THE IMPACT OF WAREHOUSE RECEIPT SYSTEM ON INCOME POVERTY REDUCTION OF CASHEWNUT FARMERS IN NEWALA DISTRICT

By

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CERTIFICATION

We, the undersigned, certify that we have read and hereby recommend for acceptance by the Mzumbe University, a dissertation entitled **"The Impact of Warehouse Receipt System on Income Poverty Reduction of Cashew nut Farmers in Newala District"** in partial-fulfillment of the requirements for award of the degree of Master of Science in Economics of Mzumbe University.

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DEDICATION

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ACRONYMS AND ABBREVIATIONS

AAACP	All ACP Agricultural Commodities Programme
ACE	Agricultural Commodity exchange
AMCOS	Agricultural Marketing Cooperative Societies
ANOVA	Analysis of Variance
BOT	Bank of Tanzania
CATA	Cashew nut Authority of Tanzania
CBO	Community Based Organization
CBT	Cashew nut Board of Tanzania
CFC	Common Fund for Commodities
CI	Cashew nut Industry
CIP	Cashew nut Improvement Programme
CMA	Collateral Management Agreements
CNSL	Cashew nut Shell Liquid
DAES	District Agricultural Extension Staff
FAO	Food and Agriculture Organization
FGD	Focus Group Discussions
GDP	Gross Domestic Product
IFAD	International Fund for Agricultural Development
MITM	Ministry of Industry, Trade and Marketing
MKUKUTA	*Mkakati wa Kukuza Uchumi na Kupunguza Umasikini Tanzania*
NARI	Naliendele Agricultural Research Institute
NGOs	Non - Governmental Organisations
NIC	National Insurance Corporation
NMB	National Microfinance Bank ltd
NSSF	National Social Security Fund
ODA	Official Development Assistance
OLS	Ordinary Least Squares
PCS	Primary Cooperative Society
RCB	Regional Cashew nut Board

RECINESA	Regional Cashew Improvement Network for Eastern and Southern Africa
SACCOS	Savings and Credit Cooperative Societies
TANECU	Tandahimba and Newala` Cooperative Union
TCMB	Tanzania Cashew nut Marketing Board
TWLB	Tanzania Warehouse Licensing Boar
UCE	Uganda Commodity Exchange
UNIDO	United Nations Industrial Development Organization
USAID	United States Agency for International Developments
WRS	Warehouse Receipt System
ZAMACE	Zambia Agricultural Commodity Exchange

ABSTRACT

The Warehouse Receipt System (WRS) is one of the reform measures undertaken by the government of Tanzania in efforts to address the problems inefficient crops marketing systems. It is assumed that an improved efficiency of the marketing system through the WRP can help in poverty reduction by enhancing incomes of farmers via stable prices and reduced transactional risks. The main objective of this study was to examine the contribution of the WRS on the economic welfare of cashew nut farmers in Newala district. The underlying hypothesis of the study is that the WRS improves income of the farm households in Newala. Data was collected in six villages from a representative sample of 200 farmers out of 403,356. The studies applied a regression technique to analyze the postulated relationships. The findings showed that income of the farmers has significant effect on poverty reduction. Output price were negatively related with the income of the farmers using Warehouse Receipt System. These happen due to decrease change of price of cashew nut in the world market. The income of farmer improved slightly, but did not exceed Tshs. 500,000/= per annum. This represents an increase of about 43% of the farmers' income. Levels of education of the farmers have positive impact with income and marketing on reduction of poverty. It can be concluded that the WRS can be an important tool for alleviating cashew nut marketing problems. However, at present, the significance of the WRS has not been felt much by farmers notably due to other distortions emanating from taxes and levies. The government should look into these issues carefully for the betterment of the cashew nut farmers. For better understanding of the contribution of the WRS, more research is needed especially on the role played by cooperative societies within the WRS framework.

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CHAPTER ONE
INTRODUCTION

1.0 Introduction

This chapter provides background information, Statement of the problem, Research questions, Objectives, Significance of the study, Purpose of the study, and Limitation of the study, Delimitation of the study and definition of key terms.

1.1 Background to Research Problem

The development of Warehouse Receipt Systems (WRS) emerged as an important means of improving the performance of agricultural marketing systems in Africa following liberalization in the 1980s. Liberalization created significant space for local subsidiaries of international inspection companies to offer warehousing and commodity collateralization services without any regulatory oversight. In Tanzania, the Government has undertaken various structural and institutional reforms, revised its policies and strategies for improving service delivery. This was apparent in the government decision to rationalize its functions to concentrate more on regulatory and supervisory roles.

The WRS is one of the reform measures undertaken by the government of Tanzania in efforts to address the problems of inefficient crops marketing system. The problems include poor and costly mechanisms for financing, performance and payment risks associated with transactions, lack of forward contracting and lack of standardized quality and grading. Due to these problems, warehousing crops seems as a partial solution, particularly in view of the existence of large numbers of former parastatal stores to mention just a few, cashew nut store and godowns, Parastatal Pensions Fund stores, Woolworth Stores, 21st Century stores, National Social Security Fund (NSSF) stores, and National Insurance Corporation (NIC) stores which those remained underutilized (CBT, 2001).

The System translated in ***Kiswahili as "stakabadhi ghalani***" was piloted by the government of Tanzania since 2000 in collaboration with international organizations. The Common Fund for Commodities (CFC), International Fund for Agriculture

Development (IFAD) and Non-Governmental organizations were involved. Needs for a legal framework, the parliament of the United Republic of Tanzania passed a warehouse Receipt bill in April 2005, bill obtained a presidential assent in June 2005, became law (Act.No.10 of 2005) and its regulations were endorsed in 2006.

A cashew nut warehouse receipt is a document of title issued by a warehouse operator stating that the commodities certified in the receipt are held in the warehouse and at the disposal of the person named thereon. The system functions properly where there are trade incentives through tradable commodities (Operational Manual, 2007). Cashew nuts generate an average of USD 74 million per year in foreign exchange earnings, serving as Tanzania's leading agricultural export, grown by 280,000 smallholder farmers mostly from Mtwara and Lindi regions, and only 42,000 cashew farmers in Tanga and Ruvuma regions.(BoT, 2010).

This dissertation provides new data set from questionnaires, focus group discussions (FGDs) and interviews to farmers and primary cooperative societies to analyze the impact of WRS to cashew nut farmers for data collection. This study addressed the two specific questions as WRS to improve the income of the farmers and improved cashew nuts marketing system leaving farmers poor and creating chaos between cashew nut stakeholders in Newala district.

The remainder of this dissertation is organized in five parts. chapter 2 the literature review chapter 3 describes the methodology used, chapter 4 presentation of the empirical analysis describing the data, chapters 5 discusses the findings and chapter 6 present the summary of the results, conclusions, recommendations and policy implications. Finally references and appendices are attached.

1.2 Statement of the Problem

WRS has been in operation for more than 100 years in U.S.A and Canada (RECINESA, 2004). In Africa the system is gaining popularity and success in South Africa, Zambia, Ghana, Uganda and Tanzania. In Tanzania the system was launched under Act no 10 of 2005 and started to operate in 2006 on coffee, cotton, maize, rice and cashew nut crops.

The Government strongly focuses to improving agricultural performance and instituting structural reforms to underpin strong growth and poverty alleviation. These focused on increasing the income of the individual farmer. The reforms contributed to an average real GDP growth rate of 5% in recent years compared to 3% growth in the early 1990s (BOT, 2006)

The WRS implementation strategies are to improve marketing system and income for welfare and wellbeing of the farmers in Newala. The problem is that, although the Marketing of WRS was launched in 2006 in Mtwara, the income poverty of the farmers in Newala continues to be critical economic problems yearly while the WRS marketing charnel still operating.

The problem with the system is that the modes of payment such as in cash to farmers are not good (two to three trenches), the cooperatives unions are weak, CBT remains with regulating roles, farmers returns are depressed, information on auction is not transparency, prices and exports has been difficult to come by, and the government's ability to act timely on matters affecting the cashew nut industry is low. Farmers and cooperative union are not interacting effectively. With all these problems, there could be some explanations as to why the WRS has failed to have a significant impact on income poverty. The present study, therefore, was set to determine the extent to which the WRS has an impact on income poverty of cashew nut farmer households.

1.3 Study Objectives

The main objective of the study was to identify the contribution of the WRS on the economic welfare of cashew nut farmers in Newala district Mtwara region.

1.3.1 Specific Objectives

This dissertation considered the following specific objectives:

i. To identify whether WRS has improving the income of the cashew nut farmers in Newala district.

ii. 2. To improve local human resource capacities to operate effectively in a market system.

1.3.2 Research Questions

This study is guided by the following questions:

i. To what extent the WRS has improved the income of the farmers in Newala?
ii. Has WRS improved or worsen the cashew nuts marketing system in Newala?

1.4 Significance of the Study

The study quantify the impact on cashew nuts WRS to farmers in Newala district. More specifically, the study examines the contribution of WRS on income poverty alleviation and production capacity. To the best of our understanding, very little research has been done on these issues.

The WRS empower farmers in Newala that secure access to market, credit and reliable storage facilities for their cashew nuts, it gives them to obtain last payment (bonus) when the price is high and stable in the auction thus reduce the black marketing system (barter system) which benefits the businessman with high capital while the farmers lose their end payments.

The study of WRS provides the recommendations the government can do to maximize economic benefits to the farmers in Newala district and minimize costs of production. This is in line with the government's objective of trying to ensure that the agricultural cash crops are giant contributor to the national economy in terms of foreign exchange and farmers are the beneficiaries of the final earnings.

The study of WRS provide useful data to different stakeholders who are potential contributors to the National Strategy for Growth and Poverty Reduction named in Kiswahili as MKUKUTA and suggest ways which the system can be sustainable.

1.5 Limitation of the Study

This study has been conducted in Newala district which is among the five districts in Mtwara region where the cashew nut producers and large farms are available. Within the districts the study was conducted in six villages among 155 Villages and six AMCOS was sampled among the 32 AMCOS in the district. Inadequate fund and time limited the study to be conducted to a greater sample size, which could enhance external validity of the findings.

1.6 Delimitation of the Study

This study was carried out in Newala district in Mtwara region because Newala is among the districts in Mtwara region which are the main producers of cashew nuts in Tanzania. Unlike Tandahimba and Masasi Newala produced 14,230,189 metric/tone during 2010/2011 production season as shown in Table 1.1 in the appendix. Its geographical location is conducive with cashew nut crop production and has a wide felt impact on improving the income of the rural people.

1.7 Definition of key terms

1.7.1 Buyers

The buyers refers to the person/company/society whom buy cashew nut or commodity from farmers whom can be an individual's, SACCOS, Primary Cooperative Societies and Cooperative Union whom store cashew nut in the warehouse ready for selling to external buyers in the auction.

1.7.2 Commodities

Commodities are defined as non- perishable agricultural crops meant for storage, trade and or collateral. The commodity can be stored in its original state or changed in form depending on the instructions of the depositors, TWLB or nature of the commodity itself. It can be deposited by individuals, groups as primary society, cooperative union, farmer's, business groups, associations and companies. Commodity can be released from the warehouse in full or partial in which the receipt of the said commodity shall be

surrendered and cancelled and new receipt to be issued in respect of undelivered portion of the commodity. The deposited commodities must conform to the established official standards adopted by the TWLB. The received commodity in the warehouse must be in a suitable condition for storage, transportation, conditioning, exporting, shipping and handling. Commodities received in the warehouse must have full insurance cover against fire, burglary and other risks as may be directed by the TWLB. The depositor upon delivery of the commodity in the warehouse shall be issued a warehouse receipt stating type, quality and to the holder of the outstanding warehouse receipts

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1.7.3 Depositors

According to section 3 of the Act, a depositor can be any person who deposits a commodity in a warehouse for storage, handling or shipment or is the owner or legal holder of an outstanding warehouse receipt or who is lawfully entitled to possession of the commodity. In return for depositing the commodities, they are given a Warehouse Receipt signifying having ownership of title in the deposited commodities.

1.7.4 Financiers

Financer means a person or institutions which perform the activity of finance through the WRS. The introduction of WRS in Tanzania, among other objectives was to be enable the financiers includes Commercial Banks, Non – Bank financial institutions (SACCOS, SACCAS, Social Security Fund, Non-Government Organizations example PRIDE, FAIDA, FINCA, DUNDULIZA, FBME bank, Community and Regional Banks, Savings and Credit Co-operative Societies, Rural Financial Support NGOs, which are now giving credit to individual farmers, farmers group, primary co-operative societies, co-operative unions as well as private traders to promote and participate in the business in agricultural commodity marketing with minimum risks.

1.7.5 Price

Price refers to the market value inputs and output of cashew nut when using WRS. Price determines the individual farmer's income; also motivate the farmers to use WRS.

According to WRS the regulating board set the indicative price.

1.7.6 Quality

The quality refers to the values of the cashew nut/ commodity when using WRS. There are grades of cashew nut as grade one, two and three. Grade one is the best followed by grade two. The WRS can reject cashew when quality is low

1.7.7 Quantity

The quantity refers to the amount of the cashew nut/ commodity in kilogram's or in metric tons when using WRS.

1.7.8 Regulatory Boards

Tanzania Warehouse Licensing Board (TWLB) is a board corporate established under the Act to oversee, regulates and promotes WRS in Tanzania. The TWLB investigate the receiving, storing, conditioning, shipping and handling of commodities and complaints with respect thereto, including the inspection of any warehouse, commodities stored and all property and records pertaining thereto.

1.7.9 Sellers

The sellers refers to the farmers/company/society whom sell cashew nut or commodity to Primary Cooperative Societies and Cooperative Union which store cashew nut in the warehouse ready for transportation, handling and selling to external buyers.

1.7.10 Warehouses

According to section 3 of the Act No.10 0f 2005 of the Warehouse Receipt, a warehouse is "any building, structure or other protected enclosure, approved by the board to be used or usable, for the storage or conditioning of commodities or buildings used in relation thereof or including operations of the warehouse." In relation to the operation of the WRS, the warehouse is a commercial building approved by the Tanzania Licensing Board for storage of commodities. Also includes offices, conditioning rooms and so forth.

According to the Warehouse Receipt Act, the designated warehouses to be used in the operationalization of the system must be licensed by the Tanzania Warehouse Licensing Board (TWLB). An application for license is done according to section 16 of the Act and Regulation 28. Before issuance of a license the Board shall satisfy itself that applicant meet the conditions stipulated under the Act. This implies that among other requirements, the goods that will be stored in the warehouse have to be indicated in the application form for a warehouse license.

1.7.11 Warehouse Operator

Any person engaged in the business of operating a warehouse for receiving, storing, shipping or handling of commodities for compensation, includes the agent or employee the scope of whose actual or apparent authority renders a person to exercise rights or become liable under the Act. The Act imposes intensive obligations and liabilities on the warehouse operators in case of negligence or lack of duty of care in which the warehouse operator is required to file or execute an indemnity bond to secure performance obligation before licensed.

