



Swedish University of Agricultural Sciences  
Faculty of Natural Resources and Agricultural Sciences  
Department of Economics

## Fruits of Knowledge

- A case study of marketing strategies for small-scale mango farmers in the Nyanza Province, Kenya

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Fennia & Karin

# Summary

This report is focused on marketing opportunities for small-scale mango farmers in the Nyanza Province in Kenya. Kenya is a large horticultural producer in the world. Horticulture is an important income for a large share of the rural population in Kenya but profitability is low due to inefficiencies in marketing systems and poor infrastructure. The conditions for growing mango in the Nyanza Province are very beneficial and there are two harvesting seasons. Mango offers good income opportunities for small-scale farmers in the Nyanza Province.

The aim of this study is to identify marketing conditions that will enable prospering business for small-scale mango farmers in the Nyanza Province, Kenya. The method for answering the research questions was to conduct a case study in Kenya. The data collection consisted of interviews with small-scale mango farmers, Field Officers at the Vi Agroforestry, and experts at organizations involved in the topic. This case study is based on a literature review of marketing strategies for mango production in Kenya and it focuses on the farmers' opportunities. The analysis in this report aims to make use of existing theories in structuring empirical facts to better understand a complex phenomenon and the chosen theories in this case are marketing strategy in an institutional context combined with theories about cooperatives.

Key results from the interviews are that mango production is a profitable business and all respondents were positive towards growing mango, even though there are many challenges. The main conclusion of this study is that the most suitable marketing strategy for the small-scale farmers in Nyanza is to collaborate with each other and different organizations. Collaborations bring many advantages for the farmers such as gathering of financial resources, knowledge, and information, stronger bargain power, access to larger markets, and increased profits. Mango production in the Nyanza Province holds great potential both for the local and the global market. Although, the development is at an early stage and the focus today should be to increase the production and establish working partnerships to be competitive in the long run.

# Sammanfattning

Denna rapport inriktar sig på marknadsmöjligheter för småskaliga mangobönder i Nyanza Provinsen i Kenya. Kenya är en viktig producent av hortikulturella produkter och hortikultur är en viktig inkomstkälla för en stor del av landsbygdsbefolkningen. Lönsamheten är dock låg till följd av ineffektiva marknadssystem och dåligt fungerande infrastruktur. Förutsättningarna för att odla mango i Nyanza är mycket fördelaktiga och mangon kan skördas två gånger om året. Vidare erbjuder mango goda möjligheter till ökad inkomst för småskaliga bönder i Nyanza.

Denna studie syftar till att identifiera marknadsförhållanden som möjliggör framgångsrik affärsverksamhet för småskaliga mangobönder i Nyanza Provinsen i Kenya. Metoden som använts för att besvara forskningsfrågorna är en fallstudie vilken har genomförts i Kenya. Datasamlingen gjordes i Kenya och bestod av intervjuer med småskaliga mangobönder, Field Officers anställda av Vi Skogen samt experter på ämnet och organisationer involverade i produktion och marknadsföring av mango. Böndernas möjligheter är fokus för denna fallstudie som baseras på en litteraturstudie av marknadsstrategier för mangoproduktion i Kenya. Analysen syftar till att strukturera empiriska fakta med hjälp av existerande teoretiska modeller för att bättre förstå ett komplext fenomen. Den valda teoretiska modellen sätter marknadsstrategier i ett institutionellt sammanhang. Även teorier om kooperativ används i rapporten.

Ett viktigt resultat från intervjuerna är att mangoproduktion är lönsamt och samtliga respondenter var positiva till att odla mango även om svårigheterna är många. Den huvudsakliga slutsatsen är att den mest lämpliga marknadsstrategin för småskaliga mangobönder i Nyanza är att samarbeta med varandra och med organisationer. Sådana samarbeten för med sig många fördelar, det ger bönderna möjlighet att samla sina finansiella resurser och de kan dela med sig av kunskap och information. Samarbeten ger också bönderna en starkare förhandlingsposition, tillgång till större marknader samt ökad lönsamhet. Det finns stor potential för mangoproduktion i Nyanza, både för lokala och globala marknader. Utvecklingen är dock på ett tidigt stadium och idag bör fokus ligga på att öka produktionen och etablera partnerskap. På så sätt kan bönderna bli långsiktigt konkurrenskraftiga.

# Abbreviations

acre	4,046.856 square meters or 0.407 hectares
Anthracoze	Is a fungus disease that hosts many different plants like mango. It affects all plant growth stages. It creates dark spots on the fruit and on the stems. The dark spots on the fruit cause rotting (www, OISAT, 1, 2011).
Agroforestry	A farming system that combines tree plantation, holding animals and growing crops.
Cash Crop	Cash crop is a crop that is grown for profit (www, Princetown, 1, 2010).
CIG	Common Interest Group, groups that consists of a group of farmers that produce the same product. The group gets training and supports each other to become better producers. Some of the groups also do marketing.
East Africa	Kenya, Rwanda, Tanzania, and Uganda
FO	A Field Officer is an adviser who guides farmers in their production and marketing, in this report the term Field Officer means the ones that work for the Vi Agroforestry.
GDP	Gross Domestic Product
GNP	Gross National Product
ha	Hectare 10,000 square meters, 1 ha = 2.47105 acres.
HCDA	Horticultural Crops Development Authority, a Kenyan state corporation. HCDA is Kenya's regulatory agency that for the horticultural sub-sector (www, HCDA, 1, 2011).
IFAD	International Fund for Agricultural Development is a specialized agency under the United Nations that aims to " <i>empower poor rural women and men in developing countries to achieve higher incomes and improved food security</i> " (www, IFAD, 1, 2011).
KENFAP	Kenya National Federation of Agricultural Producers, an farmer led organization that focuses on "Enriching the farmers voice" (www, KENFAP, 1, 2011).
Market madams	Women that sell fruits and vegetables in local markets.
Matatu	A minivan used for public transportation all over Kenya.
MDG	The Millennium Development Goals was established in the United Nations Millennium Declaration 2000, where all world leaders agreed to reduce extreme and to reach a series of time-bound targets that should be achieved in 2015. (www, UN, 1, 2011)
MFS	A Minor Field Study is a grant given to students for doing field projects in a developing context. (www, Programkontoret, 1, 2011). The grant donor is Sida and the MFS grants are part of Swedish aid.
Middlemen	Traders that meditates between farmers and larger traders.
NGO/s	Non-Governmental Organization/s.
Picki-picki	a motorbike taxi used for transportation all over Kenya.
SCC	Swedish Cooperative Center, a Swedish NGO that is the mother organization for Vi Agroforestry
Sida	Swedish International Development Cooperation Agency and is in charge of the Swedish aid. Sida works according to directives of the Swedish parliament and government to reduce poverty in the world (www, Sida, 1, 2011)
Sub-Saharan Africa	The area on the African continent south of the Sahara.

UN United Nations.  
Vi Agroforestry The Vi Agroforestry Programme is a Swedish Non-Governmental  
Organization, and host for this study.

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# 1 Introduction

Mango is an important horticultural product in Kenya (HCDA, 2010). This report is focused on marketing opportunities for small-scale mango farmers in the Nyanza province in Kenya. Prior to this study the authors have conducted a literature review<sup>1</sup> to find out what challenges the small-scale mango farmers are facing in Kenya. The aim for the previous report was to understand the context of mango production and marketing of mango in Kenya.

This project is mostly conducted in the Nyanza Province, Kenya. A grant was given to the authors from the Swedish International Development Agency (Sida) to do a Minor Field Study (MFS). The money that goes to MFS grants is part of the Swedish governmental aid and the MFSs help Sida to locate new projects (Pers. Com., Smekal, 2010). The following chapter introduces the problem, the challenges associated with marketing development for mango products, and its implications.

## 1.1 Problem background

Kenya is a large horticultural producer in the world (Diao *et al.*, 2007; www, FPEAK, 2, 2010; HCDA, 2010; Minot & Ngigi, 2004). The horticultural sector in Kenya includes fruits, vegetables and cut flowers (FAO, 2003). Commercial horticulture is an important income for a large share of the rural population (Dijkstra, 1996). One problem for the small-scale farmers in Kenya is that the profitability is low due to inefficiencies in infrastructure and marketing systems (Minot and Ngigi, 2004). The production of mango has increased the last decade, both in yields and total production (Diao *et al.*, 2007; Griesbach, 2003; Minot and Ngigi, 2004). Mango offers good income opportunities for small-scale farmers. The horticultural and fruit sector consist of many small-scale farmers that have contributed to the growth of productivity and production to a large extent (Minot & Ngigi, 2004).

Most Kenyan horticultural farms are small units of less than two ha (Minot and Ngigi, 2004; Pers. Com., Nyberg, 2010). By organizing marketing systems for farmers there are several opportunities for Kenya to develop and gain financial and political resources, which may lead to decreased rural poverty (IFAD, 2010). Agriculture has had an increasingly impact on economic growth in Africa during the past 35 years (Diao *et al.*, 2007). Poorly functioning markets and lack of market opportunities constrain agricultural growth though (Pers. Com., Ramdeen, 2011). Half of the Kenyan population live below the extreme poverty<sup>2</sup> line and in 2008, 78 percent of the population lived in rural areas (www, CIA, 1, 2010).

*“Horticultural marketing information and infrastructure is poorly organized”* (HCDA, 2009, p.7). One might even go as far as to say that Kenya lacks a rural infrastructure (Boersma, 2006; Diao *et al.*, 2007; HCDA, 2010; Pers. Com., Nyberg, 2010; Pers. Com., Toborn, 2010). This is a major problem that causes inefficiencies on most markets in Kenya including the

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<sup>1</sup> Fruits of Knowledge: a Literature Review of Marketing Strategies and Mango Production in Kenya (Carlander & Lothigius, 2011)

<sup>2</sup> Extreme poverty = less than US\$ 1.25 per person and day (IFAD, 2010; www, UN, 1, 2010)

horticultural sector (HCDA, 2010). Output in terms of fresh-fruit is wasted because it does not reach the markets in time (HCDA, 2010; Pers. Com., Nilsson, 2010; Pers. Com., Nyberg, 2011). The bad roads also destroy the quality of the products due to bumps and long duration. This increases the transport costs and reduces the production margins for the small famers (Dijkstra, 2001; Omiti *et al.*, 2007). The contingency of roads and infrastructure in general also affects regional price variations that reduce the international competitiveness by not being able to offer a stable price picture. This is a bottleneck that needs to be challenged and the Vi Agroforestry wanted to locate marketing strategies and opportunities for the small-scale horticultural farmers.

Mango is produced all over Kenya (Griesbach, 2003). Below is a map of Kenya’s provinces (Figure 1).



Figure 1. Map of Kenya (www, KFA-UAE, 1, 2010).

Figure 1. is a map of Kenya and its seven provinces; Nyanza, Western, Rift Valley, Central, Eastern, North Eastern and Coast.

The table below shows the Kenyan mango production by provinces in 2001.

Table 1. Mango production figures in Kenya divided by provinces (Griesbach, 2003, p. 93)

Province	Area (ha)	Yield (T/ha)	Total production (T)
Central	543	8.9	4,826
Coast	8,230	5.5	45,592
Eastern	4,655	21.3	99,059
Western	979	7.6	7,446
Nyanza	1,458	9.4	13,691
Rift Valley	509	11.4	5,804
North-Eastern	168	19.2	3,220

The yield varies for the different provinces due to diverse conditions for growing mango (Griesbach, 2003). In the Eastern province the productivity (21.3 T/ha) is better than in the Coast, which is the least productive province with only 5.5 T/ha, although in the Coast mango is grown on 8,230 ha and in the Eastern only 4,655 ha are grown with mango. The yield is about four times higher in Eastern than in the Coast province but the total production is about the double. Also the marketing of fruit is more developed in these provinces (Pers. Com., de Figueiredo & Japhet, 2011). Both productivity and the land put up for mango production affects the mango production. Factors that affect productivity are weather and soil conditions,

altitude, fertilization and cultivars among others. Nyanza is suitable for mango production and meets all the conditions but the production has not yet developed fully and is at an initial phase (Pers. Com., FO A, 2011; Pers. Com., FO B, 2011; Pers. Com., FO C, 2011; Pers. Com., FO D, 2011; Pers. Com., FO E, 2011; Pers. Com., FO F, 2011), which can explain the low productivity figures as well as the low production compared to the Eastern Province which is the best province in terms of productivity. The table (Table 2) and graph (Figure 2) below shows that the mango production in Kenya has increased during the last decade.

Table 2. Total mango production in Kenya (FAOSTAT, 2010)

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009
Prod (T)	179,638	176,504	183,486	183,440	254,413	248,531	384,461	448,631	474,608

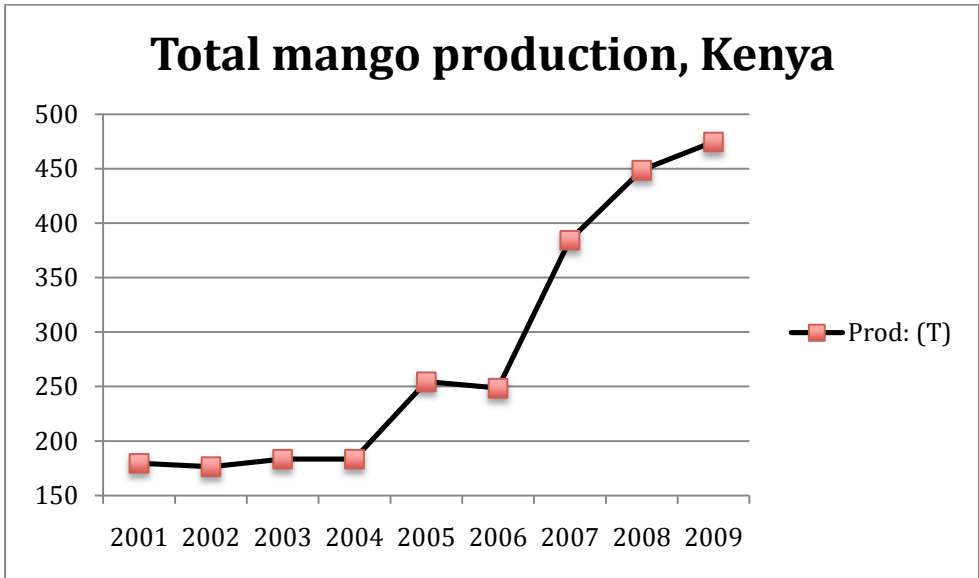


Figure 2. Total mango production over time in Kenya (FAOSTAT, 2010)

It can be concluded that the mango production has increased the last decade and the fact that most of the mango producers are small-scale farmers (Minot & Ngigi, 2004) this increased production meets several needs for the rural society - that of a very local need, the need for a family that produce mango, the need for a local market (the village), the need for a near-by city and possibly also for export. Kenya meets the essential conditions for growing mango and it is rather easy to grow (Griesbach, 2003; Pers. Com., Ramdeen, 2011), which makes mango production a good source for poverty alleviation. Crops of high nutritional value like mango with a high value-added potential and with possibilities for export are exceptionally valuable for Kenya as a country (www, FPEAK, 1, 2010; HCDA, 2009). The latest rural poverty report by the International Fund for Agricultural Development (IFAD) concludes the problem for this study:

*“Smallholder agriculture can offer a route out of poverty for many of them – but only if it is productive, commercially oriented and well linked to modern markets. But at the same time, agriculture today must use the scarce and fragile natural resources on which it is based more carefully: it must be environmentally sustainable and more resilient to increasing climatic variability” (IFAD, 2010, p. 9).*

This report is based on a literature review, which conclusions are presented below.

### 1.1.1 Conclusions from the previous literature review

The authors of this report have previously conducted a preparatory report consisting of a literature review (Carlander & Lothigius, 2011). The literature review covers literature about marketing strategies, mango production, Kenya, and marketing in developing contexts. The main conclusions from the previous literature review are presented below.

- Marketing strategies must be adapted to the specific situation and context.
- The infrastructure is poorly developed, which leads to wastage of produce and loss of profits.
- The farmers lack knowledge about the customers and the markets.
- The farmers are not organized, which leads to inefficiencies.
- Strong middlemen suppress the small-scale farmers.

The next part describes the problem that is identified in the previous literature review and further investigated in this study.

## 1.2 Problem

This study will be concentrated to mango production and post harvest production and marketing issues for small-scale farmers in the Nyanza Province, Kenya. The conditions for growing mango in the Nyanza Province are beneficial (a detailed explanation of these conditions is found in chapter 4.6 Mango) but due to underdeveloped marketing systems and infrastructure the profitability is low in the region (Pers. Com., FO, 2011; Pers. Com., HCDA, 2011; Pers. Com., KENFAP, 2011; Pers. Com., Sida, 2011). The lacking marketing system limits the opportunities for the small-scale mango farmers to reach the markets. On top of that the farmers are poorly organized, which inhibits their chances for prosperous business (Pers. Com., Ayamba & Ochieng, 2011; Pers. Com., Kasera & Ogoda, 2011; Pers. Com., Khaemba, 2011; Pers. Com., Nyberg, 2010). The main problem in this study is ineffective marketing systems. These are some of the identified stakeholder perspectives on mango related problems with marketing;

- Farmers, to increase income and get more accurate knowledge on how to better access markets;
- Local communities, where families depend on the sales of these crops;
- Horticultural Crops Development Authority (HCDA) whose vision is to have “*A globally competitive horticulture sector in Kenya*” and their mission is “*To Develop, Promote, Facilitate and Co-ordinate growth of a commercially oriented Horticulture industry through appropriate Policies and Technologies to enhance and sustain socio-economic development*” (www, HCDA, 2, 2010);
- KENFAP whose vision is “*Empowered Kenyan farmers with a strong voice*” and mission “*To empower its members to make informed choices for improved sustainable livelihoods*” (www, KENFAP, 1, 2011);
- Ministry of Agriculture whose vision is “*to be the leading agent towards the achievement of food security for all, employment creation, income generation and poverty reduction in Kenya*” and mission “*is to improve the livelihoods of Kenyans by promotion of competitive agriculture through creation of enabling environment, provision of support services and ensuring sustainable natural resources management*” (www, Ministry of Agriculture, 1, 2011);

- Ministry of Cooperative Development and Marketing whose vision is “*To be a leading agent for a globally competitive Co-operative Sector*” and mission is “*To promote a vibrant co-operative sector through enabling policy and legal framework for sustainable socio-economic development in Kenya*” (www, Ministry of Cooperative Development and Marketing, 1, 2011);
- Vi Agroforestry whose vision is “*To integrate agroforestry within the farming systems of small-scale farmers in the Lake Victoria basin, and make it the engine of economic growth and poverty alleviation*” (www, Vi Skogen, 1, 2011);
- Society at large to reduce poverty (IFAD, 2010);
- It is also an environmental issue due to waste of resources (IFAD, 2010).

### 1.3 Vi Agroforestry

This project is a commission requested by the Vi Agroforestry. They had targeted inefficiencies for marketing of horticultural products. The following section is an introduction of the organization.

The Vi Agroforestry’s objective is to work for a sustainable environment that offers poor farmers in the countries around the Victoria lake improved economic conditions and good living conditions (Vi Skogen Verksamhetsberättelse, 2009). The Vi Agroforestry is a Swedish Non-Governmental Organization financed by the Sida, the Swedish Cooperative movement, and 30,000 private annual donors (www, Vi Skogen, 2, 2011). The Vi Agroforestry provides agroforestry advisory services for small-scale farmers and operates in the area around Lake Victoria in East Africa, where they run seven projects (the dark green areas in Figure 3 below) (Vi Skogen Verksamhetsberättelse, 2009). Three in Tanzania, two in Kenya, one in Uganda and one in Rwanda. This thesis will be focusing on the conditions in the Nyanza Province and the authors will have their base at the Kisumu office in Kenya.



Figure 3. Map of the area where the Vi Agroforestry conduct their work (Vi Agroforestry, 2011).

The Vi Agroforestry has helped poor people in the area to improve their living conditions for over 25 years (Vi Skogen Verksamhetsberättelse, 2009). It is an organization that conducts poverty alleviation through agroforestry, which is a farming system that combines tree plantation, holding animals and growing crops. Agroforestry contributes to diversification of the farmer's production, which increases the possibilities of reaching the market and increase the farmers' income.

The vision of the Vi Agroforestry is "*a sustainable environment offering good living conditions for farmer families*" and the mission is "*to make agroforestry and enterprise development engines of economic growth and poverty reduction*" (Vi Agroforestry, 2011).

The Vi Agroforestry operates within several areas such as environmental work, market focused production, countermeasures to climate change, organizational development, financial services, environmental work, and tree plantation (Vi Skogen Verksamhetsberättelse, 2009). The main part of the Vi Agroforestry's work is to educate and counsel small-scale farmers, primarily within the areas microfinance, techniques for growing crops, and entrepreneurship. The Vi Agroforestry also works to prevent negative effects of climate change and to adjust the agriculture for new threats that may hit Africa hard.

## 1.4 Aim

*The aim of this study is to identify marketing conditions that will enable prospering business for small-scale mango farmers in the Nyanza province, Kenya.* We have investigated what the key context – and business bound factors are in market development. What is an efficient marketing system for a small-scale mango producing farmer in Kenya?

Research questions of particular interest are;

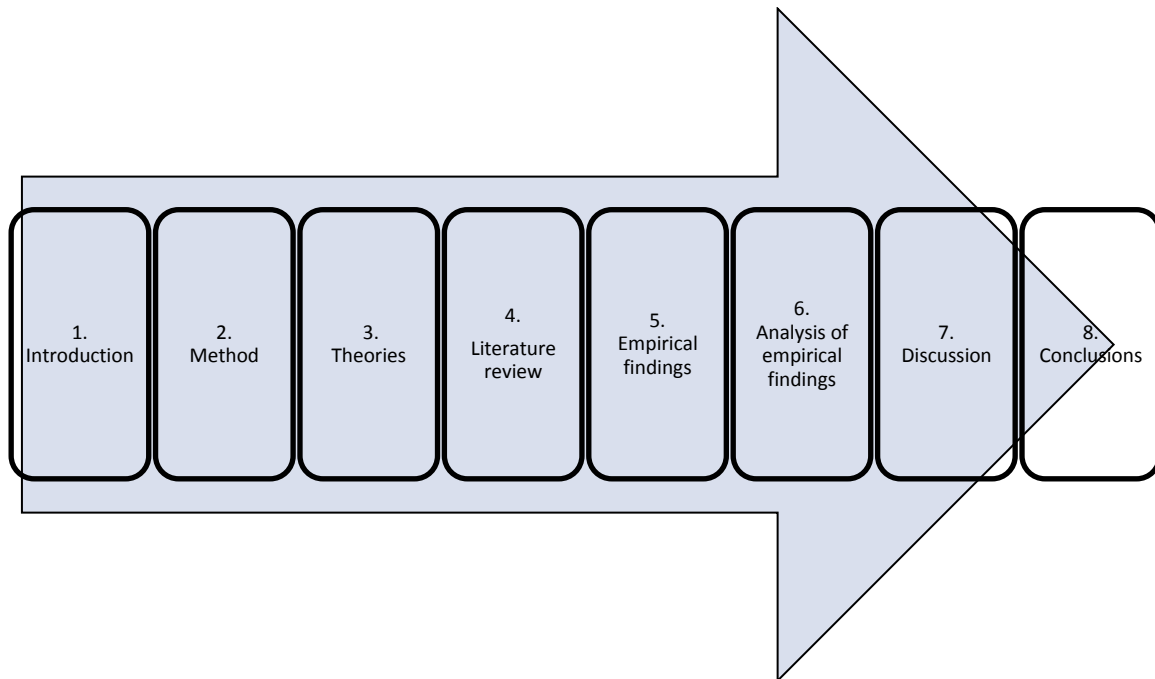
- What are the infrastructural factors that influence the development of markets for mango products?
- How does the market structure influence the mango producer?
- What marketing strategies are suitable for Kenyan smallholders?

The Vi Agroforestry identified the problem and this study is focused on finding marketing strategies that can be of use for the Vi Agroforestry and Sida.



## 1.5 Outline

Figure 4 illustrates the outline of this report.



*Figure 4. Outline for the chapters in the thesis.*

Figure 4 demonstrates the structure of the thesis. Chapter one introduces the problem and its implications and chapter two describes the project procedure. In chapter three the theoretical framework is presented. Chapter four presents the literature review that describes the empirical background. The next chapter, chapter five is a literature review that gives the empirical findings, which are the results from the interviews. In the next chapter, chapter six, the results are connected with the theoretical framework. In chapter seven the results will be discussed, put in context, and compared to other studies in the area. The last chapter concludes the findings and suggests areas for further studies.

In this chapter the problems for small-scale mango farmers in Kenya have been introduced. The chapter concludes that there are inefficient marketing systems in Nyanza Province that affects different parts of the society. The Vi Agroforestry have targeted inefficiencies for marketing horticultural products. Though there are good conditions for growing mango in the region. The aim and research for this report have also been presented in the chapter. The method for answering the research questions is described in the next chapter.

## 2 Method

The research method is presented in this chapter, which aims to describe the research design in to make the study repeatable and highly reliable. A high reliability means that another researcher should be able to repeat the procedures that are described, conduct the same case study, and come up with the same results (Yin, 2003), which may be difficult in practice. Thus, it is essential to document the procedures. First the general approach is presented and then the choice of theoretical framework is described. A description of the collection of empirical background and collection of empirical data follows. Next, the selection of units of analysis is illustrated together with a description of the performed interviews. Further the method chapter includes a presentation of how the analysis of empirical findings is conducted and finally the delimitations of the study are presented.

The choice of methods depends on what kind of information that is sought for and the selected methods should be suitable for the research questions (Robson, 2005). This report is a flexible qualitative case study that is focused on marketing conditions that are beneficial and applicable for small-scale mango farmers in the Nyanza province in Kenya. The first hand information for this report is gathered during eleven weeks in Kenya. This is an academic report although the intention is that it should be of use for the Vi Agroforestry, Sida, and agricultural marketers interested in the East Africa region. Further, the authors hope to make students interested in agriculture and markets in developing countries.

### 2.1 General approach

The objective with this case study is not to develop a new theory or model, it is to adapt existing ones and use them to analyze empirical findings. Thereby, the approach is not inductive (Svensson & Starrin, 1996). Nor is the aim of the study to prove or reject theories, and thus the approach is neither deductive. An abductive approach is chosen to cover both the theoretical framework and the empirical findings. An abductive approach arises from making use of existing theories, reports, and project specific empirical data.

The approach in this case study is also exploratory due to that the objective is to find out what is happening in the area and to seek new insights. According to Robson (2005, p. 59) an exploratory study aims to:

*“Find out what is happening, particularly in little-understood situations; to seek new insights; to ask questions; to assess phenomena in a new light; to generate ideas and hypotheses for future research”.*

The inefficient marketing system of agricultural products in Kenya is a severe problem for the farmers and new insights are needed to spark development and enable prospering business (Pers. Com., Ayamba & Ochieng, 2011; Pers. Com., Khaemba, 2011). This report is based on a case study conducted in the Nyanza province in Kenya. A literature review of marketing theories and mango production in Kenya serves as the foundation for this study. This literature review gave insight of the mango sector in Kenya and its marketing challenges.

By interviewing farmers and experts within the field this study hopes to find new insights and solutions to the inefficiencies. The focus is future possibilities and ways to challenge the problems that the small-scale mango farmers face. The report is based on secondary data for

the theoretical framework and the empirical background that consists of a literature review. The main part of the empirical findings is primary data, provided through interviews and direct observations.

The Vi Agroforestry conducts their work in the lake Victoria basin area and identified a lacking marketing system for horticultural products in Kenya, which is why the case study is conducted in Kenya. Kenya is a well-suited country for horticultural production and mango is an important commodity for poverty reduction and exports (Pers. Com., Khaemba, 2011; Pers. Com., Ministry of Agriculture, 2011). Mango production in Nyanza holds a large potential, which is the reason for the choice of product. The focus of this report will be the entrepreneurial opportunities for the farmer. The research process is described further in the following sections.

## 2.2 Choice of theoretical framework

To do a literature review is a mean to formulate questions that are significant for the topic (Yin, 2003). This part illustrates the identification of potential terms and theories.

A good marketing strategy is key to enable prospering business, which this project focuses on (Jain & Punj, 1993; Johnson *et al.*, 2008). In this case study the focus is on the small-scale mango farmer. Due to their size and the surrounding context Kenyan small-scale mango farmers are affected by many different institutions and stakeholders, and need to adapt to those (Carlander & Lothigius, 2011). The institutional context is crucial for small-scale farmers in Kenya, which is why the choice of theoretical framework is focused on the institutional environment. Many marketing theories are developed in and adjusted to a developed context, which is another reason to the choice of theory (Cateora & Graham, 2007; Walters & Samiee, 2003).

