

Effectiveness of second-tier rural producer organisations in linking smallholder farmers to markets in Uganda

by

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DECLARATION

I declare that this dissertation, which I hereby submit for the degree of Doctor of Philosophy in Rural Development at the University of Pretoria, is my own and has not previously been submitted by me for a degree at this or any other tertiary institution.

Signature: _____

Date: _____

DEDICATION

To my Friend, Lord and Saviour Jesus Christ, who continually makes something beautiful of my life that would, otherwise, have never been.

To Johnson Lubega, Ttendo Nabukenya, Able Mulindwa, Victor Lubega and Jane Nshemereirwe; for their understanding, patience, love and unfailing support.

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Department: Agricultural Economics, Extension and Rural Development
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ABSTRACT

The agricultural sector is key to the attainment of general economic growth and poverty alleviation in Africa. Therefore, it is important to develop the sector and this requires removing constraints limiting smallholder farmers to compete in markets. Collective action, in the form of rural producer organisations (RPOs), is often essential to achieve competitiveness. The RPO route to commercialisation of smallholder agriculture has been embraced in many developing countries, including Uganda. However, little has been done to analyse the effectiveness of RPOs in this regard.

In Uganda, RPOs have been welcomed and popularized by the government, with limited empirical evidence on suitable models of organisation that can benefit most smallholder producers. Despite reasonable investments in RPO approaches and wide involvement by the public and private sectors and the donor community, smallholder market participation remains low. There is, therefore, a need to understand the extent to which the RPO approach is an effective option for commercialising smallholder agriculture.

The purpose of this study was to assess the effectiveness of second-tier associations and cooperatives in linking their members to markets and to identify factors which determine their effectiveness. The goals model was applied on two units of analysis, namely, the RPO and individual members. At RPO level, effectiveness was

measured using the proportion of members that marketed products through their RPOs as a dependent variable. Relationships with explanatory variables were determined using an ordinary least squares regression model. At individual level, the proportion of revenues generated by members from selling products through the RPOs was the dependent variable. Relationships with explanatory factors were analysed using a one-way between-groups analysis of variance (ANOVA). Further analysis looked at distribution of benefits among the members across gender and socio-economic status using the Kruskal-Wallis test. The analyses were based on primary data that was collected from 62 second-tier RPOs and 1,377 individual RPO members.

The results of the study indicate that marketing RPOs are not effectively linking their members to markets. Democratic governance and RPO size show a significant and positive effect on the proportion of members selling through their RPOs. On the other hand, factors such as age, access to price information and improved planting material, and training in quality management positively influence the proportion of revenues that members obtain from RPOs. Regarding benefit distribution, the more literate and asset-rich farmers had access to more benefits compared to the less literate and asset-poor farmers while men had access to more benefits than women.

Drawing from the study findings, various recommendations for improving RPO effectiveness are put forth. With respect to governance of RPOs, using smaller executive committees and additional sub-committees seems a better governance strategy for improving the effectiveness of RPOs. Whereas capacity building of leaders is important, newly-learned management procedures should be implemented in a way that does not hinder member participation. Effective RPOs should be established through members' initiative, possibly, as a strategy to overcome a felt problem. Similarly, effective market linkages should be established by producers so that they have an opportunity to foster and develop profitable business relationships. Other aspects that can enhance effectiveness of RPOs include increasing member access to extension advisory services and market information, reviewing rural finance delivery mechanisms to meet a broad range of smallholder needs and focusing and developing one marketable enterprise until businesses mature. There is also need to institutionalize practical guidelines that enable equitable participation and benefit

access among all categories of member producers. Specifically, action-oriented strategies are required to include the less educated, asset-poor and women, as well as ensure that they are benefiting from RPOs in which they are members. Lastly, the government has a role to deliver on promises made regarding development of RPOs in the country.

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ACRONYMS AND ABBREVIATIONS

ACE	Area Cooperative Enterprise
APEP	Agricultural Productivity Enhancement Program
AR4D	Agricultural Research for Development
CLUSA	Cooperative League of the United States of America
CO	Community-Oriented Organisation
DSIP	Development Strategy and Investment Plan
FAO	Food and Agriculture Organisation
ha	hectare
km	kilometre
ICA	International Cooperative Alliance
ILO	International Labour Organisation
MAAIF	Ministry of Agriculture Animal Industry and Fisheries
MFPED	Ministry of Finance, Policy and Economic Planning
MSC	Microfinance Support Centre
MTIC	Ministry of Trade Industry and Cooperatives
NAADS	National Agricultural Advisory Services
NDP	National Development Plan
NGO	Non-Governmental Organisation
NKG	Neumann Kaffee Gruppe
NPC	National Cooperative Policy
NPO	Non-Profit Organisation
NUCAFE	National Union of Coffee Agribusinesses and Farm Enterprises
OE	Organisational Effectiveness
OLS	Ordinary Least Squares
PEAP	Poverty Eradication Action Plan
PMA	Plan for Modernisation of Agriculture
R&D	Research and Development
ROSCA	Rotating Savings and Credit Associations
RPO	Rural Producer Organisation
SACCO	Savings and Credit Cooperatives
SME	Small and Medium Enterprise

SSA	Sub-Saharan Africa
UCA	Uganda Cooperative Alliance
UBOS	Uganda Bureau of Statistics
UN	United Nations
UNFFE	Uganda National Farmers' Federation
ULRC	Uganda Law Reform Commission
USA	United States of America
USAID	United States Agency for International Development
VEDCO	Volunteer Efforts for Development Concern

CHAPTER 1

INTRODUCTION

1.1 Background

1.1.1 Importance of the agricultural sector

The agricultural sector in Uganda dominates the nation's economy in terms of employment, foreign exchange earnings and contribution to Gross Domestic Product (GDP). Agriculture contributed 22.5 percent of the GDP in the 2010/11 fiscal year. In 2010, agriculture contributed 46 percent of the export earnings and employed 66 percent of the labour force (MAAIF, 2011; UBOS, 2011). These statistics underscore the importance of the agricultural sector in job creation and poverty reduction.

However, the contribution of the agricultural sector to GDP has been declining since 2001, from 39.9 percent in 2001/2002 (Lukwago, 2010) to 23.8 percent in 2009/2010 and 22.5 percent in 2010/2011 (MAAIF, 2011). The decline, which has not been accompanied by socio-economic transformation, is blamed on insufficient budgetary allocations (Lukwago, 2010). Public expenditure on agriculture has been declining from 4.6 percent of total government spending in 2001/02 to 3.8 percent in 2008/09 and an expected 3.2 percent in 2012/13 (Zorya *et al.*, 2010). Additional reasons include poor performance of the agricultural sector (World Bank, 2011) and low agricultural productivity (Tibaidhukira, 2011). This implies that more effort and resources are required to develop the agricultural sector, which is considered to be 'the engine of growth' (World Bank, 2007).

1.1.2 Poverty status and smallholder farming

According to the Uganda national household survey of 2009/2010, 24.7 percent of the population live under the poverty line (UBOS, 2010). Poverty remains a predominantly rural phenomenon. The rural areas accommodate 85 percent of the population, which constitutes 95 percent of the national poverty. Out of a total population of 33 million, 7.5 million are poor and 7.1 million of the poor live in the rural areas (UBOS, 2011). In contrast, urban areas constitute 15 percent of the

population and about five percent of the national poverty. Nevertheless, recent reports indicate that rural poverty has been declining (World Bank, 2011).

Table 1: Poor people in Uganda (millions), 2002-2010

	2002/2003	2005/2006	2009/10
National	9.81	8.44	7.51
Rural	9.31	7.87	7.10
Urban	0.50	0.57	0.42
Region			
Central	1.67	1.30	0.87
Eastern	3.19	2.45	2.20
Northern	2.90	3.25	2.84
Western	2.06	1.44	1.60

Source: UBOS (2010)

Table 1 indicates that there has been a general reduction in the incidence of poverty. For example, the number of poor people decreased from 9.8 million in 2002/3 to 7.5 million in 2009/10. The largest decrease in the incidence of poverty occurred in the rural areas and in the central region of the country. Nationally, the proportion of poor people decreased from 34.2 percent in 2005/6 to 27.2 percent in 2009/10 and this was due to growth in consumption (UBOS, 2010).

Table 2: Distribution of farm sizes (percentage of total)

Agro-ecological zones	Small (up to 1 ha)	Medium (between 1 and 5 ha)	Large (above 5 ha)
Eastern Highlands	53	43	3
Karamoja Dry lands	73	25	2
Lake Albert Crescent	51	44	4
Lake Victoria Crescent	66	30	3
Mid-Northern	62	35	2
Southern Dry lands	56	38	5
Southwest Highlands	55	40	4
West Nile	66	30	4
Western Highlands	63	34	3
National	58	38	4

Source: World Bank (2011)

In Uganda, smallholder farming accounts for 75 percent of total agricultural production that is carried out by an estimated 2.5 million smallholder families, most of whom live in the rural areas. Table 2 shows the distribution of farm sizes in Uganda.

In all agro-ecological zones, more than 90 percent of farms do not exceed five hectares in size, confirming that smallholder farmers constitute the majority of agricultural producers in the country.

Compared to other countries, land endowment in Uganda is four and a half times smaller than the average for sub-Saharan Africa and three times smaller than the world average (World Bank, 2011). With one of the highest population growth rates in the world (3.2 percent per annum), it is suggested that the most viable strategy for agricultural development in Uganda is a smallholder strategy (World Bank, 2011).

1.1.3 Smallholder commercialization initiatives

The Ugandan government considers the development of the agricultural sector as a prerequisite for economic growth and rural poverty alleviation. For over a decade, agricultural commercialization has become the sector's development focus. The Poverty Eradication Action Plan (PEAP) (1997-2008) was dedicated to agricultural development and sought to enhance production, competitiveness and incomes (MFPED, 2004). One of the key priorities in achieving this was the modernization of agriculture, which was intended to transform subsistence agriculture to commercial or market-oriented production.

The Plan for Modernisation of Agriculture (PMA) stressed the importance of forming a hierarchy of rural producer organisations (RPOs) as a framework for the commercialization of smallholder production (Diaz, 2004). The current National Development Plan (NDP) (2010/11-2014/15) and the agricultural sector Development Strategy and Investment Plan (DSIP) (2010/11-2014/15), build on the PMA efforts and seek to improve access to and sustainability of markets by expanding and strengthening the RPOs as well as supplying market infrastructure (DSIP, 2010; NDP, 2010). Among other things, efforts will be pointed towards improving RPO management and resource mobilization, entrepreneurship, enhancing capacity for competitiveness in the wider market, diversification of enterprises and value addition.

In spite of the importance of smallholder agriculture in Uganda, market participation by individual farmer producers is low (Nivievskyi *et al.*, 2010; Salami *et al.*, 2010). For

example, a study on commercialization and the role of markets in Uganda by Nivievskiy *et al.* (2010) reveals that the least commercialized 25 percent of farmers sell only four percent of their produce and purchase inputs worth only one percent of the value of their production. In addition, only 25 percent of the most commercialized farmers sell more than half of their total production. Evidence from elsewhere indicates that successful commercialisation of the agricultural sector is not possible without linking smallholder farmers to markets.

Previous studies highlight different mechanisms of linking smallholders to the market, including approaches that promote direct linkages between producers and buyers (Barham & Chitemi, 2008; Kaganzi *et al.*, 2009; Shepherd, 2007), intermediation (Hellin *et al.*, 2009; Jagwe and Macheche, 2011; Lundy, 2007; Vorley *et al.*, 2008) and hybridization (Crowley *et al.*, 2005; Vorley *et al.*, 2008). However, in all cases, the importance of smallholder organisation as a pre-requisite for competitiveness and realizing economies of scale gains is emphasized. Smallholder commercialization literature also points to the importance of reducing transaction costs, a role that RPOs can effectively perform, either as an option or as a pre-requisite for alternative market arrangements (Alene *et al.*, 2008; Jaleta *et al.*, 2009; Poulton *et al.*, 2006; Barrett, 2008).

Therefore, the choice by the Ugandan government to promote the use of RPOs as a means of improving farmers' market participation is a favourable and timely one. This is particularly so when considering the significance of smallholder production and the fact that rural Uganda has poorly developed road and telecommunication infrastructure and a limited scale of urban markets. In addition, studies by Fafchamps and Hill (2005; 2008) found that Ugandan coffee producers did not benefit from rising international coffee prices. This was due to excessive entry by local traders at farm gate, who take advantage of farmers' ignorance of the rising prices, and 'rip-off' what would be profits to producers (Fafchamps and Hill, 2008). RPOs should, therefore, be able to mitigate market failures, countervail buyer power and help smallholder producers to access markets and related services (Bernard and Spielman, 2009; Markelova and Mwangi, 2010; Paumgarten *et al.*, 2012; Penrose-Buckley, 2007).

However, studies have indicated that RPOs are generally underperforming due to a number of constraints. Examples include weak internal capacities due to lack of qualified staff, limited literacy skills and inadequate training of members, lack of ownership and reliance on support from donors or local NGOs (Kyazze, 2010; Mrema, 2008). RPOs are also constrained by lack of direct benefits to members (Mutimba and Luzobe, 2004). Many RPOs are weak because they recruited 'poor' members that were initially drawn by handouts at the expense of group objectives (Coulter, 2006). Additional problems include lack of integrity by leaders and 'capture' by politicians and influential people in the communities (Coulter, 2006). Feder *et al.* (2010) review a number of studies conducted on producer groups facilitated by National Agricultural Advisory Services (NAADS) and find that participation in groups and access to benefits favoured the wealthy, elites and the more connected producers in the communities. Compared to other forms of associations, Hill *et al.* (2008) find that the participation of producers in the NAADS established groups was minimal (16 percent), and collective marketing was limited by low levels of trust and lack of liquidity.

1.2 Statement of the research problem

RPOs have been popularized across many developing countries in the hope that they will commercialize smallholder agriculture. However, little is known about their effectiveness and the circumstances under which they work or fail. It has been argued in recent collective marketing studies that because RPOs are member-owned organisations, they tend to prioritize community norms that promote social inclusion and solidarity over business norms that demand professional and competitive RPOs (Bernard and Spielman, 2009; World Bank, 2007). By holding onto social inclusion and solidarity, RPOs maintain members that may not comply with obligations, which leads to cross-subsidizing poorer performers at the expense of better ones, which in turn weakens rewards for efficiency and innovation (World Bank, 2007). Analysts have thus emphasized the need for more empirical research with respect to how effective RPOs can be organised and sustained (Hellin *et al.*, 2009; Markelova *et al.*, 2009; World Bank, 2007).

Most of the recent research conducted on organisational effectiveness in the last decade has focused on the non-profit sector in developed countries. Similarly, the models that have been popularized for measuring organisational effectiveness apply mostly to non-profit organisations (NPOs) for which measurement of organisational effectiveness hinges on their variability and the need to account to donors and the multiple stakeholders they work with (Herman and Renz, 2004; Lecy *et al.*, 2011; Papadimitriou, 2007; Rojas, 2000; Tysir and Tysir, 2012). Although these models may inform research on organisational effectiveness in general, they do not necessarily apply well in the context of developing countries or in other forms of organisations such as RPOs. For example, cooperatives in the United States are managed by two separate bodies; the democratically elected board and the salaried professional executive management (Brown, 2005; Cornforth, 2004) while RPOs in Uganda are managed by only a voluntary democratically elected executive committee, consisting of individuals who are both members and managers. These and other differences in functioning of cooperatives and other forms of RPOs present different scenarios that cannot be analysed by models used in the developed world.

The few studies that measure effectiveness of RPOs have been conducted on cooperatives in the developed world. For example, Burt and Wirth (1990) studied the effectiveness of supply cooperatives, focusing on attitudes of commercial farmers and cooperative managers. Stoel (2002) measured relational effectiveness between cooperative members and the management. Newton (2006) evaluated effectiveness of food consumer cooperatives, with specific focus on the collaborative partnerships between the board and the chief executive officer. Katchova and Woods (2011) measured effectiveness of supply chain marketing strategies of food cooperatives, focusing on the cooperative's ability to source out and promote marketing of local foods. All these studies were conducted on cooperatives in the United States although they addressed specific aspects of effectiveness but not organisational effectiveness *per se*. On the other hand, organisational effectiveness regarding RPOs has received limited attention in research, particularly in the developing world.

Regarding the measurement of organisational effectiveness, significant effort has gone into defining and testing the suitability of criteria and variables for measuring organisational effectiveness (Brown, 2005; Cho, 2007; Eisinger, 2002; Herman and

Renz, 2004; Palmer, 2002; Selden and Sowa, 2004; Sowa *et al.*, 2004; Tysir and Tysir, 2012). On the other hand, empirical studies that measure organisational effectiveness have remained rare across different sectors (Lecy *et al.*, 2009). In instances where effectiveness has been actually measured, analysts have tended to measure one dimension, such as finances (Richie and Kolodinsky, 2003) or stakeholder responsiveness (Hornsey *et al.*, 2012) or leader relations (Newton, 2006; Stoel, 2002) and board effectiveness (Cornforth, 2001; Preston and Brown, 2004). Yet, unidimension measures have been criticized for not being useful in measuring effectiveness of organisations (Lecy *et al.*, 2009; 2012). Moreover, the criteria mostly used to measure effectiveness have mainly been based on aggregated perceptions of the different stakeholders (Balsler and McClusky, 2005; Herman and Renz, 2004), which may not give a complete reflection of organisational effectiveness because perceptions tend to be subjective and may lack consistency (Palmer, 2002). Anchored on the goals model, this study extends the use of a multidimension approach and objective criteria in measuring effectiveness of RPOs.

With specific reference to Uganda, RPOs are generally under-researched as evidenced by the sparse literature. In particular, empirical studies related to effectiveness of RPOs are rare. For example, Archambault (2004) explores organisational constraints that curtail the capacity of farmer groups from supplying beans and maize to the World Food Programme. Najjingo and Sseguya (2004) look at gender aspects within RPOs, concentrating on cooperatives under Uganda Cooperative Alliance (UCA). Mugisha *et al.* (2004) explore the involvement of RPOs in policy formulation. Coulter (2006) explores institutional and market development processes of secondary RPOs facilitated by the USAID's Agricultural Productivity Enhancement Program (APEP). Kyazze (2010), Mrema (2008) and Nana and Korugyendo (2010b) review the functioning of cooperatives from the historical cooperative movement to date, including the new models of business organisations. Studies by Grossman and Hanlon (2011) and Miiro *et al.* (2011) discuss factors that affect performance of RPO leaders or enhance RPO leader skills-transfer to the work environment, respectively. Adong *et al.* (2012) investigate determinants of membership to farmer groups. To the best of the author's knowledge, this is the first broad study that attempts to evaluate effectiveness of second-tier RPOs in linking smallholder farmers to markets in Uganda. The study goes further to identify factors

that determine effectiveness of RPOs in linking smallholder farmers to markets. Knowing the determinants of RPO effectiveness is important for policy makers and others interested in enhancing RPO effectiveness. This is because they will be able to focus their interventions on specific areas that can generate better results in terms of improving RPO effectiveness.

1.3 Objectives of the study

The main objective of this study is to assess the effectiveness of second-tier associations and cooperatives in Uganda in linking their members to the market and to identify factors which determine their effectiveness.

Specific objectives are to

- a) develop a measure for effectiveness of RPOs in linking their members to markets;
- b) determine whether the method used to establish RPOs (i.e. whether their establishment was demand- or supply-led) has a bearing on their effectiveness in linking farmers to markets;
- c) determine whether the effectiveness of RPOs in linking farmers to markets is dependent on the type of model used for the linkages;
- d) examine the organisational and management structures of RPOs with respect to how they facilitate or hinder effectiveness in linking their members to markets;
- e) investigate the relationship between the management capacity of RPOs and their effectiveness in linking members to markets; and
- f) establish whether there are any benefits accruing to members of RPOs and ascertain whether such benefits are equitably distributed, based on gender and socio-economic status.

1.4 Hypotheses

The hypotheses of the study are as follows:

Hypothesis 1: *RPOs whose establishment originated from internal demand are more effective than those whose establishment was externally induced.* Analysts indicate that RPOs, which develop through self-organisation, tend to be self-reliant and exhibit cohesive solidarity. On the other hand, RPOs that are externally induced, are less stable in the long-term and tend to lose focus on member priorities and their effectiveness because members lack a true sense of ownership (SARD, 2007; Zeuli and Radel, 2005). It is also believed that externally induced RPOs may develop over-dependency on external aid (Berdegue *et al.*, 2008; Coulter 2006) and thus will become perpetually weak. However, in some cases, successful RPOs have been established through a mix of self-organisation and external support (Crowley *et al.*, 2005; Kaganzi *et al.*, 2009).

Hypothesis 2: *Effectiveness of RPOs will differ according to the model used to link members to the market, i.e. whether the linkage is intermediary, buyer or producer-driven.* There have been shifts in thinking about successful models of linking smallholder farmers to markets. Earlier beliefs suggested that direct linkages between producer and buyer were more profitable for farmers considering that they shortened the market chain by 'cutting out' the middleman (Shepherd, 2007; Samaratunga, 2007). In contrast, recent studies indicate that intermediaries are playing a key role in effectively linking smallholders to markets (FAO, 2008; IIED, 2008; Hellin *et al.*, 2009; Jagwe and Machethe, 2011; Lundy, 2007; Vorley *et al.*, 2008; World Bank, 2007). Hence, an effective model of linking smallholder farmers to markets will depend on the situation at hand. If, for example, RPOs have limited cooperative experience and markets are thin, an intermediary-driven model may be most suitable (Bienabe and Sautier, 2005).

Hypothesis 3: *Democratic structures of governance and equitable rules and procedures limit the effectiveness of RPOs in linking farmers to markets.* By definition, RPOs are governed by democratic means. Since they are voluntary organisations formed to meet common member needs, democratic management offers members an opportunity to monitor and control the leadership (Spear, 2004) and determine how the proceeds from the enterprise are used (Wanyama *et al.*, 2008). However, collective ownership of RPOs subjects them to a number of property rights problems (Chaddad and Cook, 2004), the solution of which demands

appropriate management structures. Some studies have also indicated that democratic tendencies cause the leadership to be more concerned with equity and solidarity at the cost of efficiency (Bernard *et al.*, 2008). Furthermore, there has been recent concerns about problems in member-based democratic organisations such as corrupt practices, poor decision-making and uncertainty about the board's protection of members' interests, which makes democratic leadership questionable.

Hypothesis 4: *The level of management expertise is positively related to effectiveness of RPOs in linking farmers to markets.* Management capacity is a vital prerequisite for the performance of RPOs. First, there is need to access and manage resources effectively (Bernard *et al.*, 2008). Second, there is increasing need to deal with complicated and changing supply chains (World Bank, 2007). Third, particularly at second-tier level, there are additional issues of managing a heterogeneous membership. Fourth, management experiences tensions in trying to serve as member representatives and experts that should improve performance of organisations as well as being prudently accountable (Cornforth, 2004). Managing all these issues demands that leaders of RPOs have the necessary experience and skills.

Hypothesis 5: *Males and richer members of RPOs benefit more from membership than females and poorer members.* It is widely understood that membership in marketing RPOs is dominated by males and the better-off farmers, who tend to benefit more from them. Women and the poor, when included, are normally not represented in leadership positions and, as a result, do not participate actively in decision-making (Barret, 2008; Bernard and Spielman, 2009). Nonetheless, some studies indicate that RPOs can enable women to break through the community safety concerns or socio-cultural norms and access markets (PenRose-Berckly, 2007). According to Hilhorst and Wennink (2010), women's participation in RPOs has clear benefits in terms of increased assets and income, and gains in control over decision-making processes that affect their lives. In contrast, other studies show evidence that women access minimal benefits from RPOs compared to their male counterparts, regarding loans, credit, inputs and skills training (Lodhia, 2010; Lyon *et al.*, 2010).

1.5 Definition of key terms

Rural producer organisations (RPOs): There are various definitions of RPOs (see Section 2.1.1). In this study, RPOs are defined as membership organisations, which are legally owned and controlled by members that pursue common interests beneficial to members. In Uganda, RPOs include cooperatives, associations and producer groups, which exist at different levels. This study focuses on second-tier RPOs.

Second-tier producer organisations: These are organisations at secondary level that are constituted by primary organisations at the grassroots level. When individual producers come together, they form groups of relatively smaller sizes. When two or more of these groups join together, they form a higher level organisation that makes a second-tier. With respect to marketing, second-tier RPOs are normally formed for purposes of pooling large quantities to be able to attract a lucrative buyer. They also help affiliated groups in reducing their individual costs of accessing extension advisory services and sharing input purchasing, production, processing and marketing costs (Bosc *et al.*, 2002; Mwesigye, 2006). Section 2.4 provides additional details. In Uganda, second-tier level organisations may be farmer associations, companies limited by guarantee or area cooperative enterprises (ACEs).

Cooperatives: The International Cooperative Alliance (ICA) definition of cooperatives is widely accepted. A cooperative is defined as “an autonomous association of persons who voluntarily unite to meet common economic, social and cultural needs and aspirations through a jointly-owned and democratically-controlled enterprise” (Onumah *et al.*, 2007:1). In Uganda, second-tier cooperatives are constituted by grower cooperative societies and are bound by the same cooperative principles.

Models of linking farmers to the market: This refers to how producers organise themselves to participate in the market. In a producer-driven model, the producers themselves make an effort to integrate into the market. In a buyer-driven model, the buyer (retailer, processor or exporter) drives the production process with an intention

to ensure supply. In an intermediated model, there are additional players (with varying roles) in-between the producer and the buyer (see details in section 4.1.6).

Market linkage: This describes the situation when a RPO is ‘connected’ to a specific market or buyer. Development of a market linkage is necessary for ensuring a sustainable market and a sure supply. The buyer seeks to be sure of quantity and quality of supply while the producer needs to be assured of a reliable market, fair price and, in some cases, support services (NRI, 2003). In strong linkages, one would expect the existence of a formal relationship (contract or written agreement) between producers and the buyer(s). In weak linkages, the two are ‘connected’ but without any formal agreement and this threatens sustainability of the business relationship. In the majority of cases, reliable and sustainable market linkages between smallholder farmers and private buyers are non-existent and have to be developed. The linkages may be developed by strengthening the existing private sector production and marketing channels (Kindness and Gordon, 2001) or by establishing new links with modern markets.

Market participation: In this study, market participation means that the producers are integrated in the market and are taking part in influencing aspects of the market chain, the minimum of which would be actual selling of their products. Ideally, a market link precedes market participation, implying that market participation is not a necessary condition for the existence of a market linkage. However, the effectiveness of RPOs in linking farmers to markets cannot be determined without reference to market participation. Hence, market participation may be considered as an outcome of effectiveness of RPOs in linking their members to markets.

Organisational and management structures: These are structural arrangements put in place to control performance and achievement of goals. They include social structures (such as leadership committees) and their functions, processes as well as rules and guidelines that shape member and business behaviour.

Effectiveness of RPOs: Effectiveness of an organisation may be defined in various ways (see section 3.2). In general, effectiveness refers to an absolute level such as outcome attainment. Measurement of organisational effectiveness goes beyond

financial performance to include accomplishments of goals for the different constituents (Ezell, 2005). In this study, effectiveness of an RPO will be defined as the ability of an organisation to achieve its collective marketing goals.

RPO performance: Organisational performance is commonly used interchangeably with effectiveness, although the two constructs are different. Performance refers to the actual output of an organisation or a firm as measured against the intended outputs. Its measurement normally focuses on financial measures (Richard et al., 2009). Within the confines of this study, performance is perceived as a subset of effectiveness (see sections 3.3.1 for details).

Management capacity: In this study, management capacity refers to the ability of the leader(s) to accountably exercise discretion over day-to-day operations of the RPO. It involves decision-making, resource mobilization and management, communication and coordination as well as conflict resolution. In this study, management capacity will be measured using selected indicators that include education level, formal training in management related fields, experience in managing businesses and collective initiatives, control mechanisms and professional management (see details in section 4.1.3).

1.6 Organisation of thesis

The rest of the thesis is organised as follows: Chapter two presents an overview of the importance of RPOs in rural development, poverty alleviation and smallholder production and marketing. Chapter three presents the theoretical and empirical literature related to models of measuring organisational effectiveness. A boundary of organisational effectiveness is also set by delineating it from related terminologies. The chapter also presents a justification for using the goals model in measuring effectiveness of RPOs. Measurement criteria for this study are also presented in this chapter. Chapter four presents the conceptual framework for the study and a literature review of factors that determine effectiveness of organisations, highlighting variables used in analysing effectiveness of RPOs.

The methods and procedures used in the study, including data and their sources, sampling and collection methods are presented in chapter five. This chapter also describes the variables used in the analysis, presents their descriptive statistics and discusses analytical procedures. Chapter six presents the major results of the study related to effectiveness of RPOs and factors that influence it. The study results and discussion thereof address effectiveness at both the RPO and member levels. Chapter seven explores the benefits that accrue to members of RPOs and analyses how these benefits are distributed among members across gender and socio-economic status. Chapter eight presents a summary of the study and highlights major findings and limitations of the study. Areas for policy intervention and suggestions for further research are also presented.

CHAPTER 2

THE IMPORTANCE OF RURAL PRODUCER ORGANISATIONS IN RURAL DEVELOPMENT, POVERTY ALLEVIATION AND SMALLHOLDER AGRICULTURAL MARKETING

This chapter serves to broaden our understanding of the importance of RPOs in rural development, poverty alleviation and smallholder agricultural marketing. Different forms of RPOs are presented and their functions and levels of operation discussed. The role of second-tier marketing RPOs in the market chain is briefly reviewed. A brief overview of the performance of RPOs in developing countries and how RPO benefits are distributed by gender is also presented. The last part of the chapter presents a review of the organisation and functioning of RPOs in Uganda and the legal and policy framework within which they operate.

2.1 Understanding RPOs: definition, functions and levels of operation

2.1.1 Definition of RPOs

Hussein (2001:6) defines RPOs as “groups of rural producers coming together to found organisations, based on the principle of free membership, to pursue specific common interests of their members...”. These organisations undertake roles in developing technical and economic activities that benefit their members and maintain relations with partners that operate in their economic and institutional environment. Rondot and Collion (2001: 2) simplify this definition by describing RPOs as “member organisations created by farmers (or other groups) to provide services”. RPOs can be identified by common characteristics. According to the World Bank (1995:2), RPOs “are private sector organisations, operate within a market-based economy, are freely established and have voluntary membership. They are legally owned and controlled by persons who benefit from the services provided. They have partners as the dominant stakeholder group, and are based on the concept that benefits accrue to members in accordance with their participation in the organisation”. For purposes of this research, RPOs will be generally termed as membership organisations, which are legally owned and controlled by members that pursue common interests

beneficial to members. The common interest in this study is collective marketing of member's produce.

From the literature, two broad categories of RPOs come out, namely, business (economic or commodity) and community-oriented organisations (COs), sometimes known as self-help groups (Bijman, 2006). Business organisations focus on business planning and development of specific products. They are involved in income generating activities such as production, processing and marketing. They also provide additional services to their members, such as extension advice, market information, inputs and credit. Examples include market-oriented organisations such as cooperatives, producer associations and unions (Bernard *et al.*, 2008; Rondot and Collion, 2001).

COs, on the other hand, are concerned with the provision of club or public goods such as collective cultivation, maintenance of irrigation systems or cereal banks, extension delivery, environment management and other social activities that improve quality of life. COs tend to support local development processes (Bernard *et al.*, 2008; Bijman, 2006; Rondot and Collion, 2001). In places where decentralization has not yet taken root, COs provide a wide range of public and social services, filling the government gap.

2.1.2 Functions and levels of organisation

The levels of organisation and representation of RPOs vary and are unique to the local context. RPOs may exist only at local levels (village and inter-village) or may be represented up to regional (medium level) and national levels (as unions or federations). However, the functions and level of organisation are closely related. Traditional forms of organisation exist in many rural societies performing bonding functions within groups and these tend to be limited to local levels. Formal organisations, on the other hand, are often formed to establish links between the organisation and the outside world, thus performing a bridging function (Rondot and Collion, 2001). However, in the context of developing countries, RPOs include elements of both traditional and formal organisations. Thus, they remain rooted in

traditional customs but the notion of organising for purposes of being economically effective tends to abound.

