PRODUCER ORGANIZATIONS AND ACCESS TO AGRICULTURAL MARKETS: THE CASE OF MWANZA REGION IN TANZANIA

BY

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ABSTRACT

In this study the factors that influence rural producer organizations in facilitating smallholder farmers access to agricultural markets were studied. The study used survey data from 120 smallholder farmers (86 members and 34 non members of smallholder farmer organizations). Study sample was selected using stratified random sampling technique based on number of farmer organisations. The study employed a triangulation of data from both primary and secondary data sources. Analyses of qualitative and quantitative data were done using multinomial regression analysis and descriptive statistics. The specific objectives of the study were to analyze factors which determine smallholder farmers' access to agricultural markets, to assess the extent to which rural producer organizations facilitate smallholder farmers' access to agricultural markets and to identify problems faced by producer organizations in linking smallholder farmers' access to agricultural markets. The findings suggest that among the social capital indices, group trust, help, frequency of attendance in group meetings and participatory decision making influenced positively smallholder farmers' access to agricultural markets. Cognisant, the average per capita monthly income for group members was Tsh 13 022. However, this per capita is lower than the overall poverty line of Tsh 28 418 per person per month as defined by National Bureau of Statistics (NBS). Furthermore, the results revealed that presence of rural producer organizations is not the only solution for improved access to agricultural market. The access to agricultural market is affected by other external shocks and structural constraints ranging from low price (46%), long market chain (23%), price fluctuation (18%), lack of profitable market (8%), asymmetric market information (3%) and poor infrastructure (2%). The study concluded that farmer groups have the potential to overcome many of the marketing problems smallholder farmers face. However, there is a need for investments at the individual farmer level to participate in group dynamics. It

implies that composition and characteristics of producer organizations influence the way these organizations perform their roles. Attention must therefore be given to these composition and characteristics, in the formulation and implementation of development strategies that target smallholder farmers' access to agricultural markets through producer organizations.

DECLARATION

I, **Ipyana Adamson Mwakasaka**, do hereby declare to the Senate of Sokoine University of Agriculture that this dissertation is my own original work and that it has neither been submitted nor being concurrently submitted for degree award in any other institution.

_____   _____

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LIST OF ABBREVIATIONS

ASDP	Agricultural Sector Development Program
ASDS	Agricultural Sector Development Strategy
CDP	Cooperative Development Policy
CRP	Community Resource Person
CRPM	Cooperative Reform and Modernization Programme
CRS	Catholic Relief Services
EU	European Union
ERPGAP	Euro-Retailer Produce Good Agricultural Practices
FGD	Focus Group Discussion
GDP	Gross Domestic Product
HACCP	Hazard Analysis of Critical Control Points
Kms	Kilometers
LDCs	Least Developing Countries
MVIWATA	Muungano wa Vikundi vya Wakulima Tanzania (Swahili acronym for Confederation of Farmers Organizations)
MRHP	Mwanza Rural Housing Programme
NAPB	National Agricultural Products Board
NBS	National Bureau of Standards
NGO	Non - Government Organization
NMC	National Milling Cooporation
OLS	Ordinary Least Square
PA	Partner Agencies
RPOs	Rural Producer Organizations

SACCOs	Saving and Credit Cooperative Societies
SHF	Smallholder farmers
SILC	Saving and Internal Lending Communities
SME	Small and Medium Enterprises
SPSS	Statistical Package for Social Sciences
SWOT	Strength, Weakness, Opportunity and Threat
S&C	Saving and credit
Tsh	Tanzania Shillings
UNDP	United National Development Program
URT	United Republic of Tanzania
USA	United States of America
VECO	Vredeseilanden Country Office

CHAPTER ONE

INTRODUCTION

1.1   Background information

Upon independence, many African governments inherited bureaucracies that held a legal monopoly over commodities importation and exportation. States possessed extreme powerful instruments of market intervention (Bates, 1983). After the collapse of socialism, agricultural sector of the formerly centrally planned economies became in a state of disarray and economic crisis (Gardner and Lerman, 2006). Economic and institutional context of agriculture and other rural activities underwent profound changes which include; state withdrawal from monopoly of agricultural sector to privatization, market liberalization, democratization of public life and administrative decentralization (Mercoiret and Mfou'ou, 2006).

As part of the structural adjustment program of the 1980s and the 1990s, many sub-Saharan countries liberalized their economies and developed poverty reduction strategies that were intended to open new market-led opportunities for economic growth (Shiferaw *et al.*, 2006). According to Bee (2004) Tanzania, like most other developing countries was implementing market-based reforms that advocated by the World Bank and the International Monetary Fund. Wennink and Heemskerk (2006) pointed out that liberalization of the agricultural sector opened up national and international markets for farmers and other rural entrepreneurs. Policies for agricultural development increasingly put chain development forward as the key to sustainable economic development. Shiferaw *et al.* (2006) explained that liberalization of markets was intended to improve efficiency and enhance market linkages for smallholder farmers. The expected positive response by

the private sector in areas with limited market infrastructure has however been disappointing.

According to Myrers (2007) the return to cooperatives as instruments of rural development attributed to the popularized concept of social capital. Social capital has quickly risen as a mainstream concept in development project and policy design. The theory captures the importance of social bonds and networks in shaping livelihood outcomes. The desire to build social capital has been used as one rationale for promoting rural producer organizations as a means to improve livelihoods by empowering smallholder farmers to work collectively through a business and social enterprise. Social capital facilitates collection action to address problems and barriers which smallholder farmers individually might not have the influence or capacity to overcome.

Number of strategies for overcoming high transaction costs smallholders facing have been recommended (Wambugu *et al.,* 2009). The author pointed out one strategy that is collective action in form of producer organizations. Development literature (Barham and Chitemi, 2008; Kawa and Kaitira, 2007; Shiferaw *et al.* (2006); Wambungu *et al.,* 2009) promote the use of producer organizations as a strategy for overcoming the high transaction costs in smallholder agriculture in Africa. According to Kaleshu *et al.* (2007) socio-economic and political reforms implemented in Tanzania have increased opportunities for growth of the Rural Producer Organizations in the country as it has opened up avenues for democratic and economic emancipation at grassroots level. However, the performance of these organizations has, in many cases, not been impressive. This study is therefore assessing an aspect of collective action that might be instrumental in understanding why some organizations perform well while others have poor performance particularly in facilitate smallholder farmers to access agricultural markets.

1.2   Problem Statement and Justification for the Study

Access to agricultural markets for smallholder farmers remains one of the major challenges in Africa. Past efforts to improve smallholder farmers' access to markets through market reforms have largely been ineffective. Consequently majority of African smallholder farmers still produce largely for subsistence needs. Majority produce small marketable surpluses and faces unreliable markets. Such markets are characterized by high transaction costs, low volumes and non-competitiveness (Wambugu *et al.,* 2009).

Development literature (Barham and Chitemi, 2008; Kawa and Kaitira, 2007; Shiferaw *et al.,* 2006; Wambungu *et al.*, 2009) promote the use of producer organizations in linking farmers' access to agricultural markets. However, empirical studies find mixed performance of such organizations. Bee (2004) noted that the success of rural producer organizations (RPOs) is influenced by external factors such as policy environment as well as support from donor and non governmental organizations. Kaleshu *et al.* (2007), Kilima *et al*. (1997) and Wambura *et al.* (2004) have shown that, poor performances of RPOs have been attributed to a large extent by their organizational weakness. Much is also known about the economic and agricultural policy environment in Tanzania context and role of rural producer organizations in poverty reduction initiative (Bee, 2004; Kilima *et al*., 1997). However, it is surprising that such literature has no substantial information explaining organizational internal factors (such as group composition and characteristics) that affect the performance of RPOs in facilitate smallholder farmers' access to markets. This study is therefore attempted to fill this gap.

Assessing the performance of RPOs has become a critical concern for development analyst and partners alike. Understanding internal factors like group composition and characteristics can be useful for policy makers in different institutions and development planners and

practitioners in government, non-governmental organizations and other partners in the design of development strategies that target the marketing of smallholder agricultural produce through producer organizations. Hence the gist of this study is therefore to provide comprehensive understanding of the factors which influence rural producer organizations in facilitating smallholder farmers' access to agricultural markets. The study is in line with Millennium development goal number one that is eradicate extreme poverty and hunger, Vision 2025 which also focus on agriculture, the Agricultural Sector Development Programme (ASDP), MKUKUTA and KILIMO KWANZA both which lays considerable emphasis on pro poor growth where the roles of rural producer organizations features prominently.

1.3 Objectives of the Study

1.3.1 General objective

The general objective of the study was to assess the factors which influence rural producer organizations in facilitating smallholder farmers' access to agricultural markets in order to provide comprehensive understanding of the roles of producer organizations in market linkages in Misungwi and Kwimba Districts.

1.3.2 Specific objectives

i.   To analyze factors which determine smallholder farmers' access to agricultural markets,

ii.   To assess the extent to which rural producer organizations influence smallholder farmers' access to agricultural markets, and

iii. To identify problems faced by producer organizations in linking smallholder farmers' access to agricultural markets.

1.3.3 Hypotheses

i. There is significant differences in level of farmers' social capital and level in marketing smallholder agriculture produce

ii. Distance covered by farmer to the producer organizations collective centre has an influence on price of smallholder agriculture produce.

iii. There is significant difference in annual income from agricultural production of farmer group members compared to non group members.

CHAPTER TWO

LITERATURE REVIEW

2.1 Agricultural Markets and Role of Collective Action

The interest in making agricultural markets work for the poor is partly in response to changes in the global agricultural economy that are providing rural producers with both new challenges and opportunities. These changes include trade liberalization, increasing food safety and quality standards, and shifts in food consumption patterns. One challenge that farmers face is the general long-term decline in the real price of commodities, a trend that has been in part linked to the structural adjustments and cuts in fiscal deficits under the umbrella of the Washington Consensus (Hellin *et al.*, 2007).

Tanzanian agriculture is dominated by small-scale subsistence farming. Like the entire economy, agriculture is in a transition from being a command to a market-based production system. The transition process started in the mid-1980s as part of the economic adjustment and structural reform programs and policies supported by Tanzania's development partners. Despite some impressive macroeconomic achievements resulting from the reform programs, agricultural growth and rural poverty reduction continue to present daunting challenges (Kawa and Kaitira, 2007).

Liberalization has opened a window of opportunity for smallholder producers hitherto growing diverse products and supplying small surpluses to markets. The removal of trade barriers and increased competition has opened some flexibility for farmers to choose buyers for their products and suppliers of key inputs. But high transaction costs and problems of asymmetric information continue to bedevil smallholder farmers, especially those with poor access to markets for products, inputs and services. Lack of access to

market infrastructure and geographical isolation either due to remoteness or poor roads and poor communication systems limit the development of markets. Hence, smallholder producers in these areas are poorly served by agricultural traders, making local markets thin, less competitive and prices highly dependent on seasons. The lack of competition among buyers, low local effective demand and covariate risks limit opportunities for farmers to bargain for better prices, which leaves them to accept low prices for their produce (Shiferaw *et al.*, 2006).

