FACTORS INFLUENCING MARKET ACCESS OF FRUITS BY THE PRODUCER GROUPS (THE CASE OF MANGO MARKETING IN MERU CENTRAL SUB - COUNTY, KENYA).

BY

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DECLARATION

This research project is my original work and has not been presented to any university for the award of a degree.

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DEDICATION

This research project is dedicated to my Dear Parents; James Maitai and Margaret Regeria,my Sisters and Brother.

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ABBREVIATIONS AND ACRONYMS

AFC	-	Agricultural and Food Council
CF	-	Contract Farming
FAO	-	Food and Agricultural Organization
FO	-	Farmer Organization
FPEAK	-	Fresh Produce Exporters' Association of Kenya
GAP	-	Good Agricultural Practices
GTZ	-	German and international development cooperation
HCDA	-	Horticultural Crop Development Authority
KARI	-	Kenya Agricultural Research Institute
KEMPMA	-	Kenya Mango Production and Marketing Association
KHDP	-	Kenya Horticulture development Project
MOA	-	Ministry of Agriculture
MVC	-	Mango value chain
POs	-	Producer Organizations
PSDA	-	Private Sector Development in Agriculture
SCM	-	Supply Chain Management
SPSS	-	Statistical Package for Social Sciences
USAID	-	United States Agency for International DEvelopment

ABSTRACT

Changes in agriculture are taking place in terms of the fundamental business proposition and the ways of doing business, example, a shift from spot markets to collective and contracts marketing models. This is due to the need for a all year-round supply and global change in consumer preferences e.g. quality, safety, health and nutritional aspects of food products. Interest in quality management systems, food safety and competition in markets is rising, associated with profitable agricultural products trade (Agribusiness). This is the reason why in 2004, the Kenya government developed and launched the Strategy for Revitalizing Agriculture (SRA), Which sets out the Government's vision: To transform Kenya's agriculture into a profitable, commercially oriented, internationally and regionally competitive economic activity that provides high quality and gainful employment to Kenyans.

This research study on factors influencing market access of fruits, specifically on mango by the producer groups was conducted in Meru Central sub-county. The objectives of the research was to get how producer groups networking, negotiation, logistics costs and post-harvest handling measures affected their mango market access. Background to the study, problem statement, purpose, limitations and delimitations to the study were indicated. Literatures review based on the four objectives was discussed. 12 mango groups were purposively selected, 120 farmers respondents randomly selected and 5 stakeholders purposively selected in the study. Documentary analysis and questioner data collection instruments were used. Data was analyzed using Statistical Package of Social Scientists (SPSS) and presented both qualitatively and quantitative using descriptive method and SPSS tables respectively. Relationships between dependent and independent variables was done using cross tabulations. There were four major finding and conclusions from the research. Networking with market linkaging stakeholders was minimal compared to technical advises and information.A large percentage of the farmers had mutual agreement, while farmers had no organized plan to meet the transportation costs which was rated highest in market logistics. Access to high value market was possible to farmers who owned a cooler, while the rest sold mango at local or farm- gate markets. Further research to establish whether technical expertise on mangoes had led to improved mango quality and quantities was recommended.

CHAPTER ONE
INTRODUCTION

1.1 Background to the study

Trade in fresh horticultural products has become increasingly global driven by liberalization of domestic and international markets, climatic changes, need for all year round supplies, changes in consumer preference and technical changes in processing of high value products such as fruits juices (WTO, 2000). This trend has been encouraged by a liberalizing international and national regulatory framework associated with World Trade Organization (WTO), International Monetary Fund (IMF) and the World Bank policies. There have also been developed standards which incorporate the concept of globally accepted Good Agricultural Practices (GAP) within the framework of commercial agricultural production example; EurepeGAP governs European countries trade with other counties. This expansion has the potential to benefit smallholder farmers through linkages to other parts of the economy (Griesbach, 2003; FAO). The transition embraces the whole food chain from production and processing to consumer choices and the marketing systems

The EU and its individual markets are progressively introducing conditions and regulations to the non-EU suppliers which have made market access more difficult and resulted in new costs being imposed on the suppliers. These measures cover areas such as traceability, quarantine issues, packaging, human well fare and safety. There is a new emphasis on taste and aesthetics thus demand for healthy, ethically produced high quality food, presented as a convenient product, with customers willing to pay for the value added products. Consumers now demand that farmers and retailers are accountable for food safety and are prepared to pay for this assurance (USAID, 2001).This causes an effect to transaction costs and post-harvest handling measures on farmers to access market for their produce.

According to FAO, (2003), fruits and vegetables commercialization from the developing countries in Africa is also a growing sector. The major developing African producers like Kenya, Egypt, Zimbabwe, Gambia, Ivory Coast and Zambia have benefited from the international trade. However, in Africa, individual rural farmers often produce small quantities of produce. Production is seasonal and markets are distantly separated in space. Costs associated with

transfer and transport of commodities is high. Exchange functions of agricultural products often involve participation of middlemen in the marketing chain with intricate information networks further weakening the producers' bargaining position. This has led to formation of food supply chains. There is a large opportunity for well organized, business thinking, entrepreneurial farmer groups to bridge the gap between production and marketing (FAO, 2010). It is envisaged that collective marketing facilitates economy of size which help to reduce the logistical costs of getting the produce to the market and improve the bargaining power of producers. Marketing can be organized informally (small groups of farmer) thus permitting the collective commercialization of products (OECD, 2007).

To meet the Millennium development goal (eradicate extreme poverty and hunger) , the policy document "vision 2030" emphasizes the need to have highly productive, commercially oriented and competitive agricultural enterprises GOK (2007).This will be accomplished through increasing productivity and improving market access for smallholder through better supply chains management e.g. For Kenya, contract marketing practice has gained new momentum with various companies scrambling to source produce from small holder farmers. Example, Coco-Cola through sunny processors working with mango farmer groups to support its Minute maid fruit juice brand, in partnership with technoserve to contract and capacity build small- holder farmers to enable them service the large market opportunities that it offers (Sunny Processors, 2010).

Japan, Singapore, and Hong Kong are important fruit markets. Among the fruits, mango has been the third most important fruit in terms of area and total production after bananas and pineapples respectively (Griesbach, 2003). The capacity of Kenyan farmers to be competitive and access markets depends mainly on their ability to sustain a reliable supply of fruits that meet increasingly stringent quality and safety standards. However, mango quality is constrained due to mango fruit flies, the mango weevil, mango rust, maturity of the fruit and the variety, and may disqualify them from market (USAID/KHDP, 2010).

The focus of this research was to find out the factors influencing mangoes market access by the producer groups in Meru central sub county.

1.2 Statement of the Problem

Smallholder fruit farmers face challenges in marketing because of the changing preferences of consumers in developed (and increasingly in developing) countries for safer, healthier, better quality food that has been produced in environmentally sustainable and ethical ways. The most threatened are the perishable fresh food family (fruits and vegetables) as they are more liable to accelerated physiological, chemical and microbial processes that lead to the deterioration and loss of wholesomeness (FAO, 2001). The process of industrialization has created opportunities for smallholders in developing countries to produce horticultural commodities under contract, according to certain specifications (Kandiwa, 2011), but has the danger that small farmers will be marginalized and excluded from high-value markets (Reardon & Barrett, 2000). The question remains whether an arrangement such as group approach and collective marketing provides the solution to this challenge.

In a study on perceived mango quality in the Netherlands – for the World Agroforestry Centre, it was found out that there were chances for farmers in Dutch market. Fruit juice was among the most imported products in the Netherlands (FAO, 2005). Dutch consumers indicated it was very important that people who produced mangoes did this under proper working conditions.

The Program for Promotion of Private Sector Development in Agriculture, Kenya (PSDA, 2007) reported its intervention to develop the mango fruit value chain in Meru central started through capacity building in 2004.However to–date, there is inadequate institutional interventions for market development, lack of quality and food safety management framework and limited partnerships between private/public sectors towards value addition technologies. The PSDA further reported its support to formation of the Kenya mango producers and marketing Association (KEMPMA) for market access, lobbying and advocacy. Its grassroots strength and intervention to mango farmer market access was unclear.

Further, a mini baseline mango volume study conducted in Meru central by USAID/KHDP, 2009, found out that at harvest time, there was often an oversupply which lead to low prices and product losses. The price of mango went as low as 2 shillings a piece. Buying agents were getting a better share in the mango trade. There remained little evidence whether farmer groups were platforms for bargaining in their economical engagements.

It was against this background that the researcher based the study to understand networking,

negotiations with buyers, logistical costs and post-harvest handling measures which could control the mango market access by producer groups at Meru central sub-county.

1.3. Purpose of the study

The purpose of this study was to find out factors influencing of mango market access by the producer groups in Meru central sub-county.

1.4. Research objectives of the study

The study was guided by the following research objectives:

i. To establish the influence of networking by producer groups on the mango market access in meru central sub-county
ii. To determine the influence of negotiation by producer groups on the mango market access in meru central sub-county
iii. To investigate the effects of logistical cost by producer groups on mango market access in meru central sub-county .
iv. To find out the post-harvest handling measures by producer groups and its effect on mango market access in meru central sub-county

1.5. Research questions

The study was guided by the following research questions:

i. What is the influence of networking by producer groups on the mango market access?
ii. How does the producer groups' negotiation influence the mango market access?
iii. What are the effects of logistical costs by producer groups on the mango market access?
iv. How do the post-harvest handling measures by producer groups affect the mango market access?

1.6. Significance of the study

This research was to find out factors influencing mango producer groups and their market access. The study enabled mango farmers conduct their self assessment and have better understanding of their level of engagement and measures for success in market access. The findings and recommendations further will help mango farmer groups, their associations, buying firms,

government agents, non-governmental organizations and other researchers identify areas of intervention in development of mango supply chain.

1.7 De –limitations of the study

The research was confined to Meru central sub- county at mwanganthia and kiagu wards with a population **of** 24,793 and 22,243 persons respectively according to Kenya population and housing census (2009). The focus was on mango producer groups namely Kaguma, mbajone, nduruma, njuthine, nkumbo, bamato, runywene, kamuga, makandune, kathwene, gakuuru and kiamuri which have been registered by ministry of social services (MOA, 2012).Interviewing was done during groups' meetings.

1.8. Limitations of the study.

Some challenges experienced were that individual group members were selected randomly hence could interpret the questions wrongly due to high illiteracy levels. To overcome this, data collection was conducted during the farmer group meetings with guidance by research assistants and reference was made from group records.

1.9 Assumptions of the study

Various assumptions were made while carrying out this study i.e. the respondents would answer the questions asked correctly and truthfully and would recall all the basic information important for the study.

1.10 Definition of significant terms as used in the study:

Contract marketing -An agreement between farmers and processing and/or buyer firms for the production and supply of agricultural products under agreements, frequently at predetermined prices, quality and quantity.

Influencing - Manipulating, controlling, actions

Logistical costs -The expenses incurred during marketing of mango fruit (Transportation, grading & supervision costs)

Market access – Ability of farmer groups to create demand for, supply and sell their mangoes to consumers/agents at the required quantity and quality, within the required time, at consumers' or buyers' convenient destination and at profitable price.

Negotiation –Bargaining process by farmer groups e.g. with the mango buyers and transporters towards making agreement of the marketing and ensuring fair terms and balanced powers. i.e on payment schedule, pricing, collection days and produce quality and quantity to be delivered terms.

Networking - Creating relationships, linkages and collaboration with other external actors by farmer groups. example; associations, federations, government agents or banks who have ability to offer a group other benefits example credit, technical expertise or inputs.