The Regulatory Board should ensure a person or company licensed as a warehouse operator must be well knowledgeable of how the system operates. For example, technical handling of the deposits, to understand that the warehouse receipt is a document and its possession provides evidence of ownership of the agricultural commodity it represents.

1.7.12 Warehouse Receipts

It is a receipt issued by a warehouse operator in respect of storage, handling or shipment of the commodity. The receipt gives title of ownership assuring the existence and availability of a given type, quantity and quality of a commodity in storage.The warehouse receipts in Appendix11.

1.7.13 Warehouse Receipt System

Awarehouse receipt system is a marketing system whereby document issued by a licensed warehouse operator certifying the QUALITY and QUANTITY of a specified commodity placed by a named DEPOSITOR into a secure storage environment. It specifies, Location of warehouse, Commodity type, Quality and quantity, Name of depositor, Date of delivery and Storage charges. In short, WRS is a trade in commodities whereby deposit of commodities (collateral) in a designated warehouse enables the access of credit to the depositor.The issuer of the Warehouse Receipt holds the stored commodity by way of safe custody; implying that the issuer is legally liable to make good any value lost through theft or damage by fire and other catastrophes. In case of liquidation, creditors of the issuer will not be able to seek recourse to the commodities stored since legal title remains with the depositor or bona fide holder of the Warehouse Receipt. The only exception is the warehouse operator's lien covering outstanding storage costs. The receipts are transferable, allowing transfer to a new holder – a lender (where the stored commodity is pledged as security for a loan) or trade counter-party – which entitles the holder to take delivery of the commodity upon presentation of the Warehouse Receipt at the warehouse. The depositor may be a producer/farmer, farmers group, trader, exporter, or corporate entity (Operational Manual 2008).

The East and Southern Africa Agricultural network in its articles (ESAANET, 24/05/2007) defined the WRS as an arrangement that solves two problems, lack of storage facilities and the difficulty of obtaining credit. It is a sustainable mechanism for increasing and help to manage the food security and marketing issues.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter on literature review is divided into four parts, namely theoretical part, Empirical part, Conceptual framework and research model and Hypotheses.

2.1 Theoretical Literature review

The theoretical bases of this literature are income and marketing theories of Warehouse Receipt Systems in Tanzania, Warehouse Receipt System in Africa, Operationalization of the warehouse receipt system, cashew nut value chain, Challenges and Benefit of Warehouse Receipt System and Poverty and Warehouse Receipt System.

2.1. 1 Theoretical Bases of Warehouse Receipt System

2.1.1.1 Income Theory of Warehouse Receipt System

Incomes in monetary terms are expressed as the consumption and savings opportunity gained by an entity within a specified timeframe. Income for households and individuals is the sum of all the wages, salaries, profits, interests' payments, rents and other forms of earnings received in a given period of time. Income for the firm refers to net-profit remains after total revenue subtracted with expenses. In public economics, income is the accumulation of both monetary and non-monetary consumption ability of any given entity, such as a person or household. Income per capita of the individual farmer increase steadily in almost every year contributed by factors which are education, price, globalization and favorable political circumstances such as economic freedom and peace.(Reardon and Taylor, 1996).Factor income is the return accruing for a person, or a nation, derived from the factors of production which are rental income, wages generated by labor, the interest created by capital, profits from entrepreneurial ventures and ownership of land (MOFEA, 2009).

In consumer theory income is an amount Y to be spent on different commodity x and y in quantities x and y at prices Px and Py expressed as Y= Px.x +Py.y. The quantity

theory of money. The income theory of money has two approaches which are Income-Expenditure approach and saving and Investment approach both defines the income theory of money as relationships of money supply, prices, interest, investment and economic activity (Fisher, 1989).

From the income theory explained by different economists, the WRS adopted the theory as income of the farmers are direct proportional with the price, quantity and quality of cashew nut in the market and capital (education and assets) owned by the farmers. With the system farmers paid their income in three trenches. Trench one are paid 70% of the total price at given quantity, second trench are paid 30% and the last payment are bonus paid after the auction. Table 2.2 shows that income of the farmers dropped from 2000/= in 2009/2010 to 1800/= in 2010/2011 per kilogram due to changes of the price of cashew nut in the world market (TANECU, 2011).

2.1.1.2 Marketing Theory of Warehouse Receipt System

Marketing Theory aspects, including strategy, consumer behavior, new product development and the need of the mix of the right product, sold at the right price, in the right place and using the most suitable promotion. The marketing mix have to meet the product that must look good and work well, the price that the farmers have the high profit, the right place at the right time making sure that the commodity arrives when and where they are wanted is an important operation and the commodity were well promoted . Successful promotion helps to spread costs over a larger output (Onumah, 2001). The marketing system of the WRS includes quality and quantity of the cashew nut, price, warehouse, warehouse operator, buyers and exporters therefore has followed the theory of marketing described in the literature. The cashew nut marketing in Newala district and international marketing aspect does the same.

2.1.2 Cashew Marketing Process in Newala District

Prior to WRS in Newala district, private companies used to exploit farmers by buying the cash crop at prices that were too low to cover even the input costs. Cashew nut groves have aged and diseases and pests are not effectively controlled due to inherent

inefficiencies in the marketing system of the required inputs and poor performance of rural financial markets to finance the production system. Cashew nuts are purchased using a network of agents who go to the field to buy nuts for the large exporters. This removed farmers from the exporter, let alone the end market, that is when farmers harvest cashew nut they sell it at a low price, and that is for all farmers could get.

Government commercialise Tandahimba Newala Cooperative Union (TANECU) Ltd. in 2007. Since then the creditworthiness of the Primary Agriculture Marketing Cooperative Societies (AMCOS) has improved and marketing took place along the following steps. A Task Force that operates in confidentiality like a tender board assesses the bids that are proposed by the potential buyers and proclaim the winning proposal. In 2010/2011 an initial price of Tshs. 850/= per kg was given an additional of Tsh.350/=, making it in total Tsh. 1200/= per kg in 2011/2012 season (District profile, 2010).

The farmers deliver cashew nut to one of the 32 primary Agricultural Marketing Cooperative Societies (AMCOS) which issues crop receipt for the amount delivered. The AMCOS delivers the mentioned cashew nuts to a Registered Warehouse whom issues Warehouse Receipt for amount delivered. The AMCOS process the Warehouse Receipt to the bank and requests for a loan and AMCOS issues a cheque of 70% of the sales value to TANECU which endorses the mentioned cheque of 70% of the sales to bank and cashes the cheque (of value 70% of sales) of the same amount cash to AMCOS concerned. AMCOS pays the farmer concerned (at value of 70% of the sales value). TANECU prepares the Sales Catalogue for the prospective Cashew nut Buyers whom bid confidentially to procure Cashew nuts. The bid is opened confidentially by the Taskforce which includes Chairman TANECU, Manager TANECU, representatives from Cashew nut Board (CBT), Warehouse Receipt Licensing Board and Bank (TANECU, 2011).

The winning proposal of the highest Bidder is announced. TANECU issues an Invoice to the highest Bidder whom pays the mentioned amount to the Bank which issues a Release Warrant to the Buyer and the Buyer processes the Release Warrant to the AMCOS and

the Registered Warehouse respectively. The Registered Warehouse supplies the Cashew nuts. AMCOS issues a cheque of the remaining 30% through TANECU which endorses the cheque (of the remaining 30%) to the Bank and cashes the cheque (of the remaining 30%) to the AMCOS concerned. AMCOS pays (the remaining 30%) to the Farmer

Initial payment of 70% of the estimated (guaranteed) selling price is paid to the farmer directly after supply of the cashew nuts to the AMCOS and Registered Warehouse consequently. The remaining 30% is paid after the potential buyer has paid for its cashew nuts to the bank. However in reality the buyers procured the cashew nuts for in between Tshs. 950/= and Tshs. 1,400/= at the first auction. Over the 15 auctions in 2009/2010 prices varied in between Tshs.1, 050/= and Tshs. 820/= per kg. The payment of bonus in average Tshs. 165/= - took place afterwards when all dealings were accounted for. The variations in the bonus are determined by the supply of that particular AMCOS at that particular "market" day. In 2009/2010 TANECU paid in total over Tshs. 26,000 millions for the 8,810 tons of cashew nuts (District Profile, 2010).

2.1.3 Cashew nut Marketing Aspects

Cashew nut marketing aspects in brief were looked at in the regional and international levels.

Looking at international practice, the most comprehensive regulatory regimes found in North America (US and Canada) and the Philippines. The regimes are concerned specifically with agricultural commodities, and the warehouse operator (or mill in case of the Philippines) can issue warehouse receipts against stock deposited by farmers and own stock, by the means of rapidly raising funds against inventories. Regulation is very strict and officials are believed to be of high integrity. (Coulter and Onumah, 2002).

In US, the system streamlined with the US agricultural marketing system and up to the 1950s, playing a critical role in financing and development of the family farm organized under the US Warehousing Act of 1916, with subsequent amendments. The law is enforced by Federal and State agencies, whose programmes are described as voluntary in the sense that a warehouse operator (grain elevator) has the choice of being regulated by Federal or State agricultural authorities.

In recent years, the local subsidiaries of international inspection companies increased involvement, taking advantage of creation of liberalization of African commodity trade. The inspection companies set up tripartite Collateral Management Agreements (CMAs) involving a bank, the borrower and the collateral manager (i.e. the inspection company acting as warehouse operator), which allow depositors to secure bank credit. The WR are issued directly to the financing bank, not to the depositor and not transferable (Sijaona, 2002).

In a liberalized market and credit risks, CMAs provide the confidence for banks to continue financing import and export transactions. There are limitations to the scope and benefits from the CMAs as the main users tend to be large operators, who own or can rent entire warehouses and can afford fees per month. Services are not available to farmer groups or traders wish to deposit small volumes of commodity (e.g. 50–100 ton). The system used as a component in financing import and export transactions, rarely used for non-tradable, except for large processor. In most African countries, there have been very limited benefits to the domestic agricultural trade. Collateral managers sometimes experience losses through theft and fraud, and where losses occur, liability tends to be limited. The receipt is non-transferable and cannot be used as delivery instruments against contracts (Onumah, 2002).

The NGOs attempted to establish inventory credit systems for small farmer groups, being pioneered by Techno Serve in Ghana. Techno Serve's approach brought major immediate benefits to participating farmers but has not proven economically sustainable because of the small volumes of grain involved, much less than 1000 ton of maize in a single year (Kweka M. 2004).The scheme requires Techno Serve to provide intensive supervision, similar to CMAs, to give banks comfort. The system is out of proportion to the benefits involved. The experiences suggest that, to be sustainable, warehousing schemes must appeal to a wider clientele than smallholder farmers thereby building up volumes, reducing unit costs and improving overall system efficiency.

In Francophone West Africa, the system is known as the Warrantee System. They operate like Ghana. In Tanzania, IFAD funded a similar pilot where commercial collateral management companies were contracted to manage deposited commodities. The IFAD-funded project heavily subsidized the collateral management fees. Uganda developed a foundation on which the Uganda Commodity Exchange (UCE) is developing its delivery mechanism, especially for grains.

In Zambia, the Zambia Agricultural Commodity Exchange (ZAMACE) inherited a WRS successfully piloted with support from CFC and other donors including USAID, IFAD and the Dutch Government. The Common Fund for Commodities (CFC) provides financial assistance to developing countries for poverty alleviation through commodity-focused developments. The Regional Cashew Improvement Network for Eastern and Southern Africa (RECINESA) including seven countries namely Tanzania, Malawi, Mozambique, Kenya, Uganda, Madagascar and Ethiopia are also funded by the CFC. The overall objective of the Network is to raise the incomes and living standards of resource-poor farmers, and enhancing environmental wellbeing by promoting the maintenance of land (AAACP, 2009).

In Tanzania cashew nut marketing passed though different periods, now are the WRS. From the year 1960 to 1993 Tanzania embarked on an aggressive forming rural cooperative societies and farmers association formed with the hope that they will be appropriate instruments for representing farmers in negotiations with buyers, the Government, finance houses and cooperatives that deal with the cashew nut crop.
(Shomari, 1990). In 1961 and a few years after independence, individual private merchants, acting as middlemen between producers and the Indian buyers dominated the procurement of cashew nuts in Tanzania. Prices offered to farmers varied widely from place, season – to – season, and even within the same season. **(**AAACP, September 2009**).**
In 1962 the Southern Region Cashew nut Board (SRCB) was set up to carry out the marketing of cashew nuts in Tanganyika. The SRCB sold cashew nuts to exporters through auctions. Farmers were paid according to the price at the last auction. This

marketing system was efficient and each farmer was paid a price determined by the forces of the market **(**CBT reports, 2001**).**

In 1963 the National Agricultural Products Board (NAPB) replaced the SRCB first by the Southern Region Agricultural Products Board (SRAPB) and then by National Agricultural Products Board (NAPB) in 1964. When the NAPB was in existence. Primary cooperative societies procured cashew nuts from farmers and sold them to regional cooperative union (CBT reports, 1990). In 1974, The Cashew nut Authority of Tanzania (CATA) replaced the NAPB. CATA was given wide responsibilities for developing the Cashew nut Industry (CI) such as promoting, planting of few cashew trees, stimulating processing cashew nut and advising the government about the industry. CATA was the controller, the promoter, the procurer, the exporter and advisor of the government on CI. **(**Ellis, 1980). In 1984 the Tanzania Cashew nut Marketing Board (TCMB) was formed to replace CATA. The system of procurement of cashew nut through the Regional Cooperative Union (RCUs) and village primary societies continued unabated. The TCMB bought cashew nut from RCUs as predetermined annual into-store-price, arrived at after negotiations between the Board and each of the RCUs. The cashew was exported in raw form as all cashew factories had been closed by for lack of sufficient raw material to process among other reasons.

In 1993, The Cashew nut Marketing Board, Act No.21 of 1984 was amended and the Cashew nut Board of Tanzania (CBT) replaced TCMB. CBT assumed regulatory role of all activities in the cashew industry instead of being an exporter of raw cashew nuts, processor and exporter of kernels on behalf of Cooperatives. The government relinquished its control on prices and liberalized the procurement and export of cashew nut. In order for CBT to perform its assigned roles effectively, the government made Cashew nut regulations under the Cashew nut Marketing Act No. 21 of 1984 **(**Katinila, 2001).

During year 2000 the WRS in Tanzania was piloted by the government of Tanzania in collaboration with the international organizations which are Common Fund for Commodities (CFC), International Fund for Agriculture Development (IFAD) and Non

Governmenaved in the piloted areas and needs for a legal framework, the parliament of the United Republic of Tanzania passed a Warehouse Receipt bill in April 2005. The bill obtained a presidential assent in June 2005 and thus became law (Act.No.10 0f 2005) and its regulations were endorsed in 2006. Pursuant to section 1 of the Act, the Minister responsible for Marketing of agricultural commodities published a notice in the government gazette Number 185 of 8th December, 2006 declaring the operationalization of the Act. **(**Act. No. 10 0f 2005).

