



Investing in rural people



**EFFECTIVENESS OF COLLECTIVE ACTION IN REDUCING  
TRANSACTION COSTS FOR SMALLHOLDER FARMERS IN  
TANZANIA**

**FINAL REPORT BY:**

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## **ACRONYMS/ABBREVIATIONS**

AfDB - African Development Bank

AMSDP - Agricultural Marketing Systems Development Programme

BRELA - Bureau of Registration and Licensing Authority

CRDB - Community Rural Development Bank

FG – Farmers Group

FO – Farmers Organization

FTCs - Fixed Transaction Costs

IFAD-International Fund for Agricultural Development

KII – Key Informant Interview

MIVARF – Marketing Infrastructure Value Addition and Rural Finance

MPAFAC – MSalala Paddy Farmers Company

NMB - National Microfinance Bank

PCT - Programme Coordination Team

RFSP - Rural Finance Services Programme

RUDI - Rural Urban Development Initiatives

SHF – Smallholder Farmer

SHPF – Smallholder Paddy Farmer

SACCOS - Savings and Credit Cooperative Society

SEIDA - Small Enterprises Institutional Development Associates

TZS - Tanzanian Shillings

VTCs - Variable Transaction Costs

OXFAM - Oxford Committee for Famine Relief

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## EXECUTIVE SUMMARY

Agriculture in Tanzania is an important occupation for over 75% of inhabitants. It is the mainstay of the majority of the households. The country has a total land area covering 94.5 million hectares out of which 44 million hectares are suitable for agriculture. The population is approximately 50 million people, with 45 percent under 15 years of age and annual population growth rate is 2.8 percent (Mbiseet *al.*, 2011). Paddy, maize and sorghum are the most important cereal crops in the country. As for paddy, statistics indicate that approximately 24% of the national total production area is in the Southern Highlands and produce about 33% of the national rice produce (RLDC, 2009).

Many of the world's poor still directly or indirectly depend on agriculture for their livelihoods, most of them as small-scale farmers, living in remote areas with poor infrastructure; they face high transaction costs that significantly reduce their incentives for market participation (Barrett, 2008). The World Bank (2008) identified nine barriers broadly affecting SHF transaction cost: awareness, technology, organization and management skills, production, productivity, financial resources, infrastructure, information, and policy environment.

As the agricultural sector in developing countries transforms towards commercialization, the smallholder farmers and intermediaries require systems that are responsive to their needs, which include access to markets, market information, market intelligence and effective collective action. Collective Action (CA) or Farmers' Organization (FO) has become an important strategy for smallholder farmers in developing countries to remain competitive in rapidly changing markets and has been tagged as popular means of reducing transaction cost.

Although, CA is considered as an appropriate tool for rural development, it is facing critical problems, which hinder it from providing its full benefit. Some of these constraints are: low institutional capacity, inadequate qualified personnel, low entrepreneurship skills, lack of financial resources, lack of market information, poor members participation patronizing the business activity of the groups, control and support. However, the prices of agricultural inputs are increasing from year to year and farmers are complaining (Barrett, 2008).

Therefore, the study was carried out to show the multifaceted problems of CA, provide recommendations to key constraints faced in reducing transaction cost and to access the

effectiveness of farmer groups in reducing transaction cost for smallholder paddy farmers in Msalala Council, Tanzania. The study also paid attention to the participation of intermediaries as they play a crucial role of sourcing, assembling and bulking of commodities prior to transporting to urban places.

The study used Transaction Cost Theory developed by Coase; Williamson; and Ouchi, which focuses on how the characteristics of a transaction affect the costs of handling it through markets, bureaucracies, and other forms of organization. The target population of the study consists of the members of Msalala Paddy Farmers Company (MPAFAC).

Cross-sectional survey was used to gather factual information necessary for decision making on the influence of collective action on transaction cost among smallholder farmers. The mixed-methods approach utilized for the study is Key Informant Interviews (KII) and Structured Questionnaires. Data obtained were entered and analysed descriptively using frequencies, tables, graphs and simple percentages. Mean, median, mode and standard deviation were calculated for continuous variables and Chi-square and ANOVA was used to test for associations between variables.

The research established the effectiveness of CA in reducing transaction cost for smallholder farmers, identify key constraints impeding CA from reducing transaction cost, state how frequent increase in price of agricultural inputs is affecting transaction cost, show the multifaceted problems of CA, pay attention to participating intermediaries (middlemen) operating in such marketing systems and provide recommendation on what need to be done to enable FOs achieve their strategic objectives.

On market participation requirements of respondent, the study found out that 82.5% stated it is difficult while only 19% see the market size as large and 72.4% have their customers as small quantity buyers, 62.2% reportedly rated market prices as poor 62.5% stated they have adequate access to market. The study also noted 50.8% lacks customer retention strategy and rely on government or institutions to provide one. Also, on looking at the roles middlemen play in transaction cost, 87.3% are aware of middlemen, of this, 71.1% operate with them and 43.5% do because there is no buyer. Similarly, 34.9% respondent said middlemen are not needed while 34% said they are exploitative.

The study found the mean of distance from farm market to be 19.519km, with minimum and maximum distance to farm being 1km and 100km respectively. The total amount spent by

smallholder farmer on transaction before joining FO using a conversion rate of 1 USD = 2,000TSh, it was found that 45.7% spent 205 USD per acre on transaction cost before joining FO while 74.9% spent 155 USD and above on transaction cost after joining FO but 89.8% reported their income has increased.

Policy implications were drawn based on the major findings of the study. It was noted that majority of the smallholder farmers had primary education and this is in tandem with the views of Mwatawala et al (2016) which held that majority of developing countries population who depends on agricultural activities for economic prosperity have their agricultural sector operated by individuals with low level of education.

Since the result showed that most of the customers are small quantity buyers. This then buttresses inadequate access to market for smallholder farmers as one of the key factors affecting reduction in transaction cost, a challenge currently prevailing in Sub-Sahara Africa agricultural sector. The age distribution of farmers is another interesting issue as the buttress the issue of food security in Africa and the need to make agriculture attractive to its young growing population

Therefore, there is need to make collective action (CA) a popular term in national Agricultural system. Nations need to provide necessary information to the farmers about collective action in farming. The Ministry of Agriculture, through extension officers should conduct seminars and workshops to enhance farmers' understanding of collective action in all areas of agricultural farming and marketing to exploit the benefits of group activities.

Countries can start CA by setting up informal self-help farmers groups and can be assisted to develop into mature formal groups over time. Adequate training should also be made available to group leaders as a group will be more likely to succeed if its group leaders are knowledgeable and skilled in collective enterprise, and motivated and trusted by group members.

For Tanzania to achieve a great feat in agricultural sector and improve the economy of smallholder farmers, concrete activities such as regular group meetings, where members gather to discuss future strategies and manage routine business, and collective marketing, where agricultural produce are transported to collection centres and sold at special market days to exploit economies of scale. MIVARF, MPAFAC with support from government need to look at availability of inputs of very good qualities for farmers as well as agricultural



equipment for mechanized farming. I believe if things like these are addressed, farmers can spend the same amount of money on larger quantity of produce and as such they would make more money and reduce the cost of doing business.

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## CHAPTER ONE

### INTRODUCTION

#### 1.1 Background to the Study

Tanzania has a total land area covering 94.5 million hectares out of which 44 million hectares are suitable for agriculture. However, it is estimated that only 23 percent of this arable land is under cultivation. The population is approximately 50 million people, with 45 percent under 15 years of age and annual population growth rate is 2.8 percent (Mbiseet *al.*, 2011). Its main geographic features are a coastal plain in the west, northern highlands along the border with Kenya, southern highlands near the Zambian border, and the semi-arid central plains. Tanzania is larger and more populous than any of its neighbours in eastern and southern Africa with the exceptions of Ethiopia and South Africa (Match Maker Associates, 2010).

Agriculture in Tanzania is an important occupation for over 75% of inhabitants. It is the mainstay of the majority of the households in the country where weather conditions are favourable for growing various food and cash crops (Mbiseet *al.*, 2011). Paddy, maize and sorghum are the most important cereal crops in the country. Root and tuber crops like cassava, sweet potatoes, horticultural crops and fruits are also grown in some parts of the country. Maize, beans, rice, potatoes are the main food crops while major cash crops are coffee, tea (green leaves), pyrethrum, cardamom, sunflower, cocoa, tobacco, vegetables. As for paddy, statistics indicate that approximately 24% of the national total production area is in the Southern Highlands and produce about 33% of the national rice produce (RLDC, 2009).

Tanzania has a single rainy season, which occurs between December and April, except for the northern and north-eastern edge of the country which has a bimodal rainfall pattern, with a shorter *vuli* rainy season from October to December and a longer *masika* rainy season from March to May. The southern highlands are considered the “breadbasket” of Tanzania, producing most of the marketed maize and paddy. The northern highlands are another high-potential zone, producing coffee, and horticultural products. The central and northwest zones are drier and less food secure, growing sorghum, tobacco, and cotton. The southwest of Tanzania produces cassava for domestic consumption and cashews for export (Barham and Chitemi, 2009).

Rice cultivation is the principal activity and source of income for millions of households around the globe, and several countries of Asia and Africa are highly dependent on rice as a source of foreign exchange earnings and government revenue (Gebremeskel, 2010). It is the second largest produced cereal in the world. At the beginning of the 1990s, annual production was around 350 million tons and by the end of the century it had reached 410 million tons. Production is geographically concentrated in Western and Eastern Asia, accounting for 90% of the world's production and consumption of rice. China and India, which account for more than one-third of global population supply over half of the world's rice. Rice production in India accounts for 20% of overall production, while Brazil stands as the most important non-Asian producer, followed by the United States (Indiamart, 2009).

Paddy is one of the most cultivated important food grains in Tanzania and is the second most important food crop in terms of number of households, area planted and production volume. It is grown under three major ecosystems namely rain-fed lowland, upland rice and irrigated. It is predominantly dominated by small holders under rain-fed conditions. It falls under the category of 'preferred staples,' which also comprises of maize and wheat. Other categories include 'drought staples' (sorghum, millet and cassava), 'pulses' (beans and pigeon peas) and 'oil seeds' (sunflower, groundnuts, sesame and copra) (Mbiseet *al.*, 2011). Due to climatic reasons, most of the wetlands which are major rice producing areas lack alternative food and cash crop making rice the only source of cash and staple food. The leading regions in rice production are Shinyanga, Tabora, Mwanza, Mbeya, Rukwa and Morogoro. Others include Kilimanjaro, Arusha, Manyara, Iringa, Mara, Tanga and Kigoma. Rice consumers in Tanzania are very keen on the grain size, colour, taste/flavour and cooking attributes of rice (Gebremeskel, 2010).

Many of the world's poor still directly or indirectly depend on agriculture for their livelihoods, most of them as small-scale farmers, living in remote areas with poor infrastructure; they face high transaction costs that significantly reduce their incentives for market participation (Barrett, 2008). In Tanzania, small traditional farmer cultivates about 1-10 acres using traditional methods and are the dominant type of farmer in the country. Small irrigation farmers cultivates about one hectare of land of rice in an irrigation scheme often controlled by the irrigation scheme association. Large irrigation farmers are mainly found in Mbeya region grows more than 5 hectares of paddy in an irrigation scheme (RLDC, 2009).

The challenges of smallholder farmers, especially in sub-Saharan Africa, are multifaceted and tackling them requires numerous interventions. These may include institutional reforms that facilitate efficient rural service delivery, development of markets, physical infrastructure and supportive government policies while ensuring a stable and conducive political environment (Match Maker Associates, 2010). Though specific households face unique constraint sets, The World Bank (2008) identified nine barriers broadly affecting SHF transaction cost: awareness, technology, organization and management skills, production, productivity, financial resources, infrastructure, information, and policy environment. Lack of connections to established market actors, distortions or absence of input and output markets, and credit constraints further worsen SHF transaction, with farmers in remote locations characterized by inadequate transportation and storage infrastructure particularly the disadvantaged (IFAD, 2003).

As the agricultural sector in developing countries transforms towards commercialization, the smallholder farmers and intermediaries require systems that are responsive to their needs, which include access to markets, market information, market intelligence and effective collective action (Narrod, 2009). Intermediaries play a crucial role of sourcing, assembling and bulking the commodity prior to transporting to urban places. Intermediaries create a margin to offset the costs they incur for the services rendered. However, their services are usually misconstrued and considered to lead to a reduction of farmers' margins. Some farmers make attempts to link directly to the markets without going through intermediaries as means of obtaining higher prices. However, they do require the necessary expertise and skills to successfully participate in markets directly (Watanabe, 2006).

Aggregation of smallholder farmers into groups' links producers with off-takers and can help achieve economies of scale along the value chain and meet the standards and requirements of modern markets and address high transaction costs (Narrod, 2009). Farmer Organizations (FOs), Cooperatives, and other similar forms of Collective Action (CA) have the potential to improve market access and promote equitable growth by reducing transaction costs, strengthening producer bargaining power, and enable collective action. By providing access to productive assets, financial services, production and market information, and higher-value markets, CA broaden the range of strategies available to members, potentially propelling small holder farmers (SHF) trapped in the viscous cycle of low-risk, low-return on investments toward more remunerative strategies. Collective marketing through FGs enables

members to aggregate their surplus into a single tradable lot, which reduces the per-unit costs of transaction (Jayne, 2010)

## **1.2 Rationale for the Study**

More than two-thirds of the three billion people comprising the developing world's rural population live on small farms of two hectares or less. Smallholder Farmers (SHFs) constitute more than half of the world's undernourished people and the majority of people living in absolute poverty. Due to high transaction costs, immediate cash needs, lack of access to financial services, and inaccessibility to more remunerative markets, SHFs traditionally, have sold their crops to intermediaries after harvest (Mukindia, 2014). Selling at harvest when prices are low for lack of liquidity, then buying when prices are high for lack of household stock, the majority of SHFs participate in markets as net buyers of the very food they produce (Barrett, 2008).

Similarly, majority of smallholder farmers in developing countries are located in remote areas with poor infrastructure and they often fail to participate in markets due to the high transaction costs involved. Sometimes the transaction costs are so high that markets can be said to be "missing" while in other instances, farmers may choose to remain self-sufficient in order to minimize the transaction costs (Key *et al.*, 2000).

Collective Action (CA) or Farmers' Organization (FO) has become an important strategy for smallholder farmers in developing countries to remain competitive in rapidly changing markets and has been tagged as popular means of reducing transaction cost. This is particularly important as Africa continent is following the policy of agriculture led-industrialization and economic development where agricultural sector is expected to produce surplus that can move to other sectors of the economy (Kariuki & Place, 2005). Mukindia (2014) stated that FOs has the capacity to promote equitable growth and reduce poverty, as well as decrease transaction costs, strengthen producer bargaining power, and improve market access through collective action.

Although, CA is considered as an appropriate tool for rural development, it is facing critical problems, which hinder it from it providing its full benefit. Some of these constrains are: low institutional capacity, inadequate qualified personnel, low entrepreneurship skills, lack of financial resources, lack of market information, poor members participation patronizing the

business activity of the groups, control and support. However, the prices of agricultural inputs are increasing from year to year and farmers are complaining (Barrett, 2008).

Therefore, this study is carried out to show the multifaceted problems of CA, provide recommendations to key constraints faced in reducing transaction cost and to access the effectiveness of farmer groups in reducing transaction cost for smallholder paddy farmers in Msalala Council of Shinyanga Region, Tanzania. Also, since most studies done have mainly focused on the smallholder farmers with little attention to the participation of intermediaries operating in such marketing systems, this study will therefore include the analysis of intermediaries (middlemen) because of the vital role they often play in the marketing of agricultural commodities.