Post-harvest handling- Managing and maintaining the mango quality, appearance, nutrition, (wholesomeness) to meet consumer's tastes and preferences. It also involves avoiding microbiological contamination

Producer group- Enterprise oriented, voluntarily owned and controlled by the member farmers. It is established and managed in order to meet the mutual needs of its owner members. They can be either input supply groups, service groups or marketing groups

Supply chain management (SCM) - Focus on inter-firm process both at the input and the output side of the firm, and emphasize the link between the production and marketing.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter shows literature related to market access through group approach as documented by others who have researched and or written on this subject. This chapter is organized in the following subtopics; Groups Networks, Negotiations, logistical costs and **Post- harvest handling.** The chapter also covers the critical aspect of the existing literature.

2.2 Theoretical Framework

This research will be based on Supply chain management theories founded by John Von Neumann 1928 which draws on several disciplines i.e. Transaction-cost economics, Power and power relationships, Agency and negotiation theories.

Transaction-cost economics analyses the costs associated with the exchange of goods and services (Hobbs 2003). example costs of acquiring information, costs associated with negotiating and enforcing contracts, definitions of property rights, and the monitoring and changing of institutional arrangements which define the processes by which business transactions occur between companies. Agency theory involves defining the most appropriate forms of contract to protect the relationships between chain members (Eisenhardt 2004). The aim is to produce an agreement which achieves a balance between chain members. The agency theory approach is complementary to transaction-cost economics; together they focus on improving the economic efficiency of doing business between firms.

Power and power relationships between businesses within a supply chain, and between the chain members and the government, have been studied by political scientists (French and Raven 2009). Boehlje (1998) argue that the power of one business over another is dependent on the economic structure of the relationships. Power is related to dependency, and dependency is related to the availability of alternatives. The more alternatives a farmer group has, the less dependent it will be and the smaller the chance that it will be unduly affected by the power (real or perceived) of another firm-buyer. Negotiating Power and Performance Incentives help explain the choice and implementation of various vertical relations within agricultural supply chains systems. In negotiated coordination among stages in the food chain, the invisible hand of the market is replaced by the very visible hands of buyers and sellers negotiating the terms of trade. In such a

system, phenomena such as negotiating strategy, skill, power, conflict resolution, trust, performance monitoring, and evaluation become central in the system.

A key concept in this argument is that of trust in the economic transaction, In a continuing game even the large contractor who is recognized as being in control must maintain a reputation for fairness. The contractor needs a group of contractees as much as the contractures need the contractor.

Supply chain management theory further builds on strategic management theory which emphasizes on importance for creating farmer competitive advantage through innovations and strategic management to create value of their produce. It also builds on the capability theory which emphasizes on need for symmetrical knowledge between parties involved in contracts to enable them make choices on organizational structure in food system. The need for cooperative approach and incorporation of government support is supported. The consolidation of agribusiness firms over the last two decades has much to do with attempting to gain real or perceived market power. At the upstream end, the small and fragmented businesses of smallholders have very little individual power, which may provide them with a strong incentive to work together. All the six theories seeks to represent whether the game is worth for a player?

Supply chains management theory is vital basis for foods and their market access.

2.3 Global mango production and trade

Mango is one of the most important fruit crops in the tropical and subtropical lowlands. It is native to India, Bangladesh and Malaysia. It can be found growing in more than sixty other countries throughout the world. International production and trade for mango has increased since the 1990s due to availability of longer longer shelf life mangos varieties .The largest producer is India while Mexico is the largest mango exporter in the world, followed by Brazil. USA is the largest importer then follows the European Union (FAO, 2003).

2.3.1 The mango production and marketing situation in Kenya

Mango farming has spread to most parts of the country since its introduction in 14th century, to areas e.g Eastern (54% of the production), Coast (22%), Nyanza (4.5%), and Central (3.5%), with the rest coming from other parts of the country (Griesbach, 2003; FAO). In eastern,the higher percentage of improved mango varieties are grown in Mbeere , Meru Central, Makueni, Machakos and Meru South districts. The improved varieties (Apple, Keit, Tommy, Van-Dyke), which are grown for both local and export markets, are usually grafted on local mango varieties ie

Ngowe, Dodo and Boribo (Griesbach, 2003). Brokers collect mangoes from individual producer farmers or groups and then supply to the main open markets, the export market, and institutions (FAO,2010). Once consignments are delivered to the markets, wholesalers buy and sell to retailers who then sell to consumers in kiosks, other retail markets, green groceries and roadside markets. Processors often acquire the bulk of mangoes directly through brokers and at a small scale from the producers. The traditional air system continues to handle most of fresh mango produce and is frequented by the huge numbers of Medium- and low-income households (PSDA, 2008).At the high end of the market, the supermarkets sell high quality mangoes to the upper income consumers. This outlet, however, only accounts for less than 5% of the mangoes distributed in Kenya. (FAO, 2010).

In Kenya, contract marketing practice has gained new momentum with various companies scrambling to source produce from small holder farmers e.g Coco-Cola through sunny processors is contracting mango farmers to support its Minute Maid fruit juice brand. in (Sunny Processors, 2010). However Mango quality is a key constraint due to mango fruit flies, the mango weevil, mango rust, maturity of the fruit and the variety, which all affect the fruits, and may disqualify them for exports (KHCP,2010).

2.4 Farmer Group Networks role in enhancing supply competitive advantage

The traditional economic view is that a firm's competitiveness is determined by how efficiently and effectively its management is able to organize the firm's internal Processes, structure, resources and people so as to maximize profit. This allows firms to compete against each other and share a particular market segment (Porter,2000).However, over the last 20 years this traditional view of how firms become and remain competitive has been challenged by alternative view that sees a firm as part of a chain that links the production of goods with consumers. Firms' competitiveness is influenced by how it networks with others in the supply chain (Gifford, 2001). Van Roekel (2002) further points out that it is becoming increasingly evident that achievement of desired market position cannot be achieve sorely. A firm has to network and cooperate. This business model called supply chain management (SCM), is built on the preposition that there are gains from cooperation and coordination between firms in a supply chain, that are not available to firms operating independently of each other.(O'Keeffe,2008). This modern model has been used also in Agri-food industries, including horticulture (Fearne and Hughes, 1999).overtime the SCM

ensured the logistical and distributional efficiency of flow of materials along a supply chain (Cooper and Ellram, 2000).However overtime, the focus of SCM is not to achieve logistical efficiency alone, but also for competitive reality, relationships, interfirm coordination and satisfying the end consumer (world bank, 2007).

Integration of business systems and processes between firms is necessary to achieve operational efficiency and improve flow and transparency of information (Beers,1998).Effective relationships drive successful SCM, because they are the antecedents of information exchange, conflict resolution and co-innovation between supply chain partners (Morgan and Hunt,1994).Performance of the whole system (linking input suppliers-producers-consumers) wholly depends on interactions among all partners (Jackson,2003). The Agriculture and Food Council of Alberta [AFC],2002) highlights that Interaction with Market place provides information to decision makers for every link in the chain. Although contract farming involves a written agreement between farmers and the agribusiness firm or integrator, these contracts are seldom legally enforceable in practice (O'Keeffe, 2008). The poorly developed legal institutions in developing countries contribute to high transaction costs in suing individual smallholders for contract breach. Enforcing a contract also leads to souring the relationship between the farmers and the firm, as well as between the agribusiness and the community.

According to Coulter (1999), Farmers sometimes break contract either on account of production failure or because they have sold the produce to competing buyers or to the local spot market. When there is a good market at harvest, many farmers are lured by higher spot prices where they can sell their produce for cash. In this way they avoid the repayment of credit, which is usually subtracted at the time of delivery. The farmer often claims production failure for the lack of compliance with the contract. Kherallah (2010) also notes that the absence of effective legal systems and lack of collateral held by smallholders, as well as the weak insurance markets, create considerable risk for companies engaging in contract farming with smallholders Because of the risk of default, many agribusinesses or traders have discontinued the process of supplying inputs to farmers again creating barriers preventing entry to agricultural markets by some smallholders.How does one resolve the problem of farmer default? Agribusiness has developed a number of innovative mechanisms to deal with this problem, mainly in the case of high-value crops. Coulter et al. (1999) has discussed some mechanisms. Lending through groups, Good communication and close monitoring to foster good company-farmer relations and a sense of

trust, which can contribute to minimizing strategic default. The writer adds also that Range and quality of services offered, enhance closer relationship between the farmer and business and the farmer stands to lose by breaking the relationship.

2.4.1 The importance of external agencies in the case of contract marketing.

Contracts are categorized between formal (or written) and informal (or verbal). In agriculture, contracts are often simple and verbal (Bogetoft and Olesen, 2004). There are good reasons why most contracts are informal. Often, the agreement contains variables that cannot easily be verified by the court in case of contract breach. While contract partners know whether the agreement has been honored or not, for instance whether the right quality has been delivered, it may be difficult for outsiders to assess whether the actual quality is equal to the one described in the contract. An even more mundane explanation for the simplicity of agricultural contracts is that simplicity is efficient. Even if parties are able to write complete contracts, it may be less costly to engage in simple informal contracting and rely on self-enforcement instead of third party protection. Moreover, in many developing countries, notably in Sub-Saharan Africa, there is no tradition of written contract. The traditionally used informal agreements and understandings are still commonly used and respected (O'Keeffe, 2008).

Informal contracts that cannot be enforced by legal authorities (or other third parties) are called self-enforcing contracts, which means that parties have incentives to honor the contract in all contingencies. These incentives can be both economic and social (Nooteboom, 2002). Economic incentives to comply with the contract can be derived from the contractual relationship itself or from the larger network of current and potential contracting partners. Relationship-specific incentives to honour the contract result from (mutual) dependency or from the unique partner value. This is a micro-based, or bilateral, incentive. Contracting parties may also have a macro-based (or multilateral) incentive to honors the contract. The so-called reputation mechanism (Eaton & Shepherd, 2001) means that parties have a calculative interest in cooperation in the current contract because they expect payoffs from future cooperative behavior.This self-enforcement mechanism of agricultural contracts has been found both in developed countries and developing countries (Key and Runsten, 1999).

Warning and Key (2002), writing about contracts in peanut production in Senegal, found that most contract enforcement actually occurs through a repeated-game approach. In the absence of

public mechanisms for contract enforcement, private enforcement mechanisms can be of help. The organization for economic cooperation and development [OECD], (2007) also argues that the use of internal private mechanisms for contract enforcement through contractual arrangements between two parties in an exchange can make contracts 'self-enforcing'. In other parts of the developing world, one finds that legal institutions do not play an important role in the enforcement of contracts. An analysis by Morgan (2009) suggests that trust-based relationships are the dominant contract enforcement mechanism under these circumstances. Trust is established primarily through the repeated transactions of the contracted parties. Trust and social networks are usually the mechanisms by which transactions and contractual arrangements in developing countries are enforced and thus provide another alternative to be considered in reducing contract default.

Networking assures government support,infrastructure,banking facilities (Datta,2006).In some situations it is not easy to build immediate partnerships. Therefore there can be a quasi-judicial system at local level (district administration) to monitor the contract and resolve any conflict with appropriate penalties to any of the defaulting parties. `.Partnership with governments and its agencies can help in building relations with the producers.Thus, it is important for Farmer groups to tread carefully when partnering with outside agencies, and the method of engagement between farmer groups and external agencies is critical. Kindness and Gordon (2001) suggest that the role of outside agencies should be a facilitative one, not an interventionist one. Partnerships should provide intensive "software" support, in which external actors accompany and advise farmer organizations (FOs) but do not intervene directly in decision-making. Such collaborations can also help existing organizations become more empowered and more capable of representing the interests of their members in key policy areas. Cooperation at the operational level, and Farmer groups should have clear and enforceable rules separating political interests and external pressures from its leadership. (Thompson, 2009).