Along the market and value chain, processors and traders are constrained by low quality grain, inadequate supply and high cleaning costs whereas market intermediaries in the supply chain face high assembly costs, high market risk and cash flow problems. These factors deprive farmers the underlying incentives to produce and supply quality and differentiated products with desirable market traits in addition to their inability to penetrate high value niche markets (Jones *et al*., 2002). This indicates that small-scale, dispersed and unorganized producers are unlikely to exploit market opportunities as they cannot attain the necessary economies of scale and lack bargaining power in negotiating prices. This reduces their ability to compete with well established large scale producers and farmers in more favored areas to harness available and emerging market opportunities (Johnson and Berdegue, 2004). One viable strategy for such producers would be to evolve new collective forms of organization that would help them reduce transaction costs and benefit from better bargaining power in marketing their produce and procuring production inputs.

Rural producer organization (RPOs) is used as a generic term to cover all types of institutional arrangements that regulate individual and collective actions by rural producers in order to safeguard and promote their economic, social, and political interests

(Bee, 2004). Bee (2004) categorize RPO into six categories that include (i) service providing organizations such as groups, cooperatives, associations catering for marketing, financial services, extension services, etc, (ii) interest based organizations (trade unions, associations, business associations), (iii) advocacy groups (NGOs, farmer groups, environmental organizations, (iv) user groups e.g. water users associations, (v) community based organizations and self help groups, and (vi) socio – cultural/ethnic organizations.

According to Shiferaw *et al.* (2006) RPOs are grounded on the principle of collective action among potential beneficiaries. Collective action occurs when individuals voluntarily cooperate as a group and coordinate their behaviour in solving a common problem. In broad terms, collective action may be defined as action taken by a group (either directly or on its behalf through an organization) in pursuit of members' perceived shared interest, which fits well in the traditional African setting. In the absence of well functioning markets, African farmers have traditionally relied on kinship and other forms of reciprocal relationships in production, marketing and other social activities. There is a potential that such informal institutions and relationships can form the basis for enhancing market access and entrepreneurial skills through collective action. However, collective action in marketing requires closer coordination of production and post harvest activities to ensure delivery of high quality and homogeneous products. Moreover, new forms of organization among small and spatially dispersed producers involve transaction costs and require good leadership and development of new skills in business and agro-enterprise development.

2.2 Rural Producer Organizations and Economic Policies

Since mid 1980s Tanzania pursued a number of macro- economic and sectoral policies coupled with series of reform programmes in order to improve both social and economic performances. These policies and strategies aimed at attaining the Nation's Vision of

achieving a "sustainable socio-economic development by the year 2025". Major reforms implemented include Structural Adjustment Programmes (SAPs); Economic Recovery Programme (ERP); Public Sector and Local Government Reforms, Parastatal Sector Reforms (PSR); Poverty Reduction Strategy Paper (PRSP); the Agricultural Sector Development Strategy (ASDS) and Agricultural Sector Development Program (ASDP); and the Cooperative Development Policy (CDP) (Bee, 2004; Morrissey and Leyaro, 2007).

According to Morrissey and Leyaro (2007) reforms were complemented by a variety of sectoral policies whereby attentions were made into three core issues. One of the core issues was the failure of cooperative sector to respond to the challenge of liberalization. The sector suffers from weak managerial (and advocacy) skills, lack of financial resources (in particular undercapitalization of cooperative banks, so credit constraints remain), and a weak institutional structure (especially, in that they are not accountable to members). Thus although the cooperative sector remains significant, it is not viewed as successful, either in supporting development and growth or in representing the interests of members, giving added impetus to liberalization initiatives.

2.3   Roles of Rural Producer Organizations in Improved Smallholder Farmers Access to Agricultural Markets

Studies suggest that one of the major constraints to commercialization of smallholder agriculture is market access (Poulton *et al*., 2006). According to Wambungu *et al.* (2009) past efforts to improve smallholder farmers' access to markets through market reforms have largely been ineffective. Consequently majority of African smallholder farmers still produce largely for subsistence needs. Majority produce small marketable surpluses and faces thin markets. Such markets are characterized by low activity, low volumes and non-competitiveness.

Shiferaw *et al*. (2006) put a strong justification that rural producer organizations play a critical role in both the delivery and coordination of services to smallholder producers. They can facilitate collective marketing of agricultural outputs that will help reduce transaction costs related to the marketing of agricultural inputs and small marketable surplus emanating from a large number of widely dispersed small producers. According to Shiferaw *et al*. (2006) collective marketing allows small-scale farmers to spread the costs of marketing, enhance their ability to negotiate for better prices, and improve their market power. Through coordination of marketing activities, RPOs could facilitate access to better markets, reduce marketing costs, and synchronize buying and selling practices to seasonal price conditions. RPOs can shorten the marketing chains by linking producers more directly to the upper end of the marketing chain.

According to Poulton *et al*. (2006) farmer organizations (FOs) have the potential to play a critical role in both the delivery and co-ordination of services to smallholder producers. They provide a means for service providers to reduce the number of small-scale transactions they engage in with individual farmers, allowing the same volume of business to be concentrated in a smaller number of larger and more secure transactions. In performing this function, effective FOs not only help to reduce service providers' co-ordination costs and risk, they can also assist farmers in obtaining lower-cost, more reliable and coordinated delivery of extension, research, finance, input and output marketing services. FOs also have an important potential role in strengthening client 'voice' in policy-making and accountability processes at both national and local levels.

However, review of other studies of several producer organizations find mixed performance of producer organizations in improving smallholder farmers' access to markets. Eskola (2005) observe that even though farmers have had building farmers'

associations, the associations are still weak and lack the education and experience needed in the price negotiations when faced by experienced international buyers with the relevant information and capital. An individual farmer is often willing to accept which ever price is being offered by the buyer who is coming to the village, especially at the time when the cash from the last harvest has been depleted for a long time ago. Kaleshu *et al*. (2007) explain that analyst of collective action and market access have been advocated that rural producer organizations play a significant role in poverty reduction through enhanced collective bargaining power, and improved economic empowerment. However, the performances of these organizations have, in many cases, not been impressive.

2.4 Theories of Social Capital and Collective Action

According to Siisiainen (2000), the role of social capital in livelihoods originated from the work of Pierre Bourdieu and Robert D. Putnam (1993). Putnam expresses social capital that has three components: moral obligations and norms, social values (especially trust) and social networks (especially voluntary associations). Putnam's central thesis is that if a region has a well-functioning economic system and a high level of political integration, these are the result of the region's successful accumulation of social capital. Bourdieu's concept is connected with his theoretical ideas on class. He identifies three dimensions of capital each with its own relationship to class: economic, cultural and social capital. These three resources become socially effective, and their ownership is legitimized through the mediation of symbolic capital.

According to Myrers (2007) Bourdieu critiques the persistent disregard for social analyses and structures in economic theory and proposes the inclusion of social capital. Social capital describes the network of relationships built on obligations or institutional rights which result in solidarity between people. In his view, these networks among the powerful

and wealthy – and their ensuing privileges - perpetuate class construction, inequality and social domination.

Social capital theoretical frameworks are perhaps more useful conceptualizations for analyzing the potential benefits of rural producer organizations. Myrers (2007) citing Putnam (1993; 1995) looks at social capital and social connectedness as a group or national asset reflected in the level of civic engagement. He regards this form of social capital as a prerequisite for effective government and economic development.

According to Adhikari (2008) Putnam defines social capital as features of social organizations, such as networks, norms, and trust that facilitate coordination and cooperation for mutual benefits. Studies of collective action have widely used the social capital framework as defined by Putnam for three significant reasons. First, Putnam relates social capital to meso (collective) level units, such as associations, communities, and regions. Second, Putnam presents social capital as a solution to the dilemmas of collective action. Third, Putnam applies the social capital framework to the study of the performance of institutions, such as regional governments. In a broader, analytical sense, application of the social capital framework in the study of the management of collective issues is useful because it includes networks (both formal and informal), including users' groups, as the structural social capital facilitating collective action. These concepts are of particular relevance to rural producer organization membership and yield both economic and social value, ideas which will be explored in this study.

On the other hand Francisco (2006) uses the economic rational actor theory as a starting point to explain the social capital, a function of person's social relations between and among actors, is an asset whose value enables individuals to achieve their interest.

Francisco (2006) describes three dimensions of social capital: obligation and expectations, information sharing channels and social norms, that when combined facilitate collective action, trust and sustainability. Krishna and Shrader (1999) referring the participatory poverty assessment in Tanzania carried out by Narayan (1997). The assessment looked at social capital and the magnitude of social capital's impact on household income, the assessment demonstrating the ways that social capital affects incomes through better public services, greater use of modern agricultural inputs, more community activity, and greater use of credit in agriculture.

2.5   Social Capital and the Performance of Rural Producer Organizations

Wambungu *et al.* (2009) observed that overcoming the problem of high transaction costs requires that smallholder producers rely on external rather than internal economies of scale through collective action. Wambungu *et al*. (2009) citing Hollaway *et al.* (1999) suggests participatory, farmer led producer organizations that handle output marketing, usually after some form of bulking to address the problem of market access.

According to Shiferaw *et al*. (2006) collective action in marketing is likely to occur if expected benefits from lower business transaction costs, better prices for inputs and outputs and/or empowerment and capacity enhancement outweigh the associated costs of complying with collective rules and norms. If the expected cooperation benefits are lower than the expected costs, households are unlikely to participate in group marketing activities. Successful collective action based on membership will, therefore, depend on the potential that group action will improve the members' expected net benefit streams above and beyond what can be achieved without such collective action.

The potential for accessing essential services to improve agricultural incomes and tapping economic opportunities will act as a strong incentive for anyone contemplating membership. Existing skills/experience of members in relation to what is required to undertake joint activities; internal cohesion and membership driven agenda; and the ability to effectively integrate into a wider commercial economy will determine the effectiveness of collective marketing activities (Shiferaw *et al*., 2006).

Wambungu *et al*. (2009) pointed out that the success of a rural producer organizations and collective action in reducing transaction costs depends on social capital (i.e. the level of cooperation or networking between its members) among other factors. Wambungu *et al*. (2009) citing Serageldin and Grootaert (2000) argue that the capacity to fulfill the producer organizations' interests depends on the social structures internal to the organization, structures that organize the formulation and enforcement of rules, making and implementation of collective decisions and actions. These internal structures constitute social capital. Consequently, the recognition that social capital is an input in a household's production function has major implications for any development policy. It implies that the acquisition of human capital and the establishment of a physical infrastructure needs to be complemented by institutional development (i.e. social networks), in order to reap the full benefits of these investments.

2.6   SILC- SIGA Model

SILC – SIGA model is basically a two tier model; the first tier is the SILC and the second tier is the SIGA. The SILC are normally mixed groups of around 15 to 30 members. The members save together and each of them has to buy a minimum of 1 and a maximum of 3 shares during their weekly meetings. Most of them buy the maximum number of shares. After saving even from the first moment of buying share (saving), the members are

entitled to borrow from the SILC. Member, who wants to borrow, must present applications, thereafter the application is discussed on the weekly meetings. If the loan applied is exceeds the saving of the individual member, 5 guarantors are required to guarantee the borrower. These guarantors should not have an outstanding loan. The maximum a member can borrow is 3 times their savings. The repayment period varies between 1 to 3 month, depending on the purpose and the amount of the loan. The interest is 10% per month on a declining balance Oxfam (2008).