### **1.3 Research questions**

Overall, this study assessed the effectiveness of collective action (CA) in reducing transaction cost for smallholder farmer to the extent that it provided answers to the following research questions:

- What are the effects of transaction costs on the intensity of participation of smallholder farmers in CA?
- Does involvement of intermediaries affect smallholder farmers' participation in CA as well as their transaction cost?
- To what extent do farmers' group composition attributes influence transaction cost?
- To what extent do farmers' group governance attributes influence smallholder's participation and transaction cost

### **1.4 Objectives of the Study**

The overall objective of the study is to investigate the effects of transaction costs on the participation of smallholder paddy farmers in FOs, how intermediaries influence transaction cost, and the effectiveness of farmers groups in reducing these costs. The specific objectives of the study are:

- To determine the effects of transaction costs on the intensity of participation of smallholder farmers in CA

- To determine whether the involvement of intermediaries affect smallholder's participation and transaction cost
- To assess the extent to which farmer's group composition attributes influence transaction cost.
- To assess how farmer group governance attributes influence smallholder's participation and transaction cost

#### 1.4.1 Analysis of Objectives of the study

**Table 1: Analysis of objective, research questions, data collection and method of analysis and expected outcomes.**

S/N	Objective	Data Collection	Method of Analysis
1	To determine the effects of collective action on the cost of transaction	key Informant Interview and Structured Questionnaire	Descriptive statistics (frequencies, percentages, charts and cross tabulation)
2	To determine whether the involvement of intermediaries affect smallholder's participation and transaction cost	key Informant Interview and Structured Questionnaire	Frequencies and percentages. Means and inferential statistics (chi-square test, ANOVA).
3	To assess the extent to which farmer's group composition attributes influences transaction cost.	key Informant Interview and Structured Questionnaire	Frequencies and percentages.
4	To assess how farmer group governance attributes influence smallholder's participation and transaction cost	key Informant Interview and Structured Questionnaire	Means and inferential statistics (T-test).

#### 1.5 Hypotheses

The hypotheses of this study emanate from the theory of transaction cost which was developed by Coase (1937) while attempting to define the relationship between a firm and the market. The hypotheses of this study are as follows:

### 1.5.1 Hypothesis One

- **Null Hypothesis ( $H_0$ ):** Adequate access of smallholder farmers' to paddy market is not equally affected by distance from farm to the market
- **Alternate Hypothesis ( $H_A$ ):** Adequate access of smallholder farmers to paddy market is equally affected by distance from farm to the market

### 1.5.2 Hypothesis Two

- **Null Hypothesis ( $H_0$ ):** Adequate access of smallholder farmers' to paddy market is not equally affected by distance from farm to the nearest tarred road
- **Alternate Hypothesis ( $H_A$ ):** Adequate access of smallholder farmers to paddy market is equally affected by distance from farm to the nearest tarred road

### 1.5.3 Hypothesis Three

- **Null Hypothesis ( $H_0$ ):** there's no significant difference between transaction cost before joining farmer organization and transaction cost after joining farmer organization
- **Alternate Hypothesis ( $H_A$ ):**there's significant difference between transaction cost before joining farmer organization and transaction cost after joining farmer organization

### 1.5.4 Hypothesis Four

- **Null Hypothesis ( $H_0$ ):** The involvement of intermediaries doesn't enhance the participation of smallholder farmers in farmers' organization.
- **Alternate Hypothesis ( $H_A$ ):** The involvement of intermediaries enhances the participation of smallholder farmers in farmers' organization.

## 1.6 Significance of the Study

In Tanzania, several national initiatives such as Kilimo Kwanza (Agriculture First), Big Results Now (BRN, 2012) etc. have been in place to put more emphasis on agricultural development and increased productivity of all crops including rice and several studies when



analysing the effects of transaction costs on participation in markets focuses on commodities of relatively high perishability (e.g. staples such as bananas, cassava, potatoes and other roots and tubers) with little attention to grains and cereals. Also, previous studies (Key *et al.*, 2000; Makhura *et al.*, 2001) focus only on smallholder farmers with no attention to intermediaries in paddy transaction chain. This research would, however, establish the effectiveness of CA in reducing transaction cost for smallholder farmers, identify key constraints impeding CA from reducing transaction cost, look at constraints impeding smallholder farmers from participating in FO, state how frequent increase in price of agricultural inputs is affecting transaction cost, show the multifaceted problems of CA, pay attention to participating intermediaries (middlemen) operating in such marketing systems and provide recommendations on what need to be done to enable CA achieve its strategic objectives with respect to transaction cost.

## 1.7 Definition of Concepts

### **Paddy**

Paddy is the rice grain with husk. The term paddy was derived from Malay word with the meaning of “rice in the straw or husk”. Generally, rice plant is also called paddy. This is a crop which belongs to the family *Graminae*. Botanical name of the paddy is *Oryza sativa*. It is a wetland crop, which extensively grows all over the world. Paddy is the main crop in the majority of the Asian countries including India, Pakistan, and Philippine etc. Paddy cultivation started from the beginning of human civilization. The wet land paddy cultivation originated in China, but field cultivation of paddy started in Korea. Cultivation practices of paddy have a cultural value in most communities. There are novel techniques such as SRI method (practice in the African region) applied in paddy cultivation. Paddy becomes rice after the removal of husk by threshing

**Smallholder Farmers:** Refer to farming households with land holdings of less than ten acres.

**Middlemen:** often used interchangeably with the term "intermediaries", refer to persons engaged in buying and selling activities within the marketing system. These persons may also be referred to as traders. Middlemen play the role of mediating between the sellers of a product and its potential buyers. In instances where transactions are direct (i.e. without involving the middlemen), the seller and buyers share the trade surplus. However, in

instances where middlemen negotiate the trade, the middlemen share the surplus with the sellers and the buyers (John, 2011).

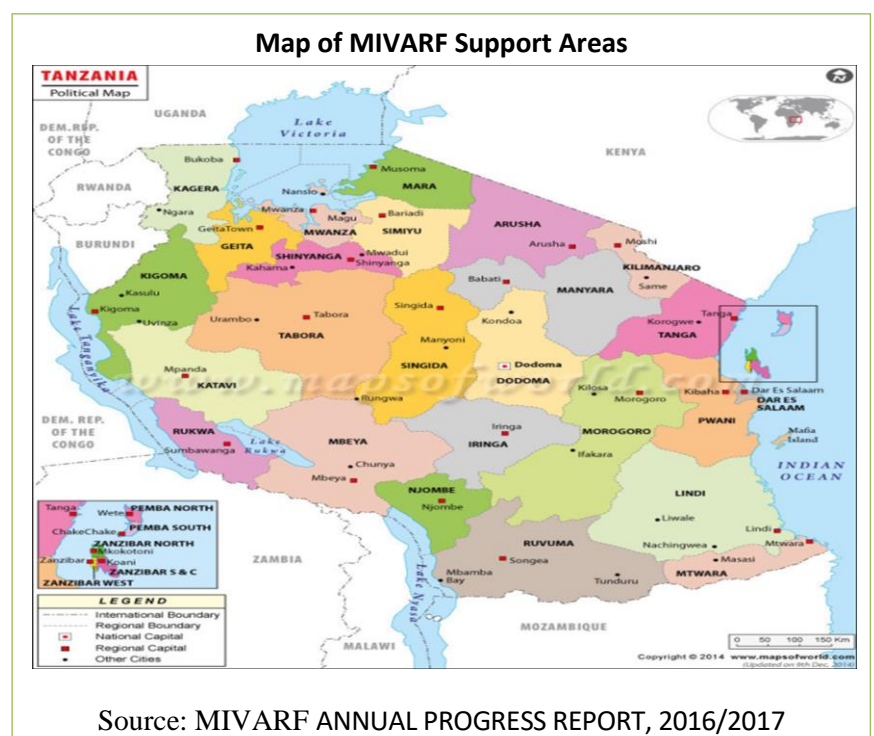
**Participation:** refers to any situation which involves the exchange of goods (e.g. plantain) for money regardless of location. The intensity of participation shall refer to the quantities of commodity sold by either party in a defined time period.

**Transaction Costs:** Transaction costs refer to costs incurred when looking for a trading partner, negotiating with them, making a contract and enforcing it. These also include costs originated from searching information, bargaining and making decision (Barrett, 2008). It is broadly classified into the following: information and search costs, negotiation and contracting, and monitoring and enforcement costs. The first category involves gathering information about potential buyers of the product, price offers, delivery mode, terms of payment and possibly frequency of repeat transactions. The second category involves building consensus on the price, quantity, quality, terms of payment and mode of delivery. The third category involves making sure that what has been agreed upon in the contract is adhered to (John, 2011).

**CA/FO:** these are groups of people or involvement of a group of people with shared interests undertaking some kind of common action in pursuit of that shared interest. It also refers to the coordinated behaviour of groups toward a common purpose. FO can also be described as individuals that are members of local, regional or national farmers groups (Meinzen-Dick et al., 2004).

### 1.7.1 MIVARF

This stands for Marketing Infrastructure, Value Addition and Rural Finance. The Government of the United Republic of Tanzania in collaboration with the *International Fund for Agriculture Development (IFAD)* and the *African Development Bank (AfDB)*, is implementing



the *Marketing Infrastructure, Value Addition and Rural Finance Support* programme (MIVARF), It's a seven-year support programme whose effective implementation started in July 2011 and its completion date was 31<sup>st</sup> March, 2018 with a closing date of 30<sup>th</sup> September 2018. The Programme covers 29 regions and 73 Local Government Authorities (LGAs), has an overall goal of enhancing incomes and food security of the target group on a sustainable basis. The programme is up-scaling best practices and lessons drawn from the *Agricultural Marketing Systems Development Programme (AMSDP)* and *Rural Finance Services Programme (RFSP)*. The Programme comprises three components that serve as basis for the implementation of its activities. These are; Marketing Infrastructure and Systems, Rural Finance, and Programme Coordination. The goal of the programme is to reduce rural poverty and accelerate economic growth on a sustainable basis as well as enhance incomes and food security of the target group on a sustainable basis. The total programme cost is USD 170.46 million, comprised financing from IFAD, the African Development Bank (AfDB), SIDA, Government of Tanzania and beneficiaries. The Programme was approved by IFAD's Executive Board on 15 December 2010 and entered into force on 25<sup>th</sup> February 2011. The Prime Minister's Office is the Lead Implementing Agency of the MIVARF, with day to day management undertaken by a Programme Coordination Team (PCT) based in Arusha (MIVARF, 2017).

### **1.7.2 MPAFAC**

This stands for Msalala Paddy Farmers Company. It was created in March, 2015 by MIVARF. It is an affiliate company of producer groups formed MIVARF. It is both an advocacy and quality control centre of production and marketing of all the rice produced in Msalala. It was created to support the development of paddy farmers and to represent business interests of all the producer groups in MSalala. The company is managed by nine Board of Directors drawn from the producer's groups (MIVARF, 2017). It is registered by Bureau of Registration and Licensing Authority (BRELA) and possesses all the required permits including Tax Payer Identification Numbers. The company has working and Business relations with the Association of Millers as well as Input suppliers in Kahama. It has two sub-committees, Production Committee and Marketing committee which are made of 5 members each. The marketing committee market the produce from smallholder farmers groups in production committee. MPAFAC main activity is to provide inputs (fertilizer, seed, and loan) to farmers as well as manpower, markets and financial support. It operates with the principle

of collective marketing Since commencement of the MIVARF in Msalala Council in October, 2013/ 2014 Financial year, the SP and the client supported informal producer groups in the programme wards to form formal associations with clear organization structures. A total 40 producer groups exist to date and they are expected to continue for many years even after the end of the programme. The groups come from 6 wards: Kashishi, Bulige, Busangi, Chela, Segeseand Ntobo, all located at MSalala District Council of MIVARF support areas. MPAFAC is supported by MIVARF through service providers such as SEIDA (Small Enterprises Institutional Development Associates), RUDI (Rural Urban Development Initiatives), OXFAM, NMB (National Microfinance Bank), CRDB (Community Rural Development Bank), SACCOS (Savings and Credit Cooperative Society) etc. (SEIDA, 2017).

### **1.8 Limitations of the Study**

The effectiveness of CA in reducing transaction cost for SHF was conducted with substantial cooperation of the respondent owing to the effect it had on them but the language barrier was of little significant. It was overcome with the use of interpreters. All the stated objectives of the study were successfully achieved. In some cases, observation method was used for verification of given information. Their responses were subject to error due to poor understanding, inadequate knowledge and inadequate ability to recall issues as farmers do not keep record. Also, five wards out of six were sampled as a ward was facing a natural disaster (flooding). Nevertheless, care was taken to ensure that data collected were reliable enough for statistical analysis. Where local units like bags and tins were used, conversion to metric estimations was done to have standard units for analysis.

### **1.8 Organization of this Report**

This report is organized into five chapters. The first chapter comprises background to the study, rationale for the research, objectives, and significance of research, research limitations and report organization. Chapter two is mainly literature reviews which included definitions of key concepts. The third one narrates methodologies used in this study, in line with description of the study area. The fourth chapter deals with the results and discussions of the findings, while conclusion and recommendations are presented in the fifth chapter.

## CHAPTER TWO

### Theoretical Framework and Literature Review

#### 2.0 Introduction

This section deals with the theoretical underpinnings of the study and literature review. The theoretical underpinnings are further buttressed by the presentation of the conceptual framework; review of empirical studies on key aspects of the study concludes this section.

#### 2.1 Theoretical Framework

Since Williamson (1937) proposed the theory of Transaction Cost Economics, a number of researchers have used it in a variety of relationships. The transaction cost approach, as developed by Coase; Williamson; and Ouchi, focuses on how the characteristics of a transaction affect the costs of handling it through markets, bureaucracies, and other forms of organization. The ‘New Institutional Economics’ approach is also based on the premise that institutions are transaction cost minimizing arrangements which may change and evolve with changes in the nature and sources of transaction costs (Williamson, 1985). A transaction occurs whenever a good or service is transferred across a technologically separable interface (Williamson 1985). Transaction costs include the costs of gathering and processing the information needed to carry out a transaction, of reaching decisions, of negotiating contracts, and of policing and enforcing those contracts. Coase (1960) emphasizes that market exchanges is not costless. Costs are incurred because of the friction involved in the exchange process, as it entails the transfer and enforcement of property rights.

Past studies such as Key *et al.* (2000) have categorized these costs into fixed and variable transaction costs. Fixed transaction costs (FTCs) are invariant to the volume of output traded and affect smallholder farmers’ market participation decisions. They include the costs of searching for a buyer with the best price, or search for a market; for negotiation when there is asymmetric information on prices; and for screening the potential buyer and enforcing the contract in case of credit sales (Kirsten & Vink, 2005). Variable Transaction Costs (VTCs), on the other hand, are per unit costs of accessing markets that vary with the volumes traded and may affect the decision to participate in the market as well as the quantity traded. They include costs associated with transferring the output being traded, such as transport costs and time spent delivering the product to the market. In essence, the variable transaction costs raise the real price of the commodity purchased and lower the real price received for commodity sold (Key *et al.*, 2000).

Williamson (1985) argues that the organizational form or "governance structure" that minimizes the sum of production and transaction costs for a given activity will help smallholder farmers have a competitive advantage. Also, agricultural products are often distinguished from other commodities due to their perishability and much of the coordination task required in assuring timely production, processing and distribution. Hence, agricultural transactions provide a rich and largely unexplored area for application and refinement of transaction-cost theory. (Masten, 2000) and Berdegué (2001) identified high transaction costs among the factors leading to the emergence of collective action. Therefore, this study examines the multifaceted problems of CA; provide recommendations to key constraints faced in reducing transaction cost and to access the effectiveness of farmer groups in reducing transaction cost for smallholder paddy farmers in Msalala Council of Shinyanga Region, Tanzania.

