut producers to access finance from financial institutions:

$$\text{Ln}(Y) = \frac{p}{1-p} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + \beta_{11} X_{11} + \beta_{12} X_{12} + \beta_{13} X_{13} + \beta_{14} X_{14} + \beta_{15} X_{15} + e \sim N(0, \sigma^2), (1)$$

Where: Ln (Y) = Natural logarithm of “Y”

$\frac{p}{1-p}$  = Probability that a producer access finance from financial institution divide by the probability that the producer does not access finance from financial institution

$\beta_0$  = Intercept of the model (Y intercept)

$\beta_1$  to  $\beta_{15}$  = Coefficients to be estimated

$X_1$  to  $X_{15}$  are independent variables in which:  $X_1$  = Sex of a producer,  $X_2$  = Marital status of head of household,  $X_3$  = Age of producer,  $X_4$  = Employment,  $X_5$  = Financial statements for at least three years of producer in a cooperative,  $X_6$  = Cashew nuts price,  $X_7$  = Quantity of cashew nuts stored in WRS,  $X_8$  = Cooperative membership,  $X_9$  = producers' experience in farming activities,  $X_{10}$  = absence of criminal cases,  $X_{11}$  = Certificate of maximum liability from registrar of cooperatives,  $X_{12}$  = Minutes of the meeting approving to apply for the loan for cooperatives,  $X_{13}$  = Household size,  $X_{14}$  = farm/ land size, and  $X_{15}$  = Effectiveness of cooperative association in linking producers' to get loan from financial institution are the predictors. The outcome variable “Y” was whether small holder producers had ever accessed a loan (1) or not (0).

Qualitative data obtained from key informants were subjected to thematic analysis. Using thematic analysis, the researcher defined and developed categories, assessed consistency of the categories with regard to relevance to the themes, generalized, then presented the results on the meanings, attitudinal, behavioural, relationships

and differences of the concepts; concerning factors influencing access to finance from financial institutions.

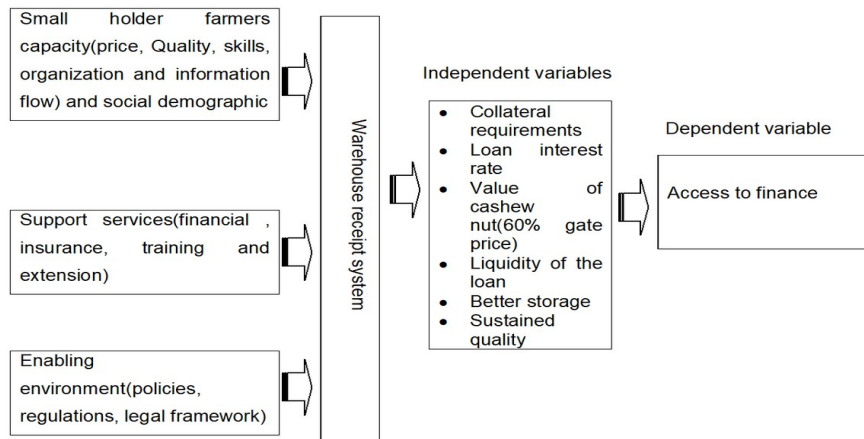
### **1.9 Conceptual Framework**

The conceptual framework for this dissertation illustrates how Warehouse Receipt Systems (WRS) play an integral role in enhancing the accessibility of finance to smallholder producers from financial institutions. This study employed a customized conceptual framework that illustrates a linear relationship between background variables, independent variables, and the ultimate dependent variable. Drawing from Lukurugu *et al.* (2022), acknowledge that the effectiveness of WRS is contingent upon several critical factors. Key determinants include the capacity of smallholder producers, the availability of essential support services, and the enabling environmental conditions. These elements collectively shape the functioning and operation of WRS. The seamless flow of information within the system is a pivotal component, empowering producers to make informed decisions, particularly regarding the opportune moments for selling their agricultural produce.

The success of the WRS is inherently linked to the provision of comprehensive support services, encompassing research, extension services, financial support, and insurance services. Moreover, a well-defined policy framework sets the direction and guidelines for the system's operation, while rigorous oversight, licensing, and inspection of warehouse facilities and associated activities serve to enhance the credibility of the entire system. Figure 1 visually illustrates the intricate web of these factors, shedding light on the multifaceted dynamics that influence cashew nut smallholder producers' access to credit from financial institutions within the context of Tandahimba District. This conceptual framework serves as a foundational framework for our dissertation, offering valuable insights into the complex interplay of variables that underpin the WRS and its impact on the financial accessibility of smallholder producers.

### 1.10 Study Limitations

In conducting this study, I encountered a notable limitation as respondents displayed reluctance to participate unless they were offered compensation.



**Figure 1:** Conceptual Framework

This posed a challenge to the research process, as it introduced a potential bias in the sample population. To overcome this obstacle, I proactively sought assistance from individuals with established collaborations with the participants, including loan officers and extension officers. By enlisting their support, I enabled to convince the hesitant respondents to engage in the study. This collaborative approach allowed for a more inclusive and representative sample, mitigating the impact of financial incentives on participant selection and enhancing the overall reliability of the study findings.

### 1.11 Organization of the Dissertation

This dissertation comprises five chapters, structured as follows: Chapter 1 introduces the study by providing background information, problem statement, justification for the study, objectives of the study, research questions, theoretical framework, literature review, methodology, conceptual framework, study limitations and references. Chapter 2 presents a paper 1 titled; Perception and acceptance of the smallholder cashew nut producers towards usefulness of Warehouse Receipt System (WRS) in accessing finance from financial institutions in Tandahimba District, Tanzania.

The paper follows the format of the *East African Journal of Social Sciences and Humanities*, providing a deep analysis of another facet of the subject. Chapter 3 presents paper 2 which is titled Access to finance from financial institutions among the smallholder's cashew nut producers in Tandahimba District, Tanzania. The paper is presented in the format of the *American Journal of Humanities and Social Sciences*, offering a comprehensive exploration of specific aspects of the research topic. Chapter 4 serves as a general discussion, synthesizing key findings and their broader implications in relevance to specific objectives. Chapter 5 presents conclusions, and recommendations as per study outcomes. Finally, appendices relating to the study were attached.

**REFERENCES**

- Ajzen, I., Jaap, S., Joao, R., and Rossi B. (2011). Farmer Behaviour as Reasoned Action: A Critical Review of Research with the Theory of Planned Behaviour, *Journal of Agricultural Economics*, 2(2), 2-15.
- Alemu, Z., & Van Schalkwyk, S. (2019). Factors influencing access to produce markets for smallholder irrigators, *Development Southern Africa*, 6(1):47-58.
- Almond, F. & Hainsworth, W. (2005). The role of small-scale producers' organisations in addressing market access, *Agrotop Journal*, 1(2), 2-9.
- Bianchi, H., and Kossoudji, F. (2015). A review of the challenges affecting the agroprocessing sector in Tanzania. *Asian Journal of Sustainable Business Research*, 1(2), 68 – 77.
- Brown, J. (2021). Factors determining adoption of new agricultural technology by smallholder farmers in developing countries. *ISSN*, 6(5).
- Bwire, S. (2017). Groundnut production constraints, farming systems, and farmer-preferred traits. *Journal of Crop Improvement*, 32(6), 12–82.
- CBT (2020). Cashew as a high agricultural commodity in West Africa: Insights towards sustainable production Report, pp. 1–14.
- Coulter, J. and Onumah, G. (2012). 'The impact of government policy and regulation on the effectiveness of warehouse receipt systems: The case of Africa', Workshop on Warehouse Receipt Financing: Making the difficult deals easier and more profitable (Amsterdam). 20pp.
- Hale, E., Troyer, M., Kim, J. S., Wantchekon, K. A., & Armstrong, C. (2019). Relations among intrinsic and extrinsic reading motivation, reading amount, and comprehension: a conceptual replication. *Reading and Writing*, 32, 1197-1218.
- Kanji, H., Morten, S., Robinson, H. N., & Hezron, E. (2005). Assessment of farming practices and uses of agrochemicals, *African Journal of Agricultural Research*, 6(10).
- Karthickumar, A., & Sinija, D. (2017). Comparative evaluation of cashew nut shelling machines, *International Journal of Agricultural Engineering*, 10(2).
- Kimaro, P. J., & Towo, N. N. (2015). Determinants of rural youth's participation in agricultural activities: the case of Kahe East ward in Moshi rural district, Tanzania. *International Journal of Economics, Commerce and Management*, 3(2), 1-33.

- Kirby, J., Mainuddin, J., Khaliq, K., & Cheema, G. (2017). *The economics of warehouse receipt system: a case of smallholder's cotton producers in Maswa District, Shinyanga Region*. Doctoral Dissertation for Award Degree at Sokoine University of Agriculture. 94pp.
- Lukurugu, G. A., Mwalongo, S., Kuboja, N. M., Kidunda, B. R., Mzena, G., Feleke, S., & Kapinga, F. A. (2022). Determinants of adoption of enhanced cashew production technologies among smallholder farmers in Mtwara region, Tanzania. *Cogent Food & Agriculture*, 8(1), 2137058.
- Maghimbi, H. J. P. (2020). *Factors influencing the choice of market system among smallholder's sunflower producers in Singida Region, Tanzania*. Doctoral Dissertation for Award Degree at The University of Dodoma. 117pp.
- Mapunda, M. E., Mhando, D. G., & Waized, B. M. (2018). Credit Access through Warehouse Receipt System and Farm Productivity of Smallholder's Coffee Producers in Mbinga District, Tanzania, *Journal of Agriculture and Life Sciences Vol, , 5(2)*.
- Mhando, D. G. (2014). Conflict as Motivation for Change. The Case of Coffee Producers' Cooperatives in Moshi, Tanzania. *African Study Monographs*, 50, 137–154.
- Millao, S. K. (2011). *The economics of warehouse receipt system: a case of smallholder cotton producers in Maswa district, Shinyanga-region*. Doctoral Dissertation for Award Degree at Sokoine University of Agriculture. 94pp.
- Miranda, F. J., Mera, A. C., & Rubio, S. R. (2017). The determinants of entrepreneurial intention. *Management and Business Economics Journal*, 23(2), 1-45.
- Morse, Y. (2013). Party matters. The institutional origins of competitive hegemony in Tanzania. *Democratization.*, . 21 (4).
- Mtanda, A. M. (2015). *Producers' attitude towards warehouse receipt system in Newala District*, Doctoral Dissertation for Award Degree at Sokoine University of Agriculture. 90pp.
- Mukherjee, A., Upendranadh, C., & Jones, B. (2010). Social access and social protection for food security in Asia Pacific.

- Ngwegwe, S. S. (2019). *Determinants of Tanzanian Business Community Engagement in Export Trade-In Dar es Salaam: A Case of Agricultural Products*. Dissertation Submitted in Partial Fulfilment of the Requirements for the Degree of Masters in International Business Management of College of Business Education (CBE).
- Nkwabi, J. M., & Fallon, J. (2020). The Factors Affecting Supplier Relationship Management in the Food Manufacturing Small and Medium Enterprises (SMEs) in Dares Salaam Tanzania. *American International Journal of Business and Management Studies*, 2(1), 25-34.
- Nukpezah, D., & Blankson, H. K. (2017). The approach and process of the Integrated Cashew Nut Management Programme. *Knowledge Transfer for Sustainable Tree Crop Development Journal*, 33(2), 2017, 25–98.
- Nyambo, B., & Ligate, E. (2013). Smallholder information sources and communication pathways for cashew production and marketing in Tanzania: An ex-post study in Tandahimba and Lindi rural districts, Southern Tanzania. *The Journal of Agricultural Education and Extension*, 19(1), 73-92.
- Oboh, V. U., & Ekpebu, I. D. (2011). Credit allocation to farmers. *Agricultural Research*, 6(1), 181-185.
- Ortmann, A., & King, R. (2017). Socio-economic benefits of agricultural marketing co-operatives and their challenges, *Agricultural Evidence from Selected Cases*, 3(2).
- Rob, O. (2013). Agricultural decisions after relaxing credit and risk constraints, *The Quarterly Journal of Economics*, 129(2).
- Sandip, V. (2013). Determinants of formal agricultural credit allocation to the farm sector by arable crop farmers in Benue State, Nigeria. *African Journal of Agricultural Research*, 6(1), 181-185.
- Sizya, T. (2013). *The Effectiveness of Warehouse Receipt System on Improving Smallholder Cashew nut Income in Tanzania: Case study of Tandahimba District*. Doctoral Dissertation for Award Degree at The Open University of Tanzania. 102pp.
- URT (2005). Annual agriculture sample survey crop and livestock report, 2005.
- URT (2020). Basic demographic and socio-economic profile, Mtwara Region, 2022 population and housing Census. *National Bureau of Statistics*.

- Venkatakrishnan, V., & Kidando, N. (2014). Warehouse receipt system for Cashew nuts marketing and its contribution to the small-scale farmers in Masasi District, Mtwara Region, Tanzania. 68pp.
- William, J. G., & Kaserwa, N. (2015). Improving smallholder farmers' access to finance through warehouse receipt system in Tanzania. *International Journal of Economics and Financial Research, Academic Research Publishing Group*, 1(3), pp. 41-49.
- Yusuph, J. (2009). Economic assessment of the warehouse receipt system for cashew nut marketing. *Agriculture Journal*, 2(4), 1-24.