A review of literature indicates that RPOs provide multiple functions. Rondot and Collion (2001) have categorized these functions into three, namely, advocacy/policy, economic and technical, and local development. In practice, many RPOs perform all the three functions to varying extents. The policy advocacy function is best played by higher tier RPOs (associations, unions or federations) at regional and national levels (Rondot and Collion, 2001; Ton and Jansen, 2007). These RPOs represent the interests of their members by engaging governments, the private sector and donors through lobbying and negotiation. Examples of issues over which they can exert influence may include (but not limited to) local and international trade, import-export and fiscal policies, and land reform (Rondot and Collion, 2001).

Economic and technical functions include provision of information, facilitating access to input and output markets, credit, support for processing and storage. These functions are effectively performed mainly by the local level RPOs (Rondot and Collion, 2001; Stockbridge *et al.*, 2003; Ton and Jansen, 2007). These include cooperatives, producer associations, unions and other economic groups.

In the context of developing countries and, in particular, sub-Saharan Africa (SSA), RPOs play multiple roles. For example, RPOs classified as business or economic organisations, such as marketing cooperatives and associations, still integrate social and political functions. Economic functions usually focus on strengthening the economic position of farmers through collective bargaining and marketing. Political functions may entail issues of representation in local or central government and other political structures. By design, RPOs, themselves being social communities, have a social responsibility over the area from which they draw members. In addition, the social processes within RPO localities largely influence the internal RPO processes, member behaviour and inter-personal relationships and, thus, shape member commitment and solidarity (Bijman, 2006).

2.2 RPOs and rural development in Africa

The belief that RPOs can foster development is based on the global successful experiences of agricultural cooperatives. The agricultural cooperative sector has become a powerful economic force, particularly in the developed world. In the United States, cooperative businesses are a major player in rural America where only 1.6 percent of cooperatives do 57 percent of businesses. In Canada, cooperatives handle 40 percent of farm cash receipts plus heavy involvement in agri-food processing. The Japanese cooperatives have 91 percent of farmers in membership, including shouldering an entire system of marketing, supply, credit and insurance for the entire rural economy. Other significant successes with agricultural cooperatives have been recorded in Brazil, South Korea, China, New Zealand, Australia and Europe, where cooperatives have become economic forces handling international businesses (Birchall, 2004). In addition, in Latin America there are successful examples such as the National Federation of Cooperatives in Nicaragua (Manchon and Macleod, 2010), the *Federación de Cooperativas Vitivinícolas Argentinas* (FeCoVitA) in Argentina (Corby, 2010); Coocafé and the National Council of Cooperatives of Costa Rica (Ronchi, 2002).

Bilateral donors, international agencies as well as governments believe that RPOs, in the form of cooperatives, have a significant role to play in enhancing the achievement of millennium development goals. The United Nations (UN) and its specialist agencies, such as the International Labour Organisation (ILO) and Food and the Agriculture Organisation (FAO), have worked with cooperatives for many years and recognize the role cooperatives can play with respect to provision of infrastructure, farm inputs, marketing, education and poverty alleviation (Birchall, 2003).

With respect to Africa, RPOs have potential to foster development in four major ways: creation of employment, poverty reduction, extending social protection and representation of interests of the majority poor who have no voice (Develtere *et al.*, 2008).

2.2.1 RPOs and employment

A study by Wanyama *et al.* (2008), on cooperatives in 11 African countries, reveals that cooperatives have created employment and positively impacted on development. Cooperatives have employed people that directly work in the primary and secondary cooperative as well as their support institutions, such as cooperative colleges, ministries and departments. They have also offered self-employment to members who participate in their economic activities. Through spill-over effects, employment has also been extended to non-members who do businesses with the cooperatives. With the introduction of savings and credit cooperatives (SACCOs) as sources of productive resources in Africa, the cooperative potential for creating employment and increasing household incomes and facilitating financial flow has broadened.

Mrema (2008) gives an example of Kibinge Coffee Farmers' Association in Uganda, whose members have been able to employ labour and pay wages recommended by Utz Kapeh code (an International coffee certification agency). The employees are currently earning relatively higher wages, which contribute to poverty alleviation in the community. On the other hand, farmers are getting 30-40 percent over the prices they used to get, increasing members' purchasing power and bringing more money into the community.

2.2.2 RPOs and poverty alleviation

Because marketing RPOs are essentially income generating organisations, they are believed to make substantial contributions towards poverty alleviation. They are also expected to benefit the poor because they have free membership and do not require huge capital investments. Furthermore, because cooperatives provide surpluses to the members in the form of a patronage refund, they are likely to ensure equitable growth. However, Birchall (2003) argues that the extent to which cooperatives and other RPOs can reduce poverty depends on the degree to which their principles, values and norms are practised.

Although there are no substantive studies that provide evidence about the extent to which RPOs have reduced poverty in Africa, it is widely acknowledged that RPOs

change the institutional setting in which people live and work to the advantage of those with limited resources at their disposal. Most RPOs in Africa draw their membership from the rural poor. RPOs pool risks and enhance members' risk-managing capacities by bringing together their capital and capacities in synergy. These benefits accrue directly to members but also non-members in the community benefit indirectly in various ways, such as affordable interest rates, higher wages and better infrastructure (Delvetere *et al.*, 2008). Kaganzi *et al.* (2009) illustrate this with an example of Nyabyumba Seed Potato Producer Association in Uganda, where members mobilised savings and, through internal loaning mechanisms, accumulated capital that enabled them to start a SACCO. They were also able to finance the RPO activities and develop lucrative market relations with a fast food restaurant (Nandos) in Kampala. Not only have the RPO members' livelihoods improved, but the entire community is benefiting in various ways.

With respect to investment in human capital, significant income generated from the sales of produce or funds borrowed from the SACCOs affiliated to RPOs are used to pay children's school fees. Thus, members of RPOs fight poverty by investing in their children's education, thereby taking care of future employment. Examples of these investments are abundant in communities and have been documented for Uganda, Kenya, Ghana, Nigeria and Cape Verde (Mrema, 2007, Wanyama *et al.*, 2008). In addition, RPOs improve literacy of members through training and information dissemination. This helps them to understand their rights and obligations in the RPO and the wider community. It is also believed that, if planned well, RPOs can lead to empowerment of women and marginalized groups.

2.2.3 RPOs and extension of social protection

Social protection can be defined as "all the safety mechanisms the social environment provides for an individual or communities in case of hazard or loss of income" (Develtere *et al.*, 2008:77). Social protection in Africa is low due to the small tax base, prevalence of the informal economy and institutional weaknesses. These circumstances hinder the creation or extension of formal centrally organised and state-led social protection systems. RPOs do provide alternative options either by providing new frameworks or reinforcing traditional mutual support mechanisms that

may be event or hazard related. These mechanisms may be informal and similar to those upheld by the wider community or may be formal such as savings schemes, which members fall back to in case of emergencies. In Uganda, for example, members of RPOs put aside money to help each other in case of death, fire, sickness or provide communal labour in case a member is sick or old aged or has an unexpected bumper harvest (Mrema, 2008).

2.2.4 RPOs and representation of poor

The ability of RPOs to represent voices of the poor has been contested. This is because the cooperative sector in many countries has not been able to find alternatives to the federations and apex bodies that represented the sector in the post-colonial era. However, studies indicate that there are many federations in some countries (such as Rwanda, Senegal and Kenya) that have been successful (Develtere *et al.*, 2008). They have not only been able to earn a significant economic value for affiliated RPOs but have also aggregated the interests of their members and lobbied government successfully. A case is given of the Rwandan Union of rice growers that was able to secure high prices for their paddy rice (Develtere *et al.*, 2008). Apart from the localized successes, in general, interest aggregation by RPOs remains weak and the voice remains timid and is hardly heard.

2.3 The intersect between RPOs, rural poverty alleviation and agriculture

The importance of RPOs in rural development can be looked at under two inter-linked premises; much of the poverty in developing countries is rural; the majority of the poor are smallholder producers that live in rural areas and derive their livelihoods from agriculture (Bresciani and Valdes, 2007; World Bank, 2007; World Bank, 2011). Sub-Saharan Africa constitutes 68 percent of the global poverty with an estimated 47.5 percent of poor people (875.1 million) living on less than \$1.25 per day. In comparison, an estimated 22.4 percent (1,289 million people), in the world, live on less than \$1.25 a day (World Bank, 2012). Agriculture remains a key sector for alleviating poverty in the rural areas of most of sub-Saharan Africa, a fact that has been accepted by most development stakeholders (DFID, 2005; OECD, 2009; World Bank, 2007).

Developing the rural areas, under the highlighted circumstances, is synonymous to rural poverty alleviation. However, given the importance of agriculture in the rural areas, the fight against poverty cannot be won without developing the agricultural sector. For sub-Saharan Africa (SSA), improving agricultural performance implies focusing on the predominant smallholder farmers and improving their marketing situation (Onumah *et al.*, 2007; World Bank, 2007). Emphasizing the importance of smallholders in the agricultural sector and in poverty alleviation, Delgado (1999:165) observes that “smallholder agriculture is simply too important for employment, human welfare, and political stability in sub-Saharan Africa to be either ignored or treated as just another small adjusting sector of market economy”.

For the smallholder sector to develop, it is essential for smallholder farmers to produce for the market. However, smallholders experience numerous constraints when attempting to participate in markets. These include low productivity, highly diversified production, variable and sub-standard quality, lack of market information, high transaction costs, missing or unreliable markets, few links with buyers in the marketing chain, poor infrastructure and communication (Bienabe and Sautier, 2005; Delgado, 1999; Hazell, 2005). Many of these constraints may not be overcome unless smallholder farmers organise themselves into groups such as RPOs. For example, collective action can help overcome problems of diseconomies of scale associated with smallholder production and marketing. As such, collective action in the form of RPOs is considered important in enabling farmers achieve competitiveness in the market (World Bank, 2007). Beyond market competitiveness, RPOs (and particularly cooperatives) are increasingly seen as a pre-condition for a successful drive against poverty and exclusion, to a greater extent in Africa (Birchall, 2003; Birchall, 2004; Wanyama *et al.*, 2008).

2.4 The role of second-tier RPOs in smallholder agricultural marketing

As market-support institutions, second-tier RPOs perform two broad functions, namely, horizontal coordination (addressing missing market) and vertical integration (adjusting activities to integrate in the market chain). In horizontal coordination, RPOs help producers to bulk their surplus output, reduce physical and transaction costs,

and enable bargaining for better market terms with buyers. Thus, RPOs increase market margins and guarantee a market (Bernard and Spielman, 2009; Cook, 1995).

In vertical integration, RPOs lead to improved access to information and services such as inputs, credit, market outlets and extension advice (Shepherd, 2007). Where markets are thin, RPOs reduce search costs. This does not only encourage other players to invest in the market chain but also helps to connect farmers with local, regional or national institutions (UNDP, 2012). Furthermore, in buyer-driven market linkage models, RPOs create countervailing power, which helps to balance the power of buyers (Penrose-Buckley, 2007). This is very important for Ugandan smallholder farmers where examples of buyer-driven models are diverse. Examples include the multi-national coffee exporters (such as NKG-Ibero and Savanna) and numerous horticultural export firms.

On the side of the trader/buyer, provision of services such as credit and inputs through RPOs strengthens monitoring and restrains non-compliance of contracts. It also helps reduce the physical and transaction costs related to supply of inputs, collection and delivery of produce, provision of extension advice and contract negotiation (Shepherd, 2007). Furthermore, RPOs lead to effective management, decision-making and accountability, and increased participation in the marketing chain (Bingen *et al.*, 2003; Hussein, 2001).

In the Ugandan context, where second-tier RPOs are structurally and procedurally linked to SACCOs, RPOs serve as an indispensable source of credit for smallholder farmers that may either not have access to or cannot afford the alternative options available elsewhere.

2.5 RPO performance in developing countries

The functionality of RPOs in developing countries dates back to the cooperative movement. Unlike in the developed world, where significant successes with agricultural cooperatives have been achieved, the majority of cooperatives in the developing world did not bring significant benefits to the rural poor. The better-off people took advantage of the services and facilities offered by government through

cooperatives, poorer members would be illegible for services such as loans and, in the majority of cases, women were not included since they targeted the household heads (Korten, 1980). In addition, the cooperative leaders were corrupt and abused their power (Andrew, 1976). Yet members could not hold them accountable because either they did not have enough capacity or were not fully aware of their rights and obligations (Opio-Odongo, 1980). Most analysts have attributed the failure of cooperatives to government interference (Bigirwa, 2005; Hyden, 1974; Opio-Odongo, 1980; Wan *et al.*, 1988), which was aimed at promoting government policies. As a result, cooperatives were never left to function as voluntary creations of individuals to increase their collective marketing power (Andrew, 1976; Korten, 1980; Zesch, 1989).

With the introduction and implementation of structural adjustment policies, the role of the state changed from intervention to regulation in most national economies (Ton and Bijman, 2006). This has caused the RPOs, which were formerly protected, to be exposed to competitive international market forces. In recent decades, the economic environment in which agricultural producers and their RPOs operate has undergone changes. Notable among these are the increased vertical coordination in supply chains, spot markets being replaced by contractual exchanges and more attention being paid to food quality and safety (Hazell, 2005; Louw *et al.*, 2008; Ton and Bijman, 2006). Thus, agrifood product markets are changing from being producer-driven to becoming buyer-driven or consumer oriented. These changes threaten to edge out the smallholder producer's participation in new market opportunities (Kirsten and Sartorius, 2002) or even worsen poverty levels through marginalization of smallholders and the rural poor (Cavatassi *et al.*, 2009). With increased instability and competition, smallholder producers must enhance their competitiveness to take advantage of economies of scale. This is the reason many public and private development stakeholders are facilitating the integration of smallholder producers into supply chains through formation of RPOs.

The performance of these RPOs has brought mixed reactions among analysts. Some think that RPOs have failed to address Africa's development challenges and have performed poorly, considering the numerous malfunctioning cooperatives (Birchall, 2004; Develtere *et al.*, 2008). Others think that RPOs fit well in the communal African

cultures and, because they combine economic enterprises and concern for community, they have helped many people out of poverty and created wealth in their communities (Wanyama *et al.*, 2008).

To date, many issues constrain co-operatives in the East African region. These issues include governance, inadequate human resources, weak regulations and supervision, limited products and services, low marketing and innovation, and poor image. In addition, issues of weak internal capacity are still at large and not yet resolved. The wider community has not been able to hold leaders accountable despite their lack of integrity (Coulter, 2006). There is inadequate information flow among members and between members and the management, which limits member participation in decision-making. The village elites and well-to-do, who may not necessarily be active farmers, continue to dominate the cooperatives.

2.6 Gendered distribution of RPO benefits and implications for reorganising collective marketing through RPOs

Studies indicate that RPOs can enable women to break through the community safety concerns or socio-cultural norms and access markets (Penrose-Buckley, 2007). According to Hilhorst and Wennink (2010), women's participation in RPOs has clear benefits in terms of increased assets and income, and gains in control over decision-making processes that affect their lives.

A study by Lodhia (2009) on gender inequality in cooperatives reveals that, in Asia and Pacific countries, 72 percent of men and 28 percent women received loans and credit from cooperatives. Likewise, inputs were received by 80 percent of men and 20 percent of women. Skills improvement training was also received by a smaller percentage of women across countries. Lyon *et al.* (2010) find that in Mesoamerica, within the 'feminization of agriculture' arrangements, women were able to benefit from participation in organic coffee organisations, mostly in localities where there was a lot of male out-migration. Rubin *et al.* (2009) find that women are likely to benefit from association membership when they have equal opportunity to participate in leadership and to set association priorities and policies.

In terms of mitigating for the inequitable distribution of benefits, particularly in mixed RPOs, analysts recommend that market-oriented interventions that seek to enhance women's market access must address the constraining gender norms if they want to be more effective (Kaaria *et al.*, 2008; Quisumbing and Pandolfelli, 2009; Rubin *et al.*, 2009). In cases where gender inequalities are deeply entrenched and socio-cultural norms prohibitive, women-only RPOs, which deal with specific needs of disadvantaged women, may be a better way to improve their status and promote their motivation (Hilhorst and Wennink, 2010; Quisumbing and Pandolfelli, 2009). Carr and Hartl (2008) also find that when rural women form their own RPOs, they have better access to credit, technology, training and markets, and are more able to voice their needs as well as increase their bargaining power within the value chain. In contrast, Barham and Chitemi (2008) find that women's RPOs are less successful than men's regarding searching for and accessing new output markets for their products as well as pursuing new products.

2.7 RPOs in Uganda: experiences to date

This sub-section presents a brief historic review of the cooperative movement, and discusses the new marketing models of RPOs and how collective marketing is organised in Uganda.

2.7.1 Brief overview of the cooperative movement in Uganda

In Uganda, marketing RPOs were initiated during the colonial era through the cooperative movement. After independence (1962), cooperatives were promoted as a means of advancing socio-economic growth of the nation although only few export crops (coffee and cotton) were mainly marketed. However, the cooperative movement later failed due to government interference (Bigirwa, 2005; Opio-Odongo, 1980), elite capture, corruption and mismanagement (Najjingo and Seguya, 2004).

Marketing RPOs were reintroduced in the 1990s to bridge the existing 'marketing gap'. In reviving the RPOs, government withdrew from marketing activities, which included price regulation, quality assurance, and provision of trade finance and production credit (Mwesigye, 2006). The cash crop market had been built around

marketing boards, with cooperatives acting as collection agents. The withdrawal of government from marketing created a vacuum in agricultural marketing that was expected to be filled by the private sector, NGOs, and producer organisations. In an effort to bridge this marketing gap, the government of Uganda, through the Plan for Modernisation of Agriculture, stressed the importance of forming a hierarchy of farmer associations as a framework for the commercialization of smallholder production. The establishment of RPOs has been facilitated by different development stakeholders, including government, NGOs, private sector and the donor community.

2.7.2 Organisation of new models of marketing RPOs

In terms of organisation, second-tier marketing RPOs in Uganda can be broadly categorized into two major types, namely, area cooperative enterprises (ACEs) and farmer associations. The former are constituted by a membership of primary cooperative societies while the latter may comprise individuals only, groups only, or a mixture of both groups and individuals. In both cases, farmers have to pay some form of fees or purchase shares to become members. Most marketing RPOs are affiliated to a SACCO, where all monetary transactions for the RPO are handled. To facilitate financial transactions, RPO members (individuals and groups) are required to open accounts in the SACCO to which the RPO is affiliated.

All RPOs undertake multiple activities, including provision of or mobilising access to agricultural extension services, provision of market information, and the processing and transportation of produce, although the magnitude of involvement in each activity varies between RPOs. With respect to organisation of produce marketing, members (either groups or individuals) deliver their produce to the second-tier RPOs, which sell the produce on their behalf, deducting a commission on the sale to finance their operations. Figure 1 is a schematic representation of how second-tier marketing RPOs are organised.

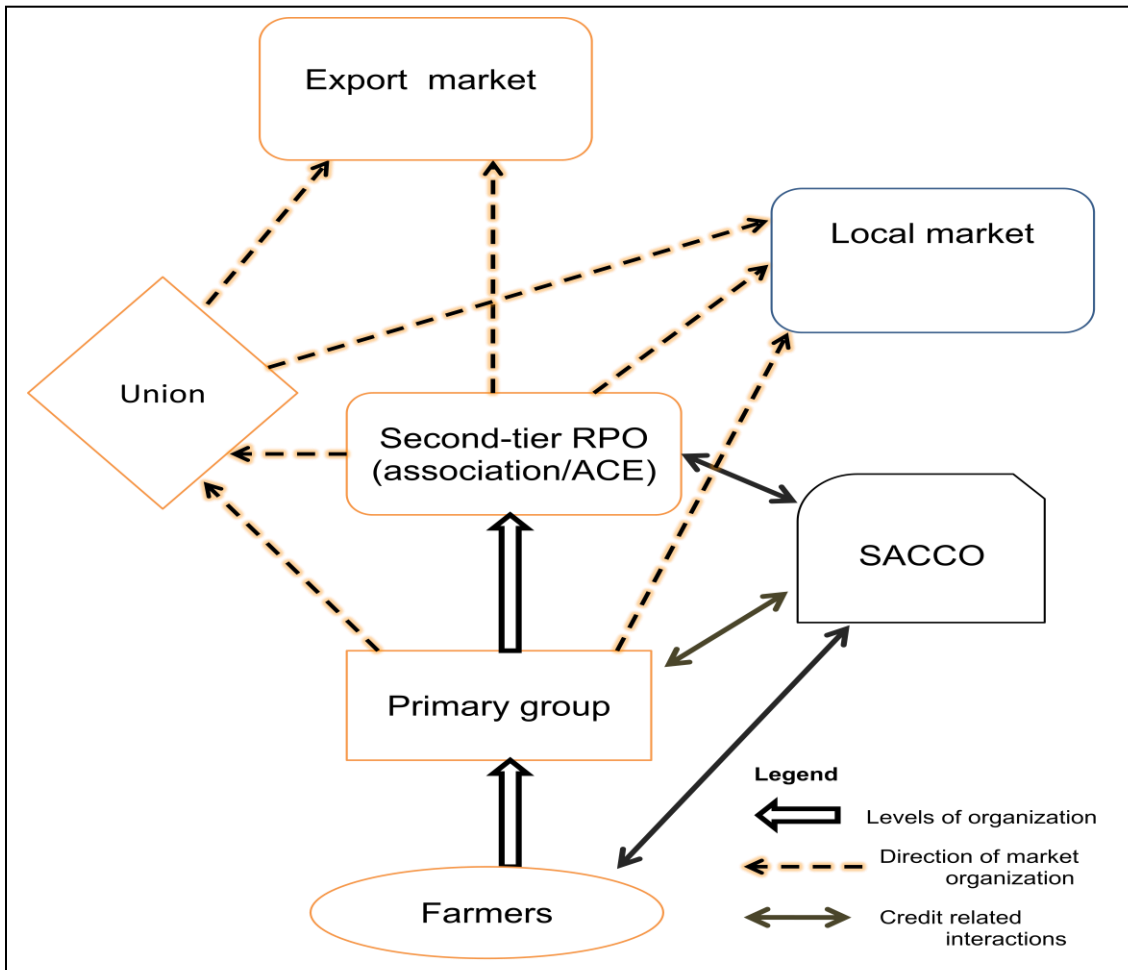


Figure 1: Organisation of RPOs for collective marketing in Uganda

Source: Adapted from Nana and Korugyendo (2010a)

However, the business conduct of RPOs varies. Some RPOs (most associations) play a brokerage role, with members retaining ownership of produce throughout the transaction. In that case, the RPO charges for services provided in the process of value addition and marketing. Other RPOs purchase products from members upon delivery, taking ownership of the products. Yet others may choose to make partial payments to members that are financially constrained (so as to secure products) and settle balances at the end of the transaction. The option selected by the RPO, to a large extent, depends on the financial resources available, although there are traces of solidarity. Appendix 8 provides a comparison of how different service providers organise RPOs for collective marketing.

The RPOs may sell produce to the local markets (in the case of bananas and maize), to unions where they are affiliated (in the case of coffee) or to the export market (for

premium coffee and under fair trade arrangements). Some of the RPOs also sell maize to the neighbouring countries, mainly Sudan and Kenya.

SACCOs are relatively new initiatives that were introduced by the UCA in the cooperative structure, to provide financial services to rural farmers. UCA is a private national umbrella organisation for cooperatives that is in the forefront of reviving, restructuring and testing new cooperative models. All SACCOs operate as public institutions, serving the wider community but have preferential benefits for members, such as reduced interest rates. However, access to finances is based on the amount of savings one has with the SACCO. Individual farmers, primary groups and second-tier RPOs have access to the finances in the SACCO as long as they satisfy the stipulated conditions.

On the other hand, the SACCO pools funds from membership and subscription fees, and shares. Some RPOs get sponsorships from well wishers such as donor organisations or service providers such as NGOs while others borrow money from the Microfinance Support Centre (MSC). MSC is a government-owned company that was incorporated in 2001 to provide rural financial services to SACCOs, unions, microfinance institutions (MFIs) and small and medium enterprises (SMEs).

In terms of member representation, the top executive at the second-tier level is constituted by representatives from the member groups. In cases where the executive is large, all groups may be represented but when the size of the executive is limiting, a few representatives are opted for, implying that some groups may not be adequately represented in decision-making. However, the majority of RPOs have additional sub-committees, which offer additional leadership opportunities. The annual general meetings at second-tier level are attended by representatives selected from groups as opposed to all-member meetings at lower levels.

2.7.3 Legislative and policy framework governing RPOs in Uganda

Since the reintroduction of RPOs in the early 2000s, the government of Uganda has been facilitating RPO integration in its development strategies and policies (section 1.1.3). There has also been a consultative participatory development of a cooperative

development policy, amendment of cooperative laws and regulations, and reform of the warehouse receipt system and commodity exchange. The area cooperative approach is also being promoted to provide marketing support services, including finance to rural farmers (Nannyonjo, 2010).

The former regulatory framework (The Cooperative Societies Act, Cap. 112-Laws of Uganda and The Cooperative Laws Regulations 1992) was found inadequate in various ways and reforms were recommended that could enable cooperatives to function in the best interest of members, serve a wider citizenry and improve the performance of cooperatives (Nannyonjo, 2013; ULRC, 2006). Among other interventions, a National Cooperative Policy (NCP) 2011 has been announced, which outlines strategies to strengthen the cooperative movement so that it can play a leading role in poverty eradication, employment creation and economic transformation of the country (MTIC, 2011). This policy will be implemented through a public–private partnership arrangement (Nannyonjo, 2013). A National Cooperative Development Plan has also been developed to facilitate the implementation of the policy. MTIC is also amending the The Cooperative Societies Act, Cap. 112-Laws of Uganda and The Cooperative Laws Regulations 1992 to support the operationalization of the NCP (MTIC, 2011).

In Uganda, all cooperatives are registered under the Cooperative Societies Act, Cap. 112 (1991) and Cooperative Societies Regulations of 1992. The two legislations are administered by the Registrar of Cooperatives in the MTIC. Other forms of RPOs do not have such legal and policy structures, although they plan to register as ACEs in the long term. By the provisions of the policy instruments, farmer associations must qualify to be registered as cooperatives.

Whereas the policy and regulatory frameworks are in place, the government is facing challenges in delivering on its promises of (1) increasing capacity of RPOs in management and entrepreneurship; (2) expanding the network of rural market infrastructure and (3) improving capacity for regulation and enforcement in safety standards and quality assurance (MAAIF, 2010). Among the hurdles, are inadequate skilled human resources for supervision and delivery of technical services, insufficient

financial budgetary allocations to the MTIC and UCA, and conflict of interest or misunderstanding of the role of MTIC by UCA (Nannyonjo, 2010).

2.8 Summary

In this chapter, a characterization of RPOs was presented, specifying definition, categories of RPOs, their functions and levels of operation. An overview of the inter-relationship between rural poverty alleviation and agriculture was presented. The importance of RPOs in rural development was discussed with specific focus on employment, poverty alleviation, social protection and representation of the poor. A brief overview of the performance of RPOs in developing countries, and how RPO benefits are distributed by gender, was also presented. A sub-section that highlights the evolution of RPOs in Uganda, including new models of organisation and the legal framework under which RPOs operate was included.

CHAPTER 3

DEFINING AND MEASURING ORGANISATIONAL EFFECTIVENESS

This chapter introduces perspectives on evaluating organisational effectiveness. The chapter discusses the theoretical explanations and paradigm shifts related to measuring effectiveness of organisations. Organisational effectiveness is defined and delineated from related terms in the literature. Theoretical models of measuring organisational effectiveness, their corresponding assumptions and limitations are presented. A model that is best suited to measure effectiveness of RPOs in the Ugandan context and measurement indicators are described.

3.1 Organisational effectiveness as a concept

The concept of organisational effectiveness (OE) has occupied centre stage of the organisational theory for many decades (Baruch and Ramalho, 2006; Cameron, 2005; Rojas, 2000). OE as a concept is widely known for its ambiguity. The search to define OE and its suitable measures has baffled scholars for long (Selden and Sowa, 2004). Although extensive research has been done, no concrete theory has been generated, no constructs have been articulated and no universally accepted definition of effectiveness has been generated (Rodsutti and Swierczek, 2002; Roy and Dugal, 2005; Quinn and Rohrbaugh, 1981). Some scholars have suggested that it may be more worthwhile to develop frameworks that measure effectiveness rather than developing a theory of effectiveness (Cameron and Whetten, 1983). Other analysts have argued that effectiveness should exist as a conceptually as opposed to an empirically relevant concept (Hannan and Freeman, 1977).

The ambiguity surrounding the concept seems to stem from the fact that effectiveness statements have tended to be evaluative and normative rather than descriptive. That is, they do not explain how the organisation is performing but rather how well is it performing or how much better it should perform (Connolly; 1980). In addition, evaluation of effectiveness is based on criteria which are mostly subjective, largely based on what individuals want to measure, which may not necessarily be the correct representation of effectiveness (Cameron, 1980; Cameron and Whetten, 1983). To sum it up, Cameron (2005:9) explains that the effectiveness problem is an

assessment issue rather than theoretical, that is, the difficulty lies in “how to identify the appropriate indicators, standards, and measures.”

However, in spite of its elusive nature, OE is considered a critical concept in organisational theory (Baruch and Ramalho, 2006; Cameron, 2005; Rojas, 2000). This is because (1) OE lies at the centre of all models and theories of organisation; (2) OE is the dominant and ultimate dependent variable in organisational research used to discuss performance of organisations (Cameron, 2005); and (3) individuals are often required to make judgements about the effectiveness of organisations (Cameron and Whitten, 1996). Because of the difficulty in defining and measuring OE, particularly when perceived as a construct, effectiveness was gradually replaced by single indicators of outcomes such as financial ratios, productivity, share price or customer loyalty (Cameron and Whitten, 1996). However, there has been renewed interest in OE research and a willingness to solve the assessment issues by identifying appropriate indicators, standards and measures (Cameron, 2005).

3.2 Defining organisational effectiveness

OE has been defined differently by different people, the overriding criteria being the models used for evaluation. Kirchoff (1977:347) defines effectiveness, based on the goals model, as the “measurement of organisation performance relative to goals”. Yutchman and Seashore (1967:898), using the systems resource approach, define organisational effectiveness as “the ability of the organisation...to exploit its environment in the acquisition of scarce and valued resources”. Gaertner and Ramnarayan (1983:97) use a multiple constituency approach to define OE as “the ability of an organisation to account successfully for its outputs and operations to its various internal and external constituents”. Roy and Dugal (2005:252), combining goals, systems resource and multiple constituency models, define OE as “the net satisfaction of all constituents in the process of gathering and transforming inputs into output in an efficient manner”. Ostroff and Schumidt (1993) assert that OE refers to an absolute level such as input acquisition or outcome attainment. Pennings and Goodman (1977:167) argue that organisations are effective if “relevant constraints can be satisfied and if organisational results approximate or

exceed a set of referents for multiple goals”. Constraints refer to conditions, policies or procedures set in advance to guide decision-making and behaviour. Referents, on the other hand, refer to set standards. OE has also been defined as “the extent to which an organisation, by the use of certain resources, fulfils its objectives without depleting its resources and without placing undue strain on its members and/or society” (Thibodeaux and Favilla, 1996:21).

Other analysts define OE by what constitutes its measurement. Richard *et al.* (2009) explains that OE is a broader concept that captures organisational performance and other internal performance outcomes associated with efficient or effective operations and other external measures broader than those associated with economic valuation such as corporate social responsibility. Rogers and Wright (1998) assert that measurement of OE goes beyond financial performance measures to include an account of accomplishments of goals and objectives held by multiple stakeholders. In this case, OE is “a function of the degree to which the subunits meet their task requirements as well as the extent to which their activities are coordinated” (Pennings and Goodman, 1977:156). With a collective action lens, Pandolfelli *et al.* (2008) define effectiveness of collective action as the ability of RPOs to meet their immediate purposes and the process through which the RPO works to meet the purposes.