SILC have three funds know as social fund, an insurance fund and an input fund. These funds are important to cater different problems according to respective fund. Problems may include social problems (illness of member or his /her dependants, deaths of member's siblings etc). The contributions to these funds are Tsh 500 monthly per member and particularly the repayment and interest requirements for these funds can be different. For example; the social fund is most likely to be interest free. An interesting feature of the SILC is that members are paid back their shares with dividend at the end of each cycle (normally 12 months) and then start afresh. It implies that all loans are to be repaid before the end of the cycle and that an income statement is produced (Mnenwa *et. al.,* 2008)

At village level the SILC form a forum (named SIGA), normally SIGA consisting of at least 4 SILC, mainly for collective marketing purpose. However, as explained in the preface experience by CRS/MRHP and others have shown that collective marketing is often not binding enough and therefore the SIGA also manages an insurance, education and input fund. On a monthly basis all (SILC) members have to contribute Tsh 500/= to each of these funds. The SILC can request loans from SIGA from these funds on behalf of its members. Nonetheless, the main aim of the SIGA is to bargain better marketing deals

for its members and to ensure transparent and accountable marketing procedures (Mnenwa *et. al*., 2008).

According to Mnenwa *et. al*. (2008) market function is the primary goal of establishing SIGAs. One of the problems facing producers regards to unreliable market outlets and unfavourable markets governance. Establishment of SIGAs was intended to ease the effects of these problems. The main objective SIGA was therefore to provide an alternative market outlet for its members. The SIGAs are responsible for collection of crops from their members and other producers and deliver them to buyers. Collective marketing has many advantages including transaction cost reduction, and market accessibility by being able to attain the volumes of products that satisfy lager buyers. SIGAs are also responsible for provision of information on prices, products required by buyers

2.7   Conceptual Framework for the Study

The literature on collective action in theory and practice emerged from dissatisfaction and failures of many of the rural development programs of the 1960s and 1970s. The development paradigms of this period assumed that communities would willfully engage in collective activities, with little time and scrutiny given to understand the conditions under which this will happen or on how these actions might be sustained (Barham and Chitemi, 2008). Farmers groups as an outcome of collective action are unlikely to emerge on their own. The need for collective action depends on the resource type, degree of spatial integration and the time required in achieving the desired outcomes (Shiferaw *et al*., 2006).

A conceptual model adapted and modified from Barham and Chitemi (2008) developed to understand and explain the flow of changes under study. The model including certain

factors under the infrastructure and social structure, the model tries to separate and analyze the determining factors from the enabling or constraining factors that affect group marketing performance. The wider and determinate infrastructure encapsulates changed initiative and includes such factors as the smallholder groups' farming systems, the agro-ecological conditions under which they must work, and their physical access to markets, for example, distance to markets, access to feeder roads, conditions of roads, and so on (Fig. 1).

The conceptual framework presenting the social structure and infrastructure components Social structure; this includes a number of factors that will affect a group's ability to enact successful collective action initiatives (that is, the group's asset configurations, composition, and characteristics). The NGOs and other networking groups named as partner agencies (PA) are responsible for intervening to enhance human capital in form of marketing skills, business insight and other group capacity trainings, which is represented by the solid line going from the PA directly to the social structure. Along with these training activities, the PA's are also providing some groups with market linkages to other chain actors; this is represented by the dotted line going to the collective action initiative, as well as the lines connecting PA intervention to market chain actors. Farmer groups are also carrying out collective action initiatives without direct linkages from the PA, which is represented by the lines connecting the collective action initiatives to the market chain actors. The performance outcomes represent to what extent groups have improved their market situation and resulted in positive livelihood outcomes for the members of their groups. However, infrastructure (i.e. physical access to market, agro-ecological factors and farming system) also influencing on social structure and affect collective actions and finally lead to better/or poor performance outcomes.

According to Wambungu *et al.* (2009) the capacity to fulfill the producer organizations' performance outcomes depends on the social structures internal to the organization, structures that organize the formulation and enforcement of rules, making and implementation of collective decisions and actions. The internal structures in this study constitute of group composition and characteristics. Consequently, the recognition that social capital is an input in a household's production function has major implications for any development policy. It implies that the acquisition of human capital and the establishment of a physical infrastructure needs to be complemented by institutional development (such as marketing skills, linkages, social networks and capacity building), in order to reap the full benefits of the rural producer organizations.
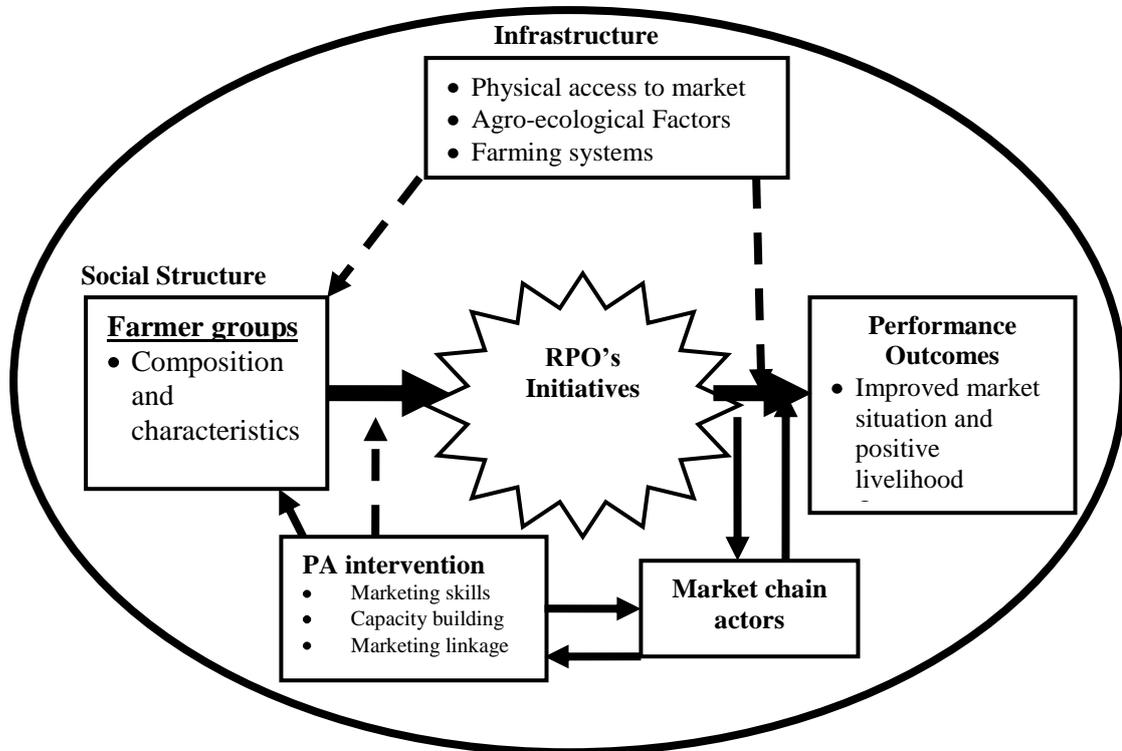
Figure 1:   Conceptual framework for the study (adopted and modified from Barham and Chitemi, 2008)

2.8   Summary of Literature Review Findings and Gap

Several authors, for example Bee (2004) and Kilima *et al.* (1997) assessing the performance of rural producer organization in economic and agricultural policy formulation and implementation in order to protect smallholder farmers interest and livelihood but doesn't provide information on how the organization internal factor may affect the performance of the rural producer organization in fulfill smallholders farmers interest and livelihood. Kaleshu *et al.* (2007) and Wambura *et. al*. (2004) both provide limited information on the organizational internal factors (such as group composition and characteristics) that affect the performance of RPOs in facilitate smallholder farmers' access to markets, the gap this study was therefore geared to fill and recommend to policy makers in different institutions and development practitioners in the formulation and implementation of development strategies that target the marketing of smallholder agricultural produce through producer organizations.

CHAPTER THREE

METHODOLOGY

3.1   Location of Study Area

The data were collected from Kwimba and Misungwi Districts of Mwanza Region. Mwanza Region has a total of 8 Districts named Ilemela, Nyamagana, Magu, Ukerewe, Geita, Sengerema, Kwimba, and Misungwi (URT, 2008). Kwimba District is bordered to the west by the Misungwi District and to the north by the Magu district. While Misungwi District is bordered to the west by Mwanza city, Kwimba District to the east, Magu District to the north, Shinyanga Region to the south, and to the southwest by the Geita and Sengerema Districts. Kwimba is administratively subdivided into 5 divisions, 25 wards, and 110 villages. Misungwi is administratively subdivided into 4 divisions, 20 wards, and 78 villages (URT, 2008).

In general temperatures and rainfall in Mwanza Region are influenced by the region's proximity to Lake Victoria and the Equator. Maximum temperatures range between 25^0 C to 28^0 C during June to August. Rainfall is unreliable and bimodal and ranging between 750 mm in dry areas and 1,200 mm in wet areas. The soil of Mwanza is classified into three major groups (a) sandy soils derived from granite (b) Red loam soil derived from limestone, and (c) Black clay soils. The first group has moderate natural fertility and steadily deteriorates under conditions of continuous cultivation. The second and the third groups of soils have a higher agricultural potential but tend to be found in areas of low rainfall like Kwimba and Misungwi Districts (URT, 2008).

Kwimba and Misungwi Districts are semi-arid area in the region characterised by bimodal rainfall ranging from 650mm to 1000mm per annum (Mahoo, 2005). Because of inherent

resource limitations and risk prone climate for arable agriculture, these areas include some of the poorest sectors of the population (Lamboll *et al*., 2001). Many development practitioners have had put initiative in promoting farmer organizations in these districts. These are among reasons for the Districts to be selected as study area.

3.2   Research Design

This research follows explanatory research design. According to Ndunguru (2004) focus of explanatory research is at understanding, investing and explaining phenomenon in terms of what is, how and why it happens, and attempting to demonstrate the causal relationships among independent and dependent variables surrounding the phenomenon under study.

3.3   Sampling Frame and Sample Size

Sampling frame of the research consists of RPOs engaged in market and farming households (RPOs members and non members) in two selected districts of Misungwi and Kwimba in Mwanza Region. A representative sample size of 120 farmers was selected using stratified random sampling technique. The technique increases accuracy without increasing the sample size (Temu and Lazaro, 2006).

3.4   Data Collection

This study employed triangulation of data from both primary and secondary data sources. Primary data were collected using both closed and open ended structured questionnaires. Key informant interviews, focus group discussion and observations were also used to obtain data on the objectives and aspirations of the groups when they were formed; general group characteristics (for example, size and composition, frequency of meetings and capital); asset ownership; credit access; bulking and marketing; governance; major constraints limiting group performance and planned activities. At the household level, the

data were collected on socioeconomic and demographic characteristics, crop and livestock production and marketing activities, household assets, credit and savings, access to information and participation in collective marketing or awareness of collective marketing and perception of anticipated benefits.

Secondary data were collected from Sokoine University of Agriculture Library, Mwanza Regional and District profiles, Misungwi and Kwimba District Council offices and Mwanza Rural Housing Programme (MRHP – NGO) office. MRHP fosters development through a unique combination of technological ingenuity, microfinance, and agricultural development.