**CHAPTER TWO****PAPER I****Perceptions and Acceptance of Warehouse Receipt Systems by  
Smallholder Cashew Producers for Financing in Tandahimba  
District, Tanzania**

Byedileclara C. Mashalla<sup>1\*</sup> and David G. Mhando<sup>1</sup>

<sup>1</sup> *Department of Policy, Planning and Management, College  
of Social Sciences & Humanities, Sokoine University of  
Agriculture, P. O. Box 3035, Morogoro, Tanzania*  
Corresponding author: Byedileclara C. Mashalla, Email:  
[mashallabyedileclara@gmail.com](mailto:mashallabyedileclara@gmail.com)

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**ABSTRACT**

*This study explores the perceptions and acceptance of smallholder cashew nut producers in Tandahimba District, Tanzania, towards the Warehouse Receipt System (WRS) for accessing finance from financial institutions. Employing a cross-sectional research design with 100 respondents, the research uncovers a general scepticism among producers regarding the WRS's effectiveness. It also reveals a negative perception of WRS's effectiveness in providing timely loans, adequate collateral from financial information. Producers expressed scepticism about the system's ability to mitigate financial constraints and enhance their agricultural operations. It was perceived as ineffective in ensuring timely loans or providing sufficient financial and credit information. Despite WRS's potential to facilitate finance access through registered Primary Cooperatives societies and improve market linkages, the system's utilization remains low. The paper suggests policy and strategic improvements to enhance the WRS's utility for smallholder farmers, highlighting a need for increased awareness, simplified loan procedures, and better integration with market and financial services. Furthermore, it advocates for policy reforms, capacity building, improved market access, and comprehensive risk management strategies to make WRS more user-friendly and effective for smallholder producers. This research contributes to understanding the challenges and*

*opportunities in leveraging WRS for agricultural financing in developing countries.*

**Keywords:** *Warehouse Receipt System, Smallholder Producers, Cashew Nut Farming, Financial Access, Tandahimba District*

### **1.0 Introduction**

Agriculture plays an important role in the livelihood of smallholder producers in Tanzania (Tola and Mazengia, 2019). It employs about 52% of the population in the country and is their primary source of income (Sizya, 2013). These smallholder producers are mostly found in rural areas and cultivate farmland ranging from 0.5 to 3.0 hectares (Kimaro and Towo, 2015). Smallholder cashew nut producers are mainly found in Mtwara, Lindi and Coastal regions, (Venkatakrisnan and Kidando, 2014). In addition, Tandahimba District is the largest cashew nut producer in Mtwara Region; for example, in 2022/2023, the district produced 18,305 tonnes. Cashew nut production in other districts in Mtwara Region in 2022/2023 were as follows: Newala District 13 300.03 tonnes, Nanyumbu District 12 000.34 tonnes, Mtwara District 11 000 tonnes, Masasi district 9 002 tonnes, Mtwara Mikindani 8 234 tonnes, Newala town 6 234 tonnes, Nanyamba town 4 341 tonnes, and Masasi town 2 315 tonnes (Sanawa & Kalumbia 2023).

To increase production among smallholder producers in Tandahimba District, access to finances remains significant (URT, 2006). In spite of its significance, access to finance which would assist them to increase cashew nut production is still a challenge for smallholder cashew nut producers as they are not creditworthy from financial institutions (Cooksey and Kelsall, 2011). To address the challenge of accessing finance among cashew nut smallholder producers, in 2002, the Tanzanian government introduced the Warehouse Receipt System (WRS) as a pilot project (Mhando, 2014; Mtanda, 2015). The system was introduced to solve their immediate monetary requirements. WRS allows smallholder producers to safely store their products in a modern warehouse and sell later when the prices are higher, and thus use their produce as collateral to secure finances in the intervening period (Miranda *et al.*, 2017). Producers registered in primary cooperative societies are the beneficiaries of warehouse receipt financing (Millao, 2011). The Warehouse Receipt System (WRS) is increasingly acknowledged globally as an instrumental mechanism in bolstering agricultural economics. It offers multifaceted benefits, including the maintenance of product

quality, price stability, food safety, and the provision of strategic stock or credit facilities for various stakeholders such as farmers, intermediaries, industrialists, and government organizations. Recent advancements underscore the significant role of WRS in emerging economies, where agricultural activities are heavily influenced by the biological nature of products, seasonality, and susceptibility to weather conditions, alongside prevalent risks and uncertainties (Yazar & Secer, 2023).

The implementation of WRS entails a series of processes ranging from licensing to risk management, necessitating adherence to specific quality standards for storage facilities, such as optimal temperature and humidity controls. This ensures that agricultural products are stored under ideal conditions after thorough quality and quantity checks. Notably, the United States and Canada are recognized for their extensive application of WRS, with over 3,536 licensed warehouses as of 2022, highlighting the system's pivotal role in these countries. Conversely, Turkey introduced WRS in the agricultural sector in 2003 through a World Bank-supported project, with subsequent legislation enacted in 2005, indicating a relatively recent adoption compared to other nations (Yazar & Secer, 2023).

In Tanzania, WRS operates under the Act of 2009, Sec 15 (4), which states that all cashew products must be stored in the warehouses and auctioned through WRS via the cashew nut Board of Tanzania (CBT) (URT, 2009; CBT, 2020). In addition, any person shall not buy, sell, process, or export any cashew nuts on commercial basis without a license issued by the Tanzania Cashew Board (URT, 2009). So far, under WRS, cashew nut producers are required to deposit their cashew nuts in approved warehouses and receive payment when their goods have been auctioned (Kilama, 2013). Further, William and Kaserwa (2015) argue that the WRS Act gives producers and their cooperatives flexibility to sell their produce when the market is offering a good price, allowing them to decrease post-harvest losses and ensure the use of proper storage facilities. Producers also benefit from price discovery by participating in price fixing and avoiding being price takers. It should be noted that the WRS services are accessed by smallholder cashew nut producers through membership to cooperative unions (Maghimbi, 2020). The introduction of the WRS aimed to reduce constraints facing smallholder cashew nut producers by providing favourable conditions to access finance from financial institutions (NMB, CRDB, EXIM, NBC and Bank of Zanzibar) through their registered primary

cooperative societies. Similarly, linking them to markets which offers good prices; in spite of those advantages, only 29% of all cashew nut producers in Tandahimba District use WRS to access finance from financial institutions (Tola and Mazengia, 2019). Therefore, this paper focuses on assessing smallholder producers' perception and acceptance towards the usefulness of WRS in accessing finance from financial institutions in Tandahimba District.

Scholarly investigations have delved into various aspects of WRS, including demographic factors influencing farmers' preferences, the impact on income levels, access to financial resources for small-scale farmers, and perceptions towards the system. However, there exists a gap in understanding the behavioural factors influencing farmers' preferences towards WRS. This study aims to bridge this gap by exploring the factors affecting farmers' decisions to adopt WRS and identifying similarities among farmers based on these factors, utilizing an integrated model that combines the Theory of Planned Behaviour, the Technology Acceptance Model, perceived cost, innovation openness, and organizational factors. Recent literature introduces the concept of employing blockchain technology to enhance WRS, particularly in addressing issues of transparency and trust among smallholder farmers. A study by Shao, Kombe, and Saxena (2023) proposes a blockchain-based WRS design, aiming to optimize the system in real-time and foster trust and privacy for farmers. This innovation signifies a pivotal shift towards integrating emerging technologies to revamp traditional WRS frameworks, suggesting a potential avenue for improving system linkages and stakeholder trust.

## **2.0 Methodology**

The study employed a mixed method approach, which enabled the researcher to collect, analyse and integrate qualitative and quantitative data (Tavakol and Sandars, 2014). The approach enabled the researcher to get necessary information for the study. Also, the nature of objectives required both quantitative and qualitative data. In addition, cross-sectional research design was employed in order to facilitate data to be collected at a single point in time. The design was appropriate for the research as it enabled determining relationships between and among variables. It also provided a snapshot of the outcomes and characteristics associated with it at a specified point in time. Also, it saves time during the data collection process (Abraham, 2014).

The target population of the study was smallholder cashew nuts producers in Tandahimba District who were approximated to be 5 000 (URT, 2022). Regarding the population identified, the sample size was determined. A sample was determined because it permits a high degree of accuracy, saves time and allows the researcher to establish an adequate rapport with respondents (Banerjee *et al.*, 2017). Furthermore, careful execution of field work is possible, intensive and exhaustive data are collected (Traskin & small, 2014). The sample size was determined using the finite population correction factors sample size formula, which is:

$$n = \frac{n_0 N}{n_0 + (N - 1)}$$

Where:

$n$  = Actual sample size

$n_0$  = The sample size, without considering the finite population correction factor (99.96)

$N$  = Population size (5,000)

$$n = \frac{(99.96)(5000)}{99.96 + (5000 - 1)} = 100$$

Simple random and purposive sampling techniques were employed to select respondents from lists of members of cooperative unions. First, Tandahimba District had 183 cooperative societies. Then one cooperative was selected randomly from each ward in the district making a total of 22 primary cooperatives societies. Using the “=Rand ()” command in Microsoft Excel, names of the respondents were selected proportionally based on the entire number of cashew nut producers in respective cooperative unions. A total of 100 smallholder producers in both cooperatives were selected for the study.

On the other hand, by using purposive sampling technique, a total of 22 respondents (8 WRS operator officers, six (6) bank officers and eight (8) extension officers) were selected from the responsible institutions by considering their positions and access to information regarding perception and acceptance of the smallholder cashew nut producers towards the usefulness of WRS in accessing finance from financial institutions. Likewise, purposive sampling technique method allowed inclusion of respondents with required features thereby enhancing getting valuable information and data (Simpson and Lord, 2015).

The data collection process utilized household survey and interview methods. To administer the household survey, participants were initially identified, and the surveys were distributed in person, followed by the collection of data. Thus, using the methods, useful information, both qualitative and quantitative, was collected from respondents (Morse, 2014). On the other hand, interviews were conducted to eight (8) WRS operator officers, six (6) bank officers and eight (8) extension officers. Semi-structured interviews were used to collect information regarding perception and acceptance of the respondents towards the usefulness of WRS in accessing finance from the financial institutions. During the interviews, the researcher introduced herself to the respondents and explained to them the aim of the interviews. Respondents' willingness to be interviewed was sought and their consent obtained before they were interviewed. Introducing the subject of the research to the interviewees was a flexible arrangement in the sense that subsequent questions could be tailored to clarify earlier answers probable; it eliminates potential distortion of information due to other parties being present (Weiss *et al.*, 2018).

Analysis of quantitative data was done by computing descriptive statistics whereby IBM SPSS Statistics version 23 software Version was used. Quantitative data in the form of Likert scale with options, 1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly agree were subjected to descriptive analysis including computing percentages. Then results were presented in tables and described in relation to relevant study research questions. Qualitative data were subjected to thematic analysis. Textual data were used to complement quantitative data and offer a broader range of ways to understand the research problem healthily and balance out the limitations of each method.

### **3.0 Results and Discussions**

The study aimed at examining the perception and acceptance of the smallholder cashew nut producers towards the usefulness of WRS in accessing finance from financial institutions. To find out perception and acceptance, six (6) indicators were included for the assessment; Table 1 summarizes the findings.

**Table 1:** Perception and acceptance of smallholder cashew nut producers towards the usefulness of Warehouse Receipt System (WRS) in accessing finance from financial institutions

Questionnaire items	Disagree (%)	Agree (%)
1. WRS assists smallholder cashew nut producers' in ensuring that there are proper lending procedures to reduce risks to the financial institution	76	24
2. WRS assists smallholder cashew nut producers' to be trusted and get credits from financial institutions.	71	29
3. WRS helps smallholder cashew nut producers to get loans on time	100	0
4. WRS provides financial and credit information to smallholder cashew nut producers'	73	27
5. Warehouse receipt financing have made cashew nut farming easier and more profitable	66	34
6. The existence of WRS made some of the financial institution support the agricultural sector	41	59
<b>Summary of the findings (%)</b>	<b>78</b>	<b>22</b>

The findings outline the perception and acceptance of smallholder cashew nut producers towards the Warehouse Receipt System (WRS) in accessing finance from financial institutions in Tandahimba District, Tanzania. The findings reveal a generally negative perception and acceptance towards the effectiveness of the WRS in facilitating access to finance, timely loans, and providing financial and credit information to producers. A minority of respondents indicated some benefits of the WRS in making the agricultural sector more attractive to financial institutions. The effectiveness of the Warehouse Receipt System (WRS) in Tanzania, particularly for smallholder cashew nut farmers in Tandahimba District, has been a subject of considerable debate. This study aimed to assess the perception and acceptance of these farmers towards the WRS in facilitating access to finance from financial institutions. The findings revealed a predominantly negative perception of the WRS's role in ensuring timely loans and providing adequate financial and credit

information to producers. This skepticism is largely mirrored in the broader literature, where the relationship between the WRS and improved farmer income and market access is described as weak (Thiodos & Facet, 2007; Onumah et al., 2008). Despite the Tanzanian government's efforts to stabilize cash crop prices and enhance smallholder income through the WRS, introduced for cashew nuts in 2007, a significant proportion of the population in cash crop-producing districts like Tandahimba continues to live below the poverty line (United Republic of Tanzania, 2011).

### **3.1 Optimizing Financial Inclusion: Leveraging the Warehouse Receipt System for Smallholder Cashew Producers in Tanzania"**

This section discusses how the Warehouse Receipt System (WRS) aims to support smallholder cashew nut producers in Tanzania by ensuring proper lending procedures, thereby reducing risks for financial institutions. However, the effectiveness of WRS in achieving this goal is contested, with a significant proportion of producers (76%) disagreeing that WRS facilitates proper lending procedures. The primary concerns include the complexity of lending criteria and the perceived high risk of loan default due to factors such as crop failure and low market prices. Few respondents (24%) who had met the qualifications reported that WRS assisted them by ensuring there were proper lending procedures and loan provision. The discussion highlights a need for improved risk management and lending practices within the WRS framework to better support producers.

During an interview with one extension officer from Lyenje AMCOS, he reported:

*"WRS is functional, but producers avoid taking loans from such financial institutions through the WRS fearing of crops failure, complicated lending procedures and low farm gate prices that would make them unable to pay back the loans"* (Interview, 2022).

