
WOMEN IN HORTICULTURE

RISK AFFECTING FACTORS FACED BY WOMEN IN THE KENYAN HORTICULTURAL SECTOR

by

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ABSTRACT

The purpose of this essay is to examine different factors that affect women in horticulture. The horticultural sector is seen as a great opportunity for poverty reduction, especially for women. Nevertheless, there are several obstacles that are analysed in this study in order to examine the actual possibilities for women in Kenyan horticulture. Through using qualitative and quantitative methods in a field study, sector specific obstacles faced by females have been studied to enable an analysis of the risk faced by women in horticulture. The higher the risk that women experience, the less incentive there is for them to enter and invest in the horticultural sector. The conclusion is that most of the factors are increasing the risk that challenges women in horticulture. However, women can still take advantage of the possibilities offered by the sector due to the risk reducing factors which function as informal insurances.

Key words: Kenya, horticulture, women, agriculture and risk

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ABBREVIATIONS

CPI – Consumer Price Index

ECD – Early Childhood Development

GDP – Gross Domestic Product

GER – Gross Enrolment Rate

GNI – Gross National Income

HCDA – Horticultural Crops Development Authority

JICA – Japan International Cooperation Agency

Ksh – Kenya shillings

MFI – Micro Finance Institutions

NER – Net Enrolment Rate

SHEP – Smallholder Horticulture Empowerment Project

USAID – United States Agency for International Development

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1 INTRODUCTION



“The African women stands for 80 percent of the food production, get 10 percent of the income but only 1 percent of the assets” (The Backbone of Africa, 2009). The economy of Kenya is based on agriculture, with crops such as tea, coffee, fresh fruits, vegetables, cut flowers etc. These products are exported all over the world and makes up for about 60 percent of the export of the country. To raise growth and reduce poverty, the agriculture has to be renewed and become more productive, claims the government of Kenya (SIDA, 2010).

There is an increasing demand for horticultural products on the international as well as on the domestic market. The horticultural sector is the fastest growing agricultural subsector in the country, and is ranked third in terms of foreign exchange earnings from exports, after tourism and tea. The horticultural production consists mainly of fruits, vegetables and cut flowers, and makes Kenya one of the world’s major producers and exporters of horticultural products (EPZA, 2005). This sector is challenging the old traditional agricultural sector in many ways.

The growth of this sector has contributed to reduce rural poverty and increased rural income (EPZA, 2005). The conditions of the horticultural sector offer new opportunities for women to improve their economic situation, but is also marked by female specific constraints.

Previous research has been conducted in areas of women, poverty reduction and horticulture, where horticulture often has proven to be a successful way to empower women economically. However, the constraints that women face have not been discoursed thoroughly.

Purpose

Horticulture is a relatively new and rapidly growing sector in Kenya, it is thus relevant to study how the sector might contribute to lift women out of poverty and further increase the welfare of the country. The purpose of this thesis is to examine how women can improve their economic situation by entering the growing sector of horticulture considering the conditions that the women face. We intend to identify the relevant risk affecting factors that women face in Kenya, and what impact the risk have on the economic behaviour of the women in relation to horticulture.

Research question

The examination how women in Kenya can improve their economic situation by entering the horticultural sector is done by identifying the risk affecting factors faced by the women; for those who enter- and for those who are already involved in the horticultural sector. Involving in the sector implies taking a risk; therefore, the risk aspect is of major importance in this study. The main focus is on smallholders¹ since most farming women in Kenya are small scale farmers, however, aspects concerning farm workers and pack house workers will also be included. The central questions that we aim to answer are:

- How is the risk, which women face in horticulture, affected by sectorial factors?
- Which are the most significant factors that affect the incentives of women, concerning investments in horticulture?

Delimitations and definitions

The limitations are done in the essay to answer the research question in a clear manner; they are described and justified below. Horticulture in this essay is defined as high-value crops. A list of horticultural crops can be found in Appendix 1.

The study is mainly conducted in the Nyanza province, where Kisumu is the capital of the area. There is currently an international airport being built and, therefore, this province is of interest since there are great future opportunities for the horticultural export sector. Some parts of the study include areas outside Nyanza province where the horticultural sector is more developed. Even though the major part of the qualitative study is done in Nyanza, the quantitative measures cover the entire country to enable a generalisation of the results.