Figure 1: Theoretical Framework of Transaction Cost

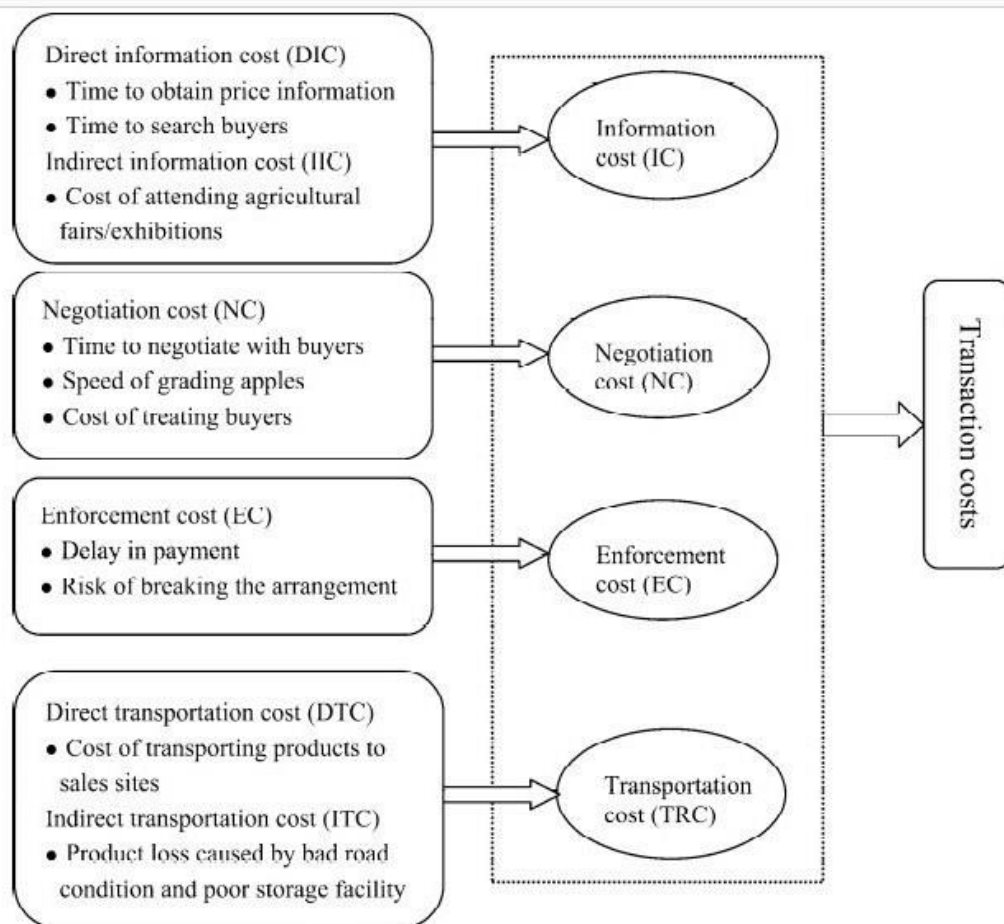


Figure 1: Theoretical Framework of Transaction Cost

Source: Wang and Huo, (2013)

## **2.2 Review of Concepts**

### **2.2.1 The Concept of Collective Action**

Collective action means group action. It also refers to activities that require the coordination of efforts by at least two or more individuals to further their shared interests. Members' actions in collective action are interdependent so much so, that one person's outcome is dependent on the action of others. Therefore, collective action is designed to assist smallholder farmers' engagement in markets, contributing to improvements in rural economies (Sandler, 1992). The idea of collective action for market access has led to emergence of marketing organization and farmer groups in practically all countries of the world to close gaps arising due to the weakness of farmers as bargainers in the market, inelastic supply of produce and inelastic demand (Arias *et al.*, 2003).

Similarly, many researchers have tried to define the situations under which collective action occurs, and the characteristics that allow sustainable collective action. A review of these studies show that the conditions for collective action are multiple and complex (Agrawal, 2001); however, collective action typically arises in instances where there are significant incentives to cooperate (Devaux *et al.*, 2007).

MacCathy (2004) stated the primary functions of the farmer groups as follows; to give farmers the profits of marketing that would ordinarily flow to market intermediaries, to stimulate and develop agricultural leadership, to help make market access more efficient and farming more profitable to try and maintain high quality and to reduce costs. Meanwhile, Agrawal (2001) stated that small group size, shared norms, previous successes in collective action (social capital), effective leadership, and interdependence among group members are factors that can encourage and support effective collective action. The study further posits that such factors are not limited to formal collective action, as in the form of cooperatives or other formal organizations but also informal collective action. Fliert (2002) observed that both formal and informal forms of collective action need leadership systems to prosper. He later posits that smaller marketing groups have higher internal cohesion because it is easier to monitor other members and most cases of successful collective marketing efforts reports a group size in the range of 20 - 40 members

Barham and Chitemi (2009) in examining collective action among farmer smallholder groups in Tanzania found out that female-dominated groups (defined both in terms of leadership and membership) were in fact disadvantaged in regards to marketing their produce, as women

faced a time disadvantage in seeking new markets as well as reduced access to non-local socio-political networks. Pandolfelli *et al.*, (2008) explained this and related findings as related to women's reduced likelihood to be tied into traditional information networks. However, in many cases women themselves rely on information provided by collective action institutions, so women's participation is necessary to voice demand for relevant information.

While evidence has proved that collective action is effective in ensuring efficient and sustainable resource management, research indicates that smallholder producers find it more challenging to pursue shared objectives as a group in other areas, including collective marketing (Barham and Chitemi, 2009). In particular, the transaction costs associated with organizing a collective marketing strategy, including ensuring access to common storage facilities and undertaking thorough quality control, often appear to be higher than the cumulative benefits derived from collective marketing (Berdegué Sacristán, 2001). At the same time, some evidence seems also to show that as a result of specific enabling conditions, collective market development can assist poor smallholders in overcoming unfavourable market conditions by facilitating innovation and value addition (Markelova and Meinzen-Dick, 2009; Devaux *et al.*, 2007).

### **2.2.2 Smallholder Farmers**

The concept of smallholder farmers arises as a classification based on; the size of the landholding; the purpose of production which may be own home consumption or market and income levels of the farmer (Barham and Chitemi, 2009). Dixon *et al.* (2003) stated that smallholder farmers are the backbone of African agriculture. The author noted that majority of the population in Sub-Saharan Africa are considered as smallholder farmers and reside in the rural areas. According to Delgado (1998), smallholder agriculture is important to employment, human welfare, and political stability in Sub-Saharan Africa (SSA). Eicher and Rukuni (1996) pointed out that smallholder agriculture is a source of growth linkages by enlarging the market for industrial goods and moderation of the urban migration.

Similarly, a number of studies including those by Vink and van Rooyen (2009) have tried to contextualize the challenges faced by smallholder farmers. Vink and van Rooyen (2009) claimed that smallholder production has declined over the past 10 years and that the divide between smallholder and commercial farmer productivity levels appears to be growing. One reason for this is probably the level of support provided to these smallholder farmers or



resource poor farmers. The Department of Agriculture's (DoA) Integrated Growth and Development Plan states that commercial, smallholder and subsistence farmers in South Africa currently receive less support from the state than their counterparts in any industrialized country in the world (DAFF, 2010). Despite significant progress in addressing the long-standing equity issues in land distribution in South African agriculture, there is evidence from a number of studies that agricultural production and income are not improving among the black smallholder population (World Bank, 2008; Denison *et al.*, 2010).

Barham (2007) posit that agricultural produce in developing countries such as Kenya, Tanzania, Uganda and Zambia is characterized by existence of a large number of smallholder farmers; a lack of full control over quality and quantity of the output; inability of individual farmers to engage in demand creation activities for own produce; seasonality of production; bulkiness of commodities relative to the value; and perishability of unprocessed products.

Wambugu and Kiome (2001) stated that smallholder farmers access to market in Kenya for their produce is constrained by weak mechanisms of operation by farmers, lack of trade support infrastructures such as trade centres or warehouses in priority export markets, low access to international market due stringent standards, inadequate diversification of exports and value addition of products due to tariff peaks and escalation of tariff barriers and technical barriers to trade despite continued participation in the multilateral, regional and bilateral trade agreement, declining value of preferential trade schemes as a result of trade liberalization, lack of comprehensive trade information on existing and, emerging market and product diversification and inappropriate background and forward linkages.

### **2.2.3 Transaction Cost**

According to Simon (1957), there are at least three main factors underlying positive transaction costs. First, individuals are limited in their ability to plan for the future and in spite of their best efforts to deal with the complexity and unpredictability of the world around them, they lack the knowledge, foresight and/or skill to accurately predict and plan for all the various contingencies that may arise. Second, even if perfect planning were possible, it is hard for contracting parties to negotiate about these plans due to the difficulty associated with developing a common language to describe actions and states of the world with which the parties have little prior experience (Hart 1995). Third, assuming that parties could plan and negotiate for a fully contingent contract, it frequently remains difficult for them to communicate their plans in such a way that an uninformed third-party (e.g., a court) could

reasonably enforce them. The upshot is that all contracts are actually and effectively incomplete.

Alston, Datta, and Nugent (1984) analysed the choice between labours wages and sharecrop contracts in a model with transaction costs. Allen and Lueck (1998) examined modern sharecrop contracts using the transaction cost approach through a model in which agents are risk neutral and contract rules are chosen to maximize expected joint wealth. Dorward (1999 as cited by Makhura 2001) developed a methodology for modelling negotiated choice of contractual arrangements in buyer/seller relationships in agriculture, integrating in the buyer's decisions his or her pure transaction cost and associated transformation cost. Purcell and Hudson (2004 as cited by Macher and Richman 2008) examined the growth of long-term contracting, the rise of vertical alliances, and the prevalence of integration between feedlots and beef processors brought about by site specificity.

Allen and Lueck (1998), on the other hand, explain why farming has generally not converted from small, family based firms into large factory-style corporate firms using a framework derived from Coase's (1937) seminal work on the theory of the firm. Fuentes (1998) examined, using transaction cost economics as the framework of analysis, some specific institutional arrangements that arise when small, village-based paddy traders and local farmers are used as middlemen and commission agents, respectively, to procure paddy supplies for large rice millers, traders, and retailers/wholesalers in rural Philippines. He found that the institutional arrangements examined generally conform to the propositions set forth in transactional cost economics literature. Naseer, Evenson, and De Silva (2007) examined whether or not community-based networks and associations play a role in improving agricultural productivity and explored the interaction between social capital and the relationship of transaction cost of production and proximity to markets.

Holloway *et al.*, (2000) interpret transaction costs as the pecuniary (observable) and non-pecuniary (non-observable) costs associated with arranging and carrying out an exchange of goods and services. Included are both the cost of exchange and the complete set of costs implied when households must reorganize and reallocate labor to generate a marketable surplus. Staal *et al.*, (1997) include the cost of transferring the product, which typically involves transportation, processing, packaging, and securing title, if necessary, to the set of transaction costs. Omamo (1998), on the other hand, identifies farm-to-market transaction

costs, which include transport costs and other marketing costs like searching, haggling, and waiting costs.

Sadoulet and de Janvry (1995) describe transaction costs as typically involving the costs of information, search, negotiation, screening, monitoring, coordination, and enforcement. They also include transportation costs as an important type of transaction cost in agriculture. They posit that due to the pervasive existence of transaction costs, agents have to incur high costs to access distant markets, even if these markets are perfect. This results in wide bands between sale price and purchase price. A market may fail when households face these wide price margins.

Goetz (1992) attributes the failure to participate in specific commodity markets to high fixed transaction costs. Renkow, Hallstrom, and Karanja (2003) found that economic isolation is positively associated with the size of the fixed transaction costs. Although both fixed and proportional transaction costs affect market participation decisions, Key, Sadoulet, and de Janvry (2000) show that only proportional transaction costs are significant in the household's market supply decision. Heltberg and Tarp (2002) used exogenous variables such as distance and types of transport as proxies for proportional transaction costs and information variables to determine fixed transaction costs. Their findings highlight the importance of non-price factors like technology, transport infrastructure, farm endowments, and area characteristics.

Pingali, Khawaja, and Meijer (2005) argue that increased transaction costs deter small farmers from entering the market, thus depriving them of the benefits from commercialization in agriculture. Interventions aimed at reducing transaction cost would encourage increased farmer participation in competitive markets to meet the broader poverty alleviation objectives (De Silva and Ratnadiwakara 2008). Sadoulet and de Janvry (1995) also claim that important productivity gains can be achieved through the promotion of greater specialization and exchange by reducing transaction costs. Heltberg and Tarp (2002) show that policies supporting the expansion of the number of market participants are far more important than those for stimulating farmers who are already in the market to increase their supply.

Henning and Henningsen (2007) developed a farm household model that incorporates various types of transaction costs as well as labor heterogeneity. Results show that non-proportional variable transaction costs and labor heterogeneity significantly influence household behavior. Alene et al. (2008) assessed the effects of transaction costs on smallholder marketed surplus

and input use in Kenya using a selectivity model. Output supply and input demand responses to changes in transaction costs and price and non-price factors were estimated and decomposed into market entry and intensity. Results show a negative impact of transaction costs on market entry.

### **2.3 Review of Empirical Studies**

A number of studies, such as Key *et al.*, (2000) and Makhura *et al.*, (2001) have identified high transaction costs as one of the key reasons for smallholder farmers' failure to participate in markets, though they accorded little attention to the participation of intermediaries operating in such marketing systems. Key *et al.*, (2000) worked on market participation, supply response and transaction costs using data from corn producers in Mexico and claimed that costs associated with market transactions were responsible for explaining why households have different relationships with the market. Markelova *et al.*, (2009) see smallholder organization in farmer groups as a possible institutional solution to overcome high transaction costs and other market failures in developing countries. Bingen *et al.*, (2003) noted that farmer organizations can provide important platforms for capacity building, information exchange, and innovation in rural settings.

Chowdhury (2002) also works on information aspect of transaction cost by testing hypotheses on whether access to information brought about any change in the producers' discrete choice between selling to middlemen or to direct buyers and its effect on continuous choice of selling. Staalet *et al.*, 1997; Holloway *et al.*, 2000; Winterset *et al.*, 2005 provides evidence on the importance of transaction costs in agricultural transaction. Staatz (1987) contends that transactional attributes that were proposed by Williamson (1985) are relevant concepts for the emergence of farmer cooperatives. It says smallholder producers face uncertainty in finding a buyer, particularly if their product has idiosyncratic qualities thereby raising their information or search costs. Hobbs and Young (2000) stated that product perishability also creates complexity of the transaction, thereby raising transaction cost. Shiferaw *et al.*, (2009) identified low volumes as one of the major limiting factors for the success of smallholder marketing groups in Kenya.

Watanabe (2006) believes the existence of intermediaries/middlemen in most commodity chains plays a crucial role of enabling markets to function and argues that middlemen/intermediaries usually emerge endogenously to intermediate between

homogenous buyers and sellers in the presence of coordination frictions and see market environment in sub-Saharan Africa too difficult for smallholder farmers to sustainably participate. Biglaiser (1993) ascertains that intermediaries are mainly driven by the obligation of maintaining a loyal customer base which they would not like to disappoint in terms of quality of commodity and consistency in supply in order to justify their existence and their profit margins. Fafchamps and Hill (2005); Chowdhury *et al.*, (2005) found out that middlemen have over time gained expertise in minimizing transaction costs and, hence, there is a continuous debate about the gains and losses of selling through middlemen or directly.