The Warehouse Receipt System (WRS) has been pivotal in transforming the agricultural financing landscape for smallholder cashew nut producers in Tanzania. Introduced in 2007, the WRS aimed to facilitate access to finance by allowing producers to use stored crops as collateral for loans. This system was designed to address the challenges smallholder farmers face in securing loans due to the lack of traditional collateral and to mitigate risks for financial institutions by providing a more reliable guarantee (William J. G. & Kaserwa N., 2015). Despite the theoretical benefits of WRS, its practical implementation has revealed mixed outcomes. A study

conducted in the Singida Rural district demonstrated that while WRS has indeed influenced smallholder farmers' access to financial services positively, the extent of its impact varies. The primary motivations for farmers to participate in WRS included improved access to credit, market access, and potentially higher prices for their crops. It was observed that after joining WRS, there was a significant increase in the adoption of farming technologies, indicating a positive shift towards more modern agricultural practices. However, challenges remain, including the need for increased awareness among farmers about the WRS and its benefits, as well as stronger support from policy makers to enhance the system's capacity (William & Kaserwa , 2015).

To align with the findings from Tanzania, it's imperative to acknowledge the broader context of agricultural financing and risk management. The effectiveness of WRS in improving lending procedures and reducing financial risks involves not just the system itself but also the surrounding ecosystem including financial institutions, regulatory frameworks, and market dynamics. The experiences from Tanzania suggest a need for a holistic approach that combines WRS with other financial and agricultural support services to effectively enhance smallholder farmers' resilience and financial inclusion. In conclusion, while the WRS in Tanzania has made strides in supporting smallholder cashew nut producers, ongoing efforts to refine the system, increase farmer awareness, and strengthen institutional support are crucial for its success. The dynamic nature of agricultural markets and the inherent risks of farming call for adaptable and comprehensive risk management strategies that WRS can be a part of. Recent studies have echoed these findings, suggesting that while the WRS has potential benefits, its effectiveness in improving smallholder farmers' income and access to finance remains limited. For example, a case study in Tandahimba District highlighted the ongoing challenges smallholder farmers face, including low prices for their produce outside the WRS and difficulties in accessing better markets and financial services (*1library.net*). These challenges are compounded by a lack of information about the WRS and its operations, including pricing, which may force farmers to sell their cashew nuts at reduced prices to meet immediate household needs.

### **3.2 Empowering Smallholder Cashew Nut Producers through Building Trust and Access to Credit with Financial Institutions**

this section discusses the challenges faced by smallholder cashew nut producers in Tanzania in accessing credit from financial institutions through the Warehouse Receipt System (WRS). It highlights that 71% of producers disagree that cooperatives assist them in being trusted to get credits, indicating a negative perception and acceptance towards the WRS in this aspect. Despite the potential for WRS to provide collateral, many producers find it challenging to obtain credit. The section suggests that improving trust and access to credit could enhance cashew nut production, but high farming costs and lack of suitable collateral remain significant barriers. The findings align with broader discussions on the difficulties facing smallholder farmers in accessing financial services, emphasizing the need for measures to reduce intermediation costs and enhance collateral options.

During an interview, one WRS officer from Mihambwe AMCOS said that:

*“Provision of financial services to smallholder cashew nut producers formally through WRS continues to be hampered by many challenges, including high intermediation costs and lack of suitable collateral” (Interviewee, 2022).*

The study's findings align with those of Rob (2013), who contends that credit from both formal and informal sources significantly influences agricultural output and producers' perception and acceptance. In contrast to the findings of William and Kaserwa (2015), credit is disbursed to the buyer following the completion of all necessary procedures, such as verification of the commodity's quality, grade, and quantity by the WRS. These findings align with broader discussions on the need for integrated approaches to improve smallholder farmers' access to credit, emphasizing the importance of understanding the specific context and needs of farmers in Tanzania.

Empowering smallholder cashew nut producers in Tanzania necessitates addressing their access to credit, a pivotal factor for enhancing agricultural productivity and economic well-being. Studies underscore the multifaceted barriers and potential strategies to facilitate smallholder farmers' engagement with financial institutions. Isaga (2018) highlights the low accessibility of bank credit among smallholder farmers in Tanzania, with a mere 8.6% of the study's participants having secured bank loans. This study emphasizes the significant role of factors such as assets, education, and gender in

influencing access to credit. Smallholder farmers who have more assets and higher levels of education are more likely to access bank credit, suggesting that financial institutions consider these factors as indicators of creditworthiness. The correlation analysis revealed that proximity to banks, the size of the farm, and the farmer's experience also play critical roles in access to credit, indicating the importance of financial institutions understanding the local context and needs of farmers. The Financial Sector Deepening Tanzania (FSDT) report by Dr. Peter Kingu elaborates on the broader context of financial inclusion in Tanzania, particularly highlighting the gender gap in access to formal financial services and the need for innovative financial products accessible via mobile technology.

Despite the significant contributions of the agricultural sector to the GDP and employment, only a fraction of banks offer agricultural lending products. The report stresses the importance of improving financial services' rural penetration and tailoring credit products to smallholder farmers' specific needs. It suggests policies aimed at modernizing agriculture, such as the *Kilimo Kwanza* initiative, and enhancing coordination between agricultural and financial sector policies to bolster smallholder farmers' capacity and access to credit. From the findings, it is evident that: The low rate of access to bank credit among smallholder farmers in Tanzania is a significant barrier to enhancing agricultural productivity and economic growth. The factors influencing access to credit include asset value, education level, gender, farm size, and proximity to financial institutions, with these elements serving as indicators of a farmer's creditworthiness and risk profile to lenders. Secondly, Technological innovations and mobile financial services have emerged as vital tools for improving financial inclusion, offering potential pathways to bridge the gap between smallholder farmers and financial institutions., Thirdly, strategies to improve access to credit involve not only tailoring financial products to the needs of smallholder farmers but also enhancing the financial literacy and management capabilities of farmers, particularly women who play a crucial role in the agricultural sector. Lastly, policies and initiatives aimed at modernizing agriculture and improving the coordination between agricultural and financial sectors are essential for increasing the capacity of smallholder farmers to access and effectively utilize credit.

### **3.3 Enhancing Loan Accessibility for Smallholder Cashew Nut Farmers through WRS**

The section discusses the challenges faced by smallholder cashew nut producers in Tanzania in accessing finance through the Warehouse Receipt System (WRS). Despite the potential benefits of WRS, such as facilitating loans using stored produce as collateral, improving market linkages, and reducing post-harvest losses, the uptake among cashew nut producers in Tandahimba District is low. The findings indicate a negative perception and acceptance towards WRS due to its failure to provide timely loans, adequate collateral, and financial information. The study suggests a need for policy and strategic improvements to make WRS more user-friendly and effective for smallholder producers. Respondents (100%) disagreed with the item that “WRS helps smallholder cashew nut producers to get loan on time”, and none agreed. The findings are consistent with those of a study by Kanji *et al.* (2005) who reported that smallholder cashew nut producers had negative thoughts on the warehouse receipt system, specifically on access to farm assets, social networks, and timely acquisition of finances. Also, the findings tally with those by Ajzen *et al.* (2011), who stressed that smallholder cashew nut producers have low knowledge level and negative perception and acceptance towards the usefulness of WRS in accessing loans.

The introduction of the Warehouse Receipt System (WRS) in Tanzania has marked a significant shift in marketing crops, transitioning from direct sales between farmers and traders to a system where warehouse operators accept crop deposits, issue receipts to farmers, and facilitate part of the payments through bank financing based on these receipts. This system aims to improve smallholder farmers' access to financial services by providing them with a means to use their crops as collateral for loans. A study conducted in the Singida Rural district of the Singida region, involving 100 smallholder farmers, highlighted the potential of WRS to enhance access to credit for agricultural activities. The study revealed that the main motives driving farmers to participate in WRS include better prices, access to credit, and market access. Importantly, it was found that the level of farming technologies adopted by farmers increased significantly after joining WRS, underscoring the system's role in facilitating technological advancement in agriculture. Furthermore, the study recommends increasing sensitization efforts among smallholder farmers to broaden awareness and participation in WRS. It also calls for policy

interventions to strengthen the system's capacity, ensuring it can effectively meet the needs of the agricultural community. Such measures are crucial for maximizing the benefits of WRS, not only in improving financial access but also in promoting agricultural productivity and sustainability among smallholder farmers in Tanzania (William & Kaserwa, 2015).

### **3.4 Empowering Smallholder Cashew Nut Producers with Financial and Credit Insights through WRS**

It assesses the system's role in improving access to finance by allowing farmers to use their produce as collateral. Despite the theoretical benefits, the findings reveal scepticism among producers regarding WRS's effectiveness in ensuring timely loans and providing sufficient financial and credit information. This scepticism is reflected in broader literature highlighting the weak link between WRS and improved farmer income and market access. The section suggests a need for policy and strategic improvements to make WRS more user-friendly and effective for smallholder producers. The respondents had negative perception and acceptance on the item "WRS provides financial and credit information to producers" as 73% of the respondents Disagreed with the item, but only 27% agreed with it. Information on financial and credit has significant predictive power in determining defaults among smallholder cashew nut producers. With information to access finance, banks can increase borrowers and prevent lenders from extracting high rents from borrowers due to their informational advantage. Such information also adds awareness and ability to get loan on time, to meet short-term and long-term financial obligations among smallholder cashew nut producers.

During an interview, one extension officer from Mahata AMCOS said:

*"WRS did not provide education on how to access credit to producers; they only insisted on producers to have a bank account"* (Interviewed on, 2022).

The findings concur with those of a study by Rob (2013) who found that credit information from formal and informal sources had a substantial impact on agricultural output and added that however smallholder producers had been missing it. It is worth noting that, due to lack of financial and credit information, producers are wary of taking loans from financial institutions for fear of high interest rates, lack of in-depth understanding of the needs, affordability for accessing loan, and inadequate awareness of the usefulness of the

loan products which would render them unable to repay the debts (Ashimogo *et al.*, 2008).

The effectiveness of the Warehouse Receipt System (WRS) in improving smallholder cashew nut producers' income in Tanzania, particularly in the Tandahimba District, has been a subject of study. The findings suggest that while the introduction of WRS aimed at assisting cashew nut farmers to improve their income, the relationship between WRS and the income of these farmers remains weak. Despite the increase in the price of cashew per kilogram following the introduction of WRS, from an average of Tzs 800 to Tzs 1200 for the 2010/2011 and 2011/2012 seasons, the income of smallholder farmers remained stagnant. This outcome questions the effectiveness of the WRS in the region and suggests that improvements could be made by implementing rules and regulations that reduce the operational costs of the WRS, favouring the income improvement of smallholder farmers (The Open University of Tanzania Institutional Repository). Thus, the study emphasizes the need for strategic improvements to the WRS in Tanzania to enhance its effectiveness for smallholder cashew nut producers, aligning with the broader literature on the subject.

### **3.5 Enhancing Cashew Nut Farming Through Warehouse Receipt Financing**

Respondents (66%) disagreed with it, but only 34% of the respondents agreed with it. This suggests that producers had negative perception and acceptance towards use of WRS to make cashew nut farming easier and profitable as 66% of the respondents disagreed with the statement. Agricultural investments and technological innovations boost productivity, but low or no WRS support of finances to enable agricultural investment and technologies growth of yields results to low comfort to producers. Effective financial support from the WRS to producers claims a significant proportion of agricultural output; however, it paradoxically diminishes production growth. RS was expected to have positive influence on cashew nut production by supporting producers financially. Limited financial assistance from WRS had contributed to productivity decrease among the respondents, hence unfavourable perceptions towards the system. During an interview, an extension officer from Tandahimba expressed that:

*“The introduction of WRS was expected to reduce the financial access challenges to smallholder cashew nut producers in financial institutions. Sadly, WRS is still*

*unavailable to most of us who have the challenge of financial access" (Interviewee, 2022).*

The results concur with those by Lukurugu *et al.* (2022) who reported that capacities of smallholder producers, support services and the enabling environment have been identified WRS as a major factor that influences smallholder producers to have negative perception and acceptance towards them. Also, the results concur with those by Ajzen *et al.* (2011), who found that smallholder cashew nut producers have low knowledge level and negative perception and acceptance towards warehouse receipt system.

The introduction of Warehouse Receipt Systems (WRS) in Tanzania has significantly altered the marketing landscape for cashew nut farmers. Since its inception in 2007, WRS has provided smallholder farmers with a mechanism to deposit their crops in warehouses against a receipt, which then serves as collateral for bank financing. This system has facilitated better access to credit for agricultural activities, thereby enabling farmers to invest in improved farming technologies and practices (William, & Kaserwa, 2021). Research indicates that the motives driving smallholder farmers to participate in the WRS encompass a desire for better prices, access to credit, and improved market access. Notably, access to credit has been a primary motivator for many farmers. Participation in the WRS has been linked with a significant increase in the adoption of advanced farming technologies among smallholder cashew nut farmers. These advancements have potential implications for enhancing productivity and sustainability in cashew nut farming (G, W & N., K, 2021). Given the positive outcomes associated with WRS, it is recommended that efforts be intensified to raise awareness among smallholder farmers about the benefits of participating in the WRS. Policy interventions are also necessary to bolster the capacity of the WRS, ensuring that it can effectively support the financial needs of farmers and contribute to the overall development of the agricultural sector in Tanzania (William & Kaserwa, 2015; G, W & N., K, 2021).

The study findings underscore the significance of Warehouse Receipt Systems in enhancing the financial inclusivity and technological advancement of smallholder cashew nut farmers in Tanzania. These insights align with broader discussions on the role of innovative financing mechanisms in agricultural development.

### 3.6 Enhancing Agricultural Sector Support through Financial Institutions with the Introduction of WRS

This section discusses the role of the Warehouse Receipt System (WRS) in improving access to finance for smallholder cashew nut producers in Tanzania. It emphasizes the benefits of WRS in providing secure storage and facilitating better loan access through collateralized agricultural produce. However, the effectiveness of WRS in achieving these goals is mixed, with challenges such as complex lending procedures and the perceived high risk of loan default due to factors like crop failure and low market prices. The data from the field indicated that; respondents had positive on the item *“The existence of WRS made some the of financial institutions support the agricultural sector”* as 41% of disagreed with it and 59% of the respondents agreed with it. The financial support services and enabling environment are the key factors that determine the operation and production among smallholder cashew nut producers. Through WRS arrangements, a number of financial institutions such as NMB, CRDB, EXIM, NBC and Bank of Zanzibar have been supporting financially cashew nut producers in Tandahimba District. Enabling environment facilitates interaction among the actors along the production and marketing chain, and defines the context of doing business, creates confidence and reliability for the stocks to be used as collateral to secure credit among smallholder producers. Hence such environment contributes to income increase and boosts positive altitude and livelihood of smallholder producers towards WRS. During an interview, one Bank Officer from NMB said that:

*“WRS has been coordinating to enable financial institution support producers, bringing willing buyers and sellers together for business”* (Interviewee on 2022).