An analysis of the above definitions reveals common aspects that do not only define OE but also inform the variables that could be used to analyse OE. These include resource mobilization and management, accountability to constituents, achievement of goals, working within set standards, rules and procedures and issues of sustainability/survival of organisation. These aspects can be grouped into three categories; the ‘what’ (goals/activities), ‘who’ (constituents) and ‘how’ (processes, in this case, mobilisation and management of resources, accountability, rules, procedures and standards). However, in practice, goals and processes influence each other, i.e. the goal dictates the processes used while processes determine the extent goals can be achieved. This means that, if one is interested in measuring goals, processes could be explanatory variables. Therefore, for purposes of this study, effectiveness of a RPO has been defined as the ability of an organisation to

achieve its collective marketing goal of linking members to output markets. The members of RPOs are the stakeholders/constituents while processes are treated as explanatory variables. Detailed explanations are in subsequent sections.

3.3 Delineating organisational effectiveness from related concepts

Common terminologies used in the organisational effectiveness research include organisational performance, efficiency, productivity, competitiveness and sustainability. Each of these is briefly described in the following sub-sections.

3.3.1 Organisational performance

In much of the organisational research literature, organisational performance and OE are used interchangeably (Henri, 2004). However, for purposes of harmony in the organisational research field, some analysts have tried to differentiate the two concepts. In general terms, organisational performance refers to the actual output of an organisation or a firm as measured against the intended outputs. In profit making organisations, performance is conceptually viewed as a comparison of the value created by a firm with the value owners expected to receive from the firm (Rogers and Wright, 1998; Venkatraman and Ramanujam, 1986). According to Richard *et al.* (2009), organisational performance includes three aspects of firm outcomes, namely, financial performance, product market performance and shareholder return. Thus organisational performance focuses on the financial measures. Venkatraman and Ramanujam (1986) postulate a model that depicts OE as an overarching domain that is itself constituted by financial and business performance domains. They thus illustrate that organisational performance is “a subset of the overall concept of OE” (Venkatraman and Ramanujam, 1986:803). In agreement, Richard *et al.* (2009) view organisational performance as one of the indicators of organisational effectiveness.

3.3.2 Efficiency

Efficiency and effectiveness are different in the sense that, whereas effectiveness refers to levels of input acquisition or output disposal, efficiency adjusts the levels in proportion to cost or resource utilization (Pennings and Goodman, 1983). Thus, efficiency refers to the input-output ratio or state of resource usage in achieving

objectives (Ostroff and Schmitt, 1993; Rogers and Wright, 1998). In the marketing RPO sense, efficiency means the best way (alternative) of organising a transaction that generates the best outcome for the people involved (Bijman, 2002).

In measuring efficiency, a distinction is made between allocative and technical efficiency. Technical efficiency addresses the relation between inputs and outputs, that is, 'best practice'. However, to ensure that technical efficiency decisions make economic sense, they are justified by allocative efficiency which introduces costs and benefits. Thus, allocative efficiency indicates the link between the optimal combination of inputs taking into account costs and benefits and the output achieved (Mandl *et al.*, 2008).

3.3.3 Productivity

Productivity is defined as the ratio of outputs produced to inputs used. It differs from efficiency in the sense that the efficiency concept indicates feasible output levels given the scale of operations. For example, the greater the output for a specific input or the lower the input for a specific output, the more efficient the activity is (Mandl *et al.*, 2008). Productivity is commonly measured in terms of unit cost or cost effectiveness (Packard, 2010) or the efficiency with which resources are utilized.

3.3.4 Competitiveness

Competitiveness is defined as the ability of a firm to offer products and services that meet the quality standards of a given market at prices that are competitive and provide sufficient returns on the resources employed. In the real world, competitiveness signifies performance of a given firm in relation to performance of other firms in the same market. Studies have indicated that RPOs, which seek to be competitive in the market, need to prioritize agribusiness opportunities over social welfare objectives (Shiferaw *et al.*, 2011). Others have highlighted the importance of service delivery in enabling smallholder competitiveness (Poulton *et al.*, 2010). Sergaki (2010) presents a critical description of the importance of networks in enhancing the competitiveness of agricultural cooperatives. In agreement, Nowakunda *et al.* (2010) find that organising in networked groups and a consortium

of public and private institutions helped Ugandan farmers to access better markets, offering competitive prices for bananas and other services. Therefore, it seems that effective RPOs should also be competitive in the market or vice versa. The literature also shows that RPOs can make deliberate investments to become competitive. Although this study does not address the issue of competitiveness, mention is made here to stress its relevance to effectiveness.

3.3.5 Sustainability

Sustainability stands for resiliency over time – the ability to survive shocks. According to Fiksel *et al.* (1999), a sustainable organisation should minimize resource consumption while maximizing value creation. Value is defined as a condition that is attributable to the organisation's activities and benefits one or more of its stakeholders. In the case of RPOs, examples of value would include profitability, economic value added, business competency, customer satisfaction and other benefits that might accrue to members. On the other hand, examples of resources may include human resource, assets and investment capital (Fiksel *et al.*, 1999). Van Calker *et al.* (2005) identify attributes that determine sustainability in dairy farming. With the involvement of stakeholders in criteria selection, they too find profitability to be a measure for economic sustainability while working conditions was a suitable measure for internal social sustainability. Giovannucci and Ponte (2005) take stock of the importance of standards in the sustainability of coffee trade. They conclude that standards can be a social contract that enhances sustainability as long producers participate adequately in decision-making and their efforts are compensated for.

This means that RPOs that would be effective need to put in place sustainability strategies that can make them more resilient to shocks. Suggestions cut across stakeholder engagement, incentives to retain membership and quality leaders, increased innovativeness and flexibility to adapt to changing market environments, to mention but a few. Although sustainability is an important element of effectiveness, it has not been addressed in this study.

3.4 Models for measuring organisational effectiveness

Literature on measuring effectiveness of RPOs is generally sparse. As a result, it has been deemed appropriate to review OE in non-profit organisations (NPOs). Some effectiveness studies that have been conducted on cooperatives have also tended to draw from the NPO research (Arcas and Munuera, 2002; Burt and Wirth, 1990; Newton, 2006; Stoel, 2002; Katchova and Woods, 2011). Two main categories of models have been used for measuring effectiveness of NPOs. These are the one dimension models and the multi-dimensional models.

3.4.1 One-dimension models

Organisational effectiveness has been measured by using four models, namely, (1) organisational goals; (2) systems resource; (3) internal processes and systems; and (4) participant satisfaction (Cameron, 1980; Kirchhoff; 1977; Roy and Dugal, 2005; Seashore and Yutchman, 1967; Sowa *et al.*, 2004). The goals model is the most widely used effectiveness criterion in the internal approaches (Rodsutti and Swierczek, 2002). Built on the assumption that organisations are set up to achieve given goals and objectives, the model measures effectiveness by the extent the organisation has achieved its set goals (Palmer, 2002; Roy and Dugal, 2005; Sowa *et al.*, 2004). This approach is most useful when goals are clear, time bound and measurable (Cameron, 2005). However, this is not always the case as some analysts have argued that organisations may have multiple goals that could evolve over time (Quinn and Cameron, 1983; Herman and Renz, 1999). Lecy *et al.* (2009) also raise concerns that goal achievement may be an inadequate measure if organisations do not have a single or coherent set of goals. At worst, some organisations could be pursuing erroneous goals, whose attainment may lead to counter-productive outcomes (Baruchi and Ramalho, 2006).

The systems resource model measures effectiveness by assessing the ability of the organisation to exploit its external environment and acquire the needed resources (Seashore and Yutchman, 1967). The model defines effectiveness of the organisation through its overall survival. The inputs into an organisation are conceived to be more important than its outputs (Selden and Sowa, 2004). Thus, an

organisation is more effective if it sustains a bigger intake of resources than is required to create its outputs (Palmer, 2002). The model is useful when there is a clear connection between the resources marshalled by the organisation and the outputs generated from the resources (Cameron, 1980). However, the model elevates survival above performance (Sowa *et al.*, 2004), which may not necessarily imply effectiveness. It is also possible that an organisation may be effective even when its inputs are not optimal and when there is no existence of a competitive advantage in the resource market (Cameron, 1981).

The participant satisfaction (or ecological) model evaluates effectiveness based on the satisfaction of strategic constituents in the organisation (Cameron, 1980; Roy and Dugal, 2005). These may be different stakeholders or different sub-groups who have some stake in the organisation. Effectiveness of the organisation is, therefore, based on how well it responds to demands and expectations of these constituents. The model is appropriate where the organisation is largely responsive to constituency demands or the constituents have a big influence on the organisation. The limitation, however, is that stakeholders may not necessarily have consistent views of what makes an organisation effective.

The fourth model evaluates effectiveness by focusing on internal processes and operations of the organisation. Effective organisations are those that have smooth internal systems (sometimes called healthy systems). For example, their members are highly integrated, with high levels of trust and there are vertical and horizontal information flows (Cameron, 1980; Rodsutti and Swierczek, 2002). The model is appropriate where internal processes and procedures are closely associated with the organisation's primary task or its products. Nonetheless, an organisation may be effective even when its internal processes are questionable and organisational health is low. Similarly, when the environment is turbulent, organisational slackness, which may indicate inefficiency in the internal processes, may be important for long-term survival and adaptability (Cameron, 1981).

3.4.2 Multi-dimensional approaches

Deficiencies in the unimodel approaches led NPO scholars to propose a shift from their use to application of multi-dimensional and multi-criteria approaches in measuring organisational effectiveness. Two major premises prompted the shift. The first premise relates to the diverse nature of NPOs. First, NPOs are highly variable, that is, there is variation in structures, multiple missions and organisational characteristics. Second, NPOs develop their activities in many domains, pursue multiple goals and work towards satisfying diverging interests and expectations from various stakeholders (Papadimitriou, 2007). Thus, an organisation could be effective in some domains and not in others (Cameron, 1978). Similarly, an organisation could be very effective in achieving some goals and less effective in achieving others or may satisfy a limited number of stakeholders and not others. Third, due to their reliance on public funding, NPOs are influenced by a changing and increasingly demanding external environment (Herman and Renz, 1999, 2004; Papadimitriou, 2007).

The second premise has to do with the lack of clarity about the effectiveness construct. Persistent confusion stems from researchers failing to build on earlier findings (Baruch and Ramalho, 2006). The varying theoretical perspectives and research objectives have made accumulation and integration of knowledge impossible (Herman and Renz, 1999). Sowa *et al.* (2004) also show concerns that in measuring organisational effectiveness analysts have failed to differentiate levels and units of analysis. Thus, despite the research efforts, there are still no known conceptual boundaries of effectiveness since there are no clear criteria for indicators, predictors or outcomes (Cameron and Whitten, 1996; Sowa *et al.*, 2004). However, there is increasing realization that there is a need to develop cumulative knowledge and enhance understanding of the topic within the organisational effectiveness research community, particularly in the non-profit sector (Baruch and Ramalho, 2006; Herman and Renz, 2008).

In response to the appeal to use multi-dimensional approaches in assessing effectiveness, Cameron (1978, 1980, 1981) developed a `multi-dimensional approach that tries to combine aspects from the four models discussed. Quinn and

Rohrbaugh (1981, 1983) put forth a spatial model that recognizes competing values associated with measuring organisational effectiveness. Kaplan (2001) advanced the balanced score card, which complements financial measures with perspectives of the customer, internal process and learning and growth. However, even though some of these models are comprehensive, none of them stands out as a universal choice for measurement of effectiveness (Cameron, 1986b) .

Close to two decades ago, well-known organisational effectiveness scholars converged in a symposium to discuss the state of organisational effectiveness. Highlighting the disarray and conceptual confusion surrounding the effectiveness construct, they concluded that “multiple models of organisational effectiveness are products of multiple, often arbitrary models of organisation. No model of organisation can be argued to be better than any other, so no model of effectiveness has advantage over any other” (Cameron and Whetten, 1996:266). Organisational effectiveness research, therefore, continues to be ‘work in progress’ that requires conceptual clarity, rigorous assessment techniques and appropriate frameworks (Cameron, 2005).

3.5 Reconsidering the application of multi-dimensional models in measuring organisational effectiveness

The multi-dimensional approaches being advanced for measuring effectiveness have a lot to do with the nature of organisations in the non-profit sector, such as community based organisations, charitable organisations and service organisations. Since conditions under which effectiveness measurement models are applied are not necessarily universal, the choice of model to use, to a large extent, depends on the type of organisation being studied and the purpose of investigation. This makes the measurement of OE situation specific. Therefore, for purposes of getting a more systematic and useful assessment of organisational effectiveness, it is important “to develop a theoretical framework within which situation specific aspects can be ordered” (Quinn and Rohrbaugh, 1981:125).

In addition, most of the recent research conducted on organisational effectiveness in the last decade has been done in the developed world (mainly USA and Europe).

The maturity level of these organisations, their management capacities and structures, membership/stakeholder attributes and the external environment in which they operate are totally different from organisations in the developing world. Therefore, the models developed for measuring effectiveness in the developed world cannot be extended to apply in the context of developing countries as well as in other forms of organisations such as RPOs. As such, there may be a need to develop new frameworks of measurement or modify existing ones to match the local context, the type of organisations being evaluated and their mode of functioning.

In general, RPOs constitute a unique type of organisation. For example, the members of RPOs are the owners, users, controllers and beneficiaries of the RPOs (Birchall, 2004; Minguez-Vera *et al.*, 2010). With specific reference to Uganda, agro-marketing RPOs are led by voluntary and democratically elected executive committees who are also members of the RPOs. The marketing managers are either salaried or volunteer members of RPOs, recruited by the top executive to support collective marketing initiatives. They share leadership roles with the voluntary top executive committees responsible for the day-to-day running of activities and have voting powers just like any other RPO member. Unlike the traditional cooperative arrangement, where the executive or board is expected to supervise the managers, there seems to be no clear separation of roles between the management and the executive in RPOs. This kind of enmeshment of roles and ownership causes conceptualization and measurement of RPO effectiveness to differ from the way effectiveness is measured in other forms of organisations.

3.6 Justification of the goals model for measuring effectiveness of RPOs in the Ugandan context

Despite arguments against the use of unidimensional models in measuring effectiveness, the goals model is still considered a suitable one (Mitchell, 2012; Packard, 2010), particularly in organisations that have specified and easily measurable goals (Cameron, 2005; Sowa *et al.*, 2004). This is also due to the fact that perceived effectiveness may not reflect the entire organisational effectiveness because organisational members or stakeholders may not be completely objective (Taysir and Taysir, 2012). In addition, analysts assert that the usefulness of any

model depends on the purposes and constraints placed on the investigation (Cameron, 2005). For example, outcome measures can appropriately be used as effectiveness criteria when studying a specific type of organisation and in cases where the organisation conducts one program such that there would be no alternative causes of outcomes (Herman and Renz, 1999: 2008). In this particular case, second-tier marketing RPOs have been studied and they had one major program - collective marketing of members' produce. The rest of the activities that RPOs were involved in, such as provision of extension services, transportation of produce and primary processing, were integrated to enhance collective marketing.

Furthermore, the goals model is sufficiently applicable for measurement when organisational domains are narrowly defined, goals have been established by consensus or outcomes are easily identifiable (Cameron, 1981: Mensa *et al.*, 2006). Organisational domains refer to the population served, tools/methods used and services the organisation provides. These domains may originate from the key constituents on what activities to emphasize or may be prescribed by an external agency, such as apex organisations, government programmes, donors or NGOs in the case of RPOs.

All the sampled RPOs in this study were involved in bulk marketing of members' produce. Eighty-five percent of the sampled RPOs had been established for purposes of bulk marketing while 15 percent were established for different reasons (mainly to access services), but later took on collective marketing as a major activity. Thus, the goals and objectives across the sampled RPOs are absolutely coherent, binding both organisations and their members. The population served by these RPOs is the membership and the approaches used are democratic in nature, which makes them consensual. This includes the selection of marketable enterprises that the RPO will specialize in. With respect to linking members to market, the RPOs provide a brokerage service between members and markets. Collective marketing outcomes are indeed specific and easily identifiable. For example, RPOs keep a range of records that may include, but not limited to, total membership, number of members bulking and quantities members deliver.

Against the arguments put forth, and within the confines of this research, the goals model qualifies as a suitable model to measure the effectiveness of RPOs in linking members to output markets.

3.7 Measuring effectiveness of RPOs in Uganda: indicators and levels of analysis

Second-tier marketing RPOs in Uganda have been established primarily for collective marketing purposes. As such, the organisations and their members subscribe to one common goal – pooling member produce and marketing collectively. The question that needs to be answered is “To what extent are the RPOs and their members achieving this goal?” Two units of analysis that represent key constituents are considered, namely, the organisation and the individual members.

The RPO has a role to mobilise members and provide adequate incentives to enable members market their products through them. In this case, the proportion of the membership that is selling products through the RPO represents the extent the RPO is achieving the collective marketing goal. On the other hand, since the collective marketing goal was agreed on by members of the RPOs, the members have a duty to sell their products through their RPOs. Thus, the proportion of the marketed produce that is actually sold through the RPO is an indicator of how effectively the member is achieving the collective marketing goal at that level. The two indicators constitute the dependent variables that are investigated separately in the analysis. In this study, short-term criteria have been used in selecting effectiveness measurement indicators.

3.8 Summary

The chapter presented theoretical explanations and shifts in conceptualising and measuring effectiveness of organisations. A brief overview of OE as a concept and its various definitions in the literature was discussed. A boundary for OE was set by delineating the concept from related terms in the literature. Theoretical models of measuring organisational effectiveness and their perceived limitations were discussed. Based on the discussion, the goals model was found to be suitable for

measuring effectiveness of RPOs in the Ugandan context and indicators of measurement for this study were described.

CHAPTER 4

DETERMINANTS OF ORGANISATIONAL EFFECTIVENESS

This chapter reviews the literature on measurement indicators, focus being placed on organisational and individual levels, and the external environment. The review highlights factors that have relevance to marketing RPOs and draws from both non-profit and collective action literature. The purpose of the chapter is to identify appropriate variables for measuring effectiveness of marketing RPOs in Uganda. A conceptual framework that elaborates the relationship between RPO effectiveness, its influencing factors and market participation is presented first.

4.1 RPO effectiveness and market participation: a conceptual framework

Since the sampled RPOs in this study were formed for purposes of collective marketing, achieving the goal means that the RPOs are providing the necessary incentives to marshal allegiance and support from their members. If the members are sufficiently motivated, they will tend to sell their products through their organisations in preference to other buyers. The ultimate goal for effective RPOs would then be to have as many members as possible marketing their produce through the RPO. In this case, the RPO would have helped members to participate in markets, evidenced by selling products in those markets to which they are linked. In addition, due to the large quantities pooled (and improved quality), RPOs are able to negotiate with buyers for higher product prices (Hilhorst and Wennink, 2010; Penrose-Buckley, 2007), which individuals would otherwise not access. The higher prices would, in turn, attract more members to sell relatively bigger quantities to the RPOs (in preference to other buyers). Thus, effective RPOs have the effect of increasing member participation in the market, both in terms of the number of members that market products through them and influencing the quantities that individual members supply.

However, collective marketing is not a single isolated activity, but a process that involves a series of events. For example, activities that are undertaken in organising collective marketing include (1) mobilizing communities to join RPOs; (2) providing extension services; (3) searching for, identifying and disseminating relevant market

information; (4) pooling and processing produce; (5) identifying buyers; and (6) actual selling of the produce. RPOs also have a role of soliciting the necessary resources to run their operations. In practice, these activities are not accomplished or services provided solely by the RPOs. Other development stakeholders, such as government departments, NGOs and private firms support the RPOs and all stakeholders work within the provisions of the external environment. Figure 2 illustrates the inter-relationships.

Although the RPO is at the centre of the marketing activities, its effectiveness is influenced by other factors from the organisation itself, individual members and the external environment within which the organisation operates. Therefore, in general terms, RPO effectiveness can be represented by equation 1.

$$\text{Effectiveness} = f(\text{Organisation, Individual, External environment}) \dots \dots \dots (1)$$

Where

- Organisation = internal factors within the organisation
- Individual = factors at individual/member level
- External environment = factors driven by the external environment

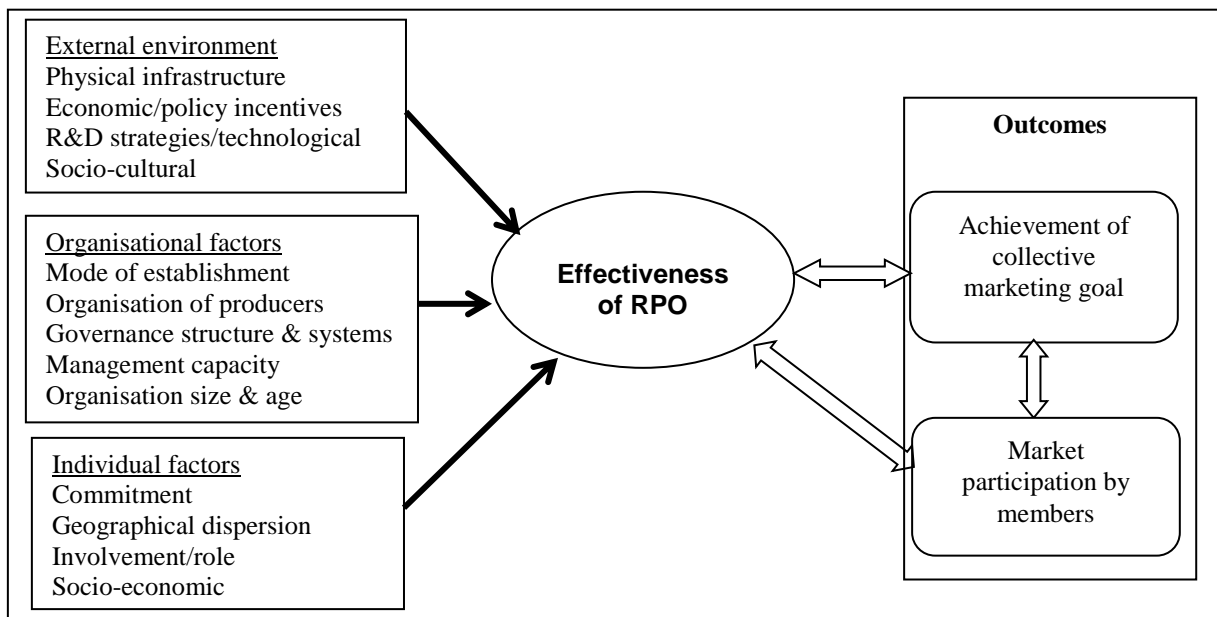


Figure 2: RPO effectiveness, its determinants and relations with market participation
Source: Adapted from Handy (1993) and Stockbridge *et al.* (2003)

4.2 Organisational level factors that influence effectiveness

Organisational level factors are those that relate to the structure and functioning of the organisation. Factors that have particular relevance to RPOs include, but are not limited to, governance, leaders and their capacities, the way RPOs organise for production and marketing activities, RPO size and age. Although stakeholder responsiveness has received considerable attention as a key factor in the non-profit sector, it has been considered to be of limited relevance to the objectives of this research.

4.2.1 Governance

RPOs are member-based organisations that are mostly governed democratically. Key ideas and practices in democratic governance include (1) open elections on the basis of one man one vote; (2) pluralism: representatives represent interests of the members and remain accountable to the electorate; and (3) a separation between the elected members that make the policy (the board or executive committees), and the managers, who implement policy decisions (Cornforth, 2004).

The concept of democratic governance has its origins in the assumptions of unbalanced power distribution, with the management being more powerful than the shareholders (Spear, 2004). For example, the principal-agent theory has been the most frequently used to link corporate governance with organisational effectiveness. The theory perceives conflict between the board (the principal that delegates power) and executives (the agent which executes management functions on behalf of the board). The board's role is to monitor self-interested behaviours of the executives to protect shareholders' interests. When the board's interests are aligned with those of the shareholders, the former will be more vigilant in monitoring the managers. This can be achieved if the board is given incentives and board members are kept distant from the management, for example, by limiting the number of board members that have close ties with management (Brown, 2005).

Democratic governance, therefore, seeks to give some control rights to the owner, which include control of the organisation, disposing the organisation's pay-off and

transferring the control and pay-off rights (Spear, 2004). Thus, management of the organisation is shared such that decision management is exercised by the management while decision control (monitoring) is exercised by the shareholders. The shareholders' interests are represented by the board of directors (or executive committees in the case of RPOs). However, as mentioned above, effective performance of the decision control hinges on the extent to which the interests of the board and management are aligned.

Incentives that can help to align shareholder and management interests include financial rewards (tied to organisation performance), such as bonuses, allowing managers to buy shares or giving them share options and conducting financial audits and performance evaluations (Davis *et al.*, 1997; Jensen and Meckling, 1976). Additional incentives may include enforcement of appropriate member policies, such as net income allocation and distribution, member's residual rights/privileges and control rights (Olson, 2007).

RPOs in Uganda have a different leadership structure. They do not have a board but are led by a voluntary top executive committee that is democratically elected by members. The executive oversees the day-to-day functions of the RPO. In addition to the executive leadership, there are additional sub-committees that lead specific activities, such as marketing, audit, procurement, information dissemination and discipline. Such committees broaden the management function as well as enhance participation, responsibility and commitment among members. Thus, the management of RPOs is done by the executive committees and the various sub-committees that undertake specific functions.

Democratic governance in RPOs is of significant importance, if they are to perform effectively. An example is that of a cooperative, in which farmer members depend largely on the performance of the organisation for their income. The members also invest in the cooperative using earnings retained by the cooperative. As a result, both the farmers and their boards have motivation to control and supervise the management. In addition, cooperatives do not have external mechanisms for disciplining the management; no external financial assessment for the performance of the cooperative and its management and no possibility of hostile takeover

(Cornforth, 2004). Therefore, the cooperative relies entirely on active and continuous monitoring of the board to discipline management. RPOs in Uganda depend on the executive committee and sub-committees to monitor and discipline the manager and other staff.

In general, democratic governance alone can significantly improve the performance of smaller groups that are homogeneous and cohesive (Stringfellow *et al.*, 1997). In larger RPOs, democratic governance creates ownership such that members get motivated to take responsibility (Coulter *et al.*, 1999; Magnus and Piters, 2010). However, when organisational size increases, the usefulness of democratic governance may be constrained, unless measures are put in place to address free riding and opportunistic behavioural tendencies and other social dilemmas (Olson, 1965; Ostrom, 1990).

Democratic governance, in the case of RPOs in Uganda, is perceived to be the participatory management of RPOs. This includes the democratic election of the top executive and sub-committees and formation of binding rules and guidelines (norms) that guide member behaviour in the collective. The norms are enshrined in the RPO constitutions that are developed by members before the RPO can be legally recognized by government entities that register them. It is such norms that guard the RPO against free riding tendencies and other social dilemmas by stipulating penalties for defaulters. Other than the leadership structures, the members still uphold the traditional cooperative principles, although RPOs in practice do not give monetary benefits to members in the form of dividends. The limited funds generated from shares, fees and commissions are used to fund operations of the RPOs.

4.2.2 RPO/organisation size

Collective action studies indicate that larger groups experience more organisational problems than smaller ones (Stockbridge *et al.*, 2003). Large organisations are characterised by increased heterogeneity and member dispersion. These limit frequent communication between leaders and members and may lead to increased information asymmetry. As a result, managers may pursue interests of their own as opposed to the shareholders' interests (Cechin and Bijman, 2009). Financial

management and accounting becomes equally complex, which may result in reduced transparency and increase exposure to abuse (Stockbridge *et al.*, 2003). Furthermore, increase in size and more participation in the market chain, come with increased complexity. Under such circumstances, unless the farmer leaders have the necessary skills and experience, the RPO may become ineffective.

Nonetheless, for purposes of collective marketing, large groups are necessary for enabling economies of scale. In this case, selective incentives can be used to reduce costs and social dilemma problems (Olson, 1965; 2007). The new institutional economics literature affirms Olson's notion of selective incentives by recognizing the role of institutions (rules and norms) in structuring behaviour in collective action ventures (Ostrom, 1990). Larger groups are also advantageous for social learning and innovative behaviour, an aspect that is common in marketing RPOs (Chirwa *et al.*, 2005; Devaux *et al.*, 2009).

This implies that, despite the economies of scale and increased bargaining power, large groups (second-tier in this case) require that additional incentives that structure member behaviour are put in place to help overcome free-riding and other social dilemmas (Olson, 1965; 2007; Ostrom, 1990). In other words, in larger organisations, there is need to supplement democratic governance structures and processes with other institutions and social norms. In the context of RPOs, institutions have been regarded as both formal and informal rules and strategies that RPOs use to structure behavioural and interaction patterns among members so as to bring out the best outputs in collective engagements.

4.2.3 The board and board practices

The role of the board of directors in cooperate governance is multiple. Among other roles, it involves monitoring or advising the management to ensure the latter implements decisions as taken by the board and representing the interests of shareholders. Board members also serve as organisational resource catalysts linking organisations to necessary resources that may be finances, human and relational capital (Brown, 2005). Human capital may include experience, expertise and

reputation while relational capital includes networks and linkages to external agencies, such as financiers, technocrats and the stakeholders/constituents.

Studies in the nonprofit sector have indicated that organisational effectiveness is correlated to board effectiveness. In general, board effectiveness is correlated with use of particular prescribed practices. Some researchers have found that some of the board practices that are positively correlated with organisational effectiveness include sharing a common vision among boards as well as their involvement in strategic planning (Cornforth, 2001; Herman and Renz, 2000; Herman *et al.*, 1997). In a study that investigated financial performance in independent non-profit colleges, Olson (2000) found that decision control (monitoring), facilitated by long tenure and expertise, had a positive influence on financial performance. Brudney and Murray (1998) found that intentional improvement of the board also improved performance of the organisation. In particular, problems related to structure and process, roles and decision making would be addressed by the board's improvement efforts.

Green and Griesinger (1996) observed that boards of effective organisations were more involved in strategic planning, program review, resource development, finance planning and control, and board development, compared to boards of non-effective organisations. Board development aspects included training new board members, specifying duties for board members and evaluating board performance. Brown (2005) found that educational, interpersonal and analytical skills of the board were correlated with effective organisational processes. Specifically, financial performance was correlated with the analytical dimension, which required board members to debate important issues. The interpersonal element, which focused on collegial relationships among board members, was correlated with organisations operating a net financial surplus. The interpersonal element validated the need to understand group processes in boards, an element that has not been given due importance in effective governance.

Nonetheless, Herman and Renz (2000), based on the multi-stakeholder nature of NPOs, argue that the causal relationships between organisational effectiveness and board practices remain unclear. Whereas it is universally accepted that organisational effectiveness is positively correlated with board effectiveness, it is

possible that different stakeholders will perceive effectiveness differently. Testing this premise empirically, they concluded that determining a causal relationship was still a big challenge. They, however, concurred with earlier findings that improving board performance could improve the way board members did their work and, therefore, could help their organisations to be more effective. Later, Herman and Renz (2008) assert that best practices may only work well for common administrative functions such as those that ensure internal controls. However, their suitability as effectiveness measures depends on how they align with each other and with the entire organisational context (values, missions and stakeholders' expectations).

4.2.4 Management capacity

The roles of the board and management are discussed in previous sections. With respect to RPOs in Uganda, there is no separation of management and executive committee roles. The democratically elected executive leaders constitute the equivalent of the board. These executive leaders play a management role with the help of a marketing manager (in the majority of cases) and a few other professional staff (in some cases). In the non-profit sector, expertise of board members is desirable but not a very crucial requirement (Cornforth, 2004) due to the presence of a separate professional management team. On the contrary, in the management of RPOs, management capacity is essential because the executive leaders play multiple roles, combining both leadership and management.