An alternative could be a production economics approach. Such an approach would require full information of input and output factors and costs. These kind of data is not fully documented by the farmers and thereby not accessible. Such a study would have been insecure and not give accurate results. A production economics analysis would also be difficult for the farmers to understand and implement due to low levels of education and knowledge. Results from a production economics study could have been provided to experts and officials to obtain political change though.

This report holds two different theories used to address the research questions. The first two research questions are tackled through the institutional context perspective. Theories about cooperatives are used for the third research question. The research questions are:

- What are the infrastructural factors that influence the development of markets for mango products?
- How does the market structure influence the mango producer?
- What marketing strategies are suitable for Kenyan smallholders?

The following data bases are used: Ag Econ, Applied Social Sciences Index and Abstracts (ASSIA), Econlit, Emerald, Epsilon, JSTOR, Science Direct, Scopus and Web of Science (through Web of Knowledge). The databases were chosen out of availability, and that they cover the subject.

A screening of the articles was done to make sure that only articles relevant for the topic of the study are chosen. The key words were chosen after reading Minot and Ngigi (2004) and have been discussed with the advisor. The keywords and search terms for the literature review is presented in table 3 below.

Table 3. Keywords and search terms used in databases

TEXT ALL TEXT	AND	TEXT ALL TEXT	AND	TEXT ALL TEXT
Agribusiness		Marketing		Africa
Agriculture		Marketing strategies		East Africa
Cash crop		Marketing schemes		Developing countries
Horticultural farming		Strategy planning		Sub-Saharan Africa
Horticultural production		Strategy schemes		Kenya
Mango production				
Small-scale				
Small-scale farming				
Small-scale production				

The literature that this report is based on was chosen out of relevance for the topic and the trustworthiness of the author and/or organization. Information from well-known organizations was used to get accurate data and when possible various sources validating the information, triangulation ensured the quality of the data. Further, recent articles and materials were chosen before earlier ones. To find basic knowledge about mango production and marketing strategies also older literature was used but to understand the current situation the search was concentrated between 2000 and 2010. The earliest written article is from 1964.

## 2.3 Collection of empirical background data

To get accurate empirical background data about Kenya, mango production and trade patterns the following sources have been used;

- Central Intelligence Agency of the United States of America (CIA) to get information about Kenya, its population and other relevant facts using the key term “Kenya” in the World Fact Book by CIA;
- ENCYCLOPÆDIA Britannica (Britannica) to find facts about Kenya using the key term “Kenya”;
- Food and Agriculture Organization of the United Nations (FAO) to get information about international and Kenyan mango production by the key terms “mango” and “Kenya”;

- FAO statistics (FAOSTAT) to get production volumes, production areas and trade figures by the key terms “mango, mangosteens and guava<sup>3</sup>”, “Kenya”, “2008” (the latest accurate figures were those from the year of 2008) and;
- The United Nations (UN) to get key figures and information about Kenya using the key term “Kenya” for data.

The CIA is a well-known organization that collects and gives information to the American state and the public. The data that CIA provides is to serve many different stakeholders so the accuracy of the information is in their interest. Even though it is important to remember that the CIA perspective is American. The information that Britannica gives is trustworthy as well, its long history and scale should imply that their information is correct. The Kenyan history of being a Crown Colony (British) makes the British encyclopedia suitable. FAO is a well established organization under the United Nations (UN) and have high trustworthiness and it is of their as well as the UN’s interest to give accurate and correct data. FAO is the ultimate source of international and agricultural data. The disadvantage of using the FAO and UN as sources of data is that the informants to the FAO and UN may have different agendas than the organizations’. The selected sources can be combined to create triangulation. By triangulating the information from the selected sources trustworthiness increases.

## 2.4 Collection of empirical data

There are numerous ways of performing social science research, which all have different advantages and disadvantages (Yin, 2003). The pros and cons of each method depends on three conditions stated by Yin (2003, p. 1):

- The type of research question
- The control an investigator has over actual behavioral events
- The focus on contemporary as opposed to historical phenomena

This report deals with contemporary phenomena within a real context and the aim for this study targets a complex social phenomena. To find solutions to the research questions there are many ‘how and why’ that needs to be considered. The investigator’s control over the situation is limited and the topic is empirical. All of these conditions make a case study the most appropriate method according to Yin (2003).

One of the strengths in doing a case study is the full variety of material for information (Yin, 2003). In this report the following sources for information have been used: interviews, and direct observation during the interviews but also documents for the literature review. The gathering of empirical material for the case study was performed during eleven weeks in Kenya (February-April 2011). Most of the interviews were conducted in the Nyanza Province, the area around Kisumu. During five weeks interviews with farmers, Field Officers, organizations, and experts in Nyanza were conducted. In addition, one more interview was conducted with experts in Nairobi.

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<sup>3</sup> The FAOSTAT groups mango production together with the production of mangosteen and guava.

## 2.5 Units of analysis

To choose the units of analysis is to define what the actual case is and the selection of units of analysis is connected to the research questions (Yin, 2003). The units of analysis should be connected with the theory and need to share one common denominator but still be different from each other. The selection of units of analysis has been made in cooperation with the Vi Agroforestry. To enable contact with the farmers and Field Officers (FO) the authors were dependent on Vi Agroforestry's contacts. To find and establish contacts with accurate farmers is very difficult without help from an organization (Pers. Com., Nyberg, 2011). The language barrier is a big obstacle in this process. Vi Agroforestry knows the area, is established in the region, and has attained trust from the farmers in the area.

The interviewees were selected through the Vi Agroforestry based on a list of requests. In the first phase 10 mango farmers were sought for. Out of the selection the request was to get:

- Farmers of mixed gender and age
- A mix of larger and smaller entities
- Farmers that represent different areas

Five different FO were also asked for, with the specific specialization of: marketing, value-addition, strategies, and organizational development issues. The interviewed experts represent different organizations that were mentioned during interviews with farmers and FO and were contacted through the Vi Agroforestry. The interview with representatives from Sida was performed to get a broader perspective from experts. The interview with Sida representatives was arranged through personal contacts. The results from the interviews with farmers and FOs are united and analyzed together, the interviews are not analyzed individually. Totally twelve farmers and six FO were included in the study.

### 2.5.1 Farmers

The twelve interviewed farmers were all targeted through the Vi Agroforestry's Field Officers around Kisumu. The farmers needed to be located within a day's drive from the Vi Agroforestry Kisumu office. The FOs established the contact with the farmers and handled all the planning with the individual farmers. Three of the twelve interviews were performed with a translator. In those cases the FO acted as the main interpreter and other family members that knew English helped out as well. The visited farmers were all involved in one or more Vi Agroforestry programs, the farmers were enrolled in totally 30 programs, where the mean was 2,5 programs. Data of the interviewed farmers and their farms can be found in the table below.

Table 4. Data of the interviewed farmers and their farms

Data for Farmers			
Interviewed farmers		12	
Interview	Couple	3	
	Single	9	
Gender	Female	7	
	Male	8	
	Mean	Median	Total
Age	49,3	51	
Size of farm (acre)*	10,375	2,25	124,5
Employees at farm	4,42	4	57,5
Number of trees**	242,5	75	1940
Grown mango since	2006	2007	
Number of Vi Agroforestry programs	2,5	2	30
* All the farmers did not provide the information of how many acres they grew their mango on. Some gave the information of the total size of their farm.			
**All the farmers did not provide information of how many mango trees they had. The age of the trees differ greatly, some of the trees are just planted and some are 10 years old.			

The interviewed female farmers were all responsible of the mango production on the farm, but their husband owned the farm in all cases but one. In that case the farmer was a widow who owned and did run the whole farm. The size of the entities were quite small, the mean farm size is 10,38 acre, which does not give the accurate picture, two of the farms had more land but did not produce mango on more than maximum 4 acres on their farms. Other farmers had more land than they said in the interview; here the interpretation of the question played a big role. The median size of the interviewed farms is 2,25 acres, which gives an accurate picture of the respondents' farm sizes. The farmers that are the basis for this study own 124,5 acres together, although some of the farmers did not give the exact numbers of how much land they grew mango on. The total number of mango trees that the farmers have is approximately 1940 trees. Most of these trees are grafted. This information is neither absolute and the trees are also at very different stages. Most of the visited farmers had many young trees that had not started to produce for commercial use yet. Some of the farmers did not know how many trees they had. The mango production is a rather new produce for most of the farmers, the mean start up year for the visited farms is 2006 and the median start up year is 2007. This goes hand in hand with the number of young trees as was mentioned earlier.

All the farmers for the study had their families involved and working with the mango production. Some of them also took help from employees. A few of the farmers had agricultural students as employees. Totally 57,5 people had some kind of work through the mango production, although it needs to be stressed that some of the farmers accounted all their family members as employees, where most were children. The mean number of employees is 4,42 and median is 4. The mean age of the farmers were 49,33 years and the median was 51. All except one of the farmers had been educated in school, five had been to primary school, and five to secondary and four had been to college level. The table in Appendix 1 shows more detailed information about the farmers.

## 2.5.2 Field Officers (FO)

All of the FOs that were interviewed were working in the areas where the interviewed farmers and farms are located. All of the interviewed FOs work for the Vi Agroforestry and are connected to the interviewed farmers. In table 5 data for the FOs and their farmers can be found.

Table 5. Data of the interviewed Field Officers and their farmers

Data for Field Officers			
Interviewed FO			6
Gender	Female		2
	Male		4
	Mean	Median	Total
Age	36,5	38	
Number of farmers	1033	1000	6200
Worked for Vi Agroforestry (years)	7,8	8	

All of the interviewed FOs have college or university diplomas in agriculture or forestry. The interviewed FOs were two women and four men. The FOs had worked for the Vi Agroforestry in 7,8 years with a mean of eight years. Their mean age is 36,5 and their median age is 38 years. Most of the FOs work with farmers in different groups to make the famers help and support each other. The interviewed FO worked with 1033 farmers each. The FOs worked with 6200 farmers altogether. For more detailed data of the FOs and their specialization see Appendix 2. Below more detailed information of the conducted FO interviews can be found in table 6.

Table 6 Interviewed FOs

	Field Officer	Location	Area of expertise	Interview date <i>Validation date</i>
1.	Jacinter Odongo	Muhoroni	General agriculture and rural development	2011-02-23 <i>2011-02-23</i>
2.	Daniel Ego	Muhoroni	Forestry	2011-02-24 <i>2011-02-24</i>
3.	Elijah Wokiri	Maseno	Forestry	2011-03-02 <i>2011-03-02</i>
4.	Simon Ogoma Wambwa	Maseno	Capacity building in all fields	2011-03-03 <i>2011-03-03</i>
5.	Betty Okello	Winam – Koching	Agricultural business management	2011-03-08 <i>2011-03-08</i>
6.	Paul Wabomba	Kadibo and Winam	General agriculture	2011-03-11 <i>2011-03-11</i>

All of the Vi Agroforestry's FOs were contacted through the Vi Agroforestry office in Kisumu. All of the interviewed FOs worked with at least one mango producer, and were working with the interviewed farmers.



### 2.5.3 Experts

The case study will also cover interviews with experts and expert organizations. Below in table 7 interviewed experts detailed information for the conducted interviews can be found.

Table 7. Interviewed experts

	Expert – role	Organization	Interview date <i>Validation date</i>
1.	Jay Ramdeen - Manager - Commodity Trade East Africa	Farmsecure Global Markets	2011-02-08 <i>2011-02-11</i>
2.	Ylva Nyberg - Programme Technical Adviser	Vi Agroforestry	2011-03-11 <i>2011-04-04</i>
3.	George Ogoda - Regional Chairman Nyanza and Chairman Kisumu, and Andrew Kasera - District Co- ordinating officer	KENFAP	2011-03-16 <i>2011-05-11</i>
4.	No name – Field officer	Ministry of Agriculture	2011-03-16 <i>2011-03-16</i>
5.	Florence Mang’oli Khaemba – Senior Horticultural Assistant	HCDA	2011-03-17 <i>2011-05-11</i>
6.	Aineah Ayamba – District Cooperative Officer, Bondo and Atito Jafeth Ochieng Cooperative Field Officer	Ministry of Cooperative Development and Marketing	2011-03-21 <i>2011-05-11</i>
7.	Pedro de Figueiredo – Senior Programme Manager, Agriculture part of the Regional Team for environment and Economic Development (REED) and Kiara Japhet	Sida	2011-03-24 <i>2011-05-19</i>

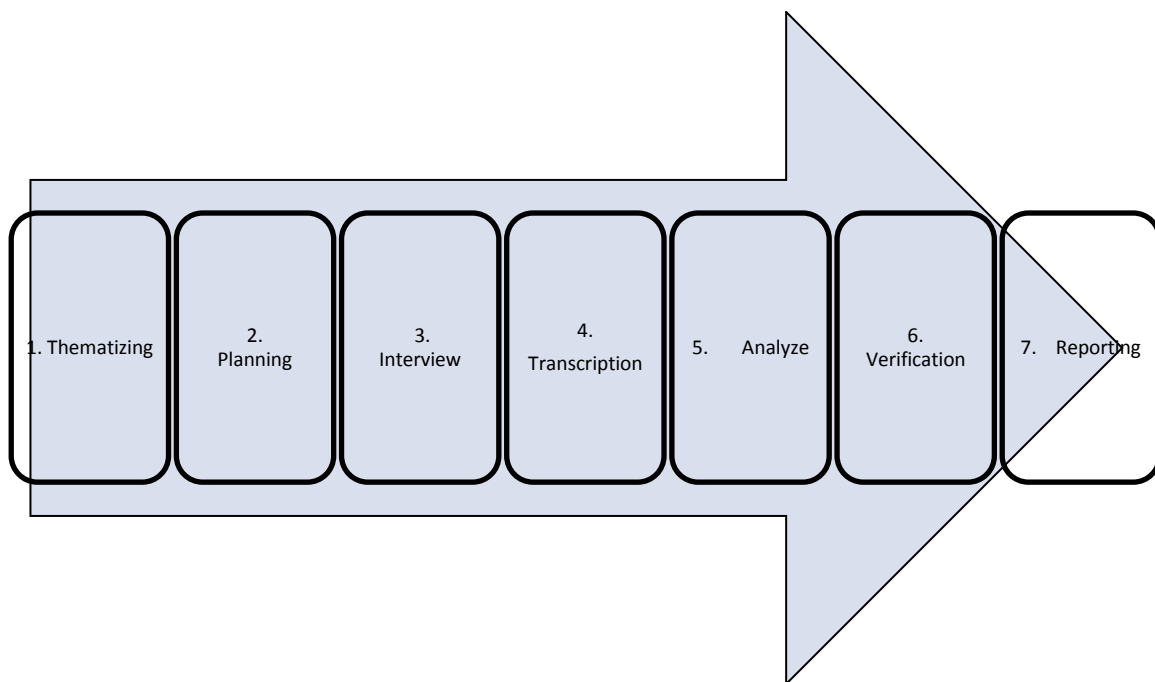
HCDA was contacted by the Vi Agroforestry on the authors’ behalf. The interview was conducted with Florence Mang’oli Khaemba a senior horticultural assistant. Through one of the Vi Agroforestry FOs a contact was established with a representative from the Ministry of Agriculture that was interviewed. This interviewee was a local Field Officer and not in a decisive position within the Ministry of Agriculture. The representatives from Ministry of Cooperative Development and Marketing were also contacted through the Vi Agroforestry. The interview was held with Aineah Ayamba, the district co-operative Officer and Atito Jafeth Ochieng a Field Officer. KENFAP was contacted through the Vi Agroforestry and the interview was conducted with the Regional Chairman for Nyanza and the District Co-ordinating Officer for Kisumu and Nyando. The interview with Sida representatives was conducted with the Senior Programme Manager of Agriculture and he is also part of the Regional Team for Environment and Economic Development (REED) and Kiara Japhet who is an agricultural expert. They were contacted through the personal network of the authors.

### 2.5.4 Interviews

The interview is one of the most important sources of information in a case study (Yin, 2003). An interview is a conversation with determined purpose and structure (Kvale & Brinkmann,

2009). The interviewer is in a position of power during the interview and defines and controls the situation. There is power asymmetry in the interview situation. To conduct interviews in an unfamiliar culture may cause problems due to the large amount of cultural factors that affect the relationship between the interviewee and the interviewer (Kvale & Brinkmann, 2009). It is important to learn about and understand the new culture to minimize misunderstandings. The authors spent three weeks of preparation in Kenya prior to the first interview. During these three weeks the authors had time to adapt to the new environment and culture, which was beneficial. Another important factor when it comes to interviews in an unfamiliar culture is to find a good translator (Kvale & Brinkmann, 2009). The translator should help the interviewer and he or she must be culturally accepted and have good knowledge in the language. Qualitative research interviews try to understand the world from the interviewee's perspective and the aim of a research interview is to produce knowledge.

There are no regulations or standard procedures for conducting an interview study but there are seven phases in the research process; thematizing, planning, interview, transcription, analyze, verification, and reporting (Kvale & Brinkmann, 2009). The phases are illustrated below in figure 5. The first phase of this case study was to thematize, which was done before going to Kenya. The aim of the study was clarified, the research questions were formulated and relevant theories were identified. The planning phase was done both in Sweden and in Kenya. In Sweden the period for the field trip was decided.



*Figure 5. The seven phases of conducting an interview study (Kvale & Brinkmann, 2009, p.118)*

On site in Kenya the authors planned the farmers interviews together with the Vi Agroforestry. The local advisor provided the authors with necessary information of how to successfully conduct interviews with farmers. The interview period started off with two try out interviews to see how the questions worked. The interviews were semi-structured and were followed by interview guides (see Appendix 3-7). The authors decided for the semi-structure to be able to adapt the interviews to the situation and to be able to get clarifications when necessary so that the interview would be ideal and stand for itself after the session as Kvale and Brinkmann (2009) states. The interview guides for the farmers and FOs were quite

detailed compared to the interviews with the expert organizations so that the authors would get as much information as possible and an understanding for the farmers situation.

Interview research is permeated by ethical and moral issues (Kvale & Brinkmann, 2009). The interviewees must agree to participate in the study and the researcher must consider the consequences of the study. It also needs to be reassured that the interviewees remain confidential. The interviewer should think about how deeply the interviews are to be analyzed and whether the informants are aloud to affect the interpretations or not. Another obligation that the researcher has is to verify the information to the largest extent possible. There are four areas of ethical issues that are frequently discussed; informed approval, consequences, the role of the researcher, and confidentiality.

Prior to the farmer and FO interviews the authors met with the responsible FO to explain the purpose of the study and the interview and what kind of farmers the authors were looking for. The FO was also explained about the expected time for the interview - maximum of one hour and was told to pass on all the information to the farmers prior to the interview section. During this preparation meeting with the FO the interviewers also asked if the Filed Officer could be interviewed separately to get another perspective.

The interviews with the farmers were held at the farm and the farmers did show their farms and mango production before or after the interview section, during the farm guidance a lot of 'extra' information above the interview guide was provided. When the authors arrived to the farm they introduced themselves and their study and explained about the interview, that it would maximum take one hour. The farmers always wanted to show their farm and were to decide if they wanted to show their farm before or after the interview session. Before the interview started the purpose of the study was repeated and the authors stressed the fact that the interviews were not too familiar with growing mangos in Kenya that they were Swedish students and were eager to get to know everything that the farmer could possibly give. Further the authors explained that all answers were accepted, and if the farmer did not understand the question, it was OK. It was also explained that if the farmer did not know the answer an; 'I don't know' was a pleased answer. Sometimes several family members were present during the interview. For the transcribing purpose all the interviews were recorded with the interviewees consent. All the farmers were promised confidentiality.

The FO decided where their interviews were to be held. All of the FO interviews were held after the authors had interviewed their farmers. Prior to the interview section the authors explained the purpose of the interview and that they were interested in the FO perspective. All of the interviews in this study were recorded and had permission to do so, for the purpose of getting all information. During the interviews one of the authors held the interview and the other took notes (these roles were changed between the authors) and was explained prior to every single interview. That protocol was changed during the interviews with Ramdeen and Sida were both of the authors were asking questions.

For Kvale and Brinkmann's (2009) phase tree to seven in conducting an interview study, Reismann's (1993) narrative model is useful, which is illustrated below in figure 5. The model explains the narrative pitfalls that the author can cause by choosing what and how to handle the information provided by the interview.

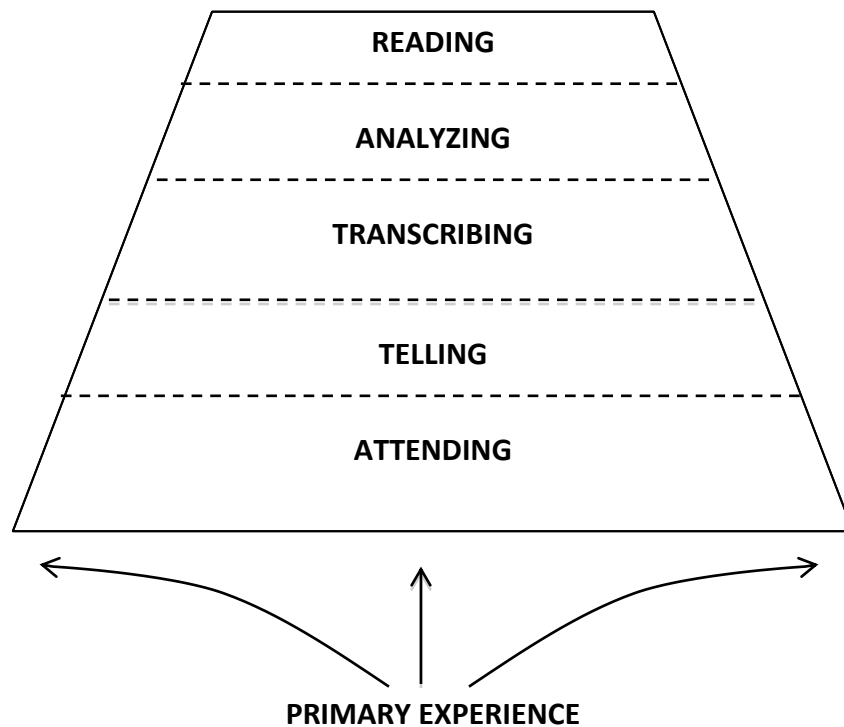


Figure 6. Levels of narrative representation in research process (Reissman, 1993, p. 10).

In the research process the researcher need to be aware of that what he or she says, reads, interacts and interprets colors the work (Reissman, 1993). It is not possible to be neutral or objective. To avoid oversimplifying the results from the interviews there are five levels of experiences as in Reissman's model illustrated in figure 5. Relating the model to the case study, the primary experience is the interview session. The first stage *attending* is the interviewers impressions from the interview like smells, visual experiences, and how the respondent acted. The next phase is *telling* where the interviewer talk with other people about what he or she experienced and by discussing with them the focus can somewhat change to the interest or inputs from the friends. The next stage is *transcribing* where the spoken word is transcribed into written text, this phase may be very difficult for the author, the author need to decide how much data that will be included in the transcription. What and how the author decides to illustrate and arrange the data will affect the reader. All the first three stages are incomplete, partial and selective (Reissman, 1993). The fourth *analyzing* phase more data is lost to in editing and reshaping what was told to fit in with the study. Data that might not be relevant for the author is put away and so on. The last experience is the *reading* step and that is when the reader reads the study and interprets the text according to past experiences and knowledge. It is impossible for the author to include all data and therefore the narrative will be colored by the reader's thoughts and interest.

After an interview was performed the author who were the secretary during the interview wrote down the interview word by word with the help of the manuscript and the recorded interview. The other author read the interview manuscript for possible corrections and then it was approved. When all of the interviews were performed and written down the authors split the work into farmers and FOs. Then all of the individual results of the farmers and FOs were put together and then the results were divided into sections after topic. And this is how the results from the interviews are presented in the empirical findings chapter (chapter 5). The

handling of transcribing the expert interviews were done the same way with the exception that the result was not blended with other experts (from the same organization).

**2.5.5 Performed interviews**

This study includes twelve interviews with individual farmers and six interviews with Vi Agroforestry FOs. One Programme Technical Adviser from the Vi Agroforestry was also interviewed as well as representatives from the following organizations; HCDA, KENFAP, Ministry of Agriculture, Ministry of Cooperative Development and Marketing, and Sida.

Nine of the farmers and all of the experts and FOs spoke and understood English. In three of the interviews an interpreter was needed. In those three cases, the local Field Officer or a family member translated during the interview. The interviewed farmers and FOs were promised confidentiality of what they said, they were promised that what they said would not be traced to them individually, which is why comments and quotes from them are signed with a FO A-E or Farmer 1-12. It is only the authors that can trace their statements. Further what the individual farmer or FO said is not the key in this study and that is why the empirical chapter that gives the results bunch all the farmers to one voice and the FOs to another. The reason to guarantee them anonymity was to get all possible information and data and thought that that was easier given if anonymity was promised. The authors wanted to clarify that the results of this study would go to the organization and also the farmers but the individual results was not of interest. The individual data was only given to the authors so that the farmers or FOs would not end up in a bad position through being part of this study. The data that the authors asked for was also adjusted for this study and could be misused if it was released for another scholars.

The interviews in this study took approximately one and a half hour, preferably just one hour, to keep the interviewees interested and not get afraid of lost time or income due to do the participating. The farmers are contacted trough the FOs at Vi Agroforestry, that are located in different areas. A maximum of three interviews per day were performed. The dates for interviews needed to be set in time to be able to book a car and driver. The dates for interviews were:

Table 8. Interview dates

Dates for interviews with farmers	Dates for interviews with FOs	Dates for interviews with experts
February: 21 <sup>st</sup> , 23 <sup>rd</sup>	February: 23 <sup>st</sup> , 24 <sup>th</sup> ,	February: 8 <sup>th</sup>
March: 2 <sup>nd</sup> , 3 <sup>rd</sup> , 8 <sup>th</sup> , 11 <sup>th</sup>	March: 2 <sup>nd</sup> , 3 <sup>rd</sup> , 8 <sup>th</sup> , 11 <sup>th</sup> ,	March: 11 <sup>th</sup> , 16 <sup>th</sup> , 17 <sup>th</sup> , 24 <sup>th</sup>

*“Interview as many persons as it takes to find out what you need to know”* is Brinkmann and Kvale’s answer to the question of how many interviewees that are needed (2009, p. 129). The number of interviewees that are needed is depending on the aim of the study and can vary greatly. Between five and twenty-five persons are a common number though.

During the interviews, especially those with farmers, the authors got the impression that the farmers saw the opportunities of getting more help and support through the visit, which leave

the authors the responsibility to report about their situation in a correct way. Some of the farmers seemed to believe that their situation would be improved by participating in the study. The result is provided to them through the Vi Agroforestry and might be useful for the farmers in the long run. According to the FOs the authors visit at the farms motivated and inspired many of the farmers to improve their farming and marketing though. Both farmers and FOs also mentioned that the interviews gave new insights and ideas.

Since the interviews are crucial in this empirical study, the validation process is essential. The validation process is taken in two steps for the interviews with the farmers - during the interview (by repeating partial answers and asking for clarification) and after the completion of the interview in an oral summary of the key points in the interview. The interviews with the FOs were also validated in steps – a validation during the interview and an oral summary of the key points after the interview. For the experts validation was made through e-mail correspondence. The interview guides used in this study are found in Appendix 3-7.

## 2.6 Analysis of findings

Analyzing data refers to tabulate, categorize, examine and test data to address the initial proposition of the study (Yin, 2003). To have an analytic strategy is the best preparation for conducting an analysis of the case study. There are three general strategies to analyze data; relying on theoretical propositions, thinking about rival explanations, and developing a case description. *“Little sense can be made of a huge collection of data; therefore an essential part of research is the analysis of the data. This analysis must be carried out in relation to the research problem”* (Walliman, 2005, p. 301). The analysis needs to be relevant to the aim of the study.

When the interviews are conducted and the literature review is put together the empirical findings are analyzed by the help of the theoretical framework. The general strategy to analyze the findings is to rely on theoretical proposition. Every research question is analyzed towards a theory to get a full picture and a deeper understanding. The problem in this case study relies on several difficulties that the small-scale mango farmers face in marketing and there is no single explanation to it (Pers. Com., Nyberg, 2011; Pers. Com., Sida, 2011). Further, this is not a new phenomenon and thereby there is no need for developing a case description. The analysis aims to make use of existing theories in structuring empirical facts to better understand a complex phenomenon, marketing in developing world context. To further discuss and deepen the analysis the findings are put in in relation to other studies, which can be found in the discussion chapter.

## 2.7 Delimitations

The authors are well aware that this study does not include the whole process of mango production or marketing it neither aims to study all of Kenya’s small-scale mango farmers. Thus this study has been delimited to theoretical, empirical and method related issues that is further described in the following sections.

### 2.7.1 Theoretical delimitations

The theory chapter could have included more individual theories to respond to the research questions. Quality assurance, the marketing mix and value-addition or branding theories could have been suitable marketing strategies. The authors chose to exclude these theories due to that they are rather narrow and not developed for the context of a developing country.