3.5 Data Analysis

The data analysis was done based mainly on non parametric test statistics using multinomial regression analysis to analyze factors which determine smallholder farmers' access to agricultural markets, and assess the extent to which rural producer organizations influence smallholder farmers' access to agricultural markets. While descriptive statistics such as means and frequency were employed in identify problems faced by producer organizations in linking smallholder farmers' access to agricultural markets.

3.5.1 Multinomial logistic regression model

Multinomial logistic regression can be used to predict a dependent variable, based on continuous and/or categorical independent variables, where the dependent variable takes more than two forms (Hill *et al*., 2001). Furthermore, it is used to determine the percent of variance in the dependent variable explained by the independent variables and to rank the relative importance of independent variables. Logistic regression does not assume linear relationship between the dependent variable and independent variables, but requires that

the independent variables be linearly related to the logit of the dependent variable (Gujarati, 2003).

3.5.2   Justification of the multinomial logistic model

Multinomial logistic regression model is useful in analyzing data where the researcher is interested in finding the likelihood of a certain event occurring. In other words, using data from relevant independent variables, multinomial logistic regression is used to predict the probability (p) of occurrence, not necessarily getting a numerical value for a dependent variable (Gujarati, 2003). Rodriguez (2007) explained that multinomial logistic regression model is analogous to a logistic regression model, except that the probability distribution of the response is multinomial instead of binomial and we have p − 1 equations instead of one. The p − 1 multinomial logit equations contrast each of categories 1, 2 …p − 1 with category p, whereas the single logistic regression equation is a contrast between successes and failures. If p = 2 the multinomial logit model reduces to the usual logistic regression model.

According to Rodriguez (2007), several methods can be used to explain the relationship between dependent and independent variables. Such methods include linear regression models, probit analysis, log-linear regression and discriminant analysis. However, multinomial logistic regression has been chosen because it has more advantages, especially when dealing with qualitative dependent variables. This approach is relevant when the study consider multiple occurrence of dependent variable which is the case in this study as relationship between factors which affects RPO's performance are randomized in a way each factor has equal chance of affecting dependent variable in different ways. Another strength of multinomial logistic regression guarantees that probabilities estimated from the logit model will always lie within the logical bounds of 0 and 1 (Gujarati, 2003).

Again probit analysis gives the same results as the logistic model. In this study, the logistic model is preferred because of its comparative mathematical simplicity and fewer assumptions in theory. Moreover, logistic regression analysis is more statistically robust in practice, and is easier to use and understand than other methods (Gujarati, 2003).

3.5.3   Model specification

(a) Given that social capital is most frequently defined in terms of the groups, networks, norms, and trust that people have available to them for productive purposes, the survey tool in this study is designed to capture this multi-dimensionality. Indicators of both structural and cognitive social capital (i.e. frequency of attendance to rural producer organization's meeting, level of democracy in decision making, general trust and solidarity among members in the rural producer organizations), borrowed from previous studies are estimated using proxies and are used to construct social capital indices that constitute independent variables and access to access to agricultural markets as dependent variable was calculated as mean price in Tanzania shillings of produce sold to the mean costs of production.

A typical logistic regression model used to analyze factors which determine smallholder farmers' access to agricultural markets is denoted as follows;

$$\text{Logit}(P_i) = ln(P_i / 1 - P_i) = \beta_0 + \beta_1 X_1 \ldots + \beta_n X_n \ldots + \varepsilon_t \ldots\ldots\ldots\ldots\ldots (1)$$

Whereby,

$ln(P_i / 1 - P_i)$ = logit for access to agricultural markets (calculated as the mean price in Tanzania shillings of produce sold to the mean costs of production); the dependent variable

β_0 = Intercept (constant term)

β_i = Partial regression coefficients

ε_t = Stochastic error term

Independent variables (social capital indices) includes:-

X_1 = Group meeting participation (All meetings, several, few, not attending)

X_2 = Decision making (leaders, committee, all group members)

X_3 = General trust (1 agree; 0 otherwise)

X_4 = Presence of by law (1 exist; 0 otherwise)

X_5 = Solidarity among group members (agree, disagree, don't know)

(b) According to Shiferaw *et al*. (2006) collective action in marketing is likely to occur if expected benefits from lower business transaction costs, better prices for inputs and outputs and/or empowerment and capacity enhancement outweigh the associated costs of complying with collective rules and norms. If the expected cooperation benefits are lower than the expected costs, households are unlikely to participate in group marketing activities. Therefore, extent to which rural producer organizations influence smallholders farmers access to agricultural markets were assessed based on the price offered at the producers organization selling center as dependent variable and distance to selling point, selection on where to sale, quality of crops, production situation, grading of crops and farm size were independent variables. Model was specified as follows: -

$$\text{Logit (Pi)} = ln\ (Pi\ /\ 1 - Pi) = \beta_0 + \beta_1 X_1 \ldots + \beta_n X_n \ldots + \varepsilon_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (2)$$

Where by,

$ln\ (Pi\ /\ 1 - Pi)$ = logit for breakeven price; the dependent variable

Independent variables includes:-

X_1 = Distance to selling point (Number of Km travelled)

X_2 = Quality of crops (Excellent, good, moderate, poor)

X_3 = Production situation (increase, decrease, stagnant)

X_4 = Where did you sell produce (1 = farmer groups; 0 = otherwise)

X_5 = Grading of crops (1 = yes; 0 = otherwise)

X_6 = Farm size (1 = below 5 acres; 0 = otherwise)

(c)   Descriptive statistics such as frequency was employed to describe the problem faced by producer organization in linking smallholder farmers to access agricultural markets.

3.6   Limitation of the Study

In this study, answers to certain critical aspects towards agriculture marketing (like group management, institution arrangement, and operation of agriculture systems) that are require conceptualized in the context of past memories were not quite precise. Out of some questions asked concerned these aspects, were answered in subjective manner. The respondents could not answer such questions promptly. These may have been contributed by different reasons one of which was a lack of record keeping. However, this was resolved by triangulation with other sources of data.

Using Mwanza Rural Housing Program (MRHP) staffs and resources (like vehicle) during the study create an impression that the study was probably MRHP's effort. This may have raised some expectations and bias. However, repeated explanations of specific objectives of the study ensured the bias was kept minimal.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1   Socio-economic Characteristics of Respondents

The presented socio-economic variables are important because they have a bearing on people's attitude, the ability and motives towards collective action including collective marketing. Table 1 presents socioeconomic data gathered during the interview and which include age, sex, marital status, household size, education level, annual income, family assets, land as well as livestock that family owned.

4.1.1   Age of Respondents

According to Table 1, the age interval between 40 – 59 years has the highest number of respondents in both farmer group members as well as non members (50% and 55.9% respectively). However, the survey reveals that 46.4% and 35.3% of the respondents with the age interval between 29 – 39 years old (youth) in both farmer groups members and non members respectively. It is quite encouraging to see that for the farmer group approach, the youth are substantially participating in agriculture. It also calls for that the government to make the provision of youth's involvement in agriculture through engaging them in profitable agricultural projects specially designed for the youth, so that this sector is well developed.

4.1.2   Level of education

The results in Table 1 show that 71. 4% of the respondents from farmer group have only up to seven years of schooling (standard seven level of primary school) while non members composed 67.7% at the same level of education (standard seven level of primary school). Only two percent of farmer group respondents attained secondary level of

education and there was no respondent from this category who had attained tertiary level of education. This implies that better educated people rarely reside in the villages participating in agriculture. Given the fact that human resource is of paramount important in decision making, people with higher education levels are most likely able to absorb more content and put more ideas into practice in improving marketing situation. The fact that the majority of the respondents had attained primary education level implies that the respondents have at least moderate education level which can influence better communication and dissemination of different information.

Table 1: Percentage distribution of socioeconomic characteristics of respondents

Variable Measured	Member ($n_M = 56$)	Non-member ($n_{NM} = 34$)
Age of respondent		
Age interval between 20 – 39 years	46.4	35.3
Age interval between 40 – 59 years	50.0	55.9
Age interval from 60 years and above	3.6	8.8
Sex of respondents		
Female	53.6	23.5
Male	46.4	76.5
Mean number of years of schooling		
0 year of schooling	12.5	17.6
3 years of schooling	1.8	2.9
4 years of schooling	8.9	11.8
6 year of schooling	1.8	-
7 years of schooling	71.4	67.6
9 years of schooling	2	-
11 years of schooling	2	-
Marital status		
Single	5.4	-
Married	76.8	91.2
Divorced/separated	8.9	8.8
Widow	8.9	-

4.1.3 Marital status

From the survey results (Table 1), majority of the respondents were married that is 76.8% of farmer group members and 91.2% for non members. The high percentage of marriage

among the farmers may be as a result of the belief of the rural people that married people are more responsible. In addition, most people probably get married in order to raise families that would supply labour on the farm. However only three percent of farmer group members were singles, five percent were widowed and five percent divorced/separated.

4.1.4 Sex of Respondents

The study results (Table 1) reveals that female respondents in farmer group members were (53.6%) which is more than male respondents who were 46.4%. Furthermore percentage distribution of cross tabulation results (Table 2) show that 37% of women were leaders in their groups. Hence, participation of women is considerably impressive. This revealed that the group approach may be appropriate solution for addressing the political, economic, social and cultural constraints, which hinder women's participation.

Table 2: Percentage distribution of cross tabulation between sex and leadership

Sex	Leadership			
	Yes		No	
	n	%	n	%
Male	16	61.5	10	38.5
Female	11	36.7	19	63.3

4.1.5 Household size

On average, the household size is eight and seven for farmer group and for non farmer group members respectively (Table 3). The average number of household size is above the 2007 Household budget survey figure of 5.1. According to NBS (2009) households with many members and those with a large proportion of dependants are particularly likely to be poor. The trend of having a big household size could be attributed to a low level of family planning awareness, high fertility in the female group, and a high incidence of polygamy (URT, 2006).

Table 3: Mean numbers of socioeconomic characteristics of household

Variable Measured	Member ($n_M = 56$)	Non-member ($n_{NM} = 34$)
Household size	8	7
Family members below 18years	4.4	4.5
Family members between 18 – 60 years	3	2.7
Family members above 60 years	0.61	0.12
Dependency ratio	61	61

4.1.6 Dependency ratio

Dependency ratio is the ratio between those under 15 and over 65 compared to those in the working age from 15 to 65. The age dependency ratios indicate the estimated number of people supported by one hundred in the working age group of 15 to 65 years (NBS, 2009; UNDP, 2000). The information in Table 3 show that the average dependency ratio in the surveyed area is 61. This implies that 61 persons are being supported by 100 workers. This has implications for the social services needs for this population, especially the provision of education and healthcare.

4.1.7 Income

From the study results (Table 4) the mean household annual income for farmer group members was Tsh 1 274 009 while for individual farmers was Tsh 1 200 274 (equivalent to the household monthly income of Tsh 103 917 and Tsh 100 023 for farmer group members and non members respectively). With an average household size of eight members for farmer group respondents and seven members for non members this translates to a per capita monthly income of Tsh 13 022 and Tsh 14 000 for farmer group members and non members respectively. These per capita incomes compares unfavourably with the overall poverty line of Tsh 28 418 per person per month as defined by the Government of Tanzania (NBS, 2009). However, the low per capita income from the survey data is contributed by large household sizes of eight compared to average household size of 5.1 (NBS, 2009).