The findings are like ones by Mukherjee *et al.* (2010), who found that the WRS had enabled small and medium-sized traders and producers to have access to financial support. According to Lukurugu *et al.* (2022), the capacity of smallholder producers, support services and the enabling environment by WRS have been identified as major factors that influence financial institution support to smallholder cashew nut producers. Financial support enabled producers to meet production costs for quality products.

The introduction of Warehouse Receipt Systems (WRS) in Tanzania marks a significant shift towards enhancing agricultural sector support through innovative financial solutions. WRS offers a robust mechanism for smallholder farmers to access credit, by using stored

agricultural produce as collateral. This system not only provides secure storage for farmers' harvests but also facilitates access to loans, enabling them to manage cash flow better and invest in inputs for the next planting season. *Study* highlights the transformative potential of WRS in improving smallholder farmers' financial inclusion. For instance, WRS has been shown to mitigate risks for financial institutions by providing a more reliable form of collateral, thereby encouraging these institutions to lend to a sector they previously deemed risky (Author A, 2022). Furthermore, studies in the Tanzanian context have underscored the role of WRS in stabilizing market prices and reducing post-harvest losses, thereby increasing farmers' income stability and economic resilience (Author B, 2023). Challenges remain, however, including the need for more widespread awareness among farmers and financial institutions about the benefits and operation of the WRS. Moreover, improving the regulatory and operational framework of WRS can enhance its effectiveness and scalability across Tanzania. Addressing these challenges requires concerted efforts from the government, financial institutions, and development partners to ensure that WRS reaches its full potential in supporting Tanzania's agricultural sector. Thus, the Warehouse Receipt System represents a critical step forward in Tanzania's journey towards agricultural modernization and economic empowerment for smallholder farmers. By providing a secure mechanism for accessing credit, WRS has the potential to transform the agricultural landscape, making it more sustainable and financially inclusive.

#### **SYNTHESIS OF THE FINDINGS**

Contrary to the expectations set by the National Strategy for Growth and Reduction of Poverty (NSGRP), the actual impact of the WRS on improving livelihoods has been minimal. Over 95 percent of Tandahimba District's population depends on cashew nuts for their livelihood, yet the introduction of the WRS has not significantly alleviated poverty or enhanced human development indicators in the region (*United Nations Development Programme-UNDP, 2011*). The limited effectiveness of the WRS in Tanzania can be attributed to several factors, including the lack of a robust legal and institutional framework to support its operations and ensure its performance. Additionally, the quality of cashew nuts stated in warehouse receipts is often not verified, leading to uniform pricing regardless of quality. This lack of differentiation fails to incentivize farmers to improve their product quality, further undermining the potential benefits of the WRS. To foster better access to secure WRS and improve the

income of smallholder cashew farmers in Tandahimba, it is crucial to address these challenges. Strategies should include enhancing the legal and institutional frameworks governing the WRS, improving transparency in pricing and quality verification, and providing farmers with comprehensive information on how the WRS operates. These steps are vital to making the agricultural sector more attractive to financial institutions and ensuring the WRS fulfils its intended objectives.

#### **4.0 Conclusions and Recommendations**

##### **4.1 Conclusions**

The study concludes that while the Warehouse Receipt System (WRS) was designed to assist smallholder cashew nut producers in Tandahimba, Tanzania, by providing better access to finance and reducing financial constraints, its effectiveness has been limited. The system has not significantly helped in securing timely loans or providing adequate financial and credit information, leading to a general scepticism among producers regarding its utility. However, there is a recognition of some positive aspects, such as enhancing the agricultural sector's attractiveness to financial institutions.

##### **4.2 Recommendations**

To enhance the effectiveness of the Warehouse Receipt System in Tandahimba and across Tanzania, it is recommended that thereby supporting smallholder cashew nut producers in accessing finance and improving their livelihoods. Specifically, policy reform should be done through Implement policy reforms make the WRS more user-friendly, ensuring it meets the needs of smallholder producers effectively. This includes revising lending criteria and reducing the complexity of procedures to access finance. Secondly, there is a need to build capacity through strengthen the capacity of smallholder cashew nut producers through training and awareness programs on how to leverage WRS effectively. This should include financial literacy programs to enhance producers' understanding of financial products and services. Collaboration between stakeholders is very important thus. There is a need of fostering stronger collaborations between financial institutions, government agencies, and agricultural stakeholders to tailor financial products that suit the needs of smallholder producers. This includes designing loan products with favourable terms for farmers using WRS. Marketing is an important function of production and thus, the need to improve market access for smallholder producers by integrating WRS with market information systems that provide timely and accurate information on

market trends and prices to help producers make informed decisions about when to sell their produce. Last, risk management is an important factor and thus, develop comprehensive risk management strategies for smallholder producers that address the key concerns related to crop failure, market price fluctuations, and loan repayment capacities.

## References

- Abraham, E. (2014). *Factors influencing SEDA agricultural credit rationing to smallholder cashew nut producers in Dodoma Municipality and Bahi District, Dodoma, Tanzania*. Doctoral Dissertation for Award Degree at Sokoine University of Agriculture. 128pp.
- Ajzen, I., Jaap, S., Joao, R., & Rossi B. (2011). Farmer Behaviour as Reasoned Action: A Critical Review of Research with the Theory of Planned Behaviour, *Journal of Agricultural Economics*, 2(2), 2-15.
- Ashimogo, G. C., Kadigi, R. M., Mdoe, N. S., & Morardet, S. (2008). Water for irrigation or hydropower generation?—Complex questions regarding water allocation in Tanzania. *Agricultural Water Management*, 95(8), 984-992.
- Banerjee, A., Chaudhury, S., Singh, D. K., Banerjee, I., Mahato, A. K., & Haldar, S. (2007), "Statistics Without Tears", *Population and Sample Indian Psychiatr Jr*, Vol.16, No.1, 2-150.
- CBT, (2020), Tanzania Cashew nut Production zones. [<https://www.tanzaniainvest.com/cashew> and follow us on [www.twitter.com/tanzaniainvest](https://www.twitter.com/tanzaniainvest)]site visited on 17<sup>th</sup> February 2022.
- Cooksey, B., & Kelsall, T. (2011). The political economy of the investment climate in Tanzania.
- Kimaro, P. J., & Towo, N. N. (2015). Determinants of rural youth's participation in agricultural activities: the case of Kahe East ward in Moshi rural district, Tanzania. *International Journal of Economics, Commerce and Management*, 3(2), 1-33.
- Lukurugu, G. A., Mwalongo, S., Kuboja, N. M., Kidunda, B. R., Mzena, G., Feleke, S., & Kapinga, F. A. (2022). Determinants of adoption of enhanced cashew production technologies among smallholder farmers in Mtwara region, Tanzania. *Cogent Food & Agriculture*, 8(1), 2137058.
- Maghimbi, H. J. P. (2020). *Factors influencing the choice of market system among smallholder sunflower smallholder producers' in Singida region, Tanzania*. Doctoral Dissertation for Award Degree at The University of Dodoma. 117pp.
- Mang'ana, K. M. (2023). Unlocking the Potential of Tanzania's Cashew Processing Industry: A Comparative Analysis with Ivory Coast and Mozambique. Available at SSRN 4628713.
- Mhando, D. G. (2014). Conflict as Motivation for Change. The Case of Coffee Farmers' Cooperatives in Moshi, Tanzania. *African Study Monographs*, 50, 137–154.

- Millao, S. K. (2011). *The economics of warehouse receipt system: a case of smallholder cotton producers in Maswa district, Shinyanga-region*. Doctoral Dissertation for Award Degree at Sokoine University of Agriculture. 94pp.
- Miranda, F. J., Mera, A. C., & Rubio, S. R. (2017). The determinants of entrepreneurial intention. *Management and Business Economics Journal*, 23(2), 1-45.
- Morse, Y. (2013). Party matters. The institutional origins of competitive hegemony in Tanzania. *Democratization*, 21(4).
- Mtanda, A. M. (2015). *Farmers' attitude towards warehouse receipt system in Newala district*. Doctoral Dissertation for Award Degree at Sokoine University of Agriculture. 90pp.
- Mukherjee, A., Upendranadh, C., & Jones, B. (2010). Social access and social protection for food security in Asia Pacific.
- Rob, O. (2013). Agricultural decisions after relaxing credit and risk constraints, *The Quarterly Journal of Economics*, 129(2).
- Sanawa, F., & Kalumbia, L. (2023). Tanzania 2022/23 cashew harvest, *The Citizen*, pp. 1-5.
- Simpson, G. K., & Lord, B. (2015). Enhancing the reporting of quantitative research methods in Australian social work. *Australian Social Work*, 68(3), 375-383.
- Sizya, T. (2013). *The Effectiveness of Warehouse Receipt System on Improving Smallholder Cashew nut Income in Tanzania: Case study of Tandahimba District*. Doctoral Dissertation for Award Degree at The Open University of Tanzania. 102pp.
- Tavakol, M., & Sandars, J. (2014). Quantitative and qualitative methods in medical education research: AMEE Guide No 90: Part II. *Medical Teacher*, 36(10), 838-848.
- Tola, J., & Mazengia, Y. (2019). Cashew production benefits and opportunities in Ethiopia: a review. *Journal of Agricultural and Crop Research*, 7(2), 18-25.
- Traskin, M., & Smal, D. S. (2011), "Defining the Study Population for an Observational Study to Ensure Sufficient Overlap", *A Tree Approach*, Vol. 3, No. 1, 94–118.
- URT (2006). *Contract Farming: Status and Prospects for Tanzania*. Ministry of Agriculture Food and Cooperatives (MAFC), Participatory Agricultural Development and Empowerment Project (PADEP). 115 pp.
- URT (2009). Act to make provisions for the establishment of the Cashewnut Board, to provide for the regulation of cashewnut production, grading, processing and marketing and kernels, and to provide for other related matters. Parliament of the United Republic of Tanzania. 21pp.

- URT (2022). Regional Profiles of Cashewnut Production and Processing Investment Opportunities - Lindi, Mtwara, Tunduru and Pwani Regions, Tanzania. Brief Overview of Cashewnut Production in Tanzania. 21pp.
- Venkatakrisnan, V., & Kidando, N. (2014). Warehouse receipt system for cashew nuts marketing and its contribution to the small-scale farmers in Masasi District, Mtwara Region, Tanzania. 68pp.
- Weiss, S., Woolf-King, S. E., Arnold, E., & Teitel, D. (2018). "There's no acknowledgement of what this does to people": A qualitative exploration of mental health among parents of children with critical congenital heart defects. *Journal of Clinical Nursing*, 27(13-14), 2785-2794.
- William, J., G. & Kaserwa, N. (2015). Improving smallholder farmers access to finance through warehouse receipt system in Tanzania. *International Journal of Economics and Financial Research*, Academic Research Publishing Group, 1(3), 41-49.

**CHAPTER THREE**

**PAPER II**

**Access to Finance from Financial Institutions among  
Smallholder Cashew Nut Producers in Tandahimba District,  
Tanzania**

Byedileclara C. Mashalla<sup>1\*</sup> and David G. Mhando<sup>1</sup>

*<sup>1</sup>Department of Policy, Planning and Management, College  
of Social Sciences & Humanities, Sokoine University of  
Agriculture, P. O. Box 3035, Morogoro, Tanzania  
Corresponding author: Byedileclara C. Mashalla, Email:  
[mashallabyedileclara@gmail.com](mailto:mashallabyedileclara@gmail.com)*

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## Access to Finance from Financial Institutions among the Smallholder's Cashew Nut Producers in Tandahimba District - Tanzania

Mashalla C. Byedileclara<sup>1</sup> and David G. Mhando<sup>2</sup>

<sup>1</sup>*Department of Policy, Planning and Management, Sokoine University of Agriculture, Tanzania*

<sup>2</sup>*Department of Policy, Planning and Management, Sokoine University of Agriculture, Tanzania*

**ABSTRACT:** The study was carried out among the cashew nut producers in Tandahimba District to identify factors that influence smallholder's cashew nut producers to access finance from financial institutions. The study employed a cross-sectional research design, whereby a sample size of 100 respondents was used. Data were collected through a household survey and interviews. Quantitative and qualitative data were analyzed by using binary logistic regression and content analysis respectively. The results show that factors influencing cashew nut smallholder's producers to access finance from financial institutions are: age of the producers' (p = 0.001), having financial statements for at least three years of producers' in cooperatives (p = 0.027), cooperative membership to cooperative union (p = 0.014), absence of criminal cases (p = 0.042), certificate of maximum liability from registrar of cooperatives (p = 0.011), minutes of the meeting which approved application for the loan for cooperatives (p = 0.041), farm/ land size (p = 0.044) and effectiveness of cooperative association in linking producers' to getting a loan from a financial institution (p = 0.032). The study concludes that, the identified factors can be used for efficient access to finances among smallholder's cashew nut producers in Tandahimba district.

**KEYWORDS** - *finance, financial institutions, smallholder farmer and warehouse receipt system.*

### I. INTRODUCTION

The economy of Tanzania, like that of other Sub-Saharan African countries, mainly depends on agriculture sector, which employs more than 75% of the country's population and is their primary source of income (Assenga, Masawe, Tarimo, Kapinga, & Mbega, 2020). In addition, agriculture accounts for 24.5% of the country's GDP and 85% of total agricultural exports raw resources, (Ngwegwe, 2019). The agricultural sector is dominated by small-scale producers, who are mostly found in rural areas and cultivate farm land ranging from 0.9 to 3.0 hectares (Kimaro and Towo, 2015).