Agency theory and stakeholder analysis could have given valuable insights to the market structure. Inefficient relations between different stakeholders did not cause the major problems for the small-scale farmers though. The literature review gave the impression of strong middlemen in the market system but the interviews did not reveal such problems.

The institutional context model is a very broad model and every block of it can hold very detailed illustrations of data, but the focus is not to get too deep into those, it is the farmers view that the authors have focused on. The authors include the details that was observed and mentioned during the interviews. The theories for organizational aspects of collaborating are broad and can hold many small details, like evaluating what kind of cooperative that would be the best fit for the farmers. Although, the farmers interviewed in this case study was not at the level of their production neither in position to entering or establishing a cooperative in a near future. That is why the focus for ways of collaborating is not focusing on the detailed scheme in how to form a specific collaboration is evaluated.

Lastly, two aspects that are potential constraints to mango production in Kenya but not considered in this report are access to finance and land ownership. The farmers that are included in the report all own their land. Access to finance is crucial for marketing but it is not the focus in this report.

### 2.7.2 Empirical delimitations

This report is based on a literature review and primary data is collected through interviews in Kenya. In Kenya the local media was not used and there were no local statistics available. There is a university with agricultural research in the area but this source of possible information was not used due to lack of contacts. No primary data from middlemen is included in the study due to the same reason. The consumers' perspective is neither included. Further, local politicians could have provided valuable information but no such possibility was given. There are several small NGOs and researchers in the area but no such contacts were possible to find.

The stakeholders in this report are the ones that were available while the authors were positioned in Kenya. All of the stakeholders are connected to the Vi Agroforestry. The study is not focused on gender issues even though it has been brought up. The authors asked for an even distribution according to sex for the farmers and FOs but did not have the possibility to influence the choice of interviewees more than that. The expert section relies on a single interview with one single interview with a recommended representative and sometimes one interview with two representatives. The information provided by those experts is something that the authors rely on which can be a weakness and also delimitation. Although the information provided by the different expert organizations was confirmed by the other expert organizations.

Further, when studies are conducted the respondents may want to color the findings to get grants or desired projects (Pers. Com., Carlsson, 2011; Pers. Com., Nyberg, 2011). The interviewers' gender can affect the result due to cultural norms and perceptions. The sources of information origins from different stakeholders, with sometimes-different agendas, that is hard to evaluate. Altogether these factors may cause faults that the authors are not able to detect. Further, the advisor has no experience when it comes to either Kenya or mango production. Only English and Swedish articles and sources of background information are used.

The Vi Agroforestry in Kisumu did not have any marketing expert that could guide the authors to valuable sources of information or contacts when this study was conducted. It would have been beneficial to get feedback from a local expert. During the time in Kenya the authors were constantly provided with new perspectives and possible sources of information. It would have been impossible to include all that information in this report.

### 2.7.3 Methodological delimitations

This study is limited to cover only small-scale mango farmers connected to the Vi Agroforestry in the Nyanza province in Kenya. The units of analysis are not representative for the population they are selected out of. The selected farmers are all located within a reasonable distance from Kisumu and are chosen with the help of Vi Agroforestry. The study is primarily focused on post-harvest issues although the production management has been brought up. All primary data in this study was collected during eleven weeks (February-April, 2011) in Kenya.

A weakness in this report is the authors' cultural background, which inhibits the ability to speak freely with the interviewees about their reality. By not knowing the mother tongue of the respondents, misunderstandings may occur. Also the translators' role and understanding can cause faults. The translator can also have an agenda of his or her own, different from the authors. Most of the farmers are Luo, an ethnical group in Kenya, and their culture differs greatly from the authors' culture. Kenya's past under the British Crown may also affect the relationship between the interviewer and the interviewees. The locals tend to always respond to a 'white persons' questions even though they do not know the answer (Pers. Com., Nyberg, 2011). Even if their answer is no, they tend to be positive.

This chapter gave insights to how the case study has been conducted and how the researchers are to get from the research questions to the conclusions that answer the aim. The method chapter is the description of the way to the goal. The next chapter will present the theoretical framework for the report.



## 3 Theory

The aim of this study is to identify marketing conditions that will enable prospering business for small-scale mango farmers in the Nyanza province, Kenya. The analysis includes empirics concerning mango farmers and context bound factors that influence marketing of mango. A marketing model is presented in figure 7. It illustrates major context bound factors that influence marketing processes (Johnson *et al.*, 2008; Kotler, 2002). An appropriate marketing strategy is essential to enable prospering business (Johnson *et al.*, 2008; Kotler, 2002; Solomon *et al.*, 2009). The model gives a broad perspective of a marketing strategy. It is important to know the internal and external environment to put the organization in a strategic position (Johnson *et al.*, 2008; Solomon *et al.*, 2009). The economic, technological, political and legal, and social environment affects the small-scale farmer in Kenya to a large extent (Carlander & Lothigius, 2011), which is the reason for the choice of this model.

Due to the fact that the marketing system for horticultural products in Kenya is poorly developed (Pers. Com., de Figueiredo & Japhet, 2011), many different aspects need to be considered. This implies that a broad theory concerning marketing strategies is needed to frame the empirical findings. Further, theories regarding cooperatives are used. The following chapter outlines the theoretical framework that is used in this report. The theories are addressed to the research questions and are used to analyze the empirical findings in chapter five. This chapter begins with a definition of marketing strategy.

### 3.1 Marketing strategy – an introduction

Mintzberg defines strategy as “*a pattern in a stream of decisions*”(1978, p. 934) he determines that a marketing strategy is not a fixed plan. He also states that the management learning is important and plays a big role in the strategy formation. Further he concludes;

*”There is perhaps no process in organizations that is more demanding of human cognition than strategy formation. Every strategy-maker faces an impossible overload of information (much of it soft); as a result he can have no optimal process to follow”* (Mintzberg, 1978, p. 948).

Based on Mintzberg’s definition of strategy Johnson *et al.* (2008) presents four ways of using and developing a strategy and they are the following: *Strategy as a design* is a logical process where the manager has a clear strategic direction. It is designed at the top management and goes down to the rest of the organization. This is the most common textbook view of how a strategy should be developed. *Strategy as experience* is when the organizations’ future strategies are based on the managers past strategies experiences. The future strategies are developed through bargain and negotiations between the different notions within the organization. *Strategy as ideas* is being used when there are innovative ideas, strategy as a design is top down and very set, and the strategy as experience plays on the past, which is hard to do for new ideas. The strategy as ideas uses and promotes the whole organizations’ experiences and differences to find to new strategies and ideas. Through this system new ideas emerge but will likely be discussed and battled for the survival against other ideas to pass as a new strategy. The last perspective is *strategy as a discourse*. In this strategy the managers’ language with the rest of the organization is the command control. The way the managers use their language becomes crucial, also how they frame the strategic problems,

present the strategy proposals, or debate issues are central. In this approach “*Strategy ‘talk’ matters*” (Johnson *et al.*, 2008, p. 22).

### 3.2 Marketing strategy in an institutional context

Depending on the situation the marketing strategy needs to be adapted (Cateora & Graham, 2007; Jain & Punj, 1993; Solomon *et al.*, 2009). Figure 7 represents the key elements of the marketing strategy formulation and the institutional context that needs to be considered in the making of a marketing strategy (Solomon *et al.*, 2009). This can also be called situation analysis, environmental analysis or business review.

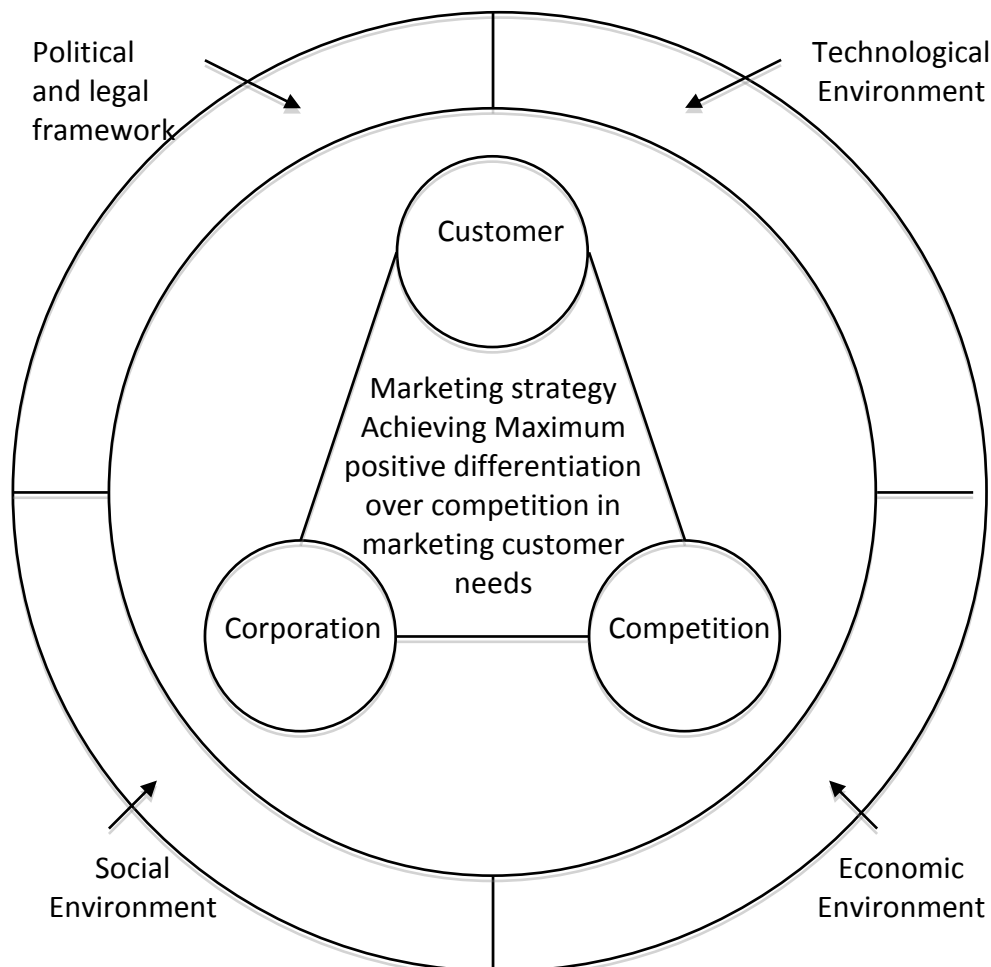


Figure 7. Key Elements of Marketing Strategy Formulation (Jain, 2000, p. 25).

The figure above (Figure 7) shows the institutional context, referred to as an environment (both internal and external) that affects the organization and changes constantly (Jain, 2000; Johnson *et al.*, 2008). The environment is different to different organizations. For example, if there is a strong legal framework for the environment where the organization X is located, X need to be very accurate in their actions and handling of toxic products like pesticides. The strong framework makes X’s products more expensive in processing and the price is higher. Competing with other businesses that are located in areas of weaker environmental laws and regulations the legal framework can be considered to be both a threat or an opportunity for X. In this case the strong environmental laws and regulations can be considered an opportunity for X while marketing in the local market but a threat for the company in the global market

where the products are more expensive and perhaps not even demanded. The surrounding environment and its variables gives the threats and opportunities for the organization. Continuing on the legal framework case, the actions to meet the harsher legal framework can also play a part in the economic and social environment. Internal and external contexts are further discussed in 3.1-3.2.

### 3.3 Internal environment

Solomon *et al.* (2009, p. 54) define the internal environment as “*all the controllable elements inside the firm that influence how well the firm operates*”. The internal environment identifies the organization’s strengths and weaknesses (Jain & Punj, 1993; Solomon *et al.*, 2009). The internal environment consists of the three Cs; the customers, the competition and the corporation (Jain & Punj, 1993). Examples of strengths can be technologies, relationship with suppliers, corporate reputation, financial stability, ability to produce high quality products, or physical facilities (Solomon *et al.*, 2009). These strengths could also be weaknesses. Internal strengths and weaknesses are mostly depending on human capital within the organization.

#### *Customer, competition and corporation*

A good marketing strategy focuses on the organizations’ key elements and their interplay (Jain, 2000). The key elements of marketing strategy are primarily the three Cs, the customer, the competition, and the corporation. They all have their own aims and intentions but are equally important for the organization and its strategy (Jain and Punj, 1993; Jain 2000). Marketing strategies focus on how the organization can differentiate by creating higher value for their customers compared to other organizations and their products. That is why it is important to have “*positive matching of the needs and objectives*” between the customer and the organization continuously and ahead of the competition otherwise the strategy will fail and the customers choose the better competitor (Jain, 2000, p. 24).

“*Businesses exist to serve customer needs*”(Jain & Punj, 1993, p.36). The customer is the focus for the organization and always need to be. The organization need to match the customers’ needs and wants at all times, otherwise the organization will lose the customer to a competitor. It is important to have knowledge about the customer and his or her preferred market to be able to reach the right customer. Knowledge about the customer and the market makes it easier to segment the market, arrive at the accurate market, and reach the customer.

The competition is very important to pin down in the making of a marketing strategy. Porter (1979) identified the five key factors (Porter’s five forces) to gain strengths against the competitors and they are: industry structure or degree of rivalry, threat of entry, substitute products, bargaining power of buyers, and bargaining power of suppliers. The interactions between the five forces also determine the concentration of competition in an industry (Jain & Punj, 1993).

For the corporation there are seven success factors, the seven Ss of strategy by Peters & Waterman (1982), that help to form and implement a corporate-level marketing strategy and they are;

*“structure (the hierarchical arrangement of human resources in the organization); systems (procedures followed to ensure control during strategy implementation); style (management’s decision making philosophy); staff (the management development process in the company); skills (the firm’s unique competencies); shared goals (the*

*firm's culture and management's value system); and strategy (the corporate mission)"* (Jain & Punj, 1993, p. 37).

These factors determine the corporation's competitive advantage.

The broad picture of the internal environment, where the customer, corporation and the competition are the keystones has been introduced. The next section portrays the external environment.

### 3.4 External environment

*"The external environment consists of elements outside the firm that may affect it either positively or negatively"* (Solomon *et al.*, 2009, p. 54). The external environment can be grouped into four categories: economic environment, technological environment, political and legal environment, and social environment (Jain, 2000). These four categories are presented below. The external environment gives the organization's opportunities and threats (Jain, 2000; Johnson *et al.*, 2008). The small-scale farmer in Kenya is highly affected by external factors (Per. Com., Nyberg, 2011). One opportunity for the farmers is to collaborate. Theories of cooperatives are presented in 3.3 to examine this opportunity.

#### 3.4.1 Economic environment

*"Understanding the economy of a country in which a firm does business is vital to the success of marketing plans. Marketers need to understand the state of the economy from two different perspectives: the overall economic health and level of development of a country and the current stage of its business cycle"* (Solomon *et al.*, 2009, p.55).

This statement stresses the fact that the organization needs to know the economic environment to succeed in its marketing strategies. Organizations can look to the gross domestic product (GDP) or gross national product (GNP) that are indicators of a country's economic health to adjust the marketing strategy (Solomon *et al.*, 2009). They can also look past the figures and look to what is done to reduce poverty, inequality and unemployment. *"A country's standard of living is an indicator of the average quality and quantity of goods and services a country consumes"*(Solomon *et al.*, 2009, p.56). Depending on if the country is less developed, developing or developed the emphasis of industry, use of technology, education, infrastructure and standards of living is different. The less developed a country is, the larger share of agricultural and rural employment. In developed countries the marketing systems are more sophisticated.

#### 3.4.2 Technological environment

Technology can be a competitive advantage for the organization (Solomon *et al.*, 2009). Governmental programs influence the technological level in an industry. This level also has an effect on the business since it may affect the competitiveness. *"Changes in technology can dramatically transform an industry"* (*ibid*, p. 60). To be successful it is important to be updated and able to find trends in the external environment.

#### 3.4.3 Political and legal framework

Depending on if the organization acts on the local, national or global markets it needs to consider different laws and regulations (Solomon *et al.*, 2009). Political decisions can affect the business operations and must be considered. It is important to understand the political system, which is more complex in the global markets arena. Legislations for different trade

unions are essential to know to go global. The legal enforcement differs between countries and cultures.

**3.4.4 Social environment**

The social environment refers to the cultural values and beliefs in the society (Solomon *et al.*, 2009). *”Understanding consumer attitudes, beliefs and ways of doing things in different parts of the world is especially important to firms when developing a marketing strategy”* (*ibid*, p. 64). The organization needs to understand and adjust to the characteristics of the society and its citizens. Demographic factors such as age, gender, ethnic group, education, occupation, income and family structure are essential to know. The relation between sexes and the role of the family are also important factors for the organization to reflect on. Every society pass on a set of cultural values to its members, these values are beliefs of what is right and wrong, acceptable and unacceptable. Marketing must be adapted to the cultural values to be successful. One cultural aspect that might cause problems is language-barriers.

In this model the context plays an important role. In the making of a marketing strategy the organization is colored by the society at large and need to adapt to it, to get a superior marketing position. In Kenya the small-scale farmers need to adapt to many different environments in the society.

To improve bargain power, many small entities can be gathered into cooperatives or collaborations, which is further described in the next section.

**3.5 The external focus - collaboration**

The theory about cooperatives, which is a form of collaboration, is chosen to frame the research questions about market structure and infrastructure but it is also a possible marketing strategy.

To improve their bargaining situation the farmers could organize into marketing cooperatives (Dijkstra, 1996). Cooperatives have been used for more than a hundred years and are a form of private business organization, owned and controlled by the users (Barton, 2000). A cooperative consists of a group with similar business needs and interests. The aim for the cooperation is to provide benefit, ownership and or control to its users. The users are the owners but could also be described as customers with benefits. These benefits are not given in terms of ownership but in use, like cheaper input products or a guaranteed price for harvested commodities.

A cooperative can be viewed from three perspectives that reveal benefits, responsibilities, roles and what kind of transactions that are made with the cooperative (Table 4).

Table 9: User perspectives of cooperatives (Barton, 2000, p. 23)

User benefits and Responsibilities	User roles	User transaction with cooperation
Benefit: Purchase goods and services	Customer	Buy inputs
Benefit: Market farm products	Customer	Sell inputs
Benefit: Receive net income	Patron	Receive patronage refund
Ownership: Provide equity	Owner	Equity investment; -Stock purchase -Retained patronage refund

Control: Provide governance	Member	-Per unit capital retain Equity redemption Vote to elects directors, approve articles, bylaws, major actions
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Table 8 illustrates the use of a cooperative for various stakeholders. Depending on what kind of cooperative the farmer takes part in - he or she plays different roles and receives different outcomes. A farmer may also be a member of a cooperative to get social benefits (Barton, 2000).

The cooperative business form is common in the agricultural industry but it is used in many different sectors (Barton, 2000). Cooperatives are beneficial for farmers because they can gather their financial resources. Through the cooperative the farmer perform business that would not have been economically possible for them in solely. By forming cooperatives it is possible for the farmer to receive larger profits. Cooperatives make it possible for farmers to purchase services and inputs such as fertilizer and feed at lower costs. The farmers can also access markets that they could not have reached by themselves and market their products at higher prices. Traditionally, most cooperatives are small and operate in small geographic areas.

A food assembly market is a form of cooperative that is common in Africa (Dijkstra, 1996).

*“African governments have to play their part in creating an institutional framework in which efficient and effective marketing channels can develop. One aspect of such a framework involves food assembly markets in production areas, where grain and other food commodities can be assembled before going on transport to urban centers” (Dijkstra, 1996, p.26).*

Food assembly markets in Africa works like a cooperative and develops the marketing system. According to Dijkstra (1996) the importance of food assembly markets is a crucial success factor in food production, and the governments should encourage them. When the market conditions are free, rural assembly markets can develop to efficient marketing systems (Dijkstra, 1996). Such an assembly market concentrates demand and supply, thus transportation and transaction costs decrease (Dijkstra, 1996; Omiti, 2007). This is a way to create a more efficient marketing channel. Further, food assembly markets makes development of price more transparent.

This chapter presented the theoretical framework that will be used to structure the empirical findings. The key elements (including the institutional context) to consider while constructing a marketing strategy were illustrated. The main model was divided into the internal and external environment. In the internal environment the customer, corporation and competition are the factors and the external environment is the institutional context is divided into four broad areas; economic, technological, social environment and political and legal framework. Further the external focus brought up collaboration. The next chapter presents a literature review to give the context of the Kenyan small-scale mango farmer.

## 4 Literature review

The following chapter describes the empirical background and aims to create a picture of the Kenyan mango farmer's context. The section starts with an introduction of Kenya and continues to describe marketing in a developing context. After that the importance of good infrastructure and rural challenges are presented followed by facts about mango. The section ends with a brief part about international mango trade.

### 4.1 Kenya

Kenya is a former British colony located in the sub-Saharan Africa<sup>4</sup> (Firestone *et al.*, 2009; Insight Guides, 2007). In Kenya there are 39 million inhabitants and 50 percent of the population lives below the extreme poverty line (www, CIA, 1, 2010; www, UNDATA, 1, 2010). In 2008, 78 percent of the inhabitants lived in rural areas. The agricultural sector covers 75 percent of Kenya's labor force but the unemployment rate is high, 40 percent (*ibid*). Almost half of the output and 75 percent of the total agricultural production origins from small farms (2-5 ha.) (Omiti *et al.*, 2007). The agricultural sector in Kenya provides food, income and employment.

Since the 1960s Kenya has been a successful horticultural producer, canned pineapples, and fresh vegetables have been large contributors for their export since then (Minot & Ngigi, 2004). The sector has developed along the years and in the late 1980s the export of green beans took off. Since the mid 1990s cut flowers have gained a large share of the total horticultural production, and the export of it has grown rapidly compared to vegetables and fruits.

Development in Kenya is slowed down by a large number of reasons<sup>5</sup> such as widespread poverty, declining economy, corruption (Transparency International, 2009; Pers. Com., Zetterberg, 2010), ethnic tension, rapid population growth, fluctuating agricultural production and yields, soil erosion, declining soil fertility, and land fragmentation (Ekbom, *et al.*, 2001). Foreign investment has decreased due to corruption, which has become a severe threat to the Kenyan economy and development. Ethnic tensions are a big problem as well. Since the independence there has been political turbulences in Kenya (Firestone *et al.*, 2009; Freedom House, 2009). Kenya has been unsuccessful in producing enough food to keep up with the rapid population growth since the 1970s (Ekbom, *et al.*, 2001).

Kenya suffer greatly from HIV/AIDS, 1,5 million Kenyans are infected (www, Avert, 1, 2011; Pers. Com., Kinch, 2010). In 2009, 42.8 percent of the population was younger than 15 years old and only 4.3 percent of the population was older than 60 (www, UNDATA, 1, 2010). In 2009, 1.2 million children are orphans due to AIDS in Kenya (www, Avert, 1, 2011). For more information about Kenya see Appendix 8.

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<sup>4</sup> A detailed map of Kenya is found in Appendix 8.

<sup>5</sup> These problems are explained more in detail in Appendix 8.

## 4.2 Marketing in developing countries

“A marketer cannot superimpose a sophisticated marketing strategy on an underdeveloped economy. Marketing efforts must be keyed to each situation, custom tailored for each set of circumstances” (Cateora & Graham, 2007, p. 256). Marketing strategies need to be adapted to the institutional context. Depending on the level of economic development the marketing strategy is challenged differently. Characteristic for marketing in developing countries is that marketing structures often are at various stages simultaneously (Cateora & Graham, 2007). Advanced and modern retail markets are often functioning side by side with traditional food markets.

The less developed a country’s economy is, the less variety of marketing functions is demanded (Cateora & Graham, 2007, Pers. Com., Toborn, 2010). Thus, the institutions that perform marketing functions are less specialized and sophisticated. Agriculture in developing countries has been unfavorable for the small-scale farmers due to poor domestic environments such as low levels of investments in agriculture, bad policies, uncompetitive markets, lacking rural infrastructure, critical financial and production services and, lack of natural resource management (IFAD, 2010). On the global markets the prices for agricultural products have increased. Through this change in the agricultural markets there are new possibilities for small-scale farmers all over the world but improved domestic environment in rural areas of developing countries is required. As the economy in a country develops the marketing channels and distribution does the same (Cateora & Graham, 2007; Pers. Com., Toborn, 2010).

To get an accurate picture of the market and the operating context it is essential to develop and implement strategy (Walters & Samiee, 2003). Information is highly important for marketing planning. There are several challenges to overcome when gathering information in developing and emerging markets though. “*Indeed, the literature suggests that the lack of reliable information is a key reason for the absence of formal corporate planning activities in many developing markets*” (*ibid.*, p. 98).

”*Improving competitiveness of agricultural products in international, regional, and domestic markets is the key to expanding market opportunities*” (Diao *et al.*, 2007, p. 27). Marketing, infrastructure, communication and transport are rudimentary in Africa, even compared to development countries in other parts of the world, and African agricultural products are often not competitive. High marketing and transportation costs, low productivity, agricultural policies and trade barriers are reasons for the low competitiveness. To increase competitiveness several measures need to be done; increase productivity, reform institutions, and infrastructure to reduce transaction and transportation costs and enhance regional cooperation. One of the major challenges for small-scale agribusiness in developing countries is to identify new markets (Fromm & Nyhodo, 2007).

## 4.3 Marketing of mango in Kenya today

Marketing of horticultural products has been free of direct government interventions for the most part (Minot & Ngigi, 2004). The Kenyan horticultural domestic marketing channels are often integrated by professional middlemen and traders that mediate between the consumer and the farmer (Boersma, 2006; Dijkstra, 2001). Most of the traders are women.



The degree of product differentiation is very low, and advertising is slightly used and brands do not exist (Dijkstra, 2001). A low price is the most important factor for most consumers. The Kenyan horticulture markets are characterized by intense competition and the supplied and demanded quantities control the price. The farmers often lack knowledge on alternative product uses, options for value addition and alternative marketing possibilities (FAO, 2003).

Transport is the largest cost in the Kenyan horticultural trade (Dijkstra, 2001; Omiti *et al.*, 2007). Hired porters, donkeys or tractors, often perform short distance transports in rural areas. Handcarts are common in urban areas. Other costs are packing materials and market fees. Infrastructure is a major constraint in marketing (FAO, 2003).

Very few farmers sell their products at large urban markets (Boersma 2006; Dijkstra, 1996). The farmers mostly sell their products at the farm or in local markets. In both cases the farmer depend on the middlemen to receive current prices in the markets. When selling at the farm the farmer have to deal with middlemen, traders who come to the farm to purchase. Farmers that sell at local market places can sell either directly to consumers or to middlemen.

Both input and output markets for agricultural products are inadequately developed (Ekbohm, *et al.*, 2001). The supply of inputs such as fertilizers, seeds and pesticides is scarce. The farmers mostly sell their products to local middlemen at a fraction of the price they could have received at larger markets, in Nairobi for instance. This is due to that the farmers are poorly organized. The higher the level of education is in a country, the larger the flexibility and willingness to develop the production (Pers. Com., Lindgren, 2010). The purchases of local traders are fluctuating in terms of price and size, which implies uncertainty for the farmers and causes large losses of crops. Cooperatives are not common in Kenya but the Kenyan government has been promoting cooperatives to avoid exploitation by traders (Minot & Ngigi, 2004).

Fruits are perishable commodities and as soon as they are harvested they start to deteriorate and do so through their marketing processing (Kohls & Uhl, 2002). To maintain the farm-fresh value it is important to have a rapid and efficient marketing system. Up to ten percent of the value of fresh-fruit is lost during the marketing process trough bad storage and handling, spoilage trimming to improve appearance, careless handling by shoppers, and theft. To keep the fruit fresh and keep a high quality during marketing sophisticated and developed marketing channels, facilities and equipment are needed. The transportation is the key. The perishability affects the pricing and the price negotiations because the fruit cannot be held for long periods to get better contracts. 'Sell it or smell it' is a saying within the sector. Mango is an easily damaged product with short shelf life, which implies difficulties in marketing (Schoorl & Holt, 1986). There are three main markets for mangos; export, domestic processing, and domestic fresh-fruit.

The mango prices vary substantially; the price of one mango at a local market in Kenya is about twenty Kenyan Shillings (KES) which is less than 2 Swedish Krona (SEK) (www, Forex, 1, 2010; Pers. Com., Farmers, 2011). The price of one mango at a European supermarket is about 200 KES, which is slightly more than 18 SEK (Mutunga, 2010).

#### 4.4 Infrastructure and marketing

The degree of infrastructure development in a country highly affects the potential of economic growth (Cateora & Graham, 2007). Infrastructure is an crucial part of the economic structure

in a country (Pers. Com., Lindgren, 2010) and it is essential for a well functioning production and marketing (Cateora & Graham, 2007). Infrastructure is an essential component facing marketers. Railroads, roads, seaports, financial networks and communication networks are all important parts of the infrastructure. Transportation of commodities is necessary to reach the market and without sufficient transport, distribution costs can increase considerably. Credit and banking facilities, advertising agencies, marketing research agencies, and storage facilities are other parts of infrastructure that make it efficient to conduct business and marketing. In recent years the importance of cell phones, and cell phone use has increased in Kenya (Pers. Com., Nilsson, 2010).