As the previous sub-sections indicate, management capacity is necessary for strategic planning, conflict resolution, accessing and effective use of resources, among other management and control functions. For larger organisations, such as the case of second-tier marketing RPOs, additional issues include managing a heterogeneous membership and tensions that arise due to multiple roles and varying expectations from stakeholders (Cornforth, 2004). Furthermore, unlike in stock-listed companies, where shares and share options can be used for remuneration, incentive options are quite limited in RPOs since shares are not tradable. The management must have capacity to make incentive decisions that are effective yet do not overstretch the RPO and, at the same time, maintain a member-centred orientation

(Zeuli, 2004). This sets an additional challenge for leaders who must actively and continuously monitor the management (Bijman and van Gijt, 2009).

Increasingly, the agrifood market trends are becoming more competitive (due to lack of market protection) and diversified (due to increased demand for variety, convenience, quality and safety). RPOs have to respond to these pressures by being more market-oriented, diversified and innovative (Bijman and van Gijt, 2009). Thus, there is need for farmer leaders to have the capacity required to steer RPOs in this direction.

Since the board in collective organisations is made up of farmer members who may not necessarily have prior specialized skills, the collective action literature makes suggestions on how to deal with this. Stringfellow *et al.* (1997) suggest that from the onset, RPO activities should be matched with existing managerial abilities, skills and experience. This is because the success of activities hinges, to a bigger extent, on the management demands placed on the RPO. In agreement, Coulter *et al.* (1999) adds that the activity undertaken should be matched with financial capacity and, preferably, activities should be undertaken by pre-existing organisations as opposed to new ones. In cases where such experience and skills are limiting, capacity building in the form of training, helps improve internal structure and functioning of RPOs and prepares them to handle economic functions (Bienabe and Sautier, 2005).

4.2.5 Age/maturity of organisation

Group studies suggest that the longer a group stays, the higher the chances that members are more able to behave corporately (Burtis *et al.*, 2006), the shorter the social distances leading to a higher motivation for members to contribute to group objectives, thus better group performance. Social distance is defined as “the degree of reciprocity that subjects believe exists within social space” (Elias and Alwang, 2008:9). Reciprocity is seen to grow with increased inter-personal interactions among group members, such as face-to-face assurance-giving, regular communication and observing what others are doing (Kahan, 2002). Such social norms that increase trust can be developed over time and as such are closely related to the age of the organisation and its members.

Burtis *et al.* (2006:133) define group maturity as “the ability to do the particular work required in a group in a particular way required by others in the group”. This constitutes (1) members’ ability to do a task, which includes knowledge, skill and experience doing it; and (2) willingness to take responsibility for doing a task, which relates to motivation, confidence and commitment to group and task. Thus, in a mature organisation, members have more ability and willingness to take responsibility, which is likely to enhance effectiveness of the organisation. However, in terms of firm life cycle, there will be a time when the RPO reaches its upper boundary of performance and effectiveness will decline, particularly if appropriate leadership is not provided (Adams and Galenes, 2009). This implies that RPOs need to innovatively create incentives that keep members motivated and loyal.

4.2.6 Mode of establishing organisation

Crowley (2008) identifies three forms of organising RPOs, namely, internal, hybrid, and external forms of organisation. An internally organised RPO is one where members originate the idea to form an organisation and once formed go ahead to support it, that is, self-established and self-supported. Externally organised RPOs are those that are initiated and supported by an external agency. The hybrid type of organisation is where either the organisation was established by an external agency and is supported by members or was established by members and is supported externally, or varying combinations of the two.

Perception of how the mode of establishment affects organisational effectiveness can be divided into two opposing streams. One stream suggests that because RPOs formed through self-organisation tend to be self-reliant and exhibit cohesive solidarity, they are most likely to be effective (Bienabe and Sautier, 2005). On the other hand, RPOs that are externally organised tend to lose focus on member priorities, thus members may lack a true sense of ownership (Zeuli and Radel, 2005). In addition, the organisations are likely to be unstable in the long run (SARD, 2007) and, therefore, ineffective. Furthermore, there is fear that externally supported RPOs may develop over-dependency on external aid (Berdegue *et al.*, 2008) and, thus, become perpetually weak. However, many successful RPOs show evidence of varying degrees of hybridization such as (1) a mix of self-organisation and external or

joint support; (2) externally initiated and external technical support but self financed; or (3) external initiation and external support at start (Crowley *et al.*, 2005).

4.2.7 Models of linking smallholders to market

In previous sections, it was mentioned that the market context determines the suitability of the model used to link producers to the market. In the producer-driven model, collective action offers a viable strategy for increasing smallholder participation as well as generating sustained economic flows of quality products. Producers drive the process by attempting to integrate into the market. However, the model is applicable in situations where the RPO undertakes sizeable operations. Effective business organisation is critical, for which required skills may be enhanced by working in partnership with other stakeholders from the public and private sectors (Berdegue *et al.*, 2008; FAO, 2008). The management situation can be improved by having a professional management team that is not subject to democratic governance procedures, but regularly reports to the RPO board.

Vorley *et al.* (2008:11) explain that buyer-driven models “seek efficiencies in the chain to the benefit of processing and retail”. A common feature of this model is where the buyer integrates backwards to coordinate the production. Interventions may include provision of extension services, supply of inputs and provision of credit or intermediation of credit from financial institutions (Samaratunga, 2007). Both the producer and buyer are interested in “cutting out” the middleman and seek for competitive markets to be able to shift from traditional markets in search of value, improved quality and product assurance. In Uganda, the model is commonly used by private agencies involved in the production and export of high value organic and other niche market products.

Intermediation models normally include a strong component of service provision by the intermediary organisation, which is intended to balance the needs of smallholder farmers and realities of modern markets related to quality and volume. In the majority of times, particularly in Uganda, this role is played by NGOs, research organisations, government departments or other private service providers (Diaz, 2004; Coulter, 2006). However, global examples indicate successful examples of

specialized private companies without own production, such as Bimandiri in Indonesia (World Bank, 2007) and lead farmers in Honduras (Hellin *et al.*, 2009; Lundy, 2007). However, care must be taken to negotiate the distribution of additional benefits along the chain so that the intermediating actor does not selfishly extract the benefits based on information asymmetries. It is, therefore, important to develop transparent pricing mechanisms as well as put in place communication flows and shared standards along the chain (FAO, 2008; Vorley *et al.*, 2008).

Within the Ugandan context, there may be no clear-cut boundaries to define the model used for market linkages. In the majority of times, there is a mix of producer-driven and intermediation models. Besides, the RPOs and their partners may not necessarily be satisfying all the listed conditions to qualify for a specific model. The use of this factor, therefore, requires modification to be able to fit in the local context.

4.3 Individual level factors that influence organisational effectiveness

A variety of literature that cuts across member-based, for-profit, non-profit and public sector organisations, reveals common individual factors that are associated with organisational performance. Key factors that have relevance to the functioning of RPOs have been selected and are discussed in subsequent sub-sections.

4.3.1 Commitment

Organisational commitment is the extent to which an individual identifies with and is involved in an organisation (Steers, 1977). It implies an active relationship with the organisation to the extent that individuals are willing to give of themselves for the well-being of the organisation (Kim, 2005). Allen and Meyer (1991) divide commitment into three categories, namely, affective, continuance and normative.

Affective commitment is the employee's emotional attachment to, identification with and involvement in the organisation. Employees remain with the organisation because they want to. In the case of RPOs, members will remain because they have a sincere desire to remain and will give something of themselves to improve effectiveness of their RPO. Affective commitment occurs when an individual has a

deep-rooted loyal attitude towards a partner, which inclines them to favour further relationships with that partner in preference to others (Gundlach *et al.*, 1995; Morgan and Hunt, 1994). In the case of a marketing RPO, affective commitment of members should compel them to sell their products through the RPO (as opposed to other buyers) so as to enhance the collective marketing objectives (Kelly and Kelly, 1994; Stoel, 2002).

Continuance commitment is associated with the individual's awareness of costs related to leaving the organisation. RPO members may remain in the organisation because they need to. If they leave, they may lose market connections, social ties, friends or position and prestige, if they were leaders.

Normative commitment arises from a feeling of obligation. In the case of RPOs, a member will remain because they think it is the normal thing to do, not because they want to.

In measuring individual board commitment, Preston and Brown (2004) looked at factors such as attendance of committee meetings, quality of attendance (active participation), knowledge of organisation missions, objectives and services, and providing assistance where needed. In the case of RPOs, one would look at participation in meetings and decision-making and proportion of the marketable produce that members sold through their RPOs.

4.3.2 Member satisfaction

One of the objectives of cooperatives (and other forms of RPOs) is to satisfy economic and social needs of members. Satisfaction is, therefore, seen as a true measure or the best indicator of RPO success. When members are satisfied with the RPO, they maintain the relationship and are likely to remain loyal and committed, making the RPO more effective (Arcas and Munuera, 2002). In employer-staff relationships, job satisfaction is positively correlated with motivation, job involvement, organisational citizenship behaviour, organisational performance and organisational commitment. On the other hand, satisfaction is negatively correlated with absenteeism, turnover and perceived stress (Kim, 2005). However, Packard (2010)

argues that employee satisfaction is not usually seen as an end result variable but can be an intervening variable affecting service outputs or outcomes.

Drawing from the discussion above, if members of RPOs are satisfied with their organisation, they will be motivated to remain loyal and committed. This implies that satisfaction is manifested in terms of commitment to organisation. In this study, satisfaction is considered as an intervening variable, the effects of which can be adequately captured under commitment.

4.3.3 Geographical dispersion

Geographical dispersion is known to increase transaction and influence costs, leading to increased inefficiency. It also limits information sharing among members and access to services, such as inputs, credit, market outlets and extension advice (Iliopolous and Cook, 1999). Yet, studies have indicated that access to productive technologies and public goods is vital for improving households' profitability, market access and greater market participation (Alene *et al.*, 2008; Barrett, 2008; Jaleta *et al.*, 2009; Renkow *et al.*, 2004).

The dispersion problem is compounded by lack of market support infrastructure. For example, lack of transport infrastructure leads to high cost of travel and farm output transportation. This, coupled with lack of telecommunication facilities, increases the cost of searching, screening and getting information (Jagwe and Machethe, 2011). Lack of essential market information limits producer-market linkages, impacting RPO performance negatively. In rural areas, additional transaction costs arise due to bad roads, poor telephone/cellphone connectivity, hilly topography and insufficient transport facilities.

4.3.4 Factors that influence market participation

A review of literature on commercialization of smallholder agriculture indicates a range of factors that influence market participation. For example, asset holdings, labour access to agricultural input credit, adoption of modern crop varieties, quality requirements and communication assets have been found to have positive and

significant effects on market participation (Alene *et al.*, 2008; Jaleta *et al.*, 2009). Other demographic variables that have been used to evaluate market participation include education level, age, sex, position in household, household size, household assets, non-farm sources of income and ownership of livestock (Jaleta *et al.*, 2009; Nivievskyi *et al.*, 2010).

4.4 Environmental factors and organisational effectiveness

The contribution of the external environment to effectiveness of organisations is recognized in the literature. In particular, policy incentives, physical infrastructure and research and development (R&D) strategies directly influence the extent to which RPOs can be effective in market linkages (World Bank, 2007). Shepherd (2007) explains that, even though the private sector takes responsibility for organising production, processing and marketing of agricultural products, the government should improve efficiency by providing an appropriate macro-economic framework and the necessary public goods.

With regard to policy incentives, government has to ensure the development and functioning of a legal and regulatory framework. Issues related to legislation of RPOs should be clarified, if market linkages are to be effective. For example, contractual agreements between companies and RPOs should have potential to be settled in courts of law (Shepherd, 2007). Additional issues relate to land tenure, input use, quality standards as well as defining roles for different actors.

Infrastructure includes rail and road networks (particularly feeder roads), electricity supply, irrigation systems, internet and telephone connectivity and associated tariffs. It also includes market support institutions that provide credit and information. In addition, government has a role to deliver on public goods such as education, research and extension services, if markets are to function effectively. R&D strategies are the interventions by research organisations, NGOs and government departments that facilitate collective action activities and provision of technical and institutional backstopping.

With specific focus on Uganda, studies (Lukwago, 2010; Nivievskiy *et al.*, 2010; Tibaidhukira, 2011; World Bank, 2011) have indicated that issues of concern in solving smallholder commercialization problems include:

- The need for government to increase provision of services to the agricultural sector, such as increasing financial budgetary allocations; investing in human capital development; improvement of farmer's skills in production and marketing; and encouraging adoption of grades and standards;
- Investment in road infrastructure to connect spaces, particularly rural roads so as help solve problems of profitability of farmers and agribusinesses. Road investments should be aligned with agricultural potential and cross-border trade facilitation, among others;
- Addressing land resource constraints, through strengthening the security of land tenure and providing a more flexible land market;
- Improving the investment climate, in particular, addressing issues of rural electrification and connectivity;
- Increasing access to rural finance, tailored to the needs of smallholder farmers; and
- Strengthening extension-research linkages to enable functioning technology transfer between research and advisory services.

4.5 Summary

The chapter presented a review of factors that influence organisational effectiveness. A conceptual framework, showing inter-relationships between market participation, RPO effectiveness and influencing factors was presented first. Attention was paid to organisational and individual level factors and the external environment. Only factors that were deemed to have relevance to marketing RPOs were discussed, drawing from both non-profit and collective action literature. Where applicable, the relevance of the factors to the RPO context, or areas that would need modification were highlighted.

CHAPTER 5

DATA SOURCES AND SAMPLE CHARACTERISTICS

A model for measuring effectiveness of RPOs was specified, in functional terms, in Chapter four. This chapter extends the usefulness of the model by specifying the kinds of information required to evaluate the RPO effectiveness. As such, data, their sources and methods of collection are herein described. The sample and sampling procedures are also presented. Finally, variables used to analyze effectiveness at both the RPO and individual levels are described and their descriptive statistics presented, accompanied by a brief explanation of the analytical procedures.

5.1 Data sources

Data for this study were drawn from two relatively large surveys, conducted simultaneously between February and April 2010. The first survey was conducted at RPO level and included 62 second-tier RPOs, sampled from 19 districts representing the four regions of rural Uganda – east, north, central and west. This survey collected information on RPOs that included history of their establishment, membership, activities, models used to connect with output markets, types of markets supplied, sales, governance structures, characteristics of leaders, assets owned and access to other market support institutions such as financial services and extension advice.

The second survey included 1,377 households, randomly selected from the RPO sample and constituted by about 30 individual members per second-tier RPO. Information collected in this survey included household characteristics, demographic attributes, asset endowment, participation in RPO activities, sales of target enterprises, and perceived benefits from RPOs.

Sixteen of the 62 RPOs were added as a sub-sample of a different survey, conducted between February and March 2010, by the International Food Policy Research Institute (IFPRI) Market Access Project in Uganda. The project collected baseline data ahead of a planned action research on enhancing collective marketing in RPOs. Information was collected from a range of RPOs but only those that met this study's selection criteria were added. Because IFPRI's RPO member data targeted

the entire household and not the individual members of RPOs, household data from the 16 RPOs (including two RPOs from northern Uganda) have not been included in the analysis at individual level. Consequently, the 1,377 respondents constitute a sample of 46 RPOs. However, the 16 RPOs are part of the 62 RPOs and are included in all analyses reported in this study at that level.

5.2 The sample

The sampled second-tier RPOs were selected from 19 districts of Uganda. The sample was purposively selected to include RPOs that were involved in collective marketing of coffee, bananas and maize. The three crops were chosen for their importance to the Ugandan nationals, particularly the smallholder farmers. Coffee is a traditional cash crop and is produced by the majority of households. Plantain bananas are traditionally a staple crop but are increasingly marketed in the region for income. Maize has, in the recent past, increasingly become a non-traditional export in the region (Mathews *et al.*, 2007), mainly to Kenya, Southern Sudan and Rwanda (Coulter, 2006). In terms of output marketing, the majority of producers are participating in the sale of one or more of the three crops.

A multi-stage sampling technique was adopted. Selection of participating districts depended on the number of RPOs and availability of the target enterprises. That is, a district with a relatively large number of RPOs participating in the target enterprises was preferred to a district with fewer RPOs and enterprises. This was adopted for purposes of managing a limited budget. Within the districts, RPOs were purposively selected based on the preset criteria.

To cater for variability of RPOs, samples were selected from various agencies that have been facilitating collective marketing through RPOs. These included area cooperative enterprises (ACEs) affiliated to Uganda Cooperative Alliance (UCA), depot committees (DCs) developed by APEP, but working with other service providers at the time of data collection. Other RPOs were selected from private national level umbrella organisations, such as National Union of Coffee Agribusinesses and Farm Enterprises (NUCAFE), Uganda National Farmers' Federation (UNFFE) and the Neumann Kaffee Gruppe (NKG) Coffee Alliance Trust.

NGOs included KULIKA Charitable Trust (Uganda), Volunteer Efforts for Development Concern (VEDCO) and Technoserve. Government extension services were represented by the National Agricultural Advisory Services (NAADS). Broadly, the list included government initiatives, private sector firms, national umbrella farmer federations, NGOs and donor agencies. With the exception of Technoserve and the banana industry, there is no clear separation of supporting agencies as RPOs tend to work with a range of service providers at different time periods.

Lists of registered second-tier marketing RPOs were obtained from the service providers that supported the RPOs. Confirmation was made with RPO leaders to ensure that RPOs met the selection criteria and leaders expressed willingness to participate in the study. At RPO level, lists of member groups were obtained and individual respondents were randomly selected. A minimum of three groups were sampled per second-tier RPO, from which individual respondents were selected. Table 3 shows the composition of the study sample while the location of sampled RPOs is illustrated in Figure 3.

Table 3: Study sample: districts, RPOs and individual respondents

Region	Number of districts	Number of RPOs	Number of respondents	% of sample	Supporting agency
Central	7	16	270	19.61	Private national umbrellas
Eastern	6	30	745	54.10	Private national umbrellas (13), NGOs (7), Donor agencies (10)
Northern	1	2	0	0	Private national umbrella
Western	5	14	362	26.29	Government (1), NGOs (4), Donor agency (1), Private national umbrellas (8)
Total	19	62	1,377	100	

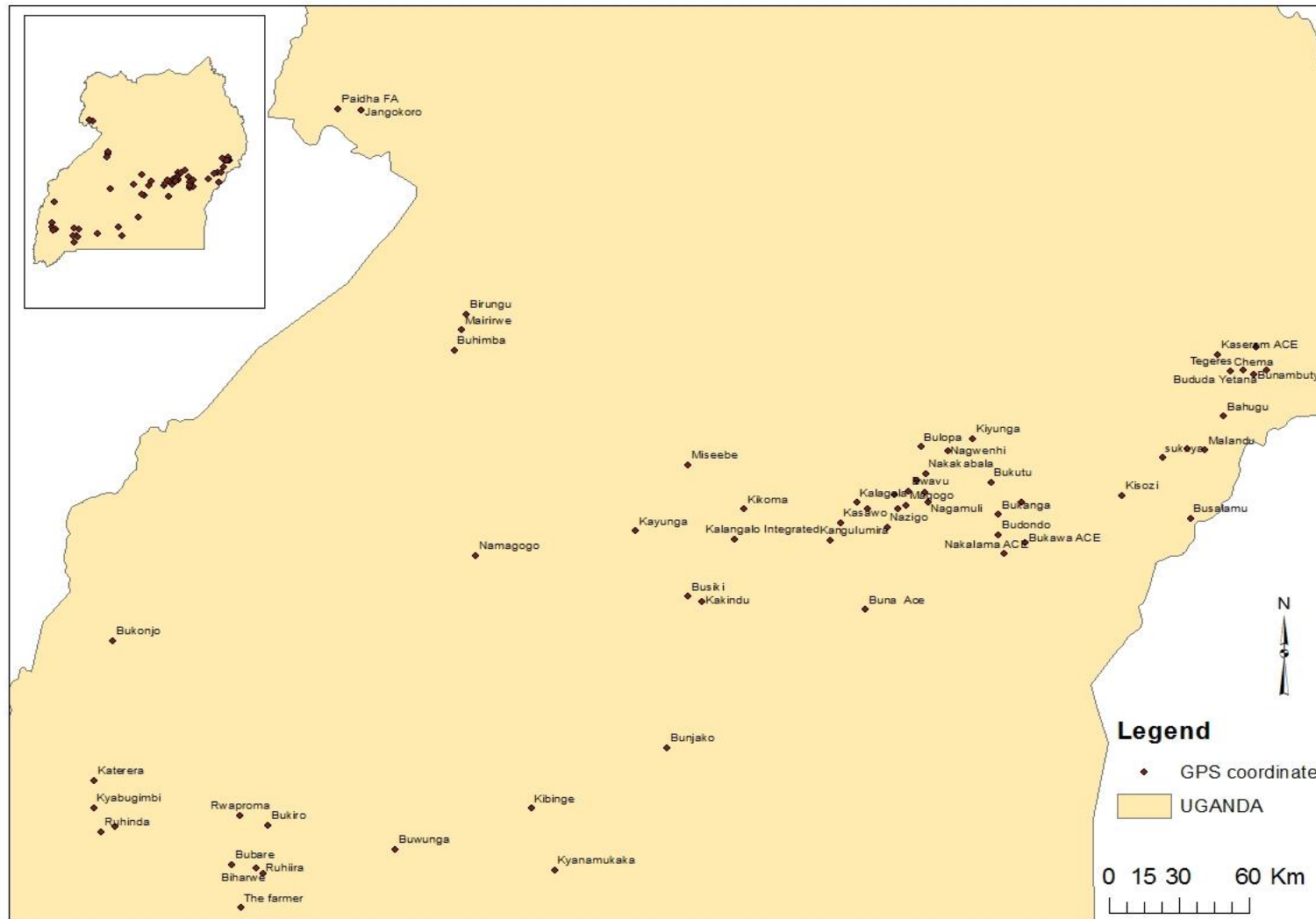


Figure 3: Map of Uganda showing location of surveyed RPOs

5.3 Data collection methods

All data were collected through face-to-face interviews and all information recorded on questionnaires. Additional information was generated through key informant interviews and informal discussions with RPO members. RPO level interviews were conducted through focus group discussions with top executive leaders while household interviews were conducted with individual members of RPOs. All questionnaires were pretested before the survey. RPO questionnaires were pretested with six RPOs while household interviews were pretested with 63 RPO members, selected from the central, eastern and western regions of the country.

A team of nine enumerators and three supervisors were selected and trained, emphasis being placed on importance of the study, data quality management and interviewing skills. During the training, all questions were reviewed to substantiate their rightful and non-threatening meaning so that the entire team had common understanding about the correctness of questions. Although the team of enumerators changed for eastern Uganda due to language barriers, the team of supervisors was consistent throughout the study and helped to sustain collection of quality data. Besides, the principal researcher was available throughout the entire time of data collection and maintained questionnaire reviews and feedback, which helped minimize errors. To ensure quality and rigour of research, the research design was particularly detailed, specifying procedures, sampling criteria, and sample size and study sites. This was made possible through reconnaissance visits made prior to data collection. Where adjustments were made, only the principal researcher sought alternative options, which fit within the stipulated criteria.

5.4 Data access challenges

A number of challenges were encountered during data collection. The majority of RPOs did not have viable information management mechanisms. The kind of records kept were mostly quantities that individual members or primary groups delivered for sale and quantities that RPOs delivered to buyers. In general, visions and objectives were generic without any specific targets or thresholds against which performance could be measured. For example, across all RPOs sampled, there were neither

targets of how many members would be reached over a specific period of time nor set ceilings for maximum membership. There were also no targets of quantities that members should supply to the RPO in a specific season or quantities that RPOs targeted to market. Furthermore, there were no orders given by buyers specifying quantities that should be supplied and no commitments over prices at which products would be bought. Business transactions were mainly run in an adhoc manner based on highest price offered.

Such data limitations led to adjustments in the proxies that could be used to measure some variables, which affected subsequent procedures of modelling and data analysis. For example, two objective variables were selected for measuring effectiveness; the proportion of members selling through the RPOs at RPO level and the proportion of quantities that were marketed through RPOs at individual level.

5.5 Definition and description of variables used in the analysis

This study utilizes two units of analysis, namely, the RPO and individual member levels. Each of these units makes use of a different set of variables, which description is presented separately in subsequent sub-sections.

5.5.1 Description and measurement of variables used at RPO level

Table 4: Variables used in the analysis at organisational level and descriptives (n=62)

Variable name	Variable description	Value		Std. deviation
		%	Mean	
RPOAGE	Number of years RPO has existed	-	5.18	2.87
ESTMODE	Mode of RPO establishment. Member initiated =1, externally initiated = 0	1(29.03) 0(70.97)	-	-
RPOSIZE	Size of RPO. Total number of members in RPO		778.53	1017.06
DEMGOV	Democratic governance. Percentage of RPOs with at least two all-members meetings a year and at least two additional committees	27.42	-	
EXCOSIZE	Size of Executive Committee. Average number of members in top executive management of RPO	-	9.29	2.58

Variable name	Variable description	Value		Std. deviation
		%	Mean	
INTPRACT	Internal practices. Matrix combining (1) use of both record books and accounting books (2) presence of a written code of conduct (3) enforcement of rewards for defaulting	80.98	-	
TRAINLEAD	Trained leadership. Average percentage of key leaders that trained in leadership	85.16	-	
LINKMOD	Model of market linkage. Process through which RPO is connected to output markets (0=producer driven, 1=intermediated, 2=mix of both)	0(48.39) 1(37.10) 2(14.51)	-	
COMDIST	Commercial distance. Average distance from RPO to nearest commercial centre (km)	-	11.95	11.16
BULKDIST	Bulking distance. Average distance from the household to collection centre; aggregated from sampled households per RPO (km)	-	2.21	1.72
RPOTYPE	Type of RPO. Cooperative=1; other organisations=0	43.55	-	-
COFFEE	Major enterprise promoted for collective marketing is coffee	59.68		
BANANA	Major enterprise promoted for collective marketing is bananas - cooking type	9.68	-	-
MAIZE	Major enterprise promoted for collective marketing is maize	30.65	-	-

Table 4 presents a summary description of explanatory variables used in the analysis at RPO level. The dependent variable is effectiveness of RPO, which is expressed as the proportion of members selling through the RPOs (PROPSELL).

Mode of RPO establishment, age and size

The majority of the sampled RPOs (71 percent) were established by external agencies while 29 percent were initiated by members (Table 4). The descriptive statistics also indicate that second-tier marketing RPOs in Uganda are relatively young, as indicated by an average age of five years (Table 4). The number of farmers belonging to RPOs was variable. Although the average number is 778, the smallest ten percent of RPOs had about 100 members while half of the RPOs had an average of 388 members. Only 25 percent of the largest RPOs were constituted by over 948 members.

Democratic governance and use of internal practices

Few RPOs (27 percent) were governed democratically by conducting at least one all-member meeting a year and having at least two extra committees in addition to the top executive. On the other hand, the majority of RPOs (81 percent) used internal practices to structure member behaviour (Table 4).

Leadership training and size of executive committee

Key leaders, who include the chairperson, the vice-chairperson, the treasurer, secretary and business manager, had an average education of ordinary level grades. The majority of these leaders (85 percent) were trained in leadership by their support agencies. The executive committees had an average of nine members. However, the smallest 25 percent of committees had seven members while the largest 25 percent had above 11 members (Table 4).

Models of linking to output markets

RPOs were linked to output markets through producer-driven (48 percent), intermediary-driven (37 percent) or a mixture of both producer-driven and intermediary models (15 percent) (Table 4). Thus, intermediary models are relatively more predominant.

Commercial and bulking distances

Generally, RPOs are located in close proximity to commercial centres as shown by an average distance of 12 km to these centres. Similarly, the bulking distances were relatively short, averaging 2.2 km. However, 50 percent of the RPO members were located within two kilometres from the bulking centres (Table 4).

Type of RPO and priority collective enterprises

About 44 percent of the sampled RPOs were cooperatives and the rest were farmer organisations (48 percent) and companies limited by guarantee (8 percent). Although these two types are named differently, they operate in comparable ways and thus they were clustered together. Regarding enterprises, about 60 percent of the sampled RPOs dealt in coffee (40.32 percent, Robusta, and 19.35 percent, Arabica), ten percent focused on bananas as the only marketable enterprise while 31 percent dealt in maize. However, about 44 percent of the sampled RPOs were marketing a minimum of two enterprises (Table 4).

5.5.2 Description and measurement of variables used for analysis at individual level

Only persons that subscribe to the RPOs as members were included in the household sample. Table 5 presents a description of the variables used for analysis at individual level. The dependent variable is effectiveness of RPO, expressed as the proportion of total revenue from sales generated from the RPO (REVRPO). On average, 46 percent of members' revenues from the sale of their products was generated by RPOs.

Respondent gender, age, and positions in household and RPO

Out of a total of 1,377 individuals surveyed, 57 percent were males. The average age of the respondents was 46 years, with males older than females (average age was 47 and 43 years for males and females, respectively). Overall, the youngest 25 percent of respondents were under 35 years while the oldest 25 percent were above 54 years of age.

On the other hand, the majority of respondents (64 percent) were household heads, most of whom were males (83 percent) while 33 percent were spouses of household heads, mainly females. Furthermore, only 28 percent of the respondents undertook leadership responsibilities in RPOs at different levels. Among the leaders, 71 percent were males, depicting male dominance in the leadership of RPOs.

Table 5: Descriptive statistics of the individual respondents (n=1,377)

Variable name	Description	Value		Std. deviation
		%	Mean	
GENDER	Male	56.72	-	-
	Female	43.28	-	
POSRPO	Position in RPO		-	-
	Leader (if sitting on any committee)	28.47		
	Ordinary member	71.23		
POSHH	Position in household.		-	-
	Household head	64.34		
	Spouse of household head	32.97		
	Household member	2.69		
AGE	Respondent age. Number of years the respondent has lived	-	45.82	13.44
EDUCATION	Education level. Number of formal schooling years	-	7.00	3.76
LANDSIZE	Land size. Size of land owned by household (acres)	-	5.02	5.98
FAMSIZE	Family size. Number of people per household	-	8.17	3.85
BULKDIST	Distance from residence to central collection point (km)	-	2.21	1.72
PAYDAYS	Paydays. Number of days RPO takes to pay members after delivery	-	9.03	15.68
PRODCOMM	Produced commodities. Number of enterprises household deals in, including livestock	-	8.57	2.88
MKTCOMM	Marketed commodities. Number of commodities sold through the RPO by the household	-	1.53	0.93
NFI	Non-farm income sources. Number of non-farm sources of income	-	0.55	0.66
MEMTENURE	Membership tenure. Number of years respondents have been members of RPOs	-	5.41	5.65
BENRPO	Benefited from RPO. Percentage of members that benefited from RPO	72.00		
SATRPO	Satisfied with RPO marketing initiatives. Percentage of members responding to satisfied and very satisfied on a 5-point Likert scale	47.35	-	-
RECSEED	Received improved seed. Percentage of members that received improved seed	24.40		
PRICEINFO	Received price information. Percentage of members that received price information	29.48	-	-
TRAINPRACT	Trained in improved practices. Percentage of members that trained in improved agricultural practices	37.25	-	-
TRAINQUAL	Trained in quality management. Percentage of members that were	16.70	-	-

	trained in quality management			
TRAINREC	Trained in record keeping. Percentage of members trained in record keeping	10.82	-	-

Education level, size of owned land and size of household

The average education level among RPO members was seven years, which, according to the Uganda National Household Survey (UNHS) 2009/10, is a national representative figure for the majority (51 percent) of Ugandans (UBOS, 2010). The average land holding was five acres (2 ha) but 50 percent of the respondents owned less than three acres. Only 25 percent of the respondents owned land above six acres. These results approximate national statistics for small and medium land holdings (section 1.1). On the other hand, the average family size was eight members even though 25 percent of the smallest households had up to 6 household members. Nevertheless, 10 percent of the largest households were consituted by over ten members.

Bulking distance and pay days

Regarding collective marketing, households were on average located close to produce collection centres. The furthest ten percent of the sample were located beyond four kilometres. This indicates a key contribution of RPOs in innovatively shortening market distance, and thus reducing transaction costs, by transporting produce from communities.