The focus is on the production of horticulture but aspects concerning transport and cultivation will also be included. The essay will not be limited to cover certain crops. The non-horticultural crops will be the ones with low-value and which have traditionally been grown in the Nyanza province and in Kenya in general. The low-value crops that our interviewees

¹ Smallholders are defined as farmers with less than three acres of land in this essay. They do subsistence farming but are often able to provide a small surplus for the local market.

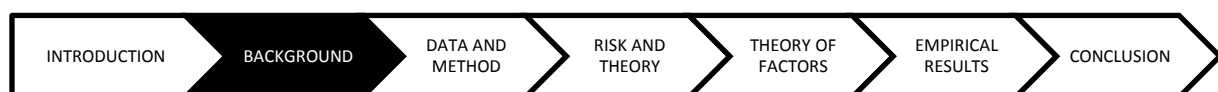
mainly grew were maize and sugarcanes, and those are some of the most commonly grown crops in Kenya.

This study does not include everything that affect the entrance to, and the activities in the horticultural sector. The focus is on the conditions that the interviewed women experience, and the information that previous research provide². Health is one of the factors that could be significant but is left out because that it was not really considered an issue by interviewees nor was it highlighted in previous research.

Disposition

The following chapter discusses the situation of women in Kenya and presents an historical overview of agriculture in the country including the development of the horticultural sector. The third chapter explains the approach of the study, and our selection of data and methods. A description of the theoretical framework is found in chapter four. The theoretical discussions and hypothesis of the factors are presented in chapter five. In chapter six we evaluate the empirical results from the study, including interviews and quantitative statistics, which are then summarized it an analysis. Finally, a conclusion of our research question and hypothesis is made in chapter seven.

2 AN OVERVIEW OF THE BACKGROUND OF AGRICULTURE AND WOMEN'S SITUATION IN KENYA



² Dolan, Catherine S. – Kirsty Sutherland, 2002. "Gender and Employment in the Kenya Horticulture Value Chain". Maertens, Miet – F. M. Johan Swinnen, 2009. "Are African high-value horticulture supply chains bearers of gender equality?". McCulloch, Neil – Masako Ota, 2002. "Export horticulture and poverty in Kenya". Mehra, Rekha – Mary Rojas Hill, 2008. "Women, food security and agriculture in a global marketplace". SHEP = Smallholder Horticulture Empowerment Project, Ministry of Agriculture, HCDA and JICA. "Gender Mainstreaming in Smallholder Farmers' Groups". USAID= United States Agency for International Development by Rubin, Deborah (Cultural Practice LLC) and Cristina Manfre and Kara Nichols Barrett, 2009. Promoting Gender Equitable Opportunities in Agricultural Value Chains.

2.1 WOMEN AND AGRICULTURE

The reasons for the high level of participation of women in agriculture and horticulture in Africa are numerous. Fewer girls go to school compared to boys, men can leave their wives with the work in the farm, older women must provide for themselves when they become widows, and young men are in wider range than young females away from the villages and working in wage employment or attending school. Since the majority of the women and girls in African villages work with agriculture, the female agricultural workforce becomes much larger than the male one (Boserup, 1970 p. 8).

There are also historical reasons which have shaped the agricultural situation of today with a female-dominance. Back in the days the felling, hunting and warfare were the most important tasks for African men in many places. Although, as time went by, felling and hunting became less important, and the Europeans came to Africa and prevented much inter-tribal wars due to European conquered domination, and consequently the African men were left with less tasks to deal with (Boserup, 1970 p. 7). The Europeans recruited unmarried males for work in road building, mines, plantations, and constructional work, voluntary or forced, which led to an enlargement of the agricultural work burden for women in the villages (Boserup, 1970 p. 7).

There are several problematic issues in agriculture that affect women more than men, such as lack of human capital, appropriate technology and financial credit. It results in less education, worse technology and no or little access to financial credits in comparison to the situation of men (Todaro & Smith, 2009 p.458). When it comes to the land issue, women are also disadvantaged in ways of having much smaller and more fragmented plots, often having insecure ownership and less fertile soil for cultivating. Not to forget all the extra hours they have to work in the informal sector, such as performing domestic work at home. If the distribution of resources and inputs were equal between the sexes: “on average, women achieve much higher values of output per hectare than men, on much smaller plots” (Mehra & Rojas Hill, 2008 p. 7). The same authors also discuss the fact that women receive only seven percent of total aid in the sectors of agriculture, forestry and fishing. It can therefore be seen as contradicting that governments, in order to develop the rural economy and living standard, give aid directed to men and activities including men, when the women are the greatest contributors to development.