A country may be unable to export commodities due to lack of infrastructure even though it has the ability to produce them (Cateora & Graham, 2007). When the infrastructure in a country is insufficient to support an expanding economy and population, the economic development starts to fall behind.

## 4.5 Rural challenges

In the year of 2000 all the member nations of the United Nations (UN), including Kenya, agreed to reduce poverty by half before 2015 (www, UN, 2, 2011). To achieve this the eight Millennium Development Goals (MDGs) were made. The MDGs is to; end poverty and hunger; universal education; gender equality; child health; maternal health; combat HIV/AIDS; environmental sustainability and; global partnership. Since then, progress for achieving the MDGs has been made but still 1.4 billion people live in extreme poverty and two thirds of them live in rural areas in developing countries, most of them in sub-Saharan Africa (IFAD, 2010).

To achieve the MDG the IFAD has pointed out four key issues for rural economic growth. They are: to improve the overall environment of rural areas, enable poor rural people to manage risk and to reduce their level of risk, to invest in education for the rural population to develop skills to take advantage of new economic opportunities and to strengthen the collective capabilities of rural people.

Agriculture is based on natural resources where land and water are the most important factors (IFAD, 2010). To sustain in agriculture all farmers need to be economic with scarce resources, handle and plan for long-term issues. The competition for land and water is growing. The climate change is another critical factor that needs to be considered for the agricultural sector. Poor farmers in already exposed areas are usually hit harder by climate change and environmental destruction. Knowledge and education for the farmers is necessary to meet the changing environment successfully.

## 4.6 Mango

Mango origin from India where it has been cultivated for 4000 years (Fivaz, 2009; Njuguna *et al.*, 2009). Today mango is produced in more than 90 countries, mostly in tropical and subtropical regions (Fivaz, 2009, p. 30). The total area of mango production in the world was 3,69 million hectares in 2004 (Fivaz, 2009). According to Evans and Mendoza (2009) the world production of mango was 28,51 million tonnes in 2005 of which nine percent was produced in Africa. India is the largest mango producer in the world followed by China and Thailand (www, FAOSTAT, 1, 2010). The aggregated production of ten countries constitutes about 80 percent of the total worldwide production (Jedele *et al.*, 2003, p. 4). Asia produces

77 percent of the global production, America 13 percent and Africa nine percent (www, FAOSTAT, 1, 2010)

The demand for mango has been increasing worldwide the past decade (Fivaz, 2009; Jedele *et al.*, 2003). The world production has increased by 60 percent over the past 20 years. Mango production is mostly prosecuted in developing or emerging countries (Jedele *et al.*, 2003). Only one percent of the mango producing countries is developed and the mango production in industrialized countries is very limited.

Mango is not an indigenous crop in Kenya but it has been cultivated in the area for centuries (Griesbach, 2003). Today, Kenya is the thirteenth largest mango producer in the world (www, FAOSTAT, 1, 2010) and the total production was 183,000 tonnes in 2003 (FAO, 2003). Over the last ten years mango has been the third most important fruit in Kenya in terms of area and total production. In the figure below the total mango production in Kenya over time is illustrated.

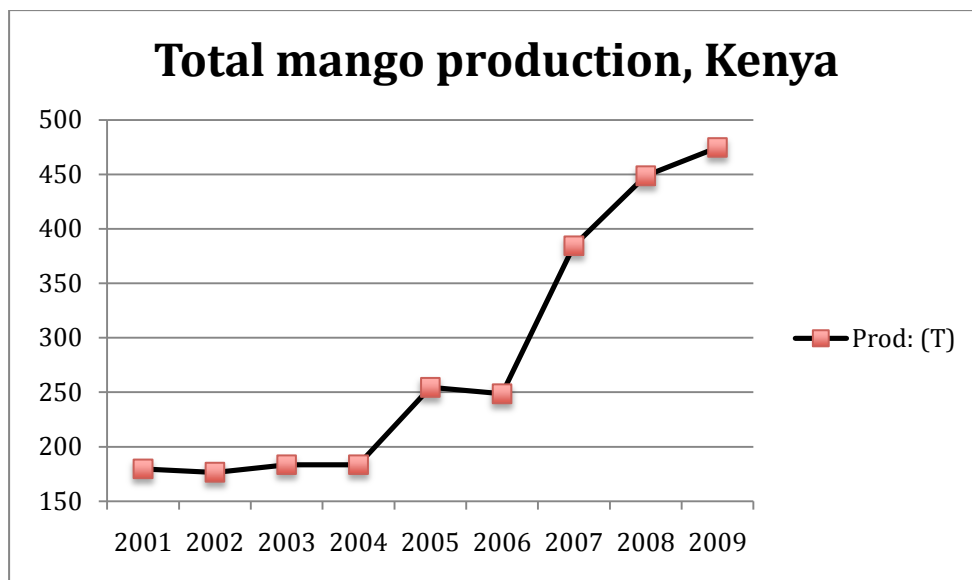


Figure 8. Total mango production over time in Kenya (FAOSTAT, 2010).

There are two different mango races, one from Southeast Asia and one from India and there are several cultivars (Griesbach, 2003). The production in Kenya is mainly based on seven different cultivars (Njuguna *et al.*, 2009). The cultivars differ considerably in size, shape and internal characteristics (Griesbach, 2003). The size of the fruits varies from 2,5-30 centimeters and the weight could be from 200 grams to more than 2,000 grams. The fruit quality depends on sweetness, amount of turpentine taste and fibers.

The mango plant is evergreen and can develop into giant trees with deep root systems (Griesbach, 2003). Grafted trees reach about 10 meters in height while seedlings trees can be the double size. Propagation is done vegetative or by seed. Mango trees are long lived and can produce fruit at the age of 150 years. The tree flushes two or three times a year and new leaves are produced. The leaves can measure more than 30 centimeters in length. Mangos in Kenya flower from late July to early November and the flowers are pinkish or greenish-white. Very high humidity or frequent rains during the flowering damages the produce. In Nyanza there are two mango seasons (Pers. Com., FO, 2011; Pers. Com., Farmers, 2011).

Mango can be grown on many different kinds of soil (Griesbach, 2003). Essential conditions for a successful production are rainfall of 500-1000 mm per year, deep soils (> 3 meters), an altitude of 0-1200 meters, pH value of between 5,5 and 7,5 and good drainage. Other very important factors affecting the production are a dry period during the time of flowering and enough heat when the fruit is ripening. The ideal temperature is between 20 and 26°C. The seedlings start to bear fruit within 4-7 years. Mangos are considered to be drought resistant to some extent but irrigation does improve yield and quality (Fivaz, 2009). Irrigation during the first years increases the growth but when the trees start to produce fruit irrigation is stopped (Griesbach, 2003). Nitrogen is the most important fertilizer but potassium is needed as well (Fivaz, 2009).

Mangos have relatively few problems with diseases and pests but the mango fruit-fly and the mango seed weevil are noxious insects that occur (Griesbach, 2003). Mango fruit-flies attack ripening mangos and cause yield losses. The mango weevil do not damage the fruit but fruits attacked by the seed weevil cannot be exported due to regulations. Anthracnose and powdery mildew are the most common diseases of mango and are both caused by fungus. Infections can result in large and even complete yield losses. Spraying the trees with different chemicals can treat both diseases.

Mangos are harvested at various stages of physiological maturity depending on the prevailing conditions and the purpose of the production (Fivaz, 2009). The fruits are fragile and must be handled very carefully during and after harvest (Griesbach, 2003). Picked mangos are placed into clean plastic or wooden containers to avoid physical damages. If the fruits cannot be transported immediately they must be kept in a sheltered place. Mangos are available from November to April in Kenya, sometimes there are mangos until July.

The mango contains many essential minerals and almost all the known vitamins (Griesbach, 2003). One fruit can provide a large share of daily human requirements of vitamins and minerals and the protein content is higher than that of most other fruits. Mangos also contain iron, calcium, thiamin and niacin.

## 4.7 International mango trade

Mango constitutes 50 percent of all tropical fruits produced in the world and it is produced in over 90 countries (Jedele *et al.*, 2003). Less than four percent is traded. Although the international production and trade for mango has increased since the 1990s due to lower prices for consumers, year-round availability, fewer trade barriers, changes in food consumption preferences, longer shelf life for mangos, and increased demand for healthier foods (Evans & Mendoza, 2009). Horticultural production in Kenya is mostly aimed for the domestic market but exports are important in terms of foreign exchange (Dijkstra, 1996). The biggest part (96 percent) of the mango production is consumed domestically and a very small share is processed. (Jedele *et al.*, 2003; Minot & Ngigi, 2004). The major part of the produced mango in Kenya does not meet export standards (FAO, 2003).

Mexico is the largest mango exporter in the world followed by Brazil and India (Evans & Mendoza, 2009; Jedele *et al.*, 2003). The largest producer is India. Latin America is the most important exporting region followed by Asia. USA is the largest single market importer then follows the European Union (Evans & Mendoza, 2009). Japan, Singapore, and Hong Kong are important markets as well (Evans & Mendoza, 2009; Jedele *et al.*, 2003). North America represents 42 percent of global fresh mango imports, Europe accounts for 24 percent and the

Far East 17 percent. One third of the European import goes to the Netherlands and is re-exported to other European countries from Rotterdam.

Today fruits are among the most important commodities for Kenya's export (www, Britannica, 1, 2010; Minot & Ngigi, 2004). Although the long history of exporting horticultural products, the cash crops are not providing the expected amount of profit (HCDA, 2010). HCDA in Kenya stresses the Kenyan horticultural producers to "*meet the increasing demand for top quality produc[tion]e in the export market*" (www, HCDA, 3, 2010).

Kenya's primary export market is Europe with a focus on the UK and the Netherlands (www, CIA, 2, 2010). The market for fruit and vegetables has changed in Europe, where larger supermarkets and the consumers demand more control and traceability of what they are purchasing (Minot and Ngigi, 2004). Food safety issues and the rise of larger supermarkets make it harder for small farmers to be competitive. Key fruits for Kenya's exports are mangos, avocados and passion fruits (www, FPEAK, 2, 2010). The UK, the Netherlands, Germany, and France are the main importers of fruit and the middle-east market is the main outlet market for Kenyan fruits.

This literature review presented the context in which the Kenyan small-scale mango farmer acts. The country and mango production together with issues of marketing and infrastructure for the rural population was explained. The global mango production and marketing perspective was also briefly described. The next chapter presents the results from the interviews with farmers, Field Officers (FOs), and experts.

## 5 Empirical findings

The following chapter presents the aggregated results from the interviews with farmers, Field Officers (FOs) and experts from organizations that work with mango farming. The interviews are made to identify marketing conditions that will enable prospering business for small-scale mango farmers in the Nyanza province, Kenya. The different stakeholders have different perspectives and give a broader picture to the case study. The first part describes the farmers' perspective. After that the FOs from the Vi Agroforestry give a larger picture, they are in contact with a wide range of mango farmers and can give a broader perspective. The FOs' part is followed by a part from the Vi Agroforestry organization. The next section is the expert perspective from HCDA, KENFAP, Ministry of Agriculture, Ministry of Cooperative Development and Marketing and lastly from Sida. The results are presented and structured to different topics that are highlighted in the italic font. The interview guides are found in Appendix 3-7.

### 5.1 The farmers' perspective

The following section presents the result from the interviews with the farmers. The farmers were interviewed individually but the results were gathered and structured into sections after topic. The farmers are promised anonymity and that is the reason why they are numbered from one to twelve when quoted.

#### *Mango production*

*“Farming [mango] is good because it gives food and prevents from starving and makes me involved in the local community”.* (Pers. Com., Farmer 7, 2011) *“Mango production is a sustainable crop to grow to reduce poverty”* (Pers. Com., Farmer 11, 2011).

Mango is mostly grown to get extra income from the local market and for domestic consumption. The dry climate in Nyanza is also very suitable for mango production; it is better equipped than the commonly grown maize. The farmers say that there is a local market and demand for the fruit. Some of the farmers claim that grafted mango does better than other fruit production in the region. A few of the farmers comment the new international airport as a carrot to start producing cash crops and that mango is a very good alternative that is easily grown in the region. Some of the farmers heard and saw others succeed with mango in dry areas and wanted to try themselves. Further, radio commercials from Coca Cola and Bill Gates promoted mango production in East Africa, which gave courage to try.

Most farmers combine the mango production with other crops like banana, pawpaw, avocado, passion fruit, sugarcane, maize and beans. Capsicum, sweet potatoes, vegetables (both local and graded), oranges, lemon/citrus, moringa trees, fast growing firewood trees are also common combinations. Some of the farmers also have fishponds and sunflowers for oil making. Further some of the farmers have tree nursery and sell seedlings of grafted mango. Husbandry like poultry, local hens, egg production, chickens, cows (both local and upgraded ones), and goats were frequent among the farmers.

Mango is the largest source of income for a few of the farmers (mostly sold as fresh fruit but also seedlings), although, sugar canes and bananas seem to be the major cash crops for most of the farmers. The farmers that currently have bananas as their major income think that the mango will become the largest source of income once the production is fully developed.

Herbals for soap and oil making, vegetables and maize were the largest source of income for some of the other farmers. For two farmers the poultry production was the largest income contributor of the farm. *“Mango trees are good trees and they are good to leave to the children because it is a long-term investment”* (Pers. Com., Farmer 6, 2011). Most of the farmers had the production as a retirement plan and received pensions or incomes from other branches than agriculture.

### *The market*

The local community market is the primary market for all of the farmers, although three of them mention export markets. Only one farmer that currently practices export (to the Arabic peninsula and Sudan). The other two sell their mango to markets further away than the closest market (to the university and Kisumu). Eight of the farmers sell most of their mango at the farm gate, to the local community. A few of the farmers sell to traders or agents, mostly to market madams. Only two of the farmers sell their mango to larger traders than the local ones. Some of the farmers say that once they have developed their production and have larger quantities they will start to deal and sell to traders. Currently the farmers sell to anyone that wants to buy and can afford the mango.

All of the farmers sell most of their mango as fresh fruit. Either the customers from the local community come to the farms and pick the fruit themselves, or the farmer arranges the harvest and sells the mango at the farm gate or local market. The farmers focus on grafted mango varieties to receive a higher price. They also sort the fruit according to size and quality to receive a better price. One farmer mention that she sometimes receives orders, packs the mango for the customer, and thereby adds value to her produce. Most of the farmers (everyone except two) have thought of value-addition like juice blending but due to lack of electricity they cannot make it. One farmer dries the mango and two of the farmers have contacts with juice blenders that they sometimes sell their mango to. In those cases it is the blenders in their turn that sell the juice. One of the farmers that make juice has thought of making jam. Mango is generally harvested in the afternoon and delivered to the local market the morning after. During the night the mango is stored inside the household. None of the farmer has any other storage facilities except for their own houses.

According to the farmers the customers want high quality fruit and nice looking fresh mangos. The farmers think that most customers prefer grafted mangos. The hotels and traders want ‘problem free mangos’, which is mangos free of pests, diseases and dirt. The juice blending customers that buy the fruit for value-addition prefer particular grafted varieties. Three of the farmers mention the importance of using pesticides and insecticides during the production and have a good irrigation system to be able to sell high quality mango. One of the farmers that sell mango for juice blending stresses the importance of picking the fruit when it is dry and to store it properly to receive a high quality mango.

### *Wastage*

The farmers’ experiences of wastage at the farms differ. One farmer approximates the losses at the farm to 10 %, others claim that there is no wastage at all, although, many of the farmers mention diseases, and pests during the flowering and fruiting period. The drought is a severe problem for some of the farmers and it causes wastage of produce. The fruit that is destroyed is mostly consumed within the household. One of the farmers dries the healthy parts of the damaged fruit.

During transportation a lot of fruit is wasted for most of the farmers, there are only two of them that do not have any trouble with transports. Due to the bad roads and the available means of transportation some farmers approximate their losses to 20%. Grafted mango generally copes with transportation better than local mango because they have thicker skin. The indigenous mango is more difficult to transport due to thinner skin and the fruit gets watery and destroyed. One of the farmers says that she tries to talk to politicians to get better roads. The farmers have limited knowledge about the losses at the market but they say that everything that enters the market is sold; it is just a matter of pricing. One farmer approximates the losses to 5% though. The farmers try to prevent diseases by spraying the fruit.

The farmers sell the destroyed and damaged fruit at throwaway prices, consume it domestically (in the household for family and husbandry) or they throw it away. One farmer dries the fruit; another tries to sell it for juice blending. Some of the farmers add the damaged fruit to the manure and decompose it. Two farmers use the destroyed fruits' seeds for new seedlings. One of the farmers that have had problems with anthracnose burns the sick fruit.

### *Pricing and market*

Most of the farmers group the fruit into different categories depending on quality and size, there are different standard prices depending on the size of the fruit (small, medium and large mangos), and set prices for the different varieties. At farm gate the mango is sold cheaper than at the market, usually KES 10 a piece. In March the price is the lowest due to large supply. The market decides the price. Most of the farmers claim that they decide the price, although sometimes they negotiate. One of the farmers is involved in a mango-marketing group where the group decides the price according to the size and based on market information. For small indigenous fruits the farmers get KES 10-15 a piece and large grafted fruit can give up to KES 30 (sometimes even KES 35-40), although most farmers sell it for KES 20.

To receive price information, the farmers study the local market for current prices and listen to the radio or read the papers for listings, although most of the farmers decide the price after the own local market surveys. Some of the farmers talk to each other before setting the price. One of the farmers says that he does not receive any price information before selling the fruit. Two of the farmers get updated on prices through contacts in Nairobi and Mombasa.

Half of the farmers' price negotiates when selling the mango and the other half says that it is difficult due to lack of power, and that they get very little profit due to high input prices so it is difficult to negotiate. One of the farmers says, "*When the need for mangos is high there are better chances to succeed in negotiations*" (Farmer 9, 2011). Today none of the farmers is using arranged contracts. Some say that it is because of low production. One of the farmers intends to use contracts once starting selling mango to the new international airport. Most of the farmers use cell phone services to get market information, arrange orders and transports, inform traders and customers that they have mature mangos.

### *Marketing*

The farmers knowledge of marketing is "*how to sell mangos*" as most of them expresses. One of them explains marketing as "*if you take something to sell then you get money for it, like changing*" (Pers. Com., Farmer 3, 2011). Four of the farmers say that marketing is done within a group, like the Vi Agroforestry taught them. Those groups are educated in how to market the fruit. Three of the farmers do not know what marketing is even though they have been taught about it by the Vi Agroforestry. The most developed and commercial mango



farmer stated that “*marketing is very important, the most important factor to be successful*” (Pers. Com., Farmer 10, 2011).

### *Quality*

All of the farmers agree that the quality of the mango is very important to receive a higher price. The customers care about the size, taste, fiber content, and the color of the fruit. The grafted mangos receive a higher price than the small indigenous varieties. Two of the farmers claim that the export market requires the highest quality mango, and one farmer claim that the local markets do not require the same quality as the export markets. Higher quality mango receives a higher price, contributes to maintaining the customers.

To offer high quality mango most of the farmers have plans. First of all the grafted varieties are preferred among the farmers. Most of the farmers stress the importance of good manure management and taking care of the trees. Some of the farmers follow advices from the Vi Agroforestry and other organizations. The farmers are also using pesticides, insecticides, fungicides, and fertilizer. The quality will remain high by spraying the fruits at the right times, mostly during flowering. One farmer says, “*What you put in is what you get out*” (Pers. Com., Farmer 9, 2011) another says that it is important to “*follow the standards*” (Pers. Com., Farmer 7, 2011).

### *Storage*

None of the farmers have any particular storage facilities for their mango produce; they store the fruit within the household. Some of the farmers pick the fruit in the afternoon and then deliver it to the market the day after; others store the fruit for three to four days. Most of the farmers consider it too expensive to invest in storage facilities and argue that there currently is no need for storage facilities due to low production. The need will arise when the production is fully developed. The farmer in this study that produces the largest quantity of mango says that he has thought of getting a storage facility so that he can sell mango during the off-season, but it is too expensive. A few of the farmers mention theft as a risk having storage facilities.

### *Planning of production*

For the short run most farmers make plans on how to improve the number of fruits during the season. Plans are made for when to plant, manure, spray and harvest. This is decided by talking to other farmers or by the help of FOs. Two farmers say that they do not make any plans. The long run planning mostly consists of plans for expanding the production and grow more grafted mango trees, or other suitable cash crops. Two of the farmers say that they plan their production so that varieties fit and meet the international demand for mangos and they think of how to target exporters for the long run.

All of the farmers are prepared to invest more in their production to receive a higher price, some of them mention that they want to invest in new seedlings and varieties and to expand the number of mango trees. Two of the farmers mention that they want more trees so that they can offer larger quantities and get better bargain power.

### *Transportation*

The farmer is generally the one who arranges the transportation of the mango to the market. Most of the mango is transported on bikes or carried to the local markets. Some of the farmers transport on motorbikes and one of them transport the mango through public means (matatu or a picki-picki). One of the farmers transport the mango in the family car. Two of the farmers

that were visited transported the mango by donkeys due to bad roads. The mango is kept in sacks and/or baskets during the transportation, in some cases the farmers transport the mango in boxes or used cans. The fruit is mostly transported the day after harvest; three farmers keep the fruit between three to five days before transporting it to the market.

### *Collaboration*

*“In the area collaborating is good to encourage one another – and people just don’t stick to one cash crop. It is easier to succeed with farming by diversifying the production, like combining mango production with bananas, pawpaw, and pineapples for example” (Pers. Com., Farmer 12, 2011).*

Except for two of the farmers that do not collaborate with anyone - except the family, the farmers are collaborating with other farmers in the community. Half of the farmers are part of Common Interest Groups (CIGs) or marketing groups (bananas, mangos, beekeeping and dairy). All of the farmers agree that the collaborations provide them with information, training and experts. Collaborations can also give funds, mass production, continuous supply, principles for a better production, to learn and get inspired by other farmers and efficiency. The largest producer in this study is part of collaborations to look for new markets and to get the best prices.

*“The inputs are difficult to get and handle and I wish to be connected with a partner to ease this worry” (Pers. Com., Farmer 9, 2011).* Except from collaborating with the closest community, through CIGs, women groups, and marketing groups, the farmers are collaborating with different organizations, all of them collaborate with the Vi Agroforestry and SCC and almost all of them collaborates with the Ministry of Agriculture. Five of the farmers are collaborating with the HCDA, KENFAP, and Maseno University. Further, one of the farmers where collaborating with traders. Most of the farmers trust their collaborating partners, until something happens as almost all of them add. Some of the farmers think that they will collaborate with traders when they produce a larger quantity of mangos. One of the farmers that is involved in a mango marketing group of 35 growers explain that today the group has 615 trees and 20 farmers that are currently prepared to start growing trees and join the group. By October this year the group will have reached over 1000 trees altogether

*“By collaborations the farmer can stabilize the market and by having more trees and fruits also the transportation and sorting gets easier” (Pers. Com., Farmer 8, 2011).* Collaborations have a positive value and effects for the farmers. Collaborations can provide connections and open up for more markets than just the local, encourage the farmers to grow more fruit, provide knowledge, can help getting assistance, get marketing knowledge, useful tips and hints, gives a better marketing position, get a better position towards the middlemen, and receive better profit.

The farmers find the disadvantages connected to collaborations to be distrust (if collaborating with the wrong people), and state that if someone does not live up to his or her share of the collaboration by being unfaithful the whole group can suffer and this can create ‘bad participation’. Some of the farmers’ experiences are that some collaborators are not coexistent with the group and leave after a short while. The farmers find the advantages greater than the disadvantages of collaborating.

### *Profit*

All of the farmers agree on that mango is very profitable, suitable for the area, and can bring a larger income for the farmer. Mango production does not require too much work either and is easy to grow. The region also have two seasons, which is an advantage compared to the rest of Kenya.

## 5.2 Vi Agroforestry 's Field Officers' (FOs') perspective

In the following section the result from the interviews with FOs at the Vi Agroforestry is presented. The FOs were interviewed individually but the results were gathered and structured into sections after topic (*italic font*). The FOs are promised anonymity to their statements and that is the reason why they are listed from A to F when quoted.

### *Mango production*

Mango is primarily grown because it is a good cash crop and income generating but also for family consumption. It is a good supplement in food for the household and is grown for nutrient purpose. Another motive for the farmers to grow mango is that the trees improve the microclimate and conserves moisture in the ground. Mango is drought resistant and can generate income even during dry season. Fruit trees can also be seen as prestigious and give the farmer's status.

Mango production is rarely the only source of income for the farmers. It is combined with other crops and husbandry. Vegetables, maize, cassava, peanuts, beans, soya beans, and other fruits like bananas, pawpaw, and pineapple are usually combined with mango production. Husbandry is common, mostly poultry, cows, and goats. Some farmers have dairy production, both dairy cows and dairy goats are occurring.

### *The mango market*

The primary market for most farmers is the nearest local market due to low levels of production. The most common alternative is to sell the mango at the farm, either to consumers like community members and neighbors or to traders, retailers, and middlemen. A few farmers target larger urban markets like the ones in Kisumu. The indigenous mango and the improved mango are sold at different prices and markets. The indigenous variety is rarely taken to the market but mostly consumed by the family and the neighbors whereas the improved mango often is sold at the market.

To whom the mango is sold depends on what price that is offered but most farmers sell to whomever that wants to buy mango and can pay for it. The farmers do not choose their customers in general. Some farmers do have identified buyers and it is beneficial to stick to a good buyer. In those cases there is often a mutual understanding between the seller and the buyer. Collective identification of buyers is also beneficial for the farmers. A number of farmers join common interest groups (CIGs), do collective marketing, and bulking to get a better position in negotiations.

The majority of the mango is sold as fresh fruit or used for own consumption. The farmers do not have storage facilities but some of them store the fruit in their houses until it is ripen. Some farmers bulk for up to a week to increase the quantity but few have the possibility to do so. The need for storage facilities is low at the moment due to that all produced mango is consumed and most of it is sold immediately after harvest.

Value-addition is currently not performed by the farmers to a large extent but there are opportunities to do so in the future. The farmers lack the capacity to invest, which is an obstacle as well as the lack of electricity. Most farmers cannot afford to buy machines and equipment that is necessary for value-addition and the production is still too low to make such investments profitable. Collaborations increase the possibilities for value-addition. All of the FOs agree on that the farmers should come together, identify good buyers, and do marketing collectively.

There are different kinds of value-addition that are more or less developed. Sorting and grading of mango according to size and quality is an example of simple value-addition that could increase the income for farmers without investments. Transportation is another form of value-addition; the prices at the markets are higher than the farm-gate prices. Not all farmers can manage to pay for transportation to the market though. Most farmers can not afford to arrange proper packaging of the fruit either.

Processed products like juice is the most demanding form of value-addition for the farmer. Electricity is needed as well as the capacity to buy a blending machine and arrange cold storage. When it comes to processed products it is also essential to identify specific customers on beforehand. The farmers are aware of what the customers want. The grafted mangos are mostly demanded, the grafted trees produce high quality and big fruits with low fiber content. Some FOs claim that many customers want organically grown fruit.

### *Wastage*

How much mango that is wasted at the farm depends on the farm management. Mismanagement leads to increased wastage. Drought also causes waste due to that the fruits fall off when it is too dry. Poor methods of harvesting also cause wastage as well as lack of control of the trees. The local mangos are wasted to a much larger extent than the grafted ones; the waste of improved mango at the farm is very low. Some of the FOs considers wastage to be a minor problem.

When it comes to wastage during transportation it is highly depending on what kind of means of transportation that are used. Transport with donkeys or bicycles for instance cause higher waste. It is very beneficial for the farmers to arrange transports together, that way they can rent a pick-up or some other kind of vehicle, which reduces damage of the fruits to a great extent. Fresh mangos are normally not damaged to a high degree but the ripen ones are. Ripened fruits easily get squeezed. The quantities that are transported are often small, which reduces the losses during transportation.

Large quantities are wasted at the market when the supply is high but these losses are not affecting the farmers due to that they already have sold the fruit. None of the FOs know how much that is wasted at the farm, during transportation, and at the market. They do not know the exact numbers; they can only estimate the amounts. The wastage at the farm is commonly used for home consumption and rotten mango is often used as manure. Composting and recycling is promoted by the Vi Agroforestry. Damaged fruit can also be used to feed animals. Some farmers collect seeds from wasted fruit at the market, which is a problem due to that those seeds might be infected with diseases.