Furthermore, some literatures have analysed under what condition collective action is successful. One literature strand has examined determinants of group membership, focusing on farm and household characteristics, such as farm size, wealth, education, or gender (La Ferrara 2002; Wollni and Zeller 2007; Bernard and Spielman 2009). This slightly overlaps with studies on the impacts of group membership in terms of market access, prices, and income (Wollni and Zeller 2007; Bernard *et al.*, 2008; Roy and Thorat 2008). Another literature strand has scrutinized structural and institutional aspects of farmer groups, such as group size, stringency of rules, commodity focus, and market conditions (Hellin *et al.*, 2009; Barham and Chitemi 2009; Narrod *et al.*, 2009).

Numerous studies have accorded much attention to the effects of transaction costs on smallholder farmers mainly focusing on their decision to participate in markets and extent of participation, have outlined criticisms levelled against middlemen and justification for their existence, highlighting their roles and functions. However, these studies have not provided holistic analyses on the effects of transaction costs on the intensity of participation of smallholder farmers in CA, determine whether the involvement of intermediaries affect smallholder's participation in CA or not, assess the extent to which farmers' group composition attributes and governance attributes influence transaction cost as well as smallholder's participation in CA. These are considered as research gaps, which will be addressed in this study

## **CHAPTER THREE**

### **Methodology**

#### **3.0 Introduction**

This section presents the methodology of the study. It covers the study areas, the scope, type and sources of data, analytical methods as well as the description of variable used for the estimation of the empirical analyses of the study.

#### **3.1 Research Design**

This section covers the description of study areas and the type of survey adopted in the study. It is expected to define the population, the sample size as well as the sampling technique adopted in selecting the sample size. Sources of data collection, data analysis and data presentation are part of the research design. This research was designed to show the multifaceted problems of CA, provide recommendations to key constraints faced in reducing transaction cost and to assess the effectiveness of farmer groups in reducing transaction cost for smallholder paddy farmers in Msalala Council of Shinyanga Region, Tanzania. Also, since most studies done have mainly focused on the smallholder farmers with little attention to the participation of intermediaries operating in such marketing systems, this study will therefore, include the analysis of intermediaries (middlemen) because of the vital role they often play in the marketing of agricultural commodities. Questionnaire was administered in a survey conducted among the members of MPAFAC and KII was used to obtain further information from farmers, farmers groups and governing body of MPAFAC

#### **3.2 Overview of Country of Research**

Tanzania is a country in East Africa bordered by Kenya and Uganda to the north; Rwanda, Burundi, and the Democratic Republic of the Congo to the west; Zambia, Malawi, and Mozambique to the south; and the Indian Ocean to the east. The United Republic of Tanzania came into being in 1964 following the union of the Republic of Tanganyika (formed in 1961) and Zanzibar. Its official languages are Kiswahili and English. Dodoma is the national capital of Tanzania, and the Tanzanian Shilling (TZS) is the official currency. It is the 13<sup>th</sup> largest country in Africa and is situated in East-Africa (National Bureau of Statistics, 2012).

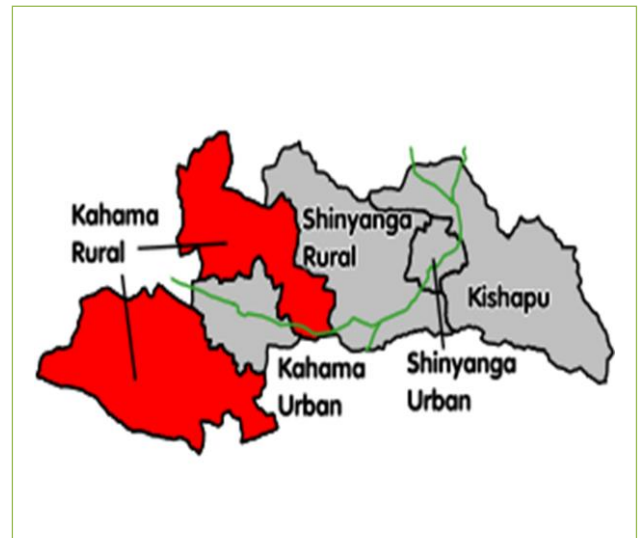
The Tanzanian economy depends heavily on agriculture, which accounts for more than a quarter of GDP, provides 85% of exports and employs about 80% of the work force.<sup>19</sup> in

GDP composition by sector in 2011, services accounted for about half with the rest divided more or less equally between agriculture and industry (Karfakis and Rapsomanikis, 2008).

### 3.3 Overview of Region of Research

Shinyanga Region is one of Tanzania's 30 administrative regions. The regional capital is the municipality of Shinyanga; it is one of the relatively least developed regions in Tanzania. The region lies between latitude 30 15" and 40 30" South of the Equator and between longitudes 310 30" and 340 15" East of the Greenwich Meridian.

The average rainfall of the region is 600-900mm per annum. The region has a total surface area of 18,555 square kilometres. Administratively the region is divided into 3 Districts namely Kahama, Kishapu and Shinyanga with 6 Local Government Authorities - Kahama Town Council, Shinyanga Municipal Council, Kishapu District Council, Shinyanga District Council, Msalala Council and Ushetu Council (National Bureau of Statistics, 2012).



Shinyanga region has the privilege of sharing borders with six other regions. These regions include: Geita, Simiyu, Singida, Tabora, Kigoma, and Mwanza. Landlocked countries of Republic of Congo, Burundi, Rwanda and even Uganda also depend to some extent on the efficiency of Shinyanga roads as well as Isaka dry land port. According to the 2012 national census, the region had a population of 1,534, 808; the region's 2.1 percent average annual population growth rate was the twentieth highest in the country. It is also the tenth most densely populated region with 81 people per square kilometer. With a size of 50,781 square kilometres (19,607 sq mi), the region is slightly smaller than Costa Rica.

There are three categories of industries in Shinyanga region namely, large scale industries employing more than 50 workers; medium scale industries employing between 10 and 49 workers; and small scale industries employing one to nine workers (Mbiseet *al.*, 2011).As in many parts of Tanzania, agriculture is the backbone of Shinyanga's economy employing about 80 percent of the total labour force of the region. Despite its dominance to the regional economy, this sector is not well developed because of the poor farming methods which include the use of hand tool and reliance on traditional rain-fed cropping methods and animal

husbandry. Main cash crops are cotton and tobacco, while the main food crops include maize, sorghum, paddy, sweet potatoes, millet and cassava. Besides farming, livestock keeping, cattle, goats and sheep rearing are major activities in Shinyanga (Karfakis and Rapsomanikis, 2008).

### **3.4 The Study Area**

Msalala District Council is one among the six councils in the region of Shinyanga. Others are Kishapu, Shinyanga Municipal, Shinyanga Rural, Kahama Town Council and Ushetu. The council was established from the former Kahama District Council. The district lies between latitude 3<sup>0</sup>15" and 4<sup>0</sup>30" south of Ikweta and Longitude 31<sup>0</sup>30" and 33<sup>0</sup>00" east of Greenwich. The district borders Geita region to the north and to the south it borders with Tabora region. To the west, the district borders with Shinyanga district and to the west it borders Kahama Town Council. Administratively Msalala district has 2 Division, 18 Wards, 92 Villages and 328 Sub-villages. The district occupies an area of 263,520.2 hectares (2,635.52 km<sup>2</sup>) which is equivalent to 5.2% of the total area of Shinyanga region i.e 50,781 km<sup>2</sup> (SEIDA, 2017).

The population density is estimated at 84 Persons per sq. km. Rainfall variability is on a year-to-year basis averaging between 750 and 1030 mm per year. It lies between 958 and 1,345 meters above sea level. It has a tropical savannah climate. The district is located on the inter-rift plateau. Temperatures are relatively constant throughout the year; with mean daily temperatures ranging from 21<sup>o</sup> to 26<sup>o</sup>C. Relative humidity is on average of 79% with little variation during the year; during the rainy season values are between 80% and 85% and are slightly lower during the dry season (SEIDA, 2017).

According to the 2012 Population and Housing Census Msalala district had 250,727 people out of which 122,234 were males and 128,493 were females. The total road-network in the district is 715 km of which 25 km are tarmac road, 205 km are gravel and 485 km are earth-feeder roads. The Msalala District has forest reserves occupying an area of 107,000ha. It is estimated that more than 70% of the population depend on trees as their source of fuel/energy (SEIDA, 2017).

The main economic activities are Agriculture, Livestock Keeping, Mining and small business and about 85% of all people in the district depends on Agriculture and Livestock Keeping. Majority of residents are into subsistence agriculture and livestock rearing, it is estimated that more than 85% are engaging in these activities. Approximately, 80% of the total arable land



of 482,320 ha or 57% of district area is presently being utilized either for crop production or as grazing land. Farm sizes vary from 0.4 to 20 ha per farm household, averaging to 2.4 – 6.0 ha (SEIDA, 2017).

### 3.5 Population and Sample Design

The target population for this study consists of the members of MPAFAC belonging to five different wards, 35 groups and different villages. According to the secondary data obtained from SEIDA, there were a total number of 1021 smallholder paddy farmers from these wards as at March, 2017.

S/N	DISTRICT	MSALALA DISTRICT COUNCIL					COMMODITY
	FARMER GROUP/ORGANISATION	MEMBERSHIP		LOCATION			
		MALE	FEMALE	DISTRICT	WARD	VILLAGE	
1	KILIMO KWANZA	15	15	MSALALA	NTOBO	NTOBO	Paddy/Rice
2	JUHUDI	22	8	MSALALA	NTOBO	KALAGWA	Paddy
3	KIWAMIKI	21	15	MSALALA	NTOBO	NTOBO	Paddy
4	TUPENDANE	9	8	MSALALA	NTOBO	BUGANZO	Paddy
5	MWANGAZA B'	7	9	MSALALA	NTOBO	KALAGWA	Paddy
6	AMANI	15	15	MSALALA	NTOBO	NTOBO	Paddy
7	JKOMBOE	14	17	MSALALA	SEGESE	SEGESE	Paddy
8.	MAENDELEO	12	18	MSALALA	SEGESE	SEGESE	Paddy
9.	AMANI	14	16	MSALALA	SEGESE	SEGESE	Paddy
10	SONGAMBELE	15	17	MSALALA	SEGESE	WISOLELE	Paddy
11	JIPEMOYO	9	18	MSALALA	SEGESE	SEGESE	Paddy
12	UPENDO	8	19	MSALALA	SEGESE	SEGESE	Paddy
13	IGEMBESABO	13	15	MSALALA	BULIGE	MWANINGI	Paddy
14	KIMAVIBU	8	17	MSALALA	BULIGE	BULIGE	Paddy
15	FARAJA	10	11	MSALALA	BULIGE	BULIGE	Paddy
16	MKOMBOZI	14	12	MSALALA	BULIGE	MARITHO	Paddy
17	UPENDO	-	30	MSALALA	BULIGE	BULIGE	Paddy
18	MSHIKAMANO	-	30	MSALALA	BUSANGI	BUSANGI	Paddy
19	MSAPPO	13	17	MSALALA	BUSANGI	NYAMIGEGE	Paddy
20	NYAMBOGO	17	13	MSALALA	BUSANGI	NYAMIGEGE	Paddy
21	TUNAUVI	7	13	MSALALA	BUSANGI	NTUNDU	Paddy
22	UMOJA NI NGUVU	15	15	MSALALA	BUSANGI	NYAMIGEGE	Paddy
23	UMWAGILIAJI MAJI	46	8	MSALALA	CHELA	CHELA	Paddy
24	AKASEKWA	14	16	MSALALA	CHELA	MHANDU	Paddy
25	FARAJA	11	17	MSALALA	CHELA	CHELA	Paddy
26	MKOMBOZI	9	18	MSALALA	CHELA	NUNDU	Paddy
27	KALAMATA	30	11	MSALALA	CHELA	JOMU	Paddy
28	NGUVUKAZI	17	13	MSALALA	CHELA	MHANDU	Paddy
29	MKOMBOZI	-	20	MSALALA	CHELA	BUCHAMBAGA	Paddy
30	UPENDO	-	21	MSALALA	CHELA	BUCHAMBAGA	Paddy
31	SHILABELA	17	22	MSALALA	CHELA	BUCHAMBAGA	Paddy
32	MAENDELEO	21	10	MSALALA	CHELA	BUCHAMBAGA	Paddy

33	IKONGABALIMI	15	11	MSALALA	CHELA	BUCHAMBAGA	Paddy
34	WAPENDANAO	24	14	MSALALA	CHELA	BUCHAMBAGA	Paddy
35	KWISAGILWA	-	30	MSALALA	SEGESE	SEGESE	Paddy
<b>Total</b>		<b>462</b>	<b>559</b>				

Table 3.5 Source: SEIDA Report, March 2017

### 3.6 Data Collection

For this study, both qualitative and quantitative data were collected. This study used cross-sectional survey to gather factual information necessary for decision making on the influence of collective action on transaction cost among smallholder farmers in Msalala Council of Shinyanga, Tanzania. The design is adopted on the premise that findings would prove useful to stakeholders, particularly for the ministry of agriculture and organized farmer groups in the council and for the nation at large. The target population will therefore, was smallholder farmers, group heads and board member of MPAFAC.

Multi-stage sampling techniques consisting of purposive sampling based on paddy productivity, knowledge and position within the association and project implementation and simple random sampling of balloting was used to select the five key informants from smallholder farmers in farmers groups, five group heads, three MPAFAC governing board member and one project district focal person. Meanwhile, proportional random sampling of balloting was done to select 315 smallholder paddy farmers with an average of nine persons per group thereby constituting about 30% of the total 1021 population. The mixed-methods approach utilized for this study is by employing the following qualitative and quantitative data collection methods: Key Informant Interviews (KII) and Structured Questionnaire. In total 315 quantitative samples were collected for data analysis while 14 qualitative data sets were collected. To enhance the validity and reliability of the instruments, a pre-test was carried out Shilela Ward by administering questionnaires to the SHF in one group out of sampled population to assess the ability of the respondents to interpret and answer the questions asked correctly.

### 3.7 Questionnaire and Interview

Basically, they were structured in such a manner that brought out maximum information about the issues smallholder paddy farmers were facing in their wards and groups with respect to transaction cost. For the questionnaire, it contains a combination of closed and open ended questions. The open ended questions encourage respondents to provide detailed

answers to the questions, while answers to the closed ended questions require that the researcher seeks further clarification from other sources in order to be able to use such information adequately. It seeks information about the personal data of respondents, their transaction cost in relation to their farmers group, middlemen and their effect on participation in farmer's group as well as how it affects transaction cost. It also obtained information on farmers' group composition and governance structure in relation to transaction cost and their intensity of participation. It was administered directly to respondents and responses were collected immediately, except where the respondent asked for more time. This ensures collection of a high percentage of responses, for analysis and results presentation. The sample and schedule of the questionnaire is attached as an annexure to this chapter.

### **3.8 Analytical Techniques**

Data obtained were entered and analyzed descriptively using frequencies, tables, graphs and simple percentages. Mean, median, mode and standard deviation were calculated for continuous variables and Chi-square was used to test for associations between categorical variables and proportions. Statistical computations were carried out using SPSS software. A confidence level of 95% was used and p-values  $\leq 0.05$  considered statistically significant. Furthermore, multivariate analysis incorporating all possible associations was also carried out. Also, Frequencies and percentages were calculated for qualitative variable. The data were presented in illustrative tables and graphs (bar charts and pie charts).

### **3.9 *Priori* Expectations**

The research established the effectiveness of CA in reducing transaction cost for smallholder farmers, identify key constraints impeding CA from reducing transaction cost, state how frequent increase in price of agricultural inputs is affecting transaction cost, show the multifaceted problems of CA, pay attention to participating intermediaries (middlemen) operating in such marketing systems and provide recommendation on what need to be done to enable FOs achieve their strategic objectives.