2.5. Negotiation in enhancing farmer/buyer fairness

Experience across a range of partnerships suggest that shared decision making, based on differentiated but comparative sets of power and responsibilities for each partner will **increase** not only equity but also efficiency (Mayers and Vermeulen, 2002).Dealing with a more equal partner reduces conflict and allows access to acknowledged systems. According to Ashman (2001), a

survey conducted on civil society organizations and industry concluded that power sharing was critical not only for equity but for the resilience of partnership. Alliances ranging from small-scale growers and seller groups to national-level federations and trade unions, are fundamental not only to lowering operating costs but also to enhance the bargaining power of community partners in deals with large companies. Fortunately there is little evidence that farmer' groups in contract farming have become platforms for collective action, either to negotiate with companies or organize around their issues (Baumann, 2000).The best progress has been made in countries that already have strong traditions of political and labor organizations, such as Canada and Mexico (Braun, 2003).Another good basis for bargaining power is effective control of resources of importance to the company pertinent. Example comes from indonesia, where the tourism association in Kuningan used this power to negotiate a management deal with the company Perhutani, resulting to a win-win outcome in which revenues increased for both sides (Mudimigh, 2004).

The concern with unfair conduct by contracting firms is justified by empirical evidence that imbalanced power in contractual relations can lead to noncompetitive behavior by the dominant party. In the case of contracting agribusiness firms, this can be expressed, by the imposition of low prices, deductions of highly set input costs, early termination of contracts, the manipulation of quality attributes or by the design of biased contractual clauses (Roth and Singh, 2004). Whereas farmers' group action does not impede such practices, it does reduce the scope for their imposition. Besides with their strengthened power for financial negotiations, associations are better positioned to find support from government, NGO's or private advisors in order to monitor compliance with contractual clauses, double check product quality measurements, mediate litigations and provide information on prices and costs (Guo et al.,2005).

2.5.1 Farmer groups and Inter-Professional bodies in negotiation platforms

Successful partnerships can go on to use their cooperative as a foundation for bargaining with third parties. Example, the pulp and paper companies in Sappi and Mondi in South Africa used their out-grower schemes to lobby government for more rural roads (Cairns, 2000) In the USA,japan and Europe farmers' associations have successfully used tactics such as petitions to governments and development of alternative markets to improve their own policy influence (Welsh 1997). Third parties in company-group or community partnerships also face considerable uncertainties. According to Ashman (2001) civil society organizations play important roles as

representatives, managers or mediators in situations where small farmers also face challenges because of the changing preference. A second important issue is the lack of power and of negotiation capacity of most small scale farmers in their relationship with down-stream agents. According to Phillips (2007), Negotiation skills, power and political representation are also critical for small farmers to participate in the improvement of their institutional environment and the setting up of a realistic regulatory framework. Without a strong environment, producers and producer' organizations alone may lack the capacity to anticipate market trends and changes. Example; The aquaculture sector In Indonesia, as with other parts of. the global food industry, has experienced increased market concentration, meaning that there is an increasingly smaller number of companies operating at any particular stage of the market chain, enabling them to influence prices and giving them considerable market power, weakening the position of farmers (Penrose-Buckley, 2007). Thus, it is no longer enough for aquaculture farmers to focus solely on increasing production efficiency, but also on marketing and integrating successfully into the production chain, producing high-quality and safe products, accessing the required production inputs at affordable costs, and engaging in on-farm management practices that are highly efficient and sustainable, taking account of the surrounding environment and social issues related to production (Penrose-Buckley *et al*., 2007).

The development of producers' organizations (POs) enables the pooling of different resources such as credit, information, labour force, transportation means for selling products or buying inputs and thus, it usually leads to economies of scale. These organizations can assume several functions in the commodity chain, such as collection, grading, postharvest handling and storage. They include large organizations, such as farmer associations, cooperatives (USAID, 2004).through bulk purchase or selling, they increase individual farmers' bargaining power.

POs can play a role in negotiating with other stakeholders changes in institutional environment according to small farmers' interest. Menard,(2000) argues that POs are a good candidate for solving coordination problems since they build up internal and external relationships of trust that are required to secure credible commitment forms and to cooperate in order to realize mutually beneficial actions and investments. State deficiencies are usually high in less developed countries, e.g. difficulties in organizing internal negotiations with stakeholders and pressure of foreign aid (Felix, 2003).However negotiation process between the state and POs are really important in

creating a more enabling institutional environment for farmers' access to market. These negotiations can lead to state decisions which foster producers' competitiveness.

According to Gitz (1998), Inter-Professional bodies also operate in supply chain. They group various stakeholders involved in different functions (producers, traders, exporters) with aim to resolving in a concerted way the constrains that hinder the competitiveness of a subsector, creating more value. On a bilateral level, repeated interaction can lead to empathy, identification, routinization, and affection. Empathy entails that one knows and understands how partners think and feel. It allows one to assess strengths and weaknesses in competence and intentions, to determine limits of trustworthiness under different conditions (Nooteboom, 2002). Identification entails that partners have shared understanding about the goals of the contractual relationship and even develop shared norms to be applied in the relationship (Akerlof and Kranton, 2005). On a multilateral level, contracting parties refrain from opportunistic behavior because the prevailing values, norms, customs, and moral obligations in the community induce behavior of compliance (Keefer and Knack, 2005).

2.5.2 The role of the government in market regulation.

Governments may play two important roles in ameliorating the negative effects of CF (Eaton and Shepherd, 2001). Through acting to regulate the market ensuring that contractors do not abuse their market power. Examples of such role of the state are the Enactment of competition policies, the introduction of special contract law, and the provision of low cost arbitration options. Second, the state may facilitate contracting by encouraging Agribusiness firms to initiate new contracts and providing support to smallholders to make them suitable for contract selection. Such facilitating activities may include the provision of training (for instance in negotiation), extension services providing information on pros and cons, and research on CF practices and their impact. But also providing more information on markets and prices may greatly support the position of smallholders when entering CF schemes.

2.6 Transportation, structuring, administration, enforcement and supervision costs

A principal disadvantage frequently associated with fruit collective marketing in developing countries is the high level of logistical costs. These costs are often excessive in projects involving large numbers of small farmers who are spatially dispersed (Key & Runsten, 1999).Excessive logistical costs are generated as a result of the structuring, administering and enforcement.

Moreover, the integrator incurs additional supervision and monitoring costs in conjunction with the non-cost-effective delivery of services and inputs to farms that are small and spatially dispersed. Smallholders are often also dispersed and difficult to reach, which adds to the costs of service delivery and monitoring. They also require more inputs and capital for the farm per unit of production, as well as specialized machinery and much more extension assistance (Key & Runsten, 1999).

Food production has also become an industrialized, capital-intensive business that operates in a highly competitive and unpredictable global market, is relatively inelastic and is faced with increased supply by competing countries (FAO, 2000).The result of these forces is that the industry has evolved to optimize efficiency and minimize related costs. This has resulted in fewer larger farms, and specialization (Frank & Henderson, 2008).

The process of industrialization has created opportunities for smallholders in developing countries to produce horticultural commodities under contract according to certain specifics (Kandiwa, 1999), but has the danger that small farmers will be marginalized and excluded from high-value markets (Reardon & Barrett, 2000). The challenge is therefore to prevent this from happening and to find ways to link small growers in developing countries to these high-value markets. The question remains whether an arrangement such as collective farming provides the solution to this challenge. However, contracts, modified to suit country-specific Conditions can be used as a vehicle to overcome transaction cost barriers, technology, competition, low prices, the inelasticity of demand and the inherent instability of agriculture, as suggested by Bonnen & Schweikhardt (2004). The danger exists that the intrinsic monopolistic nature of large agribusiness (often multinationals) could result in the total marginalization of many farming communities if the introduction of this ‘new agriculture’ and relationships in developing areas are not well managed. Owing to weak legal institutions not guaranteeing contract enforcement in many countries, chances of opportunistic behavior of growers do exist, providing an important risk element to the contracting firm. However, Key & Runsten (1999) stress that agribusiness firms are often in a much better position to provide production loans to growers owing to the limited alternative markets and low monitoring, enforcement and other transaction costs. Guo (2005) suggests that one option to eliminate the problems discussed is for agribusiness firms to opt for vertical integration whereby all stages of the marketing chain – from production to consumption – take

place within one firm. However, due to typical problems in the labour market (shrinking, supervision costs, etc.), vertical integration is seen as inferior to the contracting option. In commodities where labour input is fairly high, the plantation or vertical integrated models will clearly provide diseconomies of scale and inefficient outcomes, thus opening the way for small-scale family farms. This is confirmed by the analysis of Delgado (1999), who applied a similar review of the specific factors in rural Africa most likely to be associated with transaction costs, and the way in which they shape the type of producer organization most suited to dealing with them. His analysis provides an added dimension of the commodity characteristics to the theoretical explanation for the existence of contract farming and other forms of vertical integration. It is important to recognize that individual commodities have both production and marketing characteristics that will determine the most optimal form of production organization for that specific commodity (Hobbs & Young, 2002). As shown earlier, high labour intensity favors smallholder organization, whereas both economies of scale and heavy investment requirements in production produce the opposite effect. Delgado (1999) argues that most commodity-specific transaction costs arise in marketing and processing. Contract farming reduces the need for labour supervision while increasing the access of producers to needed inputs and skills. High perishability also tends to discourage independent small-scale operators, because of the high risks involved in not having an assured processor market.

The transaction cost approach has been used to explain transactions on the global commodity chains (Gereffi,2005). These studies acknowledge that, in addition to market-based relationships and hierarchies (vertically-integrated firms), there exist a set of hybrid forms encompassing the spectrum of explicit coordination. Vertical coordination via contracts is one of these hybrid forms. The rationale applies to agro-food market as well (Frank and Henderson,2008). Neo-institutional economists seek to understand market and non-market exchange under positive transaction costs. The emergence and structure of contracts are explained in terms of information incompleteness, moral hazard, and missing markets (Menard,2000). In other words, when the characteristics that the buyer is concerned about are difficult to obtain through market exchange, vertical contracts and/or vertical integration will emerge. From the viewpoint of a specific agricultural sector, Martinez (2002) found that the emergence of new, specialized large-scale production technology affected the transaction complexity of marketing exchange in the poultry, egg, and pork industries. Vertical contracts provided an efficient means of organizing markets by reducing the

transaction costs. Non-standard products that originate from food safety and environmental concerns lead to the substitution of vertical contracts for arm's-length market exchange (Humpret and Memedovic, 2006).The new institutional economists conclude that the transformation of the agro-food market increases the transaction costs associated with market exchange (holdup, coordination, and volatility), but can reduce some of these costs by entering into a contractual arrangement, although contracting will encounter other types of costs, namely ex ante contracting costs (when drafting, negotiating, and safeguarding agreements), and ex post costs (when enforcing the contracts).Peterson, (2001),conclude that family farming is the most efficient institutional arrangement in the agrarian economy.

2.6.1 Reduction of logistical costs through farmer group approach

Another approach suggested by Coulter et al. (1999) to counter the problem of high transaction costs of dealing with smallholders is to consider the promotion of farmer groups or farmer-controlled enterprises (commonly also referred to as cooperatives) in conjunction with a contract-farming venture. The cooperative could bargain and negotiate prices and the terms of the contract on behalf of the farmers. It can also be instrumental in providing information, inputs, technical and quality assistance to the growers. Owing to the poor record of agricultural cooperatives in developing countries, it is important that such cooperatives be established on sound principles that will ensure their sustainability. The recent work by Cook & Chaddad (2000) provides an indication of the aspects that should be taken into account to ensure that cooperatives (or 'new generation cooperatives', as these authors call them) provide the necessary benefits to producers in any contractual or marketing arrangement.