To minimize wastage it is primarily important to improve the management at the farms. Pesticides, fungicides, and manure should be used in a proper way. It is important to keep the trees small enough to make it possible to spray them. The farmers are informed how to

minimize wastage and most of them are interested in improving the management and minimize wastage. Fertilizers and pesticides are expensive though and not all farmers can afford to buy them. Value-addition is a good way to avoid waste as well as collective marketing, which is very effective. It is beneficial to use damaged mango for juice. An important factor is also to find the market before the fruits are ready. When it is time for harvesting the farmers should already know who their customers are. It is significant to network and to connect the farmers with the right markets. It is often not beneficial to sell at the closest market due to that all farmers in an area harvest at the same time.

### *Pricing*

The price depends on demand and supply at the market. The supply of mango in the Nyanza Province is low, which means that there are good opportunities to get high prices. It is also possible to grow mango in off-season in Nyanza, which is advantageous to receive high prices. The price of improved mango is higher than the price of indigenous mango. In most cases the farmer according to a market comparison sets the price. Prices at small local markets are lower than the prices at bigger urban markets. The prices at the market are negotiated between seller and buyer though. There is no determined system for price setting.

The Vi Agroforestry trains the farmers to do farming as a business and the currently most common method of setting prices is a problem due to that the prices are set without consideration of how much that is invested in the production. To make the farming profitable it is essential to set the prices according to production costs. The farmers need to calculate, which rarely is done today, the farmers do not know how much they have invested. They need to make sure that they do not sell below break-even price.

The farmers are trained by the Vi Agroforestry in doing market research but few of them know how to access information. Common ways of getting price information are from the market, by radio, newspapers, cell phones, from traders, and from marketing boards. The marketing boards are set up by people in Vi Agroforestry marketing groups and provide current prices at different markets, the marketing boards are only available in some areas. The information in newspapers and on the radio is collected and provided by an organization called Kenya Agriculture Community Exchange (KACE) and KENFAP.

There are possibilities to negotiate about the price and the price is an agreement between seller and buyer. Many farmers do not negotiate and thus they sell their products at very low prices. The farmers need to be enlightened and educated in how to do marketing.

Arranged contracts for selling mango are currently not used due to that the farmers are small-scale and the production in the area still is low. There is more of mutual understanding and trust between the farmers and their customers. The mutual understanding usually includes quantities and prices. HCDA promotes contract farming for the farmers and wants them to sign agreements on quantity, time, and quality. Contract farming is not yet widespread in the area though. Some of the FOs considers HCDA to be too big to help the small-scale farmers in the area because they require too large quantities. Contracts are a possibility for the farmers in the long run though.

### *Possibilities*

The demand is high and there are few mango growers in the area, which means that the supply is low. Most mangos sold at the markets in Nyanza today are grown in Eastern Kenya, the supply of locally grown mango is not enough. This is a great opportunity for the mango

farmers in the area. For the local markets selling fresh fruit is the largest opportunity. The Nyanza province has very good potential to increase the production of mango and the conditions are very beneficial. It is possible to harvest mango twice a year in the area, which is an additional advantage.

The opportunities to receive higher prices in other markets than the local are not yet exploited. The supermarkets are an opportunity but selling to them requires that the farmers sign a contract of supply. The export market could also be an opportunity. There will soon be a new international airport in Kisumu and the airport in Eldoret is an opportunity as well. The FOs think that the new airport will open up the export market. Fruit grown for export need to be organically produced and large quantities are needed. Many farmers look forward to exporting their mango from Kisumu international airport. To manage selling mango at larger markets it is necessary for the farmers to collaborate, for instance in CIGs. Cold storages and packaging are also factors that need to be managed to make exporting possible. There are also possibilities to sell value-added products like juice and dried mango. The demand for juices around big urban centers like Kisumu is growing.

### *Export*

There is almost no export of mango from the area today, very few producers sell to export markets. Most farmers do not know about the opportunities. There are opportunities of exporting fruits though but not yet due to low production and supply. To manage exporting, the farmers need to be linked with organizations and companies. There are big challenges that must be overcome to succeed in exporting mango. One of them is to achieve that certain qualities and quantities that are required and to make sure that there is supply all year round. Use of chemicals is another difficulty; the export market demands a chemical free production. Quality is key to do well in exporting. Different varieties are suitable for different purposes and markets. Only some of the varieties are appropriate for export.

Most FOs think that export will be an option in five to seven years. One of the FOs says that the production so far is undeveloped in the area, which is illustrated by the following quote; *“We have to start somewhere. Let the mango tree be there, if it's there, let us eat, if we can eat, look for money. From there we can look for new markets”* (Pers. Com., FO A, 2011).

The possibility of creating a meeting point for refrigerators and packaging at the airport is good. The farmers themselves lack the capacity to make investments in facilities for cold storage and packaging.

### *Cell phones*

Most farmers today have cell phones to receive market and price information, to identify buyers, and for contacts. There are many advantages of using cell phones, the farmers get information and can communicate easier. Communicating through phone is also time saving and reduces transportation costs. It is good to find out in advance what quantities that are demanded, that way the farmers can harvest only the needed amount.

There might be disadvantages of using cell phones though. The farmers can be fooled into selling at a lower price than the actual price at the market. Increased communication also causes that prices tend to be uniform in different markets. Other disadvantages that the farmers face are problems with miscommunication, network problems, and lack of power at the farms.

The FOs use cell phone services to communicate with colleagues and farmers, to get information and to access Internet. There are many advantages, it is cheap, time saving, and convenient to use cell phones. There might be misuse though and there are problems with lying and cheating. Lack of charging possibilities, lack of credit, and network problems are other difficulties.

### *Quality*

The quality of the mango is very important and the farmers are aware of that. The management at the farm and the transportation to the market are critical factors to keep a high quality. Mismanagement leads to low quality. Manure and pesticides are important to keep high quality but many farmers cannot afford to buy pesticides. If they use collective marketing they could buy such things together. High quality mango gives the farmer competitive advantages and higher prices. Value-addition like washing and good packaging of the mango is a way to keep the quality high. The choice of marketing strategy is essential and the word of mouth is also very important, the message of good or bad quality is spread fast.

Storage facilities are also significant to maintain the quality. Storages are expensive to build though and individual farmers cannot afford to invest in them. CIGs or other kinds of collaborations can make it possible for the farmers to invest together. If the farmers take part in collaborations they can also manage to invest in better means of transportation, they can for instance hire a pick-up or a truck. Most farmers can only access storages of low quality that are not specialized for the purpose of storing mango. The majority stores the mango in their houses. Low quality storing can be a problem and cause damages to the mango and the farmers need to be trained in the importance of good storing. The need for storages is not critical at the moment due to low production and quantities but when the production increases and the farmers expand there will be a need. Some farmers do not store mango at all, they transport the fruit to the market immediately after harvest. The FOs thinks that it is possible to arrange storages if farmers that face the same challenges and produce the same commodity go together, storages are long-term investments. The lack of power is a problem it and prevents farmers from the possibility to build cold stores. To improve the infrastructure will take time.

### *Production planning*

The farmers are trained by the Vi Agroforestry to use one year production plans and most farmers do perform one year planning (from preparation to harvest). Marketing is also included in the planning. The implementation of the plans is a problem though, many farmers do not stick to their plans, and this is a reason why it would be good to use contracts. On group level some of the farmers do have long term plans as well. The groups should meet once a year to make follow ups of the yearly planning. The farmers are prepared to invest in their production, both for the short run and the long run. To buy fertilizer, seed, and to plant more trees are examples of investments. Farmers that have saved more money and has a larger financial capacity might invest in small-scale irrigation systems.

### *Marketing*

The FOs assists the farmers in finding markets and links them to buyers. The farmers need to understand that it is not profitable for them to stick to a static price. They know that they need to take their products to the market and get money in return but they do not have any deeper understanding of marketing. The general knowledge of marketing among farmers is low. Many of them are starting to get more involved with marketing and they want to find out how to get more information and how to get in contact with organizations that do marketing. The larger producers are more involved than the smaller ones and some of the farmers are more

business minded than others. According to one of the FOs, marketing is not the biggest challenge at the moment, currently it is more important to focus on improving the production and quality.

All the FOs agree on that the best marketing strategy for the small-scale mango farmers is to collaborate and do collective marketing. Farmers that produce the same commodity should go together, identify the challenges and face them together. To sell the low quantities individually is not profitable for the farmers. The farmers also need help from marketing organizations. Improvements of infrastructure such as the power network, the roads, and communication facilities are also needed to develop the marketing further, the government can only perform these improvements.

### *Transportation*

Mango is generally packed in baskets and transported by different means like donkeys, carrying on the head, bicycles, and motorbikes. Very few use pick-ups, trucks, or cars to transport mango to the market. The transports are arranged either by the farmers or by traders that buy mango at the farms and take it to the market. The transports are generally carried out early in the mornings. Transports are arranged together to a very small extent, it would be profitable for the farmers to transport together, which would decrease the transportation costs. The FOs agree on that more farmers will arrange transports together in the future. The mangos are transported either fresh or ripen. The ripened ones are more likely to be damaged during transportation.

If the farmers go together their fruit can be collected and transported by organizations like the HCDA. Collective transports can also make it possible for the farmers to hire a vehicle together, which is cost effective and decrease the risk of damaged fruits. It is not profitable and often not possible for individual farmers to hire a vehicle individually. All FOs agree on that it is necessary for the farmers to go together to succeed, that way they can reduce time and costs. The railway to Nairobi is an option as well as the new airport. Transportation is a big challenge.

### *Collaboration*

The extent of existing collaborations among farmers and between farmers and organization is varying in different regions of the Nyanza Province. In some regions there are currently no collaborations at all. Some farmers collaborate with traders and inform them when the mangos are ready for harvesting. Collaborations between farmers and traders is not always profitable for the farmers due to that the traders are only interested in buying mango as cheap as possible. Middlemen generally reduce profit for the farmers. There is some collaboration with both governmental and nongovernmental organizations. The Vi Agroforestry advice the farmers whom to collaborate with. Collaboration between farmers is more widespread in Nyanza when it comes to other commodities than mango due to that there are relatively few mango producers in the area. The interest to take part in collaboration is great among the farmers. There is also great interest in linkage to organizations.

Many farmers have realized that they need to go together and the demand for arranging cooperatives often comes from the farmers themselves. They have started to realize that through collaborations they can cut costs and save money but also that they can access more information and knowledge. Collaborations will not work if they are not the farmers' own choice but if it is done properly the profit can be maximized. Mistrust can be a big problem when collaborating. Another problem is farmers within a group that do not perform well,



which may cause trouble for the other farmers. Some farmers have very high expectations on the collaboration and want immediate profit; they are often self-centered and have difficulties to work in a group.

#### *Middlemen*

Many farmers are dependent on organizations like the Vi Agroforestry, KENFAP, HCDA, and the Ministry of Agriculture, few of the farmers are dependent on other stakeholders like traders. Trust is important, whether they trust each other and external organizations or not is individual.

#### *Profit*

All FOs agree on that it is highly profitable to grow mango. To increase the income the production and management need to be improved and the number of trees must be expanded. It is worth investing in mango production. Mango does well even in dry areas, which is beneficial for the Nyanza Province. Socio cultural attitudes are still a challenge for starting up groups and make the farmers do farming as a business.

### 5.3 The Vi Agroforestry 's perspective

The following section reveals the perspective from the Vi Agroforestry 's office in Kisumu.

#### *The work of the Vi Agroforestry*

The Vi Agroforestry (Vi) was founded in 1983 in Kitale and was very small-scale from the start. From the beginning it was implemented through a missionary organization that started to plant trees. Today the focus has shifted from tree planting to agroforestry and advisory services. In the beginning the Vi distributed tree seedlings but today they give farmers starter tree seeds instead, the farmers are trained on the whole chain from seed collection to producing products and offer them at the market themselves. The work in the Kisumu area started in 2003.

It is hard to say how many farmers that have taken part in the Vi projects. The Vi's work is divided into different funding periods and the current period is between 2009-2011. About 200,000 farmers have been involved during this funding period of which around 50,000 in Kisumu. Some of these were involved before the funding period and some will still be involved after the period as the programme normally goes on in an area for about six years. The percentage of farmers that quit the projects is low.

The first criterion when a new area is targeted is that the area must be located in the Lake Victoria basin. There are many factors that determine which area the Vi goes into such as level of erosion, production levels, poverty levels, how vulnerable the people are, and extent of HIV/AIDS. Areas where other NGO's are already located and areas that are well functioning are not chosen. When an area is chosen a FO is given the responsibility. The FO contacts leaders in the area and holds information meetings for the community. The FO also finds out if there are any existing collaborations or groups in the area and contacts them. An action plan and a strategic plan are performed for every group. The interests of the groups decide what kind of trainings the group is given from the Vi.

#### *Goals*

Different goals are set at different levels. The FO has one goal, and there is one goal for every division, one goal for every project, and one goal for the program. The goals are more

detailed on the lower levels. The goals for the program include how many farmers to participate, how many that shall receive a higher standard of living, and how many trees that are to be planted etcetera. The goals for the project include factors like the number of tree nurseries that should be obtained, the number of schools that the Vi should work with, education in climate change, and sustainable land use management practices. There are also goals concerning how many farmers that should be capacity built and how many farmers that should implement the practices that they have learnt. Some of the goals are achieved and some are not. Follow-ups are reported to the division level. There are deadlines for the projects often on semi-annual and annual targets. There is also one overall target for the funding period.

### *Project results*

The projects generate a higher standard of living for the farmers. Their production increases, they start to plan, and become more educated. They start saving money in the Village Savings and Loans projects, which leads to that they can start to make investments. Village Savings and Loans started in 2007 and is one of the most frequently demanded activities today. There are more trees on the farms and the farmers are provided with more long-term products and perspectives.

### *Difficulties*

There are many difficulties that the Vi face in their work. One difficulty is the farmers' low level of education from the start. They also lack in planning, which they are not used to do. The farms are also generally very small in Kenya and the farmers often do not think that they have any room for planting trees. This problem has decreased though, due to that many farmers have seen their neighbors and other people succeed in planting trees. Another problem is that the farmers lack financial resources and thus cannot afford essential investments. The relation between men and women might be a problem as well, the men decide and the women perform the work. The men usually work outside the farm because they do not consider agriculture to be an appropriate sector for them. It is essential that both women and men participate in the trainings. Furthermore there are lots of social problems that obstruct the projects.

### *Mango production*

Vi primarily promotes agroforestry plants. Mango is not an agroforestry tree - it cannot be planted together with other crops but Vi promotes it due to nutritional reasons. The people need the vitamins and the nutrition that mango contains. Many of the farmers only eat maize and many children are mal-nourished. Fruit trees are a very important factor to decrease that problem. The Vi has promoted mango since the beginning. An additional benefit of growing mango is that the harvest season is during the dry season when the fruits really are needed. Further, mango trees are not labor intensive in contrast to many other seasonal crops.

The problem with fruit trees is that all the fruits are ready for harvest at the same time, which makes it difficult to take care of all produce. Value-addition might be a solution to that problem. Other problems with mango are the short season and that mango shades. The local mango does not provide fruit until after ten years but the grafted ones bear fruit after two to three years. Information of benefits and detriments of mango production is provided to the farmers by FOs when they show interest for growing mango.

### *Marketing*

It is recommended by the Vi Agroforestry that farmers go together and agree on growing and exploring one crop. When they have decided they should start looking for markets and possibilities for transportation. The farmers are recommended to look for markets together and to market the products together. Due to the small size of the farms and the low production it is not profitable to do it individually, the transport costs become too high. There are more valuable strategies such as value-addition but to succeed in that the farmers need to be at a certain level in their production. If they have passed that production phase it is possible to go together in even larger groups and find better and larger markets. There may be possibilities for export in those cases.

The Vi collaborates with many different organizations. They collaborate with the government in every division but also with more specific organizations like Heifer and KARI. Heifer give away heifers to farmers and the farmer in his turn must give away the calf to another family, the Vi recommend what crops to grow to feed the animals. The KARI does research. The Vi also collaborates with many local organizations.

Vi recommend the farmer to look beyond the local village market, the first step in that direction is often to take the fruit to Kisumu. The Vi also recommends them to look beyond the middlemen. The farmers are told to look at the market information boards provided by the organization to get price information from other markets than the closest one. There is no point in selling to Tanzania or Uganda. The export market is although an option. There is a much larger market for processed mango and Vi promotes alternative markets.

The FOs' knowledge and involvement is very individual and depend on their personal interest. There should be FOs with different background in every division, if one FO lack in knowledge in an area he or she should be able to ask a colleague for advice. All FOs are educated in marketing and value-addition to some extent. If the groups are working well and are at a higher level, more effort can be put into marketing for the officer and the group. There should be someone specialized in farm enterprise development and marketing in every office. The position is currently vacant in Kisumu though.

The farmers' knowledge of marketing is low in general. They know that it is possible to sell in other markets than the one in the village but often they cannot afford transports and they lack knowledge of how profitable it can be. The knowledge of marketing among farmers is very individual. Vi promotes value-addition out of marketing purposes and as a mean to maintain the quality of the fruit for the farmers themselves. Jam, juice, and dried mangos are products that may have a market in Kenya but it needs to be done the right way. Dried mango is not very widespread in Kenya. Above the value-addition process, the farmers also need to have the possibility to pack the products and get them into a supermarket.

### *Export*

The possibilities for exporting will increase when the new airport is ready, although this requires someone, probably a middleman, to collect and manage the export of mango. The airports' importance for the farmers may increase in the long run. There is already an international airport in Nairobi, which means that export is already possible. The export might increase due to the new airport in the future, maybe in five to ten years. In the future the production will increase and there will be a greater variety of products due to value-addition.

## 5.4 Experts' perspective

The following sections (5.4.1-5.4.5) show the results from the interviews with the different expert organizations working with production and mostly marketing of horticultural products in Kenya.

### 5.4.1 Horticultural Crops Development Authority (HCDA)

HCDA organizes farmers that grow the same kind of crops into marketing groups. They also provide the farmers with technical knowledge and new technologies such as grafted mangos. HCDA teach the farmers to produce a competitive product both for the market inside Kenya and outside. Today, mango is only grown for local consumption. The local mango can only be sold at local markets. HCDA has introduced the improved mango that is demanded at larger markets, for the farmers. The establishment of improved mango is currently ongoing. The farmers are starting to see the value of improved varieties.

HCDA has been present in the region since the 1970s. Even though, the horticultural production has not really started off yet. Currently, data about the farmers is being documented; the HCDA is trying to find out where the farmers are located and what they are growing. This process is called Mango Farming Mapping. About 1,000 farmers have planted improved mango so far. The mapping is important to manage linkage between buyers and sellers. The buyers need to know where to find what. The HCDA mobilize the production and perform linkage between sellers and buyers, which hopefully results in contract farming.

To achieve a globally competitive horticultural sector in Kenya HCDA has qualified technical officers in the field. The officers are educated and regularly take courses and are updated on market standard requirements. HCDA was created to address things that the Ministry of Agriculture cannot identify. An important task for HCDA is to identify valuable crops and encourage farmers to grow them but also to help the farmers deal with regulations.

#### *Marketing*

The Japanese government has supplied Kenya with cold stores and insulated trucks in some areas, which is very important for quality assurance. Thanks to this HCDA can assist the farmers with storage and transport. The fruit is picked up and paid at the farm gate, it is important for the farmers to know that the quality is accepted at the farm. So far, the cold stores and insulated trucks can only be provided in the Eastern and Central provinces where the production is higher than in Nyanza. The revenue from the existing facilities will finance new cold stores in the future. Farmers are responding and asking for cold stores faster than the revenue is collected though.

Currently there are no cold stores or insulated trucks in the area around Kisumu but the need is coming as the production increases. Large investments are needed to come up with the same structures in Nyanza as in Eastern and Central. HCDA are waiting for respond from the government. One problem though is that the targeted people are not always willing to try new things, they are afraid of change. There need to be an interest among the farmers if cold stores are to be arranged. The farmers need help to become competitive but they need to see the value of improvements to understand it. Charcoal coolers are a good alternative that is not depending on electricity. A room with charcoal walls is built and water is put between the walls. Charcoal coolers are very effective and do not require any electricity.

### *Marketing challenges*

The biggest challenge is that the farmers are unorganized. There are no strong marketing groups. The farmers are still cheated by middlemen, the middlemen sometimes do not show up or do not pay the agreed price. The middlemen are corrupted. This is why HCDA encourage contract farming. HCDA can teach the farmers how to sign contracts. The farmers are not charged for HCDA's services. The only thing the farmers need to pay is an export fee of 5000 KES if they want to export their products. HCDA trains farmers in the whole chain from production to market. They collaborate with the Ministry of Agriculture and the Vi Agroforestry and they want to collaborate with other stakeholders as well. It is up to the Vi to approach HCDA.

To overcome the marketing challenges farmer groups are trained in group dynamics and leadership to keep the groups together. All members of a group must see the benefits of participating. If the farmers do not see the benefits, the groups will be split. Group empowerment is very important. The Ministry of Agriculture form CIG that are not performing well, very few farmers in a group actually do what they are suppose to do. The groups often expect to receive help or money without performing in return. "*They are like a child in school that goes to class but is not listening or taking notes*" (Pers. Com., HCDA, 2011).

Gender mainstreaming is important and is one part of the mapping. The women are the ones who perform the work at the farms but generally they never see the money from the farming due to that the money is spent by the men. This leads to that the women are not motivated to work on their family farms, which is a big problem.

### *Marketing strategy*

The farmers should form groups, which they are encouraged to do. Currently there are not many groups. Today buyers mostly come and buy fruit at farm gates, some farmers transport fruit to the local market. It is essential to work on the quality of fruit, which includes flowering, fruit setting, and harvesting. Many farmers harvest too early, which is a quality aspect, and not good for the taste. Nyanza is beneficial for mango production due to that the season is earlier than in other parts of Kenya. There are also two seasons in the region. The potential in the area is very good. A mango tree must be stressed by drought for two weeks to start flowering.

### *Value-addition*

HCDA encourages value-addition of mango. Some farmers do small-scale value-addition in their homes. The Great Lakes University process mango into juice and sell to the students. Value-addition needs to be promoted to the farmers. Last year HCDA held a mango faire, which resulted in increased production and a higher demand for mango plants. In five years from now the production in the area will be good. Mango can do well in any type of soil.

### *Opportunities*

There are vast opportunities. Most of the mango that is consumed in Nyanza comes from other regions; the production in this area is not enough. The opportunities to grow mango in the area are good and it is possible to sell to the local market as well as the export market. HCDA has the knowledge of how to do it. Some areas in Kenya are too cold for mango production, which is an advantage for the producers in Nyanza.

The international airport that currently is under construction in Kisumu will provide new opportunities for the farmers. The situation today is that most exporters find Kisumu to be too far away from the international airport in Nairobi. The new airport in Kisumu will create a new situation and many exporters and buyers will be willing to collect fruit in the area. The number of organized groups that are marketing together both inside and outside Kenya will increase in the future.

#### 5.4.2 Field Officer (FO) from Ministry of Agriculture

FOs from Ministry of Agriculture teach and train the farmers within three areas; production, harvesting, and marketing. The production part includes technologies and information about different varieties. The marketing part is divided into food crops, cash crops, and value-addition. The target is to make the farmers produce enough for their family need of food and income. Another part of the FOs' work is to perform market surveys and communicate to the farmers what crops to produce. They also train the farmers to take their products to a good market in the right time. To perform the market surveys the FOs go to the market and pretend to be a buyer. After that they provide the farmers with information and assist them with transports to the market. The Ministry of Agriculture works with all farmers in the area. The ministry of Agriculture supplies farmers with market information, mostly through radio.

#### *Marketing opportunities and challenges*

The area and the climate is good for mango growing. The weather and the soil are suitable. Sandy soil is best for mango production. The farmers should be trained in the opportunity and importance of the new airport. The Ministry of Industries has held a meeting to inform the farmers about the airport. The farmers were told to be ready when the opportunity of export arises. The Ministry of Agriculture promotes export to the farmers. To meet the quality demands is the big problem.

According to the Field Officer one marketing problem is that the supply at the market occasionally is too high, which causes very low prices. Other challenges are timing, the weather, and transportation. The farmers should not grow their crops in places that are not accessible due to lack of infrastructure. Infrastructure is a major problem. The worst challenge of all though is middlemen. The middlemen buy products at very low prices at farm gates and sell at the market for the double or three double price.

Upgrading of roads is needed and it is ongoing in the area. The Ministry of Agriculture has a vision of that all farmers should receive transports in 2030. The farmers are recommended to be in groups, if they are the Ministry of Agriculture can provide transports with pick-ups. Transports like that are currently arranged in the area but only for rice.

#### *Marketing strategy*

The best strategy is to transfer the market to the locality and arrange small local markets. That way the buyers can come from town and buy the products. The prices will be higher than at farm gates.

#### *Value-addition*

One possibility is to let the mango ripe and sell them ripen for juice processing. The peels that are left over from juice squeezing can be dried and eaten as vegetables. The farmers should also be learned not to throw away the seeds. Instead they should start their own tree nurseries. In the future mango will be exported and the extent of value-addition will increase, mostly in juice.

### 5.4.3 Ministry of Cooperative Development and Marketing

The Ministry of Cooperative Development and Marketing develop cooperative policies and legalizations, register cooperatives, implement cooperative policies, educates and trains cooperatives, and develops marketing for value-addition. The ministry can help a group of farmers to form a cooperative and link the cooperative to other organizations or market groups. The minimum to start up a cooperative is to have ten members; in the initial phase the ministry help the new cooperative with realistic work plans to achieve the members goals, to prepare technical staff, and tech good governance. The Ministry of Cooperative Development and Marketing propagates for new cooperatives and not CIGs for example, there are untapped potentials being formed as a cooperative. The marketing department within the ministry helps and informs the cooperatives with marketing linkage.

Once the marketing cooperative is registered, which takes about three months, the Ministry of Cooperative Development and Marketing helps the cooperatives to find good marketing centers and intervene so that the cooperative get the best support possible. The ministry also helps out with the bylaws and registers them correctly and makes sure that it is the right quantity per member. The rules are discussed and with all members and through training the ministry stress all the members that all their products that goes to the market has to go through the cooperative. They also train and educate the members of remedies for those that do not follow the bylaws. The bylaws are difficult to implement though and most of the education and training that the ministry perform with the members and management teams is about how to monitor and follow the bylaws. In the training it is also important to stress the fact that nothing is allowed outside the budget, in the start up the ministry follows the management monthly and supervise the physically, to avoid corruption. The ministry and the members have power if the management or the cooperative does not work, they can dissolve the cooperative and take the issue to court. This happens and is good that there are consequences to mismanagement.

#### *Marketing*

The ministry has a few horticultural farmers in the area; there is no horticultural cooperative that the office works with. Today the region mostly imports the mango for consumption. Most of the farmers in the region work in different groups like CIGs, not cooperatives. By forming a cooperative it is easier to facilitate good marketing. Through the ministry a cooperative is linked with other cooperatives, institutions and organizations to reach a better market.

There are different ministries and many different stakeholders that can help the farmers to become better at marketing. There are other registration authorities for forming a cooperative than a group - ministry of cooperative development and marketing and the ministry of agriculture. When forming a group there are no laws that need to be implemented or followed. NGOs are usually helping out forming groups together with the ministry of agriculture rather than cooperatives. A cooperative has much better marketing capacity than a CIG.

A good marketing strategy for small-scale mango farmers is to form cooperatives that can be linked to markets other than the very local market, like supermarkets. Today when selling fruit individually and being part of groups the farmers just cheat themselves. One large cooperative society can better supply the market than many small entities. The cooperative also attacks the middlemen issue, the middlemen commission and throwaway prices disappears and the farmers make more money for their produce. By being linked the cooperative can be more specific and focus their production towards other businesses, like a factory for example. A mango cooperative could start up a small processing plant to add value

to their products. The farmers could also be trained in marketing and value-addition better. The challenges of value-addition are the lack of finance, storage facilities and the strong competition of attractive fruits.

#### *Improved production*

Usually when the production develops and improves there will be more cooperatives. When producing a lot it is important to have good marketing to be able to sell outside the region. If there are no cooperatives there is a big risk of exploitation, so by forming cooperatives the farmers get more power and they can work together to attract companies rather than the opposite with large companies come and exploit the small-scale farmers. Cooperatives will not exploit the farmers.

When it is proper production the output increases and there are more marketing opportunities for the farmers and the incentives for forming cooperatives will probably grow. The new international airport in Kisumu will probably improve the number of horticultural cooperatives in the region. The new international airport is good for marketing but there are still many local opportunities, like making juice or producing fruit for Del Monte. The best option for the future is to form cooperatives and market the fruit together.

#### **5.4.4 Kenya National Federation of Agricultural Producers (KENFAP)**

KENFAP is working with management and governance issues for Kenyan small-scale farmers. In Kenya KENFAP work in 52 greater districts and with 53 commodities. KENFAP is arranged into farmers associations for particular crops like: tea, coffee and mango. In the Kisumu/Nyando area 1,500 farmer households are connected to KENFAP. All over Kenya there are about 1,8 million farmer households connected to them, and most of them are small-scale farmers.