Women do, to a higher degree, priority the collective welfare and basic needs, mainly related to children, in the household (Dolan & Sutherland, 2002 p. 25). That means that if the woman can raise her income (through horticulture) she will most likely raise the living standard for the whole household. Although the main expenses are more or less the same between women and men: Rent, utilities, food, clothes, school fees, health care, livestock, savings etc, still, females tend to priority welfare items such as food and medical care, a little higher than men do.

“Improvements of productivity and incomes for women farmers are therefore key to a strategy for poverty reduction” (Todaro & Smith, 2009 p. 468).

Poverty is disproportionately concentrated among women in rural areas and in the agricultural sector in Kenya. To reduce poverty there needs to be a great improvement in productivity and income for women. Despite this, it has been difficult to change the perception of the traditional female roles (Todaro & Smith, 2009 p.468f). Even if there are improvements in agricultural technology, it might not affect the development of the economic situation of women. In fact, the introduction of new technology makes the labour productivity of men to increase and the labour productivity of women to remain the same. This outcome results from the fact that the new technology and the modern agricultural methods are performed by the men who monopolize them, and the women continue doing the simple manual agricultural tasks as before (Boserup 1970, p. 41). To succeed with horticulture, more advanced technology is needed and, thus, this makes it harder for women to gain from horticultural production.

2.2 THE EXPANSION OF THE HORTICULTURAL SECTOR

In sub-Saharan Africa the export sector of horticulture has grown dramatically compared to other agricultural commodities that face declining world prices and stagnation (McCulloch & Ota, 2002 p. 1).

Developing countries often have comparative advantages in terms of cheap labour, useful natural resources, seasonality, etc. These countries therefore have good conditions to produce horticultural products, which can be exported world wide and make the income, skills, and employment increase for farmers involved in this kind of production. The demand for horticultural products, with high income elasticity and a high unit value are constantly

growing. The industry is growing and is predicted to continue doing so. An effect of this expansion is the fact that competition also grows, which in turn leads to greater product differentiation (World Bank, 2010).

2.3 WOMEN AND HORTICULTURE

The horticultural sector is seen as a great opportunity for women to find employment or to be self-employed (Dolan & Sutherland, 2002 p.6). Employments can be found at farms or pack houses, and self-employment can imply having a plot of your own, used for cultivation. The horticultural production benefits the society in terms of creating employment in the whole value-chain in areas of processing, sorting, grading, transporting and producing input supplies.

Female farmers, and their families, benefit from horticultural activities. It is shown in different studies, and is especially seen in the export sector (Mehra & Rojas Hill, 2008 p. 9). They further explain that 95 percent of female small-scale farmers thought of vegetable export production as the most profitable opportunity available to them. This study was made in Guatemala but similar results exist for Kenya (Mehra & Rojas Hill, 2008 p. 9).

Empirical results of possibilities with horticulture

Horticulture is viewed as a great possibility for women as they can gain economically from the sector in several ways. Some employees regard it as an opportunity to use the knowledge from their work outside their current occupation. For example, employees at farms take the knowledge of how to grow horticultural crops to their homes and have so called kitchen gardens, where they can grow crops used in their private household for cooking, and maybe sell to their neighbours. Some are able to save enough money to buy their own land and learn about the export opportunities through their work at the pack houses. Smallholders tend to find it positive because the harvest period for the horticultural crops are shorter compared to the non-horticultural crops, which means that the crops mature earlier. The reason why most farmers start with horticulture is due to the fact that they expect a greater income since the prices of horticultural crops are higher than for non-horticultural crops.

A success story is an employee at the headquarters of Horticultural Crops Development Authority (HCDA)³ in Nairobi, who was able to advance in her career through horticulture. She began as a farm worker but now she has a much coveted employment in an office. As she guides us around at the Nairobi horticultural Centre she claims that horticultural farmers are better off than non horticultural farmers.

According to O.J Arim, the general manager at HCDA, the country is optimistic about changing the life of the smallholders. The attempt of the government is to focus on the domestic market since there has already been emphasis on the export market. The exports make up only four percent of the total horticultural produce but it generates twice as much money as the domestic market. Since the rate of urbanization is approximately four percent, it implies an increased need of food production to provide the urban markets and, therefore, a great demand for horticultural products. Moreover, there is an increasing awareness in the value of eating nutritious food such as fruits and vegetables. Before the ugali (carbohydrate) and fish or meat was enough to satisfy someone. This awareness increases the demand of horticultural products and benefits the farmers (Arim, interview, 2011). Mary Mbithi (interview, 2011) confirms the high demand by pointing out the high prices of horticultural crops in Nairobi.