Both Kherallah (2000) and Coulter et al. (1999) use the activities of the Fresh Produce Exporters' Association of Kenya (FPEAK) as an example to illustrate the value of grass-roots activity in promoting linkages of smallholders with agribusiness(exporters). FPEAK supports small farmer groups through technical assistance and training, small grants to invest in infrastructure such as grading sheds and charcoal coolers, and loans to purchase inputs. It also provides services such as market intelligence and market promotion. The technical and financial support has made it possible for many farmers to meet the strict requirements and standards of the United Kingdom supermarkets – the largest buyers of Kenyan fresh produce. By assigning groups of farmers to different exporters it is now more profitable for exporters to contract with small-scale farmers (Kherallah, 2010). This organization has thus addressed not only the issue of high costs in dealing

with smallholders, but also the problem of product quality and standards, which is a major concern for most traders. If transaction costs of working together as a group are higher than those associated with other institutional alternatives or working individually, the group will be unsuccessful (Dorward and Kydd, 2003).

2.7 Maintaining and adding value through post-harvest handling technology

Value is usually defined in terms of the customers or consumers and thus customer value is linked to use of product while it is perceived by customer, not determined by seller (Mudimigh ,2004).Sources of value have been shown to lie in features of products, such as price, convenience, appearance ,nutrition, safety and reliability(FAO,2001). This has led to rise of food safety, one of the most important issues in public and private concern which has made the different actors aware that assuring safety of the final food product requires proper alignment of activities of all participants.

Collective farming can be plagued by a variety of problems. The most contentious issue between the parties is the determination of grading standards; contracts should specify commodities grading, the respective price to be paid for each grade, and the criteria for rejecting substandard output (GTZ,2007).Grading standards can be complex and open to subjective interpretations.Indeed,arbitrary and unfair grading of commodities is the most common complaint of contract farmers. Some contracting agencies apply more stringent interpretations of standards and increase rejection rates when their markets become oversupplied (Collins,2006).Indeed in some cases, fruit rejection rates have been over 50% (Glover and Kusterer, 2007) ,and even more extreme cases, buyers have unilaterally terminated contracts.

Having a focus of the consumer as the ultimate ‘target of the activities of a chain is a distinguishing feature of VCM (Collins,2006).Explanation of the VCM, such as that given by the Agriculture and Food Council of Alberta[AFC],2002) highlights that a value chain begins and ends with market orientation. Interaction with market place provides information to decision makers for every link in the chain. Although the quick growth of contract farming in the last couple of years can be ascribed to the importance of grades and standards in the fresh food industry, as established by multinational firms and consortia Reardon(2000), illustrates the difficulty in enforcing such measures when dealing with a large number of smallholders. Additional support from farmer or grass-roots organizations or the government will be needed to

ensure that this does not lead to the exclusion of smallholders from contracting opportunities due to their non-compliance with food safety and quality standards (Frewer, 2003).

Much of agriculture is shifting from a philosophy from 'here's what we produce' to a situation where farmers take note of what the consumers want. New technology, which includes bio- and information technology, makes it possible to ensure that agricultural and food products do have the characteristics consumers want (Boehlje & Doering, 2000.). Apart from the pressures from consumers and end-use markets, other major drivers and contributors to these changes in agriculture include the following: Increasing competition from global market participants, economies of size and scope in production and distribution, Risk mitigation and management strategies of buyers and suppliers, Strategic positioning and market power/control strategies of individual businesses, Increased levels of processing, improved productivity, new technology forces have expanded the range of products (USAID, 2004).

The value created through post harvest activities such as grading, processing, packaging, storage and transport is targeted at meeting specific consumer requirements. By meeting these requirements more precisely, reliably and economically more value can be created. When a chain of collaborating firms is able to create value in this way, it not only strengthens the relationships among the collaborating firms, but also builds relationships between the chain and its consumers.(USAID et. al,). Aside from meeting the standards of individual companies, farmers are also increasingly required to meet collective certification standards to show buyers and consumers that certain quality, safety, environmental and/or ethical standards have been met (Penrose-Buckley, 2007).

However, Bollen, (2004) argues that in practice, it is rare to find a value chain that is able to achieve high level of collaboration and value creation that involves every actor. In horticulture, individual producers are relatively small in relation to their ability to service a market segment. It is common for producers to form alliances among themselves, sometimes referred to as horizontal alliances (Agriculture and food Council, 2002).It is also common for horizontal alliances of producers to initiate the formation of value chains in horticultural industries. Collins (2004) describes the type of activities that firms become capable of once a successful alliance has been formed. These include; co-investing in research to better understand consumer needs seeking to actively influence consumers, exploring new products, technologies or markets and providing proof of authenticity.

Value can be achieved through four interconnected areas of activity. They are food safety, traceability, information systems and consumer response to quality (Bollen,2004). Research show that general consumer confidence in the motives of food producers and retailers has decreased (Frewer, 2003), fueled by publicity surrounding outbreaks e.g. foot and mouth. While horticulture has not been subject to this same level of public concern about its systems and outputs, there is still enough publicity to keep food safety issues squarely in minds of consumer's e.g. reports of deaths from agricultural chemical contaminations of vegetables in china.FAO (2006) reports that the incident of human food borne illness related to horticultural produce is low, but increasing due to better microbial detection methods. He further suggests that every horticultural supply chain needs food safety plan. Post harvest practices that ensure food safety add value through confidence that instill in consumers (Frewer, 2003)

Food safety means avoiding microbiological contamination that exceeds defined limits. or implementing and enforcing food safety standards and management systems that deliver value 100% of the time. Traceability in supply chains is also important because it gives evidence of good agri-cultural practices and improves product segmentation (Bollen, 2004).it is impossible to achieve traceability without at least some cooperation from every chain member.

2.8. Critical summary and Analysis of the literature review.

The literature emphasizes that fresh produce can no longer, be taken to the market on the off chance that it will be purchased. Access to markets requires that produce be supplied through market driven systems in which market requirements known prior to production are used in specifying input quality as well as production practices . The success or failure of a horticultural supply chain is ultimately determined by the degree to which produce satisfies consumer requirements for quality and safety.

2.9 Research Gap

GlobalGAP (Good Agricultural Practices) is the single most important standard in international food supply chains. However, there are contradicting findings on the costs and benefits of certification at producer level in order to assess the high profile market (Doland and Humphrey, 2011). Several researchers argue implications for globalGAP has lead to increased exclusion of individual smallholders from markets and increased their cost of operation. It is not clear whether farmer groups have been able to meet the associated investments costs and comply with market standards

2.10. Conceptual Framework

This explains the relationship between the independent and dependent variable, where the independent variables (group networking, negotiation, logistical costs, post-harvest handling) are a function of dependent variable (market access). The moderating variable (groups leadership and financial status) are assumed to produce an interaction effect to both dependent and independent variables while the extraneous variable (locality climatic conditions, Distance to the market, pests and diseases) are from and determined from outside of the farmer group.

Figure 1-Conceptual framework

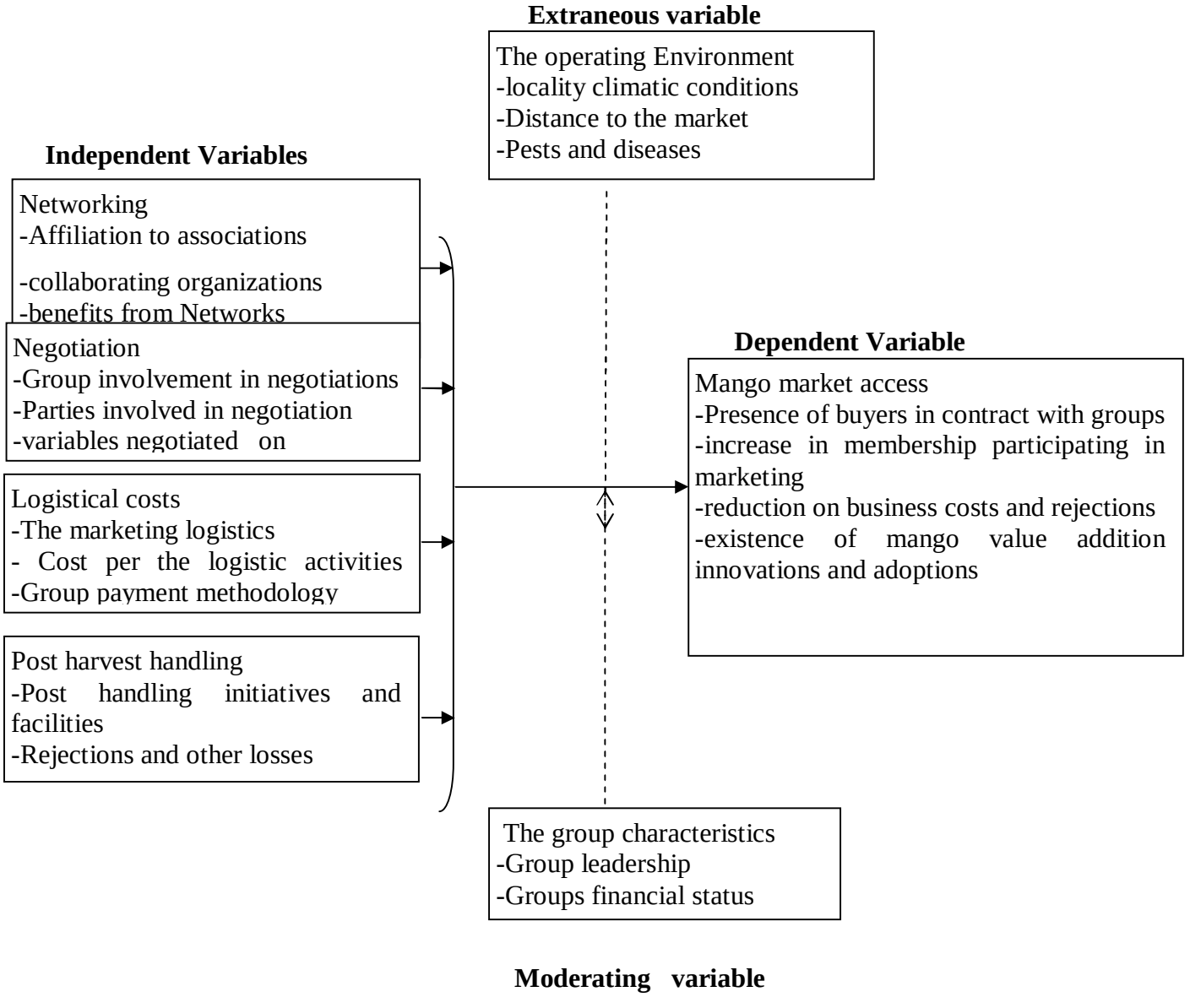

Figure 1-Conceptual framework. Source; Owner.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

According to Mugenda Olive and Mugenda (1999), research methodology outlines the techniques, methods and tools to be used in data analysis. The chapter is organized in following; research design, Target population, sample size, Sampling techniques , research instruments, reliability and validity of instruments, data analysis and presentation.

3.2 Research Design.

The study used descriptive survey design to investigate the factors influencing of mango market access by the producer groups i.e through interviewing and administering of questionnaires to a sampled group representatives and stakeholders. Cross tabulation was used to determine relationships among two or more variables and to explore their implications for cause and effect.

3.3 Target population

A total 12 mango producer groups with total membership of 416 farmers were purposively selected in the study. The groups exist within Meru central sub-county (Mwangathia and Kiagu ward) i.e. the mango agri-ecological zones.