#### *Marketing challenges*

According to KENFAP the major problem for the Kenyan small-scale farmers is marketing. KENFAP link farmers to markets and marketers and they also network farmers with different organizations. One current example that KENFAP are involved in is the linking of sorghum farmers to breweries. There are several marketing challenges for the small-scale farmers; small quantity of produce, the lacking transportation and bad roads, storage facilities and lack of organized farmers. So far, the farmers produce in small quantity. The farmers need to reach a larger market than small local ones to receive a higher price. To solve this the producers need to organize themselves into production groups so they can offer a larger quantity and thereby reach a larger market. By contract farming the production can be developed into better production, not just only rain fed production (which is most common in the region today).

Today the means of transportation and the roads are bad. The transportation has many delays. The cost for ordering a truck is high also driver and reparation costs. The distance between the farmer and the consumer is far and this creates difficulties to reach the customers and/or markets in time. Kenfap is trying to organize the transportation situation for the farmers. The best option is to transport the mango in lorries or trucks, but due to high costs and low production this option is rarely used. KENFAP wants to help and find farmer friendly transporters and provide the contacts of good transporters to the farmers. If such a network is established the farmers can organize transportation together. Drivers that are farmer friendly and understand the full value chain of perishable goods is sought for and KENFAP is



currently teaching drivers about the farmers' reality so that the drivers can respond to the farmers' issues better. The time for transportation also need to be shortened to a chain without delays. One alternative is that the CIGs own the vehicles. The transportation of the products is an issue that best can be solved through contract farming. Storage is another problem for the farmers. Mango is a perishable product and need proper storage facilities and roads.

Further the farmers also lack market information and get confused or often cheated with wrong prices, especially when they sell at the farm gate. The farmers need to be updated at all times. To provide information to Kenyan farmers KENFAP interview farmers and experts and conclude the findings in a radio program to provide facts to more farmers and they operate a daily radio program where farmers are provided with current market information. KENFAP also provides individual farmers with market information if requested. By contract farming the farmer expenses can be reduced by agreeing on one that is responsible for transport and bulking the produce to market centers.

#### *Good marketing strategy for small-scale mango farmers*

Good marketing strategies for the farmers are to organize themselves. The farmers need to be put into groups like CIGs or production groups that can be trained. Also the groups can be arranged into committees that can start up umbrella marketing groups. It is easier to get the accurate information by being part of groups, which is key for the farmers and KENFAP tries to link the farmers with the market; but the farmers need to be sustainable and survive without KENFAP. Another option is to have cold rooms for good storage, as HCDA does.

Further contract farming will help farmers to get market info, better transportation and a stronger negotiating power (through knowledge and bulking and larger quantities). KENFAP also does training in contract farming where they train contract negotiating; in the eastern part of Kenya contract farming has been developed and is one reason to their successful farming. The KENFAP representatives conclude that contract farming also should be able to succeed here in the western part of Kenya. KENFAP also facilitates contracts between farmers and buyers.

#### *Value-addition*

According to KENFAP value-addition is a very important factor when it comes to marketing. By value-addition the shelf life of the mango can be prolonged and provide for more profits and a larger income for the producer. Today the value-addition is on a basic level where the mango is cleaned and sorted. The next step is to process the mango into juice. Kenfap is in collaboration with the local universities where they produce mango juice for the students. The farmers that have learned about value-addition do it, although it is little value-addition in this area, sometimes not even the basic. One factor that the value-addition hasn't come is because of the low production, which makes it hard to plan.

#### *The mango farmers' opportunities*

One opportunity is the local market. The Nyanza region is a net importer of horticultural products. Most consumed mango in the region comes from the eastern or the coastal part of the country. The second opportunity is the international airport that opens up in June. The third opportunity is farmer groups; by grouping the farmer can get a better negotiating position at the markets. A fourth opportunity is that there are labors in the area. The fifth opportunity is the availability of "good service providers" like the Vi Agroforestry, KENFAP, Ministry of Agriculture, HCDA that all have good knowledge of the production.

The production has so far accelerated and now there are opportunities for farmers to see and learn from farmers that are already producing.

#### *The export market and the future*

The farmers need to be prepared to use new international airport in Kisumu, the farmers need to know what to produce and how to produce well to make use of the it. Today there are many farmers that do not know how to use or exploit the export opportunity. In ten years from now the regional mango production will be developed and the area will hold a mango association and have many players..

#### 5.4.5 Swedish International Development Cooperation Agency (Sida)

##### *The developed versus the underdeveloped mango production in Kenya.*

One important aspect in understanding why mango production is undeveloped in the Nyanza Province is the social setup and the local culture of the people. They have traditionally not been interested in growing fruit trees and have been resistant to new activities like growing mango. Also the men just think that the mango trees are trees and not a possible source of income. The consumption pattern is another important aspect in understanding the situation.

The Eastern and Central part of Kenya produces the most horticultural products and have better market infrastructure than the western part of Kenya like Nyanza. The big markets are located in Nairobi and Mombasa and in those areas there is more knowledge and information for the farmers. The people in these areas have been encouraged to grow trees by organizations like ICRAF and Tegemeo that has been campaigning high value trees. In the region they also have the knowledge of different varieties and technologies. The knowledge of growing fruit trees is not widespread in the area around Kisumu.

The coastal area also has close connections to the Arabic peninsula and is thereby more exposed to trade and have developed suitable production for trade. The coastal horticultural production in Kenya already began in the 40s but was commercialized during the 90s and since then it has developed.

#### *Prosperous business*

There are three big challenges for the farmers to achieve prosperous business in Kenya:

- The major challenge to make the farmers profitable is to change their mindset and make them become business minded. The farmers need to do their farming as a business to become profitable. At the moment the production is not commercial - the farmers need to be entrepreneurs.
- The second challenge is that there is a generation gap in the agricultural sector. Most of the farmers are old and have no incentives of being more commercial. The younger generation tends to move to urban areas to find a job there instead of doing farming. Today agriculture is mostly considered to be a retirement plan among most Kenyans, which need to be changed
- The third challenge is the lack of financial access. The farmers lack financial capacity to make investments in their production. Another financial problem is that the farmers do not have access to banks or ATMs and thus they cannot get cash to pay transports. The financial problems can be solved through 'Merry Go Round', Village Savings & Loans, or Mpesa.

The productivity is also an important factor for achieving prosperous business. To increase the productivity the farming systems and management of the mango trees must be attended. In productive areas fruit flies is a problem that needs to be prevented. Due to governance issues this is difficult to change.

One way to solve the cultural mindset, the generation gap, the financial difficulties, and the productivity problem could be to start up 'out grower schemes', where one investor/entrepreneur start up a production and help small-scale farmers to start up small production and buy their produce and provide them with necessary insecticides, fungicides and knowledge to succeed with their production. In Kenya the Sugar canes industry is built up this way. Through out grower schemes there is a necessary supply control, which makes it easier to sell the output to larger markets.

#### *Increased profitability*

Partnership and collaboration with other stakeholders is needed and is very beneficial to increase profitability. The farmers need someone to teach them, train them, and link them with others. They also need to be linked with services to access required chemicals and equipment. At an early stage it is most important that the farmers collaborate with each other to aggregate their produce. The critical part of collaborations is that there need to be trustworthiness in the whole process, especially in agribusiness.

#### *Lacking infrastructure*

Due to lacking infrastructure the farmers are forced to sell the products to small traders who in their turn sell larger traders who collect the fruits in pick-ups and take it to the market or sell it for processing. This is an inefficient marketing system and not beneficial for the small-scale farmers. High demand of the products brings infrastructure improvements.

For the farmers' water is vital to ensure that the crop produce at its maximum and is a very important part of the infrastructure. Transportation is another part that needs to be attended - better roads are required. Storage facilities are also needed to decrease waste and improve quality. If the farmers go together and the infrastructure is improved the farmers can take their products to the market themselves, which would be much more profitable for them.

#### *Export*

The opportunities for export are determined by demand, which is different for diverse products. The demand for products like juice, fresh fruit, dried fruit, and fruit dust can differ a lot. Mangos are seasonal and to provide mango all year round for the export market it is necessary to be integrated with production in other countries.

There are export standards that need to be met and the fruit must be certified. Aspects like environmental impact and carbon footprints also need to be considered. It is not climate efficient to export mango by air from Kenya to Europe for instance. Both of the experts think that the standards in Europe are too high for the Kenyan to manage export. Everything that is exported to Europe must be traceable. Fruit flies are common and if there are fruit flies in the fruit export from the origin country, most import therefrom will be banned.

The difference between the price that the farmers receive and the price in a supermarket outside Kenya is huge and it is important to find out where the money goes and what the inefficiencies are.

### *Marketing*

The best marketing strategy for small-scale farmers is to join into groups to achieve larger quantities and keep high quality. The farmers also need to find out how to get to the market on beforehand. By forming entrepreneurial units they would be able to develop their marketing activities and deliver to more markets.

### *The future*

The development of Kenya is positive. The Kenyan economy is predicted to grow 10 % until 2013, the economy is going well and it is looking good. There is a very fast population growth, especially in the western part of Kenya, which means more consumption and increased demand for foodstuff. People in general are also becoming more health conscious and want more fruit. These things are positive for the future mango production. The population growth has consequences though, if it is too high there will not be any space to plant mango.

This chapter presented the results from the interviews with farmers, representatives from the Vi Agroforestry and other experts. The analysis in next chapter combines these results with the theoretical framework in chapter 3.

## 6 Analysis

In this chapter the empirical findings are analyzed using the theoretical framework that is presented in chapter three. The chapter is divided in two parts, internal and external environment, and the subgroups from the theoretical model are used.

The evolvement of marketing has primarily developed in the western part of the world and most marketing strategies and theories are developed to fit “*sophisticated marketing systems, strong private enterprise, and market potential for many goods and services*” (Solomon *et al.*, 2009, p. 56). This study is focused on small-scale mango production in Kenya, which is a developing country with an emerging economy where the marketing systems are poor and at various stages simultaneously (Cateora & Graham, 2007; Ekbohm *et al.*, 2001; Jedele *et al.*, 2003, Pers. Com., Sida, 2011). The production and marketing activities in the Western parts of the country are less developed than in the Central and Eastern parts (Pers. Com., HCDA, 2011; Pers. Com., KENFAP, 2011; Pers.Com., Ministry of Cooperative Development and Marketing, 2011; Pers. Com., Sida, 2011).

Mintzberg defines strategy as “*a pattern in a stream of decisions*” (1978, p.934). The farmers do not run their business with a fixed plan and do not have very developed marketing strategies, which is in accordance with Mintzberg (1978) who states that a marketing strategy is not a fixed plan. Due to the fact that strategy making requires to consider a lot of information, which the farmers do not have access to in most cases, it is difficult for them to develop their marketing strategies. Expert organizations are needed to fill the information gap. Further, the organizations can structure the strategic direction. Strategy as design could be one option where the expert organizations develop a marketing strategy based on necessary information and make the farmers implement it. Marketing of mango is not very developed in the region, which makes it difficult to use strategy as experience. Although, if marketers from other parts of Kenya that have been involved in successful marketing of horticultural products can help farmers in Nyanza to develop strategies, that is an opportunity. Strategy as ideas is good to use when there are innovative products, which is not the case for mango. It is an option in the long run though, if value-added mango products are developed. Strategy as a discourse considers communication as key, which is crucial for every marketing strategy. This implies that the expert organizations play an important role to develop marketing strategies for the farmers since they lack information.

### 6.1 Internal environment

The internal environment is defined by Solomon *et al.* (2009, p.54) as “*all the controllable elements inside the firm that influence how well the firm operates*”. The internal environment identifies the organization’s strengths and weaknesses (Jain & Punj, 1993; Solomon *et al.*, 2009). The internal environment consists of the three Cs; the customers, the competition, and the corporation. The following section is divided according to the three Cs.

#### 6.1.1 Customer

All of the farmers are very aware of the local market demand and they all agree that quality is the most important factor to attract the customers. They also agree that growing grafted mango is necessary to receive the high quality mango that is demanded at the market. Thus, there is “*positive matching of the needs and objectives*” (Jain, 2000, p. 24) between the local customers and the farmers. Currently most of the farmers do not differ from each other, they

all try to attract the same customers in the same local markets with the same products. Accordingly, these farmers do not create a higher value of the products compared to their competitors.

The difference between the products at the market is quality in terms of freshness and level of ripening for instance. This implies that the only choice for the customer at the market is the freshness and level of ripening; when it comes to other preferences the different suppliers at the market are very similar. The FOs recommends the farmers to differentiate through value-addition to the mango. The first step of value-addition is to wash the fruit and sort it according to size and quality. This way the farmer differentiates from its competitors and makes the customer choose their mango. The farmers are also recommended to grow grafted mango instead of indigenous mango to meet the market demand. All the farmers in this study have started to grow grafted mango.

On the other hand the local market is not the only option but when it comes to larger markets or markets further away most of the farmers lack knowledge of the customers demand. In a wider perspective the farmers are not matching the customers' needs. The farmers are focused on only one type of customers, the local ones. Jain and Punj (1993) state that the customer always need to be the focus for an organization, thus it is difficult for the farmer to succeed in reaching other customers as long as the focus is towards the local need. There are greater opportunities and other customers to target. Possible customers are hotels, supermarkets, schools, markets in other areas within Kenya, and the export market. To reach these it is necessary to differentiate to be competitive. Ways of differentiation could be to make juice, dry mango, make jams, or other processed products. There are several obstacles for the small-scale farmers in Nyanza to manage this. The primary ones are low production, lack of electricity, and lack of financial resources. Few of the farmers in this study have knowledge about customers in other markets than the local, which according to Jain and Punj (1993) is essential to succeed in reaching customers at the markets.

### 6.1.2 Competition

The mango production is more developed in the Central, and Coastal parts of Kenya than in the Nyanza Province (Pers. Com., HCDA, 2011; Pers. Com., KENFAP, 2011; Pers.Com., Ministry of Cooperative Development and Marketing, 2011; Pers. Com., Sida, 2011). Small-scale producers constitute the structure of the mango production in Nyanza. Further, it mostly consists of fresh fruits sold at local markets. The production in Nyanza is not enough to cover the local demand and most of the consumed mango is imported from other provinces of Kenya. In Nyanza there are two seasons for mango, which is not the case in other parts of the country. Thereby the level of rivalry for mango producers in Nyanza is low during the additional season.

Other fruits are possible substitute products to mango. Mango is consumed locally partly due to its nutritional values and other products containing comparable nutrients might be substitutes. The Nyanza Province holds a lot of farmers who all are potential mango producers in the future (Pers. Com., FO A-F, 2011; Pers. Com., Nyberg, 2011). Mango is promoted as a good crop by many organizations and successful mango producers can influence others to start growing mango. Although the production in the region is still very low and there are relatively few producers, which imply that there still is need of supply. Thus the threat of entry of new producers is fairly low, the demand is still larger than the supply in the area.

The farmers sell their mango either at the farms or at the local market (Pers. Com., Farmer 1-12, 2011; Pers. Com., FO A-E, 2011). The bargain power of the buyers is stronger at the farm gate than at the market. The farmers that sell the fruit at their farms often lack the possibility to transport their mango to the market and are dependent on that buyers pick up the produce at the farm gate. Thereby they have no other option than to accept the given price. These are often the farmers with smallest entities and lowest production. The buyer's strong position in relation to the small-scale farmers decreases the farmers' level of competitiveness and the least productive farmers are even more exposed.

The bargain power of suppliers is not the focus in this study. One of the farmers though explained the difficulties of his weak position compared to suppliers of pesticides and fungicides. The products that he bought did not work and the mango trees were infected by disease. This destroyed the entire harvest of one season and the following season's output was reduced. This farmer's margins are very small and his financial situation was weakened.

### 6.1.3 Corporation

According to Peters and Waterman (1982) there are seven success factors that determine a corporation's competitive advantage. The success factors are: structure, systems, style, staff, skills, shared goals, and strategy. The farmers' current strategy is in general to produce as much high quality mango as possible. Procedures that are followed to implement this strategy are manure management, tree management, and use of pesticides and fungicides. Most of the farmers were more focused on the production than the marketing and selling of their produce. Although, the farmers have systems of how to sell the mango.

At most of the farms the human resources consists of the family members, in some cases there are a few employees, especially during labor intensive periods such as harvest. The husband and the wife or the wives often run the farming together but women are not allowed to own land, the husband owns the land and thus he is highest in the hierarchy. In this case study the management's decision making philosophy refers to the farmers' production planning, which mostly concerns to harvest as much fruit as possible and to plant more grafted mango trees. Many farmers make short-term plans by the help of the Vi Agroforestry's FOs but those plans are not always followed and implemented.

The farmers receive knowledge through courses and marketing groups that are to develop their business and eventual staff. The farmers are skilled in growing mango but their skills are not as developed when it comes to marketing activities. By collaborating with other farmers and organizations such as the Vi Agroforestry and HCDA their skills and knowledge are developed. Today there is no developed firm's culture or management value system within the farms. Most of the farmers do not only grow mango, they combine the mango production with other farming activities. The corporate mission is to improve the household income and to provide nutritional food.

Altogether these factors determine the corporation's competitive advantage. The farmers are currently mostly concerned about the production and not their eventual competitiveness compared to others. The farmers are small-scale and continuously practice what they learn in their production. The culture of implementing and adapting the production to the better is a strength and a competitive advantage.

#### 6.1.4 Strengths and Weaknesses

The farmers are skilled in producing mango and produce high quality mango, which is one of their largest strengths. The conditions for growing mango in Nyanza are also very beneficial. Another strength is that the farmers are small-scale, which imply that they easily can adapt new situations. There are many different organizations that can provide the farmers with knowledge and help. The farmers seem to believe in prosperous business in the future and increased profits due to mango production. The farmers knowledge in English is in general good, which makes it easier for them to collaborate with external stakeholders.

Their smallness can also be a weakness due to several factors like weak bargaining position, low produce, difficulties in receiving financial support for investments, and difficulties in storing and transporting produce. Another weakness is that the farms often are located in areas that are far from the market and hard to access due to bad roads. The farmers are very focused onto the local customer, which is a weakness if they want to reach other customers. If the farmers want to reach the export market it might be a weakness that the export of mango from the area today is very low and thus this market needs to be developed before the farmers can enter it. There are very few successful examples to follow. The culture in the area hinders the farmers to try new ways of production. Another cultural factor that delimitates the farmers is the tribal belonging, which can inhibit the opportunities of entering prosperous collaborations. The strengths and weaknesses will be illustrated in figure 9 below in the opportunities and threats part.

It is difficult to differentiate the Customer, Competition, and Corporation from each other. All the farmers have more or less the same internal strategy today, which is to produce as much mango as possible. The expert organizations that are involved with the farmers promote the same strategies for all farmers. All the farmers wanted to produce high quality mango that is demanded by the local customers. Quality is the main mean of competition for all farmers. They do not differentiate from each other, none of them holds comparative advantage over the others. The farmers are more concerned about the production than their competitiveness compared to others. The corporation in this case consists of the individual farm. All corporations are very similar. The farm management differ in some cases though, farm management includes the use of pesticides, manure, and tree management. The planning of production also differ between the farms, some farmers do not plan at all and others make long term plans.

## 6.2 External environment

*“The external environment consists of elements outside the firm that may affect it either positively or negatively”* (Solomon *et al.*, 2009, p. 54). The external environment can be grouped into four categories: economic environment, technological environment, political and legal environment, and social environment (Jain, 2000). These four categories are presented below. The external environment gives the organization’s opportunities and threats (Jain, 2000; Johnson *et al.*, 2008). The small-scale farmer in Kenya is highly affected by external factors (Per. Com., Nyberg, 2011). To examine the opportunity of eventual collaborations theories about cooperatives are presented in the end.

### 6.2.1 Economic environment

The farmers in this study act in a developing economy and some of them live below the extreme poverty line (Pers. Com., FO F, 2011). It is vital to understand the economy of the country in which the firm does business to be successful in marketing (Solomon *et al.*, 2009).



The farmers are well aware of their economic context and thus they have one essential prerequisite to succeed in marketing. The farmers' marketing strategy is adjusted to the economic opportunities in the region. Kenya is a developing country and the use of modern technology in the mango production is low due to both lack of financial resources and lack of electricity. The level of education in the rural areas of Nyanza is low and that makes it hard for the farmers to receive important information about new methods of production and marketing. Organizations like KENFAP is providing market information through radio to decrease this problem. The infrastructure is problematic in many ways. Bad roads make it difficult for farmers that live far away from the market, especially during the rain seasons. The marketing system in Kenya is less sophisticated than in other more developed economies.

### 6.2.2 Technological environment

The technological level in the mango production industry in Nyanza is low. Most of the farmers in this study have access to similar technologies, with a few exceptions. Thereby the use of technology in the mango production cannot be considered as a competitive advantage. Some of the farmers have access to irrigation systems, which is a competitive advantage for them. As the overall level of technology in the production is low, access to new technology is a critical factor. If one farmer get the opportunity of a technological improvement his or hers competitive advantage is dramatically improved.

According to Solomon *et al.* (2009) governmental programs influence the technological level in an industry. The Ministry of Agriculture can provide farmers involved in marketing groups help with transports. Another example of governmental influence of the technological level in this study is HCDA's cold stores where farmers can store their produce properly. There are no such cold stores in Nyanza but although the government has influenced the technological level in the horticultural industry of Kenya to some extent. Farmers that receive governmental technological support have a competitive advantage. Neither of the farmers in this study have any storage facilities suitable for mango; cold stores could make a big difference for them. Such a change in technology could transform the mango industry in the region, as Solomon *et al.*, stated in 2009. According to Solomon *et al.* (2009) it is important to be able to find new trends in the external environment and to be updated to be successful, which is not possible for the small-scale farmers in Nyanza due to lack of information. Thus they are dependent on receiving information from FOs and organizations. This makes the farmers very vulnerable, if they are provided with incorrect information they have a small chance of discovering the faults in the information. Further, it is not suitable to adjust mango production according to new trends since it is a long-term crop.

### 6.2.3 Political and legal framework

Most of the farmers act on the local market and do not need to consider other laws and regulations than the local ones. If the farmers aspire to sell their mango on the international market they need to understand legislations for different trade unions, which might be difficult due to their low level of education and access to information. The Vi Agroforestry's FOs and other organizations' representatives stress the importance of organic products in the export markets. To sell the mango in those markets the farmers need to have an organic production, which is not the case today. It is difficult for the farmers to keep a sufficient quality without using chemicals like pesticides and fungicides. The risk of disease and insect attacks is high in an organic production. One of the challenges to succeed in export is to keep a high quality mango with reduced use of chemicals in the production. For the local market, which is the primary market today, there are no particular regulations of quality.

The farmers are in great need of improvements in the infrastructure. This can only be achieved by political decisions. According to Solomon *et al.* (2009) these decisions can affect the business operations, which corresponds in this case.

This study is not focused on Kenya's political situation but several interviewees have brought up corruption and it seems to be a severe problem. (Pers. Com., Ayamba & Ochieng, 2011; Pers. Com., Farmer 1, 2011; Pers. Com., Farmer 2, 2011; Pers. Com., Farmer 4, 2011; Pers. Com., Farmer 5, 2011; Pers. Com., Farmer 11, 2011; Pers. Com., FO F, 2011; Pers. Com., Kasera & Oгода, 2011) The corruption affects the trust in collaborations between farmers and organizations. This might be one reason why many farmers do not participate in collaborations today. Organizations like KENFAP and HCDA try to educate the farmers in the benefits of contract farming to overcome mistrust.

According to Solomon *et al.* (2009) political decisions can affect the business operations and must be considered. Political decisions of improving the infrastructure in Nyanza would affect the farmers positively (Pers. Com., FO A-F, 2011). Bad roads and lack of electricity are critical factors for their business operations.

#### 6.2.4 Social environment

The organization needs to understand and adjust to the characteristics of the society and its citizens (Solomon *et al.*, 2009). The small-scale farmers in Nyanza are aware of the local citizens, that are their primary customers today, and the characteristics of the society in which they currently act. They do not know the markets outside the local society and do not have knowledge of the customers' demands. The outside cultural values and beliefs may be very different from what the farmers are used to and according to Solomon *et al.* (2009) marketing must be adapted to the cultural values to be successful. The conclusion of this is that it probably is very difficult for the farmers to succeed in other markets than the local today.

The social environment is one of the explanations why the mango production is less developed in Nyanza than in other regions (Pers. Com., de Figurera & Japhet, 2011). The people in Nyanza have traditionally been resistant to new activities like growing fruit trees. Maize is the traditional crop of the Luo farmers, even though the climate in Nyanza is too dry and not suitable for growing maize (Pers. Com., Farmer 1, 2011; Pers. Com., Farmer 4, 2011; Pers. Com., Farmer 6, 2011; Pers. Com., Farmer 10, 2011; Pers. Com., FO A-F, 2011).

Language barriers are a cultural aspect that can cause problems according to Solomon *et al.* (2009). Kenya is an old British colony and the population generally speak and understand English well (www, Britannica, 1, 2010). All of the interviewees in this study except for three farmers speak good English and language barriers do not seem to be a problem in this case.

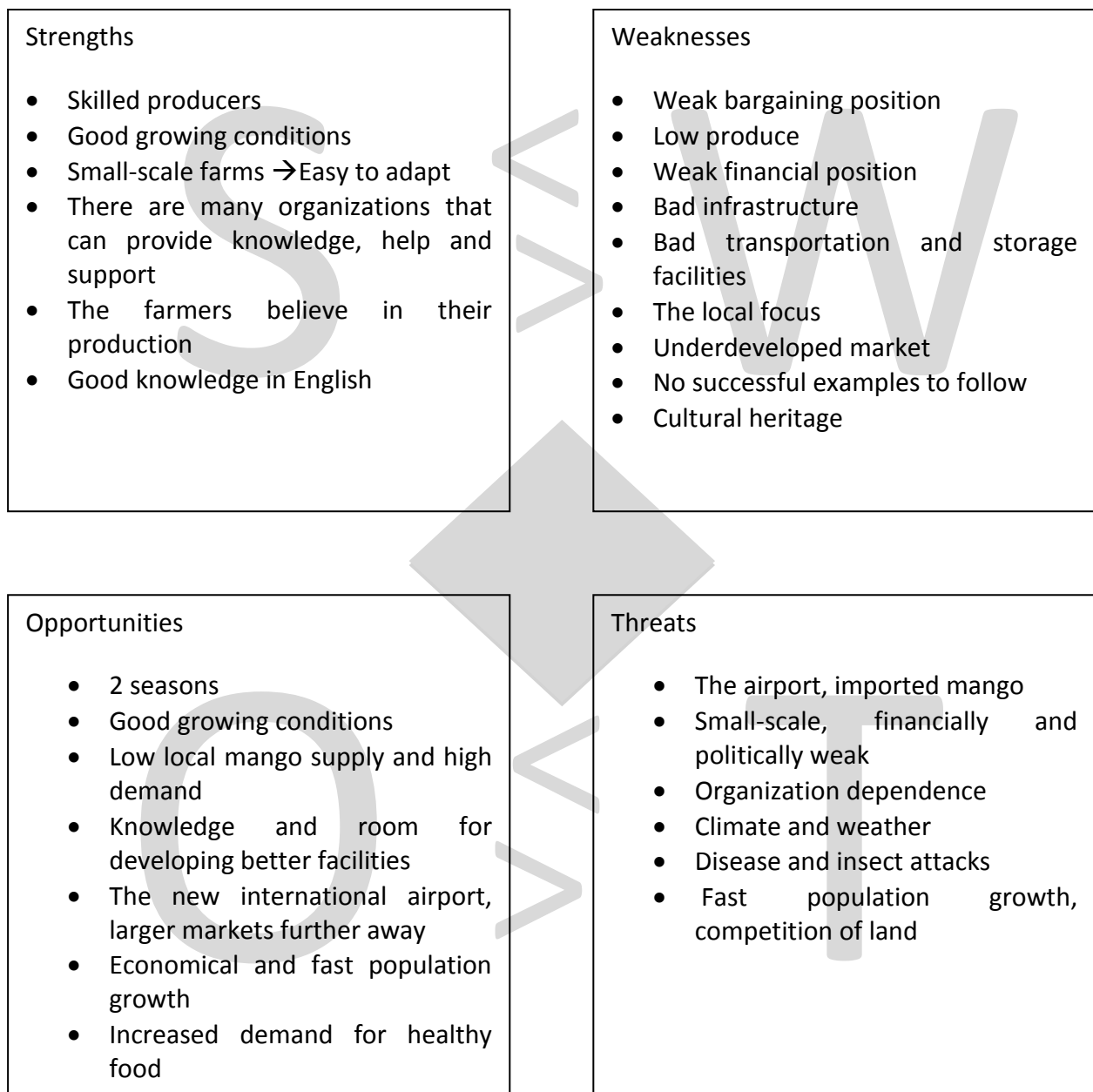
It is important to understand the relation between genders among the farmers in Nyanza (Pers. Com., Nyberg, 2011). Women are not allowed to own land in Kenya, unless they are widows. In most cases the women takes care of the farms and manage the production whereas the men has the decision power. The men decide and the women perform the work, which is why it is important to make both men and women in the household to participate in educations and programs. Another gender issue is that the women that work at the farms do not receive the income that it brings and this makes the women unmotivated (Pers. Com., Khaemba, 2011; Pers. Com., Nyberg, 2011). This might cause slow development of the production.