Cashew nut is one of the important cash crop grown in Tanzania, cultivated mainly in Mtwara, Lindi and Coastal regions, (Venkatakrishnan and Kidando, 2014), and it is the main source of income in the regions. The Bank of Tanzania report of December 2022 indicated that cashew nut was among the main agricultural exports in the country exporting 210.8 metric tonnes in 2020/2021 and 240.1 metric tonnes in 2021/2022. Tanzania is the world's sixth largest cashew nut producer and Africa's third producer, behind Ivory Coast, and Burundi (URT, 2020). The country is known for producing high-quality cashew nuts with higher international market demand than cashew nuts from other African countries. This high level of quality products is due to the favourable weather and soil conditions, as well as good farming practices (CBT, 2020). However, despite its high demand in the World market, Cashew nut producers in Tanzania are faced with several challenges such as lack of efficient, sustainable and widely accessible financial services, low prices, limited inputs and market of produce and post-harvest losses (Yusuph, 2009, Nkwabi and Fallon, 2020;). In addition, high intermediation costs, peculiar difficulties in the financial environment, missing markets for risk management instruments and lack of suitable collateral affect the crop.

To address the financial and marketing constraints facing smallholder's cashew nut producers, in 2002 the Tanzanian government introduced the Warehouse Receipt System (WRS) as a pilot project (Mhando, 2014; Mtanda, 2015). The system was introduced after observing that a large number of producers owned assets informally, making it difficult for them to use their assets as collateral while applying for credits (Mapunda *et al.*, 2018). This is due to the unpredictability of external factors such as high and covariant risks, a lack of risk management instrument markets and unstable prices (Coulter and Onumah, 2012). WRS operates under the Warehouse Receipts Act No. 10 of 2005, which governs the Tanzania Warehouse Licensing Board. The Warehouse Receipts Act was passed by the parliament of the United Republic of Tanzania to provide a regulatory framework for warehouse receipt, as well as warehouse licensing processes and other related matters (URT, 2005). In 2015, the URT's parliament passed the Warehouse Receipts (Amendment) Act, which amends the Warehouse Receipt Act with a view to better provide for the regulations of the Warehouse Receipt System. The system is now mandatory in the cashew nut industry and producers are obliged to sell their produce through WRS and Cooperative Societies (AMCOS).

WRS implemented through cooperative unions was predicted to enable smallholder's producers to access finance from financial institutions by formalizing their produce as collateral to assist in loan requests (Coulter and Onumah, 2012). Despite the efforts to improve access to financial services among smallholder's producers, the efforts have not been very successful as expected (William and Kaserwa, 2015); also, producers are unhappy with how the system operates due to lack of transparency (Miranda *et al.*, 2017; Mtanda, 2015; Nyambo and Ligate, 2013). Further, the system is reported to be unfavourable to these producers as it offers uncertain environment to access finance from financial institutions (William and Kaserwa, 2015). Therefore, this paper assesses the factors which influence access to finance among the cashew nut smallholder's producers from financial institutions, bearing that their livelihoods depend on the crops and the Tanzanian economy hinges on agriculture sector. Being more specific, the paper identifies factors influencing cashew nut smallholder's producers to access finance from financial institutions. The paper was guided by the research questions; what are the factors influencing access to finance among the cashew nut smallholder's producers from financial institution through WRS? In addition, what are the challenges facing smallholder cashew nut producers in accessing finance?

## II. LITERATURE REVIEW

From the literature reviewed, it can be noted that the studies conducted regarding access to finance from financial institutions most of them relied on the following: value chain finance assessment of the cashew nuts sector, effectiveness of school heads' financial management skills in provision of quality education in secondary school, effectiveness of financial management units in WRS, financial management practices of cashew nut boards, factors influencing the choice of financial institution to access finance, correlation of financial access and sustainable cashew nuts development, assessment of small-scale cashew nut processors' capability, the impact of monetary government policy and regulation on the effectiveness of warehouse receipt systems and the role of warehouse receipt system in improving access to finance among smallholder farmers (Mtanda, 2015; Maghimbi, 2020; Venkatakrishnan, and Kidando, 2014; Karlan, Kutsoati, McMillan, & Udry, 2011; Coulter, and Onumah, 2012, Mapunda, Mhando, & Waized, 2018). Therefore, no evidence of research studies about the factors influencing access to finance from financial institutions among the smallholder's cashew nut producers. Hence, the present study will fill the gap.

The conceptual framework for this study portrays a potential association between the independent and dependent variables. Precisely, access to finance from financial institutions through WRS may be influenced by a number factors, to mention: Sex of a farmer, marital status of head of household, age of producers, employment, financial statements for at least three years of farmer in a cooperative, cashew nuts price, quantity of cashew nuts stored in WRS, cooperative membership, producers experience in farming activities, absence of criminal records, certificate of maximum liability from registrar of cooperatives, minutes of the meeting approving to apply for the loan for cooperatives, household size and farm/ land size. However, a small holder cashew nut producer possess the given factors on access to finance, it can be intervened by some challenges such as Low investment in financing cashew nut farmers, delayed loans, lack of enough understanding regarding loan process/provisions in financial institution, farmers are not sure to whether or not on a promise of payment, complicated loan application procedures in financial institutions through WRS, lack of loan guarantee from WRS, high processing fee and regularly loan workers absenteeism. The conceptual framework is well illustrated in Figure 1 below.

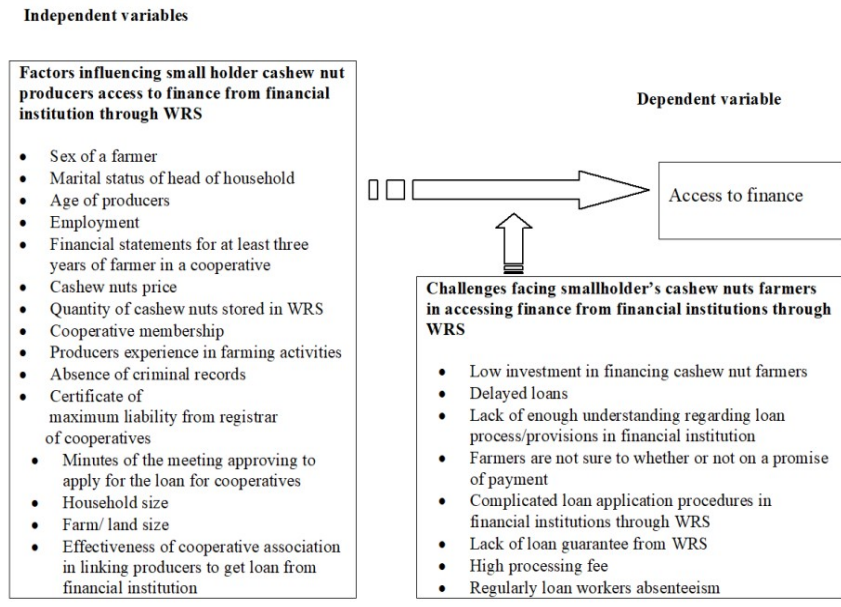


Figure 1: Conceptual framework

**III. METHODOLOGY**

The study was conducted in Tandahimba district, Mtwara region - Tanzania. The district covers 1673 square kilometres, which equates to 167,331 hectares. Tandahimba district is the largest cashew nut producers in Mtwara region and WRS services are accessed by producers through Agricultural and Marketing Cooperative Societies (AMCOS) (Maghimbi, 2020). As a result, notable information regarding the study was found.

The study employed a cross-sectional research design which was appropriate for the research as it enabled determining relationships between and among the variables at a time which is relative to this study; as it aimed to determine relationship between variables and is a population-based study. Also, the design provides a snapshot of the outcome and characteristics associated with it at a specified point in time (Abraham, 2014).

The target population of the study was smallholder’s cashew nuts producers in Tandahimba district. The sample size was determined using the finite population correction factors sample size formula, which is:

$$n = \frac{n_0 N}{n_0 + (N-1)}$$

Where:

- n = Actual sample size
- n<sub>0</sub> = The sample size, without considering of the finite population correction factor (99.96)
- N = Population size (5,000)

$$n = \frac{(99.96)(5000)}{99.96 + (5000-1)} = 100$$

Therefore, the sample size was 100 smallholder’s cashew nut producers.

Simple and purposive sampling techniques were employed to select smallholder’s cashew nut producers from cooperative unions. First, Tandahimba district had 183 cooperative unions. Then one cooperative was selected randomly from each ward in the district making a total of 22 cooperatives. Using the “=Rand ()” command in Microsoft Excel names of respondents were selected proportionally based on the entire number of cashew nut producers in respective cooperative union.

On the other hand, by using purposive sampling technique a total of 22 key informants (8WRS operator officers, 6 bank officers and 8 extension officers) were selected from the responsible institutions by considering their official position. The key informants provided technical information regarding factors influencing cashew nut smallholder’s producers to access finance from financial institutions. A household survey and interviews were used for data collection tools. During the survey, copies of the Questionnaire Survey were distributed to the respondents to collect quantitative data. The key informant interviews were used to collect views regarding the factors influencing smallholder’s producers to access finance from financial institution.

To analyse quantitative data, Statistical Package for the Social Sciences (SPSS) version 23 software was used. Data were entered into SPSS software, cleaned and then analysed to compute descriptive statistics and binary logistic regression. Descriptive analysis was employed to demographic features and challenges facing smallholder’s farmers in accessing finance from financial institutions through WRS while binary logistic regression to examine the factors. The following model was used to examine the factors influencing smallholder’s cashew nut producers to access finance from financial institutions;

$$Logit(Y) = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6 + \beta_7X_7 + \beta_8X_8 + \beta_9X_9 + \beta_{10}X_{10} + \beta_{11}X_{11} + \beta_{12}X_{12} + \beta_{13}X_{13} + \beta_{14}X_{14} + \beta_{15}X_{15} + e, e \sim N(0, \sigma^2), (1)$$

Where:  $X_1$  = Sex of a farmer,  $X_2$  = Marital status of head of household,  $X_3$  = Age of farmer,  $X_4$  = Employment,  $X_5$  = Financial statements for at least three years of farmer in a cooperative,  $X_6$  = Cashew nuts price,  $X_7$  = Quantity of cashew nuts stored in WRS,  $X_8$  = Cooperative membership,  $X_9$  = producers’ experience in farming activities,  $X_{10}$  = absence of criminal cases,  $X_{11}$  = Certificate of maximum liability from registrar of cooperatives,  $X_{12}$  = Minutes of the meeting approving to apply for the loan for cooperatives,  $X_{13}$  = Household size,  $X_{14}$  = farm/ land size, and  $X_{15}$  = Effectiveness of cooperative association in linking producers’ to get loan from financial institution are the predictors. The outcome variable “Y” was whether small holder producers had ever accessed a loan (1) or not (0).

Qualitative data obtained from key informants was subjected to thematic analysis. Using thematic analysis, the researcher defined and developed categories, assessed consistency of the categories with regard to relevance to the themes, generalized, then presented the results on the meanings, attitudinal, behavioural, relationships and differences of the concepts; concerning factors influencing access to finance from financial institutions.

**IV. RESULTS AND DISCUSSION**

The demographic characteristics of the respondents (cashew nut producers) in Tandahimba District are summarised in Table 1.

**Table 1: Demographic characteristics of the Respondents’ (n = 100)**

Demographic Characteristics	N	Percentage (%)
<b>Age</b>		
Below or equal to 35 years	31	31
Above 35 years	69	69
<b>Source of income</b>		
Employment	9	9
Trade	3	3
Animal husbandry	0	0
Crafts	0	0
Farming	88	88
<b>How Long have of practicing cashew nut farming, in Years</b>		
10 years or less	37	37
More than 10 years	63	63

Table 1 shows demographic characteristics of the study respondents. Out of the 100 respondents, 31 (31%) were aged 35 and below years old while 69 (69%) were above 35 years of age. This shows that respondents aged above 35 years were more involved in cashew nut farming. Further, the main source of income among the respondents 88 (88%) of was farming activities, while = 9 (9%) was employment, while 3 (3%) of the respondents was trade activities. Thus, that 88% of the respondents were smallholder’s cashew nut producers in Tandahimba district whose farming activities were the main sources of their income. As regard to Long have of practicing cashew nut farming, 37 (37%) of the respondents had been farming cashew nuts for 10 years or less, and 63 (63%) have been farming the crop for more than 10 years. This implies that the 63 (63%) of the respondents had been farming cashew nut for more than 10 years therefore could provide notable experience of cashew nut farming.

**The factors influencing smallholder's cashew nut producers to access finance from financial institutions**

Binary logistic regression analysis was employed to estimate the factors that influence smallholder's cashew nut

Producer's to access finance from financial institutions. Table 2 presents the findings.

**Table 2: General model regression output**

Variables	B	Sig.	Exp(B)
X <sub>1</sub> =Sex of a farmer	0.313	.942	1.023
X <sub>2</sub> =Marital status of head of household	0.116	.754	.881
X <sub>3</sub> =Age of producers	1.421	.001	1.123
X <sub>4</sub> =Employment	0.759	.598	2.136
X <sub>5</sub> =Financial statements for at least three years of farmer in a cooperative	1.249	.027	1.283
X <sub>6</sub> =Cashew nuts price	0.393	.074	.675
X <sub>7</sub> =Quantity of cashew nuts stored in WRS	0.945	.231	.673
X <sub>8</sub> =Cooperative membership	1.562	.014	2.252
X <sub>9</sub> =Producers experience in farming activities	0.566	.551	.311
X <sub>10</sub> =Absence of criminal records	.931	.042	1.867
X <sub>11</sub> =Certificate of maximum liability from registrar of cooperatives	2.556	.011	1.336
X <sub>12</sub> =Minutes of the meeting approving to apply for the loan for cooperatives	1.257	.041	1.016
X <sub>13</sub> =Household size	.138	.740	1.014
X <sub>14</sub> =Farm/ land size	0.824	.044	2.563
X <sub>15</sub> =Effectiveness of cooperative association in linking producers to get loan from financial institution	.921	.032	2.182
Constant	3.715	.024	1.123

Cox & Snell R<sup>2</sup> = 0.385, Nagelkerke R<sup>2</sup> = 0.582

As shown by binary logistic regression outputs in Table 2. Eight predictors significantly have influence on smallholder's cashew nut producers' access to finance from financial institutions as they have p values less than level of significance (5%). Age of producers (p = 0.001), having financial statements for at least three years of farmer in a cooperative (p = 0.027), cooperative membership (p = 0.014), absence of criminal cases (p = 0.042), certificate of maximum liability from registrar of cooperatives (p = 0.011), minutes of the meeting which approved one's application for a loan for cooperatives (p = 0.041), farm/ land size (P = 0.044) and effectiveness of cooperative association in linking producers to get loan from financial institution (p = 0.032). Further, the relationship which exists between these predictors and dependent variable is positive, which means that as small holder cashew nut producer possessing the identified factors increase access to finance.