On the other hand, farmers were paid within short waiting periods (average 9 days), contrary to producer claims that delayed payment was one of the factors limiting collective marketing. Twenty-five percent of respondents were paid within one day. An additional 25 percent were paid within seven days while only ten percent received their pay beyond three weeks.

Commodities produced and marketed and non-farm sources of income

In general, households undertook a variety of enterprises, evidence that production was subsistence oriented. Although the average number of enterprises is eight, 25 percent of those involved in production of multiple commodities participated in production of more than ten enterprises. In contrast, an average of one enterprise was marketed through the RPO. Only ten percent of the most diversified respondents were marketing more than three products through the RPOs. This finding confirms farmers' inability to separate production and commercialization decisions even when marketing opportunities unfold (Nivievskiy *et al.*, 2010). The situation is worsened by limited non-farm sources of income (NFI) as the median for the number of non-farm enterprises across the sample is zero (mean is 0.55). Only ten percent of respondents had more than one source of NFI. Major NFI sources included trading in agro-produce (27 percent), petty/retail trade (18 percent), teaching (15 percent) and agricultural input trading (12 percent).

Membership tenure

Majority of respondents had short membership tenure in RPOs confirmed by an average membership of five years. About 75 percent of respondents had an average membership of less than six years while only ten percent had been members for over ten years. It should be noted that the average membership of RPO members is higher than the average age of RPO existence. This is because second-tier RPOs were formed from existing primary groups or grower cooperatives societies (section 2.6.2).

Benefited from RPO and satisfied with RPO marketing initiatives

Most RPO members (72 percent) had benefited from their RPOs. However, not all who benefited were satisfied. For example, only 47 percent of the respondents were satisfied with RPO's collective marketing initiatives while the majority felt that more work needed to be done.

Received seed, price information and extension service training

Twenty four percent of the sample had received improved planting material while 29 percent had received price information. In terms of access to extension training, 37 percent were trained in improved farming practices, 17 percent were trained in quality management while 11 percent were trained in record keeping (Table 5). The means indicate that there were generally few individual members that had accessed these important elements necessary for improving the marketing situation of farmers.

5.6 Measurement and estimation procedures

Three separate analyses are conducted to identify factors that influence effectiveness of RPOs. The first analysis identifies the determinants of the proportion of members that sell products through the RPOs. The second analysis determines the factors that influence the proportion of revenues from sales that members generate from RPOs. The third analysis is conducted to establish the nature of benefits that accrue to members of RPOs and how they are distributed among male and female members.

5.6.1 Examining factors influencing the proportion of members selling through RPOs

Relationships between the proportion of members that sell products through the RPO (PROPSELL) and a number of explanatory variables were determined using an ordinary least squares (OLS) regression model. A Tobit regression was run to check the robustness of the OLS. The OLS was chosen because it did not violate assumptions of normality, multicollinearity, homoscedasticity and independence of residuals. For example, the histogram and normal probability plot of the regression standardized residual as well as a scatter plot showed that the dependent variable was normally distributed. Collinearity diagnostics (Pallant, 2011) revealed that Tolerance values ranged from 0.62-0.94 (multicollinearity is evidenced for values of less than 0.10). The Variance Inflation Factor (VIF) was between 1.06 and 1.18 (values above 10 show multicollinearity) and partial regression plots across all explanatory variables did not show evidence of violating any of the assumptions.

The explanatory variables capture aspects that influence performance of organisations, focusing on internal processes and other factors that influence market participation. They include mode of RPO establishment (ESTMODE), number of years RPO has existed (RPOAGE), total number of members (RPOSIZE), democratic governance structures (DEMGOV), number of individuals on the executive (EXCOSIZE), internal practices (INTPRACT) and proportion of leaders trained in leadership (TRAINLEAD).

The variable EXCOSIZE was included to determine the appropriate leadership structure at the second-tier level, considering the issues of lower level representation that RPOs at the secondary level have to deal with. Other variables have been included because they were expected to influence market participation at RPO level. They include model of linking farmers to the market (MKTMODE), distance to the nearest commercial centre (COMDIST), type of RPO (RPOTYPE) and enterprises that RPOs deal in (COFFEE, BANANA and MAIZE). Distance from residence to the bulking centre (BULKDIST), was included to assess the effect of geographical dispersion/isolation on market participation at producer level.

Details of how the explanatory variables influence RPO effectiveness are discussed in sections 4.2 and 4.3 while the description of variables is presented in section 5.5.1.

The multiple regression equation is specified as

$$\begin{aligned} \text{PROPSELL} = & \beta_1\text{ESTMODE} + \beta_2\text{RPOSIZE} + \beta_3\text{RPOAGE} + \beta_4\text{DEMGOV} + \beta_5\text{EXCOSIZE} + \\ & \beta_6\text{INTPRACT} + \beta_7\text{LINKMODE} + \beta_8\text{TRAINLEAD} + \beta_9\text{COMDIST} + \beta_{10}\text{BULKDIST} + \\ & \beta_{11}\text{RPOTYPE} + \beta_{12}\text{COFFEE} + \beta_{13}\text{BANANA} + \\ & \beta_{14}\text{MAIZE} \dots\dots\dots(2) \end{aligned}$$

where

- PROPSELL = proportion of RPO members selling a portion of their products to the RPO
- ESTMODE = mode of RPO establishment

RPOSIZE	=	size of RPO/number of members
RPOAGE	=	number of years RPO has existed
DEMGOV	=	democratic leadership structures
EXCOSIZE	=	number of individuals on the executive committee
INTPRACT	=	internal practices
LINKMODE	=	model of linking producers to the market
TRAINLEAD	=	proportion of leaders trained in leadership
COMDIST	=	distance to the nearest commercial centre
BULKDIST	=	distance from residence to the bulking centre
RPOTYPE	=	Type of RPO, either cooperative or farmer association
COFFEE	=	RPO's major marketing crop is coffee
BANANA	=	RPO's major marketing crop is banana
MAIZE	=	RPO's major marketing crop is maize
$\beta_1 \dots \beta_{14}$	=	coefficients estimates of the independent variables

5.6.2 Identifying determinants of amount of revenue that members generated from RPOs

The amount of revenue an individual generates from the RPO is a function of the type of products they sell and the price they receive. Therefore, the dependent variable was generated by computing the revenue generated through the RPO (revenueRPO) as a fraction of the total revenue generated from the sale of products, through the RPO and other sales channels (revenueTOTAL).

The analysis determines relationships between the proportion of revenues generated from RPOs and a range of independent variables, using a one-way between-groups analysis of variance (ANOVA). Post hoc tests were conducted using Tukey HSD to identify differences between groups. Details are presented in section 6.3. OLS and Tobit regressions were run to test the robustness of the ANOVA.

5.6.3 Assessing distribution of benefits by gender and socio-economic status

Analysis of benefit distribution among members of RPOs is divided into two different sets of analysis. The first analysis explores how benefits that accrue to members of RPOs are distributed among male and female members. This has been explored using the Chi-square test of independence. The second set of analysis explores how benefit distribution is impacted by selected socio-economic indicators such as age and education level of members, family size, size of land and assets owned. Due to the structure of the variables, the Kruskal-Wallis test was used with Mann-Whitney U post-hoc tests to identify differences between groups. Specific details are indicated in Chapter 7.

5.7 Summary

Interpretation of research findings draws a lot from a clear understanding of the sample, data sources and data collection procedures. This chapter has shown that this study utilized primary data, which was collected from a sample of second-tier RPOs involved in collective marketing of member produce. Data were collected from two levels – the RPO and its members. Procedures of sample selection, design of data collection instruments and their administration have been discussed. Variables used in the analysis at organisation and individual level have been described and their summary statistics presented. A brief explanation of the analytical procedures has been presented.

In summary, the majority of RPOs in Uganda are dominated by men, both as members and in leadership positions. About 44 percent of RPO members sell a proportion of their produce through them and get more revenues through RPOs than they do from other selling channels.

CHAPTER 6

EFFECTIVENESS OF SECOND-TIER MARKETING RPOs IN LINKING FARMERS TO MARKETS IN UGANDA AND DETERMINANTS

This chapter presents the first set of findings of the study, related to effectiveness of RPOs and determinants of effectiveness. A brief description of effectiveness of RPOs is presented. Factors that determine the effectiveness of RPOs in linking members to output markets are also discussed, focusing on RPO and individual level aspects. A brief discussion of methods used in the analysis is also presented.

6.1 Effectiveness of second-tier marketing RPOs

Descriptive statistics presented in chapter five indicate that second-tier marketing RPOs in Uganda are not yet effectively linking their members to markets, a major objective for which they were formed. In general, RPOs are operating at sub-optimal levels of effectiveness, with only 44 percent of the members selling their produce through them. In terms of revenues obtained by members from sale of produce, an average of 47 percent of the revenues came from sales through RPOs while the rest was generated from outside sources.

When individual members were asked to explain what they would consider as the indicators of effective RPOs, suggestions included (1) securing high prices for farmers' products; (2) providing equipment, such as tractors for expanding acreage and processing equipment (e.g. milling machines); (3) providing inputs, such as seed; (4) attracting and serving a large membership; (5) providing extension training; and (6) providing credit. Contrary to member wishes, seven percent of sampled RPOs owned milling equipment, seven percent owned other processing equipment and ten percent owned grading equipment (mainly, coffee hand pulpers). In addition, 43 percent had helped their members to access inputs (mainly planting materials) while 31 percent were involved in credit provision. However, results in Appendix 1 show that few producers had access to specific benefits provided by RPOs. It should also be noted that RPO members' perception of effectiveness does not necessarily reflect comparative knowledge of RPO operative goals or what can be attained with

the resources RPOs have access to, particularly regarding expensive capital investments. Cameron (1986b) had earlier warned about the fact that judgements and preferences of effectiveness by individuals may be quite variable and contradictory among different groups.

RPO leaders' perception of effectiveness focused on establishing long-term business relationships with buyers that could sustain higher price margins. For example (with specific reference to one major enterprise per RPO), although the mean age of the RPOs was five years, only 25 percent of the most consistent RPOs had maintained trading relations with buyers for more than four years. Seventy-five percent of the RPOs had buyer relations of less than three years. In addition, ten percent of the RPOs sold products to more than three buyers. The problem of inconsistent relations with buyers was brought about by fluctuating product prices, over which farmers had no control. Thus, RPO leaders feared committing themselves through contractual obligations to any buyer and would rather sell to anyone that offered the highest price in the season. Some RPOs had encountered bad experiences where buyers breached their contracts and declined to purchase ordered products without compensation to the farmers. According to the RPO leaders, long-term relations with reputable buyers would not only be a sign of effectiveness but would also place RPOs on a sustainable footing.

The perceptions of effectiveness by RPO members and owners describe a "future situation" not what is happening now, confirming that the RPOs are not yet meeting expectations of members. So far, the RPOs are tapping into economies of scale and maximizing their negotiation power to secure relatively higher product prices albeit in proportion to prevailing market prices.

Armed with the understanding that marketing RPOs are operating at sub-optimal levels of effectiveness in linking their members to markets, the factors that influence the effectiveness of RPOs are discussed in the next section. Each of the two indicators of effectiveness, namely, proportion of members that sell products through the RPO, and proportion of revenues generated from RPO to total revenue from sales, was analysed separately. Therefore, presentation of results and discussions follows a similar trend.

6.2 Factors influencing the proportion of members selling products through the RPO

Table 6 presents the results of the OLS and Tobit regressions, which examine the relationship between the proportion of members selling products through the RPO and factors hypothesized to influence RPO effectiveness.

The results showed that the estimated coefficients for DEMGOV and RPOSIZE were positive and significant. This suggests that RPOs that used democratic governance structures and were larger in size tended to have a higher proportion of members sell their produce through them. On the other hand, estimated coefficients of EXCOSIZE, TRAINLEAD, INTPRACT, BULKDIST and LINKMODE were significant and negative. This implies that RPOs, whose members were located far from the RPO bulking or collection centre, had lower proportions of members selling their produce through them. In addition, results show that RPOs with most of their leaders trained in leadership and, which enforced many internal control practices tended to have a lower proportion of their members sell their produce through them. Likewise, RPOs with larger executive committees, tended to have a lower proportion of their members sell their produce through them. Possible explanations for the results are discussed in the next subsections.

The variables ESTMODE, COMDIST, RPOAGE, RPOTYPE and type of enterprise (COFFEE, BANANA, MAIZE) had been expected to influence RPO effectiveness. MAIZE was omitted because it interfered with model fit while the estimated coefficients of the rest of the variables were not statistically significant. This implies that these factors do not significantly influence the proportion of members that market their products through the RPOs. As such, they have not been included in subsequent discussions.

Since the results from OLS and Tobit are similar, subsequent discussions do not make a distinction between the results of the two analyses.

Table 6: Results from OLS and Tobit regressions on how various factors affect the proportion of members that sell their produce through the RPO

Dependent variable: proportion of members selling products through RPOs		
Independent variables	Model 1: OLS results	Model 2: Tobit results
RPOSIZE	0.0000881 (0.0000354)**	0.0000901 (0.0000317)***
ESTMODE	0.006 (0.072)	0.005 (0.065)
DEMGOV	0.243 (0.080)***	0.258 (0.072)***
INTPRACT	-0.093 (0.043)**	-0.093 (0.038)**
BULKDIST	-0.152 (0.055)***	-0.153 (0.049)***
TRAINLEAD	-0.628 (0.178)***	-0.659 (0.161)***
COMDIST	0.034 (0.030)	0.034 (0.027)
LINKMODE	-0.075 (0.044)*	-0.076 (0.039)*
EXCOSIZE	-0.077 (0.044)*	-0.083 (0.039)**
RPOAGE	0.0276 (0.064)	0.025 (0.058)
RPOTYPE	-0.076 (0.089)	-0.070 (0.079)
COFFEE	0.060 (0.074)	0.052 (0.067)
BANANA	-0.015 (0.113)	-0.023 (0.102)
Constant	1.377 (0.242)***	1.421 (0.218)***
R-Squared	0.438***	$\chi^2 (14)=36.12$
Number of observations	62	62

***significant at 1%; **significant at 5%; *significant at 10%

Standard errors in parentheses ().

6.2.1 Democratic governance

The positive and significant relation between democratic governance and RPO effectiveness can be attributed to the fact that the democratic structures offer members opportunities to participate in decision-making processes. This makes them feel that they own the organisation (Grossman and Baldassari, 2012; Spear, 2004) and, therefore, need to support it by selling their produce through the RPO. The nature of democratic structures, in this case, matters. Rather than having numerous member meetings that may drag decision-making, the majority of RPOs (79 percent) had democratically elected sub-committees that undertake specific roles, including marketing. These committees offer opportunities for power sharing across a broader membership, which enhances responsibility and commitment

(Coulter et al., 1999; Shiferaw et al., 2011). Thus, the executive committee and sub-committees can meet as regularly as is necessary while all-member meetings are kept to a minimum, significantly reducing decision-making costs. Further analysis supports this argument, since the majority of RPOs (69 percent) held only one all-member meeting per year.

6.2.2 Size of executive committee

The size of the executive committee is related to democratic strategies of governance. When RPOs are constituted by many primary groups, the executive tends to become larger for purposes of representation. The results indicated that there was a negative relationship between executive committee size and the proportion of members selling through the RPO. There are three reasons that may explain this observation. First, large committees may lead to drudgery in decision-making due to dispersion of leaders (Bernard and Spielman, 2009), which negatively affects the pace at which outputs are delivered. Second, dispersed leaders are unable to follow up on key issues in the RPO and, in turn, cannot keep their members updated on what is happening, which leads to low morale and lack of trust (Green *et al.*, 1996; Österberg and Nilsson, 2009). Third, due to reduced follow-up and accountability, leaders are likely to pursue interests of their own as opposed to the organisation's interests (Cechin and Bijman, 2009).

For example, in this study, some leaders were involved in private buying and selling of produce, operating enterprises and activities similar to those of their RPOs (Ampaire and Machethe, 2012). Thus, leaders had become commercial competitors of their RPOs, doing business with the very members they led; using the contacts and credibility they had gained from the RPO to enhance their own businesses. This behaviour does not only result in RPOs' activities primarily benefitting the elite members, but it may also result in conflicts of interest within the management of RPOs. The results of the study support findings from earlier studies regarding issues of leadership accountability in large groups (Cechin and Bijman, 2009; Stockbridge *et al.*, 2003).

6.2.3 RPO size

The positive and significant relation between RPO size and increased proportions of members selling through RPOs can be explained by the advantages of economies of scale. A large membership will enable pooling of bigger quantities of produce and can thus negotiate for better marketing terms at reduced transaction costs (Markelova and Mwangi, 2010; Paumgarten *et al.*, 2012). The higher price margins will attract more members to sell through the RPOs. In addition, the democratic governance mechanisms above seem to solve problems associated with large size. In practice, the sub-committees are constituted by members of the primary groups, including those that may not have been represented at executive level due to limiting numbers. This way, constraints that would arise due to a large size, such as reduced member communication and participation (Stoel, 2002) and free-riding tendencies are neutralized by the decentralized responsibility and power sharing structures. These structures are also regularly used for information dissemination to members whom they represent such that the general meeting held once a year serves for review and general planning, among others, rather than day-to-day decisions.

The finding agrees with earlier studies which suggested that if the RPO objective is to coordinate marketing, large size may not be a deterrent to effectiveness (Stringfellow, 1997). Stoel (2002) had also found that cooperative size did not influence member's level of group identification or communication frequency or perceptions of relational effectiveness. Hence, it was concluded that size did not operate in voluntary business RPOs the same way it did in social groups. However, this study postulates that issues of size must be resolved within a broader context of democratic governance structures and processes, and other organisational norms or internal practices.

6.2.4 Training in leadership and internal practices

The results indicated that increasing the number of leaders trained in leadership was likely to negatively affect the proportion of members selling their produce through the RPO. Although there is no clear theoretical explanation for such an observation, additional notes from the field provides plausible insights. The leadership training

conducted for leaders covered mainly group leadership, financial management and book-keeping. In practice, the three lead to institutionalizing rules and regulations that might reduce member motivation to sell their produce through the RPO, while serving to place the RPO on a sustainable footing. Therefore, the effect of leadership training on the proportion of members selling through the RPO hinges on how the acquired skills are implemented in the management of RPOs. This is mainly through enforcement of internal practices intended to structure member behaviour.

Key internal practices to this study included professional management (use of record books and accounting books) and control measures (presence of a written code of conduct and punishing defaulters). Results indicated that implementing more of these practices could significantly reduce the percentage of members selling their products through the organisation. This is possible, particularly, if some of the practices such as controls, are enforced in an inflexible manner. For example, some of the contents of the written code of conduct included attending meetings and participating in RPO activities, full payment of shares, membership and subscription fees, and requirement to sell products through the RPO, among other things. Failure to abide by specified practices would either attract penalties (such as fines) or exclusion from certain benefits, which would, in turn, lead to reduced member commitment. These results are in line with findings by Bernard *et al.* (2008), who found that controls such as presence of a control committee or a written code of conduct, had a negative effect on performance of marketing organisations in Burkina Faso.

With respect to professional management, an additional disincentive was related to how the trained leaders enforced financial management procedures. The majority of RPOs monetary transactions were handled through savings and credit cooperatives (SACCOs) in which RPO members were required to open and operate saving accounts. Opening accounts demanded that farmers had financial resources that they could commit for the initial deposit, purchase of application forms, passbooks and the first share. This was in addition to the hassle of having to go to a SACCO to withdraw cash when payment for produce was finally made. To avoid such 'inconveniences', some RPO members would rather not sell their produce through their RPOs (Ampaire and Machethe, 2012). In agreement, Grossman and Hanlon (2011:10) find that "...more and better monitoring institutions do not necessarily lead

to better outcomes.” They conclude that rather than apply standards that exist in different economic settings, farmer groups should be structured in ways that take into account how the structures will affect the outcomes.

A study by Mirro *et al.* (2012) shows that the transferability of learning among leaders of RPOs in Uganda hinges on leaders’ personal capacity to transfer, the transfer design and supervisor encouragement, particularly, in terms of demanding accountability and feedback. This suggests a mentoring approach to capacity building in RPOs, which many have not been able to access, thus the possibility that the way skills are applied may be less motivating to members. Therefore, it seems that in trying to formulate and enforce internal practices, RPOs must take care to adopt the most beneficial options and implement them in a manner that does not become a disincentive to the members.

Collective action literature indicates that selective incentives, such as norms can be used to reduce costs and social dilemma problems common in large groups (Olson, 1965; 2007; Ostrom, 1990). However, the discussion above shows that the process through which such norms are developed and implemented determines whether they will be useful or not. A comprehensive review of the literature on smallholder commercialization by Jaleta *et al.* (2009) affirms that formal and informal institutions are important in facilitating or hindering smallholder commercialization.

6.2.5 Bulking distance

Results indicated that bulking distance is negatively and significantly associated with percentage of members that sell their products through the RPO. A bulking centre may be a RPO store or a central location where members in that locality collect produce that is picked by RPO leaders or buyers. This implies that when distance to a collection centre increases, the chances of members bringing their produce to the RPO are likely to reduce (Alene *et al.*, 2008; Fafchamps and Hill, 2005). This may be particularly true considering that, in rural Uganda, 70 percent of marketed produce is carried on the head and only ten percent by bicycle (Government of Uganda, 2000). The finding is in line with the literature regarding geographical dispersion (Iliopolous and Cook, 1999) and constraints to agricultural commercialization (Chamberlin and

Jayne, 2011; Nivieskyi *et al.*, 2010). In this study, the average bulking distance was two kilometres but a distance of four kilometres seemed to negatively affect the quantities a member would sell through the RPO (Section 6.3.5).

The motivation to bulk when distances are long is further reduced by the availability of traders at farm gate who pay cash on delivery (Fafchamps and Hill, 2008) without any quality requirements. On the contrary, RPOs demand certain quality standards and pay a little later after bulking and identifying good buyers. Unless the RPO offers outstanding incentives above other business competitors, farmers may not see the benefit of bulking and selling through them. The problem of distance to the bulking centres is compounded by lack of transportation, as revealed by 29 percent of RPO members, and poor roads.

6.2.6 Model of establishing RPO

The results indicated that the model of RPO establishment was positively associated with the proportion of members that sold products through the RPOs. Although the association was not significant, it is widely acknowledged that RPOs, whose establishment is demand driven, tend to be sustainable due to members having a sense of ownership and the tendency to adapt processes to fit the local context. With specific reference to Uganda, RPOs have been found to depend heavily on support organisations (Feder *et al.*, 2010; Hill *et al.*, 2008) and some are formed due to expectations of handouts (Coulter, 2006). It is, therefore, important that producers are allowed to participate actively in the institution building processes that result in second-tier RPOs. Good learning examples from this study were Kibinge and Bukonzo coffee farmers' associations that were started by members and never received any external support at the start. At the time of data collection, the RPOs were participating in international coffee markets, employed technical staff to run businesses, owned valuable assets and paid most of their members cash-on-delivery. The RPO leadership was proactive in seeking assistance from other stakeholders to fill gaps and their efforts were being rewarded through financial donations and technical assistance projects.

6.2.7 Model of market linkage

Farmers were linked to output markets through producer-driven (48 percent) and intermediated models (37 percent) and a mix of the two (15 percent). Results indicated that market linkage model was negatively but not significantly associated with proportion of members selling their produce through the RPO. The implication is that producer-driven models are likely to increase numbers of members selling through RPOs while intermediated models do the reverse. Discussions with RPO leaders and members revealed two issues of concern that might account for this likelihood. Most of the intermediation was being done by national umbrella (apex) organisations, which, in some cases, deducted charges for the market linkage. In the producer's view, this resulted in some income loss since the producer did not access the full payment. In instances where apex or support organisations did not deduct fees on linkages, RPOs felt obliged to sell to the linked buyers that were not necessarily offering the best prices.

6.3 Factors that influence proportion of revenues that members generated through the RPOs

A one-way between-groups ANOVA was used for all the analyses presented and discussed in this sub-section. Post-hoc tests, using Tukey HSD, were conducted to test for differences between groups. Alternative analyses were conducted with OLS and Tobit regressions to complement the ANOVA results. Regression results are presented in Appendix 9. The following sub-sections present the ANOVA results and discussions per explanatory variable. Only variables that showed significant differences between means are presented and discussed below. The main results are presented in the narrative and mean plots are presented in graphic form to illustrate relationships between proportion of revenues generated from RPOs and various explanatory variables. In addition, a summary of means in homogenous sub-sets is presented in Appendix 7 to validate differences in groups. Homogenous sub-sets present a summary of the major differences among the means. Sub-sets of means that do not differ from each other at $p < .05$ go together, and subsets that do differ go into separate columns. Groups that do not show up in the same column are significantly different from each other at $p < .05$.

The level of education of the respondent, number of non-farm sources of income, land size, family size, position in household, position in the RPO and gender of the respondent had been hypothesized to influence revenues members obtained from RPOs, among other variables. However, they did not show any statistically significant differences between means. The null hypothesis (H_0), which states that the population means are equal, was accepted for each of these variables and they are thus not discussed any further.

6.3.1 Age of members

Ages of respondents were divided into five groups; group 1: 18-30 yrs; group 2: 31-40; group 3: 41-50; group 4: 51-60 and group 5: 61 years and above. There was a statistically significant difference at the $p < 0.05$ level in proportion of revenues received for the five groups: $F(4, 1199) = 2.86, p = 0.03$. Tukey HSD post-hoc comparisons indicated that the mean score for group 2 ($M=0.89, SD=0.78$) was significantly different from group 5 ($M=1.09; SD=0.87$) at $p=0.05$. Similarly, group 3 ($M=0.86, SD=0.80$) was significantly different from group 5 at $p=0.02$. However, the mean difference between groups 3 and 5 (0.23) was higher than the mean difference between groups 2 and 5 (0.20). Groups 1 ($M=0.97, SD=0.83$) and 4 ($M=0.88, SD=0.77$) did not differ significantly from other groups. Figure 4 presents a plot of mean scores for the different groups, and their relation with revenues generated.

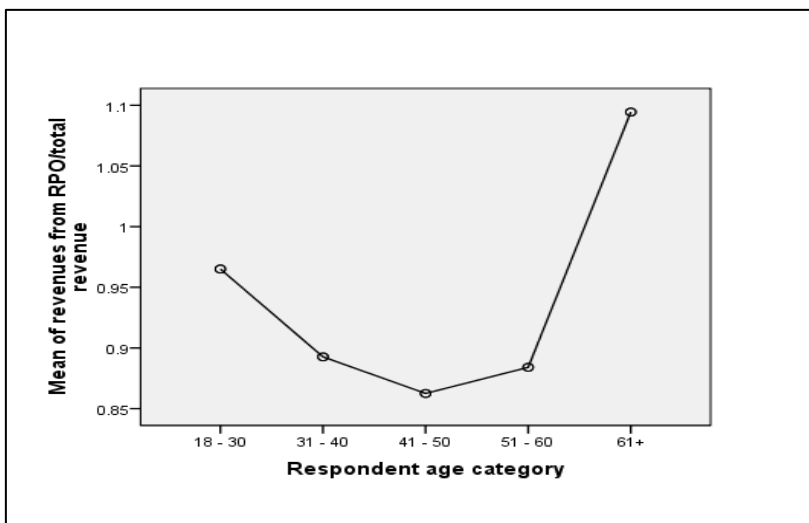


Figure 4: Relationship between proportion of revenues generated from RPO and respondent age

Contrary to ANOVA results, the homogenous sub-sets in Appendix 7a indicate that a significant difference exists only between groups three and five. This means that there are no significant differences in proportions of revenues received from RPOs for members that are up to forty years of age. However, beyond forty years, there exist significant differences with older farmers generating more revenues through RPOs than the younger as illustrated by figure 4. Indeed, further analysis indicates that 53 percent of respondents in age group 41-50, 56 percent of age group 51-60 and 61 percent of ages 60 and above, sold products through RPOs. A plausible explanation is that older farmers share past experiences with the cooperative movement and have sustained interest in principles of cooperation. They are therefore more patient and loyal to their organisations than younger farmers. Additional field observations confirm this loyalty through older farmers' deep concern about quality issues and the need for long-term relations with buyers. Younger farmers, on the other hand, think the RPOs are over-demanding, particularly regarding quality, which efforts are not well compensated for. They would rather sell to local traders, who do not care about quality, are able to purchase at farm gate and pay immediate cash.

6.3.2 Bulking distance

Bulking distance was divided into three groups; group 1: 0-2 km, group 2: 2.1- 4 km and group 3: above 4 km. There was a statistically significant difference at the $p < 0.05$ level in proportion of revenues received for the three groups: $F(2, 1201) = 4.80$, $p = 0.01$. Tukey HSD post-hoc comparison tests indicated that the mean score for group 1 ($M=0.96$, $SD=0.81$) was significantly different from group 3 ($M=0.73$; $SD=0.77$). Group 2 ($M=0.84$, $SD=0.80$) did not differ significantly from other groups. Appendix 7b presents a summary of differences in means for homogenous sub-sets. Figure 5 presents mean plots of bulking distance, which depict a negative relationship with revenues generated.

A detailed discussion of how bulking distance influences proportions members sell (and thus revenues generated) is captured in Section 6.2.5. It is however intuitive to note that a distance beyond four kilometres may limit farmers' bulking capacity.

Further analysis indicates that 26 percent of the respondents mentioned long distances to the bulking centre as a constraint to bulking. Collective marketing may not only be curtailed by costs involved but also the availability of alternative marketing options. Findings from a study by Chapoto and Jayne (2011) confirm that farmers may choose not to travel shorter distances (2-4 km) to the market when traders can buy their produce at farm gate, particularly if the quantities are small.

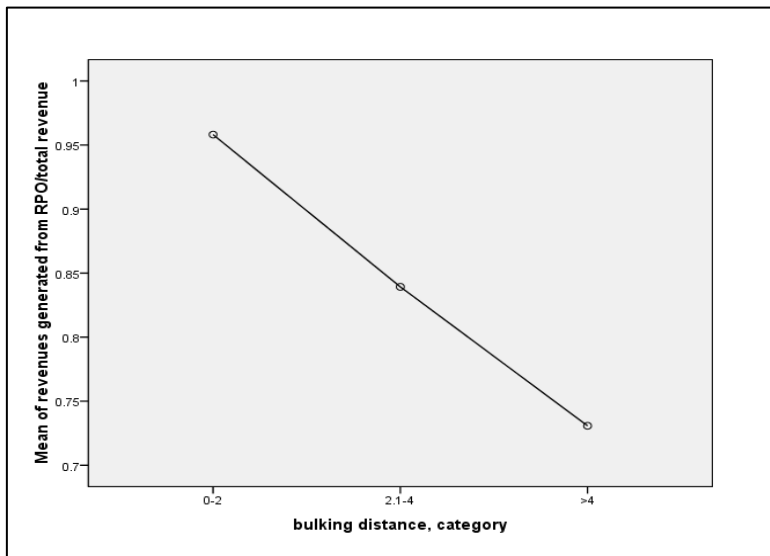


Figure 5: Relationship between revenues generated from RPO and bulking distance

6.3.3 Number of commodities produced

The number of commodities produced was divided into four groups; group 1: 1-6; group 2: 7-8; group 3: 9-10 and group 4: above 10 commodities. There was a statistically significant difference at the $p < 0.00$ level in proportion of revenues received for the four groups: $F(2, 1200) = 6.68$, $p = 0.00$. Tukey HSD post-hoc comparison tests indicated that the mean score for group 1 ($M=0.96$, $SD=0.82$) was statistically different from that of group 2 ($M=0.75$, $SD=0.83$). Similarly, the mean score for group 2 was significantly different from that of groups 3 ($M=0.93$; $SD=0.80$) and 4 ($M=1.04$, $SD=0.75$). Group 4 did not differ significantly from groups 1 and 3. Figure 6 illustrates the relationship between revenue generated and commodities produced. Appendix 7c presents a summary of differences in means for homogenous sub-sets and confirms significant differences between groups two and three revealed by ANOVA.