### 6.2.5 Opportunities & threats

A great opportunity for the small-scale farmers in Nyanza is the possibility of harvesting the mango twice a year whereas there is only one season in most of the other production areas in Kenya. The conditions for growing mango in the region are also very good. The supply of mango produced in Nyanza is low and not enough to satisfy the demand on local markets. There are good opportunities to expand and increase the production of mango in the region. Larger quantities give larger opportunities to develop good facilities for further improvements in production and marketing. The new international airport that is currently under construction in Kisumu is an opportunity to reach outside markets more easily than today. The economical growth in Kenya is high and the population growth is fast, which implies increased demand (Pers. Com., de Figurera & Japhet, 2011).

#### *Hotels & supermarkets*

The airport can also be considered as a threat due to that it facilitates import of mango from other regions that are more developed in marketing and production. The farmers are small-scale and thus they are financially and politically vulnerable. Another threat is that the farmers are dependent upon organizations like the Vi Agroforestry. If these organizations close down, move, or start to charge for their services the farmers will be negatively affected. The farmers are also very dependent on the weather and climate. The area is dry and few of the visited farmers have access to irrigation systems or financial resources to invest in such. If the rain season is late the harvest will decrease. The weather is a constant threat to the small-scale farmers and it is not controllable. Tree diseases and insect attacks are also a severe threat that can destroy the harvest. Diseases and insects can be controlled to some extent but they can occur even if the farm management is good. The fast population growth can also be seen as a threat as the land becomes denser and the space for mango trees may be reduced. Increased demand for food can lead to harder competition of the land. All the opportunities and threats are illustrated together with the strengths and weaknesses as a SWOT analysis in figure 9 below.



*Figure 9. SWOT analysis for the farmers.*

Figure 9 is a summary of the farmers' situation and clarifies the analysis above. To be successful it is important to consider all the elements in the internal and external environment but the farmers are mostly focusing on internal factors today. Their focus is to maximize the produce whereas the expert organizations focus on external factors that can develop the marketing of mango.

### 6.3 Collaboration

According to Khaemba (2011) the biggest marketing challenge is that the farmers are unorganized and by forming cooperatives this could be overcome. Cooperatives are not the only alternative to organize the farmers; there are other possible forms of collaborations (Pers. Com., Kasera & Ogodia, 2011; Pers. Com., Khaemba, 2011). One example is forming Common Interest Groups (CIGs) where the regulations are not as strict as for cooperative

(Pers. Com., de Figurera & Japhet, 2011). In a CIG there is no governmental control, which make it easier for the farmer to control their group. Another alternative that is promoted by HCDA and KENFAP is contract farming where farmers are linked to traders, transporters, and other stakeholders.

To improve their bargaining situation the farmers could organize into marketing cooperatives (Dijkstra, 1996) and working in groups and collaborations have been promoted as the best marketing strategy for small-scale farmers in Nyanza by all interviewed FOs and experts in this study (Pers. Com., Ayamba & Ochieng, 2011; Pers. Com., de Figurera & Japhet, 2011; Pers. Com., FO A-F, 2011; Pers. Com., Kasera & Ogoda, 2011; Pers. Com., Khaemba, 2011; Pers. Com., Ministry of Agriculture, 2011; Pers. Com., Nyberg, 2011). The small-scale mango farmers are a group with similar business needs and interests (Barton, 2000) and thus cooperatives are suitable for them.

The farmers are positive towards collaborations and mention several benefits like access to information, gathering of larger quantities, stronger bargain positions, access to new markets, gathering of financial resources, and inspiration for improving the production (Pers. Com., Farmer 1-12, 2011). According to Barton (2000) cooperatives are beneficial for farmers because they can gather financial resources and make investments that would not be possible for them to do individually. Barton (2000) further states that cooperatives make it possible for farmers to receive larger profits, which is also true in this case. When the farmers gather their mango and sell larger quantities together their chances of receiving a higher price is better. The costs of transportation are decreased if the farmers arrange the transports together. They can also access better means of transportation, which decrease the risk of damaged fruit and improves the quality. By better means of transportation and larger quantities the farmers can enter other markets than the local, which is another of Barton's (2000) arguments for entering cooperatives.

This chapter provided the connection between the empirical findings and the theoretical framework. The next chapter addresses the research questions from chapter one and put this study in relation to others.

## 7 Discussion

The following chapter aims to address the research questions stated in chapter one, based on the theoretical framework and the empirical findings. The outline for the discussion follows the research questions that are of particular interest to identify marketing conditions that will enable prospering business for small-scale farmers in the Nyanza province in Kenya. This chapter also puts the findings from this study in relation to other studies and reports.

### 7.1 What are the infrastructural factors that influence the development of markets for mango products?

FAO (2003) states that infrastructure is a major constraint in marketing and transport is the largest cost and bottleneck in the Kenyan horticultural trade (Dijkstra, 2001; Omiti *et al.*, 2007). This study confirms these facts and the problems have been brought up in all interviews. Infrastructural factors highly influence the marketing development of mango products (Minot & Ngigi, 2004). Bad roads cause transportation problems. It is difficult for the small-scale farmers to reach other markets than the very local ones due to bad roads and transportation costs are high. The bad roads and transportation are a severe problem that is brought up in many reports about horticultural production in Kenya and it has been obvious in this study as well. According to Dijkstra (2001) and Omiti *et al.* (2007) bad roads and transportation possibilities reduce the farmers' profit, which this case study confirms. All the authors in the literature review conclude that Kenya lacks a rural infrastructure and in the latest rural poverty report from IFAD this is targeted as a problem (Boersma, 2006; Diao *et al.*, 2001; HCDA, 2010; IFAD, 2010).

The infrastructural challenges are displayed as a big obstacle for the small-scale farmers in most literature in the field. Although it is important to focus on the opportunities and find the possibilities to help the farmers become more prosperous. By only focusing on bad things and problems it is easy to forget about the entrepreneurial potential. We strongly believe that the entrepreneurial perspective offers the largest potential for rural development in the area. Both historically and currently there are many NGOs in the area and this seem to have paralyzed the development and the farmers' entrepreneurial minds. Some farmers saw investment help from NGOs as the solution of becoming more prosperous. This would probably be good for the short run but maybe paralyze them even more from developing prosperous businesses on their own. Making own investments and developing ideas is probably more sustainable in the long run and good for the farmers' self esteem. The farmers need to become more business minded to succeed and become more profitable. Through having good entrepreneurial role models the people start to believe that they can affect their own situation and stop to rely on others.

Lack of infrastructure also includes the power network, the phone network, access to clean water, and access to internet. The literature is focused on transportation, which is the most important factor initially but to further develop the businesses access to electricity is just as important. Water is an important input factor but this study has not been focused on water access and the reports included in the literature review neither stress the problem of water access. The small-scale farmers in Nyanza generally do not have access to electricity, which limits their possibilities of value-addition. Lack of electricity is also an obstacle to use cold storages. Access to water is essential for successful mango production. Most small-scale farmers do not have irrigation systems, which might affect the productivity negatively. Many

of the farmers do not have enough financial resources to invest in irrigation systems and others do not have enough water close enough.

Most of the small-scale farmers in Nyanza have access to cell phones and use cell phone services to keep contacts and to receive information. The telephone network is fairly good but lack of electricity is a problem when it comes to cell phone use due to lack of charging possibilities. The use of cell phones highly affects many stakeholders in the marketing system, especially in the rural areas. Although this has not been mentioned in the literature. This is probably due to that it is a rather new technology for the farmers. The last couple of years cell phone use and services has expanded dramatically in Kenya (Pers. Com., Nilsson, 2010). Cell phone use is not the focus in this report but it is clear that it affects the farmers positively.

The literature included in this report agree on that the farmers depend on the middlemen to receive current prices in the markets but the farmers in this study mostly receive their market information through cell phones, radio, newspapers and through market visits. There might be many explanations for these differences. Middlemen might have a more prominent role in other areas, the use of cell phones has increased, and the farmers have started new radio programs themselves.

The lack of education implies that the farmers do not have knowledge about marketing and what the existing opportunities are (Pers. Com., FO, 2011; Pers. Com., Nyberg, 2011). Lack of education also makes it more difficult for the farmers to get and use information. As Jain (2000) concludes it is important to match needs and objectives of the customers to be ahead of the competition, which is not the case for the farmers. Access to information is a severe problem, it is essential to have accurate information about markets and prices to perform effective marketing. Universal education is one of the MDGs and is a way out of poverty. By increasing the level of education for the farmers they can adapt to new circumstances and facilitate their farms better. The farmers need to focus all their attention onto the customer as Jain and Punj (1993) concludes “*businesses exist to serve customer needs*” (p. 36). Fromm and Nyhodo (2007) conclude that one of the major challenges for small-scale agribusiness in developing countries is to identify new markets, which we agree on. By improving the level of knowledge and education new perspectives can be found and new markets can be penetrated. A higher level of knowledge can change the farmers’ focus and make them more aware of long term and sustainable solutions.

Lack of financial resources and institutes makes it difficult for the small-scale farmers. Lack of financial resources prevents them from making improving investments and lack of financial institutes makes it difficult to access credit and get advice. This is a large constraint when it comes to developing business ideas but has not been the focus neither in this case study, nor in the literature review.

Accordingly, there are many infrastructural factors that influence the development of markets for mango products in Kenya. Infrastructural weaknesses prevent small-scale farmers from developing their business, reaching better markets, and become more prosperous. Many organizations helping the small-scale farmers are involved though. These organizations make a big difference but huge improvements if the Kenyan infrastructure are needed and political decisions and help from the government is needed to make that possible.

## 7.2 How does the market structure influence the mango producer?

The market structure for mango production in Kenya consists of many small entities and the marketing system for mango in Nyanza is less developed than in other parts of Kenya (Minot & Ngigi, 2004). There are probably many reasons to the low development of mango production in Nyanza. Tradition and cultural aspects have been brought up during the interviews as possible explanations. This aspect has not been brought up in the literature, none of the reviewed articles and reports have included the situation in the Nyanza Province. There are numerous different cultural belongings, languages, and ethnic groups in Kenya, which has a major impact and creates several different contexts and dimensions to a problem. This is something that is important to bear in mind when studying these issues. These complex of problems are considered in the theoretical model used in this report. The cultural aspects are very important to consider to become respected among the farmers. The farmers in this study are old and there seems to be a generation gap in the agricultural sector. It seems to be difficult to attract younger people to the sector, which might become a threat for the industry. The gender aspect where women are not allowed to own land but are interested in producing fruit is also a cultural problem that has not been brought up in the previous studies included in the literature review.

The small-scale farmers in the area are not independent, they depend on many different stakeholders, for instance organizations helping them with information, training, and education. There is mistrust between farmers and other stakeholders in some cases, which might cause difficulties in collaborations. Corruption is not the focus in this study but it seems to be a huge problem in Kenya and probably affect the small-scale farmers in different ways. Corruption is an important contextual factor in this study even though it has not been the focus and several authors include corruption and mistrust problems in their studies. We have not found any solutions to these problems in the literature but we believe that collaborations can be one part of it. Our belief is that the first step is to create trust between stakeholders and that can be achieved through collaborations.

An important aspect when it comes to the market structure is the long distance between the farms and the markets. Even the distance to the closest local market is often far. Infrastructural factors such as long distance and bad infrastructure affect the market structure negatively and has been brought up in the literature. One solution to this is to collaborate with proper transportation and cold stores, which HCDA promotes.

According to our previous literature review on mango production in Kenya the middlemen are one of the main problems in the food marketing system (Boersma, 2006; Dijkstra, 2001; Ekbohm *et al.*, 2001; Minot & Ngigi, 2004). The farmers in this study though do not consider the middlemen to be a severe problem and the absence of middlemen in this study distinguish it from other studies in the same field. One explanation to their absence might be that the mango production in the area is not very developed and the distance to large urban centers is far. When the production start to increase and develop, the strong middlemen will probably appear. When producing and marketing mango becomes more prosperous in the region middlemen will emerge. The absence of middlemen is an opportunity for the farmers to be more prosperous. By starting up collaborations and focus on marketing issues at an early stage, the small-scale farmers can prevent middlemen to establish in the area. To further suppress the middlemen partners like HCDA can help the farmers to develop the marketing so



that the middlemen do not find the region attractive. The Vi Agroforestry is connected to Coop, which is a retail chain in Scandinavia and if Coop could buy mango from the small-scale farmers, the middlemen would have even more difficulties penetrating the market and the region. The Nyanza Province is close to Uganda and Tanzania, which are mango producing countries and thus not interested in importing mango from Nyanza.

The corruption level in Kenya is high (Transparency International, 2009) but the Vi Agroforestry is established in the region and has managed to start up collaborations between farmers and make them trust each other (Pers. Com., Nyberg, 2011). By using their trustworthiness among the farmers organizations that are connected to the Vi Agroforestry can partner with the farmers and can continue from a better position in trust.

### 7.3 What marketing strategies are suitable for Kenyan smallholders?

The literature has suggested the farmers to collaborate to receive a better bargain position, to gather knowledge and financial resources, and reduce risk and costs (Diao *et al.*, 2007; Dijkstra, 1996; IFAD, 2010). These facts have been confirmed in this study and collaborations have been brought up by all of the interviewees as the most suitable marketing strategy to make Kenyan small-scale farmers become more prosperous. Both collaborations between different farmers as well as collaborations between farmers and other stakeholders like the organizations in this report. Collaborations have many benefits for the small-scale farmers and is a seem to be a good way for them to become more profitable. By engaging in collaborations with other farmers and organizations the farmers have larger chances of affecting their own situations, like improving education and infrastructure, which is necessary to develop their businesses.

Considering the options that the farmers have, collaborating is a rational decision. Entering a collaboration is not connected with increased risk. The advantages are larger than the disadvantages. Possible disadvantages are distrust and that the farmers might lose the decision power for their own business. Other risks may be that some in the collaboration benefit from the others and the others lose profit. These disadvantages can be tackled by good contracts and bylaws that consider these risks. One example of collaborations are cooperatives where these pitfalls are regulated by the legal framework and considered from the start. Another form of collaborations are CIGs, which are not tied to the legal framework but the members can form their own rules. Being legally tied can give safety as well as it can scare the farmers from participating.

All respondents in this report are positive towards collaborations, which surprised us to some extent. The impression we got through the literature review was that the mistrust between stakeholders was too high for successful collaborations. Although all stakeholders included in this study are connected with the Vi Agroforestry that strongly promotes collaborations and cooperatives as a way out of poverty. Strong collaborations can also be a way to suppress middlemen to enter the region. Strong middlemen is probably the biggest future threat.

The selection of respondents is not representative for the Kenyan society in general. The interviewees are probably more positive towards collaborations than other Kenyan farmers that are not connected with the Vi Agroforestry or similar organizations. Although we think

that collaborations can solve many difficulties that the farmers face today. The positive attitude towards collaborations is a good start.

One of the reasons why it is beneficial for the farmers in this study to join collaborations is that it makes it possible to find and establish on larger markets. To sell the fruit at other markets than the local one is a strategy to make the farmers more profitable, which also has been brought up in the literature (Boersma, 2006; Dijkstra, 1996). The belief among the farmers and the FOs in this study seem to be that by just joining a collaboration all of their problems will be sorted out. This attitude can be dangerous and cause problems. Once a collaboration is established the farmers need to continue working to succeed becoming profitable. There are several different kinds of collaborations that are more or less regulated. None of the articles or reports in the literature review compare different kinds of collaborations but those that are fixed by law such as cooperatives or contracts seem to be followed to a larger extent. A legal binding contract can also give the farmers security and create trust.

Finally, value-addition is a good optional marketing strategy for the future and a way to increase the farmers' income that has been brought up in the study but there are many infrastructural difficulties and obstacles to start up such activities. Currently, the production in Nyanza is at an early stage and the activities are focused on improving and increasing the production. Value-addition is still a good marketing strategy that will be suitable in the future. There are several different kinds of value-addition and every single value-addition strategy need a specific plan where knowledge about demand, the customers, competition, standards etcetera are included. Some of the authors in the literature review mention value-addition as a marketing strategy but neither of them concretize it further than the possibilities of making juice or dry fruit. A local value-addition response could be to make jams that are popular in the region. From the beginning of this project we thought that the study would be more focused on value-addition activities but it appeared that the production and the marketing was not developed enough yet. There is huge potential for value-addition in the future though, which is important for the farmers to consider when building up their businesses. We suggest that the organizations look at possible markets and find partners for the farmers at an early stage. By starting these activities at an early stage there are probably large profits to gain and advantages compared to competitors.

The conclusions from our previous literature review found in chapter 1.1.1 are both confirmed and rejected in this study.

- Marketing strategies must be adapted to the specific situation and context; which is true and confirmed by this study. We have not come across any theories that concern the developing country context.
- The infrastructure is poorly developed, which leads to wastage of produce and loss of profits; this is also confirmed in this report. The bad infrastructure is a fact. The bad infrastructure causes lower profits but the wastage of produce does not seem to be an extended problem for the farmers in Nyanza.
- The farmers lack knowledge about the customers and the markets; the farmers have knowledge about the local customer and the local market but lack knowledge about other opportunities than the very local.

- The farmers are not organized, which leads inefficiencies; this is also confirmed in this study. If the farmers organize better there are opportunities of becoming more prosperous.
- Strong middlemen suppress the small-scale farmers; which is not confirmed in this study. Perhaps because the regions' fruit production is not fully developed yet.

The problem for this paper was concluded in the following statement from the 2011 rural poverty report by IFAD;

*“Smallholder agriculture can offer a route out of poverty for many of them – but only if it is productive, commercially oriented and well linked to modern markets. But at the same time, agriculture today must use the scarce and fragile natural resources on which it is based more carefully: it must be environmentally sustainable and more resilient to increasing climatic variability” (IFAD, 2010, p. 9).*

Small-scale farming offers a way out of poverty, although the production need to be productive, commercially oriented, and well linked to modern markets, which is not the case in Nyanza today. By being commercially oriented many of the market problems will get solved. The difficulty is to change the farmers' mindset so they become more business oriented. Of course the environment and climate issues are important but they are not the focus in this study.

This chapter has put this projects' findings and analysis in relation to other studies. The next chapter gives the conclusions for the report.

## 8 Conclusions

The aim of this master thesis is to identify marketing conditions that will enable prospering business for small-scale farmers in the Nyanza province in Kenya. The last chapter of this report is intending to conclude the findings from the study to address the aim.

The small-scale mango farmers in Nyanza are poor and their margins are small, which make them exposed and vulnerable. The production and marketing of mango is less developed in Nyanza than in other Kenyan provinces. Mango is a very good crop for the small-scale farmers in the area. The conditions for growing mango in the area are beneficial and there are great opportunities for prosperous business. All farmers participating in this study are very aware of quality importance and work to produce high quality mango. Conditions like weather, soil, rainfall, and altitude in Nyanza are suitable for growing mango and there are two seasons per year. There are relatively few producers and low production in the area whereas the demand for locally produced fruit is high, which also is a big opportunity for the mango farmers in the area. Value-addition is another good opportunity that is not very widespread today. There are possibilities for exporting mango and the new international airport in Kisumu is an important factor for increasing export from the area. There are huge possibilities both for export and value-addition in the future but there are many obstacles that need to be overcome first. Value-addition is a good way of increasing the profit but currently there are many difficulties in succeeding.

The marketing system in Kenya is undeveloped and today mango is mostly sold at small local markets. Many of the small-scale farmers in Nyanza sell their mango at farm-gate for very low prices, which is not profitable for them. Although, the issue of middlemen does not seem to be a very big problem for the farmers in this study. Most farmers today lack efficient strategies of selling mango and the level of planning is very low. An essential aspect in enabling prosperous business for the small-scale farmers in Nyanza is a change of their mindset. The farmers need to become more business minded and start to perform their farming as a business. It is important that the farmers look beyond the local market and understand the possibilities of finding larger markets. Organizations like the Vi Agroforestry and HCDA currently work with this issue. Cultural aspects are one reason to the lack of business mind among the small-scale farmers in Nyanza.

The farmers need to be more organized to become more prosperous. All participants in this study consider collaborations to be the best marketing strategy for small-scale farmers in Nyanza. Through collaborations the farmers can gain stronger bargain power, share knowledge, and access more information. Another important advantage of collaborations is that the farmers can gather their produce to achieve larger quantities. Transportation costs decrease through collaborations. Further, the farmers can gather their financial resources and thus make investments that would not have been possible for them individually. The benefits of collaborations can give the farmers access to better markets and increase the profit.

The Kenyan infrastructure is an obstacle for small-scale mango farmers in Nyanza. The roads are in bad condition, which makes it difficult to transport mango to the markets. Lack of electricity prevents the farmers from performing value-addition and there is no possibility of using cold storages without electricity. There is a generation gap among the farmers in Nyanza. Most farmers are old whereas young people tend to settle in urban areas to find jobs

there. Few young people seem to be interested in farming, which might be a threat for the mango production in the future.

The gender aspect plays an important part in educating the farmers. Women are not allowed to own land, unless they are widows, and the women rarely make the decisions at the farms. Thus the women are often those who perform the work in the production and take the produce to the market. Therefore it is very important to include the whole household in trainings and educations to achieve results. Organizations like the Vi Agroforestry make a big difference for the farmers and are very important for rural development in Kenya.

## 8.1 Suggestions for future research

During the process of this study many interesting questions and topics have been brought up. There is no room for these in this report though but it would have been exciting to look further at many of them in another study. Below follows some suggestions for future research;

- To look at the possibilities of collaboration between Vi Agroforestry farmers in Kenya and the retailer Coop<sup>6</sup> in Sweden. Would it be possible to sell these farmers' produce in Coop's stores?
- To perform a customer survey of different mango products in outside markets and examine the demand.
- A study focused on value-addition of mango products. What are the possibilities, is there a demand and a market?
- To perform a production economics analysis of Kenyan mango production. To collect data and find out what the inputs, costs, and outputs are.
- A comparative study between areas in Kenya that have access to cold stores and areas that do not have access to cold stores.
- A comparative study between Kenya and a country that is successful in marketing and export of mango.
- To evaluate and develop the cell phone services for small-scale farmers in Kenya

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<sup>6</sup> Coop is a Swedish grocery retail cooperative group.

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In partnership with KAS/CJPC/MERA/CIAG-K in Kenya

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Farmer 2

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Farmer 3

Personal meeting: Between 2011-02-22 to 2011-03-11

Farmer 4

Personal meeting: Between 2011-02-22 to 2011-03-11

Farmer 5

Personal meeting: Between 2011-02-22 to 2011-03-11

Farmer 6

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Farmer 7

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Farmer 10

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Farmer 11

Personal meeting: Between 2011-02-22 to 2011-03-11

Farmer 12

Personal meeting: Between 2011-02-22 to 2011-03-11

Field Officer A

Vi Agroforestry

Personal meeting: Between 2011-02-23 to 2011-03-11

Field Officer B

Vi Agroforestry

Personal meeting: Between 2011-02-23 to 2011-03-11

Field Officer C

Vi Agroforestry

Personal meeting: Between 2011-02-23 to 2011-03-11

Field Officer D

Vi Agroforestry

Personal meeting: Between 2011-02-23 to 2011-03-11

Field Officer E

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# Appendix 1: Data for the interviewed farmers

	40	30	58	43	52	42	51	58	58	38	48	47	51	60	64	Mean	Median
Age	40	30	58	43	52	42	51	58	58	38	48	47	51	60	64	49,33	51
Level of education	prim	none	sec	sec	sec	prim	coll	coll	prim	coll	prim	sec	uni	prim	sec		
Size of farm (acre)	5		4	2	1		2,5	2		2	2	0,5	23	75,5	5	10,38	2,25
Employees at farm	3		9	4	5,5		1	1	5	4	13	1,5	6	2	2,5	4,42	4
Number of trees	100			8	22			120		50		40	600	1000		242,5	75
Ingenious mango	30																
Grafted mango	70				22			120				40					
Grown mango since	2006		2006	2008	2010		2001	2009		1996	2005	2008	2000	2007	2010	2006	2007
The number of Vi Agroforestry programs:	3		2	6	1		2	3		4	2	1	1	3	2	2,5	2
Agricultural knowledge											1						
Agroforestry							1								1		
Bee keeping				1													
Dairy				1													
Dairy goat				1													
Farmer trainer										1							
Grafting								1		1				1			
Improved composing			1														
Kitchen gardening				1													
Landscaping								1									
Poultry production/poultry keeping/poultry farming	1			1													
Received seeds								1				1					

Soil and water conservation	1											
Trainings					1							
Tree nursery											1	
Tree planting	1	1		1			1	1		1	1	1
Village savings			1									
Wood lot(small forest)							1					

Female Male



## Appendix 2: Data for interviewed FOs

						Mean	Median	Total
Age	38	38	38	32	31	42	36,5	38
Level of education	College	College	College	College	University	University		
How many farmers worked for Vi Agroforestry	1000	1400	400	900	1000	1500	1033,333333	1000
Specialization	8	8	8	7	8	8	7,833333333	8
General agriculture	1			1				
Rural Developemnt	1							
Forestry		1				1		
Capacity building all fields			1					
Agricultural business management					1			

Female Male

# Appendix 3: Interview guide for farmers

## Interview guide for farmers

Studying agricultural economics. We want to learn about tropical farming, here in Kenya hope you can help us

*The aim of this study is to identify marketing conditions that will enable prospering business for small-scale mango farmers in the Nyanza province, Kenya.* We want to investigate what the key context – and business bound factors are in market development. What is an efficient marketing system for the small-scale farmers in Kenya?

Research questions of particular interest are;

- What are the infrastructural factors that influence the development of markets for mango products?
  - How does the market structure influence the mango producer?
  - What marketing strategies are suitable for Kenyan smallholders?
- 

We are interested in your understanding and opinion of factor that that have an impact on marketing of mango, this interview will take about one hour. And we are thankful for your contribution!

Name:

Age:

Gender:

How large is the entity:

Location:

Level of education:

Have you been involved in any Vi Agroforestry projects/programs?

---

The farm:

1. Can you tell us a bit of your farm,
    - a. how large,
    - b. how many works here,
    - c. who owns it,
    - d. for how long have you produced mango
  2. Why do you grow mango?
  3. Do you have any other income except from mango?
    - a. In that case what?
    - b. Other cash crops,
    - c. Husbandry?
    - d. What is your largest source of income?
- 

The mango market:

4. What is your primary market?
  - a. Where is it sold?

- b. Whom do you sell the mango to?
  - c. Are you able to choose to whom you sell the mango?
5. What do you do with the produced mango?
- a. Why?
  - b. Are there any alternatives to what you do today? (storage, etc)
  - c. Have you thought of value-addition?
6. What do your customers want or need?
- 

#### Wastage:

7. How much mango is wasted after harvest:
- a. at the farm,
  - b. during transportation,
  - c. at the market?
8. What do you do with the wastage of produce?
- 

#### Pricing:

9. How is the price decided?
- a. Who decides the price?
10. How do you get price information?
11. Do you negotiate?
- a. Why, why not?
  - b. Whom are you negotiating with?
12. Are you using contracts when you are selling mango?
- a. Why, why not?
  - b. In that case what do they say? For a certain time period, quality, quantity etc
13. Do you use any cell phone services?
- 

#### Quality:

14. Is the quality of mango important?
- a. Why, why not?
  - b. What do you do to keep a high quality of the mango?
15. Do you use storage facilities?
- a. Have you thought of using storage facilities?
- 

#### The planning of production:

16. Do you plan your production or marketing?
- a. Do you plan anything for the short run?
  - b. Do you plan anything for the long run?
17. Would you be prepared to invest more in the production to get a higher price?
- a. For the short run?
  - b. For the long run?
18. What do you know of marketing?
- 

#### Transportation:

19. How is the mango transported?
- a. Who arranges the transport of mango?
  - b. When is it transported?
- 

Collaboration:

20. Are you collaborating with someone?
- a. Why, why not?
  - b. Are you collaborating with any traders?
  - c. Do you trust that person, organization?
  - d. Why, why not?
  - e. Are those all?
21. What do you think of collaborations or similar arrangements?
- a. Would you like to be part of a collaboration/cooperative?
  - b. What are the advantages
  - c. What are the disadvantages?
- 

Profit

22. Is it profitable to grow mango?
- 

Final remarks:

23. Is it anything that you would like to add?

Read the answers for validation:

Validated:

# Appendix 4: Interview guide for FOs

## Interview guide for FOs

*The aim of this study is to identify marketing conditions that will enable prospering business for small-scale mango farmers in the Nyanza province, Kenya. We want to investigate what the key context – and business bound factors are in market development. What is an efficient marketing system for the small-scale farmers in Kenya?*

Research questions of particular interest are;

- What are the infrastructural factors that influence the development of markets for mango products?
  - How does the market structure influence the mango producer?
  - What marketing strategies are suitable for Kenyan smallholders?
- 

We are interested in your understanding and opinion of factors that that have an impact on marketing of mango, this interview will take about one and a half hours (the most). If you don't understand the question, tell us so we can rephrase it. If you don't know the answer tell us so. It is OK to answer with a 'no'. One of us will conduct the interview the other will write down your answers.