**CHAPTER FOUR**  
**RESULTS OF THE STUDY AND DISCUSSION**

**4.0 Introduction**

This chapter presents the results of the study. The overall objective of the study was to investigate the effectiveness of CA on the cost of transaction and on how it affects participation of smallholder farmers. The results capture the effects of transaction costs on the marketing of paddy, determine whether the involvement of intermediaries affect smallholders’ participation and transaction cost, assess the extent to which farmer’s group composition attributes influence transaction cost and how farmer group governance attributes influence smallholders’ participation and transaction cost

**4.1 Socio-Demographic Data of Respondents**

**Table 4.1: Distribution by Demographic Composition of Farmers**

<b>Domain</b>	<b>Respondents</b>	
<b>Gender</b>	<b>Frequency</b>	<b>Percent</b>
Male	155	49.2
Female	160	50.8
Total	315	100.0
<b>Marital Status</b>		
<b>Marital Status</b>	<b>Frequency</b>	<b>Percent</b>
Single	37	11.7
Married	239	75.9
Widowed	21	6.7
Separated	18	5.7
Total	315	100.0
<b>Age Group</b>		
<b>Age Group</b>	<b>Frequency</b>	<b>Percent</b>
18 – 35yrs	80	25.4
36 – 55yrs	195	61.9
56yrs and above	40	12.7
Total	315	100.0
<b>Educational Status</b>		
<b>Educational Status</b>	<b>Frequency</b>	<b>Percent</b>
No Formal Education	75	23.8
Primary Education	212	67.3
Secondary Education	20	6.3
Vocational Education	8	2.5

Total	315	100.0
<b>Farm Size (Acres)</b>	<b>Frequency</b>	<b>Percent</b>
0.0 - 2.4	91	28.9
2.5 - 5.0	167	53.0
5.1 and above	57	18.1
Total	315	100.0
<b>Land Acquisition</b>	<b>Frequency</b>	<b>Percent</b>
Inheritance	73	23.2
Rent	143	45.4
Lease	30	9.5
Purchased	69	21.9
Total	315	100.0

**Source: Field survey, 2018**

Results of the study reveal that of the 315 smallholder farmers interviewed, 49.2% were male and 50.8 female. As shown on table 4.1, the age categorization of the farmers shows that 25.4% belong to 18 – 35yrs, 61.9% belong to 36 – 55yrs and 12.7 belong 56yrs and above while 11.7% were single, 75.9% married, 6.7% widowed and 5.7% Separated. Further analysis shows that 23.8% had no Formal Education and 67.3% had primary education which implies bulk of the population. Farm size of 2.5-5.0 acres which represent 53% was found in more than average among the sampled respondent while 5.1 acres and above was the least with percentage of 18.1%. The survey revealed the most of the respondent (45.4%) rent their farmland, while 23.2, 9.5, and 21.9 inherit, lease and purchase theirs respectively.

**4.2 Results based on research objective 1:** To determine the effects of transaction costs on the intensity of participation of smallholder farmers in CA

**Table 4.2.1: Information on Factors affecting Transaction Cost 1**

<b>Domain</b>	<b>Respondent</b>	
<b>Market Participation</b>	<b>Frequency</b>	<b>Percent</b>
Easy	55	17.5
Difficult	260	82.5
Total	315	100.0
<b>Market Size</b>	<b>Frequency</b>	<b>Percent</b>
Small	133	42.2
Medium	122	38.7
Large	60	19.0

Total	315	100.0
<b>Access to Input Materials</b>		
	<b>Frequency</b>	<b>Percent</b>
Easy	53	16.8
Difficult	262	83.2
Total	315	100.0
<b>Description of Customers</b>		
	<b>Frequency</b>	<b>Percent</b>
Off-takers	32	10.2
One-time buyers	55	17.5
Small Quantity Buyers	228	72.4
Total	315	100.0

**Source: Field survey, 2018**

The study looked at market participation requirements of respondents, while 17.7% said it was easy to participate in market, 82.5% stated it is difficult. The study then explore further to look at market size. While 42.2% saw the market as small, 38.7% as medium and 19% saw it as large. On access to input materials for production, majority of the respondents (83.2%) stated it was difficult to access input materials while 10.2%, 17.5% and 72.4% saw their customers as off-takers, one-time buyers and small quantity buyers respectively.

**Table 4.2.2: Information on Factors affecting Transaction Cost II**

<b>Domain</b>	<b>Respondent</b>	
Farming Experience of Respondents (Years)	Frequency	Percent
0.0 -2.0	49	15.6
2.1 - 4.0	81	25.7
4.1 and above	185	58.7
Total	315	100.0
<b>Rating of Market Prices</b>		
	<b>Frequency</b>	<b>Percent</b>
Fair	43	13.7
Good	76	24.1
Poor	196	62.2

Total	315	100.0
<b>Rating of Market Demand</b>		
High	106	33.7
Average	134	42.5
Low	75	23.8
Total	315	100.0
<b>Adequate Access to Market</b>		
Yes	197	62.5
No	118	37.5
Total	315	100.0
<b>Do buyers reject your paddy?</b>		
Yes	121	38.4
No	194	61.6
Total	315	100.0
<b>Why buyers reject it</b>		
Because it has colours	41	13.0
Poor Weighing Scale	4	1.3
High Price	23	7.3
Harvest not good enough	28	8.9
Mixing of Seeds	15	4.8
Total	111	35.2
<b>Customer Retention Strategy</b>		
Harvest on Time	9	2.9
Agreement on Sales	4	1.3
Good Crops and Preservation	21	6.7

Selling Together	51	16.2
Good Output	70	22.2
No Strategy/Rely on Government	160	50.8
Total	315	100.0

**Source: Field survey, 2018**

While looking at access to market and its role in transaction cost, the study tries to investigate respondents' farming experience, market prices and demand, adequate access to market, response behaviour of customers among others. Some 58.7% of the farmers have 4.1 years and above farming experience, while 13.7%, 24.1% and 62.2% rated market prices as fair, good and poor respectively. The respondents saw market demand as high, average and low at 33.7%, 42.5% and 23.8% respectively.

On adequate access to market, 62.5% of the respondent stated there is adequate access, while 38.4% i.e. 121 out of 315 stated that buyers reject their paddy. The research further investigated the reasons for this high rate of rejection and found out that 13% was because the paddy has colours, 1.3 was because of poor weighing scale, 7.3 was due to high price, 8.9% due to poor harvest and 4.8 due to mixing of seeds. While trying to relate all this outcomes to farmer's customer retention strategy, we found out that most of them (50.8%) lacked retention strategy and rely on government or institutions to provide one.

**Table 4.2.3: Information on Factors affecting Transaction Cost III**

<b>Domain</b>	<b>Respondent</b>	
<b>Type of Road to Farm</b>	<b>Frequency</b>	<b>Percent</b>
Tarred	43	13.7
Un-tarred	272	86.3
Total	315	100.0
<b>Known means of transportation</b>	<b>Frequency</b>	<b>Percent</b>
Yes	257	81.6
No	58	18.4
Total	315	100.0
<b>Transport Means</b>	<b>Frequency</b>	<b>Percent</b>
Animal	76	24.1



Motorcycle	42	13.3
Tricycle	2	.6
Vehicle	1	.3
Other (Bicycle)	136	43.2
Total	257	81.6
<b>Statistics</b>	<b>Distance from Farm to Market in Km</b>	<b>Distance from Farm to nearest Tarred Road in Km</b>
Mean	19.5190	5.1794
Median	12.0000	4.0000
Mode	42.00	4.00
Std. Deviation	16.52699	3.43693
Range	99.00	20.00
Minimum	1.00	1.00
Maximum	100.00	21.00
Sum	6148.50	1631.50

**Source: Field survey 2018**

Proximity to market is an important factor to consider in access to market as well as available mode of transportation. The study found out that 86.3% respondent reported the road to their farm as being untarred, 81.6% have personal means of transportation made-up of 24.1%, 13.3% and 43.2% for animal, motorcycle and bicycle respectively. The study found the mean of distance from farm market to be 19.519Km, with minimum and maximum distance to farm being 1km and 100km respectively. The mean of distance from farm to nearest tarred road was found to be 5.1794Km, with minimum and maximum distance from farm to nearest tarred road being 1km and 21km respectively. A closer examination at the relationship between gender and ownership of transportation modes shows that none of the female respondents had vehicles as well as none of the male respondent has tricycle. Further investigations shows that while 37 male and 39 female farmers own animals, 61 male and 75 female farmers own bicycle with the male also having 29% ownership in Motorcycle out of 315 sampled respondents.

**Table 4.2.4 Information on Factors affecting Transaction Cost IV**

Domain	Respondents	
	Frequency	Percent
Transaction Cost/Acre before joining FO		

Below 100 USD	29	9.2
105 - 150 USD	99	31.4
155 – 200 USD	43	13.7
205 USD and above	144	45.7
Total	315	100.0
<b>Transaction Cost/Acre after joining FO</b>	Frequency	Percent
Below 50 USD	7	2.2
55 - 100 USD	31	9.8
105 – 150 USD	41	13.0
155 USD and above	236	74.9
Total	315	100.0
<b>Effect of participation on Income</b>	Frequency	Percent
Increased Income	283	89.8
There should have been opinions in between the extremes		
Decreased Income	18	5.7
No Significant Difference	14	4.4
Total	315	100.0

**Source: Field survey 2018**

In looking at how collective action help address the problem of high transaction cost, the study examined the participation of smallholder farmers in farmers organization. It was found out that 16.5% have been members for 0-2yrs, 61.3% for 2.1-4yrs and 22.2% for 4.1yrs and above. The study further showed that most of them were in farmer groups before the establishment of MPAFAC but when MPAFAC got registered, many moved with their group to the MPAFAC. Some 52.4% of the farmers stated that manpower support, financial support, marketing and sales of produce, and training purposes were their reasons for joining farmers group with as little as 21% stating is for marketing and sales of produce only. Now, while enquiring on the total amount spent by smallholder farmer on transaction before joining MPAFAC and using a conversion rate of 1 USD = 2, 000TSh, it was found that 45.7% spent 205 USD and above, 31.4%, 13.2% and 9.2% spent between 105 - 150 USD, 155 – 200 USD, and below 100 USD respectively, on transaction cost. Similarly, total amount spent on transaction per acre after joining FG was found to be below 50 USD for 2.2% of the respondent, 9.8% spent between 55 – 100 USD, 13% spent 105 – 150 USD and 74.9% spent

155 USD and above. 89.8% of the respondent reported their income has increased, while 5.7% reported decrease in income and 4.4% didn't experience a significant difference.

**4.3 Results based on research objective 2:** To determine whether the involvement of intermediaries affect smallholder's participation and transaction cost

**Table 4.3: How Middlemen affect Farmer Participation in FO and Transaction Cost**

<b>Domain</b>	<b>Respondent</b>	
<b>Awareness about Middlemen</b>	<b>Frequency</b>	<b>Percent</b>
Yes	275	87.3
No	40	12.7
Total	315	100.0
<b>Use of Middlemen</b>		
	<b>Frequency</b>	<b>Percent</b>
Yes	224	71.1
No	91	28.9
Total	315	100.0
<b>Reasons for using Middlemen</b>		
	<b>Frequency</b>	<b>Percent</b>
No Buyers	137	43.5
Long to Market	75	23.8
No Big Buyers/Off-takers	12	3.8
Distance Total	224	71.1
<b>Duration of use of Middlemen</b>		
	<b>Frequency</b>	<b>Percent</b>
0 -2 Years	19	6.0
2.1 - 4.0 Years	63	20.0
4.1 Years and above	142	45.1
Total	224	71.1
<b>Their Effect on Transaction Cost</b>		
	<b>Frequency</b>	<b>Percent</b>
Reduces Cost	79	25.1
Rarely Reduces Cost	16	5.1
Never Reduces Cost	45	14.3
Increases Cost	84	26.7
Total	224	71.1

<b>Effect on participation in FO</b>	<b>Frequency</b>	<b>Percent</b>
Promotes Participation	58	18.4
Rarely Promotes Participation	38	12.1
Doesn't Promote Participation	128	40.6
Total	224	71.1
<b>General comments on presence of middlemen</b>		
<b>General comments on presence of middlemen</b>	<b>Frequency</b>	<b>Percent</b>
Help Get Buyers	17	5.4
Not Needed	110	34.9
Increases Transaction Cost	57	18.1
They Exploit Us	107	34.0
Reduce Transport Cost	9	2.9
Total	300	95.2

**Source: Field survey, 2018**

On looking at the roles middlemen play in transaction cost, the study investigated awareness about middlemen through asking respondents to describe their presence and activities. Of 315 respondents surveyed, 87.3% were aware of middlemen, of this, 71.1% operated with them and 43.5% did because there were no buyers, 23.8% because of long distance, and 3.8% did because there were no off-takers. Also, 45.1% had been operating with middlemen for four years and above. Looking at middlemen's contribution to transaction cost, 26.1% said it reduces cost while 26.7% said it increases cost. Involvement of middlemen affected smallholder farmers as 40.6% stated it did not affect their participation in FO while 12.1% and 18.4% stated rarely promotes participation and promotes participation respectively. Some 5.4% saw middlemen as those that help to get buyers, 34.9% said they were not needed, 18.1% said they increased transaction cost, 34% said they were exploitative and only 2.9% said they reduced transaction cost.

**4.4 Results based on research objective 3:** To assess the extent to which farmer's group composition attributes influence transaction cost.

**Table 4.4a** Farmer's group composition attributes influence transaction cost.

<b>Domain</b>	<b>Respondent</b>	
<b>Gender Dominance in Groups</b>	<b>Frequency</b>	<b>Percent</b>
Male	68	21.6
Female	247	78.4
Total	315	100.0
<b>Effect on TC</b>		
	<b>Frequency</b>	<b>Percent</b>
Reduces Cost	65	20.6
Rarely Reduces Cost	87	27.6
Never Reduces Cost	68	21.6
Increases Cost	95	30.2
Total	315	100.0
<b>Age Dominance in Groups</b>		
	<b>Frequency</b>	<b>Percent</b>
15 - 24 Years	8	2.5
25 - 34 Years	76	24.1
35 - 44 Years	111	35.2
45 - 54 Years	99	31.4
55 - 64 Years	19	6.0
65 - 74 Years	2	.6
Total	315	100.0
<b>Effect on TC</b>		
	<b>Frequency</b>	<b>Percent</b>
Reduces Cost	76	24.1
Rarely Reduces Cost	75	23.8
Never Reduces Cost	91	28.9
Increases Cost	73	23.2
Total	315	100.0

Source: Field survey, 2018

**Table 4.4b:** Farmer’s group composition attributes influence transaction cost.

<b>What is the common marital status of your FG</b>		
<b>Marital Status Dominance</b>	<b>Frequency</b>	<b>Percent</b>
Single	11	3.5
Married	286	90.8
Widowed	9	2.9
Separated	9	2.9
Total	315	100.0
<b>Effect on TC</b>	<b>Frequency</b>	<b>Percent</b>
Reduces Cost	80	25.4
Rarely Reduces Cost	92	29.2
Never Reduces Cost	60	19.0
Increases Cost	83	26.3
Total	315	100.0
<b>Educational Status Dominance in FG</b>	<b>Frequency</b>	<b>Percent</b>
No Formal Education	16	5.1
Primary Education	275	87.3
Secondary Education	20	6.3
Other	4	1.3
Total	315	100.0
<b>Effect on TC</b>	<b>Frequency</b>	<b>Percent</b>
Reduces Cost	77	24.4
Rarely Reduces Cost	52	16.5
Never Reduces Cost	114	36.2
Increases Cost	72	22.9
Total	315	100.0

**Source: Field survey, 2018**

To access how farmers group composition attribute affects transaction cost, the composition of the farmers group was enumerated and related to participation of smallholders in FO and transaction cost. On the issue of gender, the respondents reported that 78.4% of their members were female and while evaluating the effect of this gender dominance on transaction cost, only 30.2% reiterated it increased cost while 20.6% said it reduced cost.