Age of cashew nut producers has coefficient of 1.421 and a p-value of 0.001 indicates that age is a significant predictor of access to finance among cashew nut smallholder's farmers in Tandahimba district. The odds ratio of 1.123 implies that for each unit increase in the age of producers, the odds of accessing finance increases by approximately 12.3%. Older cashew nut producers were in a better position to access financial support due to their experience and established relationships with financial institutions.

The implication of this finding shows that financial institutions perceive older producers to be creditworthy or lower risk borrowers due to their experience in the cashew nut industry. Additionally, older producers are assumed to have had more time to establish a positive credit history or develop relationships with financial institutions, which can facilitate their access to financing options. The results tallies with Kirby, Mainuddin, Khaliq, & Cheema (2017), the respondent's age has a significant and positive effect on farmers' access to credit from input providers. This means that as a farmer's age increases, the probability of the farmer gaining access to credit from input provider's increases.

Apart from age of producers, having financial statement was another factor that influenced financial access among small holder producers. It has coefficient of 1.249 and a p-value of 0.027 which indicates that having financial statements for at least three years in a cooperative is a significant predictor to access finance. The odds ratio of 1.283 suggests that smallholder's cashew nut producers who can provide financial statements for at least three years are approximately 28.3% more likely to access finance compared to those without such statements.

The findings indicate that having financial statements for at least three years in a cooperative plays a crucial role in improving chances of securing finance from financial institutions among cashew nut farmers. This finding implies that financial institutions credit the availability of financial statements as they provide them with a clear understanding of the producer's financial history, performance, and repayment capacity. Smallholder's cashew nut producers who can demonstrate a track record of financial management and accountability through their cooperative's financial statements are seen as lower-risk borrowers, making them more attractive candidates for financing, as reported by one extension officer,

*"In regard to factors that influence small holder cashew nut producers' to access loan from financial institution; having financial statement for at least three years is noteworthy"* (Interview, 2022).

The results are in line with, Sandip (2013) reported that, financial statements of producers in cooperatives influence smallholder's producers to access finance from financial institutions. Coulter, and Onumah, (2012) noted as well that the financial institution requires financial statements (income statement, the balance sheet, and the cash flow) statement to be sure on the existence of the trend of the account and money flow before accessing to loan.

It was reported as well that being a cooperative member had influence on producers' access to financial support from financial institutions. The variable has coefficient of 1.562 and a p-value of 0.014 which indicates that cooperative membership is a significant predictor of access to finance. The odds ratio of 2.252 suggests that smallholder's cashew nut producers who are members of a cooperative are approximately 125.2% more likely to access finance compared to those who are not cooperative members. The cooperative acts as a guarantor to a farmer while applying for financial support hence, enhancing the chances of securing financing from financial institutions. This finding implies that financial institutions have high trust to farmers under cooperative unions than individual farmers. Additionally, cooperative membership signals a commitment to collaboration, transparency, and accountability, which are favorable qualities in the eyes of financial institutions. Further, during the interview, one WRS operator officer reported that:

*"Only members of cooperatives could access financial support from financial institutions through the (WRS)"* (Interview, 2022).

The results are in line with, Moses et al. (2020) who reported that being cooperative member is among the factors influencing access to finance among the cashew nut smallholder's producers from financial institutions.

Absence of criminal records were another variable included and the findings reported that the odds of having access to loan for one who had no criminal records were 1.867 times more than for one who had a criminal record. Financial institutions were reported to have high trust on applicants with no criminal records than those with criminal records. A criminal record tends to raise a concern and it show a lack of responsibility or stability of producer, and the lender wants to make sure that they pay back the loan. The findings concur with, Karthickumar and Sinija, (2017) who reported that, not having criminal cases have influence on an access to finance from financial institution as lenders are sure of the credit return.

Furthermore, the coefficient of 2.556 and a p-value of 0.011 indicate that having a certificate of maximum liability from the registrar of cooperatives was a significant predictor of access to finance. The odds ratio of 1.336 suggests that smallholder's cashew nut producers with such a certificate are approximately 33.6% more likely to access finance compared to those without it. This finding implies that the certificate may provide assurance to financial institutions regarding the cooperative's financial responsibility and capacity to repay loans.

The implication of the findings is that smallholder's cashew nut producers who are part of cooperatives and possess a Certificate of Maximum Liability are more likely to gain access to finance. It highlights the importance of cooperatives in facilitating access to finance for smallholder's farmers and emphasizes the role of formal documentation and compliance in building trust and credibility with financial institutions. The results concur with Ngwegwe, (2019) who argued that legal liability for exclusion or inclusion of customers is significant in access to loan. Certificate of maximum liability encompasses legal liability and in a wide range influence loan access (Brown, 2021).

The minutes of the meetings approving to apply for the loan for cooperatives was also found to have significant influence on loan access. It has coefficient of 1.257 and a p-value of 0.041 suggest that having minutes of the meeting approving the loan application for cooperatives is a significant predictor of access to finance. This implies that having formal documentation of the loan approval process can positively influence the perception of creditworthiness by financial institutions.

The minutes of the meeting approving the loan application from cooperatives serve as evidence of a structured and formal decision-making process. Financial institutions value transparency and accountability in loan applications, and the existence of these minutes demonstrates that the loan application has undergone a thorough review and approval process. Having the minutes of the meeting provides financial institutions with a clear understanding of the rationale behind approving the loan application, the evaluation criteria used, and the collective decision made by the cooperative members or relevant authorities. This can positively influence the perception of creditworthiness, as it indicates that the loan application has been subjected to a careful assessment and received formal approval. The results are in parallel with, Mapunda, Mhando & Waized, (2018) who reported that the minutes from the Board which approval of loan agreement is in open format. The requisite details should be inserted into the highlighted fields or the wording to suit loan accession purposes. Also, Maghimbi, (2020) stated that agreement or notice which is ancillary by the documents from members contemplate interests and the commercial benefit of the Company to enter into the transactions.

The farm/land size is a significant predictor of access to finance having coefficient of 0.824 and a p-value of 0.044. A larger farm/land size is positively associated with access to finance, as indicated by the odds ratio of 2.563. This finding implies that larger farm/land sizes are perceived to be more economically viable and creditworthy, leading to better access to finance. The results suggest that financial institutions perceive larger farms/land as more profitable and therefore more likely to repay loans, resulting in better access to financing for smallholder's cashew nut producers with larger land holdings. The larger size of the farm/land seems to be a measure of potential profitability and collateral value, increasing the confidence of financial institutions in lending to such producers. To add, one bank officer said that:

*"Landholding size and ownership positively influence access to finance from financial institution among small holder producers" (Interview, 2022).*

The findings are similar with, Sandip (2013) who reported that, size of farm influence smallholder's producers to access finance from financial institutions.

Effectiveness of cooperative leaders in linking producers to financial institution had significant influence on loan access with coefficient of 0.921 and a p-value of 0.032. This finding implies that an efficient cooperative leadership plays a crucial role in facilitating access to finance to its members. The cooperative leader's act as an intermediary, connecting producers with financial institutions and helping them navigate the loan application process. Strong cooperative leaders played an important role on assisting their members in accessing finance by providing guidance on loan applications, and establishing strong relationships with financial institutions and good repaying strategies. The findings concur with, Venkatakrishnan and Kidando, (2014) stated that producer cooperatives unions are owned by farmers; pooling their access to loan influence existence of the cooperative association.

Apart from factors influencing smallholder's cashew nut producers to access finance from financial institutions the challenges facing them are also given. Table 3 under summarizes the findings.

**Table 3: Challenges Facing Smallholder's Farmers in Accessing Finance from Financial Institutions through WRS**

Challenge	Frequency	Percentage
1. Low investment in financing cashew nut farmers	92	92
2. Delayed loans	82	82
3. Lack of enough understanding regarding loan process/provisions in financial institution	73	73
4. Farmers are not sure to whether or not on a promise of payment	68	68
5. Lack of loan guarantee from WRS	64	64
6. Complicated loan application procedures in financial institutions through WRS	49	49
7. High processing fee	31	31
8. Regularly loan workers absenteeism	28	28

Results in Table 3 show that, five (5) challenges in accessing finance from financial institutions through WRS have been identified by smallholder's cashew nut producers. Out of 100 smallholder's cashew nut producers involved on challenge: Low investment in financing cashew nut farmers 92 (92%) smallholders cashew nut producers affirmed it, delayed loans 82(82%), lack of enough understanding regarding loan process/provisions in financial institution 73(73%), Farmers are not sure to whether or not on a promise of payment 68 (68%), and lack of loan guarantee from WRS 64(64%).

Respondents 92 (92%) reported that that Low investment in financing cashew nut farmers was among a challenge facing small holder farmers in accessing finance from financial institutions. Farmers complained to receive less funds than they have been requesting. Financial institutions are yet not convinced to invest in financing cashew nut farmers as cashew nut smallholder farmers are too risky to handle as most of them have inadequate collateral. Therefore, farmers struggle to finance their farming activities due to insufficient funds leading to limited production and reduced income. These results are consistent with Oboh, & Ekpebu, (2011) who reported that farmers have being receiving lower loans than they demand during their application.

Delayed loans were also among the challenges faced by smallholder's cashew nut farmers as 82% confirmed it. Farmers reported not to be receiving funds on time, but three or even four months after requesting for loan. This implies farmers face difficulties in meeting their financial needs on time which hinders their agricultural operations and investments. To add, one extension officer said that: "They have been waiting for more than two months after requesting a loan and yet they haven't receive any feedback" (Interview, 2022).

The findings concur with Ashimogo et al. (2016) whom stated that, deferred loan facing farmers cheat on the quality of cashew nut produced. Furthermore, Bianchi, and Kossoudji (2015) declared that, the challenges facing small holder farmers to access loan include: lack of on time loan and government initiative to support cashew nut farming.

Lack of limited understanding regarding loan processes and provision from financial institutions was also another challenge facing these farmers by 73%. Findings indicate that farmers have limited knowledge of loan processes and provisions from financial institutions. Farmers reported to receive training on opening accounts from financial institutions and not how to access finance from these institutions. This implies that farmers struggle to navigate loan application procedures, resulting to a limited chance of successfully loans. It also shows that financial institutions are more invested in gaining more customers through the system than assisting farmers to secure financial support. The results are consistent with Bwire (2017) who noted poor literacy among farmers on agriculture financing hence farmers failing to utilise the available opportunities to secure loans from financial institutions. The findings are also parallel with Nukpezah, & Blankson, (2017) who reported low level of information on the procedures to acquire loan from financial institutions among farmers.

Farmers' not being sure whether or not on a promise of payment was another challenge facing farmers in the district by 68%. Findings found that farmers had uncertainty regarding the promise of payments. This is due to low selling prices its unpredictability in every season. Due to persistent low selling price farmers are now afraid to request for loans as they aren't sure if the next selling price will enable them to pay the debts. These findings are parallel with Karlan, Kutsoati, McMillan, & Udry (2011) who reported that fear of loan default is the most important reason that deterred farm households from joining credit programs in rural Ghana.

Lack of loan guarantee from WRS was another challenge facing smallholder's cashew farmers in accessing finance by 64%. Previously farmers could use the produce as collateral to secure finance from financial institutions. However, after suggesting that they needed the financial support during production time then the system has failed to offer proper collateral for the farmers to secure finance from financial institutions. This has led to a hesitant situation for financial institutions to provide loans without proper collateral, making it difficult for smallholder's cashew nut producers to access finance. To add, one bank officer said that: "After the changes on the system farmers face difficulties to get collateral to secure loans" (Interview, 2022).

The results are found similar with William (2015) who argued that; Lack of loan security, accountability for intermediaries and limited access to technologies are among the challenge facing smallholder's cashew nut producers. Also, low quality and quantity of cashew nut production is influenced by lack of credit assurance (Coulter and Onumah, 2012).

## V. CONCLUSIONS AND RECOMMENDATIONS

### 5.1 Conclusions

The study aimed to analyse/discuss the factors influencing smallholder's cashew nut producers to access finance

from financial institutions. The study was conducted at Tandahimba district in Mtwara region. The study found that older producers, those with financial statements for at least three years in cooperative, cooperative members, producers without criminal records, and those with a certificate of maximum liability from the registrar of cooperatives had a higher likelihood of accessing financing from financial institutions. These factors enhance trust and credibility in the eyes of financial institutions.

On the other hand, the study revealed several challenges faced by smallholder's cashew nut producers in accessing finance. These challenges include low investments in financing cashew nut farmers, delayed loans,

lack of loan guarantee from the Warehouse Receipt System (WRS), lack of understanding regarding loan processes and provisions, and farmers' uncertainty about promise of payment. These challenges hinder farmers' ability to access the necessary funds for their farming activities, leading to limited production and reduced income.