The Warehouse Receipt Act no 10 of 2005 in Tanzania introduces the WRS as a part of a framework of 'modern market institutions that countries adopt in different combinations and permutations according to circumstances, to develop their agriculture and render markets more efficient and effective in delivering benefits to consumers and producers. In all countries in the Network, cashew nut marketing structures have changed over the years due to changes in the overall macro-economic policies. Market liberalization policies in the region have put emphasis on separation of the governments from business. After liberalization, private companies were given permission to buy and export raw cashew nuts or process them within the countries and export kernels to foreign markets. Except for Malawi, the buying companies are either foreign-owned or owned by nationals (mainly of Asian origin) with good international trading contacts. The company mobilize large sums of short-term finance to fund the purchase of nuts and are able to make contracts with cashew processors or commission agents in India, that receive shipments from exporting countries. Appendix iii- v the market channels in Tanzania, Mozambique and Kenya (Anonymous reports, Naliendele1994-2001).

2.1.4 Warehouse Receipt Systems in Tanzania

WRS were developed in the 1990s as a response to farmers' income instability due to price fluctuations resulting from trade liberalization. According to Operational Manual 2008, the main objective of establishing Warehouse Receipt System in Tanzania is to introduce a system that will minimize various constraints hampering effective production and marketing of agricultural produce.

The specific objectives were to increase export earnings from agricultural production and marketing in different sub sector. Improve income of smallholder agricultural producers and small scale traders in the commodity trade, by increasing their share of export prices and limiting their risk exposure.

To strengthen public and private institutions and improve local human resource capacities to operate effectively in a liberalized market. The Warehouse Receipt Act no 10 of 2005 in Tanzania introduces and governs the Commodity WRS. The Act supports the participation of smallholder producers in agricultural commodities trade, access to bank credit and the reduction of postharvest losses. It provides a regulatory framework for the operations of the WRS, licensing procedures and other related matters. The Act provides the legal foundation for farmers and traders to obtain credit from lenders using Warehouse Receipts when deposit the produce in a licensed warehouse.

The Act legalizes the process of recapturing "dead capital" by establishing a mechanism whereby agriculture commodities can be used as collateral for credit obtained from a lender through negotiation of legally recognized Warehouse Receipts. WRS provide a solution by storing commodities for the suration of the low price season. Price volatility and lack of quality standards are attributed to market liberalization in the agricultural sector (IFAD, 2009).

2.1.5 Operationalization of the Warehouse Receipt System

The WRS has been in operation in more than 100 years in U.S.A and Canada, one of the reasons for its establishment being price stability. Cashew nuts farmers enjoy stable price and managed to sell at competitive price even during world economic recessions (RECINESA, 2004). The Warehouse Receipt Act the key actors in the system whom are necessary for the Warehouse Receipt to be operational are Depositors or farmers, Warehouse Operator, Financier, the Landers, the Buyers, Primary Cooperative Societies, Regional Cooperative Unions, Exporters and Regulatory Board.

The WRS stakeholders includes the Cashew nut Board of Tanzania (CBT), District Agricultural and Livestock Offices, government research and extensions services, financial institution as CRDB and NMB, and NGOs address the factors that constrain income from cashew nut farmers and perpetuate poverty (Operational Manual, 2008). Warehouse Receipt System payments has significantly raised commodity export volume and value. During last January 2011, the export volume of cashew nuts went up to 36,639 tons compared to 21,806 tons exported in December 2007. According to the Bank of Tanzania (BoT) February 2011 Economic review, the hefty increase in cashew-nut exports was for the most part responsible for raising the total value traditional exports by 8.7 percent to USD 54.7m. For the WRS farmers store cashew nuts, get a loan and wait for prices to go up, and then make a profit. Appendix iii shows the operationalization of WRS.

2.1.6 Cashew nut Value Chain

The main product in the cashew value chain is the raw nut. From the statistics of Cashew nut Board of Tanzania (Martin, et al 1997) states that 40% of these raw nuts are processed domestically into cashew Kernels which are sold on local markets or become exported, the rest is exported in raw form. Other byproducts and wastes from raw nuts including the shells. The nut has a shell of about 3cm thickness inside which is a soft honey comb structure containing a dark reddish brown viscous liquid, the Cashew Nut Shell Liquid. Also the tester from kernels which can be used in poultry feeds. Cashew apples can be used to process other by-products, but very few are currently utilized. The

potential of using cashew nut apples to produce juice, wines, marmalades, pickles, particular ethanol is high (Chijinga, 2001). Appendix vii concerned.

The raw nuts are dried in open space under the sun for a minimum of three days. The apple eventually gets used to produce juice and/or alcohol, however, in practice; the cashew apples are not commercially utilized. Raw cashew nuts at the farm level are harvested over a period of about four months, for most plantations in Tanzania this is between October and February (Masawe et al. 2011). The process of harvesting and drying is simultaneous and continues until the nuts, after about 3 days of drying, have attained the required moisture content of 8-10%. Storage with moisture content above 10% will results into decay or rotting which leads into low out-turn and quality.

2.1.7 Challenges Facing the Warehouse Receipt System

Tanzania Warehouse Licensing Board (2009), addressed the challenges facing WRS as poor infrastructure (markets, roads processing facilities), poor formation of stable coops and farmers business groups, creating a functioning warehouses, putting a warehouse receipts as a trading instruments, lending procedures and availability of financial services to farmers is not easy, low level of productions, poor quality and standards of commodities, produced still of poor grades and resistance from the existing marketing systems and channels – cartels, sabotages.

Low production levels of farmers; Ineffective marketing, pricing and taxation policies; Lack of standards which are harmonized with international standards; Weak institutional framework and declining cashew production are another challenges of the system.

2.1.8 Benefits of Warehouse Receipt System

The WRS facilitate trade by enabling commodities of known description to be assembled at stated locations. The WRS enhance marketing efficiency in cashew nut markets. The use of warehouses as delivery locations allow transparent trade in agricultural commodities to develop between farmers and cooperative society thereby reducing the length of the marketing chain and narrowing distribution margins.

The WRS provide ability to farmers to use the credit to venture into new enterprises. More farmers have been using the system and the AMCOS and SACCOs have been able to obtain bigger loans on favorable terms.

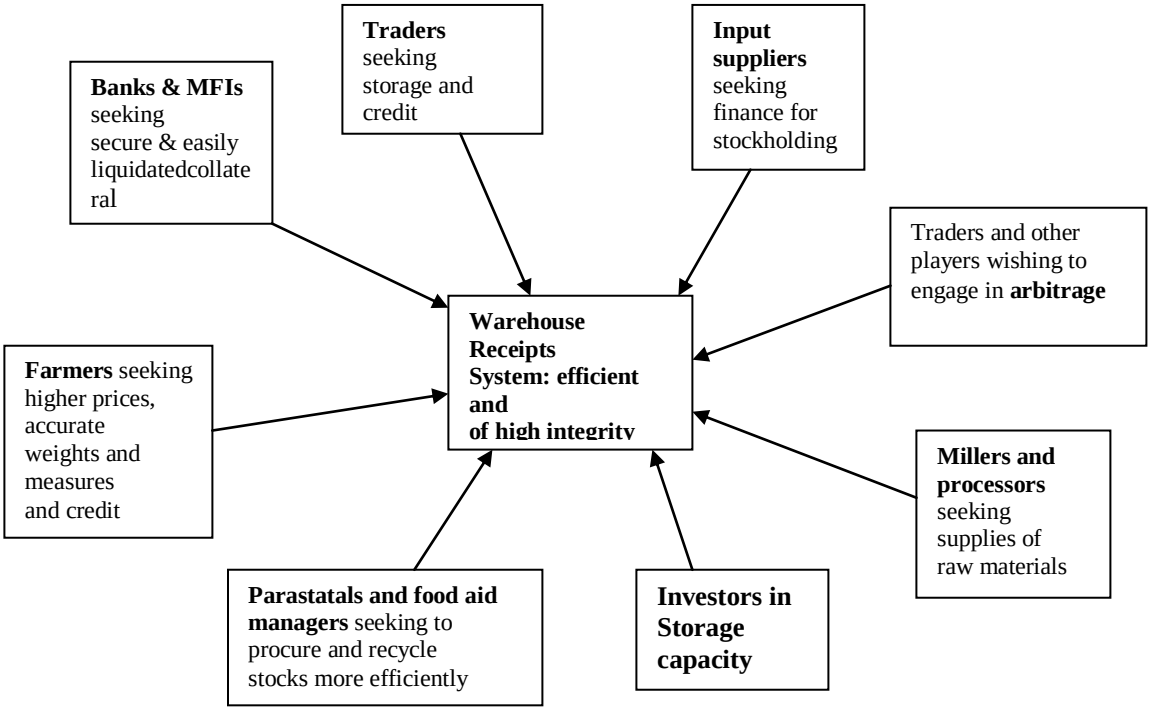
Traders have storage facilities and can sell with a good profit margin once market prices improve. Farmers are able to access markets rapidly, so they can wait to sell at the right time for the best price**.** The system contributes to the creation of cash and forward markets and thus enhances competition. The WRS provide all the essential information needed to complete a transaction between a seller and a buyer. It guarantees the existence of stocks; governments can achieve their security objectives by merely holding these receipts and WRS are price-hedging instrument that lenders can secure collateral (Kuserwa, 2009).

2.1.9 Poverty and Warehouse Receipt System

The agricultural productive work is the best mechanism for lifting people out of poverty and the strategies to expand economic opportunities and promote income growth are necessary for sustained poverty reduction highly supported by the direct relationship between cashew nut income of individual farmer and poverty. These views are adopted by most empirical studies on income and poverty using the income theory approach.

A well-developed WRS provides a forum for development of the entire commodity chain, providing incentives for a range of different parties, including farmers, financiers, traders, processors, public sector buyers, food aid managers and investors in storage capacity **(IFAD, 2009).**

Figure 2.1: Institutions with incentives to participate in the WRS



Source: Review of WRS, 2009

A study by Jayne and Chisvo (1991) in the case of Zimbabwe stated that for better storage facilities and localized warehouse receipting can help farmers hold back more crops, avoid circuitous transport and better assure their local food security. The difficulties stemming from the policy and institutional framework often make introduction of WRS a difficult undertaking, particularly with politically sensitive. The researcher explored the real situation in the WRS as the income theory reduces the income poverty of the farmers in the district.

2.2 The Empirical Literature Review

*2.2.*1 Models of Warehouse Receipt Systems

Onumah (2002) in their book states that the grain warehouse receipts were first used in Mesopotamia in 2400 BC and the first form of paper money used in UK were negotiable silver WR (Budd, 2001). Port warehousing companies and freight forwarders have for

long been involved in a simple system, typically found in Africa, under which they offer warehousing services without any regulatory authority oversight.

The empirical literature reviewed that there is a need for accelerated agricultural growth. Agricultural GDP has grown at 3.3 percent per year since 1985, the main food crops at3.5 percent and export crops at 5.4 percent per year. Considering that the overall GDP growth target for halving abject poverty by 2010 is in the range of 6-7 percent, this performance falls short of the needed growth (MKUKUTA, 2010).

The implementation of WRS in maize as a food cropping Iringa, Mbeya, Ruvuma, Rukwa and higher in Kibaigwa Corridor representing Arusha,Dodoma, Singida, Manyara and Morogoro, providing 60% dietary calories, to more than 37m Tanzanians therefore, maize shortage has been equated with food insecurity in the country.
The 35.9% of national output are maize from Southern Highland regions of Iringa, Mbeya, Ruvuma and Rukwa. The growth has been higher in the Kibaigwa Corridor representing Arusha, Dodoma, Singida, Manyara and Morogoro which taken by Dar es Salaam market and growth for Kibaigwa corridor has been higher than the national average for the period of 1998/9-2004/05.The maize market in the country and indeed Southern Highland requires a review of vision and mission at macro level rather than district/regional based measures (Mwakalinga, 2007).

The rice as a staple food produced in Mbarali and Tukuyu Mbeya, Morogoro and Tunduru. Its demand is higher than local production as reflected in the imports of 131,268 MT per annum for the period between 2003- 2006. Market price is high more than 200% compared to landed price of imported rice. One study estimated the price elasticity of demand for rice at 1.3, meaning a decrease in price triggers higher sales volume. Farmers should aim at increasing returns through higher productivity and reducing cost of production. Mbarali farmers in Mbeya is still a room for price improvement by branding and protecting the brand in the market especially Dar es Salaam. Rice producers are able to increase profitability by increased market access.

Financial institutions especially CRDB Bank, Savings and Credit Union League of Tanzania (SCULT) and Mufindi Community Bank (MUCOBA) are active in supporting saving and Credit Cooperative Societies (SACCOS). All stakeholders indicated that they do not foresee that availability of credit for WRS will be a problem. The challenge will continue to be low membership base and management weaknesses among SACCOS. There should be a strong drive to widen membership, capacity building in business planning and record keeping (Sijaona, 2007)

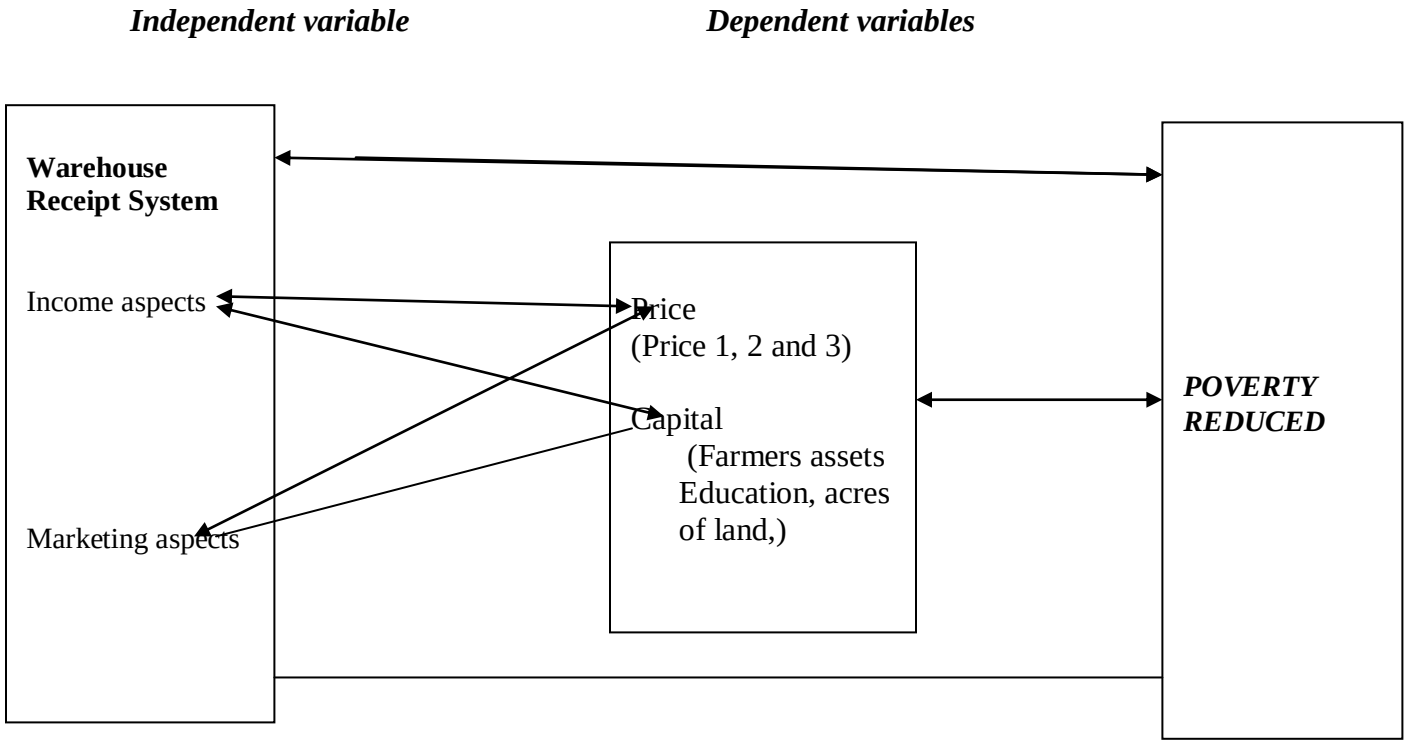
There are mixed results in the implementation of WRS due to seasonal supply fluctuations. During 2005/06 there was shortage of grains which benefited producers and primary traders. In 2006/07 there was oversupply resulting in unmet expectations. Despite the poor performance, farmers in the paddy zones are positive with the WRS; those in the maize zones were not committed. There is a need to enhance farmers' ownership of the WRS (Bennete, et al., 1979).