Looking at age group composition, 35.2% are ages between 35 – 44yrs, 31.4% were of ages between 45 – 54yrs while very few 2.5% and 0.6% were ages between 15 – 24yrs and 65 – 74yrs respectively. In relation to effect on transaction cost, 24.1% said the age group composition reduced transaction cost, 23.8% said rarely reduced, and 28.9% said never reduced while 23.2% said it increases cost.

On the effect of marital status composition of FG on transaction cost, it was discovered that 90.8% of the farmers were married and the respondents reported that of the married one, 25.4% said it reduced cost, 29.2% said rarely reduced cost, 19% said never reduced cost while 26.3% reported it increased cost.

In trying to know the effect of level of education of farmers group on transaction cost, respondent were asked the common level of education of the farmers' organization, the result shows that only 5.1% had no formal education while majority of 87.3% had primary education. Further investigation shows that 36.2% reported it never reduced their transaction cost while 24.4%, 16.5%, 22.9% said it reduced cost, rarely reduced cost and increased cost respectively.

**4.5 Results based on research objective 4:** To assess how farmers group governance structure influence smallholder’s participation and transaction cost

**Table 4.5a:** Farmer’s group governance structure composition’s influence on transaction cost.

<b>Domain</b>	<b>Respondent</b>	
<b>Focus of FG and effect on TC</b>	<b>Frequency</b>	<b>Percent</b>
Reduces Cost	196	62.2
Rarely Reduces Cost	60	19.0
Never Reduces Cost	23	7.3
Increases Cost	36	11.4
Total	315	100.0
<b>Monitoring of members effect on Participation in FO</b>		
	<b>Frequency</b>	<b>Percent</b>
Promotes Participation	267	84.8
Rarely Promotes Participation	41	13.0
Doesn't Promotes Participation	7	2.2
Total	315	100.0
<b>Monitoring of members effect on TC</b>		
	<b>Frequency</b>	<b>Percent</b>
Reduces Cost	165	52.4
Rarely Reduces Cost	75	23.8
Never Reduces Cost	36	11.4
Increases Cost	39	12.4
Total	315	100.0
<b>Relationship between members effect on Participation in FO</b>		
	<b>Frequency</b>	<b>Percent</b>



Promotes Participation	241	76.5
Rarely Promotes Participation	65	20.6
Doesn't Promotes Participation	9	2.9
Total	315	100.0

Source: Field survey, 2018

**Table 4.5b:** Farmer's group governance structure composition's influence on transaction cost.

<b>Domain</b>	<b>Respondents</b>	
<b>Relationship between members effect on TC</b>	<b>Frequency</b>	<b>Percent</b>
Reduces Cost	180	57.1
Rarely Reduces Cost	42	13.3
Never Reduces Cost	41	13.0
Increases Cost	52	16.5
Total	315	100.0
<b>Effect of Intent of Farmer Groups on Participation in FO</b>		
Promotes Participation	274	87.0
Rarely Promotes Participation	37	11.7
Doesn't Promotes Participation	4	1.3
Total	315	100.0
<b>Service of Farmer's Interest</b>		
Well Served	260	82.5
Rarely Served	37	11.7
Never Served	18	5.7
Total	315	100.0
<b>Accountability Status of FG</b>		
Yes	305	96.8

No	10	3.2
Total	315	100.0
<b>Effect of accountability on member participation in FO</b>		
	<b>Frequency</b>	<b>Percent</b>
Promotes Participation	262	83.2
Rarely Promotes Participation	38	12.1
Doesn't Promote Participation	15	4.8
Total	315	100.0

<b>How Transaction cost can be Reduced</b>	<b>Frequency</b>	<b>Percent</b>
Through Govt. Support	16	5.1
Capacity Building Trainings	134	42.5
By Staying in a Group	13	4.1
Constant Availability of Market	55	17.5
Availability of Input	97	30.8
Total	315	100.0

**Source: Field survey, 2018**

In accessing how the focus of the FG affects transaction cost, 62.2% said their FG focus reduced transaction cost, 19% said it rarely reduced cost, and 11.4% said it increased cost while 7.3% said never reduced costs. In looking at monitoring of members by leaders, 84.8% stated it allowed them to participate effectively in FG, 13% said it rarely promoted participation with only 2.2% saying it did not promote participation. But on transaction cost, 52.4% said it reduced cost, 23.8% said it rarely reduced cost, 12.4% stated never increased cost and 11.4% stated it never reduced cost.

Relationship between members in farmers group shows that, 76.5% of the respondents stated that it promoted their participation in FG, 20.6% stated it rarely promoted participation and 2.9% said it did not promote participation. And on transaction cost, 57.1% said it reduced costs, 13.3% stated it rarely reduced cost, 13% stated it never reduced costs and 16.3% said it increased cost.

On the intent and aim of farmer group on participation of smallholder farmers, 87% said it promoted participation, 11.7% stated it rarely did while 1.3% stated it did not promote

participation. Interest of individual farmers and that of others and relating it to how well it is served in the FG, 82.5% said their interest was well-served, 11.7% said it was rarely served and only 5.7% said it is never served

On the issues of accountability and check-mating of actions by farmers group, 96.8% of smallholder farmers were aware that their group was accountable to other institutions such as MIVARF, while 83.2% said the accountability promotes their participation in farmers group, 4.8% said it doesn't promote their participation

Looking at the major benefit farmers got from FO, 45.7% stated access to credit facilities, markets for crops together with capital access was at 7% and one individual indicated no benefit at all. To address the issue of transaction cost reduction, 5.1% of the respondents depended on government to provide the means, 42.5% believed capacity building training was enough, and 17.5% believed continuous availability of market is the solution

#### 4.6 Further Result Analysis

Further analysis of the results was carried out by testing four different hypotheses to know the relationship between a numbers of variables.

**Table 4.6.1:** Showing anova test of relationship between distance from farm to market and market access

ANOVA					
Distance from Farm to Market in Km					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	0.245	1	0.245	0.001	0.976
Within Groups	85766.14	313	274.013		
Total	85766.39	314			

Taking 5% probability level, since the P-value= 0.976, it can be said that there is association or relationship between adequate access of smallholder farmers' to paddy market and distance from farm to the market.

**Table 4.6.2:** Showing anova test of relationship between distance from farm to nearest tarred road and market access

ANOVA					
Distance from Farm to nearest Tarred Road in Km					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	36.171	1	36.171	3.082	0.08
Within Groups	3672.945	313	11.735		
Total	3709.116	314			

Taking 5% probability level, since the P-value= 0.08, therefore, it can be said that there is an association between adequate access of smallholder farmers' to paddy market and distance from farm to the nearest tarred road.

**Table 4.6.3:** Showing chi-square test of significant difference between transaction cost before and after joining farmer organization

Chi-Square Tests			
	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	24.508a	9	0.004
Likelihood Ratio	20.839	9	0.013
Linear-by-Linear Association	9.848	1	0.002
N of Valid Cases	315		
a 7 cells (43.8%) have expected count less than 5. The minimum expected count is .64.			

Since the asymptomatic significance, P-value (P=0.004) is less than chosen level of significance (5%), we therefore accept the alternate hypothesis which state that there's significant difference between transaction cost before joining farmer organization and transaction cost after joining farmer organization

**Table 4.6.4:** Showing chi-square test of significant difference between involvement on intermediaries and their effect on smallholder participation in collective action (CA)

<b>Chi-Square Tests</b>			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.580a	4	0.63
Likelihood Ratio	2.687	4	0.611
Linear-by-Linear Association	0.161	1	0.688
N of Valid Cases	224		
a 2 cells (22.2%) have expected count less than 5. The minimum expected count is 2.04.			

Since the asymptomatic significance P-value ( $P=0.630$ ) is greater than chosen level of significance (5%), we therefore accept the null hypothesis which state that involvement of intermediaries doesn't enhance the participation of smallholder farmers in farmers organization

## CHAPTER FIVE

### CONCLUSION

#### 5.0 Introduction

This chapter is the conclusion of this study whose main objective is to assess the effectiveness of Collective Action (CA) in reducing transaction cost for smallholder farmer in Msalala, Tanzania. It presents the summary of the major findings, policy implications of the major findings, contributions of the study to knowledge, and recommendations.

#### 5.1 Summary of Major Findings

The motivation for this study arise from the need to understand the extent to which transaction costs affect smallholder paddy farmers participation in CA, how intermediaries influence transaction cost, and the effectiveness of farmers groups in reducing these costs at Msalala Paddy Company (MPAFAC)

The study looked at market participation requirements of respondent and observed that 82.5% stated it is difficult while only 19% see the market size as large and 72.4% have their customers as small quantity buyers, 62.2% reportedly rated market prices as poor 62.5% stated they have adequate access to market. The study also noted 50.8% lacks customer retention strategy and rely on government or institutions to provide one.

Proximity to market or point of sale is an important factor to consider in transaction cost. About 86.3% respondents reported the road to their farm as being untarred while majorities 43.2% have Bicycle as their personal means of transportation. The study found the mean of distance from farm market to be 19.519km, with minimum and maximum distance to farm being 1km and 100km respectively. The mean of distance from farm to nearest tarred road was found to be 5.1794km, with minimum and maximum distance from farm to nearest tarred road being 1km and 21km respectively.

Hypotheses were tested to find out how these distances affect access to market. It was obtained that, at 5% probability level, with P-value= 0.976, for this we accepted that there is association or relationship between adequate access of smallholder farmers' to paddy market and distance from farm to the market. Also, Taking 5% probability level, since the P-value= 0.08, we accepted that there is an association between adequate access of smallholder farmers' to paddy market and distance from farm to the nearest tarred road.

The total amount spent by smallholder farmer on transaction before joining MPAFAC using a conversion rate of 1 USD = 2,000TSh, it was found that 45.7% spent 205 USD per acre on transaction cost before joining FO while 74.9% spent 155 USD and above on transaction cost after joining FO but 89.8% reported their income has increased. Further investigation to know if there any significant difference showed that the asymptomatic significance, P-value (P=0.004) is less than chosen level of significance (5%), this implies that there's significant difference between transaction cost before joining farmer organization and transaction cost after joining farmer organization

On looking at the roles middlemen play in transaction cost, 87.3% are aware of middlemen, of this, 71.1% operate with them and 43.5% do because there is no buyer. Similarly, 34.9% respondent said middlemen are not needed while 34% said they are exploitative. Further analysis on using Chi-square showed the asymptomatic significance, P-value (P=0.630) to be greater than chosen level of significance (5%), which implies that involvement of intermediaries doesn't enhance the participation of smallholder farmers in CA

To evaluate how farmers' group composition attribute affects transaction cost; the group composition of the farmers per group was enumerated and related to participation of smallholder in FO and its effect on transaction cost. On the issue of gender dominance, 78.4% of respondents reported their group is dominated by females and 30.2% stated it increases their transaction cost. In trying to know the effect of level of education of farmers group on transaction cost, respondent were asked the common level of education of the farmer organization, the result shows that majority (87.3%) had primary education and 36.2% reported it never reduces their transaction cost while 22.9% said it increases cost.

In accessing how the focus of the FG affects transaction cost, 62.2% said their FG focus reduces transaction cost, 84.8% stated monitoring of members by leaders allows them participate effectively in FG while 52.4% stated this monitoring help reduce their transaction cost. Relationship between member in farmers group showed that, 76.5% of the respondent stated it promote their participation in FG and 57.1% said this relationship help reduce transaction cost

## **5.2 Implications of Major Findings**

Policy implications are drawn based on the major findings of the study. Specifically, the factors affecting effectiveness of CA in reducing transaction cost for smallholder farmer

Majority of the smallholder farmers had primary education and this is in tandem with the views of Mwatawala et al (2016) which held that majority of developing countries population who depends on agricultural activities for economic prosperity have their agricultural sector operated by individuals with low level of education.

Since the result showed that most of the customers are small quantity buyers. This then buttresses inadequate access to market for smallholder farmers as one of the key factors affecting reduction in transaction cost, a challenge currently prevailing in Sub-Sahara Africa agricultural sector. The age distribution of farmers is another interesting issue as the buttress the issue of food security in Africa and the need to make agriculture attractive to its young growing population

Rejection of farm produce shows poor agricultural practice from the side of the farmers and buttresses the need for quality training on good agricultural practices. Similarly, over-reliance of farmers on government/institutions to help them retain their customers as most lack good customer relationship strategies shows lack of proper training on business management on the side of the farmers which is affecting their business productivity.

From the result, it can be gathered that since majority of respondents have roads leading to their farm being untarred, they will spend more on transportation which will impact their transaction cost. Also since most of the respondents rely on government and institution to provide and help them retain their customers, this study believes that they will continuously spend on customers' acquisition which will further affect their transaction cost.

Also since most of the respondents rely on bicycle as their mode of transportation, it is evident they will not have the opportunity to utilize faster means and there affect their transaction cost. Also, large proportion of respondents indicated that the buyers reject their produce, this will further increase their transaction cost as many will have to look for new buyers. This calls for the need for stable market with efficient scaling system and capacity building for the farmers

It is not quite surprising to see that marketing and sales of produce is not the ultimate reason many joined MPAFAC even though result showed many want a range of benefits. It is quite disturbing to see not much significant difference between amount spent on transaction cost



before or after joining FG even though many reported to have experienced increased income (89.8%) since joining MPAFAC. This suggests that even though the transaction cost may not have reduced as anticipated, increased income experienced points in a good direction

The non-significant difference between the effect of involvement and non-involvement of middlemen on transaction cost casts further doubt on whether they should be part of market or not. Similarity in the opinions of male and female farmers on why using middlemen shows that there is not much difference in knowledge among the two genders. High awareness level on the role of middlemen is a point in good direction. Why many farmers used them because there's no other option for sales of their produce, 34% saw them to be exploitative which further buttresses the need for collective marketing and collective sales

### **5.3 Implication for Nigeria and other Countries**

There is need to make collective action (CA) a popular term in Nigeria's Agricultural system. Nigeria needs to provide necessary information to the farmers about collective action in farming. The Ministry of Agriculture, through extension officers should conduct seminars and workshops to enhance farmers' understanding of collective action in all areas of agricultural farming and marketing to exploit the benefits of group activities.

Nigeria can start CA by setting up informal self-help farmers groups and can be assisted to develop into mature formal groups over time. Adequate training should also be made available to group leaders as a group will be more likely to succeed if its group leaders are knowledgeable and skilled in collective enterprise, and motivated and trusted by group members.

Results have shown that existence of high transaction costs reduces the ability of smallholder farmers to participate in the market. In this regard, Nigeria can formulate and implement policies which will reduce transaction costs and empower farmers to access market information by educating them. Nigeria also needs to learn the essence of better roads as this has important effect on transaction cost. Therefore, if infrastructure like road and warehousing are put in place, it will prevent food wasted, reduce transaction cost and Nigeria will better be able to cope in this age of food security.

Since improving market access is currently ranking high on the international policy agenda, creation of a specialized farmers market will assist farmers in getting their produce out. Also, since collective action among farmers' gives them more benefits in terms of profit

maximization than when they act individually. Therefore, Nigeria can transform her agricultural sector through creation of schemes that foster collective actions among different farmers group. Nigeria can empower smallholder farmers by helping and enabling them to analyze their own situation, identify and prioritize the problems and to seek the right solutions by combining their indigenous knowledge with improved knowledge and by using their resources properly.