3.4 Sampling procedure and sample size

3.4.1 Sampling procedure

Purposeful and random sampling procedures were used to select the respondents who participated in the study. Purposive sampling permitted selection of 5 stakeholders who understood and had experience of the phenomena in question. Stakeholders selected were; agro-input supplier, extension provider, buyer, finance supporter and advocacy institution. Random sampling was applied to select the 120 individual farmer respondents from the mango producer groups.

3.4.2 Sample Size

Krejcie and Morgan (1970) formula was used to determine the sample size.

$$S = \frac{X^2 NP(1-P)}{d^2(N-1) + X^2 P(1-P)}$$ Where,

S = required sample size; N=the given population

P= Population proportion for the table, assumed to be 0.50 as this yields the maximum possible sample size required

d= degree of accuracy as reflected in the amount of error, value being0.05

$X^{2=}$ 3.841 for the 0.95 confidence level

Based on Krejcie's formula the sample size would be 180.However, Cohen (1988) argues if there were too many subjects, even trivially small effect could be detected, but the findings would be of insignificant value, wasting valuable time and resources. Based on the above justifications, the sample size calculated using the formula derived from Cohen's Statistical power analysis would be more meaningful and acceptable. This number can be rounded up (to 116).Tto allow the researcher to execute Cohen's (1988) table for further analysis of the power level, A sample size of 120 was sufficient to answer research objectives and cater for risk of unanswered questioners.

Table 3.1: Analysis of Mango Producer Groups, total membership and sample size

Mango Producers Group Name	No. of members	Sample Size	% ge
1.Gaitu mango group	40	12	10
2.Kaguma Nkumbo	60	17	14.2
3.Mbajone	30	8	6.7
4.Nduruma	50	14	11.7
5.Njuthine	42	12	10.0
6.Nkumbo bamato	32	8	6.7
7.Runywene	30	8	6.7
8.Kamuga	60	17	14.2
9.Makandune mango growers	20	6	5.0
10.Kathwene mango growers	20	6	5.0
11.Gikuurune horticulture	15	4	3.3
12.Kiamuri	17	8	6.7
Total	416	120	100%

Mango Groups and membership database;. Source: MOA –Meru central District, (2013)

3.5 Research Instruments

This researcher used questionnaires and documentary analysis research instrument. 120 questionnaires were administered to the selected 12 mango producer groups' individual farmer representatives. The questioners were both open and close ended, organized as per the research objectives namely; Networking, Negotiation, logistical costs and post harvest handling.

3.6 Reliability of the Research Instruments

A pre-testing (pilot study) was conducted at gikuurune horticultural group targeting two individual farmers who were excluded from the main study. Reasons behind the pre-testing was to assess the clarity of the instrument items .Those found to be inadequate in measuring the variables were discarded or modified to improve the quality of the research instruments thus increasing their reliability.

3.7 Validity of the Research Instruments

To acquire accuracy, meaningfulness and technical soundness of the research, the research instrument was discussed with the supervisors. Any identified weakness of the instrument was corrected as per the guideline.

3.8 Data Collection

Data was collected through administration of questionnaires to randomly selected group member's representatives during group meetings. Documentary analysis of the groups records was used to draw some detailed data on groups' market access e.g. on affiliations, parties involved in negotiation, agreement and transaction cost per activity.

3.9 Data Analysis Method

The raw data obtained from the field was coded to classify answers to their respective questions to get meaningful categories as per their research questions. Quantitative and qualitative methods were used to analyze data. Statistical Packages for Social Sciences (SPSS) was applied to generate and present tabulations for final analysis. The data from interviews and questioners was organized in terms of the themes.

Table 3.2: Operationalization definition of variables table

Objective	Variables		Indicators	Measurement of indicator	Data collection method	Measuring Scale/level of scale	Type of Analysis
	Independent variable	**Dependent**					
1) To establish the influence of networking by producer groups on the mango market access.	Networking	Mango Market access.	Affiliation / membership to organizations	-Membership receipts	- Questionnaire -Documentary analysis	Nominal	Descriptive and Inferential
				-No. of organizations affiliated to	-Questionnaire -Interviews	Nominal	Descriptive and Inferential
.			Collaboration with organizations	-No. and names of partnership Organizations -No. of partnership agreements -Terms of agreements	-Questionnaire -Documentary analysis	Nominal ordinal	Descriptive and Inferential
			Benefits acquired from the Collaborations	-List and No. of benefits -No. of market contracts	-Questionnaire -Interviews	Nominal	
2) To determine the influence of negotiation with buyers by producer groups on the mango market access.	Negotiation	Mango Market access.	Group Involvement in negotiation	No/Times of negotiations	-Questionnaire -Documentary analysis	Nominal	Descriptive and Inferential
			Parties involved in negotiation	No. & names of parties involved	Documentary analysis	Nominal	Descriptive and Inferential
			Variables negotiated on	List of variables	-Questionnaire	nominal	

			Result of negotiation	-reduction in transport cost -change in mango price	-Questionnaire -documentary analysis	ordinal	
3 To investigate the effects of logistical cost by producer groups on mango market access.	logistical cost	Mango Market access.	Activities which logistical costs are incurred	List of logistical activities to group marketing	-Questionnaire -documentary analysis	nominal	Descriptive and Inferential
			Activity Cost	Cost per logistical activity for each member	-Questionnaire -Documentary analysis	Ordinal	
			Group's raising of transaction costs	-Methods -contribution per member	-Questionnaire	Nominal Ordinal	
			Failure to meet transaction costs	List of activities whose costs have difficulty in meeting	-Questionnaire	Nominal	
4 To find out the post-harvest handling measures by producer groups and its effect on mango market access.	Post-harvest handling measures	Mango Market access.	Group Post-harvest handling initiatives	-list of handling equipments	-Questionnaire -Documentary analysis	Nominal	Descriptive and Inferential
			Rejections	-No. of rejections -Total sum of rejections	-Questionnaire	Ordinal	
			Other losses (pests & diseases)	Cost as per for each member	-Documentary analysis	Ordinal	

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter deals with data analysis, presentation and interpretation of findings. It provides the overall findings based on primary and secondary data which was collected from the field using both open and close ended questionnaires, interviews and documentary analysis. The data analysis was mainly descriptive using percentages, tables and frequency distribution and cross tabulation to determine the relationship between independent and dependent variables.The data analysis was done according to the research questions of the study. The findings were then considered and interpreted.

4.2 Instrument response rate

A total of 120 questionnaires were administered and were all completed .The researcher and research assistants administered the questionnaires themselves by visiting during the group meetings and thus 100% response rate achieved.

A. Descriptive analysis

4.3 General information on respondents

It involved presenting the general characteristics of the respondent which included gender , number, age and varieties of mango trees, experience in collective marketing and current market to understand their background and relate it to mango market access.

4.3.1 Gender distribution

The researcher found out that the 77.5% of respondents were male while 22.5% were female as illustrated in table 4.1.

Table 4.1: Gender distribution

Gender	Frequency	Percent
Male	**93**	**77.5**
Female	**27**	**22.5**
Total	120	100.0

This could be attributed to the fact that majority of the mango farms are owned by men and thus it follows that they are members of these groups involved in mango production and marketing.

4.3.2. Number of mango Trees

The researcher sought to find out number of trees.

Table 4.2. Number of mango Trees

No. of mango trees	Frequency	Percent
<60	3	2.5
61 – 100	42	35.0
>100	75	62.5
Total	120	100.0

62.5% of the farmers in the farmer groups sampled had planted over 100 Mango trees whereas only 2.5% of the respondents claimed to have had less than 60 Mango trees.this indicated that majority were in mango business.

4.3.3. Variety of Mango Trees

The respondents were asked on the variety of mango tree planted.

Table 4.3: Variety of mango tree planted

Variety	Frequency	Percent
Apple	24	20.0
Tommy	17	14.2
Kent	26	21.7
Ngowe	37	30.8
Vandyke	16	13.3
Total	**120**	**100.0**

30.8% of the farmers had the Ngowe mango variety on their farms. This is best for local and processing market. A further 20% with the apple variety best preferred for export market. This meant that mangoes could be sold at local, processing or export markets

4.3.4. Experience with group collective marketing

Data on experience with collective marketing was collected.

Table 4.4: Experience in collective marketing

Experience	Frequency	Percent
Yes	91	75.8
No	29	24.2
Total	120	100.0

75.8% of the respondents claimed to have some experience with group collective marketing while 24.2% claimed not to have experience. This indicated that farmers had made initiative in collective action approach to access mango markets.

4.3.5: Current engagement in collective marketing

The researcher sought to find out current practice in marketing.

Table 4.5: Current engagement in collective marketing

	Frequency	**Percent**
Yes	41	34.9
No	79	65.1
Total	120	100.0

A majority of 65.1% of the total respondents in producer groups were not involved in collective marketing at the time, while 34.9% were still in collective marketing arrangements. This pointed out a withdraw of mango farmer from collective marketing initiative.

Table 4.6: Market place

Market	Frequency	Percent
Farm gate	68	56.7
Local	45	37.5
Export	7	5.8
Total	120	100.0

Majority by 56.7% groups members sold their mangoes at farm gate while the least 5.8% afforded to sell at export market.

4.4. Networking

The researcher found out if mango farmers were collaborating with others in their business.

4.4.1. Collaborations

Table 4.7: Collaboration with other partners

	Frequency	Percent
Yes	63	52.5
No	57	47.5
Total	120	100.0

Slightly more farmers in the producer groups sampled were collaborating with other organizations, compared to 47.5% of the respondents who were not collaborating with any other organization/partners.

4.4.2. Classification of the partners

Table 4.8: Category of partners

Category		Frequency	Percent
Other groups'	members	29	24.2
Government		11	9.1
NGOs		23	19.2
Association /	Federation	0	0.0
	N/A	57	47.5
Total		120	100.0

Of those farmers in the producer groups who were collaborating with other organizations 24.2% of them were collaborating with other groups' members. 19.2% of the respondents with NGO's while 9.1% collaborated with the government. No collaboration with any farmer federation. This indicated weaknesses of the mango associations.

4.4.3. Marketing Support received from the collaborations

The researcher sought to find out any benefits accrued from the collaboration

Table 4.9: Mango marketing support

Support	Frequency	Percent
Information exchange	08	6.7
Technical expertise	30	25.0
Lobby and advocacy	00	0.0
Market linkaging	19	15.8
n/a	63	52.5
Total	120	100.0

Majority of 25% responses on benefits from collaborations 25% said the collaboration was for technical expertise while a only 15.8% claimed that it was for market linkaging .0.0% had not acquired lobby and advocacy support. This still indicated weaknesses of the mango associations.

4.5. Negotiation.

The researcher found out weather the mango farmers had been involved in Negotiation with their buyers.

4.5.1 Engagement in negotiation

Table 4: 10:Engagement in negotiation platform with buyers

Engagement	Frequency	Percent
Yes	91	75.8
No	29	24.2
Total	120	100

A majority 75.8% of the farmers in the producer groups claimed to have been involved in negotiation process with their buyers while 24.2% were not involved. Probably because they had not participated in collective marketing.

Majority of 79.2% of the respondents in the producer groups had left the duty of negotiating on marketing terms to the group committees. 12.5% had negotiation task done by third parties while 8.3% of the respondents do it while in the group. This showed that third parties were playing negotiation role rather than facilitating the process.

4.5.3. Marketing variables negotiated on.

The respondents were asked on the variables negotiated on.

Table 4.12: Variables negotiated on.