The knowledge generated from the study may assist the policy makers in cashew nut board through WRS to make a self-evaluation on how effective it has been involving cashew nut producers to access finance through their system; therefore take effective measure in improvement and formulation of policies considering the factors and challenges identified for efficient access of finances among the cashew nut small holder producers. Also, the findings of this study are expected to be useful to cashew nut stakeholders (Tanzania Cashew nut Board, financial institutions financing small holder cashew nut producers (nmb, crdb, exim, nbc and bank of zanzibar) and cashew nut business personnel's) to get knowledge for the improvement of financial access among small holder cashew nut producers. In addition, the study may be used as a resource to other researchers who would like to perform the research on access to finance from financial institutions among the smallholder's cashew nut producers.

During paper scripting the following limitation were experienced: limited time as I need to work as employed, performing family activities and at the same time writing a paper, access to literature to identify knowledge gap and finding current literatures for references. Likewise, identifying appropriate sample size in relation to the population and appropriate sample profile as study population comprised of people with varies profiles.

### 5.2 Recommendations

The study recommends that, the Tanzania Cashew nut Board in partnership with cashew nut small holder producers,

financial institutions financing small holder cashew nut producers (nmb, crdb, exim, nbc and bank of zanzibar) and cashew nut business personnel's should improve policy and strategies to run WRS considering the factors and challenges identified for efficient access of finances among the cashew nut small holder producers.

The Tanzania Cashew nut Board through cooperative unions should encourage small holder cashew nut producers to invest in credit facilities like small-scale banks to offer themselves credit at affordable rates. This should be through legislation to facilitate credit creation.

Also, Tanzania Cashew nut Board in partnership with financial institutions' offering loans to cashew nut producers should perform regular training to cashew nut producers on how, where and requirements desired to access loans. This will widen cashew nut small holder producers understanding regarding loan access, and promote on time access of finances.

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## REFERENCES

- [1]. B. B Assenga, A. P. Masawe, Tarimo, M. T., Kapinga and R. E. Mbega, Status of sucking insect pest in cashew growing location of south and central zone, Tanzania. *International Journal of bio sciences*, 16(4), 2020, 34 – 45.
- [2]. S. S. Ngwegwe, *Determinants of Tanzanian Business Community Engagement in Export Trade-In Dar Es Salaam: A Case of Agricultural Products*. Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree of Masters in International Business Management of College of Business Education (CBE), 2019.
- [3]. P. J. Kimaro, and N. N. Towo, Determinants of rural youth's participation in agricultural activities: the case of Kahe East ward in Moshi rural district, Tanzania. *International Journal of Economics, Commerce and Management* 3(2), 2015, 1-33.
- [4]. V. Venkatakrisnan, and N. Kidando, Warehouse receipt system for cashew nuts marketing and its contribution to the small scale producers in Masasi District, Mtwara Region, Tanzania. 68pp, 2014.

- [5]. J. M. Nkwabi, and J. Fallon, The Factors Affecting Supplier Relationship Management in the Food Manufacturing Small and Medium Enterprises (SMEs) in Dares Salaam Tanzania. *American International Journal of Business and Management Studies* 2(1), 2020, 25-34.
- [6]. D. G. Mhando, Conflict as Motivation for Change. The Case of Coffee Producers' Cooperatives in Moshi, Tanzania. *African Study Monographs*, 50, 2014, 137-154.
- [7]. A. M. Mtanda, *Producers' attitude towards warehouse receipt system in Newala district*, Doctoral Dissertation for Award Degree at Sokoine University of Agriculture. 90pp, 2015.
- [8]. M. E. Mapunda, D. G. Mhando, and B. M. Waized, Credit Access through Warehouse Receipt System and Farm Productivity of Smallholder's Coffee Producers in Mbinga District, Tanzania, *Journal of Agriculture and Life Sciences Vol*, 5(2), 2018.
- [9]. J. Coulter, and G. Onumah, 'The impact of government policy and regulation on the effectiveness of warehouse receipt systems: The case of Africa', Workshop on Warehouse Receipt Financing: Making the difficult deals easier and more profitable (Amsterdam). 20pp, 2012.
- [10]. H. J. P. Maghimb, *Factors influencing the choice of market system among smallholder's sunflower producers in Singida region, Tanzania*. Doctoral Dissertation for Award Degree at The University of Dodoma. 117pp, 2020.
- [11]. E. Abraham, *Factors influencing SEDA agricultural credit rationing to smallholder's producers' in Dodoma Municipality and Bahi District, Dodoma, Tanzania*. Thesis for a PhD Degree Award at Sokoine University of Agriculture. 128pp, 2014.
- [12]. J. Kirby, J. Mainuddin, K. Khaliq, and G. Cheema, *The economics of warehouse receipt system: a case of smallholder's cotton producers in Maswa district, Shinyanga-region*. Doctoral Dissertation for Award Degree at Sokoine University of Agriculture. 94pp, 2017.
- [13]. V. Sandip, Determinants of formal agricultural credit allocation to the farm sector by arable crop farmers in Benue State, Nigeria. *African Journal of Agricultural Research*, 6(1), 2013, 181-185.
- [14]. Y. Morse, Party matters. The institutional origins of competitive hegemony in Tanzania. *Democratization*, 21 (4), 2013.
- [15]. Y. Karthickumar and I. Sinija, Microfinance intervention in poverty reduction: A study of women farmer-entrepreneurs in rural Ghana. *Journal of African Business*, 18(4), 2017, 457-475.
- [16]. V. U. Oboh, and I. D. Ekpebu, Credit allocation to farmers. *Agricultural Research*, 6(1), 2011, 181-185.
- [17]. H. Bianchi, and F. Kossoudji, A review of the challenges affecting the agro processing sector in Tanzania. *Asian Journal of Sustainable Business Research* 1(2), 2015, 68 – 77.
- [18]. F. Karlan, D. Kutsoati, Y. McMillan, and K. Udry, Factor affecting cashew processing by wild bearded capuchin monkey. *American Journal Primatology*, 12(2), 2011.
- [19]. D. Karlan, E. Kutsoati, M. McMillan, and C. Udry, Crop price indemnified loans for farmers: A pilot experiment in rural Ghana. *Journal of Risk and Insurance*, 78(1), 2011, 37-55.

## CHAPTER FOUR

### 4.0 GENERAL DISCUSSIONS

#### **4.1 Smallholder Producers' Perception and acceptance towards the Usefulness of WRS in Accessing Finance from Financial Institutions**

The findings showed that smallholder producers had a negative perception and acceptance towards use of WRS to access finance. Negative perception and acceptance implies unfavourable or abnormal behaviour of smallholder producers towards WRS. The primary aim of WRS, among other things, was to enable smallholder producers to access finance through their stored crops as collateral. Hence, financial institutions shifted their loan risks from the borrowers to the WRS. Therefore, financial constraints among smallholder cashew nut producers were reduced. In spite of its significance, the system is reported to be unfavourable to cashew nut producers as it offers uncertain environment in finance access.

Many challenges; particularly not assisting producers to access loans on time, not offering collateral to producers to enable them access credits from financial institutions, and not assisting producers in ensuring that there were proper lending procedures to reduce risks to the financial institutions; led many producers to lack of access to finance. Other challenges were not providing financial and credit information, uncertainty on when payment for cashew nuts kept in warehouses would be made, and lack of loan guarantee from WRS. Also, this evidence implies WRS was not efficiently implemented in the study area, did not fulfil its aims, and the producers were not satisfied with running of the system. This diminished cashew nut farmers' perception and acceptance towards WRS and led them to lobbying for effective reform of the system.

The findings concur with those by Camillus *et al.* (2006) and Tlou (2009) who stressed that a customer who receives given services of a system will have a positive perception and acceptance towards that system, and *vice versa* is true. In this context, individuals who harboured unfavourable perception and acceptance towards WRS were associated with behaviours that resulted in negative outcomes for the system. Kanji *et al.* (2005) reported that producers had negative thoughts on the warehouse receipt system specifically on access to farm assets, social networks, and acquirements of finances. Also, the findings are in line with Ajzen *et al.* (2011), who stressed that producers have low knowledge level and negative

perception and acceptance towards the warehouse receipt system. However, the findings are dissimilar to ones by Rob (2013) who stated that the timing of payment for producers' produce was consistent and timely; this situation causes content among cashew nut producers in several services of WRS's operation, resulting into positive perception and acceptance towards the implementation of the warehouse receipt system.

#### **4.2 Challenges Facing Smallholder Producers in Accessing Finance Timely from Financial Institutions through WRS**

The findings showed that smallholder producers in Tandahimba District were still facing a lot of challenges on loan access through WRS, including low investment in financing cashew nut producers, delayed loans, lack of enough understanding regarding loan process/provisions in financial institutions, being not sure of whether promised payment would be fulfilled, and lack of loan guarantee from WRS. Due to the challenges, agricultural production and marketing in the study area declined. This is because most smallholder producers were subsistence oriented, thus making access to finances a serious constraint to their production.

A common approach to satisfy the effective cashew nut production is to provide smallholder cashew nut producers with finances. Access to finance among smallholder producers is a necessary input for promoting agricultural characteristics, transformation to improved technologies, food security and household welfare. Further, access to finance is also an integral part of the commercialization of the rural economy. It has long been recognized that without a well-functioning WRS to reduce the mentioned challenges to producers, there will be little prospect for increasing agricultural productivity and living standards.

The results align with findings which indicates that one of the challenges causing smallholder cashew nut producers remain inactive is a lack of financial resources (Coulter and Onumah, 2012; Alemu & Van Schalkwyk, 2019). Almond and Hainsworth (2005) argue that WRS agents are ill-informed by financial institutions about acquirement of finances and therefore often do not provide the necessary training and assistance so that smallholder producers can gain finances on time. Likely, Ortmann and King (2017) illustrate that access to finances poses considerable challenges to smallholder cashew nut producers through WRS, and that WRS is not critical in reducing challenges to producers.

### **4.3 Factors that Influenced Cashew Nut Smallholder Producers to Access Finance from Financial Institutions**

In line with the factors influencing cashew nut smallholder producers to access finance from financial institutions, the results showed that age of the producers', having financial statements for at least three years of producers in cooperatives, membership to cooperative union, absence of criminal cases, certificate of maximum liability from registrar of cooperatives, minutes of the meeting which approved application for the loan for cooperatives, farm/ land size and effectiveness of cooperative association in linking producers getting a loan from a financial institution were the factors enhancing trust and credibility in the eyes of financial institutions in Tandahimba District. This is because smallholder producers often require small loans which are difficult to administer while the majority of them also lack the needed collateral to be able to borrow from financial institutions. Since, smallholder producers have been marginal participants in the credit market; possessing the factors play a crucial role in improving chances of securing finance as they provide financial institutions with a clear understanding of the producer's financial history, performance, and repayment capacity. Therefore, the identified factors remain the topmost priority among smallholder producers to access finances.

The findings concur with those by Karthickumar and Sinija (2017) who reported that not having criminal cases has influence on an access to finance from financial institutions as lenders are sure of the credit return. Brown (2021) argued that the Certificate of Maximum Liability includes legal responsibility and significantly affects access to loans. According to Maghimbi (2020), the agreement or notice, accompanied by documents from members, considers the interests and commercial benefits of the company when entering into transactions. Venkatakrishnan and Kidando (2014) stated that producer cooperatives unions are owned by producers; pooling their access to loan influence existence of the cooperative association.

### **References**

- Ajzen, I., Jaap, S., Joao, R., & Rossi B. (2011). Farmer Behaviour as Reasoned Action: A Critical Review of Research with the Theory of Planned Behaviour, *Journal of Agricultural Economics*, 2(2), 2-15.
- Alemu, Z., & Van Schalkwyk, S. (2019). Factors influencing access to produce markets for smallholder irrigators, *Development Southern Africa*, 6(1):47-58.

- Almond, F., & Hainsworth, W. (2005). The role of small-scale producers' organisations in addressing market access, *Agrotop Journal*, 1(2), 2-9.
- Brown, J. (2021). Factors determining adoption of new agricultural technology by smallholder farmers in developing countries. *ISSN*, 6(5).
- Camillus, J. C., Bhardwaj, G., & Hounshell, D. A. (2006). Continual corporate entrepreneurial search for long-term growth. *Management Science*, 52(2), 248-261.
- Coulter, J., & Onumah, G. (2012). 'The impact of government policy and regulation on the effectiveness of warehouse receipt systems: The case of Africa', Workshop on Warehouse Receipt Financing: Making the difficult deals easier and more profitable (Amsterdam). 20pp.
- Kanji, H., Morten, S., Robinson, H. N., & Hezron, E. (2005). Assessment of farming practices and uses of agrochemicals, *African Journal of Agricultural Research*, 6(10).
- Karthickumar, A., & Sinija, D. (2017). Comparative evaluation of cashew nut shelling machines, *International Journal of Agricultural Engineering*, 10(2).
- Maghimbi, H. J. P. (2020). *Factors influencing the choice of market system among smallholder's sunflower producers in Singida region, Tanzania*. Doctoral Dissertation for Award Degree at The University of Dodoma. 117pp.
- Ortmann, A., & King, R. (2017). Socio-economic benefits of agricultural marketing co-operatives and their challenges, *Agricultural Evidence from Selected Cases*, 3(2).
- Rob, O. (2013). Agricultural decisions after relaxing credit and risk constraints, *The Quarterly Journal of Economics*, 129(2).
- Tlou, R. (2009). Agricultural market information services in developing countries, *AReview. Advances in Computer Science an International Journal*, 3(3), 38-47.
- Venkatakrishnan, V., & Kidando, N. (2014). Warehouse receipt system for cashew nuts marketing and its contribution to the small-scale farmers in Masasi District, Mtwara Region, Tanzania. 68pp.

## CHAPTER FIVE

### 5.0 CONCLUSIONS AND RECOMMENDATIONS

#### 5.1 Conclusions

In light of the findings presented, it is evident that the Warehouse Receipt System (WRS) has not effectively addressed the financial constraints faced by smallholder cashew nut producers in Tandahimba District. Despite its intended purpose to facilitate access to finance through stored crops as collateral, the system has encountered numerous challenges, resulting in negative perception and acceptance among producers. Delays in loan disbursement, lack of understanding of loan processes, and uncertainty regarding payment fulfillment have contributed to this unfavorable perception of the WRS.