Table 4: Mean annual income and acres of land own

Variable Measured	Member (n_M = 56)	Non-member (n_NM = 34)
Annual household income (Tsh.)	1 274 009	1 200 274
Farming land (acres)	13.4	11.6

4.1.8   Land availability

Table 4 indicates that the average farming land for the farmer group members was 13.4 acres, while for individual farmers was 11. 6 acres, the average farming land is above the 2000/1 Household budget survey of five acres (NBS, 2009). However, these average farming land values are ranked as belonging to the moderate household class according to the focus group data (Table 4). The analysis shows further that the respondents own farming land ranges from 0.5 - 40 acres (Fig. 2).

Table 5: Farming land (acres)

Village	District	Rich	Moderate	Poor
Sangu	Kwimba	>20	5 - 20	<1
Isenengeja	Misungwi	>20	5-20	0
Kijima	Misungwi	>10	5-10	0
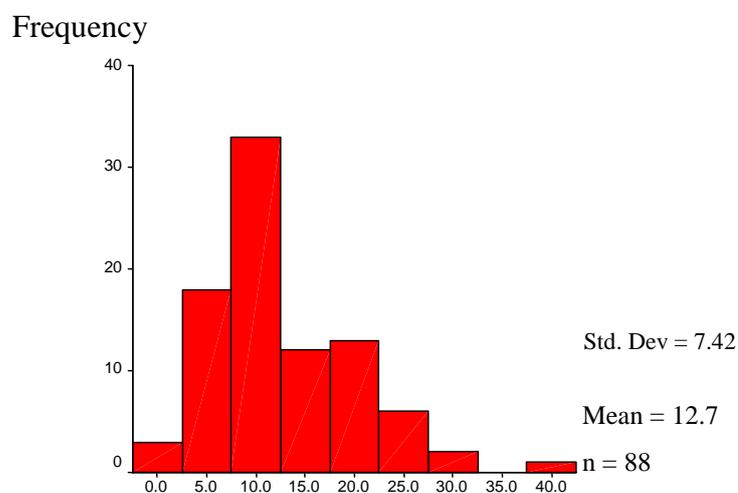
Figure 2: Respondent farming land in acres

4.2 Respondents Socioeconomic Characteristics versus Access to Market

Results in Table 6 shows that there is significant relationship between access to better market with some socioeconomic characteristics such as age, education and annual income at five percent significance level (p < 0.05) while cross tabulation results between access to markets and sex as well as between access to markets and marital status show insignificant association.

Table 6: Cross tabulation between access to market and some of socioeconomic variables

Variable	Chi – square value	Degree of freedom	Significance
Age	42.685	27	0.028*
Sex	0.001	1	0.985
Marital status	0.215	3	0.975
Education	5.602	5	0.018*
Annual income	117.035	86	0.015*

* Significance at 5% (p< 0.05)

4.2.1 Influence of age in smallholder farmers access to agricultural markets

The results Table 6 revealed that age have significant association with access to better agricultural markets. The relationship proves that matured person have better position to negotiate than immature person.

4.2.2 Influence of level of education in access to agricultural markets

The findings Table 6 show that there is statistically significant association between level of education and access to better agricultural markets (p < 0.05). This is important because it reveals that respondents who have some better level of education were more likely to improve their market situation over respondents who are having lower level of education.

4.2.3   Farmer's income and access to agricultural markets

The results Table 5 shows that household with better income are better off, in terms of access to agricultural market that those of lower income. Further the explanation shows why individual farmer who having lower income are often willing to accept whichever price is being offered by the buyer, especially at the time when the cash is uppermost required to meet immediate needs (like health, school fees, and other village development contributions).

4.3 Rural Producer Organizations and Access to Agricultural Markets

Producer organizations (farmers groups) discussed in this section are the ones strengthened and mentored by Mwanza Rural Housing Program in collaboration with Catholic Relief Services (CRS-Tanzania). According to Onumah *et al*. (2007) decline of the formal cooperatives created a vacuum in terms of grassroots RPOs with which NGOs and donor-funded projects in agriculture work to improve farmers' welfare. In response, also in part to ensure that support to farmers reach them more directly; many NGOs and donor-funded projects actively promote RPOs. This may explain why, despite the decline in cooperatives, the number of active RPOs in developing countries is reported to be on the rise.

Share and learning
experiences 3.6 %

Social
Services
17.9%

Saving and
credit 51.8%

Collective
market
26.8%
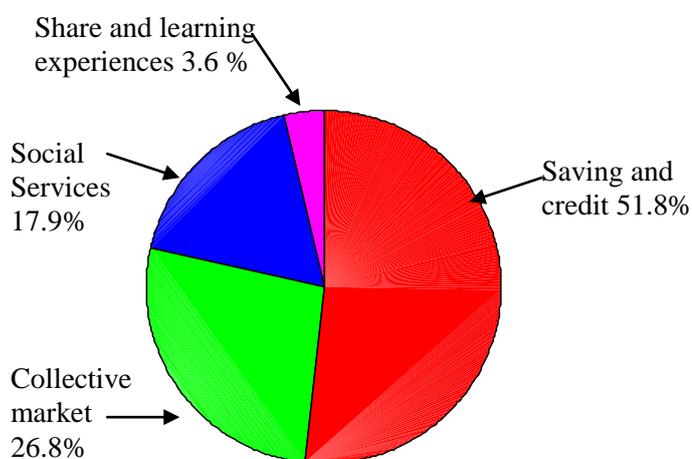
Figure 3: Objectives and aspiration of producer organizations (n=56)

4.3.1 Objectives of producer organizations

The stated objectives of the producer organizations ranged from saving and credit for income generation activities, collective agricultural marketing, helping in social services, and sharing and learning different experiences. The results in Fig. 3 above, shows that the most frequently stated objective pursued by farmer group was saving and credit (51.8%), followed by collective agricultural marketing (26.8%), helping in social services (17.9%) and sharing and learning different experiences (four percent). This implies that RPOs objective of operating microfinance have been fruitful as members are able to access credit to meet their immediate needs that arise before their harvesting and marketing season.

Table 7: Cross tabulations results of some socio economic variables against membership in farmers group

Variable Name	Chi-square value	Degree of freedom	Significance
Age	42.94	33	0.12
Sex	7.827	1	0.05*
Marital status	5.390	3	0.15
Family size	12.977	13	0.45
Education	2.130	5	0.83
Income	85.746	86	0.49
Household assets	85.873	88	0.02*

*Significant at 5% (p < 0.05)

4.3.2 Impact of RPOs to socioeconomic status of members

Cross tabulation of association between membership in farmer groups with some socio economic parameters like age, marital status, family size, education and income shows that there is no significant association between membership in farmers group and these mentioned socioeconomic parameters (Table 7). However, Chi square values in the cross tabulation indicate that there is a significant association between membership and sex as well as membership and household assets at 5% significant level (P<0.05). The results suggest that women are attracted to join farmers groups because of the immediate benefits they can obtain, particularly in improving household assets and the wellbeing of the family.

4.3.3 Roles of RPOs in farmer's access to microfinance

The results indicate that the main objective of operating microfinance activities is to avail money to farmers to be able to meet their immediate needs that may arise before their harvesting and marketing season (Appendix 4). The results (Table 8) reveal that 61.1% of the respondents access credit from farmer groups (through SILC), four point four percent from village saving and credit (*ifogong'ho*), two point two percent from SACCOS and 32.2% didn't access any credit. Furthermore, the results (Fig. 4) show that the mean credit received is worth Tsh 54 524.60.

Table 8: Respondents access to microfinance

Variable		Frequency	Percentage
Access of loan	Yes	61	67.8
	No	29	32.2
Institution loaned	SACCOS	2	2.2
	SILC	55	61.1
	Village S&C	4	4.4
	None	29	32.2

The cross tabulation results (Table 9) show that, access to credit has a significant influence in chickpea price at five percent level of significance ($P < 0.05$) in concurrent years of 2007/08 and 2008/09. Chickpea was the only agricultural produce that was collectively marketed by farmers groups in the study area. Other agricultural produce (maize and paddy) which were not collectively sold had no significant association with access to credit ($P > 0.05$).

Table 9: Cross tabulation results between access of credit and prices of maize, paddy and chickpea in different years from 2007

Variable	Chi square value	Degree of freedom	Significance
Maize price in year 2007/08	1.43	3	0.67
Paddy price in year 2007/08	0.95	5	0.97
Chickpea price in year 2007/08	18.37	10	0.04*
Maize price in year 2008/09	4.17	6	0.65
Paddy price in year 2008/09	0.42	4	0.98
Chickpea price in year 2008/09	6.00	7	0.05*

* Significance at 5%
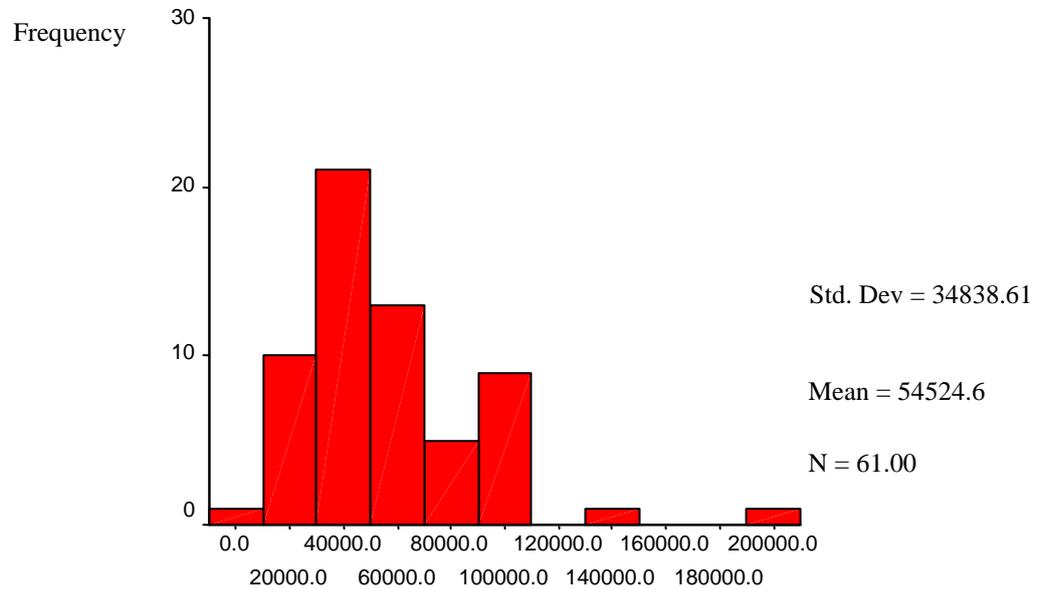
Figure 4: Loan principle value

4.3.4 Role of producer organization in smallholder farmer's income

Results for t - test (Table 10) show that there was no significance different in mean annual incomes from agricultural production between two farmers' communities (Farmer group members and non group members). Though there is no significance difference in the mean annual income, but the mean difference of annual income between farmer group members and non members give a positive indication for enhancing the farmer group approach. As a matter of fact, there should be continuous and limited efforts to strengthen the approach and ultimately increase the income of smallholder farmers.