Also, the participation of smallholder farmers in markets is greatly associated with the activities of the middlemen. Little progress will be made in transaction cost of smallholder farmers unless attention is given to supporting middlemen whose presence has been seen in negative light. Nigeria can support to smallholder farmers and intermediaries by:

- Strengthening farmer groups/associations: This may be attained by designing appropriate policies to support the establishment and existence of farmer groups or association which can act as platforms for market information exchange especially in areas where infrastructure is weak and such information is unavailable.
- Enhancing family labour: This can be attained through exploring ways of appropriately utilising family labour (especially in the age bracket of 6 to 17 years) to boost the labour requirements of households in order to enhance the household's potential of producing a marketable surplus.
- Establishing more market places: This may achieved through making policies aimed at encouraging the construction of more market places, especially in the rural areas. Such places increase market participation through enhancing the meeting of trading partners at a common place hence lowering transaction costs.
- Telecommunication technology utilisation: In this era of great advancement in telecommunication technologies, policies geared towards encouraging farmers and traders to access and utilise these technologies for trade purposes should be supported. The utilisation of these technologies would lower the transaction costs immensely.

## **5.4 Recommendations**

From the results obtained in this study, the following recommendations are hereby made to enhance the effectiveness of CA in reducing transaction cost for smallholder farmer

### **5.4.1 General**

For Tanzania to achieve a great feat in agricultural sector and improve the economy of smallholder farmers, concrete activities such as regular group meetings, where members gather to discuss future strategies and manage routine business, and collective marketing, where agricultural produce are transported to collection centres and sold at special market days to exploit economies of scale. MIVARF, MPAFAC with support from government need to look at availability of inputs of very good qualities for farmers as well as agricultural equipment for mechanized farming. I believe if things like these are addressed, farmers can spend the same amount of money on larger quantity of produce and as such they would make more money and reduce the cost of doing business.

Farmers' education programmes, linking to market, quality and profitable packaging is important. And this is not an individual's job; all bodies supporting smallholder farmers must see the need to contribute their quota as this will lead to more productive output. Age, gender, and education can affect transaction costs in a variety of ways. Age can indicate farming experience, which makes certain information and search costs easier and relatively cheaper. Compared with men, women have greater variability of transaction costs related to accessing land and credit. Education matters in reducing the costs of searching for and processing information. Similarly, the government, through various funding agencies and institutions should make credit facilities and grants available to farmers in order for them to adopt group activities.

### **5.4.2 Farmers**

Respondents acknowledged the benefits that capacity building programmes have had on their productivity over the years. However, the need for more training was reported by farmers and observed by the study as many see it as one of the best strategies to reduce transaction cost. Farmers need to learn how to separate the business from expenses like renovation of houses, building of houses, paying of dowry and wedding ceremony. The study recommends that farmers take courses or trainings on financial management in business. Farmers should select certified seeds, plant varieties like zarophyte and karamata for improved yield. Farmers need to find alternative source of revenue for subsistence during off-season. Farmers should also

have a small dam that can supply water should the weather go bad. Farmers also need to manage money effectively especially during harvesting time, a saving account is recommended so that they can have things to fall on during off-seasons

### **5.4.3 MPAFAC**

Support services in form of training, research, financial literacy and market preferences obtained in the farmer organization have contributed to strengthening MPAFAC. Notwithstanding, they still face a number of challenges. While farmers group composition was seen to have a varied effect on transaction cost as well as smallholders participation in FO, some rules within farmers group can be made less stringent such that more opportunities are given to young people to not only join MPAFAC but also be involved in decision making

Rejection of produce is another issue that affects transaction cost as farmers would need to spend extra money to attract new buyers. If MPAFAC could ensure the farm produce meet standard requirement and buyers are well established before the produce leave farm, it will save farmers a lot of money.

Since majority reported road to their farm being untarred, it's expected they will spend extra money in moving their produce to point of sales or to market. MPAFAC can offer collective marketing services where all the produce are collected together in the same place to as to reduce the amount each individual spends on transaction. Warehousing facilities and availability should be improved so that more people will have access to it.

A central selling location is needed. MPAFAC can adopt existing agricultural cooperative society or create new ones to solve the issue of sales. Relationship with processors can also be established to the extent that before harvest, market at good price is already available.

During off-season, many do gardening of other crops, vendoring through loans, market trading etc. therefore, it will be beneficial if farmers can also be provided with irrigation schemes so as to ensure continuous planting without the need of planting once a year which is currently in vogue

As most farmer reiterated that to cope and survive well, the need to be planting an average of 5 acres per year, they need to do more of transplanting which yields more compared to broadcasting, and need to use good agricultural practices, if knowledge on how this can be done can be provided, it will assist the farmers as well as the nation's food bank

MPAFAC should try and get as many processors as possible to sell to. They should also come up with other economic activities to engage farmers during off-season period. Work should be done to make buying price more stable. Provision of demonstration plot during the training period will also help farmers

It is important for farmer groups to go beyond a single crop focus and add additional agricultural commodities to their activities. The farmers need be highly diversified, in order to reduce risk.

In group governance, trust among members and good leadership was found to be significant in pursuit of markets by paddy farmers. This is supported by findings by Markelova (2009) who found out that group rules are crafted by members themselves and adopted and there is a higher likelihood of being understood and followed, which contribute to the effectiveness and sustainability of collective efforts.

MPAFAC needs to continue with manpower and financial support. They should also find a way to generate revenue so that its members can be paid meeting allowances as well as serving food during meetings. Farmers also need to be encouraged on planting in several areas during planting season. Evidences show that MPAFAC has been a success story; it needs to continue along this line.

#### **5.3.4 MIVARF**

The MIVARF needs to work in some areas as transportation which is noted to be very bad, it should organize more training programmes on financial management and modern production of rice should be conducted. Since internal market can be flooded and there won't be any other market to sell to, storage infrastructure put in place by MIVARF should be able to meet farmers' needs and subsequent ones should be done with future production target in mind. Irrigation should be provided so that farmers can farm during off-season and do not have to depend on rain-fed agriculture. Waste management strategy also needs to be worked on, as wastes constitute nuisance to the environment, especially since most are not suitable as livestock feed

With the right training module on good agricultural practice communicated in a participatory manner, reinforced by commercialization of smallholder famers, the skills and knowledge of

farmers on improved agriculture will record increase and this will assist them in reducing their transaction cost

Just as MIVARF has made a number of efforts in establishing warehouses, policy of use needs to be reviewed so that no farmer will be excluded from the opportunity. MIVARF can also create a financial scheme to help farmers' sustenance that allows farmer to wait till better prices come for their produce thus preventing the need for selling produce at the farm gate especially at a time when they are not yet mature

Most members of MPAFAC need to be constantly reminded of the benefits that can accrue to them. More work needs to be done on collective marketing; MIVARF needs to continuously monitor MPAFAC to be sure they are meeting the needs of their members. Initiatives with high tendency to enhance collaboration with processors needs to be engineered and since most farmers believe education on production, marketing, financial management etc. will address many of the issues they are facing. This study recommends monthly seminars on different areas to make farmers better equipped and to better avoid being trapped in poverty.

Work needs to be done to make participation easy as this will influence the amount spent on transaction. Also, since majority of their customers are small quantity buyers, MIVARF could come up with schemes that best link customers to market. Also, government can come up with produce transportation schemes for farmers, the scheme will be designed in such a way that farmers will spend less than in conventional ways while the produce is being moved from farms to markets or points of sales. When the scheme is done, farmers will spend less on transportation which will reduce the amount spent on transaction

## References

- Alston, L.J., S.K. Datta, and J.B. Nugent. 1984. "Tenancy Choice in a Competitive Framework with Transaction Costs." *Journal of Political Economy* 92 (6): 1121–1133.
- Allen, D. 1991. "What are Transaction Costs?" *Research in Law and Economics* 14 (0): 1–18.
- Alene, A., V.M. Manyong, H.D. Omanyua, H.D. Mignouna, M. Bokanga, and G. Odhiambo. 2008. "Smallholder Market Participation under Transaction Costs: Maize Supply and Fertilizer Demand in Kenya." *Food Policy* 33 (4): 318–328.
- Agrawal, A. and S. Goyal (2001). Group size and collective action: Third-party monitoring in common pool resources. *Comparative Political Studies* 34: 63-93.
- Barham, J.Chitemi, C.2009. Collective action initiatives to improve Marketing performance; Lessons from farmer group in Tanzania Food policy 34(1).
- Barrett, C. B. (2008). Smallholder market participation: Concepts and evidence from eastern and southern Africa. *Food Policy*, 33(4), 299–317.
- Berdegúe Sacristán, J.A. 2001. *Cooperating to compete: associative peasant business firms in Chile*. Wageningen, Netherland, Wageningen University. (Ph.D. dissertation).
- BRN (2012) Towards Big Results Now.Govt of Tanzania pp. 22.
- Coase, R.H. 1937. The nature of the firm.*Economica*, 4(16):386-405.
- Coase, RH, 1960. The problem of social cost. *Journal of Law and Economics* 3(October), 1–44.
- Chowdhury S. K., 2002. Access to information, transaction costs and marketing choice of rural households between middlemen and direct buyers in Bangladesh. Paper presented at the Royal Economic Society Annual Conference 2002, University of Warwick, UK, 25-27 March.
- Chowdhury S., Negassa A., & Torero M., 2005. Market institutions: enhancing the value of rural-urban links. MTID discussion paper 89, International Food Policy Research Institute.
- Devaux, A., Velasco, C., López, G., Bernet, T., Ordinola, M., Pico, H., Thiele, G. & Horton, D.E. 2007. *Collective action for innovation and small farmer market access: the Papa Andina experience*. CAPRI

Denison J, Field L, Wotshela L, Van Averbek W (2010). A review of experiences of establishing emerging farmers in South Africa. Food and Agriculture Organisation of the United Nations (FAO), Rome.

Delgado, C., (1998). “Sources of growth in smallholder agriculture in sub-Saharan Africa: The role of vertical integration of smallholders with processors and marketers of high value added items”. Paper presented at the inter-conference symposium of the international Association of Agricultural Economists, Badplaas, South Africa, 10-16 August.

Dixon, J., Tanyeri A., and Wattenbach, H., (2003). “Smallholders, Globalisation and Policy Analysis Produced by: Agriculture and Consumer Protection: Framework for Analyzing Impacts of Globalization on Smallholders”. FAO Corporation Re-position. Rome

Eicher, C., and Rukuni, M., (1996). “Reflections on Agrarian Reform and Capacity Building in South Africa”. Staff Paper No. 96-3, Department of Agricultural Economics, Michigan State University, East Lansing.

Fliert, E. Vander, R. 2002. *Farmer researcher teams, Farmer field schools and community*. IPM. Assen, the Netherlands

Fafchamps, M., & Hill R.V. 2005. Selling at farmgate or travelling to market. *American Journal of Agricultural Economics*, 87(3):717 . 734.

Fuentes, G. 1998. “Middlemen and Agents in the Procurement of Paddy: Institutional Arrangements from the Rural Philippines.” *Journal of Asian Economics* 9 (2): 307–331.

Gebremeskel, B. K. (2010). Rice value chain in Metema district, north Gondar, Ethiopia: Challenges and opportunities for innovation. Dissertation for Award of MSc Degree at Haramaya University, Ethiopia, 116pp.

Hart, O. (1995). *Firms Contracts and Financial Structure*. Oxford, UK, Clarendon Press

Heltberg R., and F. Tarp. 2002. “Agricultural Supply Response and Poverty in Mozambique.” *Food Policy* 27 (2): 103–124.

Henning C., and A. Henningsen. 2007. Econometric Estimation of Farm Household Decisions in the Presence of Labor Markets Imperfection. A paper presented at the Nordic Econometric Meeting, Tartu, Estonia, May 24–26.



Holloway, G., C. Nicolson, C. Delgado, S. Staal, and S. Ehui. 2000. "Agro-industrialization through Institutional Innovation: Transaction Costs, Cooperatives and Milk-market Development in the East-African Highlands." *Agricultural Economics* 23 (3): 279–288.

Hellin, J., Lundy, M., Meijer, M., 2009. Farmer organization, collective action and market access in Meso-America. *Food Policy* 34(1), 16-22.

Indiamart (2009). World rice production. [<http://sourcing.indiamart.com/agriculture>] site visited on 09/05/2012.

IFAD. (2003). Promoting market access for the rural poor in order to achieve the Millennium Development Goals. Rome.

Jagwe, J.N. 2011, Impact of Transaction Costs on the Participation of Smallholder Farmers and Intermediaries in the Banana Markets of Burundi, Democratic Republic of Congo and Rwanda. Ph.D. Thesis (Agricultural Economics), University of Pretoria, Pretoria, submitted.

Jayne, T. S., Mather, D., & Mghenyi, E. (2010). Principal challenges confronting smallholder agriculture in sub-Saharan Africa. *World Development*, 38(10), 1384–1398.

John Nkalubo Jagwe (2011). The impact of transaction costs on the participation of smallholder farmers and intermediaries in the banana market of Burundi, Democratic Republic of Congo and Rwanda. Doctor of Philosophy (Agricultural Economics) at Department of Agricultural Economics, Extension and Rural Development, University of Pretoria, South Africa

Key, N., E. Sadoulet, and A. de Janvry, 2000, Transactions Costs and Agricultural Household Supply Response. *American Journal of Agricultural Economics* 82:245-59.

Kariuki, G. & Place, F. (2005). Initiatives for rural development through collective action: The case of household participation in group activities in the highlands of Central Kenya. CAPRI working paper, 43. Washington D.C.: International Food and Policy Research Institute.

Karfakis, P., and G. Rapsomanikis, 2008, Margins across Time and Space: Threshold Co integration and Spatial pricing Applications to Commodity Markets in Tanzania: FAO, Rome, Italy 00153: Food and Agricultural Organization of the United Nations (FAO).

Kirsten, J & Vink, N, 2005. The economics of institutions: Theory and applications to African agriculture. Course study material, Department of Agricultural Economics Extension and Rural Development, University of Pretoria.

La Ferrara, E., 2002. Inequality and group participation: theory and evidence from rural Tanzania. *Journal of Public Economics* 85(2), 235-273.

Match Maker Associates (2010). *Value Chain Analysis of Rice and Maize in Selected Districts in Tanzania: A research report submitted to Agricultural Council of Tanzania*. 21pp.

Marketing Infrastructure Value Addition And Rural Finance Support Programme (MIVARF). Annual Progress Report 2017, JULY 2016 – JUNE 2017

Markelova, H. & Meinzen-Dick, R. 2009. *Collective action for smallholder market access*. CAPRI Policy Brief No. 6. Washington, DC, International Food Policy Research Institute (IFPRI). Available at: [http://www.capri.cgiar.org/pdf/polbrief\\_06.pdf](http://www.capri.cgiar.org/pdf/polbrief_06.pdf) (accessed 2 January 2014).

MarCarthy, N. 2004. Collective action and property right for sustainable development. Local - Level public goods and collective action. Washington, D C: International Food Policy Research Institute

Makhura, M., J. Kirsten, and C. Delgado, 2001, Transaction costs and smallholder participation in the maize market in Northern Province of South Africa". *Seventh Eastern and Southern Africa Regional Maize Conference, 11th -15th February, 2001*, pp. 463-467.

Matungul, P. M., Ortmann, G. F., and Lyne, M. C. 2002. Marketing methods and income generation amongst small-scale farmers in two communal areas of Kwazulu- Natal, South Africa. Paper presented at the 13th Congress of International Farm Management Association, Wageningen, The Netherlands. [online] Available: <http://ageconsearch.umn.edu/bitstream/6958/2/cp02or01.pdf> Accessed 11 January 2011.

Markelova, H., Meinzen-Dick, R., Hellin, J., Dohrn, S., 2009. Collective action for smallholder market access. *Food Policy* 34(1), 1–7.