When non-horticulture is compared with horticulture, the income from horticultural crops is more or less twice as much as the one from non-horticultural production (McCulloch & Ota, 2002 p. 18). *Ceteris paribus*, we could conclude that horticulture is one of the most income generating sources in the rural areas, even among the women. For the pack house workers the average wage is higher compared to the average income of the farmers. Our sample is not so large and it is, therefore, hard to make general statements, however, one reason for the larger incomes for the pack house workers can be due to the fact that the interviewees in the pack houses are working in exporting companies where the return is much higher. These employment opportunities (mainly in pack houses) have shown increased earnings for the involved women, and it can enable women to send remittances to their homes, save money and invest in land, agriculture or small businesses (Mehra & Rojas Hill, 2008 p. 11).

³ HCDA is a State Cooperation and the regulatory agency of the government, for the horticultural sub-sector. The authority is mandated to regulate the industry through licensing and applications of rules, and also provide advisory- and marketing services.

Crop-statistics

Statistics from the Kisumu west district give us an indication of the yield from horticultural- and non-horticultural crops. The measure used is gross margin per hectare, GM/Ha in absolute terms in Kenyan shillings (Ksh)⁴. The statistics come from different enterprises which have been divided into three different sections: Level 1, Level 2, and Level 3. The definitions of the different levels are according to Kisumu West District (2009):

Level 1: Generally have received extension messages in production including good seed or animal whose production goes hand in hand with some little agri-inputs and labour but utilizes just a token.

Level 2: The farmer utilizes a good quantity of recommended farm inputs but does not reach the optimum levels that will enhance enterprise potential.

Level 3: The farmer utilizes all the recommended inputs and applies all necessary practices thus able to achieve the enterprise potential.

TABLE 2.1 GROSS MARGIN PER HECTARE IN ABSOLUTE TERMS FOR HORTICULTURAL CROPS (KSH)

Horticultural crops	Level 1	Level 2	Level 3
Bulb onions	150.900	234.250	371.300
Kales	81.730	104.950	151.450
Tomatoes	260.610	560.825	860.060

SOURCE: DATA FROM KISUMU WEST DISTRICT, 2009

TABLE 2.2 GROSS MARGIN PER HECTARE IN ABSOLUTE TERMS FOR NON-HORTICULTURAL CROPS (KSH)

Non-horticultural crops	Level 1	Level 2	Level 3
Field beans	26.610	56.825	86.060
Maize	13.200	24.115	33.350
Sorghum	9.700	14.965	22.350

SOURCE: DATA FROM KISUMU WEST DISTRICT, 2009

⁴ 100 Kenyan shillings = 1.164 US dollar. 19 May 2011. The Economist.

The statistics in this analysis clearly demonstrate a larger yield of the horticultural crops in comparison to the non-horticultural crops. The highest gross margin of the non-horticultural crops is Ksh 86.060 per hectare, found in the production of field beans. The highest gross margin for horticultural crops is, however, Ksh 860.060 per hectare, found in the production of tomatoes. The lowest gross margin of non-horticultural production is connected to the production of sorghum, with the low Ksh 9.700 per hectare, whereas the corresponding measure in horticultural production of kales, equals Ksh 81.730 per hectare. In other words, the lowest gross margin in horticultural production is almost corresponding to the highest gross margin in non-horticultural production. These crops constitute a small sample, and the Kisumu west is a small area in relation to Kenya as a whole, however, this is a good indication of how different crops perform in terms of yield.

2.4 EXPORT

According to the Neoclassical Counterrevolution, economic efficiency and economic growth will be stimulated through factors such as less intervention of government and promoting of export (Todaro & Smith, 2009 p. 127). Horticulture is a sector where the government does not interfere much, and the horticultural export sector is generating a great share of the Gross Domestic Product of the country (Horticulture industry in Kenya 2005, 2005).

Elasticity of demand could be a contributing factor for why the export sector of developing countries is not as profitable as in developed countries. Primary commodities have a low income elasticity of demand and therefore generate low incomes. This means that demand does not rise as much as the income does when income increases. In this case, the demand for commodities will not rise as much as the Gross National Income, (GNI) of the developed importing countries (Todaro & Smith, 2009 p.597f). The main exports of Kenya are raw materials; the most of these export goods have low income elasticity of demand. Compare 0.6 percent on foodstuffs that are exported, to 1.9 percent for industrial manufactured products, when Gross National Income (GNI) increases by 1.0 percent. This means that the relative price will decline over time for the agricultural commodities but also cause large price fluctuations because of the low elasticity (Todaro & Smith, 2009 p. 597).