Variables	Frequency	Percent
Input supply	3	2.5
Pricing	32	26.7
Delivery schedule	15	12. 0
Transportation cost	19	15.8
Grading criteria	25	20.8
Payment schedule	26	21.7
Total	120	100

The pricing with 26.7% was the item highest negotiated on for the mango marketing. Input supply was the least negotiated on, accounting for 2.5%.Payment schedule at 21.7 % came second. While grading criteria was third variable most negotiated. This could closely relate to fear on rejections and losses. Delivery schedule was at 12% due to reasons that most farmers mangoes were purchased at farm gate level.

4.5.4. Type of Agreement

Table 4.13: Type of agreement existing between the farmer and mango buyers.

Type of agreement	Frequency	Percent
Mutual agreement	116	96.7
Contract	4	3.3
Total	120	100

A majority of farmer groups had mutual agreements with the buyers, only 3.3% of the farmers within producer groups had contacts signed to such agreements.

4.5.5. Breach in marketing agreement

The researcher sought to find out whether the mango farmers had encountered breach of the marketing agreement

Table 4.14: Breach in marketing agreement

Breach	Frequency	Percent
Yes	103	85.8
No	17	14.2
Total	120	100

85.8% of the respondents had encountered a breach of agreements with their buyers while a minority, 14.2% of the respondents claimed to had never encountered a breach of agreements. This was associated with farmers with young mango trees.

4.6. Logistical Costs in Marketing

The respondents gave data on the logistical costs met during the marketing process and how the costs are met among the group members. The costs were also rated.

4.6.1. Logistical costs rating.

The participants rated the logistical cost incurred during group marketing as shown in table 4.15..

Table 4.15: logistical cost rates

Cost	Frequency	Percent
Negotiations	2	1.7
Supervisory	20	16.7
Enforcement	14	11.7
Transportation	79	65.8
oading/packaging	5	4.2
Total	**120**	**100.0**

65.8% of the respondents indicated that transportation contributed the highest cost of logistic. This was associated with the road networks from farms to market. Supervision of group members during marketing accounted for 16.7%. The least by 4.2% rated loading/packaging as contributor to logistic cost. This showed that loading item as a factor of logistic was not much of a problem to address by farmers in producer groups.

4.6.2. How logistical costs are met

The researcher found out means by which logistical costs were met by members in producer groups.

Table 4.16: Meeting of logistical costs.

Cost meeting	Frequency	Percent
Individual member contribution	60	50.0
Group savings	18	15.0
Buyer	42	35.0
Total	120	100

Half of the farmer producer groups met the logistical costs through own contribution. A further 35% of the respondents claimed that the logistical costs were met by the buyer. These could be the transportation from the farm, harvesting and loading for selling at farm gate. 15% of the respondents claimed that this cost was met through the group savings. This was associated with farmers who sold and delivered collectively.

4.7. Post harvest handling Technology.

The researcher sought to know the post harvest technologies owned by farmers

Table 4.17: Post harvest technology.

Technology	Frequency	Percent
Cooler	6	5.0
None	114	95.0
Total	**120**	**100.0**

Only 5% of the respondents had a post harvest support technology which was a cooler owned by one group. 95% owned neither a grader nor processor.

4.7.2.If none, why?

Table 4.18: Reasons for lack of technology

Reasons	**Frequency**	**Percent**
High cost	95	79.2
Ignorance	11	9.2
Lack of awareness	10	8.3
N/a	4	3.3
Total	**120**	**100.0**

Of those farmers in producer groups who don't have any post harvest technology 95% associated cost (high) as the reason why they did not have. A further 8.3% claimed not to be aware that these technologies existed.

4.7.3. Mango losses from rejections

Table 4.19: Rejections

	Frequency	Percent
Yes	93	77.5
No	27	22.5
Total	**120**	**100.0**

Majority of farmers in producer groups claimed to have incurred some losses resulting from rejection of their Mangoes. This represented 77.5 % of the farmer in producer groups sampled. A further 22.5% of these respondents claimed not to have incurred some losses.This was associated with farmers who had young trees.

Table 4.20: reasons resulting to mango rejection.

Reason for rejection	Frequency	percent
Field pest & Disease infection	14	11.7
Over-ripening	79	65.8
Delivery time	2	1.7
Lack of required variety	20	16.7
Lack of sorting or grading	5	4.2
Total	**120**	**100.0**

65.8% of the respondents associated over-ripening as the main cause of rejection. This was followed by lack of required variety at 16.7%. Only 1.7% of the respondent associated this to delivery time, which was associated to the fact that farmers were selling their mangoes at farm gate.

B. INFERENTIAL ANALYSIS - CROSS TABULATION.

4.8. To Establish the Influence of Networking by Groups on the Mango Market access

Table 4.21: Influence of collaboration on collective marketing

Do you have experiences with collective marketing? * Are you collaborating with any other organization/partners to access the market

			Are you collaborating with any organization/partners?		
			Yes	No	Total
Do you have experiences with collective Marketing?	Yes	Count	50	41	91
		% within Do you have experiences with groups collective marketing?	54.9%	45.1%	100.0%
	No	Count	13	16	29
		% within Do you have experiences with groups collective marketing?	44.8%	55.2%	100.0%
Total		Count	63	57	120
		% within Do you have experiences with groups collective marketing?	52.5%	47.5%	100.0%

55.2% of those groups' members who did not have experience in collective marketing were still not collaborating with other organizations. A further 45% of the individuals in group sampled claimed to have experience in collective marketing and at the same time they claim there to be no collaboration with other partners. We thus see more farmers not in partnership. This was associated with the fear of involvement in collective action activities and thus can conclude that individual members collaboration with partners could have influenced market place and marketing support.

Table 4.22: Influence of collaboration on current engagement in collective marketing

Are you currently engaged in collective marketing? * Are you collaborating with any other organization/partners Cross tabulation

			Are you collaborating with any organization/partners?		
			Yes	No	Total
Are you currently engaged in collective marketing?	Yes	Count	41	0	41
		% within Are you currently engaged in collective marketing?	100%	0%	100.0%
	No	Count	22	57	79
		% within Are you currently engaged in collective marketing?	27.8%	72.2%	100.0%
Total		Count	63	57	120
		% within Are you currently engaged in collective marketing?	52.5%	47.5%	100.0%
		% of Total			

Of the farmers in the groups sampled, 72.2% claimed to be not involved in collective marketing at the time of data collection, and were further not in collaboration with any partner. This directly could have affected their technical expertise in production and thus affect market access to high profile markets. Thus can conclude that collaborations influence the market access and producer groups collective marketing .

4.9. To determine the influence of negotiation by producer groups on the mango market access in Meru central sub-county.

Table 4.23: Influence of negotiation on the market access.

Where do you market your product at the moment * Have you engaged in negotiation process with your buyer? Cross tabulation

			Have you engaged in negotiation process with your buyer?		
			Yes	No	Total
Where do you market your mangoes at the moment	Farm gate	Count	55	13	68
		% within where do you market your product at the moment	80.9%	19.1%	100.0%
	Local market	Count	31	14	45
		% within where do you market your product at the moment	68.9%	31.1%	100.0%
	Export	Count	5	2	7
		% within where do you market your product at the moment	71.4%	28.6%	100.0%
		% of Total	4.2%	1.7%	5.8%
Total		Count	91	29	120
		% within where do you market your product at the moment	75.8%	24.2%	100.0%
		% of Total	75.8%	24.2%	100.0%

A majority 80.9% of the respondents who market their produce with Farm gate confirmed that they were involved in negotiations for their produce. A further 68.9% of those farmers in the groups who market their mango produce at the local markets further said they were involved in negotiations for their produce. Similarly 71.4 of those respondents who took their products to

export markets confirmed that they did involve in negotiations for their mango products. This confirms the assertion that negotiation affects mango market access in a positive manner.

Table 4.24: Influence of the nature of agreement on market access.

Are you currently engaged in collective marketing? * What type of agreement exists between the farmer group and buyer? Cross tabulation

			What type of agreement exists between the farmer group and buyer?		
			Mutual agreement	Contract	Total
Are you currently engaged in collective marketing?	Yes	Count	37	4	41
		% within Are you currently engaged in collective marketing?	90.2%	9.8%	100.0%
	No	Count	79		79
		% within Are you currently engaged in collective marketing?	100.0%	0%	100.0%
Total		Count	116	4	120
		% within Are you currently engaged in collective marketing?	75.8%	24.2%	100.0%
		% of Total	75.8%	24.2%	100.0%

All the respondents who were not involved in any collective marketing also had just a mutual agreement with the buyer. A further 90.2% of the farmers in the groups who had some mutual agreement with the buyers claimed to engage in some collective marketing for their mango produce. Minority of 9.8%, who had contracts were involved in collective market. We thus associate the nature of agreement made to positively influence the approach of mango marketing by farmers within groups.

4.10. To investigate the effects of logistical cost by producer groups on mango market access in meru central sub-county.

Table 4.25: Influence of the logistical cost on collective market access

Are you currently engaged in collective marketing? * what contributes the highest cost of ogistic Cross tabulation							
			what contributes the highest cost of logistic				
			Negotiation	Supervisor	Enforcement	Transportation	Loading Packaging	Total
Are you currently engaged in collective marketing?	Yes	Count	1	2	3	30	1	41
		% within Are you currently engaged in collective marketing?	2.0%	4.9%	19.5%	73.2%	2.4%	100.0%
	No	Count	2	18	6	49	4	79
		% within Are you currently engaged in collective marketing?	2.5%	22.9%	7.6%	62%	5.1%	100.0%
Total		Count	2	20	14	79	5	120
		% within Are you currently engaged in collective marketing?	1.7%	11.7%	16.7%	65.8%	4.2%	100.0%
		% of Total	1.7%	11.7%	16.7%	65.8%	4.2%	100.0%

73.2% of the respondents who claimed that transportation accounted for highest cost among other logistics were also engaged in collective marketing. Those still not involved in collective marketing rated transportation cost highest in mango marketing .there is a positive relationship between transport cost and collecting group mango marketing.

4.26: Influence of the Logistical Cost on Market place

Where do you market your product at the moment * How do you meet the logistical costs? Cross tabulation

			How do you meet the logistical costs?			
			Individual member contribution	Group savings	Buyer	Total
Where do you market your mangoes at the moment	Farm gate	Count	43	6	19	68
		% within where do you market your product at the moment	63.2%	8.8%	27.9%	100.0%
	Local market	Count	13	10	22	45
		% within where do you market your product at the moment	28.9%	22.2%	48.9%	100.0%
	Export Market	Count	4	2	1	7
		% within where do you market your product at the moment	57.1%	28.6%	14.3%	100.0%
Total		Count	60	18	42	120
		% within where do you market your product at the moment	50.0%	15.0%	35.0%	100.0%
		% of Total	50.0%	15.0%	35.0%	100.0%

48% of the farmer groups members sampled and who market their produce at the local market had their logistical costs met by the buyer. This would in return be deducted from the final sale of their mangoes and in return lower sale price. A further 57% of the farmer groups sampled and who sold their mangoes to the export market contributed all their cost associated with logistics. Thus we can conclude that lack of enough money to finance logistical costs affects negatively the market access. This is moreover was affirmed by the fact that 63% of the respondents who funded their logistical costs from group contribution also accessed the market to some well established markets e.g. processor.

4.11.To find out the post-harvest handling measures by producer groups and its effect on mango market access in meru central sub-county.

Table 4.27:The influence of the post harvest handling technologies on market access.