Table 10: Independent Samples Test result for annual income between farmer group member and non members

Variable	F	Significance.	t	Degree of freedom
Annual income	0.146	0.703	1.070	88

4.3.5 Roles of RPOs in access to trainings and extension services

Access of extension services/training is very important in building capacities of farmers in agricultural production and marketing. The results Table 11 revealed that farmer who are groups were access extension services than their counterpart (non group members) which is significant at one percent ($p < 0.01$). The significant association emphasize the importance of agriculture extension services/trainings as a fundamental source of information and knowledge to farmers.

Table 11: Independent Samples Test result for extension services/training between farmer group member and non members

Variable	F	Significance.	t	Degree of freedom
Extension services/training	47.199	0.001	- 27.421	88

4.3.6 Composition and characteristics of RPOs

The assessment made during focus discussion (Appendix 4) shows that, the RPOs strengths lie on their composition and characteristics such as strong leadership, transparency, trust, presence of saving and internal lending scheme, community resource personnel (CRP), and collective action (during social problems, agricultural marketing and labor exchange for farm work). The results on categorical data (Table 12) show that, access to credit plays an important role to make farmers meet even during off season.

Table 12: Categorical data on access to credit, group meetings and marketing

Variable	Frequency	Percentage
Access to credit		
Yes	53	94.6
No	3	5.4
Adherence to group Meeting		
All meetings	33	58.9
Several meetings	20	35.7
Few – No meeting	3	5.4
Participate in collective marketing		
Yes	52	92.9
No	4	7.1

The results (Table 13) show further that there is a significant association between access to credit and participation in collective agricultural marketing as well as farmers willing to meet regularly. According to Oxfam (2008), CRS/MRHP applies various approaches to promote group marketing including producers marketing groups (PMGs), but lack of group cohesion is often an impediment for sustainable PMG and market linkage. One of the causes for the rather low consistency within the groups is that PMGs meet irregularly, only on field days or around times of marketing and this frequency is evidently too low to unite the members. In contrast, it was noted that saving and credit groups, particularly those based on the micro finance model (Appendix 3), are much stronger and their weekly meetings and a highly developed protocol among other things foster the cohesion.

Table 13: Cross tabulation between access to credit, group meeting and marketing

Variable	Chi value	Degree of freedom	Significance
Collective marketing	0.24	1	0.62
Group meeting	0.21	2	

4.4   Effect of Social Capital on Access to Agricultural Markets

Table 14 presents the results of a multinomial regression fitted to test the effect of social capital on access to agricultural markets for smallholder farmers. The dependent variable is the mean level of access to market (measured as the average price in Tanzania shillings of produces sold through the producer organization to the average costs of production). Results show that the various dimensions of social capital affect the performance of rural producer organizations in facilitate smallholders farmers access to agricultural markets, both positively (increase the likelihood of the response) and negatively.

Table 14: **Effect of social capital levels on access to agricultural markets**

Effect	Coefficient	Chi-Square	Degree of freedom	Significance
Intercept	69.15	0.001	0	0
Sex	65.89	5.55	1	0.019**
General trust	150	0.00	1	0.001***
Group solidarity	82	0.00	1	0.999
Participation in group meetings	97.39	8.32	1	0.004***
Bylaws	-227.16	10.23	1	0.001***

*Significance at 10%
** Significance at 5%
*** Significance at 1%

4.4.1   General trust

A result on general group trust is significance at one percent ($p< 0.01$) and its coefficient is positively influencing better access to agricultural markets. It can be concluded that trust among smallholder farmers is very important in enabling better access to agricultural markets. The findings corroborate with Barham and Chitemi (2008) but contradict with Wambungu *et al.* (2009) which reveal that a unit increase in the organization's level of trust decreased the level of access to agricultural markets.

4.4.2 Participation in group meeting

A result on participation on meetings is also significance at one percent (p< 0.01). According to Oxfam (2008), CRS/MRHP applies various approaches to promote group marketing including producers marketing groups (PMGs), but lack of group cohesion is often an impediment for sustainable PMG and market linkage. One of the causes for the rather low consistency within the groups is that PMGs meet irregularly, only on field days or around times of marketing and this frequency is evidently too low to unite the members. The result Table 14 justifies that farmer groups that meet regularly foster the cohesion among group members to perform better in facilitate smallholder farmers access to agricultural markets.

4.4.3 Existence of bylaws

Existence of bylaws is negatively influence the level of access to agricultural markets at significance level below one percent (p< 0.01). The results Table 14 revealed that the group bylaws are either not enforced or appropriately used. According to Eskola (2005) in many developing countries where laws and legal capacity to enforce them are inadequate informal relations can substitute for courts allowing deals to be made. Poor ability to enforce laws (contracts in particular) in case of violation leads to long supply chains of friends and brokers as contracts cannot be made directly between the consumer and the producer who do not know each other.

4.5   Effect of Distance on the Value of Crop Sold

Table 15 presents the results of a multinomial regression fitted to test the effect of distance traveled on value of crop sold. The results show that a unit increase in the distance travel to urban market center decreased the value of crops by 1.56 units ceteris paribus. The decrease in value of crops with the increase of the distance traveled to the selling point

seems to explain why most farmers prefer to sell the crops at the farm gate. Since distance

to urban market center often captures the level of transaction costs, the results suggest that

smallholder farmers were more likely to sell their produce at farm gate as transaction costs

of reaching alternative markets increased.

Table 15: **Effect of distance travelled to on value of crop sold**

Effect	Coefficient	Chi-Square	Degree of freedom	Significance
Intercept	-8.87	18.03	1	0.001***
Acreage	1.13	2.98	1	0.084*
Selling point	0.86	21.31	1	0.001***
Km travel to urban	-1.56	4.01	1	0.045**
Grading	3.23	9.18	1	0.002***
Quality of crops	2.82	5.57	1	0.018**
Production situation	-0.22	0.24	1	0.622

*Significance at 10%
** Significance at 5%
*** Significance at 1%

4.6   Constraints in Agricultural Production and Marketing

4.6.1   Constraints in agricultural production

Most of Tanzanian smallholder farmers (SHF) rely solely on rain in their farming

activities. Results Table 16 shows that drought and unreliable rainfall (flood) are the major

constraints for smallholder agriculture. During drought season, most of them fail to

produce. The absence of irrigation schemes inculcates the whole situation. According to

VECO Tanzania (2006) Africa irrigates 4% of available irrigation land whereas its

counterpart in Asia irrigates 40% of available land. Complementary irrigation is necessary

if the SHF is to reach economically viable volumes. This can be assured through

construction of local dams and rain water harvesting.

There are several factors affecting the agriculture sector which revealed from the study

(Table 16) includes pest and disease (20%), high cost of inputs (17%), soil infertility

(10%), and lack of proper knowledge on crop production (two percent), poor weather condition (two percent) and lack of inputs (one percent). The effective demand for pesticides and other farming inputs has been greater than current supply. Government subsidies are commonly demanded to keep the price of inputs low for the farmers. However, government subsidies have often a distortion effect on the market and the subsidy schemes are costly for the government. According to Eskola (2005) facilitating the licensing of new brand names for farming inputs and entry of new importers, as well as promoting farmers' efforts to communicate demand for inputs are likely to be more effective and cheaper ways to increase the production.

Table 16: Constraints in agricultural production (n = 90)

Factor	Frequency	Percentage
Drought	33	37.0
High cost of inputs	15	17.0
Lack of farm inputs	1	1.0
Lack of proper knowledge in crop production	2	2.0
Pest and diseases	18	20.0
Poor soil infertility	9	10.0
Poor weather condition	2	2.0
Unreliable rainfall	10	11.0

4.6.2 Constraints in agricultural marketing

For the rural producer organizations to be effective and successful in their collective marketing functions, constraints to their operations must be addressed. The study solicited the key perceived constraints to farmers' access to agricultural markets. The agricultural marketing constraints identified (Table 17) include asymmetric market information, market saturated with dishonest middlemen, lack of profitable market, low price, price fluctuation, and poor infrastructures (especially transportation/ roads). The results shows that the most frequently mentioned agricultural market impediment was low and unfavorable price for agricultural produce (45.8%), followed by dishonest middlemen (hawkers) saturated in the

market (23.3%), price fluctuation (17.8%), lack of market (7.8%), asymmetric market information (3.3%) and poor infrastructures (2.2%). Price control measures have been relaxed; there are needs for the government to intervene to make policies that will stabilize income level of producers and ensure a fair standard of living for rural community.

Table 17: Constraints in agricultural marketing (n = 90)

Constraints	Frequency	Percentage
Asymmetric market information	3	3.3
Dishonest middlemen	21	23.3
Lack of market	7	7.8
Low price	42	45.8
Poor infrastructure	2	2.2
Price fluctuation	16	17.8

4.6.2.1 Unfavourable prices and price fluctuation

The results (Table 17) reveal that unfavorable price and price fluctuation were major agricultural market impediments smallholder farmer's face (which together have scored 63.8%). Even though farmers have started establishing farmers' organizations, they are still weak and lack the knowledge and experience needed in the price negotiations when faced by experienced international buyers with the relevant information and capital. An individual farmer is often willing to accept whichever price is being offered by the buyer who is coming to the village, especially at the time when the cash from the last harvest has been depleted. According to Eskola (2005), lack of business skills and poor liquidity of farmers put them in a weak bargaining position when the final price of their products is to be decided.

4.6.2.2 Market saturated with middlemen

The result is Table 17 reveal that the market is saturated with middlemen (hawkers). As Eskola (2005) point out the existence of saturated middlemen (long supply chains of

friends and brokers) is a result of unstable markets, changing agents and poor ability to enforce the contracts in case of violation, as a result the contracts cannot be made directly between the consumer and the producer who do not know each other.

4.6.2.3 Asymmetric market information

The results Table 17 show that smallholder farmers face a variety of new challenges in coping with the requirements of a free market, lack of market information is identified as one of the reasons. Access to market information is vital in helping RPOs making informed decisions on buying and selling prices.

4.6.2.4 Poor infrastructure (roads)

Rural infrastructure includes investments that directly and indirectly affect productivity in agriculture and other rural non-farm activities (VECO Tanzania, 2006). In this context, the current study covered only transportation/roads as mentioned by the respondents (Table 17) as being a barrier for access to potential agricultural value chain. According to URT (2008) only 3.5% of the total lengths of roads in Mwanza Region are tarmac whereby graveled roads amount to only 15.7% and the rest (Earth) amount 80.8% surfaced and are impassible especially during the rain season. Poor road condition exacerbate the risk of getting stuck and is reflected in the seasonal fluctuation of the transport prices and increase the transaction costs to rural areas.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

Development literature currently promotes producer organizations as vehicle for facilitation access to agricultural market. However findings of empirical studies of such producer organizations find mix performance. This study was conducted to assess factors that influencing performance of rural producer organizations in facilitation of smallholder farmers' access to agricultural market.

The study concludes that establishment and strengthening of rural producer organizations (farmer organizations) have the potential to overcome many of the marketing problems smallholder farmers face. However, there is often a need for investments at the individual farmer level to participate in group dynamics. It implies that composition and characteristics of producer organizations (such as group trust, altruism, participatory decision making and frequency meetings) influence the way these organizations perform their roles. Attention must therefore be given to these composition and characteristics, in the formulation and implementation of development strategies that target the commercialization of smallholder agriculture through producer organizations.