2.3 Conceptual Framework

The conceptual framework of the impact of the Warehouse Receipt System to alleviate income poverty of the cashew nut farmers in Newala district, focused on cashew nuts WRS help to improve the income of individual farmers in Newala district.

The study examined the relationship income and price. It means poverty measured by looking household social economic indicators.

Figure.2.2 The Impact of Warehouse Receipt System on Income Poverty Alleviation of Cashew nut farmers



Source: Researcher's conceptualization

KEY ⟷ ***Direct effect (Variables investigated)***

——— ***Indirect effect (variable not investigated)***

2.3.1 Deriving Income of the Farmers

The income and agricultural household approach where both explained as income of individual farmers is the function of price, assets/ capital(level of education of the farmers, number of acreage of land used for farming) (Mnenwa, 2010). The household approach is justified when both income and expenditure decisions interrelated ((REPOA, 2010). From income theory of WRS the conceptual behavioral model presented as **Y = *f (P, K)*** visualizes the general idea behind the research.

Where: Y= Income of the individual farmers P= represents prices one (first payment 70%), price two (second payment 30%) and price three (bonus) and K is farmers capital. This multidimensional model shows price relationships and impacts of trenches payment processes and concepts identified as crucial issues in the poverty reduction process. The discussion explained all the entities with their operationalization or research context.

Corral and Reardon (2001) explain the variables in the income function in terms of a farmer's incentives and capacities. The incentive refers to returns and risks in the forms of prices of inputs and outputs in the WRS. Wages given to labor during cashew nut weeding and production risks. The capacities are the income which responds to the incentives. Reardon (1998) explains that incentives either pull or push individuals into the market. For the WRS high price paid to farmers improve the income and welfare of the farmers. Lanjouw (2001) explain that farmers which are pulled into non-farm activities participate as a means of obtaining more income and improving current living conditions. The factors such as risk to the farm production, late payment, payment without bonus, lack of access to credit, for example will tend to push farmers into nonagricultural activities. The capacity place farmers in better positions to respond to incentives. A farmer may have the incentive to participate in farm activities because of stable prices, transparent during the auction, efficiency and accountability of the institutions (AMCOS, TANECU, BANK and CBT) during marketing processes and higher payment of cashew nut output including bonus.

2.4 Study Hypotheses

This research is guided by the following hypotheses:

1. The income of farm households in Newala is higher under the WRS than before the introduction of the WRS.

2. The WRS has improved the efficiency of the cashew nuts marketing system in Newala district.

CHAPTER THREE
RESEARCH METHODOLOGY

3.0 Introduction

This chapter presents research methodology consists of Research Design, Study area, Study population, Units of analysis, Variables and their measurements, Sample size and sampling techniques, Types and sources of data, Data collection methods, Validity issues and Data analysis methods.

3.1 Research Design

This study is statistical study design because the determination of degree of relationship between income of the farmers when using Warehouse Receipt System on cashew nut and the price and capital by using multiple regression procedures conducted in six villages in Newala district.

3.2 Study Area

The study was carried out at Newala district in Mtwara region. Geographically, Newala district is located in the southeast of Tanzania, between longitude 39 ^{o} - 40^{o} East of greenwhich meridian time and latitude 10^{o} -11^{o} south of Equator. The district is picked because it is among the district of major producers of the cashew nut in Mtwara region. In addition the cashew nuts are the major cash crop in the district. Newala is one of the six administrative districts of Mtwara Region. It is among the old colonial districts established in 1954 by the British Government under the Local Government Ordinance 1953 Cap. 333. .

The area covers 2,439 square kilometres and lies at about 900 metres above sea level on the Makonde Plateau. The district headquarters is located about 140 km on the South West of Mtwara town which is the regional headquarters. The map in an appendix1 shows the boundaries, divisions, wards, villages and road network of Newala district. The district are bounded by Masasi District (West), Tandahimba (East), Lindi (North)., Ruvuma River (South) which is also the boarder of the United Republic of Tanzania

with the Republic of Mozambique. The district obtains annual rainfall ranges from 900 – 1200mm with an average of 1000mm; mean temperature is 22 ^{o} C. The climate is characterized by two main seasons hot humid rainy season starting from November to May and less humid dry season from June to October.

The census of 2002 population of the district is about 191,436 of which 86,000 are Males and 105,436 are female with net population growth rate of 1%. It has 155 villages. Agriculture accounts for 85% of the district economy, cashew nuts contribute 75% of income. Income and per capital is 257,627/=. Other economic sectors are animal husbandry, industry and commerce. The main food crops in the district are cassava, maize, sorghum, millet and paddy. Leguminous crops are grown are pigeon peas, cowpeas, bambaranuts and groundnuts. Jafee (1995) found that cashew accounted for more than three-quarters of total farmer's income in Mtwara region.

3.3 Study Population

This study covered the farmers and AMCOS of six villages among 155 villages in the District. The study covered 200 total farmers out of403, 356. Farmers in those villages. Geographically these villages belong to centers of WRS operation. Tables 3.3 are the populations of the study areas.

3.4 Units of analysis

The unity of analysis chosen for inquiry comprises farmers and Primary Agricultural Marketing Cooperative Society (AMCOS). The selection of respondents was randomly based on experiences and knowledge on warehouse receipt marketing system. The table 3.4shows projected number of farmers in Newala district in 2008.

3.5 Variables and Measurements

The dependent variable of the study is farmers' income which was measured in terms of the amount earned by selling cashew nut under the WRS arrangement. The independent variables are price of cashew nuts, capital (such as education and land size in acres) for improving income. Table 3.4 the levels of income ranked.

3.5.1 Independent Variables

The study considers a set of explanatory variable that corresponds to the theoretical Variables expressed in the income model. In order to analyze the income for poverty reduction the level of income of the farmers analyzed. The indicator of this variable shown on assets owned by farmers when using WRS, the ability of the farmers to buy bicycle or motorcycle for transportation of cashew nut, ability of the farmers to educate children, weeding farms, improved farmers houses and infrastructure.

3.5.2 Dependent Variables

The dependent variables are functions of a vector of price and capital(education and land assets). The variable, days worked per year, measures how much time an individual dedicates to farming activities. The variable in this study aggregates (or disaggregates) the number of hours, days, weeks and months of work declared by an individual; time of weeding per year make up a year's work.

3.6 Sample size and Sampling Techniques

The sample size was collected at six villages in Newala district in Mtwara region.
The 200 farmers and 6 Primary Agricultural Marketing Cooperative Societies (AMCOS) with the WRS selected both random and non-random samplings used to get elements to be included in the sample. Two sampling technique are used namely, strategic and simple random sampling. The sample was also stratified between populated villages and dispersed areas. The strategic sampling was used to select AMCOS representatives. The reasons of using this method is that the cooperative workers have an experience of using warehouse receipt system. Simple random sampling was used to select individual farmers in order to reduce biasness on the information.

3.7 Data Collection Methods

A questionnaire was developed to interview farmers and key AMCOS leaders. This instrument was used to collect primary data in the field. The Primary data were collected from farmers in six villages namely Malatu, Chitekete, Luchingu, Mtunguru, Minjale

and Mpwapwa and from six Agricultural Marketing Cooperative Society (AMCOS). The samples for questionnaire and interview guide are in appendix ix.

The secondary data collected through documentary sources. Information was obtained through various relevant documents from Newala District council profiles, from TANECU documents, journals and magazines about the WRS from Regional Commissioners Office, Research reports from Regional Commissioners Office, files from District Commissioners office, internet on global issues concerning WRS and quarterly reports from district agricultural officer of the Newala district council.

3.8 Validity of the Research

The information gathered was edited to ensure completeness, accuracy, clarity and matches to the research problems. About 200 farm households responded effectively to the questionnaires. The impact of warehouse receipt system to alleviate income poverty of the cashew nut farmers were possible measured because price increased yearly. The indicators on reduction of poverty showed on levels of income and cashew nut payments to farmers. Price of cashew nut increased from 500/= before WRS to 1,200/= per kilogram after WRS in 2011/2012 seasons. In general the data is valid because it shows the impact on the study.

3.9 Data Analysis Methods

The study used econometric techniques to estimate and test the income poverty reduction effect of WRS among farmers in Newala. More specifically, the Ordinary Least Square (OLS) was applied as the dependent variable was ratio scaled.

3.9.1 General Econometric Model

In order to address the theoretical income modal of the WRS and the research questions stated above, the general linear econometric models were used to analyze the impact of the WRS on income poverty alleviation in Newala district is

$$\boldsymbol{Y = \beta_0 + \beta_i P + \beta_i K + \varepsilon}$$

The terms of the equation are as Y = cashew nut income, P = vector of price one (warehouse commodity price of 70%,price two price of 30% and price three (Bonus)
K = Farmers capital assets resulted from use of WRS, βi = coefficients of the exogenous variables and ε = the error term.

3.9:2 Estimation Model

Two estimation models are used,

$$\mathbf{Y} = \boldsymbol{\beta_0} + \boldsymbol{\beta_1 P_1} + \boldsymbol{\beta_2 P_2} + \boldsymbol{\beta_3 P_3} + \boldsymbol{\beta_4 k} + \boldsymbol{u}$$

Where: **Y** is the income from farm by using WRS. ***B***is the vector of parameters of p1, p2, p3 and k. P1, P2, P3*are the* exogenous explanatory variables and **k** are capital ***u*** *is* the error term. The model is analyzed by using variance analysis (ANOVA) regression technique was undertaken (Algina, et al., 1999). The model implies that cashew nut income obtained by the farmers is a function of price and Capital availability. The modal used to estimate the income poverty because variable are highly correlated. The sample stratification for the six villages made some of them to be over represented and others under represented, which is not consistent with the random sampling condition necessary to produce unbiased estimates (Cohen and Cohen, 1983). The inequitable distribution of the sample size between the villages with low farmers and that of high farmers the samples are weighted.

CHAPTER FOUR

PRESENTATION OF FINDINGS

4.0 Introduction

The presentation of the findings aimed to describe and analyses the profile of the respondent and its characteristics, testing hypothesis one and two of and general findings. To test given hypothesis the Statistical Package for Social Sciences (SPSS) procedures are used. The multivariate analysis procedures by using analysis of variance (ANOVA) to test hypothesis is used.

4.1 Profile of Respondents

A total of 200 farmers were interviewed and given questionnaire in six villages in Newala district. Tables 4.6-4 shows the distributions of respondents.

Table 4.6 shows the respondents 71% (142) were male responded to questionnaires. Women were very busy with farming, caring the children and harvesting because during March it's the peak period of farm activities. The women respond were 29% (58) of the total farmers.

Table 4.7 shows that price of cashew nut increased by 59% (118) in 2010/2011 year compared 5 %(10) price of 2008/2009. The increase in price improved the income of the farmers in the district.

Table 4.8 shows farmers in Malatu responds by 38% (76), Luchingu 16.5%(33), Mtunguru 13,5%(27), Minjale 13%(26), Chitekete 10.5%(21), and Mpwapwa 8.5%(17). Village variables show that among the selected village Luchingu and Mpwapwa were characterized as having in a lower land as Luchingu is nearby Ruvuma River where the land is wet in most months in a year, also Mpwapwa characterized the same. These area cashew nuts are produced in two seasons in a year. The remaining villages characterized as highland of makonde plateu where it's dry in a half of the months in a year and

production is in one season. Taylor (1996) state that in places where there is contrasting agro climatic variability and significant differences in income composition.

Table 4.9 shows that primary school education level responded by 68.5% (137), secondary school level responded by 23.5 %(47), college level by 3.5% (7) and tertiary level by 4.5% (9). The primary education leavers indulge in farming activities and most secondary school and college leavers diversify from farming. The variable on educational level show the marginal rate of return of having additional years of education and how it impacts participation on farming activities and level of income.

Table 4.10.shows acres ranging 1-5 acres are 66.5%(133), who own 6-10 acres are 22%(44), 11-15 acres are 6.5%(13), ranging 16 – 20 acres are 2%(4), ranging 21-25 acres are 1%(2) and ranging 26 and above acres are 2%(4). The farmers with greater access of cashew nut acres will have positive and significant impacts on improved income of cashew nut farmers.

Table 4.11 represents income received by farmers after selling cashew nuts. Most (43%) farmers obtain income below Tshs. 500,000/= followed by the farmers receives income not more than Tshs. 2,000,000/= by 35% (70). The indicator of low income answered why farmers in Newala district remain poor under WRS .The income not enough to tackle the annual problems including social and economic activities as payment of fees for schools children, buying food, buying clothes, building quality house, travelling costs, weeding costs, buying inputs, capacity to tackle emergencies and daily expenditures.