Is it OK if we record the interview? It is only for our memory and we will delete it as soon as we have written it down.

Name:

Age:

Gender:

Specialization:

Location:

Level of education:

How long have you been working for the Vi Agroforestry ?

How many farmers do you work with?

---

The farm:

1. In your opinion, why do the farmers grow mango?
  2. Are they combining the mango production with anything else?
    - a. What is most common?
- 

The mango market:

3. What is the primary market?
  - a. Where is it sold?
  - b. To whom do they sell the mango?
  - c. Are they able to choose to whom they sell the mango?
4. What do the farmers do with the produced mango?

- a. Are there any alternatives (storage etc)?
  - b. Are there any possibilities of value-addition?
  - c. Do you know of any?
5. Are the farmers aware of what the customers want and need?
- 

#### Wastage:

6. How much mango is wasted after harvest:
    - a. at the farm,
    - b. during transportation,
    - c. at the market?
  7. What do they do with the wastage of produce
  8. Do you have any ideas of how to minimize wastage of produce?
    - a. Have you told the farmers?
    - b. Are they interested?
- 

#### Pricing:

9. How is the price decided?
    - a. Who decides the price?
  10. How do they get price information?
  11. Can the farmers negotiate?
    - a. Why, why not?
  12. Are they using arranged contracts when they sell mango?
    - a. Why, why not?
    - b. In that case what do the contracts say?
      - i. For a certain time period, quality, quantity etc
  13. What opportunities are there to sell mango,
    - a. Are there any other opportunities to receive a higher price?
  14. What opportunities are there to export the fruit?
    - a. How common is that?
    - b. What are the challenges in doing so?
  15. Do the farmers use any cell phone services?
    - a. Are there any advantages?
    - b. Are there any disadvantages?
  16. Do you use any cell phone services?
    - a. For what?
    - b. Are there any advantages?
    - c. Are there any disadvantages?
- 

#### Quality:

17. Is the quality of mango an important factor?
  - a. Why, why not?
  - b. What do they do to keep a high quality of the mango?
  - c. What could they do to keep a high quality?
  - d. Do you think they are interested, and how could it be achieved?

18. Do the farmers use storage facilities?
    - a. Is there any interest for storage facilities?
    - b. Do you think that is possible?
    - c. How could that be arranged?
- 

#### The planning of production:

19. For how long do the farmers plan their production and or marketing?
    - a. What are the short-term plans
    - b. What are the long-term plans
  20. Are they prepared to invest more in the production to get a higher price?
    - a. For the short run?
    - b. For the long run?
- 

#### Marketing:

21. Do you get any questions of how to market the mango?
    - a. What do the farmers know of marketing?
    - b. How involved are the farmers in marketing?
  22. What marketing strategies do you think are suitable for Kenyan small-scale mango producers?
  23. Are there any possibilities for the mango farmers to export the mango?
    - a. Why, why not?
    - b. If, so what do you suggest the farmer to do?
- 

#### Transportation:

24. How is the mango transported?
    - a. Who arranges the transport of mango?
    - b. When is it transported?
    - c. Do the farmers arrange transportation of mango together?
  25. Do you know of any alternatives?
- 

#### Collaboration:

26. Is there any collaboration between mango farmers?
    - a. If so, what kind?
    - b. Are they collaborating with any traders?
    - c. Do you collaborate with any traders or marketers?
  27. Is there any interest for collaborations or coops?
  28. Whose incentive are the cooperatives?
    - a. What are the difficulties?
    - b. What are the benefits?
    - c. How is it arranged?
    - d. What is your part?
- 

#### Middlemen:

29. Are the mango farmers dependent upon other stakeholders in their production/marketing?

- a. Do you think they trust each other?
- b. Why, why not?

---

Profit

30. Is it profitable to grow mango?
- a. How could it be better?

---

Final remarks:

Is it anything that you would like to add?

Read the answers for validation:



# Appendix 5: Interview guide: Vi Agroforestry

## Interview questions, Vi Agroforestry

1. Can you tell us about your position at the Vi Agroforestry (Vi)?
2. For how long has the Vi been working in the area?
3. How many farmers have taken part in the projects?
4. How are new areas decided upon and how do you decide which farmers to take part?
5. How do you get in contact with the farmers?
6. How many farmers quit the projects?
7. Do you set goals for new areas?
  - a. What kind of goals?
  - b. Are the goals achieved?
8. Do you set deadlines for the projects?
  - a. How are the projects followed up?
9. What do the projects generate?
10. What are the difficulties?
11. For how long has the Vi recommended the farmers to grow mango?
  - a. Why do you recommend them to do that?
12. What are the benefits of growing mango?
  - a. What are the problems?
  - b. How do you communicate this to the farmers?
13. What marketing strategies are recommended to the farmers?
  - a. Why?
  - b. Are there any alternative marketing strategies?
14. Do the Vi collaborate with any organizations?
  - a. How do you collaborate?
15. What markets are recommended to the farmers?
  - a. Why are those markets recommended?
  - b. Are there any alternatives?
16. Does the Vi promote the possibility to sell on other markets?
17. What do the FOs know of marketing?
  - a. How involved are they in marketing?
18. Are there any marketing experts at the offices?
19. What do the farmers know of marketing?
  - a. How involved are they?
20. What is the Vi's opinion about value-addition?
  - a. Do you promote this to the farmers?
  - b. What kind of value-addition is promoted?
  - c. What are the possibilities for value-addition?
21. How important will the new airport be for the region?
22. Will the airport be of any importance for the farmers?
23. Do you think that the export will increase due to the new airport?
24. How do you think the production and the market for mango will look like in the future?

# Appendix 6: Interview guide: HCDA, KENFAP, Ministry of Agriculture, Ministry of Cooperative Development and Marketing

## Interview questions

1. Can you tell us about your profession?
  - a. What do you do
  - b. What is X's role?
2. How many farmers are X connected to?
3. How does Kenfap work with marketing issues for small-scale farmers?
4. What are the marketing challenges for the small-scale farmers?
5. (How can they be overcome?)
6. In your opinion, what is a good marketing strategy for small-scale mango farmers?
7. Are there any possibilities for value-addition of mango
8. In your opinion, what are the farmers' opportunities?
  - a. What are the challenges in achieving that
9. What does the new international airport in Kisumu mean for the mango sector?
10. How do you think the mango sector in this area will look like in 10 years from now?

# Appendix 7: Interview guide: Sida

## Interview questions, Swedish International Development Cooperation Agency

1. What does the Kenyan horticultural production look like?
2. How does it differ from other agricultural production?
3. The conditions for growing mango (and other fruits) seem to be beneficial in Western Kenya and the Nyanza Province but the production is undeveloped compared to other parts of the country, why is that?
4. The production of mango is very small-scale, is it possible for the farmers to be profitable or is it necessary for them to expand?
5. What are the opportunities to achieve prosperous business for the small-scale farmers?
6. What are the farmers' challenges to reach increased profitability?
  - a. Does their educational level play any part?
7. Can the farmers increase their profitability on their own or do they need help from any other stakeholders?
8. The lacking infrastructure is an obstacle, how can that be overcome? Is it possible?
9. What part do middle men have in the marketing system?
  - a. What implications do they have for the small-scale farmers?
10. How is the marketing of horticultural products performed?
  - a. In domestic markets?
  - b. In global markets?
11. What are the problems for efficient marketing of horticultural products (mango)?
12. What are the opportunities?
13. Many farmers and organizations have mentioned value-addition, what opportunities are there?
  - a. How common is value-addition today?
14. What are the opportunities to export mango?
  - a. How much is exported today?
  - b. What are the difficulties?
  - c. How can these be overcome?
  - d. Does Sida work with export issues?
15. In your opinion, what is the best marketing strategy for small-scale mango farmers?
16. What do you know of the following organizations?
  - a. KENFAP
  - b. HCDA
  - c. Vi Agroforestry
  - d. Ministry of Agriculture
  - e. Ministry of Cooperative Development and Marketing
17. How do these organizations contribute to the development of horticultural marketing?
18. How do you think that the production and marketing of mango in Western Kenya will look like in ten years from now?
19. Is there anything that you would like to add?



## Appendix 8: Kenya

Geographically, Kenya is located in east Africa along the Indian Ocean and the equator bisects Kenya (www, Britannica, 2010). Kenya neighbors the Somali republic in the east, Ethiopia and the Sudan in the north, Uganda and lake Victoria in the west and Tanzania in the south. Kenya is divided into five different regions; in the south lake Victoria basin; the vast plateau of eastern Kenya; the coastal belt along the Indian Ocean (~400 km); and the highlands that are divided by the Great Rift Valley, on the western side are the highlands of the Mau Escarpment; and on the eastern side are the highlands and mountains of the Aberdare Range, where Mount Kenya is located (www, Britannica, 2010). Kenya inhabits many different ethnicities that live in different regions of the country, the map below Figure A illustrates them and Kenya's many languages.

### *Kenyan languages and ethnicities*

As the map below shows in Figure A, Kenya holds many different ethnic groups like Kikuyu, Luhya, Luo, Kamba, Kalenjin and Masaai (www, Britannica, 1, 2010). The official languages are Swahili and English but there are many more. The "African peoples of Kenya" are divided into three language groups: Bantu, Nilo-Saharan, and Afro-Asiatic (www, Britannica, 1, 2010). The Bantu is the largest group and the speakers are mainly concentrated in the southern third of the country. For example Kikuyu, Kamba, Meru, and Nyika people live in the Central Rift Highlands, and the Luhya and Gusii live in the Lake Victoria basin district.

The Nilo-Saharan is the second largest group and consists of people that speak Luo, Masaai, Samburo, and Turkana and more. The rural Luo live in lower parts of the western plateau. The Masaai live as nomads in the southern part of Kenya and in the arid northwest the Samburos and Turkanas also live as nomads.

The Afro-Asiatic group is the very smallest group and inhabits Somali people that border Somalia and Oromos' that borders Ethiopia (www, Britannica, 2010). The Somali and Oromo live in the arid and semiarid regions in the north and northeast. The dry paves for droughts, famines and desertification.

### *Religion*

Kenya also holds several different religions Christianity (Roman Catholic, Protestant, and other Christians), Islam, and also traditional beliefs (www, Britannica, 2010). The Christianity has turned up and disappeared a few times Kenya. In the 15<sup>th</sup> century the Portuguese brought the Christianity that existed until the 17<sup>th</sup> century. In the end of the 19<sup>th</sup> century it came back and today two thirds of the people are Christian in Kenya. The traditional African beliefs are many and have many different names. Some of the traditional beliefs have been mixed with Christianity. Muslims are a minority in Kenya and mostly lives in the coastal area (Pers. Com., Nilsson, 2010). There are both Sunni and Shiites Muslims in Kenya. There are also small groups of Jews, Jains, Sikhs, Baha'is in Kenya (www, Britannica, 2010).

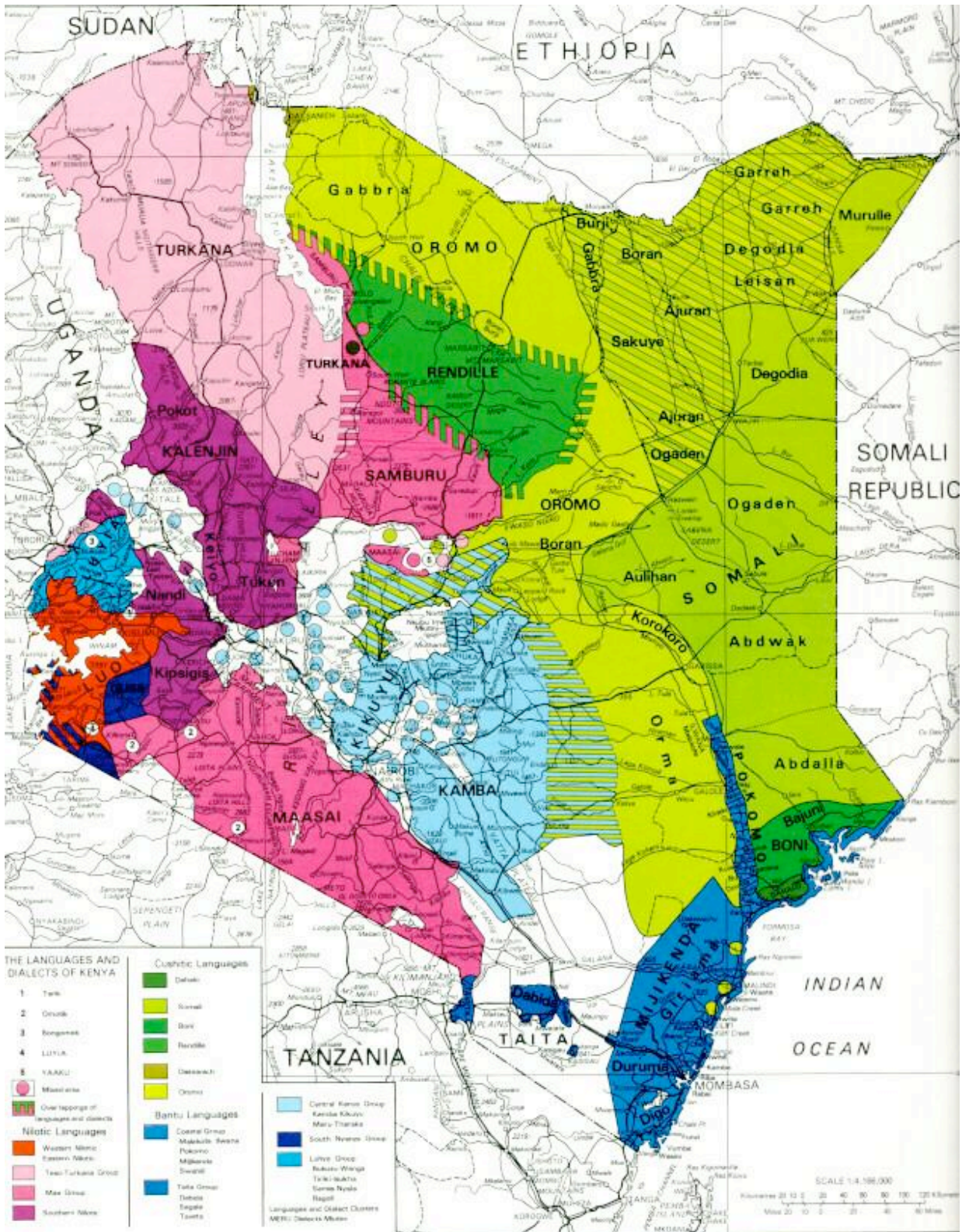


Figure A: Map of Kenyan Languages and Ethnicities (www, Wordpress, 1, 2010).

### Climate

The dry season runs from December to March. North of the equator the winds come from northeast and south of the equator southeast winds dominate during the dry seasons. The rainy season starts late March and continues until late May (www, Britannica, 1, 2010). During the dry season the air flowing from the east in both hemispheres.

The rainfall is different for the different regions (www, Britannica, 1, 2010). The annual precipitation is about 1000 millimeters (mm) (40 inches) in the lake Victoria basin district (lakeshore). The lakeshore expects 500-900 mm yearly and is thereby good for agricultural purposes. The maximum daily temperature in the lakeshore region is 27°C (80°F) in July and 32°C (90°F) in October and February.

In the eastern highlands the yearly precipitation is 1800 mm (70 inches) (www, Britannica, 1, 2010). In the Rift Valley the temperature varies, in the north the average is 29°C (84°F) and around Lake Nakuro and Lake Naivasha the temperature is 16°C (61°F). The floor of the Rift Valley is dry but the highland areas receive 760 mm (30 inches) on a yearly basis. The annual rain perception in combination with good fertile soils of the Mau Escarpment area makes a strong agricultural region.

The eastern plateau region together with the semiarid and arid regions of northern, northeastern, and southern Kenya is all dry regions and have high temperatures with yearly averages of 29°C (85°F) (www, Britannica, 1, 2010). All of them except the eastern plateau are also very erratic. The yearly rainfall is 500-760 mm (20-30 inches) in the eastern plateau, 250 mm (10 inches) in the north, and 500 mm (20 inches) in the south.

The coastal area is humid year-round and the average temperature goes above 27°C (80°F) (www, Britannica, 1, 2010). The very coast receives 760-1,270 mm a year (30-50 inches) but it decreases westwards to 500 mm (20 inches) a year. The southern part of the coast is the only suitable for agriculture.

### *History*

Kenya is already mentioned in the old testament of the bible (Insight Guides, 2007). Then the Egyptians explored Kenya (mostly the coastal strip around Mombasa). Necho, the last of the Egyptian pharaohs visited Mombasa 600 BC. Already before Christ Mombasa and Malindi were important trade centers. The coast of Tanzania and Kenya were rich of exclusive goods like gold (one of the most important commodities in the rich Mediterranean region), ivory and leopard skin (Firestone *et al.*, 2009). It was mostly Arab navigators that crossed the Kenyan coast and the Swahili language which is a hybrid of Arabic grew in the area (Insight Guides, 2007).

### *1400 – 1800*

After the prophet Mohammed the Kenyan coastal region reached its golden age and flourished through Arab immigrants (Firestone *et al.*, 2009). Up to 1450 the Islamic world was the only external influence in the sub-Saharan Africa. Towards the end of the 15th century the Portuguese came with a demand for slaves and the peaceful situation changed to exploration and conquest times (Insight Guides, 2007). The Portuguese justified their terror in the regions through a Christian against Islam (Firestone *et al.*, 2009). The Arabs were skilled merchants and returned to the region and the Portuguese left (Insight Guides, 2007).

### *Victims of the European Colonial Era*

The Berlin Conference in 1884 decided upon the African future without any African leaders (Firestone *et al.*, 2009). In the late 19th century both Germany and Britain were in the region of Kenya, Tanzania and Zanzibar. In 1885 Germany established a protectorate over the sultan of Zanzibar's coastal possessions. In 1888 the region developed to be the British East Africa Company (BEAC), a trade region. Due to wars with the Maasai people the British influence was concentrated in the coastal area. By successfully negotiate a treaty with the Maasai the Brits were able to build a railway from Mombasa to Uganda which also gave them power and made it possible to restrict the Maasai people to designated reserves. Before WWI the British

settlers set up large agricultural farms in the highlands and made profits out of the colony for the first time and spurred other Europeans to follow.

War veterans were offered subsidized land in the highlands around Nairobi, which increased the white population in Kenya from 9,000 in 1920 to 80,000 in 1950. In 1920 Kenya was transformed into a colony controlled by the British government (a Crown Colony) where the Africans were excluded from political power until 1944. This upset the Kikuyu tribe and that founded the Young Kikuyu Association that later transformed to the Kenya African Union (KAU). The KAU demanded access to white-owned land. In the end of the 1920s Johnstone Kamau, also known as Jomo Kenyatta, left Kenya for Russia and got in contact with Russian and Indian communists and started to build up the Pan-African Federation with the future president of Malawi and the future president of Ghana.

### *WWII*

In 1941 Britain needed money for the WWII and Winston Churchill plead for American aid (Firestone *et al.*, 2009). President Roosevelt demanded a clause called the Atlantic Charter, which stated self-determination for all British colonies after the WWII. In 1946 after the sixth Pan-African Congress Kenyatta returned to Kenya and became one of the leaders of KAU. Ghana became the first independent African country in 1951. This led to disturbances in Kenya and the KAU became divided into radical guerilla groups that threatened farmers and the colonial population. The years between 1948 and 1952 were violent and in 1952 the UK declared Kenya a state of emergency. The same year Kenyatta ended up in jail for masterminding a plot against the UK. Kenyatta was freed in 1959 and the following year the British government announced to transfer Kenya into a democratically elected African government. Kenya became independent in 1963 and Kenyatta became the first President leading the Kenya African National Union (KANU) party.

### *Independence and Post Colonial Era*

The first period of the postcolonial era was optimistic (Firestone *et al.*, 2009). Kenyatta wanted the whites together with the Africans to work for and benefit Kenya. The Kenyatta regime failed due to poor relevance for the average Kenyan. The political and economical landscape was poorly developed which led to tribal dissensions. This resulted in huge problems with corruption at all levels in the society and the political system broke down in 1966 and Kenya became a one party state. In 1978 Daniel arap Moi took over the power and is considered to be one of the 'Big Men' of Africa ruling Kenya for 25 years. Moi also made Kenya his 'personal state'. In 1992 the financial situation for Moi and Kenya was very difficult and Moi was forced to hold multi-party elections to get grants from outside Kenya. His power is weakened although he wins the 1992 and 1997 elections.

### *The Rise of Democratic Voices (1990s-2000s)*

The National Alliance Rainbow Coalition (NARC) is founded by the twelve opposition groups that lost in the 1992 and 1997 elections (Firestone *et al.*, 2009). In 2002 NARC receives 62 percent of the vote and Moi retires and the 30th of December 2002 Mwai Kibaki becomes the third Kenyan President. Kibaki and the new government were popular outside Kenya and received high grants to eradicate corruption and change policies, and the anticorruption institution 'czar' was established. Already in mid-2004 the battle against corruption was lost. Kibaki had many officials from the Moi era in his government and it was clear that they were part of the extended corruption. The highly spread corrupted system led to new elections in 2005 where Kibaki continued to hold political power.

### Riots

On the 27th of December 2007 Kenya held presidential, parliamentary and local elections, which led to a wave of violence across Kenya due to electoral rigging in the presidential election (Firestone *et al.*, 2009). Kibaki was announced to be the winner but both Kenyan and international election observers disagreed to the result. The violence escalated and exploded in ethnic confrontations. Over 1 000 people died and 600,000 became homeless. Kofi Annan and a panel of ‘Eminent African Persons’ were put together to mediate talks between the different ethnic groups in Kenya. The 28th of February 2008 a power sharing agreement was signed that established a prime ministerial position for the coalition (the opposition). The prime minister can only be fired by the parliament and not the president alone. The agreement also gave cabinet posts to the parties’ representation in parliament. In 2009 and 2010 land tenure reform, judicial reform and poverty and equality reforms are being developed and voted upon.

### Corruption

Kenya is one of the most corrupted countries in the world (Transparency International, 2009; Pers. Com., Zetterberg, 2010). Kenya also lacks in political freedom (www, Freedom House, 1, 2011; Pers. Com., Zetterberg, 2010) Freedom House is an organization that yearly rates freedom in different countries all over the world (www, Freedom House, 1, 2011; Pers. Com., Zetterberg, 2010). The following figure illustrates the level of freedom, political rights and civil liberties over time where 1 is the highest level and 7 is the lowest (Figure B).

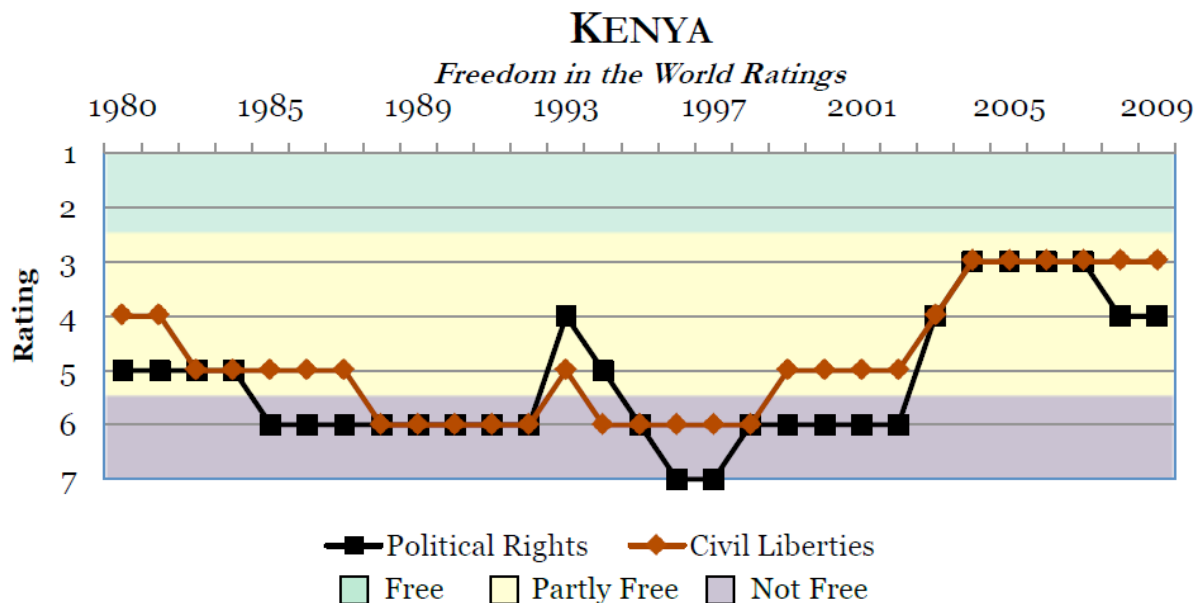


Figure B: The level of freedom in Kenya over time (Freedom House, 2009).

The definition of a free country according to Freedom House is “where there is a broad scope for open political competition, a climate of respect for civil liberties, significant independent civic life, and independent media” (Freedom House, 2009, p. 3). In a partly free country “there is limited respect for political rights and civic liberties. Partly free states frequently suffer from endemic corruption, weak rule of law, and ethnic or religious strife, and they often feature a single political party that enjoys dominance despite a façade of limited pluralism” (Freedom House, 2009, p. 3). In a not free country “basic political rights are absent, and basic civil liberties are widely and systematically denied” (Freedom House, 2009, p. 3). As Figure D illustrates Kenya has become a more free country after Moi’s withdraw in 2002 (Firestone *et al.*, 2009). The struggles that followed the election in 2007 limited the political rights.



The following table (Table A) shows short facts and key figures about Kenya.

Table A, Short facts and key figures of Kenya (www, UNDATA, 1, 2010)

Region:	Eastern Africa
Capital:	Nairobi
Currency:	Kenyan Shilling (KES)
Official languages:	Swahili and English
Surface area:	580,367 square kilometers
Population:	38,765,000 (2008)
Population density:	66.8 per square kilometer (2008)
Largest urban agglomeration:	Nairobi 3,010,000
United Nations membership:	16 December 1963
Rainfall, total mean:	1024 millimeters
Temperature, mean (min/max):	12.0/23.4 °C
Seats held by women in national parliaments 2009:	9.8 percents
Education:	
Government expenditure 2005-2008:	7.0 percent of GDP
Primary-secondary gross enrolment ratio (w/m per 100) 2005-2008:	85.0/88.7
Female third-level students 2005-2008:	36.3 percent of total
Population:	
Life expectancy at birth (w/m) 2005-2010:	54.5/53.7 years
Population growth rate 2005-2010:	2.6 avg. annual percent
Urban population growth rate 2005-2010:	4.0 avg. annual percent
Rural population growth rate 2005-2010:	2.3 avg. annual percent
Urban population:	21.3 percent (2007)
Population aged 0-14 years:	42.8 percent (2009)
Population aged 60+ years (w/m):	4.4/3.8 percent of total (2009)
Major trading partners (percent of exports):	Uganda (12.3), United Kingdom (11.0), United Rep. Tanzania (8.5) in 2008
Major trading partners (percent of imports):	United Arab Emirates (14.9), India (11.8), China (8.4) in 2008
Agricultural production index 2008:	134 estimated for 2008 in 2007 (1999-2001=100)
Agricultural production index 2005:	115 (1999-2001=100)
Agricultural production index 2000:	94 (1999-2001=100)
Food production index 2008:	136 estimated for 2008 in 2007 (1999-2001=100)
Food production index 2005:	115 (1999-2001=100)
Food production index 2000:	93 (1999-2001=100)
GNI <sup>7</sup> per capita 2008:	783.4 current US\$
GNI per capita 2005:	524.2 current US\$
GNI per capita 2000:	399.1 current US\$
GDP <sup>8</sup> per capita 2008:	788.1 current US\$
GDP per capita 2005:	527.2 current US\$

<sup>7</sup> Gross National Income

<sup>8</sup> Gross Domestic Product

GDP per capita 2000:	403.3 current US\$
Forested area:	6.2 percent of land area (2007)
CO <sub>2</sub> emission estimates:	12,143,000 metric tons/0.3 metric tons per capita