5.2 Recommendations

Based on the conclusions drawn the following recommendations are made.

i.   Establishment and strengthening of farmer groups have the potential to overcome many of the marketing problems smallholder farmers face. However, there is often

a need for investments at the individual farmer level to participate in group dynamics.

ii. It implies that composition and characteristics of producer organizations (such as group trust, participatory decision making and frequency meetings) influence the way these organizations perform their roles. Attention must therefore be given to these composition and characteristics, in the formulation and implementation of development strategies that target smallholder farmers access to agricultural markets through producer organizations.

iii. SILC/SIGA marketing model (Appendix 3) is a useful model to be replicated but the field extension workers who are in direct contact with the groups should also be made familiar with the concepts, principles, norms and advantages in such a way that they can advise and ensure farmer groups are following rules and regulations of community groups or cooperatives. But the apex (SIGA) also should improve their capability in storage by adhering to warehouse receipt system as a mechanism to solve marketing problems arise due to quality, price stability, bargaining power, tax collection, and selling and buying in bulk.

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APPENDICES

Appendix 1: Questionnaire for Farmers Group Members

Introduction

The purpose of this checklist/questionnaire is to collect your views concerning the determinants of rural producer organizations in agriculture market linkages. I hope that the findings from this study will not only improve farmers group performance and sustainability but also assist on the replication of the success model to other small scale farmers in Tanzania, elsewhere and contributing to sustainable agricultural growth and ultimately to economic development of rural poor society. I am therefore, urges for your cooperation and I am assure you that the information gained will be treated with strictly confidence.

Questionnaire No……….   **Date of interview…………**

Name of village …………….   **District …………………**

A. Socio economic characteristics

1. Age …………………
2. Gender …………….
3. Ethnic group ……………..
4. Marital status
   a) Single
   b) Married
   c) Divorce/separated
   d) Widowed
5. Number of years attended in school …………………………
6. Number of household member …………..

Age	Sex	Relationship	Education level	Main occupation

7. What is the major source of your income

   a) Farming activities

   b) Livestock keeping

   c) Salary/wages

   d) Other (specify)

8. What is your annual income earning?

9. Value of productive assets; Please list assets that family own and its current price

Item	No. owned	Current price
Hoe		
Axe		
Machete (panga)		
Plough		
Water container		
Cooking pot		
Bowl		
Bucket		
Hurricane lamp		
Torch		
Bed		
Watch		
Clock		
Radio		
Radio Cassette		
Television		
Mobile phone		
Refrigerator		
Sewing machine		
Bicycle		
Motorcycle		
Tractor		
Ox-cart		
Vehicle		
Others(write)		

B. Agricultural marketing activities

10. List crops that you have produce/and sold since year 2006/7

Crop produced	Year 2006/7			Year 2007/8			Year 2008/9		
	Vol. cons	Vol. sold	Sales (TS/vol)	Vol. cons	Vol. sold	Sales (TS/vol)	Vol. cons	Vol. sold	Sales (TS/vol)

Vol. cons = volume consumed (used for food)

11.   Please estimate man days (people x days x time spent per day) spent in
        production for each crop you mentioned in Qn.10 above

Crops	Acreage	Man days spent					
		Land preparation	Cultivation	Planting	Pesticide Spraying	Weeding	Harvest

12. Where did you sell the crops you mentioned in Qn.10 above?

(a). Name of crop………………………….

Description	Year 2006/7		Year 2007/8		Year 2008/9	
	Vol. sold	Sales (TS/vol)	Vol. sold	Sales (TS/vol)	Vol. sold	Sales (TS/vol)
Farmers gp						
Rural middleman						
Urban wholesaler						
Ginnery						

(b). Name of crop…………………………..

Description	Year 2006/7		Year 2007/8		Year 2008/9	
	Vol. sold	Sales (TS/vol)	Vol. sold	Sales (TS/vol)	Vol. sold	Sales (TS/vol)
Farmers gp						
Rural middleman						
Urban wholesaler						
Ginnery						

(c). Name of crop…………………………..

Description	Year 2006/7		Year 2007/8		Year 2008/9	
	Vol. sold	Sales (TS/vol)	Vol. sold	Sales (TS/vol)	Vol. sold	Sales (TS/vol)
Farmers gp						
Rural middleman						
Urban wholesaler						
Ginnery						

(d). Name of crop…………………………..

Description	Year 2006/7		Year 2007/8		Year 2008/9	
	Vol. sold	Sales (TS/vol)	Vol. sold	Sales (TS/vol)	Vol. sold	Sales (TS/vol)
Farmers gp						
Rural middleman						
Urban wholesaler						
Ginnery						

(Use back of questionnaire for other crops)

13. When do you sell the crops you mentioned in Qn.10 above?

Crop	Months											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec

14. How many Km do you travel up to the selling point?

Description	Km travelled	Type of road
Farmers group buying point		
Rural middlemen buying point		
Urban wholesaler		
Ginnery		

15. Did you grade your crops before selling?

16. How quality is for your selling crops?

    a) Excellent

    b) Good

    c) Moderate

    d) poor

17. How do you see market price of the crops

    a) Favourable (why)

    b) Not favourable (why)

18. What constraints do you facing in agricultural marketing

19. What is the production situation with respect to your crop(s)

a) Increasing

b) Decreasing

c) Stagnant

Why?

20. What major constraints do you facing in crops production?

C. Access to financial credit

21. Did you access any loan from financial institution(s)/ micro-finance institutions/SACCOS/SILC/HISA or other source (Yes/ No)

22. If yes name the institution

Description	Current Loan Principle value (TSh.)

D. Group sustainability

23. Do you know conditions for joining farmer's group?

24. What are your opinions regarding such conditions in terms of enabling people to join the group

    a) Too tough

    b) Reasonable

    c) Easy

25. What is your opinions regarding membership growth?

    a) Increasing

    b) Decreasing

26. If increasing (why?)

27. If decreasing (why?)

28. What were the reasons for joining the group?

29. What are the most important factors that keep you in the group?

30. Are you satisfied with the benefits you have achieved by being in the group? (Yes/No)

31. If No Why?

32. Which activities have you participated in the group

    a) Leadership

       b) Meetings

       c) Share contributions

       d) Collective sale

       e) All above

       f) Other (specify)

33. How many times you have attended in the group meetings this year?

34. What is your perception regarding the importance of farmers groups?

35. Who are decision maker in the group?

36. How do you see the member's participation in implementation of decision?

       a) High participation

       b) Low participation

       c) Not at all

37. What do you consider to be the major obstacles towards effective member's participation in collective action

38. To what extend do you agree with the following statements concerning group leadership

Statement	Agree	Don't Know	Disagree
Leaders listen to member's views and allow them to discuss and make decisions concerning group wellbeing			
Decision are made in meeting on a consensus basis			
Leaders are not careful in making follow ups to ensure success of group's collective actions			
Leaders have no transparency with respect to feedback on group activities			

39. What are the views concerning the relationship existing between group members and leaders?

Statement	Agree	Don't Know	Disagree
Working relationship between leaders themselves is good			
Working relationship between leaders and group members is good			
Working relationship between leaders and extension workers is good			

40. To what extend do you agree with the following statements concerning intra group trust?

Statement	Agree	Don't Know	Disagree
Most members in your group can be trusted.			
Most members in your group are willing to help each other if you need help			
In your group, members generally do not trust each other in matters of lending and borrowing money			

41. How many times you have ever read your group constitution?

42. Do you access a copy of group constitution?

43. What are the major objectives of the groups that have inspired you to join in the group

44. How far these group objectives have been reached

   a) Poor

   b) Moderate

   c) Good

   d) Excellent

45. What are your general views with regards to the following issues

Statement	Very good	Good	Moderate	Bad	Very Bad
a). Leadership accountability					
b). Collective buying and selling					
c). Financial management					
d). Achievement of set objectives					

46. What is your opinion with regards to the group sustainability

47. What are your suggestions to make the group sustainable?

48. Have you ever discussed in the group meeting about future action plans? (If yes, name the plans)

49. What strategy put forward for achieving those action plans

50. If no what do you think are the factors contributing to the lack of group action plans?

E. Training/extension services

    51. Have you got any training? (Yes/No)

    52. If yes which type of training

    53. Who provide such training?

    54. How do you see the relationship between the farmer group members and village/ward extension officer?

        a) Good (why)

        b) Declining (why)

        c) Not existing (why)

F. Wealth Ranking

From the list of items below, please all items reflect your household

    55. How many acres of land do you own?

    56. What kind of house do you own

        a) Own poor home (grass thatched house)

        b) Own one corrugated iron sheet roofed house

        c) Own several better house (corrugated iron sheet)

        d) Don't own home

    57. Livestock

        a) What number of cattle do you own

        b) What number of goat do you own

        c) What number of sheep do you own

    58. Planting on time

        a) Does not plant on time

        b) Does not plant on time

        c) Usually plant on time

        d) Plants on time

    59. Seed availability

        a) Does not have seed

        b) Usually have seed

        c) Have enough seed

        d) Have plenty seed

60. Labour

    a) Must sell labour

    b) Sometimes must sell labour

    c) Does not sell labour

61. Ox-carts

    a) Does not own Ox-cart

    b) Owns only one ox-cart

    c) Own several ox-carts

Appendix 2: Questionnaire for Non group Members

Questionnaire No……….   **Date of interview…………**

Name of village …………….   **District …………………**

A. Socio economic characteristics

1. Age …………………

2. Gender …………….

3. Ethnic group ……………..

4. Marital status

   e) Single

   f) Married

   g) Divorce/separated

   h) Widowed

5. Number of years attended in school …………………………

6. Member of family staying with him/her

Age	Sex	Relationship	Education level	Main occupation

7. What is the major source of your income

   d) Farming activities

   e) Livestock keeping

   f) Salary/wages

   g) Other (specify)

8. What is your annual income earning?

9. Please list assets that family own and its current price

Item	No. owned	Current price
Hoe		
Axe		
Machete (panga)		
Plough		
Water container		
Cooking pot		
Bowl		
Bucket		
Hurricane lamp		
Torch		
Bed		
Watch		
Clock		
Radio		
Radio Cassette		
Television		
Mobile phone		
Refrigerator		
Sewing machine		
Bicycle		
Motorcycle		
Tractor		
Ox-cart		
Vehicle		
Others(write)		

B. Agricultural marketing activities

10. List crops that you have produced/and sold since year 2006/7

Crop produced	Year 2006/7			Year 2007/8			Year 2008/9		
	Vol. cons	Vol. sold	Sales (TS/vol)	Vol. cons	Vol. sold	Sales (TS/vol)	Vol. cons	Vol. sold	Sales (TS/vol)

Vol. cons = volume consumed (used for food)

11. Please estimate man days spent in production for each crop you mentioned in

Qn.10 above ………….(people x days)

Crops	Acreage	Man days spent					
		Land preparation	Cultivation	Planting	Pesticide Spraying	Weeding	Harvest

12. Where did you sell the crops you mentioned in Qn.10 above?

(a). Name of crop……………………….

Description	Year 2006/7		Year 2007/8		Year 2008/9	
	Vol. sold	Sales (TS/vol)	Vol. sold	Sales (TS/vol)	Vol. sold	Sales (TS/vol)
Farmers gp						
Rural middleman						
Urban wholesaler						
Ginnery						

(b). Name of crop………………………..