ANOVA results indicate that there are no statistically significant differences in revenues received when producers are involved in production of a maximum of eight commodities, despite the inverse relationship illustrated by Figure 6. However, when households are involved in the production of more than eight enterprises, the revenues they generate from RPOs increase. Possible explanations to this anomaly are presented in subsequent discussions.

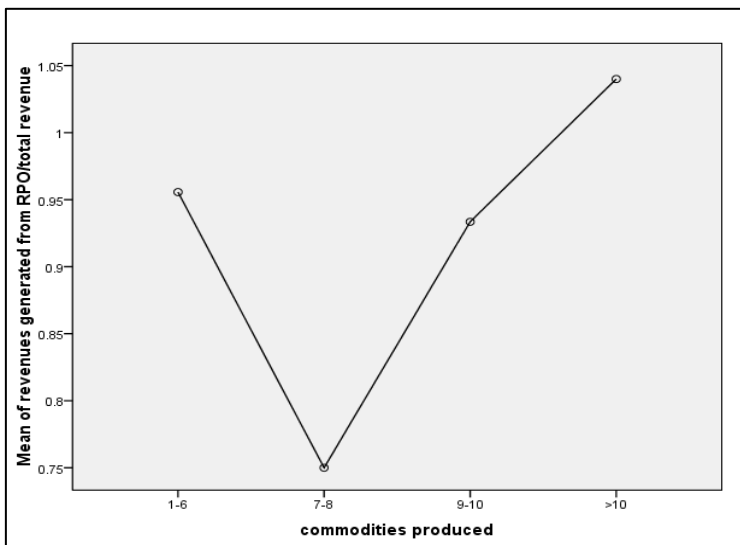


Figure 6: Relationship between revenues generated and number of commodities produced

Traditionally, agricultural production in Uganda is largely geared towards family consumption needs rather than market oriented, thus multiple enterprises (Marter and Wandschneider, 2002). According to Nivieskyi *et al.* (2010), the households' orientation towards food self-sufficiency still dominates at early stages of commercialization. Thus, although households may be involved in production of many enterprises, this does not necessarily induce an increase in quantities marketed, because a lot of production is still consumed at home.

The observation that proportions marketed increase beyond eight commodities comes as a result of diversification into livestock enterprises, particularly in small livestock (goats, sheep and pigs). Further analysis indicates that ownership of livestock was associated with increased number of commodities at household level (poultry: $F(2, 1203) = 5.25, p=0.05$), small livestock: $F(1, 1375) = 300.35, p=0.00$)

and big livestock: $F(2, 1203) = 6.29, p=0.00$). The mean difference across three groups is higher (almost twice as much) in small animals (0.66) compared to the big livestock and poultry (0.34 each). In addition, a multiple regression analysis indicates that number of commodities produced is significantly and positively associated with ownership of small livestock ($\beta=2.37(0.15), p=0.00$).

Ownership of small livestock has two main advantages. First, households owning small livestock have an easily convertible source of income with which they can invest in their crop enterprises and produce more quantities that they can sell through their RPOs. In this study, 16 percent of the respondents mentioned lack of alternative sources of income as a constraint for participating in bulk marketing. Second, because there is an alternative source of income, producers are more willing to market collectively because they can patiently wait for RPOs to sell later.

6.3.4 Number of commodities marketed through RPO

The number of commodities marketed through RPOs ranged from 0 to 3 and these constituted the 4 groups. There was a statistically significant difference at the $p<0.01$ level in proportion of revenues received for the four groups: $F(3, 1200) = 49.47, p = 0.00$. Post-hoc multiple comparisons using Tukey HSD tests indicated that the mean score for group 0 ($M=0.10, SD=0.42$) was significantly different from group 1 ($M=1.12; SD=0.79$), group 2 ($M=0.75, SD=0.78$) and group 3 ($M=1.00, SD=0.71$). Similarly, group 1 was significantly different from group 2 and group 2 was significantly different from group 3. Group 1 did not differ significantly from group 3. Separation of homogenous sub-sets in appendix 7d confirms this observation while Figure 7 illustrates a mean plot comparing groups.

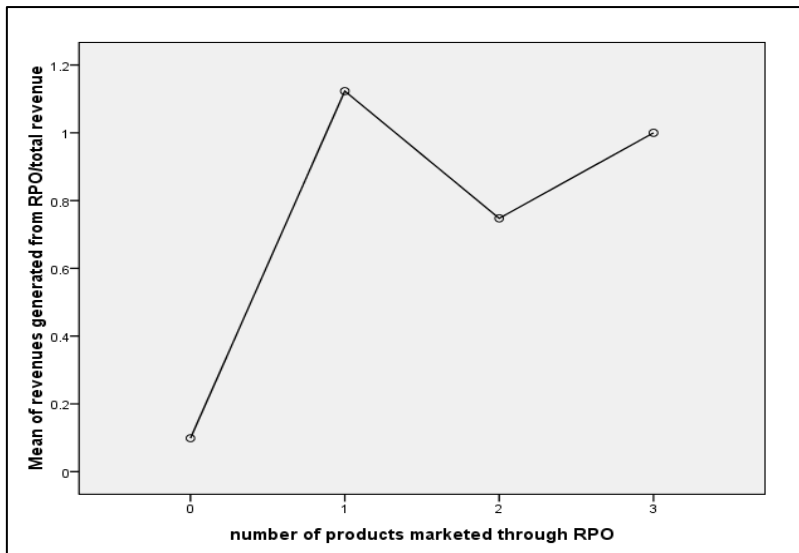


Figure 7: Relationship between proportion of revenues generated and number of commodities marketed through RPO

Although all the three groups showed significant differences between means, the mean differences between groups 1 and 2 (0.38) was higher than the mean difference between groups 2 and 3 (0.25). It can be concluded that increasing the number of products marketed through RPO beyond one is negatively associated with proportion of revenues that members obtain from RPOs. The implication for RPOs is to promote one major marketable enterprise to which all members could be committed. Dealing in multiple enterprises does not seem to increase revenues generated through RPOs significantly.

6.3.5 Membership tenure

Number of years of membership in RPOs was categorized into 4 groups; group 1: >0-2 years, group 2: >2-4 years, group 3: >4-8 years and group 4: >8 years. Results show a statistically significant difference at the $p < 0.01$ level in proportion of revenues received for the four groups: $F(3, 1200) = 6.25$, $p = 0.00$. Tukey HSD post-hoc comparison tests indicated that the mean score for group 1 ($M=0.86$, $SD=0.85$) was significantly different from group 2 ($M=1.04$; $SD=0.77$). Mean scores of groups 2 and 3 ($M=0.93$, $SD=0.78$) were significantly different from group 4 ($M=0.73$, $SD=0.84$) while groups 3 and 4 did not differ significantly from group 1. Results in Appendix 7e confirm these observations. Figure 8 illustrates a mean plot that shows differences in groups.

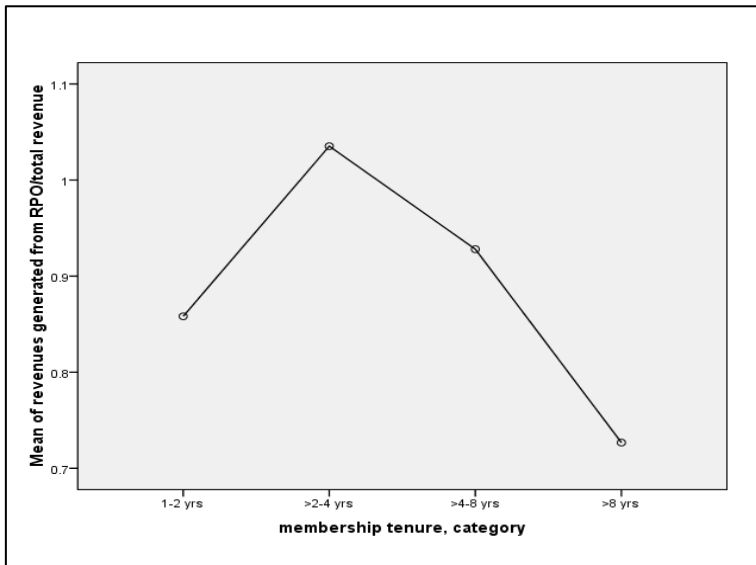


Figure 8: Relationship between revenues generated and membership tenure

Results suggest that when members have newly joined the RPOs, they tend to generate more revenues through the RPOs, which later reduce as membership tenure increases. This finding is contrary to what is known about group processes (Section 4.2.5). From discussions in Section 6.2.4, the loss of motivation by members is likely to stem from the way RPOs are managed as well as their performance. When members' expectations are not fulfilled, they lose trust and commitment. The lack of incentives by RPOs is another reason members may opt for other available buyers (Mutimba and Luzobe, 2004).

6.3.6 Days RPO takes to pay members and type of RPO

Number of days within which RPO members received payment after delivery was divided into 4 groups. Group 1: 1 day, group 2: 2-7 days, group 3: >7-14 days, group 4: >14 days. There was a statistically significant difference at the $p=0.00$ level in proportion of revenues received for the four groups: $F(3, 1201) = 35, p = 0.00$. Tukey HSD post-hoc comparison tests indicated that the mean score for group 1 ($M=1.13, SD=0.78$) was significantly different from the mean score of group 3 ($M=0.58; SD=0.76$). Similarly, score mean of group 3 was statistically different from score means of groups 2 ($M=1.07, SD=0.76$) and 4 ($M=1.14, SD=0.71$). Groups 1 and 2, 1 and 4 and 2 and 4 did not differ significantly. Homogenous sub-sets in Appendix 7f

confirm these differences between groups. Mean plots (Figure 9) depicted reduction in revenues, with a more pronounced reduction between seven and fourteen days. After fourteen days there was a sharp rise in revenues obtained from RPOs.

Generally, revenues obtained from RPOs are negatively associated with increasing days of waiting for payment up to two weeks. The increase of revenues after two weeks is contrary to common expectations and, in this case, is associated with type of RPO. ANOVA between revenues received and RPO type shows that revenues received are positively associated with cooperatives [$F(1, 1203) = 13.40, p = 0.00$; mean score for ACEs ($M=0.98, SD=0.79$) was significantly different from the mean score of other RPOs ($M=0.80; SD=0.81$) with a small effect (0.01)]. Thus the increase in revenues after 14 days has particular reference to cooperatives (ACEs) and this is because of the way they run marketing businesses.

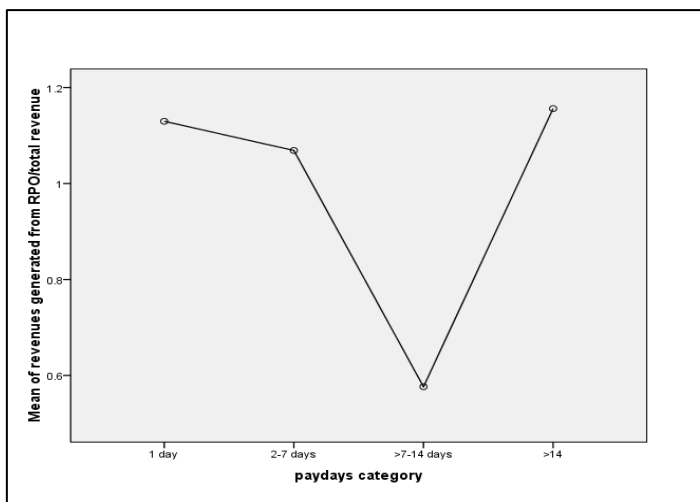


Figure 9: Relationship between revenues generated and payment days

As a method of work, ACEs have a strong orientation towards bulking of member produce, which starts during harvesting and the produce is stored and sold later, mostly off season, when prices have risen. This is made possible because ACEs own storage facilities, either inherited from the cooperative movement or recently constructed with the help of donor aid. Because of such methods of work, waiting days for cooperatives are normally longer than those of other forms of RPOs. Other forms of RPOs have to sell early in order to avoid increased rents (temporary stores are rented on a seasonal basis). Further analysis confirms this observation; ACEs

pay members within an average of 11 days (SD=8) while other forms of RPOs pay within an average of 8 days (SD=14). This is also in addition to the fact that other forms of RPOs are relatively new, are undercapitalized, lack liquidity and are still building trust among members.

In addition, a number of ACEs sampled, particularly those involved in coffee fair trade or niche markets, were paying bonuses or second payments after the close of the business season. As a result, long waiting eventually paid off due to such proceeds, which serve as an incentive to sell more products through RPOs. Thus cooperatives had incentives in place that help sustain member loyalty and commitment. The majority of other forms of RPOs sampled did not have such incentives.

Furthermore, results show that members of ACEs sold more quantities and thus obtained more revenues from RPOs (average 1,175,356 Ugshs) compared to members of other forms of organisations (average 810,992 Ugshs). This finding is plausible considering that cooperatives have existed in the business for many years and are better endowed with resources compared to other organisations. Key resources unique to cooperatives that give them an edge over other forms of RPOs include ownership of storage facilities, a sensitized or trained human resource, linkage to credit sources such as SACCOs and ownership of shares (on top of other membership fees and subscriptions) to finance operations.

6.3.7 Member attitudes: benefiting from RPOs and satisfaction with bulking initiatives

Satisfaction of members was computed from responses of RPO members against a five-point Likert scale ranging from very dissatisfied to very satisfied. Satisfied and very satisfied were merged and recoded as satisfied =1, otherwise 0. Results showed a statistically significant difference at the $p=0.00$ level in proportion of revenues received for the two groups: $F(1, 1202) = 82.57, p = 0.00$. As expected, members who were satisfied with RPOs tended to sell more quantities through them compared to those that were not satisfied.

Similarly, there was a statistically significant difference between revenues received by members that confessed they had benefited from the RPOs (1) and those that had not benefited (0): $F(1, 1203) = 14.09, p=0.00$. Results suggest that members, who had received benefits from their RPOs, obtained higher proportions of revenues from them compared to those that had not received any benefits.

Benefiting from RPOs and being satisfied are not synonymous. For example, 69 percent of respondents had benefited from their RPOs but only 47 percent were satisfied with RPO's bulking initiatives. However, both seem to influence the quantities members sold through RPOs in the same way. The implication for RPOs is the need to offer adequate incentives that can keep members motivated to sell products through them. Results agree with studies on satisfaction (Arcas and Munuera, 2002) and commitment (Kim, 2005) although the latter was conducted under the employer-employee context.

6.3.8 Price information

Access to price information was constructed as a two group variable from yes (1) and no (0) responses. ANOVA results indicated a statistically significant difference at the $p=0.00$ level in proportion of revenues received for the two groups: $F(1, 1203) = 18.03, p = 0.00$. Results imply that receiving price information is positively associated with selling more quantities through RPOs and thus higher revenues. The finding agrees with earlier research findings. Jagwe and Machethe (2011) find that farmers

who have access to price information tend to sell products to the market while farmers who have absolutely no access to price information tend not to sell any products to the market. Since RPOs have mechanisms for information dissemination to members, this may work to their advantage.

6.3.9 Extension advice in quality management

Training in quality management was also a dummy variable with yes (1) and no (0) responses. There was a statistically significant difference at the $p=0.05$ level in proportion of revenues received for the two groups: $F(1, 1203) = 3.86, p = 0.05$. In practice, training in quality management enables farmers to produce the required quality, thus they gain confidence that their products will not be rejected and are motivated to market through their RPOs.

6.3.10 Access to improved planting material

Two groups were generated: group 1: received planting materials - seed or seedlings, group 0: did not receive. ANOVA results showed a statistically significant difference at the $p=0.05$ level in proportion of revenues received for the two groups: $F(1, 1203) = 10.46, p = 0.00$. Accessing planting material from RPOs is positively associated with selling products through the RPO. Whereas access to improved technologies is known to improve market participation of smallholders (Jaleta *et al.*, 2009; Stockbridge *et al.*, 2003), the reciprocity to sell back to the RPO may depend on the norms and guidelines that guide business arrangements. For example, improved seed, particularly maize, is normally distributed on a loan basis, which payment is recovered at the end of the season. In other instances, for example coffee, elite seed/seedlings are given as hand outs from affiliated national umbrella organisations or NAADS and are distributed through RPOs. This might promote member commitment to their RPOs.

6.3.11 Region where individuals are located

Household data were constituted by three regions, which were assigned groups. Group 1: central region, group 2: western region and group 3: eastern region. Results

showed a statistically significant difference at the $p=0.00$ level in proportion of revenues received for the four groups: $F(2, 1202) = 34.03, p = 0.00$. Tukey post-hoc comparison tests indicated that the mean score for group 1 ($M=0.72, SD=0.75$) was significantly different from the mean score of group 2 ($M=1.22; SD=0.88$). Similarly, mean score of group 2 was statistically different from mean score of group 3 ($M=0.84, SD=0.74$). Mean scores of groups 1 and 3 did not differ significantly. Homogenous sub-sets in Appendix 7g confirm these differences between groups while Figure 10 presents mean plots that depict differences in regions.

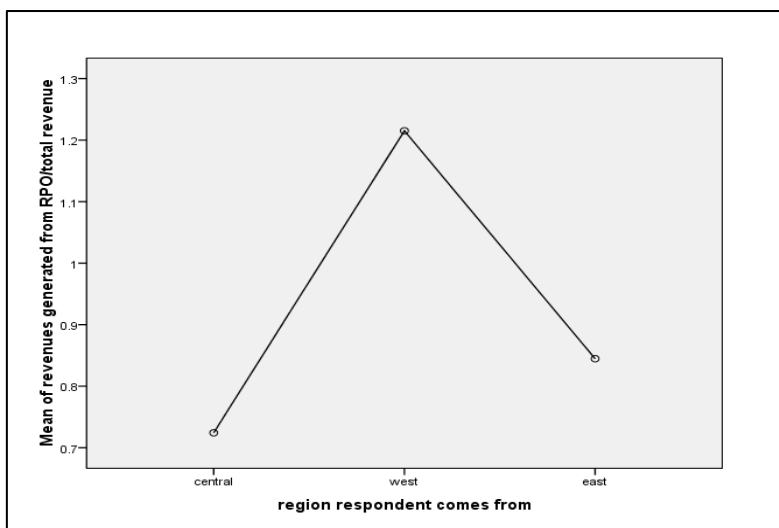


Figure 10: Relationship between proportion of revenues from RPO & region

Both statistics and mean plots show that revenues generated through RPOs were highest in the west, higher in the east and lowest in the central. Further analysis was done to follow up on this finding and it was found that the same trend was observed for revenues obtained from outside RPOs except that the amounts were smaller (average 749,149Ugsh for west, 629,966Ugshs for east and 534,231Ugshs for central). This means that regarding revenues obtained through marketing of agro-produce, the central region still lags behind the western and the eastern regions, with or without RPO arrangements. A plausible explanation then points to the productivity of the regions and the main source of employment. For example, according to the World Bank (2011), the west has the highest production potential, followed by the central and the east. However, the national household survey 2009/2010 indicates that the central region has the highest employment outside agriculture (UBOS, 2010).

Therefore, it may be possible that many people in the central region might have alternative sources of income other than marketing of agricultural production.

Results from OLS and Tobit regressions generally complement findings of the ANOVA (Annex 9). In all analyses, perceptions of satisfaction, having received price information and planting materials are positively and statistically associated with the proportion of total revenues generated from RPOs. On the other hand, bulking distance, number of commodities marketed, membership tenure, payment days and region showed negative and statistically significant associations with the proportion of total revenues generated from RPOs. A few variables showed some variations between ANOVA and regression analyses. For example, in contrast to ANOVA results, regression results suggest that family size is negatively and significantly associated with proportion of total revenues generated from RPOs. This may be true considering that large families have more needs than smaller families, which may result in smaller marketable surpluses. On the other hand, ANOVA results showed that respondent age, perceptions of having benefited from the RPO, and training in quality management were positively and significantly associated with proportion of total revenues generated from the RPOs. The number of commodities produced was negatively and significantly associated with proportion of total revenues generated from the RPOs.

It may, however, be concluded that variables, whose relationships were confirmed by the three different analyses, are the most relevant for this analysis. Nonetheless, the ANOVA enriched the findings by identifying differences between groups, which regressions could not achieve. However, a combination of methodologies may be a better option than a single method.

6.4 Summary

The chapter presented findings related to factors influencing the effectiveness of RPOs. Factors that influence organisational effectiveness, both at RPO and individual member levels, were analysed and discussed. In addition, factors that determine proportion of total revenues that members received from their RPOs were

also investigated and discussed. A brief comparison of methods used in the analysis was also presented.

CHAPTER 7

RURAL PRODUCER ORGANISATIONS AND BENEFITS ACCRUING TO MEMBERS

This chapter explores the benefits that accrue to RPO members. The first section explores benefit distribution between male and female members of RPOs while the second section investigates how the socio-economic status of members impacts on benefit distribution.

7.1 Distribution of benefits according to gender

The majority of respondents (72 percent) confessed to have benefited from being members of RPOs in different ways. Of those that indicated having benefited, the majority (59%) were males. Benefits accessed by the majority of surveyed RPO members included access to agro-inputs, market information and extension services. Fewer farmers accessed skills training in management and credit and were able to establish independent collaborative relationships or networks. Figure 11 presents a summary of key benefits segregated by gender.

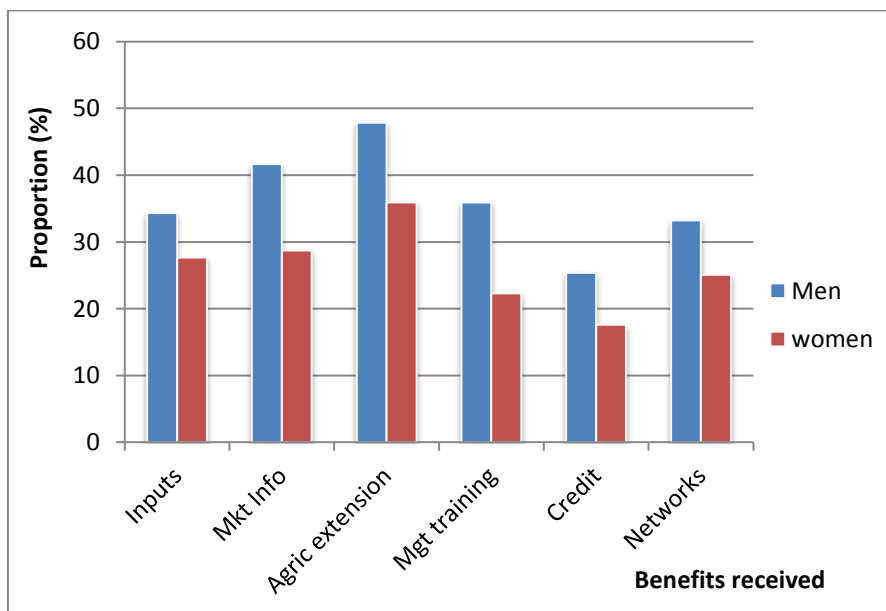


Figure 11: An inventory of benefits received by RPO members (n=1005)

Results in Figure 11 show that across all types of benefits, more males, compared to females, had received benefits. Whereas access to credit and networks was limited for both male and female members, more men had benefited compared to women.

The variance in management training can be explained by the fact that the training is exclusively offered to the RPO leadership that is constituted by the top executive and sub-committees. Women are usually under-represented on these committees and would, therefore, have limited access to the training.

A chi-square test of independence was run for each of the benefits category in Figure 11 to establish the presence of any significant differences between male and female members of RPOs. The results showed that there were significant associations between gender and market information ($p=0.09$); management training ($p=0.08$) and networks developed ($p=0.05$). However, it was difficult to know specific benefits where disparities existed. Therefore, all specific benefits/services under the broad categories were generated and subjected to further analysis. Appendix 1 presents specific benefits that were received by members. In cases where disparities in benefit access between male and female members of RPOs were significant, the phi coefficient was used to test the size effect¹. The following sub-sections discuss gender disparities manifested regarding access to specific benefits.

7.1.1 Market information

Almost all the surveyed RPOs claimed provision of market information to their members. About 61 percent of RPO members reported to have received some form of market information. Table 7 presents details of the nature of market information RPO members had received. Chi-square results reveal statistically significant associations with respect to information on a range of prices on the market and quality requirements. The phi coefficient shows a small size effect in both cases.

¹ According to Pallant (2011:220), for 2x2 tables; small=0.01; medium=0.30; large=0.50. The negative sign is usually ignored when interpreting the effect size.

Table 7: Types of market information received by members of RPOs

Information type (n=1377)	Men		Women		Total		X ²	p	phi
	Freq.	%	Freq.	%	Freq.	%			
Prices you will obtain for your produce	245	31	161	27	406	29	3.09	0.08	
A range of prices offered by different buyers	155	20	90	15	245	18	5.20	0.02	-0.06
A specific buyer the RPO is supplying that season	46	6	35	6	81	6	0.00	0.99	
A range of buyers in the market	24	3	20	3	44	3	0.09	0.77	
Different types of products buyers require	16	2	11	2	27	2	0.07	0.79	
Quality requirements	53	7	25	4	78	6	4.25	0.04	-0.06
Quantities required	15	2	9	2	24	2	0.33	0.56	

Table 7 indicates that few farmers had received market information, most of which was limited to product prices, mainly the price at which their produce would be sold in comparison to a range of prices in the market. This means that, even though 94 percent of the surveyed RPOs indicated that they were providing market information, the information farmers had received seems too deficient to help them articulate competitive business plans and decisions. With respect to gender, more men received price-related information (both from RPOs and without) and information on buyer quality requirements than women. The differences in all cases are statistically significant. The explanation for this is that men are more mobile, reaching markets and townships, interfacing with different buyers and are better endowed with mobile phones compared to their female counterparts.

In an environment where information is in short supply, information and search costs are likely to increase and buyers tend to practise opportunism due to information asymmetry (Poulton and Lyne, 2005). Yet, in the more remote areas, lack of price information does not only limit market participation but farmers who sell at the farm gate become price takers (rather than makers) and suffer exploitation by buyers who come to them (Jagwe and Machethe, 2011). In this regard, women, who are less mobile and have limited connections, suffer more than men. It can be concluded that RPOs do not have adequate access to the necessary market-related information, which they can use to improve their effectiveness. Therefore, there is still need to

establish as well as scale up existing market information systems that can deliver the right and reliable information to the RPOs.

In general, Ugandan smallholder farmers have not responded positively to “right prices” (Nivievskyi *et al.*, 2010). That is to say, even when international prices increase, the difference does not get to the farmer. Wholesale prices have been known to be much higher than local prices and the disparity is blamed on influx of traders and middlemen at the farm gate (Fafchamps and Hill, 2005), who tend to exploit the uninformed producers, among other reasons. Therefore, RPOs are doing a noble job of providing price information to their members. However, there is need to ensure that information is disseminated equitably to both male and female members.

7.1.2 Management training

Specific content offered in management training included group leadership, financial management, book-keeping and proposal writing. Table 8 shows participation in training in these aspects by gender. All aspects that show significant gender disparities reveal a small size. effect

Table 8: RPO member participation in management training

Type of benefit	Male		Female		Total		X ²	P	phi
	Freq.	%	Freq.	%	Freq.	%			
Group leadership	118	15	61	10	179	13	6.76	0.01	-0.07
Financial mgt	95	12	44	7	139	10	8.52	0.00	-0.08
Book-keeping	99	13	39	7	138	10	14.1	0.00	-0.10
Proposal writing	16	2	9	2	25	2	0.55	0.46	

Essentially, the management training is offered to RPO leaders that include the top executive and the sub-committees. Women are usually under-represented on these committees and, therefore, would not have the same access to this type of training as their male counterparts. However, even the few women that are involved in leadership do not have equitable access to financial management and book-keeping training opportunities. Field observations point to two reasons that explain this disparity. First, women might lack skills and confidence to participate in the training

due to inherently low literacy levels. However, there is comparatively fairer participation in group leadership, which subject is not as complex as book-keeping or financial management. Second, since the training is formal and run outside farming localities, women’s domestic responsibilities coupled with cultural restrictions might limit their participation. These observations are in agreement with findings from other studies and reviews (Opio, 2003; OPM, 2005).

7.1.3 Collaborative relationships established as a result of being members in RPOs

Possibly, as a spill-over effect, RPO members had developed personal connections with some stakeholders whom they met as a result of being members of the RPOs. Farmers specified such stakeholders as presented in Table 9.

Table 9: Collaborative relationships developed

Relation developed	Male		Female		Total		X ²	P	phi
	Freq.	%	Freq.	%	Freq.	%			
Political leader	68	9	54	9	122	9	0.05	0.82	
NGO	97	12	76	13	173	13	0.03	0.85	
Exporter	26	3	11	2	37	3	2.84	0.09	-0.05
School	6	1	6	1	12	1	0.22	0.64	
Processor	29	4	30	5	59	4	1.44	0.23	

The results indicate that only a few farmers were able to use the RPO platform to develop personalised relationships. With the exception of links with exporters, there were no other significant differences in the other collaborative benefits/relationships between males and females. The significant relationship also displays a small size effect.

It is intuitive to note that the major women networks are limited to agencies or individuals that have jurisdiction in the communities (political leader and NGO) or are market outlets within the neighbourhood (processor). On the other hand, men’s networks include market outlets with higher profit margins (with processor and exporter). This further confirms women’s immobility and dependence on the

immediate environment and agrees with studies by others that women networks tend to be localized while men’s are commercial-oriented (Pandolfelli et al., 2008) .

7.1.4 Credit

In general, few RPO members received credit from their organisations as well as from outside. For example, 87% of men and 89% of women sampled did not receive credit between 2008 and 2009. Credit from RPOs was accessed through rotating savings and credit associations (ROSCAs) or SACCOs. Sources outside RPOs included commercial banks and micro-finance institutions. Due to relatively low rates of interests on loans offered by RPO affiliated sources, both men and women received more credit from RPOs than other sources. However, men received more credit than women (an average of UgShs 529,950 for men versus UgShs 217,615 for women). Figure 12 indicates the average amounts borrowed from RPOs by men and women between 2008 and 2009.

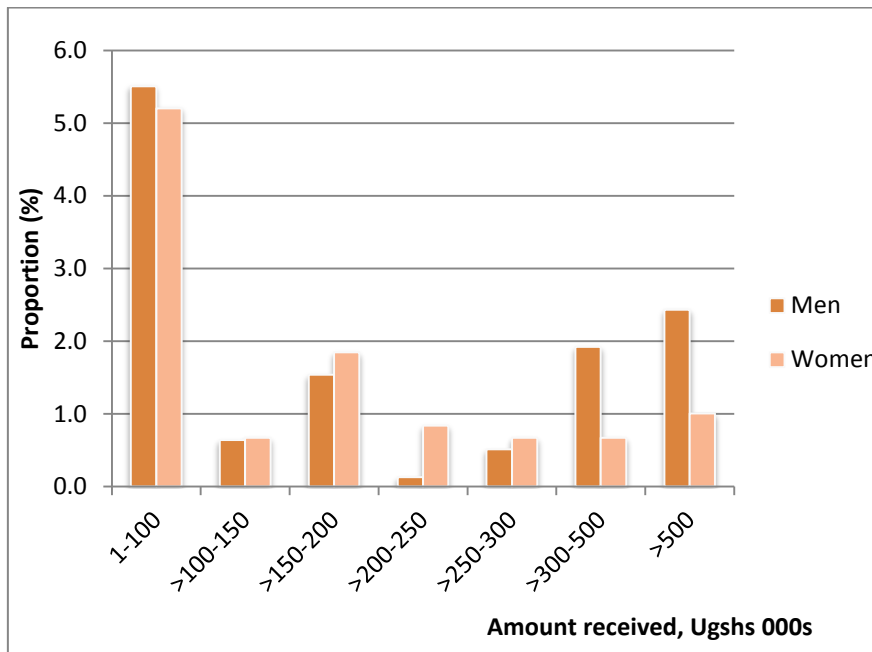


Figure 12: Amount of credit received by RPO members 2008-2009

Additional observations from Figure 12 show that women tended to borrow smaller amounts while men borrowed relatively bigger amounts. Similar trends were

observed for credit accessed from other sources except that the number of farmers borrowing became even smaller.