Table 4.12 shows the responses among the surveyed farm households regarding whether they are aware or not about the existence of the warehouse marketing system. The marketing system is good by 47% (94). The bad performance of the marketing system is due to taxes, late payment, and other factors. The taxes charged are Levy of Tshs. 40/= per kg to Newala District Council, Tshs.30/= per kg for service costs to the AMCOS, Tshs 40/= per kg for service costs to TANECU, Tshs. 50/= per kg for transportation,

Tshs. 8/= per kg for Warehouse Operations, Tshs. 32/= per kg for the bag and Tshs. 10/= per kg for Newala Development Foundation (NDF). All these levies are charged in one kilogramme of the cashew nut. The Flynn, 2004 concluded that the poverty of the producers is palpable and increasing as a result of excessive taxes, levies and forced contribution

4.2 Regression results of the Income

The raw data regressed and estimation model of the income results when SPSS econometric software used to estimate the model. The multiple regression coefficients which determine the strength of the linear relationship between variables test the given hypothesis, Table 4.13

The income equation

$$Y = 1.27 - 0.021P + 0.084E + 0.327A$$

$$SE \quad (.289) \quad (.o97) \quad (.075) \quad (.057)$$

$$t \quad (4.395) \quad (-.215) \quad (1.119) \quad (5.708)$$

$$R = .2394 \qquad R^2 = 0.155 \quad Adjusted\ R^2 = 0.142\ F = 11.98.$$

Where

Y= cashew nut income, P= price of cashew nut, E= education level of the farmers, Acres owned by the farmer (education level and acres of the farms all represents capital),

SE = standard error

The R^2 value of about 0.155 means that about 15.5 percent of the variation in income is explained by price, education level and acres of cashew nut farm the farmer own.

The F value (11.98) computed exceeds the critical F value from the F table at the 5% level of significant which is (2.95) therefore null hypothesis rejected and F value is statistically significant means that the income of the cashew nut farmers depends on price, level of education and acres the cashew nut farms.

4.3 Regression results of the Marketing of WRS

The purpose of the marketing is to increase income of the farmers. The raw data regressed and estimation model of the WRS income results when SPSS econometric software used to estimate the model.

The multiple regression coefficients which determine the strength of the linear relationship between variables test the given hypothesis, table 4.14 concerned.

The warehouse marketing system equation

Y (WRS) = 1.851 – 0.101P + 0.075E + 0.136A

SE (- .317) (-.106) (.083) (.063)

t (5.841) (.946) (- .119) (2.176)

R = .171 R^2 = .029 Adjusted R^2 = .014 F =1.970

Where

Y (WRS) = income due to marketing of Warehouse Receipt System,

The R^2 value of about 0.171 means that about 17.1 percent of the variation in the marketing of WRS is explained by price, education level and acres of cashew nut farm the farmer own.

The F value (*1.970*) computed not exceeds the critical F value from the F table at the 5% level of significant which is (2.95) therefore null hypothesis accepted and F value is statistically not significant means that the marketing WRS of the cashew nut farmers are not depends on price, level of education and acres the cashew nut farms.

4.4 Testing Hypothesis

4.2.1 Hypothesis 1: The income of farm households in Newala is higher under the WRS than before the introduction of the WRS.

The various literature reviews explained in this study, the expectations is that coefficient value of variable price and capital (education and land owned by farmers) to be positive.

Proportions of the variance in the dependent variable income explain variation in the independent variables price and capital. Thus, 15.5% of the variation in price that explained by differences in income between Tshs. 1 – 500,000/= of farmers income. It means the farmers receive income not exceeds Tshs. 500,000/= The Standard Error of the Estimate gives margin of error for the prediction then 81% of the data will fall within one standard error of the estimate of the predicted value. The null hypothesis *H0:B0<0* is rejected and accepted the alternative*H1: B1>0*. The level of farmer's education and number of acres the farmer own has positive and direct influence on farmer's income and poverty reduction. Decreases in price of the cashew nut in the market reduce farmer's income by- 0,021 which are in thousands of Tanzania shillings.

4.4.2 Testing Hypothesis 2: The WRS has improved the efficiency of the cashew nuts marketing system in Newala district.

The estimation model of the Warehouse Receipt Marketing System is shown in Table 4.16. The price is the base of the marketing and its coefficient is expected to be positive value. The proportions of the variance in the dependent variable price and capital (education and assets) explain variation in the independent variable WRS. The 2.3% of the R square determines variance in the dependent variable warehouse marketing system. The Standard Error of 86.7% will fall within one standard error of the estimate of the predicted value.

Since the F value (1.568) computed exceeds the critical F value from the table at 5%. Level of significant, then the null hypothesis *H0:B0<0* is rejected and accepted the alternative *H1: B1>0*. The level of farmer's education and number of acres the farmer own has positive and direct influence on marketing and poverty reduction. The marketing of the cashew nut through WRS has negative impact because price reduces by 0. 168 which are in thousands of Tanzania shillings.

4.5 General Findings

4.5.1 Whether the old system works better than the current warehouse receipt system

The farmers were asked to provide their views as to whether the previous system worked better than the current WRS system. Farmers responded that old system which was free market sold cashew nut in batter system and big dishes selling (Kangomba) was better than the WRS because the payment was based on full payment not in trenches, availability of reliable market and its effectiveness is due to the fact that, payment done without regarding the loan from bank which charge interest.

4.5.2 Whether the old system performed poorly and why was the case

Farmers were asked of their opinion of whether they see the old system performed poorly, and what could this poor performance be associated with. About 198 farmers (99%) responded the questionnaires as the old marketing system perform poor because of low cashew nut price, there were no bonus and the farmers were not benefited by the end sale in the external market. The price of the cashew nut were not known before by the farmers, price were free set by the businessmen in the form of "kangomba" system, price instability example after chrismus price changed.

The old system **l**ack good supervision, no receipt issued no price stability. During the same period price changed as first agent buy cashew nut by Tshs 700/= per kilogram another businessmen buy Tshs. 500/= per kilogram and another businessmen buy Tshs 350/= per kilogram of cashew nut**.** Indian businessmen exploited farmers and changed price for them to get super profit and when farmers show resistance to the price, the Indian businessmen did not buy cashew nut.

The government did not set the procedures on cashew crop therefore businessmen had power over price; they decided what they want about price during buying of the cashew nut from farmers.

4.5.3 Perceptions about the usefulness of the warehouse receipt marketing system to farmers in Newala

About 198 farmers respond (99%) to the question as the system is helpful to Newala farmers because price of the cashew nut are stable and fixed. Farmers in Newala receive bonus. The warehouse receipt system is good organized and well supervised with **r**eliable market. The WRS provides slight changes to farmers as improved good infrastructure, improved transport facilities like increase in motorcycles, bicycles, motorcars and asset

4.5.4 Possible Measures to Improve the WRS

About 195 Farmers (98%) suggest that in order the system to be sustainable and alleviate income poverty, the payment of cashew nut should be paid fully or first payment should be 90% rather than 70% of the present in the system.

The Government should increase the price of the cashew nut (indicative price) within the country and set the price of buyers (external buyers) before the market to take over.

The Government should reduce long channel of cashew nut selling and go direct to farmers instead of passing through AMCOS, TANECU and other organization because this long channel reduce farmers real income.

The awareness or education should be provided to District officials for good services to farmers because officers are very beauracratic in decision making and the responsibilities to farmers is not good especially district cooperative officer.

The farmers suggest that the word BONUS should be changed instead it will be known as phase three payment and payment to be legal payment to farmers.

The Government should reduce tax to businessmen to encourage them to buy cashew nut at a time and farmers should participate in price setting starting from village level by open meeting and discussion with farmers. The government should set the system for all cashew nut stakeholders to participate in discussion about shortcomings in the marketing system and how to remove it. The government should remove or review policy which set TANECO, MARCU in the marketing channel to reduce operational costs. Also the

Government should make follow-ups about reliable availability of inputs for cashew nut farmers and encourage cooperative society to provide loan to farmers.

4.5.5 How do you judge the cashew nut warehouse receipt marketing system?

About 95%) Farmers respond that the system is good if laws and procedures on its operation are followed effectively. The system is good because economically and socially life are improved, most farmers increases livestock, opening new business and pay costs of inputs and servicing cashew nut farms. The system is good because the price (indicative price) does not change throughout the period and payment should be in two phases, first phase should be paid all amount of indicative price and second phase bonus. The system is good because cashew nuts are bought in organized way and payment in loan bases might not happen to farmers. The politics should not interfere the performance of the system. Farmers suggest that every primary cooperative society should have its own price depending on quality of the cashew nuts.

The system removed exploitation and dictatorship which have been done by the big businessmen to farmers. The system is good but reduces tax and levies charged in one kilogramme of cashew nut and should reduce corruption in the warehouse.

4.5.6 what can be done to rectify the short comings in the system? (If any)

The 198 (99%) Farmer's respond that in order to reduce or remove those shortcomings in the system the payment cashew nuts sales to farmers should be in time i.e. to avoid delay in payment and all amount of money receipted and bonus should be paid once to farmers. High attention is needed for farmers to participate in decision making about the cashew nut output. Policy makers should reduce any inconveniences happening to farmer's example rejection of the cashew nut due to complain in the warehouse like undried and unclean cashew nut. TANECU should improve transparency during the cashew nut auction. The Taxes collected during cashew nut selling should go directly to help farmers in the required area like building dispensaries, road constructions and other services. The Agricultural Marketing of Primary Cooperative Society should employ professionals who had education like accountants. The price of cashew nut should match

with the cost of production. The farmers suggest that there is no needs of TANECU in steady of primary cooperative society supervise selling of the cashew nut in the auction. The Government should allow small farmers associations like "Wanunuzi wa Korosho Newala" (WAKONE) to buy cashew nut direct from farmers to auction in order to increase competitions in the market. The Indian businessmen should be removed to receive cashew nuts from AMCOS in the warehouse for auction. The Channels of selling cashew nut are too long so that it motivates dubious doings. The Primary cooperative society should find loan from CRDB, NMB and other Banks to reduce Bank monopoly. The taxes and Levies collected by TANECU should contribute on development projects. The government should open international market instead of depending on Indian market.

4.5.7 What are the major challenges the farmers are facing regarding the WRS?

About 74% Farmers responded that payment is done in loan bases and in small installments. The delay of payment causes farmers lucky of social and economic services and to buy inputs and services their farms. The price changes in the auction, the internal conflicts within the primary cooperative societies and with farmers and unstable and unreliable world cashew nut market are other challenges.

The system is not transparent enough to farmers especially during the auction therefore farmers loose trust and peace to the government and ruling party. Example farmers in Tandahimba district blocked the road and many crisis of peace destruction happened during 10/04/2012 – to 24/04/2012. Corruption during trench of payment from the Primary cooperative society workers to farmers. The system allows loopholes of theft in the warehouse and disturbances are given to primary cooperative society and farmers during cashew nut reserves in the warehouses. Also delay of auction of cashew nuts decreases values and quality. Many businesses closed during 2011/2012 season because most of the businessmen depend on cashew nut output which proved failure during the last season.

4.5.8 Suggest ways to make the system to work effectively to all stakeholders?

The 198 (99%) Farmers suggest that, the cashew nut board should plan well about pricing and marketing of chew nut which will satisfy the demand of the stakeholders. The board should consider the problems facing farmers about cost of cashew nut inputs and pesticide. All stakeholders should participate in every step in price setting, auctioning and exporting cashew nut. The bank should reduce loan interest so that the cooperative society will lend on time. Either government should buy cashew nuts direct from farmers not through banks because those banks have high interest. 50% Farmers suggest frequency changes in leadership in a primary cooperative society and TANECU. The price of inputs should be low to make farmers to buy the inputs.

The Government should conduct continues assessments/evaluation of the system for better performance and free market is needed for internal and external market in order to motivate stakeholders. The Primary Cooperative Society should work like SACCOS. The government should reduce or remove middlemen in the marketing system. The management and supervision of big warehouses should not give to Indian businessmen and all leaders who are not trustful in the system government should take law procedures. Also Government officials should provide continuous education to farmers about marketing system. Marketing supervision should be done by the leaders who knows the costs of the cashew nut without interfering with the leaders who knows coffee marketing schemes and TANECU should not buy the cashew nut from the farmers instead all works should left to hand of primary cooperative union.

CHAPTER FIVE

DISCUSSION OF THE FINDINGS

5.0 Introduction

The regression results and findings are discussed economically, socially and statistically on the impact of income poverty of the farmers in Newala.

5.1Discussion on District Profiles

The villages make economies distinct in agricultural income levels of the farmers. Agricultural income includes all income from cashew nut crop, food crops like maize, cassava, pigeon peas, legumes, potatoes and ground nuts, and livestock production minus expenses, home consumption and production losses. Income earned through nonagricultural activities includes agricultural processing and entrepreneurial activity in the areas. Agricultural casual work income and nonagricultural casual work income are gross incomes derived from those pursuits. The area with high cashew nut production characterized high farmer's income.

The main sources of income are from cashew nut selling which contribute 86.5% and other sources contribute only 13.5%. Table3.6. The age groups between 21 – 60 years are working and active age. The farmers at these ages have capacity to produce more cashew and income improved.

The marketing system performs purely badly before warehouse receipt system by 35.5% (71). Before WRS the market were liberalized therefore there was not bound in laws and regulations. It was before WRS the Indian businessmen dominate the market and businessmen planned price which exploited farmers by using barter system called "Kangomba" modal of buying cashew nuts.

Most household have a family ranging 6 – 10 people responds by 50.5% (101), ranging 1 -5 people responds by 40%(80), ranging 11-15 people by 8% (16), ranging 16-20

people by 1.5% (3). The families with large number of farmers generate high income. The average of birth in each family is between 4 – 8 children.

Table 5.20 the farmers weed their cashew nut farms twice per period of cashew nut season by frequency of 52%(104) while 31%(62) the farmers weed farms once per period and 17% (34) farmers service farms three times. The assumption is that the farmers who earn income from Tshs. 4,000,000/= and above have the capacity to weed three times because they can hire labor and use mechanization.

In Table 5.21, the 79.5% (141) farmers carried the cashew nut by a bicycle, 14.5% (29) carried by motorcycle, 13.5% (27) carried by head and 1.5% (3) carried by motorcar. In average most farmers have a bicycle in Newala district. Assumption is that the income of 500,000/= Tshs. per annum, the farmers had capacity to buy a bicycle. There are slight changes in income poverty reduction because farmers carry their luggage's by bicycle instead of carrying by head.

5.2 Discussion on regression results

Regression results show that the price, level of education and acres the farmer own influence on the income of the cashew nut farmers as far as the F- test is concerned.

The variables are hypothized in 5% level of significant economically the results shows decrease changes in price influences decrease in income of the farmers. In WRS farmer's income depends mostly in price, but the variable price shows the negative direction to income that statistically not significant due to the fact that the price of input is high, high tax collected in one kilogram and low servicing of the cashew nut farms. The negative coefficient of the price indicates the decrease in price lower farmer's income in that case poverty still persists.

The education of the farmers (human capital) was significant and positive coefficients imply that by increasing the education level of the farmers increase per capital income of the of the farmers. Education leads to proficient farmer's economic performance as a whole. Farmers with relative high education are more likely to have skills and opportunities to successfully into agricultural productivity and other income generating

activities that stimulate the income growth through export of cashew therefore improved standard of living of the farmers.