Description	Year 2006/7		Year 2007/8		Year 2008/9	
	Vol. sold	Sales (TS/vol)	Vol. sold	Sales (TS/vol)	Vol. sold	Sales (TS/vol)
Farmers gp						
Rural middleman						
Urban wholesaler						
Ginnery						

(c). Name of crop………………………..

Description	Year 2006/7		Year 2007/8		Year 2008/9	
	Vol. sold	Sales (TS/vol)	Vol. sold	Sales (TS/vol)	Vol. sold	Sales (TS/vol)
Farmers gp						
Rural middleman						
Urban wholesaler						
Ginnery						

(d). Name of crop…………………………..

Description	Year 2006/7		Year 2007/8		Year 2008/9	
	Vol. sold	Sales (TS/vol)	Vol. sold	Sales (TS/vol)	Vol. sold	Sales (TS/vol)
Farmers gp						
Rural middleman						
Urban wholesaler						
Ginnery						

(Use back of questionnaire for other crops)

13. How many Km do you travel up to the selling point?

Description	Km travelled	Type of road
Farmers group buying point		
Rural middlemen buying point		
Urban wholesaler		
Ginnery		

14. Did you grade your crops before selling?

15. How quality is for your selling crops?

> h) Excellent
>
> i) Average
>
> j) Moderate
>
> k) poor

16. How do you see market price of the crops

> l) Favourable (why)
>
> m) Not favourable (why)

17. What constraints are you facing in agricultural marketing?

18. What is the production situation with respect to your crop(s)

> n) Increasing
>
> o) Decreasing
>
> p) Stagnant
>
> Why?

19. What major constraints do you facing in crops production?

C. Access to financial credit

20. Did you access any loan from financial institution(s)/ micro-finance

    institutions/SACCOS/SILC/HISA or other source (name it) ……………..

Description	Current Loan Principle value (TSh.)

D. Farmer group information

21. Are you aware of the existence of farmers group which deal with collective

    selling in the village?

22. If yes why you are not a member?

    a) Bad image of the previously collapse primary cooperatives

    b) Too much family responsibilities

    c) Poor encouragement/motivation from group members

    d) Tough conditions to become member

    e) Fear of the future prosperity of the group

    f) Other (specify)

23. Would you current like to join the group? (Yes/No)

24. Would you think you can get any benefit by becoming a group member?

    (Yes/No)

25. What is your opinion(s) on the benefits for being a member of the farmers group?

    a) Easy to obtain solutions for the problems from fellow farmers

    b) Getting education in different fields from the extension workers

    c) Gaining experiences in different activities (IGAs) from the fellow

       members

    d) Building strong relationship with other member

    e) Other (specify)

26. What is your view regarding the rate of achievement in development growth of

    various group in your wards/village?

    a) Growing (Yes/No)

    b) Declining (Yes/No)

27. What do you think are the factors contributing to the group's sustainability?

a) Good leadership within the group

b) Full member's participation in group activities

c) Member involvement in decision making

d) Education to all members about different issues relating to groups development

e) Other (specify)

28. Which do you think are the possible factors contributing to failure of the farmers groups in achieving sustainability?

a) Lack of trustfulness and transparency

b) Internal conflicts among leaders

c) Miss management of group's fund

d) Lack of collective market

e) Poor education to member with respect to leadership and management

f) Other (specify)

29. What are your suggestions on things to be done in order to assist these farmers groups to be sustainable?

F. Wealth Ranking

From the list of items below, please all items reflect your household

30. How many acres of land do you own?

31. What kind of house do you own

q) Own poor home (grass thatched house)

r) Own one corrugated iron sheet roofed house

s) Own several better house (corrugated iron sheet)

t) Don't own home

32. Livestock

u) What number of cattle do you own

v) What number of goat do you own

w) What number of sheep do you own

33. Planting on time

x) Does not plant on time

y) Does not plant on time

z) Usually plant on time

aa) Plants on time

34. Seed availability

bb) Does not have seed

cc) Usually have seed

dd) Have enough seed

ee) Have plenty seed

35. Labour

ff) Must sell labour

gg) Sometimes must sell labour

hh) Does not sell labour

36. Ox-carts

ii) Does not own Ox-cart

jj) Owns only one ox-cart

kk) Own several ox-carts

Appendix 3: Checklist for Focus Group Discussion

Checklist No……….   Date of interview…………
Name of village …………….   District …………………
Name of group …………………

A. Group Composition and asset endowment

1. When the farmers group formed?
2. How was it formed?
3. Why was it formed?
4. How many founder members by gender? a). Female………. b). Male…………..
5. How many members (currently) do exist in the group? ……………
    (a) Female ……….   (b). Male ………………..
6. What number of active members? …………….
    (a) Female ……….   (b). Male ………………..
7. What is the composition of the executive committee by gender?
8. (a) Female ……….   (b). Male ………………..
9. How often does this committee meet?
10. What have the group done concerning collective selling
11. Was the collective selling successful?
12. If yes (why?)
13. If No (why?)
14. Is the group networking with other RPOs in the villages/District or anywhere? (Yes/No and explain)
15. Wealth ranking; please give me an assessment that in your village if person have certain assets can be ranked as rich, moderate, poor etc.
16. Group altruism:(Assessment on whether group member emanate more self interest or more altruistic behaviour toward the rest of group by exercise **Public Goods Game**
    a. Give each group member 10 token (square pieces of paper) each worth 50 Tanzania shillings
    b. Give member one shot to either contribute none of contribute all
    c. Evaluate and make explanation, ie:-

- All contribute everything to the group fund, and thus double their money with each member getting back TShs 1,000 (roughly half a day's wage)
- No one contributes anything to the group fund, thus holding onto their original sum of TShs 500; and finally
- Most members contribute everything, and a few members contribute nothing. This final option is further explained to the group through an example. If seven players contribute everything and three players contribute nothing, the total amount in the group fund will be TShs 3,500. Once doubled it becomes TShs 7,000, which divided equally leaves each member with TShs 700, except for the three players that contributed nothing. Each of these players will end up with their original sum of 500 that they did not contribute plus the 700 from the group fund, thus totaling TShs 1200

Appendix 4: Checklist for village/ward extension officer

Checklist No……….   Date of interview…………

Name of village …………….   District …………………

A. General information

1. Total number of household in the village …………………..
2. Total number of landless households ……………………….
3. Number of households owning local cows …………………..
4. Number of households owning improved cows ……………..
5. Number of households owning sheep ………………………
6. Number of households owning goats ………………………

B. Agricultural marketing

1. Please elaborate different process undertaken and expenses associated in different crops produces in your location.

	Description		Unit	Unit Tshs)	Total (Tshs)	Min	Max
A	Land Preparation Cost (70x70 m2)						
	1. Ox-ploughing						
	2. Cultivation and Planting						
	Total A						
	% of total Cost						
B	Production Means						
	1. Seeds (local desi)						
	2. Planting (7 x 10 m2)						
	Total B						
	% of total Cost						
C	Maintenance						
	1. Weed Clearing I, II						
	2. Spraying						
	3. Pesticide						
	Total C						
	% of total Cost						
D	Harvest and Post Harvest						
	1. Harvesting						
	2. Loading and offloading to ox-cart						
	3. Transport from farm to home						
	4. Threshing with tractor						

	5. winnowing						
	6. Gunny bags						
	Total D						
	% of total Cost						
	Total Cost (A+B+C+D)						
E	**Income from farming**						
F	**Gross Profit (July-August)**						
	SGM						
	Gross Profit (August - September)						
	SGM						
	Gross Profit (September - October)						
	SGM						

7. How do you see market price of the crops

  a) Favourable (why)

  b) Not favourable (why)

8. What constraints do farmers facing in agricultural marketing

9. What constraints do farmers facing in production

C. Farmer's group foundation

10. For how long you have known the farmers group?

11. How the farmers group formed?

12. What are main objectives of the farmers group?

13. Which strategies/approaches that were used to achieve the mentioned objectives

14. Were the objectives successful achieved? (if Yes/No ……explain)

D. Farmer's group sustainability and scalability

15. What types of services/training have been done to the farmers group?

16. The services/training are still continue to be delivered?

17. If No why

18. What is your opinion with regards to the following issues
    a) Membership growth
    b) Leadership accountability
    c) Membership benefits
    d) Income generating activities
    e) Collective buying and selling
    f) Financial management
    g) Achievement of set objectives
    h) Economic performance
19. What is your opinion with regards to the group sustainability
20. What are your suggestions to make the group sustainable?

E. Farmer's group future plans

21. Basing on your experience, this farmers group have any SMART (Specific, Measurable, Appropriate and Time bound) plans? (If yes, name the plans)
22. If no what do you think are the factors contributing to the lack of group smart plans?

Appendix 5: Key Indicators from the Household Budget Surveys

Indicator	1991/92	2000/01	2007
THE HOUSEHOLD AND HOUSING			
Average household size	5.7	4.9	4.8
Mean percentage of dependants	40	42	43
Percentage of female-headed households	8	23	25
Percentage of households with a modern roof	36	43	55
Percentage of households with modern walls	16	25	35
Average number of persons per sleeping room	2.6	2.4	2.2
Percentage of households with electricity	9	12	13
Percentage of households using a toilet	93	93	93
Percentage of households owning a radio	37	52	66
Percentage of households owning a telephone	1	1	25
EDUCATION, HEALTH AND WATER			
Percentage of adult men with any education	83	83	83
Percentage of adult women with any education	68	67	71
Percentage of adults literate	–	71	73
Primary net enrolment ratio	–	59	84
Percentage of children age 7-13 years studying	57	61	86
Secondary net enrolment ratio (forms I-IV)	–	5	15
Percentage of households within 2 km of a primary school	66	63	62
Percentage of ill individuals who consulted any health provider	–	69	69
Percentage of households within 6 km of a primary health facility	75	75	75
Percentage of households with a protected water source	46	55	52
Percentage of households within 1 km of drinking water	50	55	57
ECONOMIC ACTIVITIES			
Percentage of adults whose primary activity is agriculture, livestock or fishing	73	62	57
Percentage of rural population who live within 2km of an all – season passable road	–	–	52
Mean area of land owned by rural households (acres)	–	6.0	5.0
Percentage of households with a member with a bank account	18	6	10
CONSUMPTION AND POVERTY			
Percentage of consumption expenditure on food	71	65	64
Percentage of population below the food poverty line	22	19	17
Percentage of population below the basic needs poverty line	39	36	33
Percentage of population living in female-headed households below needs poverty line	35	35	33
Percentage of total consumption by the poorest 20 percent of population	7	7	7

Source: The Tanzanian household budget survey (2007)

Appendix 6: Strength, weakness, opportunity and threat in RPOs

Strengths	Weaknesses	Opportunities	Threats
Strong leadership	Poor membership accountability	Presence of members	• Members shifting to other places • Shifting of leader to politics
Transparency	Inadequate capacity to meet their objectives	Resources such as land	Fear of the communities resulting from bad past experiences
Saving and internal lending scheme	Lack of saving and credit skills to all member (especially new members)	Cohesion of member	Fear of members on bad experience of other micro-credit schemes
Collective action	Inadequate participation in price determination	Support from local govt authority leaders and politician	Breaching contracts
Community resource persons	Inadequate capacity to collect and disseminate information	Increased number literate people	Employment of resource personnel to other project or by potential buyers
Trust	Inadequate marketing skills	Community resource persons	Unfavourable policies
	Inadequate capital		Inadequate quality control systems