The above suggest that ROSCAs and SACCOs are potential sources of credit for RPO members. However, there are challenges associated with this source. One key constraint is that the amount lent by the RPO is dependent on the amount of savings an individual has accumulated. This implies that only members that are able to save can access credit from RPOs or affiliated SACCOs. Yet, saving in these SACCOs has conditions attached that include paying a specific deposit amount, purchase of application forms, passbooks and, in most cases, purchase of the first share. In addition, borrowing from SACCOs requires collateral, which women may not have or are not willing to risk for fear of confiscation in case they failed to repay. These conditions limit the number of people that can save. Consequently, this reduces the number of RPO members and the amounts they can borrow from the RPO. Women are the most affected by such conditions since they may neither have monies to commit at the start nor the necessary collateral to qualify for loans.

However, additional field notes indicate that the majority of women obtained credit from informal saving mechanisms, which are preferred to SACCOs because they do not require collateral and have no stringent conditions attached. The limitation with this source, however, is that smaller amounts can be obtained at a time, which, in turn, limits the farmer's level of productive investment.

7.1.5 Agro-inputs

Except for improved seed/seedlings, other agro-inputs (such as improved breeds, inorganic fertilizers, spray chemicals, organic manure and farm tools) were received by a limited number of RPO members. Figure 13 presents a summary of the agro-inputs received by gender.

Figure 13 indicates that women had more access to improved seed and breeds compared to men. Men, on the other hand, had more access to inorganic fertilizers, spray chemicals, organic manure and farm tools compared to women, which observations agree with earlier findings by Nayenga (2008). However, the Chi-square

test of independence did not reveal any significant disparities between men and women access to the enlisted inputs.

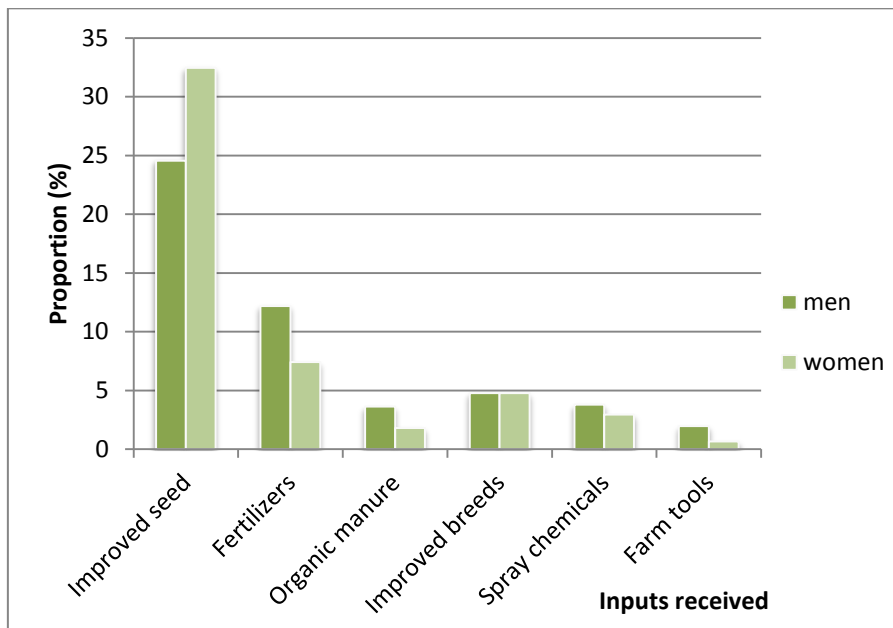


Figure 13: Agro-inputs received by members of RPO

There are two possible explanations for the gender disparity observed. First, inorganic fertilizers, crop protection chemicals and farm tools are too costly for women to purchase. Second, it may be that, since women do not own land and, therefore, have no control over it, they may not be willing to undertake costly investments on it. A study evaluating the performance of the PMA revealed that lack of land ownership or control by women in Uganda had led women to focus on production of annual crops, rather than long-term high-value cash-crops, and a reluctance to invest in improvement of land (OPM, 2005).

Women's better access to improved seed and breeds stems from the fact that women receive more of these handouts because of the trust service providers have that they will implement intended projects and manage the recovery or rotation between members better than men. To a larger extent, inputs are supplied as handouts by service providers or through the national agricultural advisory service delivery system. They are normally delivered on a loan-recovery or member rotational basis.

The limited number of farmers receiving inputs is an indication of the need to improve farmers' access to inputs, if productivity is to increase. The importance of increasing productivity is emphasized as a central theme in agricultural development in some studies (Shaw, 2007; Ray, 2009; Sumberg, 2006). Yet, conceptions of raising productivity point to the need for productivity-enhancing technologies and improving input provision systems, among others.

7.1.6 Extension services

Seventy-six percent of surveyed RPOs either provided or solicited for extension services for their members. Responses from members confirm that the majority of surveyed individuals had accessed extension services through their RPOs. Table 10 shows the specific extension services that were received. Aspects that show significant disparities reveal a small effect size.

Table 10: Extension services that were received by members

Extension services received	Male		Female		Total		X ²	p	phi
	Freq.	%	Freq.	%	Freq.	%			
Improved agricultural practices	284	36	229	38	513	37	0.61	0.43	
Setting up demonstrations	127	16	65	11	192	14	8.08	0.00	-0.08
Record keeping	100	13	49	8	149	11	7.36	0.01	-0.07
Quality management	137	18	93	16	230	17	0.91	0.34	
Collective action	25	3	16	3	41	3	0.31	0.54	
Pest and disease control	2	0.3	3	0.5	5	0.4	0.57	0.45	

The results in Table 10 indicate that a larger proportion of female farmers (compared to men) had received training on improved agronomic and animal husbandry practices, but the differences were not statistically different. Generally, fewer farmers were trained in setting up demonstrations, record keeping and quality management. However, compared to women, men had benefited more from setting up demonstrations and training in record keeping. This is further confirmed by results of the Chi-square test of independence. A plausible explanation for this observation is the fact that rural women have low literacy levels, which inadvertently limit their capacity to participate in technical undertakings such as setting up and managing

experiments and active participation in record keeping. Findings of the 2005 PMA evaluation study confirmed that women had limited knowledge of improved agricultural practices and soil conservation, a condition perpetuated by low literacy levels (OPM, 2005). This implies that any efforts intended to increase participation of rural women in related areas should target to address their capacity needs.

7.1.7 Summary: distribution of benefits across gender

In general, few farmers accessed benefits from their RPOs and men had access to a wider range of benefits compared to women. Women had benefited more than men regarding access to improved seed and, to a smaller extent, improved breeds although the differences were not statistically significant. This was due to women's credibility among service providers that they could successfully implement such projects compared to men. The rest of benefits where statistically significant differences showed that men had more access include (1) participation in demonstrations; (2) training in record keeping; (3) skills enhancement training for RPO leaders; and (4) information related to product prices and quality requirements. Regarding access to credit, more men had access and received bigger amounts compared to women. In terms of networks, men had business links with exporters while women had connections with local buyers and social relations within the immediate neighbourhood.

7.2 Distribution of benefits according to socio-economic status of RPO members

Five key socio-economic indicators were selected to represent the socio-economic status of sampled households, namely, family size, age and education level of RPO members, size of land owned and monetary value of owned assets. The Kruskal-Wallis test was conducted to test the existence of relationships between benefits accruing to members and the selected indicators. A summary of relationships between the various benefits and selected indicators is presented in Table 11. Where a significant relationship existed, confirmed by a Chi-square value showing a significance level equal to or less than 0.05, post-hoc tests were conducted with Mann-Whitney U tests to identify particular groups that were statistically different.

Relationships with significance levels above a p-value of 0.05 were not considered for post-hoc analysis because Field (2009) and Pallant (2011) recommend a significance level of 0.05.

A Boniferroni correction was applied in all cases to compare groups. That is, the alpha level of 0.05 was divided by the number of groups being compared and the resulting alpha was used as a critical level of significance. Effect sizes were calculated for each of the compared groups that showed significant differences (i.e. where the z value was less than or equal to the critical alpha value). Where values of z were higher than the critical alpha value, no effect size was calculated. In all cases, effect sizes were evaluated against Cohen's criteria of 0.1=small effect, 0.3=medium effect and 0.5=large effect (Field, 2009; Pallant, 2011).

7.2.1 The impact of family size on benefit distribution

Family size was divided into three groups: group 1: n=486; <= 6 members, group 2: n=612; >6-10 members, group 3: n=279, >10 members. Results from the Kruskal-Wallis test recorded statistically significant differences across the three different family sizes with respect to (1) access to information regarding range of buyers in the market; (2) obtaining improved breeds; and (3) access to training in financial management (Table 11). Significant levels between groups, from Mann-Whitney U tests, were determined at a p-value of 0.02 due to the application of a Boniferroni adjustment. Detailed statistical results from the tests conducted are presented in Appendix 2.

Access to information on a range of buyers in the market

Statistically significant differences were recorded between groups 1 and 3 (U=65200, z=-2.71, p=0.01, r=0.10) and between groups 2 and 3 (U=82404, z=-2.55, p=0.01, r=0.09) regarding access to information about a range of buyers in the market. Groups 1 and 2 did not show any statistical difference between mean scores.

Table 11: Benefit distribution across socio-economic indicators (Kruskal=Wallis test results)

Type of benefit	Family size	Education level	Age	Land size	Monetary value of owned assets
Market information	X ² (df=2)	X ² (df=3)	X ² (df=4)	X ² (df=2)	X ² (df=4)
Price offered for produce	1.40	5.40	4.63	1.95	13.90***
Range of buyers on the market	9.60***	2.29	5.35	0.06	1.93
Range of prices in the market	1.92	7.94**	11.57**	10.75***	8.36*
Quantities required by buyers	3.52	7.98**	3.17	5.24*	4.22
Specific buyer	2.53	3.62	13.91***	7.04**	1.28
Different products required by buyers	1.08	2.16	3.23	0.69	9.12*
Quality requirements	0.82	5.10	3.22	0.049	17.27***
Agro-inputs					
Improved seed	3.34	4.80	6.06	6.89	6.45
Improved breeds	15.20***	4.04	5.31	0.19	6.35
Fertilizer	4.03	3.93	1.47	3.49	8.00
Spray chemicals	2.48	3.73	6.69	2.27	3.20
Extension services					
Improved agronomic practices	3.44	0.94	5.13	4.58	8.04*
Demonstrations	5.66*	9.94**	7.55	4.98	4.08
Recordkeeping	0.84	14.22***	1.72	2.72	9.19**
Quality management	0.72	3.49	0.28	2.65	3.49
Collective action	0.03	0.40	1.03	1.96	0.25
Management training					
Financial management	6.93**	10.13**	1.65	1.14	1.49**
Group leadership	3.82	10.79**	2.63	5.51*	9.28*
Book-keeping	1.12	15.69***	9.58**	10.43***	17.43***
Private networks					
Political leader	7.67	26.56***	9.02*	1.81	19.56***
NGO	5.75*	16.08***	10.74**	4.05	15.39***
Exporter	0.66	10.74**	2.80	0.30	16.33***
Processor	0.97	6.49*	1.95	2.73	2.42

***significant at 1%; **significant at 5%; *significant at 10%

Results suggest that there are no differences in access to information about a range of buyers in the market among families of up to six people, but as family size goes beyond six members, differences occur in access with families bigger than ten members having more access than those with between six and ten members. Therefore, it can be concluded that families with more than ten members had more access to information regarding a range of buyers in the market compared to families with fewer members.

The observations above can be explained by mobility of the various individuals in the household, which offers an opportunity for them to pool information on various buyers. This is more so considering that the majority of members (55 percent) in households with more than ten members are men. Further analysis indicates that the average age for families with more than ten members is 50 while that with fewer members is 44. Older people in the household may have access to such information for two reasons. First, they are old enough to access or even demand information from their RPOs. Second, from earlier discussions (Section 6.3.1), older people were selling through their RPOs more than the younger ones, implying they may be more interested in acquiring any information that may help them make profitable market decisions.

Access to improved breeds

Similar to buyer information, statistically significant differences occurred between groups 1 and 3 ($U= 63882$, $z=-3.68$, $p=0.00$, $r=0.13$) and groups 2 and 3, with a medium effect ($U= 81544$, $z=-2.81$, $p=0.01$, $r=0.09$). Differences between groups 1 and 2 were not statistically significant. In family sizes of up to six people, there are no differences in access to improved breeds. Family sizes bigger than six members exhibit disparities in access to improved breeds, with families larger than ten members having more access. Major animal enterprises supported through RPOs include goats, pigs and poultry and, to a small extent, cattle.

The relevance of family size in accessing improved animal breeds has to do with the demand for labour to manage the enterprises. This is because most of the animals are intensively managed through the zero grazing system. Thus, one has to be sure

that there are people in the homestead that will supply the feeds in time and do all the day-to-day management activities. This is in addition to other requirements that must be met, which are equally labour demanding. For example, for a farmer to access an improved goat or poultry, they must have an approved housing structure and, in the case of goats (or cattle), they must also have a plot of pastures to supply feed. Big families, therefore, provide a cheap source of labour for managing the enterprises while the smaller families may not be able to cope.

Training in financial management

Mann-Whitney U tests recorded statistically significant differences between groups 1 and 3 ($U=63760$, $z=-2.62$, $p=0.01$, $r=0.09$). Other groups did not show any statistically significant differences. The results indicate that members of RPOs with household sizes of more than ten people participate in financial training more than those with up to six members.

Although there is no appropriate theoretical explanation for such an observation, two arguments point to this, namely, (1) the fact that the financial management training is provided to leaders; and (2) the gender composition of the two groups, considering that more men participate in management. Further analysis indicates that family sizes of more than ten members have more leadership positions (29 percent) than those with up to six members (26 percent). In addition, families with more than ten members are constituted by 65 percent men while those with up to six members have 53 percent men. Thus, families with more than ten members have more access to the financial management training because of indirect reasons related to having more men in leadership.

7.2.2 Education level of RPO members and benefit distribution

Education level, captured as number of formal schooling years, was divided into four groups; group 0: $n=96$; 0 years (no formal schooling), group 1: $n=785$; 7 years (primary), group 2: $n=364$; 8-11 years (O' level) and group 3: $n=132$; more than 11 years (high school and above). Education level seemed to influence access to many benefits accruing to RPO members. The Kruskal-Wallis test revealed that statistically

significant differences were recorded with respect to the following: (1) information on range of prices in the market; (2) participation in demonstrations; (3) skills enhancement training in record keeping, financial management, group leadership and book-keeping; and (4) networks with political leaders, NGOs, processors and exporters (details in Table 11).

Mann-Whitney U tests, conducted to evaluate how the different education levels affected benefit distribution, revealed that statistically significant differences occurred between zero education and high school level with respect to participation in demonstrations. In addition, statistically significant differences occurred between zero education and both ordinary level and high school regarding collaboration with political leaders and book-keeping. This implies that respondents with O level education and above had more access to these particular benefits. Furthermore, statistically significant differences occurred across all education levels with respect to (1) information on range of prices in the market; (2) training in financial management; (3) training in group leadership; and (4) collaboration with NGOs. In all the four cases, respondents with primary school education had access to the benefits, compared to those that had no formal education. However, respondents with high school education recorded more benefits than lower levels even though differences are associated with small effect sizes. All relevant statistics are documented in Appendix 3.

Whereas it is understandable that participation in demonstrations require technical skills, it is not clear why it should favour farmers that have a minimum ordinary level of education. Yet, the majority of farmers have an average of primary education. This shows the inability of RPOs to cater for the needs of the bigger membership by concentrating on the few elites. In contrast, collaborative relationships hinge on the initiative of the farmers. Thus, it is possible that the more educated farmers have the confidence and ability to network more that the less literate ones, hence the disparities. Nonetheless, networks with political leaders and NGOs are also seen to favour the village elite rather than the broader membership, signifying lack of equitable service delivery mechanisms among service providers and influential community leaders.

7.2.3 Age of RPO member and benefit distribution

Age of respondents was divided into five groups; group 1: n=176, 18-30 years; group 2: n=407, 31-40 years; group 3: n=366, 41-50 years; group 4: n=234, 51-60 years and group 5: n=194, more than 60 years. The Kruskal-Wallis test revealed that there were statistically significant differences across the different age groups regarding (1) information on range of prices in the market; (2) information regarding a specific buyer the RPO was supplying; (3) training in record keeping; and (7) networks developed with NGOs. However, Mann-Whitney U tests for between-group comparisons indicated that a statistically significant relationship existed only in the case of information regarding specific buyers between the age groups 31-40 and 41-50 ($U=70355.50$, $z=-3.12$, $p=0.00$, $r=0.11$). The rest of the age groups did not show any statistically significant difference in the benefits received. This implies that, between ages eighteen and forty, there was no difference in the distribution of enlisted benefits. However, beyond forty years of age, differences existed with respect to information received about specific buyers the RPO was supplying, such that ages 41-50 tended to receive this information more than farmers under forty years and older ones beyond fifty years. Detailed statistical results are presented in Appendix 4.

It is noted in Section 6.3.1 that farmers with age above forty years were selling more produce and, thus, getting more revenues than the younger ones. It is intuitive to note that their willingness to sell through the RPOs is dependent on their getting information about specific buyers their RPOs were supplying.

7.2.4 Size of land and benefit distribution

Land size was divided into three different groups; group 1: n=460, 0.1 – 1 ha, group 2: n=551, >1 - 2 ha and group 3: n=366, >2 ha. Size of land owned seems to influence a small range of benefits. The Kruskal-Wallis test recorded statistically significant benefits with regard to (1) range of prices in the market; (2) specific buyers the RPO was supplying; and (3) training in book-keeping. Mann-Whitney U tests were conducted to follow up these findings. A Boniferroni correction was applied and

all effects are reported at the 0.02 level of significance. Detailed statistical results are indicated in Appendix 5.

Information on range of prices on the market and specific buyers

Statistically significant differences existed between group 1 and group 3 ($U=76896$, $z=3.26$, $p=0.00$, $r=0.11$), with respect to information on a range of prices in the market. Similarly, a statistically significant difference was shown between group 1 and group 3 ($U=80527$, $z=2.60$, $p=0.01$, $r=0.09$), regarding information on a specific buyer the RPO was supplying products. This implies that there is no significant difference in benefits received among producers that own up to five acres of land. However, beyond five acres, the distribution of market information regarding range of prices on the market and specific buyers the RPO is supplying favours those that have at least five acres of land. The finding agrees with earlier studies in which large farmers have been found to seek price and quality related information than smallholders (Government of Uganda, 2009).

It is intuitive to note that dissemination of market information in RPOs is not unidirectional from RPOs to members. There are mainly two pathways that RPOs use, namely, (1) information is posted on notice boards for the entire farming community to access; and (2) leadership committee members are charged with disseminating information to their respective primary groups. Thus, members will, in one way or another, make some effort to access the available information. With respect to the above results, a probable explanation for the variance between groups is that farmers with fairly large acreages of land are likely to produce more quantities. They, therefore, seek out this information to help them make profitable decisions by choosing a buyer that offers the best price.

Training in record keeping

Statistically significant differences existed between group 1 and group 3 ($U=78625$, $z=-3.07$, $p=0.00$, $r=0.11$), and between groups 2 and 3 ($U=95840$, $z=-2.32$, $p=0.00$, $r=0.08$). This implies that there was no significant difference in terms of accessing training in record keeping among RPO members that owned up to 1 ha of land.

However, those that had more than 1 ha tended to receive more training in record keeping. Further analysis indicates that the majority of RPO members (51 percent) owning land size of up to 1 ha were women and had comparatively lower education levels (average of six formal schooling years). Those owning more than 1 ha were mainly men (60 percent) and were slightly more literate (average of seven formal schooling years). It is, therefore, possible that with lower literacy levels, the category below 1 ha had limited access to record keeping training since it builds on previous skills.

7.2.5 Asset ownership and benefit distribution

Asset ownership was captured as monetary value of owned assets, both household assets and livestock, excluding land. Thus, the value of owned assets gives an indication of wealth status in that respect. For analytical purposes, total monetary value was divided into five groups: Group 0: n=303: 0-250,000 Ugshs (very poor); Group 1: n=306: >250,000-650,000 Ugshs (poor), Group 2: n=334: >650,000-1.5 million Ugshs (moderate); group 3: n=238: >1.5-3.0 million (rich) and group 4: n=196: >3 million Ugshs (very rich). The Kruskal-Wallis test recorded statistically significant differences across asset categories with respect to (1) information on price offered for products; (2) information on quality requirements; (3) trained in record keeping; (4) trained in financial management; (5) trained in book-keeping; (6) collaboration with political leader; (7) collaboration with NGOs; and (8) collaboration with exporter. Details of statistical results are presented in Appendix 6.

However, Mann-Whitney U tests show that within groups, statistically significant differences exist between groups 1 and 2 with regard to information on prices of products (U=45142, z=-3.18, p=0.01, r=0.13); information on quality requirements (U=48405, z=-2.51, p=0.01, r=0.10); and collaboration with NGO (U=47989, z=2.31, p=0.08, r=0.10). Other statistically significant differences exist between groups 1 and 3 regarding training in book-keeping (U=33949, z=2.56, p=0.01, r=0.11) and collaboration with NGOs (U=33898, z=-2.42, p=0.02, r=0.10). Groups 2 and 3 are only statistically significantly different in the case of collaboration with NGOs (U=37377, z=2.34, p=0.02, r=0.10).

The results show that, for asset-poor households, there are no statistically significant differences in access to benefits. However, differences exist between the asset-poor and the moderately asset-rich, with the latter accessing more benefits regarding prices buyers were offering, quality requirements and collaborating with NGOs. Compared to other groups, asset-rich members had more access to information on quality requirements, training in book-keeping and collaborative relationships with NGOs and political leaders. In sum, there is a general trend with benefit access being limited for the asset-poor, but the range of benefits accessed increases for members that are moderately asset-rich and increases even further for the asset-rich.

7.2.6 Summary: benefit distribution across socio-economic status

The section elaborated that the majority of benefits accruing to members of RPOs are impacted upon by the education level of members and asset ownership. Education level influenced access to price and buyer information, networking, participation in demonstrations and skills development training, with the more literate members benefiting more than the less literate ones. Some disparities reveal the inability of RPOs to deal with the larger membership and a concentration on a few elites. Similarly, asset ownership influenced access to price information, networking, and skills training in book-keeping. The asset-rich had more access to benefits than the asset-poor.

The size of land owned had a direct and positive influence on access to information on prices and buyers, with the land-rich having more access than the land-poor. On the other hand, age had influence on specific buyers the RPOs were supplying, with the middle age group (41-50) having more access compared to other age groups. Family size had influenced access to buyer related information and improved animal breeds, owing to, respectively, mobility of household individuals and family labour availability.

CHAPTER 8

SUMMARY, CONCLUSIONS AND POLICY IMPLICATIONS

This chapter presents a summary of the study. The purpose of the study, major findings and relevant conclusions are presented. Limitations of the study are highlighted and areas for future research are outlined. Areas for policy intervention emerging from the study are also outlined.

8.1 Summary of the study

8.1.1 Background

Agriculture is the most important economic activity in Uganda, employing close to 70 percent of the labour force. Smallholder farming accounts for 75 percent of total agricultural production that is carried out by an estimated 2.5 million smallholder families, most of whom live in the rural areas. Production amongst smallholder farmers is mainly for home consumption and is characterised by traditional farming technologies. This results in the generation of small scattered surpluses, the marketing of which results in high transaction costs and risks. These problems are worsened by the poorly developed road and telecommunication infrastructure and a limited scale of urban markets.

The Ugandan government recognizes that economic growth and rural poverty alleviation can only be achieved through the development of the agricultural sector. For the past decade, efforts have been invested in agricultural commercialization, with the intention of transforming the predominantly peasant sector into commercialized agriculture. However, evidence from elsewhere indicates that successful commercialisation of the agricultural sector is not possible without linking smallholder farmers to markets. Given the supportive policy environment, the public sector, through NAADS and various agencies in the private sector, have been involved in the formation of RPOs to assist smallholder farmers participate in markets.

Despite the vigilance of promoting RPOs in the hope that they will commercialize smallholders, limited studies have been conducted to establish whether they are actually effective in linking their members to markets. It is also not clear what factors would determine their effectiveness. This is particularly important, considering that RPOs in Uganda are facilitated by different development stakeholders (the government, NGOs, private sector and the donor community) with variable divergences.

In addition, recent studies have highlighted information gaps and the need to understand how to organise and sustain effective RPOs. On the other hand, studies that measure effectiveness of RPOs, though limited, have been conducted in the developed world where the organisational structures and the context in which they operate are different from the developing world. Research that seeks to measure effectiveness of member-based organisations is still limited in the developing world. There is thus need for empirical evidence to provide insights into what determines effectiveness of marketing RPOs.

Research has also been limited on issues of inclusion in RPOs. The few studies that have explored participation have focused on the inclusion of the poor in general without paying attention to gender segregation. In general, studies that have assessed gender inclusiveness within the context of RPOs are rare. Issues of inclusiveness are particularly important for Uganda, where it has been empirically proven that gender inequalities directly and indirectly limit economic growth

Understanding the effectiveness of the widely popularized RPOs and knowing the determinants of RPO effectiveness is important for the RPOs, policy makers and others interested in enhancing RPO effectiveness. This is because the RPOs will be able to make correct choices, whereas practitioners and policy makers will be able focus their interventions on specific areas that can generate better results in terms of improving RPO effectiveness. On the other hand, understanding how male and female Ugandans are benefiting from being members of RPOs is an important and timely contribution to the current poverty alleviation initiatives, and more so to the smallholder commercialization and poverty reduction efforts.

8.1.2 Purpose of the study

The overall purpose of this study was to assess the effectiveness of second-tier associations and cooperatives in Uganda in linking their members to markets and to identify factors which determine their effectiveness. Specific objectives were to (a) develop a measure for effectiveness of RPOs in linking their members to markets; (b) determine whether the method used to establish RPOs has a bearing on their effectiveness in linking farmers to market; (c) determine whether the effectiveness of RPOs in linking farmers to markets is dependent on the type of model used for the linkages; (d) examine the organisational and management structures of RPOs with respect to how they facilitated or hinder effectiveness in linking their members to markets; (e) investigate the relationship between the management capacity of RPOs and their effectiveness in linking members to markets; and (f) establish whether there are any benefits accruing to members of RPOs and ascertain whether such benefits are equitably distributed based on gender and socio-economic status.

8.1.3 Research methods used in the study

Empirical analyses in this study are based on primary data collected from two simultaneous surveys conducted between February and April 2010. The first survey was constituted by 62 second-tier RPOs, purposively selected from the four regions of rural Uganda: eastern, northern, western and central. The RPOs had to be involved in collective marketing of coffee (Robusta or Arabica), maize or plantain bananas with evidence of output market participation. The second survey was constituted by a random sample of 1,377 members of the sampled RPOs in the east, west and central regions. All data were solicited through face to face interviews and recorded on questionnaires. Additional field notes, following up on some issues deemed important were documented.

Two objective measures were chosen to measure effectiveness of RPOs, namely, (1) the proportion of members that sold a proportion of their produce through their RPOs was used as a proxy of effectiveness at RPO level; and (2) amount of revenue received from RPOs as a proportion of revenue from total sales was used as a proxy of effectiveness at member level. Both indicators were treated as dependent

variables and analysed separately. An OLS regression was used to determine factors that influenced effectiveness of RPOs (i.e. the percentage of members selling through the RPOs). At individual level, factors influencing effectiveness were explored using one-way between-groups ANOVA with post-hoc tests to determine differences between groups.

Benefit distribution among members of RPOs was analysed in two ways. Relationships between distribution of specific benefits and gender were determined using a Chi-square test for independence. On the other hand, distribution across selected socio-economic indicators was explored using the Kruskal-Wallis test. Post-hoc tests seeking to determine differences between groups were done using Mann-Whitney U test with a Boniferroni correction.

8.2 Major findings of the study

8.2.1 Effectiveness of RPOs

The general observation was that second-tier marketing RPOs were not effectively linking their members to markets. This is because, in terms of achieving the major objective for which they were established, they were linking an average of 44 percent of their members to output markets. In terms of revenues obtained by members from the sale of produce, an average of 46 percent of the revenues came from sales through RPOs. In addition, only 47 percent of respondents were satisfied with the performance of the collective marketing initiatives.

8.2.2 Factors determining effectiveness of RPOs

The study explored factors determining effectiveness at two levels; organisational and individual. Key factors determining both are summarized below.

Organisational level factors: Democratic governance and the number of members were positively and significantly associated with the proportion of members selling through the RPO. Contrary to the widely known one-man one-vote and other democratic principles, the use of numerous committees was more important than

many member meetings and large representative committees. The number of members was advantageous for pooling big volumes for marketing and, therefore, enabling the RPO to attract relatively higher prices. On the other hand, training of leaders in leadership, use of numerous internal practices and bulking distance were negatively associated with the proportion of members marketing through the RPO.

RPOs established by members were more likely to have higher proportions of members selling their produce through them than those that were externally influenced. On the other hand, RPOs that were linked to output markets through intermediation were likely to have lower proportions of members selling through them. Even though the coefficients were not significant in both cases, these factors remain important signals for overcoming some of the collective marketing constraints highlighted in this study.

Individual level factors: The results showed that older farmers (above 40 years of age) tended to get more revenues from the RPOs compared to younger ones. Bulking distance was found to affect the amount of revenues from RPOs negatively even within a distance of four kilometres. Other than physical distance, there were additional limitations such as the availability of traders at farm level. The number of commodities produced had a negative association with the amount of revenues obtained from RPOs but ownership of small livestock was observed to increase revenues from RPOs. The number of commodities marketed through RPOs had a negative association with revenues, implying that RPOs dealing in fewer commodities are likely to be more effective.

Membership tenure had a positive significant relationship with revenues up to four years beyond which revenues reduced. The number of days that members wait for payment were negatively associated with revenues obtained and differed depending on RPO type. For farmer associations, waiting beyond 14 days reduced revenues significantly while in cooperatives, longer waiting was associated with increased revenues due to a unique *modus operandi* and ownership of basic resources. Regarding attitudes, perceptions of having benefited from RPOs and satisfaction with RPOs' marketing initiatives were positively associated with the amount of revenues obtained.

Access to price information and improved planting material, and training in quality management were significantly associated with increased revenues from RPOs. Finally, there were regional differences, with western Uganda recording more revenues from RPOs, followed by eastern Uganda and the central region came last.

Education level of respondent, gender, number of non-farm sources of income and family size did not show any statistically significant differences associated with revenues that members obtained from RPOs.

8.2.3 Benefits accruing to members of RPOs

Broad categories of benefits that accrued to members of RPOs included access to inputs, market information and credit, agricultural extension advisory services and establishment of private networks. In general, few farmers had accessed benefits from their RPOs. Further analysis was done to explore any disparities in the distribution of benefits across gender and socio-economic status of members. The following sub-sections summarize the results.

Distribution of benefits between male and female members of RPOs

A Chi-square test of independence was used to analyse relationships between specific benefits and gender. Effect size was determined using the phi coefficient. Regarding market information, men had accessed information related to prices of products and buyer quality requirements more than women. In terms of capacity building of leaders, more men had been trained in group leadership, financial management and book-keeping compared to women. In general, networks with other development stakeholders were quite limited. However, significant disparities were observed regarding linkages with exporter, where more men were connected compared to women.

In general, few producers accessed credit, both from RPOs and from other sources. Among the few who received credit, more men received it compared to women and, more producers received credit from RPOs and affiliated sources compared to

commercial banks and micro-finance institutions. In addition, women tended to borrow smaller amounts while men borrowed bigger amounts. On the other hand, women tended to borrow money from informal saving schemes than other sources.