To increase education to farmers requires long term investment to increase quality and quantity education. Educating more farmers to high level is necessary but not sufficient; the important is to raise standards of education. The type of education captured during data collection is formal school education which can be adequately substantiated. The basic literacy is important for carrying out activities that range from production to services and manufacturing. These findings are consistent with the literature, where it is found that higher levels of education will not contribute to increased earnings from agricultural wage employment (Escobal, 2001)

The income of the farmers is paralyzed by number of dependant on the family therefore high consumption lowers the income and vice versa. The indicators of improved standard of living are on improved transport facilities where by farmers carried the cashew nut after harvesting by bicycle instead of carrying by head.

The social implications of the results is that the farmers with high level of education and own large number of acres has the possibility of having high output because of high quantity at any price therefore wellbeing of the farmers improved. Price and capital has no influence on marketing of cashew nut through WRS, it means there is no effects on dependent variable warehouse receipt system.

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CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.0 Introduction

This study contributes to understanding the impact of warehouse receipt system to cashew nut farmer's income to alleviate poverty in Newala district addressing two research hypothesis, improved farmers income and marketing of WRS. The warehouse receipt system was started on 1962 in other name. After 43 years of highly modified marketing system of warehousing crops introduced. A total of 200 farmers were selected purposively and randomly, and responded to questionnaire and interview. In addition, documentary review was employed to supplement primary data. The model was tested using an F-test to determine whether or not the proposed explanatory variables jointly influence the dependent variable.

6.1 Conclusions

The objective of WRS to improve income of cashew nut farmers in Newala district in commodity trade still suffers from significant weaknesses that impair efficiency of farmer's income and marketing system. Those weaknesses are due to market failure which led to delay of payment, payment in trenches and lack of last payment (bonus),many taxes paid in one kilogram of cashew nut crop and led to undesired outcomes like crisis caused by the farmers in Tandahimba district during the field to claim for their payments. Through analysis, the variable price shows negative impact on income and marketing due to those weaknesses. Education variable is positive and statistically significant for income and marketing of warehouse receipt system. Taxes are collected in gross sales rather than margin or profit without considering the production costs the farmers incurred. The poverty is still persisting in the district due to slight changes in farmer's income.

The objective of improving local human resource capacities to operate effectively in a liberalized market has direct influence on farmer's income and marketing of WRS.

The WRS empowering smallholder producers to form and trade through business groups and facilitates linkages to improve efficiency in the market supply chain.

About 69% of farmers in Newala district have primary school education and only23.5% secondary education and 3.5% university. Therefore most AMCOS lacked individuals with at least secondary education that could spearhead development of their area at the local level. The price and capital have strong significant on cashew nut income. It is important to increase cashew nut production in order to increase number of people who attain secondary and higher education. The magnitude of change of education (0.084) in income is lower than those of marketing of WRS 0.075. Marketing of WRS needs higher education than the farmers to receive income. The sample villages in the district tend to have different income growth and development levels due to size, geographical location, historical background, variety and quality of natural resources, trade links and dependency and industrial structure are among the determinants of the development level of the district.

6.2 Policy Implications

There is a need of development strategies supporting the warehouse marketing system to avoid system failure.

6.2.1 Support to producer associations

- The government should support and allow the farmers unions like WAKONE on external marketing search in order to increase competition, access information about market, credit and bargaining power through collective crop marketing.
- The government should give mandate AMCOS direct participation in the auction.

6.2.2 Strategies to increase production

Using improved planting materials, improving husbandry practices, rehabilitation and upgrading of abandoned cashew orchards and introducing the crop in new areas that have shown some potential for growing the crop.

- The farmers should be offered technical assistance and financial incentives in high potential areas and encouraging kernel processors to undertake backward integration by opening own farms that would supply cashew nuts.
- To educate farmers through training of various technologies and skills of cashew production and marketing system.
- To improve adequate application of inputs and over-aged tree should be removed and farmers should be willing to plant new trees using improved planting materials.
- To encourage investment in cashew production and processing by removing barriers to investment imposing surcharges on exports of raw nuts in order to give priority to selling of raw nuts to local processors.
- The banks should be the sustainable sources of funds to finance cashew nut industries.
- To stream line registration of companies and offering incentives to processors such as exemptions of duty for imports and tax holidays.
- The impacts of cashew nut incomes could provide a richer interpretation of the dynamic of agricultural production of the rural economy.

6.2.3 Improving WRS to be sustainable

To encourage progress towards better cashew quality, by starting at the farm gate and re-introduction of a system of price differentials for different grades.

Government should reduce taxes and remove levies and contributions charged in one kilogram of cashew nut sells and all remains to farmers.

The SACCOS should be strengthened in order to provide credit to AMCOS.

The professional staff of the AMCOS, TANECU and Regional Cooperative Union (MARCU) should be employed according to public employment scheme in order to take legal measures in case unlawful issues happen.

The third payment (bonus) of cashew nut should be paid immediately after the auction to avoid exploitation from unfaithful leaders.

The political leaders should not mix between politics and reality of the warehouse receipt system to avoid crisis which might happen.

There is a need to increase the capacity of government staffs to undertake ex ante and ex post evaluation of policy proposals.

6.3 Areas for future research

To improve quality of research, there is an urgent need to secure sustainable funding for research and development activities. For future research it would be valuable to follow up the baseline survey in whole district in order to compare changes between periods (agricultural to future years) and to see the patterns of farmer's incomes in Newala district.

More research should be conducted to find out the money collected by AMCOS and TANECU where it goes because collection are as AMCOS Tshs 30/= per kilograms and TANECU Tshs.40/= per kilogram of cashew nut respectively.

Mtwara GDP steady increase from Tshs.376, 119 billion in 2006 to 574.4 billion 2010 (URT, 2010). Mtwara contribute to average of 5% of national GDP which ranked highly among the 21 regions of Tanzania mainland. This indicator does not correspond to incidence of poverty reduction to cashew nut farmers in Mtwara so that critical research on poverty incidence is needed to determine the causes of rich poor phenomenon of the farmers in Mtwara.

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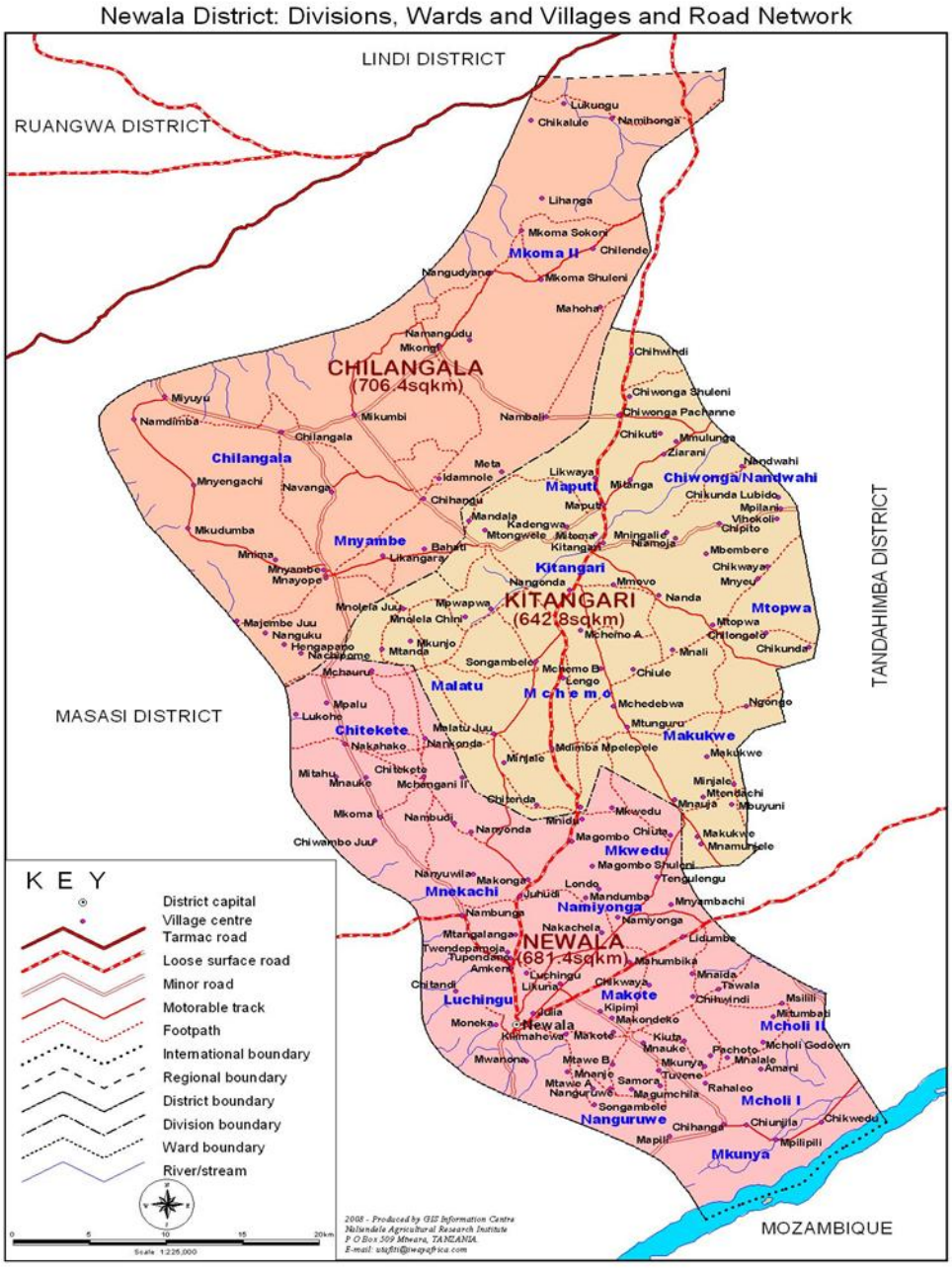
APPENDICES

APPENDIX I:

Newala District showing Divisions, Wards, Villages and Road Network



Source: Newala district council profile (2009

APPENDIX II:

The Warehouse Receipt.

TANDAHIMBA – NEWALA COOPERATIVE UNION (LTD)

P.O.BOX 194 NEWALA, TEL:023– 2410346

STAKABADHI YA MAZAO **NO.A……**

Chama/Kijiji cha…… Reg.Na…….

Chama kimepokea toka kwa……. Na……....

Zao…… Daraja……..

Tarehe……..20……... Wiki Na……

Ununuzi Kilo		Bei Kilo Moja		Jumla		Makato Ya Deni		Malipo Halisi	

Shilingi……

……

Nimepokea Fedha iliyoandikwa hapo juu

……. **……**

Saini ya Mpokeaji **Saini ya Mlipaji**

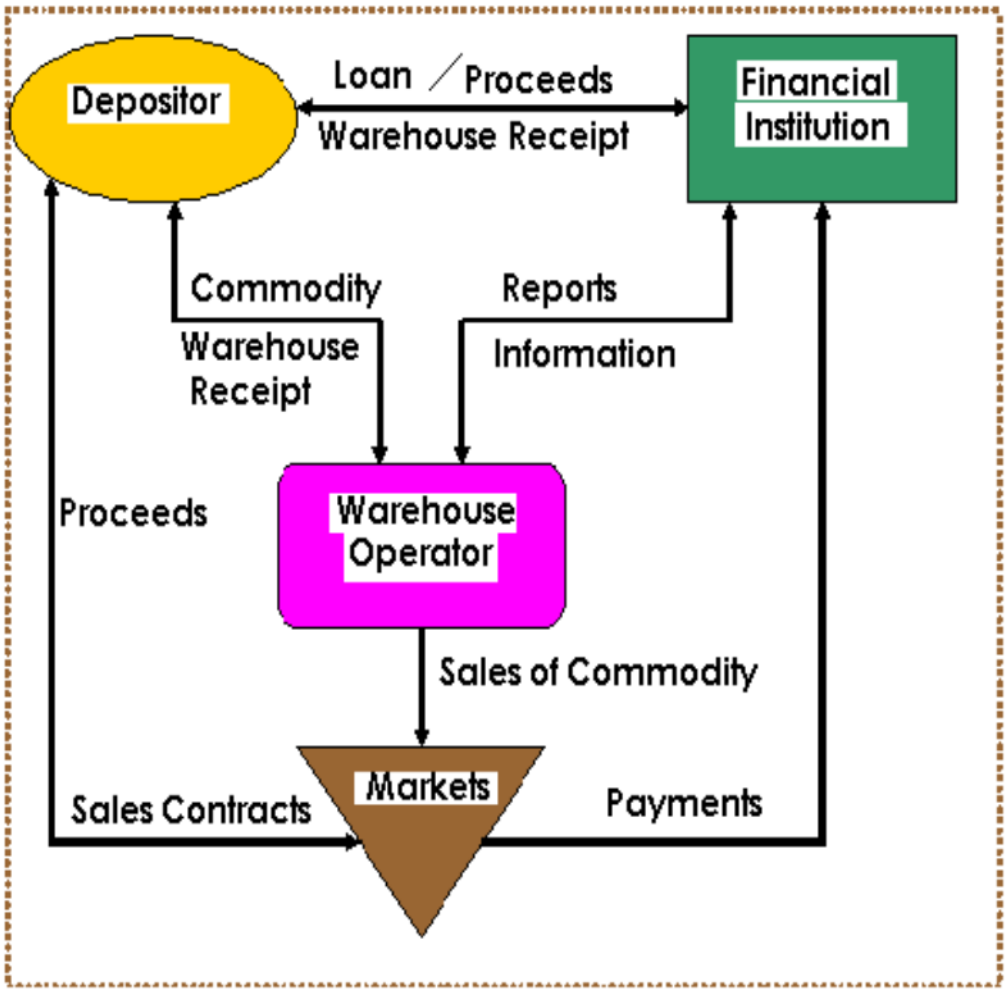
UGAWAJI 1.Mlipwaji

2. Mwandishi/Mhasibu

3. Kubaki kitabuni

APPENDIX III

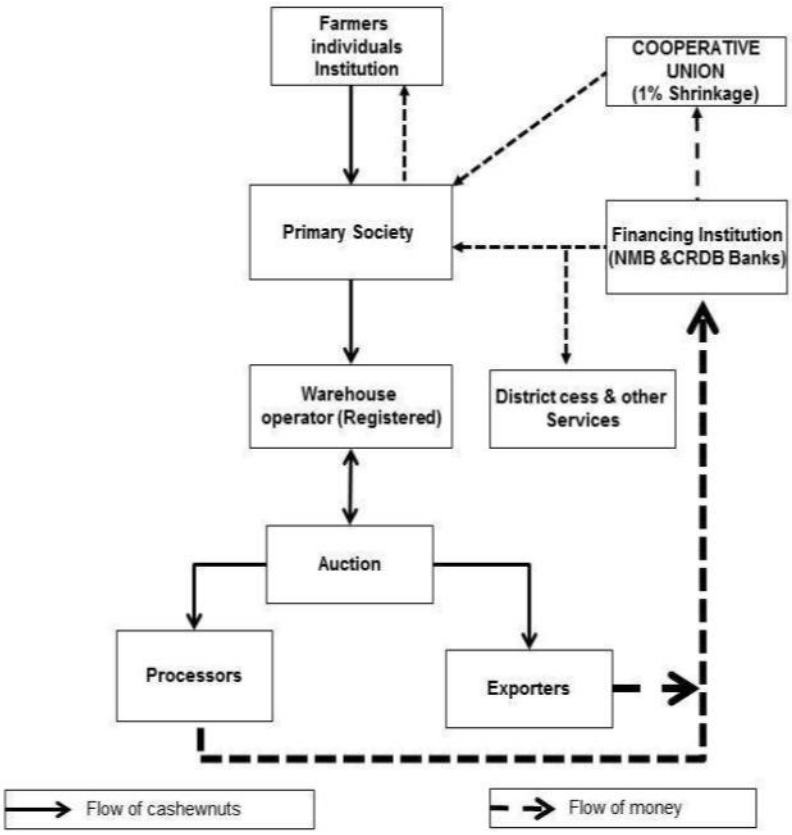
Operationalization of the Warehouse Receipt System