Where do you market your product at the moment * What post harvest handling support technologies support do you have ? Cross tabulation

			What post harvest handling support technologies support do you have?		
			Cooler	None	Total
Where do you market your product at the moment	Farm gate	Count	0	58	58
		% within Where do you market your product at the moment	0.0%	100.0%	100.0%
	Local market	Count	0	45	45
		% within Where do you market your product at the moment	0.0%	100.0%	100.0%
	Processor/ export	Count	6	1	7
		% within Where do you market your product at the moment	85.7%	14.3%	100.0%
Total		Count	6	114	120
		% within where do you market your product at the moment	5.0%	**95.0%**	**100.0%**
		% of Total	5.0%	95.0%	100.0%

Majority of the respondents had no post-harvest handling technology, hence sold at farm gate or or local markets of the.85.7% of the respondents who had post harvest support technology, they exported their produce (mango) or sold to processors. Post harvest technology availability determined the kind of market accessed. This indicated the different quality requirements for different markets.

Table 4.28: The effect of post harvest technology on marketing agreement

Have you incurred losses through rejection?

Where do you market your product at the moment * If yes, what effect had it on the market? Cross tabulation

			If yes, what effect had it on the market?				
			Rejection by buyer	Less price paid	Termination contract	Na	Total
Where do you market your product at the moment	Farm gate	Count	25	30	0	13	68
		% within where do you market your product at the moment	36.8%	44.1%	0%	19.1%	100.0%
	local market	Count	12	21	1	11	45
		% within where do you market your product at the moment	26.7%	46.7%	2.2%	24.4%	100.0%
	export	Count	2	2	0	3	7
		% within where do you market your product at the moment	28.6%	28.6%	0%	42.9%	100.0%
Total		Count	39	53	1	27	120
		% within where do you market your product at the moment	**32.5%**	**44.2%**	**8%**	**22.5%**	**100.0%**
		% of Total	**32.5%**	**44.2%**	**8%**	**22.5%**	**100.0%**

44.1% and 46.7%,who sold at farm gate and local market respectively, suffered losses as a result of less paid price for their mangoes due to rejection resulting from postharvest handling issues.A positive relationship was thus shown to exist between postharvest handling measures and mango marketing.

CHAPTER FIVE

SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSIONS & RECOMENDATIONS

5.1 Introduction

This chapter presented the summary of findings, discussions conclusion and recommendations of the study findings. The aim of the study was to analyse the factors influencing mango market access by the producer groups in Meru central sub-county.

5.2. Summary of findings

The researcher found out that the 77.5% of respondents were male while 22.5% were female an indicator that majority the mango farms were owned by men and thus the nature of mango producer groups' nature of membership. Of the respondents, Majority of 62.5% had over 100 Mango trees on their farms. Whereas .showed that majority were in mango business.30.8% of the farmers had the Ngowe mango variety on their farms, best for local and processing market. A further 20% with the apple variety best preferred for export market. This meant that mangoes in the locality could be sold at local, processing or export markets.75.8% of the respondents claimed to have had experience with group collective marketing while 24.2% did not have .Further, 65.1% of the total respondents in producer groups were not involved in collective marketing at the time of data collection, while 34.9% were still in collective marketing arrangements. This pointed out a withdraw of mango farmer from collective marketing initiative.

Selling of the mangoes was at mostly at farm gate as represented by 56.7% groups' members and the least of 5.8% afforded to sell at processing or export market. Thus an issue in accessing upper markets.

Slightly more farmers within the producer groups sampled were collaborating with other organizations, compared to 47.5% of the respondents who were not collaborating with any other organization/partners. Of those farmers who were collaborating with other organizations 24.2% of them were collaborating with other groups' members. 19.2% of the respondents with NGO's while 9.1% collaborated with the government. No collaboration with any farmer federation. This indicated weaknesses of the mango associations or ability of farmers to transform their groups to other entities. On benefits acquired from collaborations, 25% said the collaboration was for technical expertise while a only 15.8% claimed that it was for market linkaging .0.0% had not acquired lobby and advocacy support. This still indicated weaknesses of the mango associations.

A majority 75.8% of the farmers in the producer groups claimed to have been involved in negotiation process with their buyers while 24.2% were not involved. Probably because they had not participated in collective marketing. 79.2% of the respondents had left the duty of negotiating on marketing terms to the group committees,12.5% had negotiation task done by third parties while 8.3% of the respondents did negotiation while in the group. This showed that third parties were playing negotiation role rather than facilitating the process.The pricing with 26.7% was the item highest negotiated on for the mango marketing. Input supply was the least negotiated on, accounting for 2.5%.Payment schedule at 21.7 % came second. While grading criteria was third variable most negotiated. This could closely relate to fear on rejections and losses. Delivery schedule was at 12% due to reasons that most farmers mangoes were purchased at farm gate level. Only 3.3% of the mango farmers had contacts signed to sale agreements.This showed majority had no specific market for sale.

Transportation contributed the highest cost of logistic as represented by 65.8% of the respondents. This was associated with the road networks from farms to market. Supervision of group members during marketing accounted for 16.7%. The least by 4.2% rated loading/packaging as contributor to logistic cost. This showed that loading item as a factor of logistic was not much of a problem to address by farmers in producer groups.Half of the farmers met the logistical costs through own contribution. A further 35% of the respondents claimed that the logistical costs transferred by the buyer. This was the transportation from the farm, harvesting and loading for selling at farm gate. 15% of the respondents claimed that this cost was met through the group savings. This was associated with farmers who themselves sold and delivered collectively to processing market.

Only 5% of the respondents had a post harvest support technology which was a cooler .Of those farmers in producer groups who don't have any post harvest technology 95% associated this to high cost A further 8.3% claimed to be unaware on existence of these post harvest technologies.Over-ripening was rated highest by 65.8% of the respondents as the main cause of rejection. This was followed by lack of required variety at 16.7%. Only 1.7% of the respondent associated this to delivery time, which was associated to the fact that farmers were selling mostly at farm gate.

5.3. Discussions

5.3.1 To establish the influence of networking by producer groups on the mango market access in Meru central sub-county.

55.2% of those groups' members who did not have experience in collective marketing were still not collaborating with other organizations. A further 45% claimed to have experience in collective marketing but were not in collaboration with other partners. We thus see more farmers not in partnership. However of those who were in collaboration, market linkaging support was after technical expertise and information. The collaborations benefits were not on market access. This proved van Roekel (2002) who pointed out that it is evident that penetration of desired market position cannot be achieved sorely. Thus, ability to access market by these mango farmers in producer groups was influenced by the kind of partners they partnered with and services they offered.

5.3.2 To determine the influence of negotiation by producer groups on the mango market access in Meru central sub-county.

A majority 80.9% of the respondents who marketed their produce at Farm gate confirmed that they are involved in negotiations for their produce. A further 68.9% of those farmers in the groups who marketed their mango produce at the local markets further said they were involved in negotiations for their produce. Similarly 71.4 of those respondents who took their products to export markets confirmed that they did involve in negotiations for their mango products.

However, all the respondents who were not involved in any collective marketing had just a mutual agreement, with the buyer. Minority of 9.8%, who had contracts were also involved in collective market and could penetrate processing and export markets. We thus associated the negotiation on marketing terms and nature of market agreement in place to have positively influenced the mango market place of mangoes.

5.3.3 To investigate the effects of logistical cost by producer groups on mango market access in meru central sub-county.

73.2% of the respondents who claimed that transportation accounted for highest cost among other logistics were also engaged in collective marketing. Those still not involved in collective marketing rated transportation cost highest in mango marketing .There is a positive relationship

between transport cost and collecting group mango marketing.48% of the farmer groups members who marketed their produce at the local market had their logistical costs met by the buyer. This was in turn deducted from the final sale price of their mangoes and in return lower payment. This indicated farmers who sold at farm gate were not ready to incur costs.This also confirmed Delgado (1999), who argued that most commodity-specific transaction costs arise in marketing stage and the smallholder farmer who are spatially dispersed are not ready to incur. A further 57% of the respondents and who sold their mangoes to the export market contributed all their cost associated with logistics. Thus we can conclude that refusal of mango farmers to collectively contribute to the logistical costs affects negatively their collective market access. This is moreover was affirmed by the fact that 63% of the respondents who funded their logistical costs from group contribution also accessed the market to some well established markets e.g. processor.

5.3.4 To find out the post-harvest handling measures by producer groups and its effect on mango market access in meru central sub-county

Majority of the farmers did not have post harvest handling techniques. hence sold at farm gate or or local markets.Of the 17.2% of the respondents who had post harvest support technology, which was a cooler ,exported their produce. 36.8% of the respondents who marketed their produce at farm gate also confirmed to have had rejections mostly resulting from overipening and a further 26% and 28% to local and export markets respectively. It is evident from Collins (2006) that in some cases, fruits rejection rate have been over 50% and even in extreme cases, buyers have unilaterally terminated contracts. Post- harvest technology availability therefore determined the kind of market accessed, due to the different quality requirements for different markets.

5.4. Conclusions

Despite the fact that collaboration with stakeholders existed, its benefits to mango farmers was not on market linkaging. Thus, ability to access market by the mango farmers in producer groups was influenced by the kind of partners and services they received. Negotiation had also been done with buyers but mutual agreements were more in operation. The nature of agreement made positively influenced the market place of mangoes. For the few who had contract agreement, had ability to sell to upper markets. It was evident that despite involvement in collective marketing, members did not meet the logistical costs fully. Most costs at marketing was met by farm gate

buyer and in turn deducted from the sale price of their mangoes. Farmers in return received lower payment. Ignorance of farmers to try meeting some logistical costs negatively risked their ability to penetrate higher markets access. Un-availability of Post harvest technology led to rejections and losses during marketing.Availability of post harvest technology also influenced the kind of market accessed.

5.5. Recommendations

To mango producer groups

1. To increase access to market, Mango groups should collaborate more with partners with market linkaging support.
2. Mango groups should transform their market agreements with buyers into contracts, and specify on mango delivery quality and variety to reduce rejections.
3. Mango farmers and their groups should venture in transportation business themselves. With this they can compare payment price when mangoes are picked by buyer at farm gate with own delivery.

To farmer associations

4. The farmer association in the locality should participate in negotiation and advocacy activities to develop the mango value chain

To the stakeholders

5. For enhanced Agribusiness, stakeholders in the value chain should plan for mango variety improvement, post- harvest handling and market linkaging programmes

5.6. Suggestions for further research

For further research, the study recommends that the following studies be carried out.

1. Research to be carried out on whether increased access to technical expertise of mangoes has led to improved quality and produced quantities in Meru central sub-county.
2. A research be carried out to establish if the required mango quantity, quality and variety

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APPENDIX 1: LETTER OF TRANSMITTAL.

Judith Nkatha Maitai
P.O. Box 23,
Kianjai.
12th April 2013.

To Whom It May Concern:

Dear sir/madam,
RE: REQUEST FOR COLLECTION OF DATA

I am a student at University of Nairobi (UoN) pursuing a Masters degree in Project Planning and Management. In fulfilment for the requirement of the award of a master's degree, I am conducting a research project the factors influencing mango market access by the producer groups–Meru Central sub-county. I'm therefore requesting you to assist complete the questionnaire. Any information given will be used for the study only and treated with confidentiality. Thanks

Yours faithfully

Judith Nkatha Maitai.
L50/60900/2011.

Appendix 2 ; Group and Individual farmer questionnaire.

This questionnaire will research on the factors influencing mango market access by the producer groups in Meru central sub-county. The information provided in this questionnaire will be used for research purpose only and will be treated with utmost confidentiality. Please answer every question by ticking the applicable box that answers the respective question as honestly and completely as possible. You may also add comments where necessary and where you may have more information than the options provided.

PART A

Section one - Respondent details

	Date of Interview		Group Name	
1	Gender	Male ☐	Female ☐	
2	No. of mango trees	< 60 ☐	60-100 ☐	>100 ☐
3	Variety	Apple ☐	Tommy ☐ Kent ☐ Ngowe ☐ vadyke ☐	

4	Do you have experiences with groups collective marketing?	Yes ☐ No ☐
5	Are you currently engaged in collective marketing?	Yes ☐ No ☐
6	Which is your current market place?	Farm gate ☐ Local ☐ Export market ☐

PART B

Section one; Groups' networks and its influence

7) Are you affiliated to any association or Federation or Organization?(Please Name it).