Access to inputs was generally limited, only improved seed was accessed by relatively more respondents compared to other types. Although the Chi-square test did not detect any statistically significant disparities, observations show that more women received improved seed and breeds compared to men. On the other hand, more men received fertilizer compared to women. Extension advisory services were the most accessed benefit by a relatively bigger number of producers. However, gender disparities were manifested regarding participation in demonstrations and training in record keeping, in which more men were involved compared to women.

Distribution of benefits according to socio-economic status

The Kruskal-Wallis test was used to analyse relationships between selected socio-economic indicators and specific benefits. Socio-economic indicators used in the analysis included family size, age, education level, size of land owned and monetary value of owned assets. Where statistically significant differences existed, Mann-Whitney U tests with a Boniferroni correction were applied to test differences between groups. Effect sizes were calculated to measure the magnitude of the statistical differences. Results showed that the majority of the benefits were received by the elite members and the asset-wealthy, compared to other members of the RPOs. Family size, land size and age seemed to influence a few benefits.

Regarding family size, bigger families (more than ten members) had more access to buyer related information and improved animal breeds. With respect to member age, the age group 41-50 received information regarding specific buyers the RPO was supplying more than other age groups. On the other hand, farmers owning more than two ha of land had more access to information on range of prices in the market and specific buyers the RPOs would supply that season. In addition, producers that owned more than one ha of land had more access to training in record keeping than those that had less than one ha of land (majority women).

Most of the benefits were accessed by the more educated. Participation in demonstrations and individualized networks with exporters were mainly accessed by respondents with high school education. Compared to primary education level, RPO members that had a minimum of ordinary level education had more access to the following benefits: training in book-keeping, financial management and group leadership; networking with political leaders and NGOs and access to price information. Compared to those that had no formal training, members that had primary level education had more access to information on range of prices in the market, training in financial management, group leadership and networking with NGOs.

Regarding value of owned assets, the group with moderate assets (>650,000-1,500,000Ugsh) had more access to information on prices of products, information on quality requirements and networks with NGOs. The asset-rich (>1,500,000-3,000,000Ugsh) had more access to training in book keeping, information on quality requirements and networks with NGOs and political leaders. Thus the asset-rich had more access to a variety of benefits compared to other groups.

In sum, RPOs have not necessarily benefited the broader membership. Distribution of benefits is skewed towards the elite and the asset-wealthy, while the less educated, the asset-poor, and those with small pieces of land have benefited less. In addition, the elite seem to have profitably used the RPO platform to extend their networks to the wider community more than the less educated. Furthermore, the dominance of men in the leadership of RPOs seems to skew benefits to the advantage of men in various indirect ways.

8.3 Conclusions and implications for policy

8.3.1 Models used to establish RPOs and linking members to output markets

In order for RPOs to be effective, they should be established through members' initiative, possibly to overcome a felt problem by the individuals/communities concerned. In cases where external interventions demand use of RPOs as an approach, communities should be given an opportunity to discuss the need for such

and work out ways of forming the second-tier RPOs. Producers can always solicit help where required but should drive the process in order to own their organisations. This may help solve the problem of having weak RPOs that are dependent on support organisations and hungry for hand-outs.

Similarly, RPOs, through the relevant structures, should be involved in identifying and forging relations with buyers. This gives them an opportunity to negotiate the highest possible prices as well as agree on payment modalities. The apex or support organisations may still provide information on available markets and point out the benefits of partnering with them. However, the final decision to supply to any buyer should be made by the RPOs, which are directly accountable to the members.

8.3.2 Strengthening the leadership of second-tier RPOs

Democratic structures of governance are important in the management of RPOs. However, the use of many sub-committees may be a better strategy to sharing power and enhancing commitment of members compared to numerous all-member meetings that may drag decision-making processes. Smaller executive committees may also be important for instilling accountability and transparency among leaders as opposed to large, representative but ineffective committees.

8.3.3 Capacity building of leaders and implementation of skills learnt

Capacity building is still important for enhancing management skills of the majority of RPO leaders, which are largely inadequate. However, care must be taken such that the way the newly-learned management procedures are enforced does not hinder member participation. This could be done by developing the institutions in a participatory manner so that members of the primary RPOs are given a chance to contribute and, therefore, own the guidelines that structure member behaviour and business arrangements.

The government should show more commitment in delivering on promises that exist in policy frameworks. There is need to strategically develop RPOs so as to improve their competitiveness and sustainability if they must contribute to poverty alleviation.

8.3.4 Making SACCOS relevant to the farming environment

Promoting SACCOs as rural financial institutions to support rural smallholder producers is timely and necessary to address the current lack of credit. However, there is need to review policies guiding the lending conditions so that they match rural producers' economic status. In particular, production loans should be tailored to cropping seasons to enable farmers to repay after harvest. In addition, since the SACCO initiative is relatively new and few farmers are using the service, RPOs may need to put in place rules and regulations that can attract more members to make use of the SACCOs. For example, requirements for entrance could be set to a minimum, bureaucracy in lending procedures could be reduced and manageable collateral options and interest rates could be adopted.

At a higher level, government should intervene and work with the microfinance support centre, and other financial service providers, to develop products that match smallholder farmers needs and conditions. There is also need to capitalize RPOs or affiliated SACCOs in order to increase producers' access to financial credit.

8.3.5 Improving the inclusion and participation of women in RPOs

Considering the role of women in smallholder agriculture, there is need to revisit the policies that guide the formation and operation of RPOs in Uganda to prioritize gender issues in RPOs. National umbrella organisations that support RPOs, such as UCA, UNFFE, NUCAFE and NKG Coffee Alliance Trust, should put in place appropriate gender policies to guide the affiliated RPOs. The current 30 percent representation of women on leadership committees does not seem to have worked well due to the disadvantaged position of women in rural communities, lack of political will among RPO leaders and lack of binding policies and guidelines at RPO level. In addition, the current gender guidelines were adopted from the government macro-policy framework as a blueprint without modification to meet local context demands. It may be difficult for RPOs to enforce gender responsive guidelines without a guiding framework at the higher levels.

At lower levels, RPOs need to put in place workable gender responsive guidelines that can help to improve the involvement of women in RPO activities. This can be done through (1) increasing the representation of women on leadership committees; (2) putting in place legally binding by laws/guidelines to ensure that women actually participate in decision making; and (3) enforcing affirmative action in cases where women are marginalized. For example, entrance and subscription fees could be lowered for the less privileged women; a wide range of securities could be accepted to enable women qualify for loans; and loan repayment schedules could be extended for women. There is also need to deliberately target capacity building of women in the communities, which significantly limits their involvement in diverse ways. Other than addressing capacity needs, training schedules and locations should be selected to make women participation possible.

Development practitioners should be aware that gender awareness campaigns and skills training that do not go further to put in place practical reinforcement systems do not translate into helpful initiatives for RPO beneficiaries. RPOs should be supported to develop gender specific guidelines and implementable action points that can help integrate gender issues in their day-to-day activities.

8.3.6 Enabling equitable distribution of benefits among a heterogeneous membership

The RPO membership is largely variable, composed of mixed wealth classes and diverse levels of literacy. RPOs, guided by their apex organisations, should adopt appropriate policies and guidelines that can ensure equitable involvement of the different categories of members. The current “one size fits all” approaches and guidelines have served to extend inequalities, causing the RPOs to benefit the elite and the wealthy. There may be need to modify the management processes and structures through participatory approaches that give all classes of members an opportunity to make a contribution. In addition, RPO programme implementation plans need to specify clear targets for the different social interest groups so that equitable opportunities are presented to all members.

8.3.7 Developing a market oriented focus: towards enterprise specialization

To a large extent, the marketing potential of RPOs is limited by the involvement of members in multiple enterprises at household level. It is important that RPOs deal in a few enterprises in which they should make an effort to increase production, add value and target specific markets. Diversification into small livestock might be a viable strategy to finance crop enterprises, especially in areas where non-farm sources of income are limited.

There is also need to develop long-term relations with buyers in order to create sustainability of the RPOs. This calls for legal policies that can protect producers in case business contracts are not honoured. The national umbrella organisations could help in developing and enforcing such policies as well as playing a mediatory role in case problems arise.

8.3.8 Intensifying education of farmers through extension advisory services

RPOs and their apex organisations need to invest in capacity development of their members. The capacity gaps among the different social interest group suggest that there is a lot of work that needs to be done to impart knowledge and skills. Extension services have mostly been provided with support from donor projects, which services stop soon after project closure. RPOs should be supported to develop mechanisms that tap into private extension delivery systems in order to maintain flow of services beyond external intervention project phases.

The role of government is paramount in this case. The government should implement the strategies that exist on paper regarding human capacity development, increasing farmers skills, strengthening research- extension linkages and increasing budgetary allocations to the agriculture sector.

8.3.9 Improving access to and broadening scope of market information

The need for smallholders to access market information is paramount. RPOs should make an effort to access a broad range of information beyond product prices to

include other elements, such as the range of buyers in the market, the quality and quantities required by buyers. This would not only help farmers to improve their production and marketing efficiency but would also protect them from being cheated by traders.

8.4 Limitations of the study and recommendations for future research

This section highlights some of limitations of the study and suggests areas for further research.

8.4.1 Measure of effectiveness

The study used objective measures and focused on one key stakeholder (the members who are also owners and managers) to measure effectiveness of RPOs. Integrating perceptive measures of members and other stakeholders such as buyers and service providers would broaden the understanding of RPO effectiveness. Future research should integrate this.

8.4.2 Formation of RPOs and organisation for marketing

The study did not adequately consider the processes which RPOs went through from establishment to organising for collective marketing. This could have revealed insights into why some RPOs had more of their members selling through them or why they generated more revenues than others. Future research should look into processes, particularly institution building processes, and how they affect effectiveness of RPOs.

8.4.3 Gender and benefit distribution

In analysing gender disparities within the context of distribution of benefits, female members were not separated into women leaders or women heads of households or women from male headed households. This might have excluded vital information, since access to benefits may be different for the different groups. Future research

targeting gender in RPOs should investigate such differences to enable proper targeting of women.

8.4.4 Data used to analyse RPO effectiveness

The study used cross-sectional data and adapted a theory of change approach to measure effectiveness. As such, a counterfactual was not factored in the study and there was no baseline data for reference. This was because of difficulties encountered in accessing such data as well as budgetary constraints. Future research should look into ways of integrating counterfactuals in order to address issues of attribution adequately.

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APPENDICES

Appendix 1

Specific benefits received by RPO members

Benefits received per category (n=1377)	Freq.	%
Market information		
Prices you will obtain for your produce	406	29.48
A range of prices offered by different buyers	254	17.79
A specific buyer the RPO is supplying that season	81	5.88
Quality requirements	78	5.66
A range of buyers in the market	44	3.20
Different types of products buyers require	27	1.96
Quantities required	24	1.74
Inputs		
Improved seed	336	24.40
Fertiliser	119	8.64
Improved breeds	58	4.21
Spray chemicals	35	2.54
Farm tools	16	1.16
Extension services		
Improved agronomic practices	513	37.25
Quality management	230	16.70
Demonstrations	192	13.94
Record-keeping	149	10.82
Collective action	41	2.98
Management training		
Group leadership	178	12.93
Financial management	139	10.09
Bookkeeping	138	10.02
Proposal writing	25	1.82
Private networks		
NGO	173	12.56
Political leader	122	8.86
Processor	59	4.28
Exporter	37	2.69
School	12	0.87

Appendix 2

Kruskal-Wallis and Post hoc tests for benefits significantly associated to family size

Benefits received	Family size (No. of people) (groups)	Kruskal-Wallis test results			Post hoc test results (Mann-Whitney U tests)				Effect size (r = z/ \sqrt{N})
		N	Mean Rank	X ² , df, p	Groups compared (No. of people)	U	z	P-value*	r
Information on range of buyers on the market	<=6	486	682.58	9.600	<=6 & >10	65200.50	-2.71	0.01	0.10
	>6 -10	612	685.00	2	>6-10 & >10	82404.00	-2.55	0.01	0.09
	>10	279	708.95	.008	<=6 & >6-10	148194.00	0.37	0.71	
	Total	1377							
Received improved breeds	<=6	486	677.00	15.201	<=6 & >10	63882.00	-3.68	0.00	0.13
	>6 -10	612	685.88	2	>6-10 & >10	81544.00	-2.81	0.01	0.09
	>10	279	716.76	.001	<=6 & >6-10	146799.00	-1.21	0.23	
	Total	1377							
Trained in financial management	<=6	486	674.75	6.938	<=6 & >10	63760.50	-2.62	0.01	0.09
	>6 -10	612	688.12	2	>6-10 & >10	81949.50	-1.76	0.08	
	>10	279	715.74	.031	<=6 & > 6-10	145827.00	-1.11	0.27	
	Total	1377							

*Critical p-value at which the Mann-Whitney U test is significant is 0.02, following the Boniferroni correction.

Appendix 3
Kruskal-Wallis and Post hoc tests for benefits significantly associated to education level

Benefits received	Education level (No. of years) (groups)	Kruskal-Wallis test results			Post hoc test results (Mann-Whitney U tests)			Effect size (r = z/√N)	
		N	Mean Rank	X ² , df, p	Groups compared (years)	U	z	P-value*	r
Received info on range of prices in the market	0	96	616.70	7.936	0 & 1-7	33419.50	-2.76	0.00	0.09
	1-7	785	694.55	3	0 & 8-11	15578.00	-2.58	0.01	0.12
	8-11	364	691.34	0.05	0 & >11	5550.00	-2.62	0.01	0.17
	>11	132	702.11						
	Total	1377							
Received info on quantities required by buyers	0	96	677.00	7.98	0 & 1-7	37104.00	-1.22	0.22	
	1-7	785	687.52	3	0 & 8-11	17184.00	0.21	0.21	
	8-11	364	688.35	0.05	0 & >11	6048.00	-2.11	0.04	
	11-13	132	708.30						
	Total	1377							
Participated in demonstrations	0	96	650.38	9.94	0 & 1-7	35636.00	-1.48	0.14	
	1-7	785	687.72	3	0 & 8-11	16672.00	-1.23	0.22	
	8-11	364	681.90	0.02	0 & >11	5472.00	-2.75	0.01	0.18
	>11	132	744.26						
	Total	1377							
Trained in record-keeping	0	96	664.70	14.22	0 & 1-7	37163.50	-0.45	0.65	
	1-7	785	674.14	3	0 & 8-11	16250.00	-1.82	0.07	
	8-11	364	712.86	0.00	0 & >11	5742.00	-2.09	0.04	
	>11	132	729.25						
	Total	1377							
Trained in financial management	0	96	633.84	10.13	0 & 1-7	34721.00	-2.53	0.01	0.09
	1-7	785	687.91	3	0 & 8-11	15580.00	-3.06	0.00	0.14

	8-11	364	708.40	0.02	0 &>11	5892.00	2.17	0.03	0.14
	>11	132	682.09						
	Total	1377							
Trained in group leadership	0	96	628.69	10.79	0 & 1-7	34642.00	-2.35	0.01	0.08
	1-7	785	684.20	3	0 & 8-11	15560.00	-2.85	0.00	0.13
	8-11	364	704.03	0.01	0 &>11	5496.00	-3.05	0.00	0.20
	>11	132	719.97						
	Total	1377							
Trained in bookkeeping	0	96	641.52	15.69	0 & 1-7	35689.50	-1.82	0.07	
	1-7	785	677.89	3	0 & 8-11	15618.00	-2.89	0.00	0.13
	8-11	364	714.57	0.00	0 &>11	5622.00	-2.84	0.01	0.19
	>11	132	719.10						
	Total	1377							
collaboration with political leader	0	96	635.17	26.56	0 & 1-7	35480.50	-2.23	0.03	
	1-7	785	675.36	3	0 & 8-11	15494.00	-3.29	0.00	0.15
	8-11	364	713.12	0.00	0 &>11	5346.00	-3.86	0.00	0.26
	>11	132	742.75						
	Total	1377							
Collaboration with NGOs	0	96	624.02	16.08	0 & 1-7	34393.50	-2.59	0.01	0.09
	1-7	785	684.07	3	0 & 8-11	15618.00	-2.89	0.00	0.13
	8-11	364	697.07	0.00	0 &>11	5238.00	-3.81	0.00	0.25
	>11	132	743.33						
	Total	1377							
Collaboration with Exporter	0	96	670.50	10.74	0 & 1-7	36912.00	-1.41	0.16	
	1-7	785	684.53	3	0 & 8-11	16848.00	-1.88	0.06	
	8-11	364	695.09	0.01	0 &>11	5952.00	-2.45	0.01	0.16
	>11	132	712.23						
	Total	1377							

Appendix 4

Kruskal-Wallis and Post hoc tests for benefits significantly associated to RPO member age

Benefits received	Age groups (years)	Kruskal-Wallis test results			Post hoc test results (Mann-Whitney U tests)				Effect size (r = z/√N)
		N	Mean Rank	X ² , df, p	Groups compared (years)	U	z	P-value*	
Received info on range of prices in the market	18 - 30	176	656.47	11.57	18-30 & 31-40	32488.50	-2.59	0.09	
	31 - 40	407	720.44	4	31-40 & 41-50	70038.00	-2.09	0.04	
	41 - 50	366	679.37	0.02	41-50 & 51-60	41841.00	-0.76	0.45	
	51 - 60	234	663.60		18-30 & 41-50	31137.00	-1.01	0.32	
	61+	194	701.36						
	Total	1377							
Received info on specific buyer	18 - 30	176	679.80	13.91	18-30 & 31-40	34188.00	-1.89	0.06	0.11
	31 - 40	407	711.09	4	31-40 & 41-50	70355.50	-3.12	0.00	
	41 - 50	366	672.95	0.01	41-50 & 51-60	41415.00	-1.83	0.07	
	51 - 60	234	695.58		18-30 & 41-50	31888.00	-0.56	0.58	
	61+	194	673.34						
	Total	1377							
Trained in bookkeeping	18 - 30	176	698.24	9.58	18-30 & 31-40	34298.00	-1.69	0.09	
	31 - 40	407	669.06	4	31-40 & 41-50	71241.000	-2.09	0.04	
	41 - 50	366	699.01	0.05	41-50 & 51-60	41880.000	-0.80	0.43	
	51 - 60	234	714.15		18-30 & 41-50	32172.000	-0.04	0.97	
	61+	194	673.23						
	Total	1377							
Collaboration with NGOs	18 - 30	176	669.00	10.74	18-30 & 31-40	33291.50	-2.21	0.03	

	31 - 40	407	717.53	4	31-40 & 41-50	71194.500	-1.73	0.08
	41 - 50	366	687.15	0.03	41-50 & 51-60	41400.000	-1.27	0.21
	51 - 60	234	664.29		18-30 & 41-50	31359.000	-0.90	0.37
	61+	194	680.58					
	Total	1377						

Appendix 5

Kruskal-Wallis and Post hoc tests for benefits significantly associated to size of land owned

Benefits received	Land size (ha) (groups)	Kruskal-Wallis test results			Post hoc test results (Mann-Whitney U tests)				Effect size (r = z/√N)
		N	Mean Rank	X ² , df, p	Groups compared (ha)	U	z	P-value*	r
Received info on range of prices in the market	0.1-1	460	659.30	10.76	0.1-1 & >1-2	120351.00	-2.16	0.03	0.11
	>1-2	551	693.95	2	0.1-1 & >2	76896.00	-3.26	0.00	
	>2	366	718.87	0.01	>1-2 & >2	97183.50	-1.34	0.18	
	Total	1377							
Received info on specific buyer	0.1-1	460	676.94	7.04	0.1-1 & >1-2	124834.50	-1.09	0.28	0.09
	>1-2	551	687.24	2	0.1-1 & >2	80527.00	-2.60	0.01	
	>2	366	706.82	0.03	>1-2 & >2	97965.50	-1.68	0.09	
	Total	1377							
Trained in bookkeeping	0.1-1	460	672.39	10.44	0.1-1 & >1-2	124642.50	-0.93	0.35	0.11
	>1-2	551	683.73	2	0.1-1 & >2	78625.00	-3.07	0.00	
	>2	366	717.82	0.01	>1-2 & >2	95840.00	-2.32	0.02	
	Total	1377							

*Critical p-value at which the Mann-Whitney U test is significant is 0.02, following the Boniferroni correction.

Appendix 6

Kruskal-Wallis and Post hoc tests for benefits significantly associated to owned assets

Benefits	Asset value (groups) (UgShs)	Kruskal-Wallis test results				Post hoc test results (Mann-Whitney U tests)			Effect size ($r = z/\sqrt{N}$)
		N	Mean Rank	X^2 , df, p	Groups compared	U	z	P-value*	r
Information on price offered for products	0: 0-250 000	303	660.97	13.90	1 and 2	45142.00	-3.18	0.01	0.13
	1: >250000-650000	306	659.25	4	1 and 3	34561.00	-1.32	0.19	
	2: >650000-1500000	334	739.55	0.01	2 and 3	37133.00	-1.63	0.10	
	3: >1500000-3000000	238	694.29						
	4: >3000000	196	686.23						
	Total	1377							
Information on quality requirements	0: 0-250 000	303	677.27	17.27	1 and 2	48405.00	-2.51	0.01	0.10
	1: >250000-650000	306	683.75	4	1 and 3	36159.00	-0.39	0.70	0.11
	2: >650000-1500000	334	720.09	0.00	2 and 3	37370.00	-2.64	0.01	
	3: >1500000-3000000	238	678.93						
	4: >3000000	196	674.59						
	Total	1377							
Trained in record-keeping	0: 0-250 000	303	716.75	9.19	1 and 2	50487.00	-0.50	0.62	
	1: >250000-650000	306	688.75	4	1 and 3	36363.00	-0.05	0.96	
	2: >650000-1500000	334	680.46	0.06	2 and 3	39212.00	-0.52	0.60	
	3: >1500000-3000000	238	689.71						
	4: >3000000	196	660.17						
	Total	1377							
Trained in financial	0: 0-250 000	303	660.40	11.49	1 and 2	50145.00	-0.76	0.45	

	1: >250000-650000	306	687.00	4	1 and 3	34782.00	-1.61	0.11	
	2: >650000-1500000	334	699.89	0.02	2 and 3	38709.00	-0.92	0.34	
	3: >1500000-3000000	238	717.86						
	4: >3000000	196	682.73						
	Total	1377							
Trained in bookkeeping	0: 0-250 000	303	656.36	17.43	1 and 2	48670.00	-2.00	0.05	
	1: >250000-650000	306	671.75	4	1 and 3	33949.00	-2.56	0.01	0.11
	2: >650000-1500000	334	704.52	0.00	2 and 3	38947.00	-0.70	.48	
	3: >1500000-3000000	238	718.36						
	4: >3000000	196	704.31						
	Total	1377							
Collaboration with political leader	0: 0-250 000	303	657.54	19.56	1 and 2	50585.00	-0.47	0.64	
	1: >250000-650000	306	686.50	4	1 and 3	34612.00	-1.85	0.06	
	2: >650000-1500000	334	679.53	0.00	2 and 3	37377.00	-2.34	0.02	0.10
	3: >1500000-3000000	238	720.57						
	4: >3000000	196	719.33						
	Total	1377							
Collaboration with NGOs	0: 0-250 000	303	657.03	15.39	1 and 2	47989.00	-2.31	0.02	0.09
	1: >250000-650000	306	667.75	4	1 and 3	33898.00	-2.42	0.02	0.10
	2: >650000-1500000	334	709.69	0.00	2 and 3	39421.00	-0.26	0.79	
	3: >1500000-3000000	238	715.32						
	4: >3000000	196	704.37						
	Total	1377							
Collaboration with exporter	0: 0-250 000	303	672.77	16.33	1 and 2	49628.00	-2.20	0.03	
	1: >250000-650000	306	679.50	4	1 and 3	35666.00	-1.62	0.11	
	2: >650000-1500000	334	699.36	0.00	2 and 3	39416.00	-0.51	0.61	
	3: >1500000-3000000	238	693.64						
	4: >3000000	196	705.63						
	Total	1377							

*Critical p-value at which the Mann-Whitney U test is significant is 0.02, following the Boniferroni correction.

Appendix 7

Summary of differences among means of groups for homogenous subsets

Appendix 7a: Summary of differences among means in age groups

Group	Respondent age category (years)	N	Subset for alpha = 0.05	
			1	2
3	41-50	320	.86	
4	51-60	207	.88	.88
2	31-40	354	.89	.89
1	18-30	143	.97	.97
5	61+	180		1.09
	Sig.		.677	.052

Appendix 7b: Summary of differences among means of bulking distance groups

Group	Bulking distance (km)	N	Subset for alpha = 0.05	
			1	2
3	>4	104	.73	
2	2.1-4	168	.84	.84
1	0-2	932		.96
	Sig.		.404	.337

Appendix 7c: Summary of differences among means in commodity categories

Groups	No. of commodities produced	N	Subset for alpha = 0.05	
			1	2
2	7-8	280	.75	
3	9-10	376		.93
1	1-6	248		.96
4	>10	300		1.04
	Sig.		1.000	.370

Appendix 7d: Summary of differences among means in products marketed through RPOs

Number of products marketed through RPO	N	Subset for alpha = 0.05		
		1	2	3
0	71	.10		
2	412		.75	
3	120			1.00
1	601			1.12
Sig.		1.000	1.000	.495

Appendix 7e: Summary of differences among means of membership tenure

Groups	Years of membership, categories	N	Subset for alpha = 0.05	
			1	2
4	>8 years	150	.73	
1	1-2 years	282	.86	.86
3	>4-8 years	375		.93
2	>2-4 years	397		1.04
	Sig.		.239	.057

Appendix 7f: Summary of differences among means of payment days

Groups	Paydays category	N	Subset for alpha = 0.05	
			1	2
3	>7-14 days	425	.58	
2	>2-7 days	290		1.07
1	1 day	393		1.13
4	>14	96		1.16
	Sig.		1.000	.639

Appendix 7g: Summary of differences among means of region

Region respondent comes from	N	Subset for alpha = 0.05	
		1	2
Central	243	.72	
East	631	.84	
West	330		1.22
Sig.		.109	1.000

Appendix 8
A comparison of different mechanisms of organising farmers and marketing at the second-tier level

Apex organisation (Service Provider)	Organisation of the RPO	Services provided to members	Organisation of marketing
UCA (Area cooperative enterprises, ACEs)	<ul style="list-style-type: none"> - Members are grower cooperative societies (GCSs) - Membership acquired by paying fees and purchasing shares - Groups and individuals are required to open accounts with the savings and credit organisations (SACCO) to which the ACEs are affiliated - Monetary transactions, both for groups and individuals, are run through SACCO accounts - Formal cooperative rules and procedures supplied by UCA. - ACEs & GCSs qualify for registration (go through a monitored process) - Formal accounting systems & registry - Recruit full time professional business managers - Democratically elected executive committee - Capacity building of leaders 	<ul style="list-style-type: none"> - Extension advice - Provision of market information - Primary processing - Transportation of produce to the buyer - Suggest potential buyers, ACEs make decision to sell - Business audit services 	<ul style="list-style-type: none"> - GCSs bulk their produce and deliver it to the ACE - ACE stores produce until prices rise & later sells and remits payments to the members through their savings accounts in the SACCO - A commission is deducted to finance ACE operations - Promote a minimum of three collective enterprises
NKG (companies limited by guarantee)	<ul style="list-style-type: none"> - Members may be groups or individuals - Membership acquired by purchase of shares, payment of membership fees - Members choose to open accounts with SACCOs - Monetary transactions by choice, cash or SACCO - RPO governed by constitution developed by members - Democratically elected executive committee 	<ul style="list-style-type: none"> - Extension advice - Provision of market information from NKG - NKG purchases company coffee at market price - Primary processing - Transportation of produce to the buyer 	<ul style="list-style-type: none"> - Primary groups bulk their produce and deliver it to the association - Market linkage is buyer driven - Buyer picks coffee from company stores
APEP (Depot committees-DC) ² (CLUSA approach)	<ul style="list-style-type: none"> - Depot committee constituted by a maximum of 30 members - Democratic, participatory decision-making - Capacity building of leaders 	<ul style="list-style-type: none"> - Capacity building - Extension advice by lead farmers - Technology transfer 	<ul style="list-style-type: none"> - Foster partnerships between producers, input suppliers, buyers and service providers

² At the time of data collection, the APEP project had closed and RPOs were working with other service providers (SPs). In general, it is difficult to attribute approaches used to one service provider because in practice RPOs tend to work with any available service providers. The information quoted here refers to SPs that initiated the RPOs or supported them at the stage of forming the second-tier RPO.

	<ul style="list-style-type: none"> - Recruit full-time professional business managers - Experiential learning for all members - Entrepreneurship - Leaders required to report to members on performance of DC and groups - Collective visions and goals 	<ul style="list-style-type: none"> - through demonstrations - Postharvest handling & agro-processing - Private sector input supply linkage - Provision of agricultural finance - Emphasis on contracting skills 	<ul style="list-style-type: none"> - Market development and intelligence - Promotion of commodities with involvement of buyer - Facilitate value chain approach - Farming as a business
Farmer associations (NGOs, private sector, NAADS)	<ul style="list-style-type: none"> - Democratically elected executive committee - Payment of membership & subscription fees; purchase of shares is variable occurrence - Specialized management committees - Monetary transactions by choice, cash or SACCO - Members write constitutions/guidelines to guide member behaviour - Accounting system and record keeping varies with leader abilities - Capacity building of leaders depends on service provide intervention objectives 	<ul style="list-style-type: none"> - Extension advice - Provision of market information depends on ability of leaders - Development of market linkages by market committee or apex organisation - Primary processing - Transportation of produce to the buyer, deduct costs 	<ul style="list-style-type: none"> - Primary groups bulk produce, association picks it for sale - No commission is deducted, only recovery of costs incurred - Marketing committee identifies buyers and sells
Commonalities	<ul style="list-style-type: none"> - All types of RPOs are led by democratically elected volunteers who are also members of the RPOs they represent. - The different RPOs work with various development stakeholders in various ways, i.e. there are no restrictions stipulated by national umbrella organisations - All RPOs are legally registered under their umbrella organisations as well as at local levels (district and/or sub-counties). Cooperatives are registered by the registrar of cooperatives at national level. 		

Source: APEP, 2008; Miiro, 2013; Survey data

Appendix 9

OLS and Tobit regression results: alternative analysis for the ANOVA results

Dependent variable: Factors that influence proportion of revenues that members generated through the RPOs		
Independent variables	Model A: OLS results	Model B: Tobit results
POSRPO	-0.012 (0.028)	-0.056 (0.072)
POSHH	0.048 (0.032)	0.132 (0.085)
GENDER	0.012 (0.034)	0.065 (0.090)
EDUCATION	-0.002 (0.004)	-0.010 (0.009)
BULKDIST	-0.011 (0.005)**	-0.033(0.012)***
AGE	0.017 (0.011)	0.043 (0.029)
FAMSIZE	-0.006 (0.003)*	-0.016 (0.009)*
LANDSIZE	0.003 (0.002)	0.010 (0.006)
PRODCOMM	-0.001 (0.004)	0.004 (0.012)
MKTCOMM	-0.080 (0.019)***	-0.23 (0.050)***
NFI	0.021 (0.019)	0.045 (0.050)
MEMTENURE	-0.005 (0.002)**	-0.019 (0.006)***
PAYDAYS	-0.054 (0.013)***	-0.159 (0.033)***
REGION	-0.034 (0.017)*	-0.047 (0.046)
RPOTYPE	-0.012 (0.030)	-0.006 (0.078)
SATRPO	0.129 (0.015)***	0.354 (0.041)***
TRAINPRACT	0.010 (0.030)	0.019 (0.077)
PRICEINFO	0.064 (0.029)**	0.127 (0.075)*
TRAINQUAL	-0.032 (0.033)	-0.073 (0.085)
TRAINREC	0.001 (0.040)	-0.015 (0.105)
RECSEED	0.064 (0.031)**	0.22 (0.080)***
BENRPO	-0.003 (0.036)	-0.024 (0.096)
Constant	0.565 (0.121)***	0.618 (0.317)*
R-Squared	0.146***	X ² (22)=200.84***
No. of observations	1,131	1,131

***significant at 1%; **significant at 5%; *significant at 10%