Source: Tanzania Warehouse Licensing Board (2009)

Appendix IV

Marketing cashew nuts through Warehouse Receipt System Tanzania

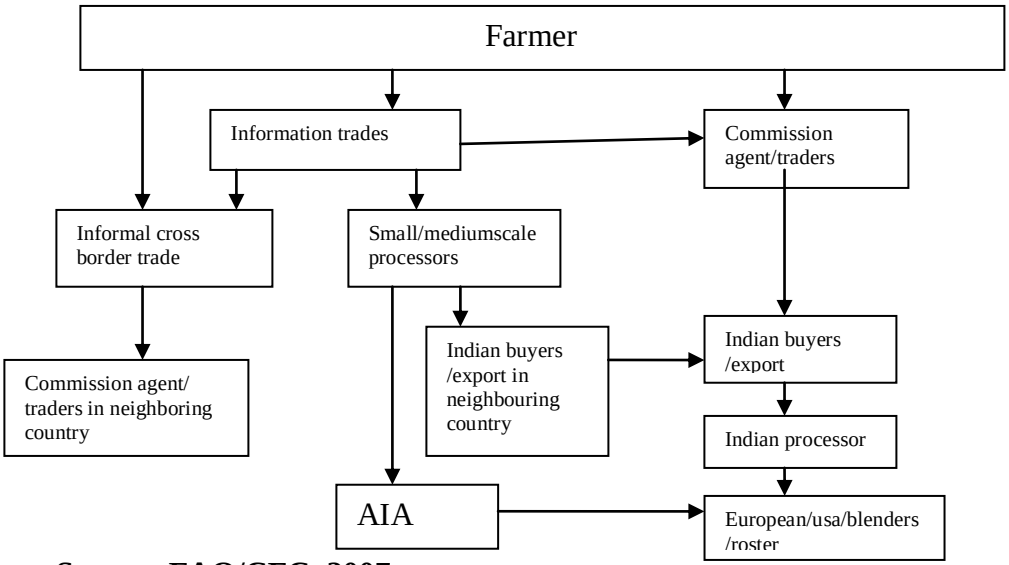


Sources: UNIDO (2011). Tanzania's Cashew Value Chain

APPENDIX V

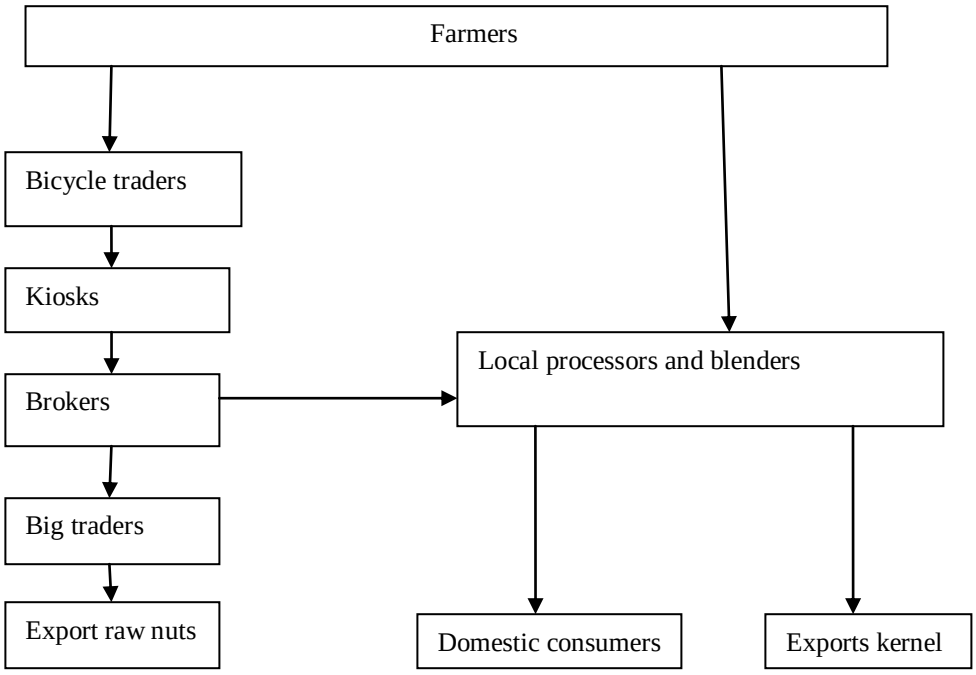
Marketing Channels in Mozambique and Kenya.

Figure: 3 Marketing Channels for Cashew nut in Mozambique



Source: FAO/CFC, 2007.

Figure 4 Marketing Channels for Cashew nut in Kenya



Source: FAO/CFC China workshop 2007

APPENDIX V1

LIST OF TABLES

Table 1.1: Cashew Production by District 2006/2007 – 2010/2011in Metric/tones

District	**2006/2007**	**2007/2008**	**2008/2009**	**2009/2010**	**2010/2011**
Mtwara (M)	2,359,373	9,424,924	424,470	434,360	768,873
Mtwara (V)	5,096,247	_	5,189,597	5,335.578	11,203,376
Tandahimba	19,519,988	24,121,053	20,702,182	24,436,005	35,996,900
Newala	10,520.327	9,111,000	6,754,505	9,270,163	14,230,189
Masasi	16,510,053	14,370,881	11,261,268	7,623,670	17,218,209
Nanyumbu	-	5,178,164	6,064,201	2,731,178	4,453,362
Mtwara region	**54,005.988**	**62,206.022**	**50,396.223**	**49,830.954**	**83,870.909**
Lindi (M)	200,000	281,066	377,951	41,045	1,451,729
Lindi (V)	726,975	3,971,423	3,984,759	2,448,738	2,943,636
Nachingwea	11,458,076	6,889,908	5,746,229	4,812,672	6,296,345
Ruangwa	5,056,364	8,440,417	5,682,617	1,437,558	3,029,745
Liwale	5,299,589	3,557,807	3,784,364	6,708,507	7,171,335
Kilwa	138,318	693,663	2,012,343	418,346	1,065,898
Lindi region	22,879,322	23,834,284	21,588,263	15,866,866	21,958,688
Mkuranga	5,290,295	2,951,536	1,395,486	2,790,540	6,428,552
Kibaha	104,000	251,399	348,096	42,205	391,369
Bagamoyo	9,700	542,285	62,905		81,258
Rufiji	1,156,993	933,711	1,184,136	1,189,540	2,102,913
Kisarawe	23,509	975,640	253,840		0.000
Mafia	39,000	103,377	14,912		3,693
Coast Region	**6,623.497**	**5,757.948**	**3,259.375**	**4,022.285**	**9,007.785**
Muheza	10,000	-	55,551		**0.000**
Pangani	19,500	271,840	48,093	45,000	0.000
Tanga	-	100,000		393,900	0.000

Korogwe	-	22,646	67,728	44,900	0.000
Mkinga		887.454	403.873	1,490.892	0.000
Tanga Region	**29.500**	**1,281.940**	**575.245**	**1,974.692**	**256.950**
Kinondoni	-	-	-	-	0.00
Temeke	1,523.148	3,158.819	478.521	151.610	0.000
Ilala	554.000	179.723	64.336	22.202	0.000
DSM Region	**2,077.148**	**3,338.542**	**542.857**	**173.812**	**0.000**
Tunduru	6,657.733	2,622.379	2,619.890	3,380.037	3,996.805
Songea	-	-	-	-	0.00
Mbinga	-	-	-	22,500	0.00
Namtumbo	-	65,605	86,941	75,518	88,581
Ruvuma Region	**6,657.733**	**2,687.984**	**2,706.831**	**3,478.055**	**4,085.386**
Ludewa	-		-	20,000	
Kyela	300,000		-		
Kilosa			-		
Morogoro/Iringa/ Mbeya	300,000		-		20,000
Sub Total	**92,573,188**	**99,106,720**	**79,068,794**	**75,366,664**	**119,179,718**
Unreported sales 30%	39,674,223	42,474,309	33,886,626	32,299,999	51,077,022
Expected Production	**132,247,411**	**141,581,029**	**112,955,420**	**107,666,663**	**170,256,740**

Source: CBT 2010

Table 2.2. The Increase of Income due to increase in Price (TSHS.)

YEAR	**PRICE 1(70% of 1KG)**	**PRICE 2(30% of 1KG)**	**BONUS**	**TOTAL INCOME PER 1KG.**
2008/2009	610/=	240/=	200/=	1,000/=
2009/2010	850/=	350/=	800/=	2,000/=
2010/2011	850/=	350/=	600/=	1,800/=

Sources: Tandahimba and Newala Cooperative Union, 2011.

Table 3.3 Wards and Villages for Research.

Wards	**villages**	**Farming units(cashew nut)**	**Centers for WRS**	**Number cashew nut farmers**
Malatu	Malatu	13,364	Malatu	54,320
Chitekete	Chitekete	15,408	Chitekete	76,194
Luchingu	Luchingu	50,532	Luchingu	105,921
Mtunguru	Mtunguru	16,536	Mtunguru	65,615
Mdimba	Minjale	11,506	Minjale	49,560
Mchemo	Mpwapwa	12,792	Mpwapwa	51,746
Total		**120,138**		**403,356**

Source: Newala district profile (October, 2010)

Table 3.4. Population of the study areas.

A. Population in 2002 census

Number	**Village name**	**Number of household**	**Male**	**Female**	**Total**
1	Malatu	1477	2559	2900	5459
2	Chitekete	2001	3378	4024	7402
3	Luchingu	6561	11398	12877	24275
4	Mtunguru	1498	2558	2985	5543
5	Minjale	975	1645	1961	3606
6	Mpwapwa	1661	2908	3237	6145
	Total population	**14173**	**24446**	**27430**	**52430**

Source: National Census (2002) and District profile (2009

B. Population projection in 2008

Number	**Village Name**	**Number of household**	**Male**	**Female**	**Total**
1	Malatu	1536	2663	3018	**5682**
2	Chitekete	2082	3516	4188	**7704**
3	Luchingu	6829	11863	13403	**25266**
4	Mtunguru	1559	2662	3107	**5769**
5	Minjale	1014	1712	2041	**3753**
6	Mpwapwa	1729	3027	3369	**6396**
	Total population	**14749**	**25443**	**29126**	**54570**

Source: National Census (2002) and District Profile (2009)

Table 3.5 Projected populations of the cashew nut farmers in Newala district 2008

Year	Number of farmers in Newala District	Male	Female
2002	162,721	73,200	89,521
2003	164348	73,831	90,517
2004	165,991	74,570	91,421
2005	167,652	75,320	92,332
2006	169,323	76,066	93,257
2007	171,021	76,830	94,191
2008	172,731	77,593	95,138

Source: District Planning office (2009)

Table 3.6 Levels of Income of the Cashew nut Farmers

Value	frequency	percentage	Valid percentage	Cumulative percentage
1 - 500,000/=	86	43	43	**43**
500,000/= - 2,000,000/=	70	35	35	**78**
3,000,000/= --6,000,000/=	36	18	18	**96**
6,000,000<	8	4	4	**100**
Total	**200**	**100**	**100**	

Source: field data collection (March, 2012)

Table 3.7 The sample size

Village	Number of farmers	Number of respondent	Percentage Of the sample size
Malatu	34,320	76	38
Chitekete	56,194	21	11
Luchingu	85,921	33	16
Mtunguru	45,615	27	14
Minjale	29,560	26	13
Mpwapwa	31,746	17	8
Total	**283,356**	**200**	**100**

Source: field data collection (March, 2012)

Table 4.8 Distribution of cashew nut farmers by sex

Sex	frequency	percentage	Valid percentage	Cumulative percentage
Male	142	71	71	71
Female	58	29	29	100
Total	200	100	100	

Source: field data collection (March, 2012)

Table 4.9Cashew nut price from year 2009 - 2011

Price in a year	Frequency	percentage	Valid percentage	Cumulative percentage
2009 – Tshs. 1200/=	10	5	5	5
2010 – Tshs. 1500/=	72	36	36	41
2011 – Tshs. 1200/=	118	59	59	100
Total	**200**	**100**	**100**	

Source: field data collection (March, 2012)

Table 4.10 Distribution of respondent by villages

Villages	**frequency**	**percentage**	**Valid percentage**	**Cumulative percentage**
Malatu	76	38	38	**38**
Chitekete	21	10.5	10.5	**48.5**
Luchingu	33	16.5	16.5	**65**
Mtunguru	27	13.5	13.5	**78.5**
Minjale	26	13	13	**91.5**
Mpwapwa	17	8.5	8.5	**100**
Total	**200**	**100**	**100**	

Source: field data collection (March, 2012)

Table 4.11 Cashew nut Farmers by Level of Education

Education level	**frequency**	**percentage**	**Valid percentage**	**Cumulative percentage**
Primary school	137	68.5	68.5	**68.5**
Secondary school	47	23.5	23.5	**92**
College/university	7	3.5	3.5	**95.5**
Others(tertiary)	9	4.5	4.5	**100**
Total	**200**	**100**	**100**	

Source: field data collection (March, 2012).

Table 4.12Acreage of land owned by farmers

Acres	**frequency**	**percentage**	**Valid percentage**	**Cumulative percentage**
1 - 5	133	66.5	66.5	**66.5**
6 - 10	44	22	22	**88.5**
11 - 15	13	6.5	6,5	**95**
16 - 20	4	2	2	**97**
21 - 25	2	1	1	**98**
26 <	4	2	2	**100**
Total	**200**	**100**	**100**	

Source: field data collection (March, 2012)

Table 4.13 Improvement of WRS

Value	**frequency**	**percentage**	**Valid percentage**	**Cumulative percentage**
Very good	38	19	19	19
Good	94	47	47	66
Very bad	49	24.5	24.5	90.5
Bad	19	9.5	9.5	100
Total	**200**	**100**	**100**	

Source: field data collection (March, 2012).