Yes ☐ No ☐

8) Are you collaborating with any other organization / partners?

Yes ☐ No ☐

9)If yes above, please indicate the category

a) Other groups members ☐ b) Government ☐ c) NGOs ☐
d) Farmer associations/federations ☐

10) Please list the partner organizations

11) What marketing support have you have received from these Associations and organizations?
a) Information exchange ☐ b) Technical expertise ☐ c) Lobby & advocacy ☐
d) Market linkaging ☐

Section two; Groups' negotiations and its influence

12) Have you engaged in negotiation process with your buyer?
Yes ☐ No ☐

13) Who was involved the negotiating?
i) Entire group ☐ ii) Group committee ☐ iii) third party ☐

14) What variables were negotiated on?
i) Input supply ☐ ii) Pricing ☐ iii) Delivery schedule ☐
iv) Transportation ☐ v) Grading criteria ☐ vi) Payment schedule ☐

15) What type of agreement exists between the farmer group and buyer farm?
i) Mutual agreement ☐ ii) Contract ☐

16) Have you ever encountered a breach of the marketing agreement?

Yes ☐ No ☐

Section three; Logistical costs

17) What are the logistics incurred in the marketing activity?
i) Negotiation ☐ ii) Supervisory ☐ iii) Enforcement ☐
iv) Transportation ☐ v) loading/packaging ☐ vi) Grading ☐

18) How do you meet the logistical costs?
i) Individual member contribution ☐ ii) Group savings ☐ iii) Buyer ☐
iv) Group cost sharing with buyer ☐

19) Has there been a failure with group members in meeting some activities costs?

Yes ☐ No ☐

20) If Yes, which logistical costs have had difficulty in meeting?

i) Negotiation ☐ ii) Supervisory ☐ iii) Enforcement ☐

iv) Transportation ☐ v) loading/packaging ☐ vi) Grading ☐

21) What do you think is the cause?

i) High cost ☐ ii) Ignorance ☐ iii) lack of capacity ☐

Section four; Post harvest handling measures

22) What post harvest handling support technologies support do you have?

i) Sorters & graders ii) Driers ☐ iii) coolers/refrigerators ☐ iv) Processors ☐

23) If none, why?

i) High cost ☐ ii) Ignorance ☐ iii) lack of awareness ☐

24) Have you ever incurred any losses resulting from Rejection?

Yes ☐ No ☐

25) If yes, what effect had it on the market?

i) Rejection by buyer ☐ ii) less price paid ☐ iii) Termination of contract ☐

26) Reasons for the rejection?

i) Field pest & disease infection ☐ ii) over –ripening ☐ ii) delivery time ☐

PART C

27) Problems/challenges faced by the group in mango marketing?

28) Are there any things you would like to be added to/regulated in your marketing contract? (Please give comment)

Thank you for participating in this research work.

Interviewer Name _____ Phone_____Signature _____

Supervisor Name _____ Phone_____Signature _____

Appendix 3 -Stakeholders' interview guide

This questionnaire attempts to research on the influence of mango producer groups on operation of contract marketing arrangement. The information provided in this questionnaire will be used for research purpose only and will be treated with utmost confidentiality. Please provide as much information as possible.

Background information about the stakeholder

Organization:	Respondent's Name:
Date of Interview:	Contact:
Core business with mango farmers	

1. Do you have experiences with collective marketing with mango groups?

Yes No

2. If yes, in what whys do you collaborate with them?

a) Strengthening their networks/linkages

b) Participation in negotiations

c) Contribution to meeting transactional costs

d) Supporting in to postharvest handling

f) Technical information provision

e) Conflict resolutions

3) Have you encountered a breach of the agreed contract in your collaboration?

Yes ☐ **No** ☐

4) Please share with us some of reasons for the breaches encountered?

5) How did the mango group involve you in resolving the issue?

6) How do you rate the relationship between mango farmer groups and buyers?

a) Very strong ☐ b) Strong ☐ c) Moderate ☐ d) Weak ☐ e) Very weak ☐

7) In your own view, how could have the collaboration of farmer group with your organization and others affected the market access?

8) Have you had successful or failure experience about the mango marketing?

Yes ☐ No ☐

9) If yes, please explain.

10. What recommendations do you give for successful mango marketing?

a) To farmer groups

b) To buyer firms

Thank you for participating in this research study.

Interviewer Name _____ Phone_____Signature _____

Supervisor Name _____ Phone_____

Appendix 4; Time schedule and Budget.

Time schedule

Activity	**Month**					
	Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**
Proposal writing						
Proposal correction						
Proposal defense, corrections and piloting						
Data correction and analysis						
Report writing, correction and submission of report						
Project report presentation and defense						

Budget

Activity/item	Description	No. of items	Cost per item	Total cost
Stationary	Pencils	120(10 dozens)	120	1,200
	Spring files	3	50	150
Photocopies and printing	Questioners photocopies	140* 5 pages=700 pgs	3	2,100
	Proposal photocopy	6	300	1,800
	Final report photocopies	6	300	1,800
	binding	12 copies	50	700
Piloting	Transport	1 day	1000	1,000
	subsistence	1 day	1000	1,000
Data collection	Daily transport	15 days	1000	15,000
	subsistence	15 days	500	7,500
	Research assistance	1 assistance,15 days	1000	15,000
Total Expenses				**31,750**
Sponsor; Self				

Appendix 5: HCDA: Code of Conduct for Fresh Horticultural Produce Sales

The Code of Conduct is an agreement between the "Buyer" of fresh horticultural produce and the "Seller" or grower of the produce. The Code of Conduct should act as a memorandum of understand-ing and as guideline for the buyer and the seller in order to conduct good business practices which will be mutually beneficial and help promote the well being of the horticultural industry in Kenya. Fur-thermore, it acts as a framework to the development of a legally binding contract to be executed by the buyer and the seller.

Obligations

Seller's Obligations

Farmers should be organized into well-managed groups and be registered with the Ministry of Culture and Social Services or any other authority. Specific outgrower groups should relate to specific buyers under a contract. Farmers should request for training on any aspect that deals with quality control as need arises.

Buyer's Obligations

Specific exporters/processors should relate to specific outgrower groups under a contract and provide reasonable extension services. The buyers should relate directly to their outgrowers and respect other companies and not try areas where other exporters/processors have developed schemes. Export-ers/processors/others should endeavor to establish means and ways of financing their groups and also try and encourage groups' self-financing.

Dual Obligations

- Both parties should be loyal to each other in the spirit and terms of the contract.
- Both parties should be involved when drawing up contracts.

MOA, HCDA & Other NGO's Obligations

- MOA as a witness will ensure that all parties abide to the contract regulations and provide sufficient support to both parties.
- HCDA as a witness will monitor the activities of both parties under the Legal Notice Number 231 cited as then HCDA (Export) Order 1995.
- Other NGOs working directly or indirectly with horticultural farmers will collaborate with MOA, HCDA, and the local administration in guiding both sellers and buyers.

CONTRACT GUIDELINE

Exporters and outgrower groups shall engage in the execution of a contract before conducting busi-ness. A contract must include specific terms and conditions of payment, responsibilities for produc-tion, handling and collection of produce, and any other essential elements

1. Quantity and quality of produce to be supplied

The contract should specify the quantity in either boxes/cartons /crates or kilos over a period of time, supplied from a certain production area. A schedule of prices shall be identified for differentials in quality. Contract shall specify a minimum quantity of produce to be provided by seller (i.e. quantity below which no collection will be effected). Seller and buyer agree to produce

and market high quality levels of produce and further specify levels of quality for produce that must be delivered by groups. (The KBS standards, NRI manual for horticultural export quality assurance, and any other requirement by specific importers should be used as referral guidelines for acceptable quality levels.)

2. Seed and other Inputs

Buyer and seller agree upon who is responsible for supplying high quality certified seeds/planting materials to the grower. If buyer requires the use of certified seeds/planting materials by the seller, it must be specified in the contract. Contract must address which party will be responsible for supplying and applying other inputs such as fertilizer and pesticides. Terms and conditions for purchase, sale of inputs must be included within the contract. Individual growers, groups, organisations and/or their members will be responsible to cover all obligations to buyers who supply inputs.

3. Generally Accepted Production Practices

Sellers shall agree to undertake production practices and procedures, which are necessary, and conducive to producing highest quality produce whether for fresh export markets, processed markets (canned, frozen, etc.) or local markets. Such practices include use of approved pesticides, proper application of pesticides according to the labels of the manufacturers, and the use and proper application of fertilizers which are recommended for the type of produce to be grown. Where applicable, buyers and sellers agree to co-operate in random testing of produce for the purpose of detection of pesticide residues.

4. Record Keeping

In order to ensure product safety, highest quality levels, full traceability and accountability, buyer and seller shall agree on a complete record keeping system for production and handling of produce. Mini-mum requirements for record keeping should include: Identification of previous crop , Type of seed used, treatment of seed ,Date of planting ,Herbicide applications: date and rate Pesticide applications: product, date, rate, and weather conditions Harvesting: dates

5. Field Support and Training

Sellers should be provided with sufficient training on group administration, proper production, handling and grading techniques on a periodic basis. Where appropriate, the buyer shall work in conjunction with MOA, KARI, HCDA, and any other relevant agencies, in order to ensure achievement of highest quality levels and contract performance.

6. Harvesting and post-Harvest Practices

Seller should agree to undertake acceptable management practices for harvesting and handling of pro-duce, which will ensure high quality levels. Use of clean (plastic) containers, protection of produce from heat and direct sunlight, maintenance of hygienic conditions, use of clean water for washing of produce, are among practices to be followed.

7. Inspection and Grading

Buyer and seller shall agree and specify responsibilities for inspection and grading of produce; when and where these activities will occur (e.g. upon collection); type of documents to be executed upon collection/ delivery; determination of when title and responsibility of goods pass from the seller to the buyer.

8. Packaging Supply and Procedures
Contract should specify which party is obligated to supply packaging materials and the acceptable conditions of the package on collection. Packing procedures such as condition and quantity of pro-duce, grade and type of produce, placement and orientation within a container, should also be made clear.

9. Conditions of collection and/or delivery
The contract should indicate specific collection periods of produce (time and year); conditions should be specified for events of non-collection. If buyer fails to collect at specified time, he will be obligated to purchase produce. However, seller should be obligated to hold produce for maximum period (i.e. 24 hours) beyond the collection deadline at the expense of the buyer.

10. Middlemen and Other Intermediaries
Both parties agree not to engage in any transactions with any other individuals or intermediaries which involve the produce under contract.

12. Rejected Produce
Point of rejection of produce should be agreed upon in the contract. If the buyer rejects the produce, conditions for the return of the produce to the seller should be specified in the contract. Any agreeable means of disposal should be specified. However, produce for which a delivery has been accepted by the buyer cannot be returned to the growers.

13. Payment Terms and Mechanism
Contracting parties agree to establish payment terms, which are acceptable to buyer and seller, and to establish a mechanism of payment to sellers which will allow for safe and timely transfer of funds.

14. Penalties
This should be specified in the contract .e.g. compensation should be applied to either party as a result of failure to abide with the laid down regulations of the contract.

15. Duration of Contract
Duration and maturity of contract should be specified by indicating number of months from contract execution or a specific time interval.

16. Termination Clause
Conditions for termination must be indicated i.e., a written notice of termination within a reasonable period, which should be equivalent to a full production and marketing cycle of the produce.

Source: Adapted from HCDA