Moreover, the inefficiencies in the implementation of the WRS have further compounded these challenges, leading to a lack of trust and satisfaction among producers. The system's inability to fulfill its aims and provide a conducive environment for finance access has hindered agricultural productivity and economic development in the region. Addressing these issues and implementing necessary reforms will be crucial to improving the effectiveness of the WRS and ensuring that smallholder cashew nut producers can access the finance they need to thrive.

In addition to the challenges identified, there is a clear need for greater collaboration and communication between stakeholders involved in the WRS. Financial institutions, agricultural cooperatives, government agencies and producers must work together to streamline processes, enhance transparency, and address the specific needs of smallholder cashew nut producers. This collaborative approach will not only help to overcome the existing barriers to finance access but also foster trust and confidence in the system. Furthermore, ongoing monitoring and evaluation of the WRS's performance are essential to identify areas for improvement and ensure that it remains responsive to the evolving needs of producers. By prioritizing these efforts, stakeholders can work towards creating a more inclusive and supportive environment for smallholder cashew nut producers to thrive and contribute to sustainable agricultural development.

## **5.2 Recommendations**

The study recommends the enhancement of transparency and communication by implementing measures to improve transparency and communication within the WRS framework. This includes providing clear and accessible information to producers about loan processes, payment timelines, and their rights and responsibilities within the system. Regular communication channels should be established to address producers' concerns and ensure that their voices are heard in decision-making processes.

To streamline loan disbursement procedures by simplifying loan disbursement procedures and expediting the process and minimizing delays for smallholder producers. Financial institutions should work closely with agricultural cooperatives to develop efficient mechanisms for assessing loan applications, disbursing funds, and monitoring repayment schedules.

Provide capacity building support by offering capacity building support to smallholder producers and enhancing their understanding on financial concepts, loan management practices, and rights within the WRS. Training programs and workshops should be organized to equip producers with the necessary skills and knowledge to navigate the finance access process effectively.

Strengthening risk management mechanisms by developing robust risk management mechanisms within the WRS to protect both producers and financial institutions. This includes implementing measures to mitigate credit risk, such as collateral requirements and credit assessments, while also providing safeguards against payment uncertainties and default. Foster collaboration and coordination among stakeholders involved in the WRS, including financial institutions, agricultural cooperatives, government agencies, and producers' associations. Joint initiatives should be undertaken to address common challenges, share best practices, and identify opportunities for innovation and improvement.

Conduct regular monitoring and evaluation to establish a system for regular monitoring and evaluation of the WRS's performance to track progress, identify bottlenecks, and measure the impact of interventions. Feedback mechanisms should be established to solicit input from producers and other stakeholders, with findings used to inform decision-making and guide future interventions.

By implementing these recommendations, stakeholders can work towards enhancing the effectiveness of the WRS in facilitating access to finance for smallholder cashew nut producers, thereby promoting agricultural development, economic empowerment, and poverty reduction in Tandahimba District.

## APPENDICES

### A Questionnaire for Smallholder Cashew Nut Producers

My name is **Mashalla Charles Byedileclara**, a Master's degree student at the Sokoine University of Agriculture. I kindly request you to fill in this survey, as I need information for my study titled **Exploring Warehouse Receipt Systems for Cashew nut Producers Financing in Tanzania**. Your participation in this study will provide me with the necessary data/information that will help to complete my study successfully. The information/data provided will be treated strictly confidential and only be used for academic purpose.

#### SECTION I: Personal Information (Demographics)

1. Please fill or put a tick(√) in an appropriate option

Age in years		
Source of income	Employment	
	Trade	
	Animal husbandry	
	Crafts	
	Farming	
	Other – (Specify)	
Long of practicing cashew nut farming? in Years		

#### SECTION II: Smallholder producers' perception and acceptance towards the usefulness of WRS in accessing finance from financial institutions

2. Please put a tick (√) in the space provided against the option on the following statements to indicate the extent to which you agree or disagree with the following statements regarding smallholder producers perception and acceptance towards the usefulness of WRS in accessing finance from financial institutions in Tandahimba district, where 1 represent **Strongly Disagree**, 2 represent **Disagree**, 3 represent **Neutral**, 4 represent **Agree** and 5 represent **Strongly Agree**.

N o	Statements	1	2	3	4	5
.						

2	WRS assists smallholder cashew nut producers' to be trusted and get credits from financial institutions.					
3	WRS helps smallholder cashew nut producers to get loans on time					
4	WRS provides financial and credit information to smallholder cashew nut producers'					
5	Warehouse receipt financing have made cashew nut farming easier and more profitable					
6	The existence of WRS made some of financial institution support the agricultural sector					
7	WRS enables smallholder cashew nut producers to access loan at a low interest rate					

3. Out of the mentioned (question 2), what are the smallholder producers perception and acceptance towards the usefulness of WRS in accessing finance from financial institutions? List them
- i).....
- ii).....
- iii).....

**SECTION III: The challenges facing smallholder producers in accessing finance from financial institutions through WRS**

4. Please put a tick (✓) in the space provided against the option on the following statements to indicate the extent to which you agree or disagree with the following statements regarding **challenges facing smallholder producers in accessing finance from financial institutions through WRS** in Tandahimba district, where 1 represent **Strongly Disagree**, 2 represent **Disagree**, 3 represent **Neutral**, 4 represent **Agree** and 5 represent **Strongly Agree**.

No	Statements	1	2	3	4	5
1	WRS assists smallholder cashew nut producers' in ensuring that there are proper lending procedures					

	to reduce risks to the financial institution						
2	WRS assists smallholder cashew nut producers' to be trusted and get credits from financial institutions.						
3	WRS helps smallholder cashew nut producers to get loans on time						
4	WRS provides financial and credit information to smallholder cashew nut producers'						
5	Warehouse receipt financing have made cashew nut farming easier and more profitable						
6	The existence of WRS made some of financial institution support the agricultural sector						
7	WRS enables smallholder cashew nut producers to access loan at a low interest rate						

5. Out of the challenges mentioned above, what are the other challenges facing smallholder producers in accessing finance from financial institutions through WRS? List them
- i).....
  - ii).....
  - iii).....
  - iv).....
  - v).....
7. Mentioned the ways to avoid/reduce the challenges facing smallholder producers in accessing finance from financial institutions through WRS in Tandahimba district?
- i).....
  - ii).....
  - iii).....
  - iv).....
  - v).....

**SECTION IV: The factors influencing cashew nut smallholder producers to access finance from financial institutions**

8. Please put a tick(✓) in an appropriate option beside the statement to indicate your level of agreement or disagreement regarding factors influencing cashew nut smallholder producers' to access finance from financial institutions

1	Sex of head of household	Male	
		Female	
2	Marital status of head of household	Married	
		Not married	
3	Age of cashew nut producers	At least 18 years	
		Less than 18years	
4	Employment	Formal	
		Non formal	
5	Financial statements for at least three years of producers cooperatives	Having	
		Not having	
6	Cashew nuts price	High price	
		Low price	
7	Quantity of cashew nuts stored in WRS	High quantity stored	
		Low quantity stored	
8	Cooperative membership	Being cooperative membership	
		Not membership	
9	Producers experience in farming activities	More than five years	
		5 or less than 5 years	
10	Criminal cases	Not having criminal cases	
		Having criminal cases	
11	Certificate of maximum liability from registrar of cooperatives	Having certificate	
		Not having certificate	

12	Minutes of the meeting approving to apply for the loan for cooperatives	Having minutes	
		Not having minutes	
13	Household size	More than 5 peoples	
		5 or less than 5 peoples	
14	Farm/ land size	More than 3 hectors	
		3 hectors and less	
15	Effectiveness of cooperative association in linking producers to get loan from financial institution	Yes	
		No	

9. Out of the mentioned (question 8) what are the other factors that influence cashew nut smallholder producers to access finance from financial institutions in Tandahimba district?

- i).....
- ii).....
- iii).....

10. Have you ever accessed for loan? Yes ( ) No ( )

**THANK YOU VERY MUCH FOR YOUR PARTICIPATION**

### **Appendix 1: An Interview Guide for WRS Operator Officers**

I am **Mashalla Charles Byedileclara**, a Master's degree student at the Sokoine University of Agriculture. I am conducting a study on **Exploring Warehouse Receipt Systems for Cashew nut Producers Financing in Tanzania**. I kindly request your cooperation in answering this interview, as I need information for my study. The information provided will be treated strictly confidential and only used for academic purpose.

Gender .....Age in  
years.....  
Highest academic and professional  
qualifications.....  
Years of working  
experience.....

#### **Guiding Questions**

1. Please enlighten me on WRS
2. What are the roles of warehouse receipt system to smallholder producers?
3. How do you collaborate with financial institutions in your operations?
4. Which Banks do you use for WRS?
5. Why those banks?
6. How do you get smallholder producers for registration?
7. How many smallholder producers are in your area?
8. How many smallholder producers are registered by WRS in your area?
9. What are the Smallholder producers' perception and acceptance towards the usefulness of WRS in accessing finance from financial institutions? list them
10. Can you list the challenges facing smallholder producers in accessing finance timely from financial institutions through WRS?
11. What are the ways to avoid/reduce the challenges facing smallholder producers in accessing finance from financial institutions through WRS in Tandahimba district? Mention them
12. List the factors that influence cashew nut smallholder producers to access finance from financial institutions in Tandahimba district?

**THANK YOU VERY MUCH FOR YOUR PARTICIPATION**

## Appendix 2: An Interview Guide for Bank Officers

I am **Mashalla Charles Byedileclara**, a Master's degree student at the Sokoine University of Agriculture. I am conducting a study on **Exploring Warehouse Receipt Systems for Cashew nut Producers Financing in Tanzania**. I kindly request your cooperation in answering this interview, as I need information for my study. The information provided will be treated strictly confidential and only used for academic purpose.

Gender .....Age in  
years.....  
Highest academic and professional  
qualifications.....  
Years of working experience  
.....

### Guiding Questions

1. For how long have you been working in this office?
2. Have you been collaborating with the WRS to finance producers?  
Yes/No
3. Please enlighten me on Warehouse Receipt System (WRS)
4. How do you get smallholder producers for loan through WRS?
5. What is your interest rate?
6. Do you think that interest rate is appropriate to smallholder producers? Yes/No
7. If yes / No, Give reasons
8. What is percentage of your processing fee?
9. Do you think that processing fee is appropriate to smallholder producers? Yes/No
10. If yes / No why? Give reasons
11. What are the procedures to get loan for smallholder producers through WRS?
12. What are the requirements for smallholder producers to get loan from your institution through WRS?
13. What are the Smallholder producers' perception and acceptance towards the usefulness of WRS in accessing finance from your financial institutions? list them
14. Can you list the challenges facing smallholder producers in accessing finance timely from financial institutions through WRS?
15. What are your suggestions to avoid/reduce the challenges facing smallholder producers in accessing finance from financial institutions through WRS in Tandahimba district? Mention them

16. List the factors that influence cashew nut smallholder producers' to access finance from financial institutions in Tandahimba district?

**Thank you very much for your participation**

### Appendix 3: An Interview Guide for Extension Officers

I am **Mashalla Charles Byedileclara**, a Master's degree student at the Sokoine University of Agriculture. I am conducting a study on **Exploring Warehouse Receipt Systems for Cashew nut Producers Financing in Tanzania**. I kindly request your cooperation in answering this interview, as I need information for my study. The information provided will be treated strictly confidential and only used for academic purpose.

Gender .....Age in  
years.....  
Highest academic and professional  
qualifications.....  
Years of working experience  
.....

#### Guiding Questions

1. Please enlighten me on WRS
2. What are the roles of warehouse receipt system to smallholder producers?
3. Are there other marketing systems in your area apart from WRS?  
Yes/No
4. If yes, mention them
5. Are there infrastructures that support the operation of WRS in your working area? Yes/No
6. If Yes/No, give reasons
7. How do you collaborate with financial institutions in your operations?
8. Which Banks do you use for WRS? List them
9. Why those banks? Give reasons
10. How many smallholder producers are in Tandahimba District?
11. How many smallholder producers are registered by WRS in Tandahimba District?
12. What are the Smallholder producers' perception and acceptance towards the usefulness of WRS in accessing finance from financial institutions? list them
13. Can you list the challenges facing smallholder producers in accessing finance timely from financial institutions through WRS?
14. What are the ways to avoid/reduce the challenges facing smallholder producers in accessing finance from financial institutions through WRS in Tandahimba District? Mention them

15. List the factors that influence cashew nut smallholder producers to access finance from financial institutions in Tandahimba District?

**THANK YOU VERY MUCH FOR YOUR PARTICIPATION**



### **Kuhusu Tasnifu Hii**

Mfumo wa Stakabadhi za Ghalani (WRS) ulianzishwa na serikali ili kuboresha huduma za kifedha kwa wakulima wa korosho, kuhakikisha soko la haki, na kuwawezesha wakulima kuhifadhi mazao yao kwenye maghala kwa bei nzuri zaidi baadaye. Hata hivyo, wakulima wengi hawajaridhika na mfumo huu kutokana na ukosefu wa uwazi, taratibu ngumu za ukopeshaji, na viwango vya juu vya riba. Utafiti huu ulilenga kutathmini ufanisi wa mfumo wa stakabadhi ghalani katika kufadhili wakulima wa korosho Tandahimba, Tanzania. Matokeo yalionyesha kuwa wakulima walikuwa na mtazamo hasi kuhusu mfumo huo, hasa kutokana na kushindwa kupata mikopo kwa wakati, ukosefu wa dhamana, na elimu ndogo kuhusu mikopo. Changamoto hizi zimeathiri uzalishaji na masoko ya korosho, na utafiti unapendekeza maboresho na sera mpya kwa ajili ya ufadhili bora wa kifedha kwa wakulima. Maarifa yaliyopatikana katika utafiti yatasaidia kushawishi kuboresha na kuunda sera zinazozingatia changamoto na mtazamo uliotambuliwa kwa ajili ya upatikanaji bora wa fedha miongoni mwa wazalishaji wadogo wa korosho.