Table4.14 The marketing system before and after WRS

Value	frequency	percentage	Valid percentage	**Cumulative** percentage
Good before WRS	50	25	25	**25**
Bad before WRS	71	35.5	35.5	**60.5**
Good after WRS	66	30	30	**93.5**
Bad after WRS	13	6.5	6.5	**100**
Total	**200**	**100**	**100**	

Source: field data collection (March, 2012

Table 4.15 Analysis of Income against Price, education and owneship of land.

Model summary

Model	R	R squrare	Adjusted R squrare	Std.error of the estimate
1	.394[a]	.155	.142	.810

a. Predictors (contant) acres, price, education

Anova[b]

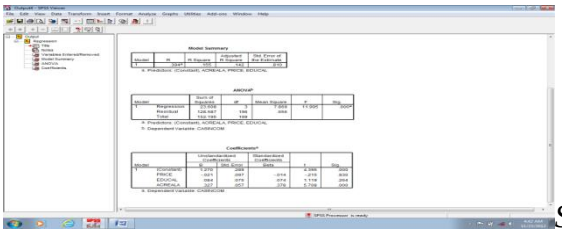
Model	Sum of square	Df	Mean square	F	Sig.
Regression Residual Total	23.608 128.587 152.195	3 196 199	7.869 .656	11.98	.000

b. Dependent variable income

Coefficients

Model		Unstandadized coefficients		Standadized coefficients	t	Sig.
		B	std.error	Beta		
1	constant	1.270	.289		4.395	.000
	price	- .021	.097	- .014	-.215	.830
	education	.084	.075	.074	1.119	.264
	acres	.327	.057	.378	5.708	.000

Source: SPSS Data output (april 2012)



SPSS Data output

Table 4.16Analysis of Warehouse Receipt System against Price, education and owneship of land.

Model summary

Model	R	R squrare	Adjusted R squrare	Std.error of the estimate
1	.153[a]	.023	.008	.867

a. Predictors (contant) acres, price, education

Anova[b]

Model	Sum of square	Df	Mean square	F	Sig.
Regression Residual Total	3.538 147.457 150.995	3 196 199	1.179 .752	1.568	.199[a]

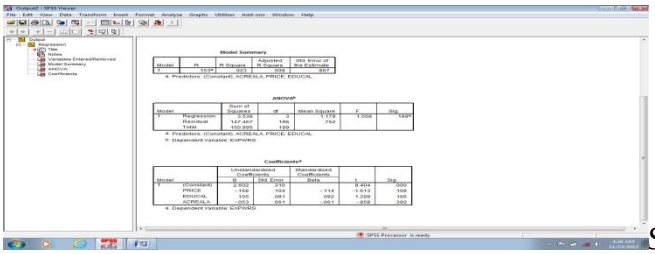
a. a.Predictors (contant) acres, price, education

b. Dependent variable iExpirince on WRS

Coefficients

Model		Unstandadized coefficients		Standadized coefficients	t	Sig.
		B	std.error	Beta		
1	constant	2.602	.310		8.404	.000
	price	- .168	.104	- .114	-1.613	.108
	education	.105	.081	.092	1.299	.196
	acres	- .053	.061	-.051	-.858	.392

Source: SPSS Data output (april 2012)



SPSS Data output

Table4.17Analysis of Warehouse Receipt System against Price, education and owneship of land.

Model summary

Model	R	R squrare	Adjusted R squrare	Std.error of the estimate
1	.171[a]	.029	.014	.888

a.Predictors (contant) acres, price, education

Anova[b]

Model	Sum of square	Df	Mean square	F	Sig.
Regression Residual Total	4.659 154.521 159.180	3 196 199	1.553 .788	1.970	.120[a]

a.Predictors (contant) acres, price, education

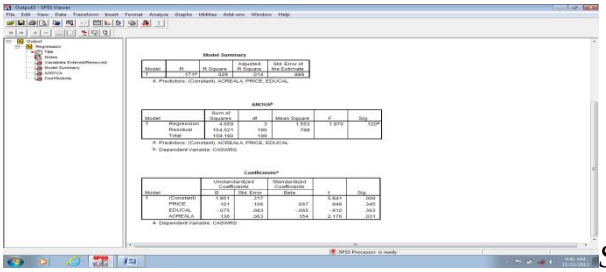
b.Dependent variable on WRS

Coefficients[a]

Model	Unstandadized coefficients		Standadized coefficients	t	Sig.
	B	std.error	Beta		
1 constant price education acres	1.851 - .101 - .075 .136	.317 .106 .083 .063	 .067 -.067 .154	5.841 .946 -.912 2.176	.000 .345 .363 .031

a. Dependent Variable WRS

Source: *SPSS Data output (april 2012)*



SPSS Data output

Table 5.18 Distribution of respondent by age

Years	Frequency	percentage	Valid percentage	Cumulative percentage
1 - 20	1	0.5	0.5	0.5
21 - 40	83	41.5	41.5	42
41 - 60	93	46.5	46.5	88.5
61 - 80	17	8.5	8.5	97
81 - 100	6	3.0	3.0	100
Total	**200**	**100**	**100**	

Source: field data collection (March, 2012)

Table 5.19 Distribution of respondent by family size

People	frequency	percentage	Valid percentage	Cumulative percentage
1 - 5	80	40	40	40
6 - 10	101	50.5	50.5	90.5
11 - 15	16	8	8	98.5
16 - 20	3	1.5	1.5	100
Total	**200**	**100**	**100**	

Source: field data collection (March, 2012).

Table 5.20Cashew nut farms weeding times

	frequency	percentage	Valid percentage	cumulative percentage
One time	62	31	31	**31**
Two time	104	52	52	**83**
Three time	34	17	17	**100**
Total	**200**	**100**	**100**	

Source: field data collection (March, 2012

Table 5.21 Transportation of Cashew nut During Harvesting.

Value	frequency	percentage	Valid percentage	cumulative percentage
Carried by head	27	13.5	13.5	**13.5**
Carried by bicycle	141	79.5	79.5	**84**
Carried by Motorcycle	29	14.5	14.5	**98.5**
Carried by motorcar	3	1.5	1.5	**100**
Total	**200**	**100**	**100**	

Source: field data collection (March, 2012

APPENDIX VI1

List of Main Stakeholders in the Cashew nut Sector

The Principal Secretary, Ministry of Agriculture and Food Security

Kilimo I House- Temeke,

P O Box 9192, Dar Es Salaam.

The Principal Secretary, Ministry of Cooperatives and Marketing

P O Box Dar es Salaam.

The Principal Secretary, Ministry of industry and Trade

Lumumba Street, P O Box 9503, Dar es Salaam.

Director General, Board of External Trade (BET)

Kilwa Road, P O Box 5402, Dar es Salaam.

Principal Secretary, Ministry of Regional Administration and Local Government

P O Box 923, Dodoma.

The Director General, Cashew Board of Tanzania,

P O Box 533, Mtw**a**ra.

The Zonal Director, Southern Zone Agricultural Research Institute

P O Box 509, Mtwara.

Cashew Management UnitP O Box 6226, Dar es Salaam.

Olam (T) ltd P.O. Box 71062 Dar es Salaam

Telephone: 2864912/2864931.Email: Otf @ Africaonline.co.tz

Ste Bps (Cote D Ivore**)** P.O. Box 1060 Mtwara.

Telephone: (255)232333331 Fax: (255) 232333331

Dashwood Corporation, P.O.Box 11789 Dar es Salaam.

Telephone: 022-2122941-2122943 Fax: 022-2122945.

Afrisian Ginning, P.O.Box 19964 DSM

Telephone: 255-22-2138781 Email: afrisian @ cats-net.com

Euro Impex ltd, P.O.Box 4075 Dar es Salaam.

Telephone: 00255-812-781653 Fax: 051-139620

Abbasi Exports ltd, P.O.Box 70 Mtwara.

Telephone: 0593373 Fax: 0593129

Sanaa Exports ltd, P.O.Box 119 Dar es Salaam.

Telephone: 288-741-236665

Premier Cashew Industries Ltd, P O Box 816, Dar es Salaam.

Onash Exports ltd, P.O.Box 11567 Dar es Salaam.

Telephone: 25-22-2127882/ 2120321 Email: Onash tz @ yahoo.com

Kanyakumari Trading, P.O.Box 4075 Dar es Salaam.

Telephone: 0255 22 2123142-2119471

Afro Asian Agro Prod, P.O.Box 816 Mtwara

Telephone: 333616 Email: afroasian@intafrica.com

Export Trading co.ltd, P.O.Box 10295 Dar es Salaam; and P.O.Box 869 Mtwara.

Telephone: 33588/2333302/2333172 Email: etc @ export trading tz.com

Alpha Exports, P.O.Box 570 Mtwara

Telephone: (255-23) 2333162 Fax: (255-23) 2333907

H.S. Impex ltd, P.O.Box 483 Mtwara.

Tropical Commodities, P.O.Box 19681 Dar es Salaam.

Telephone: 25957/46952 Fax: 46156/25957

Asia Commodities, P.O.Box 4075 Dar es Salaam.

Telephone: (255) 222123142 Fax: (255) 222119471

Oceanic Trading co, P.O.Box 157 Mtwara

Telephone: 255-23 2333162, Fax: 255-23-2333907

Mohamed Enterprises ltd, P.O.Box 20660, Dar es Salaam.

Telephone: 118931-114376-112756 Fax: 113183-112694

Cubix Limited, P.O.Box 319 Mtwara

Telephone: 255-23-2334051 Fax: 255-23-2334051

Swanlinks int., P.O.Box 8067 Dar es Salaam

Telephone: 051-183688 Email: jeizan@swanlink com

Uniafrico ltd, P.O.Box 8197 Dar es Salaam

Telephone: 118681/119441 Email:uniafrico@cats-netcom cable: uniafrico

Executive secretary Cashew nut Industry Development Fund (CIDEF)

P O Box 77432 Dar es Salaam

OTHER STAKEHOLDERS:

- Farmers
- District Councils
- Regional Secretariats
- Private Distributors of inputs
- Banks
- Primary Agricultural Marketing and Cooperative Society
- Tandahimba and Newala Cooperative Union(TANECU)

Appendix VII1:

Cashew nut Picture captured During the Field

Figure. 5 Yellow Cashew nut fruits.

Figure. 6. Red cashew nut fruits

Figure. 7. Yellow cashew nut fruit.

Figure. 8. Young Cashew nut fruit

Figure. 9. Juiced mature cashew nut fruit

Figure. 10. Collected cashew nut separating between fruit and nuts during harvesting at Malatu farm.

Figure. 11. Raw cashew nut separated from fruit

Figure. 18. Developing nut and fruit

Figure. 19. Well juiced fruit and mature nut read to drop from the tree (captured at Mpwapwa 20/11/2011

Figure. 20. Well weeded cashew nut farm (Chitekete) 18.11.2011.

Figure. 21. Well serviced cashew nut

Figure.22.Mature nut and apple

Source: field data capture in six villages November, 2011

Appendix1X:

QUESTIONNAIRE FOR THE IMPACT OF WAREHOUSE RECEIPT SYSTEM ON INCOME POVERTY ALLEVIATION OF CASHEWNUT FARMERS IN NEWALA DISTRICT

QUESTIONNAIRES TO FARMERS

Dear……

This study is done so as to assess the impact of Cashew nut warehouse receipt system on poverty alleviation in Mtwara Tanzania. The information you provide will be helpful in improving warehouse receipt system as a marketing system for you farmers in Mtwara as major beneficiaries of the system. It is therefore very vital to respond to each question below, according to most realistic situation.

INSTRUCTIONS

Please read each question carefully and indicate your response by putting an 'x' next to appropriate statement or explain in brief where question require explanation.

I promise that your answer will be treated as confidential.

I thank you very much for responding to each question.

A. Personal particulars

1. Name of respondent……

2. Category of respondent

   1. Farmers

   2. Primary Cooperative society

3. Name of the village you live

   1. Malatu 2. Chitekete 3. Luchingu 4. Mtunguru 5. Minjale 6. Mpwapwa

4. Sex of respondent……1-Male 2 –Female

5. Age of respondent……years.

   1. 1 - 20 2. 21 – 40 3. 41 – 60 4. 61 – 80 5. 81 - 100

6. Education level……years 1 – primary education, 2 – secondary education. 3 – college/ university, 4 – others.

7. How much land does your household own?.....

   1. 1 - 5 2. 6 – 10 3. 11 – 15 4. 16 – 20 5.21- 25 6. 26<

8. What is your family size?

   1. 1-10 2. 11 – 20 3. 21 - 30

9. Based on your experience how does the Marketing trend of cashew nut WRS?

   1. The Marketing is very good 2. The Marketing is good 3. The Marketing is poor 4. The Marketing is very poor

9. How do you see the cashew nut marketing system before and after WRS?

   i. The Marketing system performed better before WRS

   ii. The Marketing system performed poor before WRS

   iii. The Marketing system performed better after WRS

   iv. The Marketing system performed poor after WRS

10. Assets owned by the household

    1. Owned some of them 2. Owned all

code	Asset	Number of assets owned		
		2009	2010	2011
1	Refrigerator			
2	Television/video set			
3	Furniture			

4	Utensils(metal pots and metal kitchen ware)			
5	Sewing Machine			
6	Sola panel			
7	Mobile phones			
8	Iron sheets			
9	Wells			
10	House			
11	Motor circle			
12	Motor car			
13	Bicycle			
14	Pangas			
15	Slasher			
16	Grinding machine			
17	Power tiller			
18	Acreage of cashew nut			
19	Cashew nut spraying machine			
20	bush knives			
21	hand hoe			
22	radio			
23	knapsack spraying			

11. How much do you earn per annum by selling cashew nut?

(I) 1 – 500,000/=

(II) 500,000/= - 2,000,000/=

(III) 3,000,000/= - 6,000,000/=

(IV) 6,000,000/=<

13. How many times do you weed your farm? (i) once (ii) twice (iii) thrice

14. What amount of medicine do you apply in cashew nut farms?.....
1. 10,000/= - 100,000/= 2. 100,001/= – 200,000/= 3. 300,000/= <

15. Method of transporting cashew nut from farm back home (i) carried by head (ii) carried by bicycle (iii) carried by motor circle (iv) carried by motor car

16. The average price of cashew nut in three years back including first payment, second and third payment.1. 2008/2009 - Tshs. 1,200/= 2. 2009/2010 - Tshs. 1,500/= 3. 2010/2011 - Tshs. 1,800/=

17. If the old system works better before warehouse receipt system, explain

……..……

18. If the old Marketing system performed poor before WRS, what do you think are the major reasons for that, explain.

……

19. Are the warehouse receipt marketing system helpful to farmers in Newala? Explain briefly how?

……

20. If the system is helpful, suggest what the Government should do to improve

the WRS to be a helpful system and sustainable in order to alleviate poverty of farmers in Newala district.

21. How do you judge the cashew nut warehouse receipt marketing system? What is wrong or rights with the system? Explain

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22. What can be done to rectify the short comings in the system?(if any)

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23. What are the major challenges you are facing regarding the WRS?

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24. Suggest ways to make the system to work effectively to all stakeholders?

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