Mbise, M., D.H. Ngongola, H. Chale, B. Maonga, and F.T.M. Kilima, 2011, Transaction costs and food security: A case of maize in southern highlands of Tanzania Regional

Universities Forum for Capacity Building in Agriculture paper presented at the *Second RUFORUM Biennial Meeting 20 - 24 September 2010*, Entebbe, Uganda.

Meinzen-Dick, R., Di Gregorio, M., & McCarthy, N. (2004). Methods for studying collective action in rural development. *Agricultural Systems*, 82, 197–214.

National Bureau of Statistics, Census 2012. Republic of Tanzania. Archived from the original on 2016-03-05.

Narro, C., Roy, D., Okello, J., Avendaño, B., Rich, K., Thorat, A. 2009. Public-private partnerships and collective action in high value fruit and vegetable supply chains. *Food Policy* 34(1), 8–15.

Naseer, F., R. Evenson, and S. De Silva. 2007. *Social Capital, Efficiency and Transaction Costs in the Philippines*. Unpublished manuscript.

Omamo, S. 1998a. “Transport Cost and Smallholder Cropping Choices: An Application to Saiyaz District, Kenya.” *American Journal of Agricultural Economics* 80 (1): 116–123.

Pandolfelli, L., Meinzen-Dick, R., and Dohrn, S. (2008). “Gender and collective action: motivations, effectiveness and impact.” *Journal of International Development*, 20, pp. 1-11.

Pingali, P., Y. Khawaja, and M. Meijer. 2005. “Commercializing Small Farms: Reducing Transaction Costs.” *ESA Working Paper No. 05-08*. Rome, Italy: Food and Agriculture Organization of the United Nations.

Poulton, C., Kydd, J., & Dorward, A. 2006. Overcoming market constraints on pro-poor agricultural growth in sub-Saharan Africa. *Development Policy Review*, 24(3): 243-247.

Renkow, M., D. Hallstrom, and D. Karanja. 2004. “Rural Infrastructure, Transactions Costs and Market Participation in Kenya.” *Journal of Development Economics* 73 (1): 349–367.

RLDC, (2009). Rice sector strategy improving rice profitability through increased productivity and better marketing focusing on Tanzania’s Central Corridor. *Rural Livelihood Development Company November 2009*. pp 34.

Rasmussen, N., 2009, The International Food Crisis -Catastrophe or Historic opportunity for Africa? The case of Tanzanian maize: Roskilde University, Marts.

Sandler, T. (1992). *Collective action: theory and applications*. Ann Arbor, MI: The University of Michigan Press.

Staal, S., C. Delgado, and C. Nicholson. 1997. "Smallholder Dairying under Transaction Costs in East Africa." *World Development* 25 (5): 779–794.

Simon, H. (1957). *Administrative Behavior* (2nd ed). New York, The Free Press.

Sadoulet, E., and A. de Janvry. 1995. *Quantitative Development Policy Analysis*. Baltimore: Johns Hopkins University Press.

Sebatta, C., J. Mugisha, E. Katungi, A. Kashaaru, and H. Kyomugisha, 2014, Smallholder Farmers 'Decision and Level of Participation in the Potato Market in Uganda. *Modern Economy*, 5, 895-906

Small Enterprises Institutional Development Associates (SEIDA). Service Provider Program Pre-Completion Report Msalala District Council, Kahama, Shinyanga, March, 2017

Shiferaw, B.A., Obare, G., Muricho, G., Silim, S., 2009. Leveraging institutions for collective action to improve markets for smallholder producers in less-favored areas. *African Journal of Agricultural and Resource Economics* 3(1), 1-18.

Vink N, Van Rooyen J (2009). The economic performance of agriculture in South Africa since 1994: Implications for food security. Development Planning Division Working Paper Series No.17, DBSA: Midrand.

Wambugu. F. Kiome, R 2001 The Benefits of Biotechnology for small scale Banana in Kenya. /SAAA Briefs No.22/SAAA

Watanabe, M., 2006. Middlemen: The visible market makers. [Online] Available: <http://ssrn.com/abstract=894866> Accessed 15 October 2006.

Wang, L.J. and Huo X.X. 2013. Grower's Selling Behaviour: Transaction Cost Comparison Analysis *China Agricultural Economics Review*, 2014, Vol 15, \_0 2

Williamson, O, 1985. *The Economic Institutions of Capitalism: Firms, Markets, Relational Contracting*. The Free Press, New York.

Williamson, O.E. 2002. The theory of the firm as governance structure: from choice to contract. *Journal of Economic Perspectives*, 16(3):171.195.

Wollni, M., Zeller, M., 2007. Do farmers benefit from participating in specialty markets and cooperatives? The case of coffee marketing in Costa Rica. *Agricultural Economics* 37(2-3), 243–248.

World Bank. (2008). *World development report: Agriculture for development*. Agriculture (Vol. 54). Washington DC: World Bank.

## **Appendix**

### **KEY INFORMANT INTERVIEW (KII)**

#### **EFFECTIVENESS OF FARMER ORGANIZATIONS IN REDUCING TRANSACTION COSTS FOR SMALLHOLDER FARMER A CASE STUDY OF MPAFAC MSALALA COUNCIL, SHINYANGA REGION, TANZANIA**

1. What is the type of road to your farm location?
2. What is the size of your farm land?
3. Is your farm accessible?
4. How do you market your produce?
5. Who buys your produce?
6. How do you sell your produce?
7. Do buyers reject your paddy produce?
8. Do you have adequate access to the market?
9. What is the cost of producing an acre of paddy?
10. What marketing costs do you incur?
11. What is the income you get from sales of your produce?
12. What is the cost of transporting your produce to the market?
13. For how long have you been part of farmer group?
14. What is your motivation for participating in farmer organisation?
15. What are the major benefits you get from your farmer organization?
16. What's the most common level of education and in what ways has it affected your participation in farmer organization?
17. Is your farmer group accountable to any organization?
18. Describe generally your farmer group governance structure
19. Suggest how you think transaction cost can be reduced?

***Thank you!***

## QUESTIONNAIRE

### EFFECTIVENESS OF FARMER ORGANIZATIONS IN REDUCING TRANSACTION COSTS FOR PADDY SMALLHOLDER FARMER A CASE STUDY OF MPAFAC MSALALA COUNCIL, SHINYANGA REGION, TANZANIA

#### INTRODUCTION

Dear respondent,

I am a student of Development Practice at the University of Ibadan Centre for Sustainable Development (CESDEV), Nigeria and IFAD Fellow.

This survey is aimed at assessing the effectiveness of collective action/farmer organizations in reducing transaction costs for smallholder producer farmer: A case study of MPAFACMsalala council, Shinyanga Region, Tanzania. This questionnaire is designed to elicit information from smallholder farmers who are part of farmer organization. Information obtained will be treated with strict confidentiality. Thank you for your cooperation.

Thank you for your cooperation.

Tosin Gbadegesin

#### SMALLHOLDER FARMER'S QUESTIONNAIRE

##### SECTION A: BASIC INFORMATION

Tick as applicable

1. Please indicate respondent gender: (1) Male { } (2) Female { }
2. Respondent marital status? (1) Single { } (2) Married { } (3) Widowed { } (4) Separated { }
3. Age of the respondent by category  
(1.) Youth (18 – 35),{ } (2.) Middle age {36 - 55} (3.) 56 and above Old age { }
4. Level of education? (1) No Formal Education { } (2) Primary Education { } (3) Secondary Education { } (5) Tertiary Education { } (5) Other (s) (Specify) { }
5. How will you rate the requirement for participating in the Market? (1) Easy { } (2) Difficult { }
6. How best can you describe the market size? (1) Small { } (2) Medium { } (3) Large { }
7. How will you rate the access to input materials required for production? (1) Easy { } (2) Difficult { }
8. How best can you describe your customers? (1) Off-takers { } (2) One-time buyers { } (3) Small quantity buyers { }
9. What's your strategy for customer's retention? \_\_\_\_\_
10. How would you rate market prices? (1) Fair { } (2) Good { } (3) Poor { }
11. How would you rate market demand? (1) High { } (2) Average { } (3) Low { }

## SECTION B: INFORMATION ON PRODUCTION AND TRANSACTION COST

1. Respondent farm size (Acres) (1) 0.0 – 2.4 { } (2) 2.5 – 5.0 { } (3) 5.1 and above { }
2. How did you acquire your land? (1) Inheritance { } (2) Rent { } (3) Lease { } (4) Purchased { }
3. What is your farming experience (Years)?(1) 0.0 – 2 { } (2) 2.1 – 4.0 { } (3) 4.1 and above { }
4. Do you have adequate access to market? (1)Yes { } (2) No { }
5. What is the distance from your farm to the market? \_\_\_\_\_ (Km)
6. What is the type of road to your farm location? (a.) Tarred { } (b.) Un-tarred Road { }
7. What is the distance from your farm to the nearest tarred road? \_\_\_\_\_ (Km)
8. Do you own any means of transportation (1) Yes { } (2) No { }
9. If yes, what type?(1) Animal { } (2) Motorcycle { } (3) Tricycle { } (4) Vehicle { } (5) All of the above { } (6)Other, Specify \_\_\_\_\_
10. Do buyers reject yourpaddy produce? (1)Yes { } (2) No { }
11. If yes in question 13 what reason do they give? \_\_\_\_\_

## SECTION C: FARMER ORGANIZATION AND TRANSACTION COST

1. Are you a member any Farmer Organization? (1)Yes { } (2) No { }
2. If yes, state the name of the association? \_\_\_\_\_
3. For how long have you been a member (Years)? (1) 0.0 – 2 { } (2) 2.1 – 4.0 { } (3) 4.1 and above { }
4. What is your reason for participating in farmer organisation? (1) Man Power Support { } (2) Financial Support { } (3) Marketing and sales of Produce { } (4) Training Purposes { } (5) All of the above { } (6)Other, Specify \_\_\_\_\_
5. Before joining farmer organization, how much were you spending on transaction per acre? (1) Below 20,000TSh { } (2) 21,000 - 30,000TSh { } (3) 31,000 - 40,000TSh { } (4) 41,000TSh and above { }
6. After joining farmer organization, how much were you spending on transaction per acre? (1) Below 10,000TSh { } (2) 11,000 - 20,000TSh { } (3) 21,000 - 30,000TSh { } (4) 31,000TSh and above { }
7. How has your participation in farmer organization influence your income? (1) Increased Income { } (2) Decreased Income { } (3) No significant difference { }



8. Before joining farmer organization, what is your production rate per acre? (1) 0 – 5 Bags { } (2) 6 – 10 bags { } (3) 11 – 15 bags { } (4) 16 bags and above { }
9. After joining farmer organization, what is your production rate per acre? (1) 0 – 5 Bags { } (2) 6 – 10 bags { } (3) 11 – 15 bags { } (4) 16 – 20 bags { } (5) 21 bags and above { }
10. What are the major benefits you get from your farmer organization?  
\_\_\_\_\_

#### **SECTION D: MIDDLEMEN, PARTICIPATION IN FO AND TRANSACTION COST**

1. Are you aware of middlemen? (1) Yes { } (2) No { }
2. Do you operate with them? (1) Yes { } (2) No { }
3. If Yes, why? \_\_\_\_\_
4. For how long have you been using middlemen (Years)? (1) 0.0 – 2 { } (2) 2.1 – 4.0 { } (3) 4.1 and above { }
5. How would you rate their contribution to your transaction cost? (1) Reduces cost { } (2) Rarely reduces cost { } (3) Never reduces cost { } (4) Increases cost { }
6. How does involvement of middlemen affect your participation in farmer group? (1) Promotes Participation { } (2) rarely promotes participation { } (3) doesn't promote participation { }
7. How will you describe the presence of middlemen? \_\_\_\_\_

#### **SECTION E: GROUP COMPOSITION, PARTICIPATION AND TRANSACTION COST**

1. Who are the largest members of your farmer group? (1) Male { } (2) Female { }
2. In what ways have No.1 affected transaction cost? (1) Reduces cost { } (2) Rarely reduces cost { } (3) Never reduces cost { } (4) Increases cost { }
3. What is the most common age range of your farmer group? (1) 15 - 24 { } (2) 25 - 34 { } (3) 35-44 { } (4) 45-54 { } (5) 55-64 { } (6) 65-74 { }
4. In what ways is No.4 affecting your transaction cost? (1) Reduces cost { } (2) Rarely reduces cost { } (3) Never reduces cost { } (4) Increases cost { }
5. What is the common marital status of your farmer group? (1) Single { } (2) Married { } (3) Widowed { } (4) Separated { }
6. In what way has it affected your transaction cost? (1) Reduces cost { } (2) Rarely reduces cost { } (3) Never reduces cost { } (4) Increases cost { }

7. What's the common level of education of your organization? (1) No Formal Education { } (2) Primary Education { } (3) Secondary Education { } (4) Tertiary Education { } (5) Other (Specify) { }
  8. In what way has it affected your transaction cost?(1) Reduces cost { } (2) Rarely reduces cost { } (3) Never reduces cost { } (4) Increases cost { }
  9. What is your recommendation on how transaction cost can be reduced?
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## **SECTION F: GROUP GOVERNANCE, PARTICIPATION AND TRANSACTION COST**

1. What can you say about the focus of your farmer group on your transaction cost? (1) Reduces cost { } (2) Rarely reduces cost { } (3) Never reduces cost { } (4) Increases cost { }
  2. How does monitoring of members by leaders affect your participation? (1) Promotes Participation { } (2) rarely promotes participation { } (3) doesn't promote participation { }
  3. How does monitoring of members by leaders affect your transaction cost? (1) Reduces cost? { } (2) Rarely reduces cost { } (3) Never reduces cost { } (4) Increases cost { }
  4. How does relationship between members affect your participation? (1) Promotes Participation { } (2) rarely promotes participation { } (3) doesn't promote participation { }
  5. How does relationship between members affect your transaction cost? (1) Reduces Cost { } (2) rarely reduces cost { } (3) Never reduces cost { } (4) Increases cost { }
  6. How does the intent of your farmer group affect your participation? (1) Promotes Participation { } (2) rarely promotes participation { } (3) doesn't promote participation { }
  7. How well is your interest and that of other members served in your farmer group?  
(1) Well served { } (2) Rarely served { } (3) Never Served { }
  8. Is your farmer group accountable to any organization? (1) Yes { } (2) No { }
  9. If yes, how has this affected member participation?(1) Promotes Participation { } (2) rarely promotes participation { } (3) doesn't promote participation { }
  - 10.** Kindly comment generally on transaction cost
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## Photo Gallery



First Day at Mivarf Office, Arusha Tanzania



MAZAO Group Processor – MPAFAC Off-taker



MAZAO Group Processor – MPAFAC Off-taker



MAZAO Group Processor – MPAFAC Off-taker



MAZAO Group Processor – MPAFAC Off-taker



MAZAO Group Processor – MPAFAC Off-taker



Presentation of Research outcome to MIVARF Officials at International Conference Centre, Arusha



Presentation of Research outcome to MIVARF Officials at International Conference Centre, Arusha



Presentation of Research outcome to MIVARF Officials at International Conference Centre, Arusha





Key Informant Interview with Smallholder Farmers



Key Informant Interview with Smallholder Farmers



Assessing Smallholder Farmer Paddy's Quality



During Questionnaire Administration with Smallholder Farmers



During Questionnaire Administration with Smallholder Farmers



During Questionnaire Administration with Smallholder Farmers



During Questionnaire Administration with Smallholder Farmers



During Questionnaire Administration with Smallholder Farmers



During Key Informant Interview with key off-taker



During Questionnaire Administration with Smallholder Farmers



Key Informant Interview with Smallholder Farmers' Group



After Key Informant Interview with Smallholder Farmers





Departure from Tanzania to Nigeria