Horticultural products have a higher income elasticity of demand than other primary goods (Mbithi, interview, 2011) and therefore contribute to higher export earnings when the income of importing countries rises compared to raw materials. This means that the exporting country

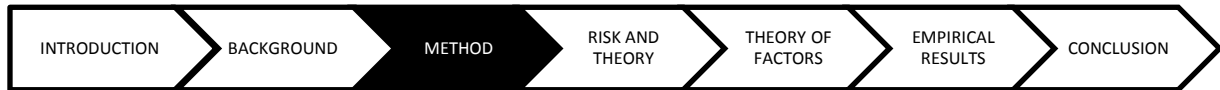
will benefit more from each unit, as economic growth occurs in other countries. Consequently the incomes from exports should rise, and so should the GDP per capita. What we can conclude from this information is that the horticultural sector has potential of increasing the income of households, and of the country as a whole, compared to export of non-horticultural crops.

Considering the fact that horticultural crops makes up for a large share of these exports, one can imagine the opportunities of increasing the wealth of the country through the horticultural export sector.

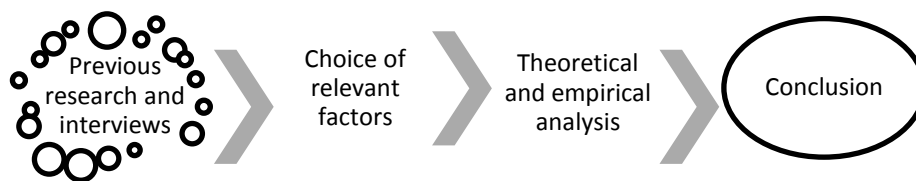
Limited possibilities with horticulture

Horticulture is not a sector that only offers possibilities. The possibilities have been discussed so far but the fact is that the sector is also characterized as being a risky sector. (Dolan & Sutherland, 2002 p. 19). The risk connected to horticulture, faced by women, will be examined in this study through factors that affect the entrance and the opportunities to profit from the horticultural production. These factors will be discussed further on, and the risk related to the sector will be weighted against the sectorial possibilities.

3 DATA AND METHOD



The study will be done through using a mixed method of qualitative and secondary quantitative data to increase the validity of the analysis. The advantage of using mixed methods is that the strengths of both qualitative and quantitative can be used and some of the weaknesses from the respective methods are eliminated by combining them. Using mixed methods allows us to identify and have a deeper understanding for the examined factors, but also to generalize the results of the study. Since it is a focus on the female perspective in the essay, a qualitative method can bring out results that may not be found with a quantitative analysis. For example it is easier to analyse a daily life phenomenon and what determines the design of the every day life of women with a qualitative method (Kvale, 1997 p. 72f). On the other hand, the quantitative part of the mixed method allows a better economical analysis, and this is why it is favourable with mixed methods.



The horticultural sector is complex in the sense that it is affected by several factors at micro and macro levels, of which some are more suitable to evaluate qualitatively and some quantitatively (Dolan & Sutherland, 2002 p.5). Theories which focus on micro economic variables have proven to have better consistency with empirical results compared to macro economic theories. Therefore, we have attempted to identify the factors that female individuals are affected by, with a main focus on micro economic variables. The choice of factors is also based on what earlier research have indicated as relevant considering what it takes to achieve gender equality and economic development. USAID stresses the importance of certain factors in a handbook for promoting gender equality in high-value chains (2009, p.10ff). We want to stress that the chosen variables are not independent from each other but do often affect other variables.

The qualitative part of the study will consist mainly of semi-structured interviews which are being done with farmers as respondents. There are approximately 25 guiding questions that can be found in Appendix 2, which lay the ground for the interviews with the respondents. In the appendix there is also information about the sample. The questions provide information about the background and life situation of the respondents, their involvement in agriculture and experiences regarding horticulture in order to answer the research questions. The average age of the respondents is 28.5 years and she is involved in some kind of cooperative. There is a mix of married women, singles and widows. The number of children in the household is on average 3.4. Furthermore, the typical respondent who is a smallholder in the horticultural sector grows a selection of tomatoes, onions, bananas but also maize since most farmers do not limit their production to horticultural crops. The guiding questions to interviews with informants at authorities and companies are also found in Appendix 2. Based on the results found in the qualitative part we search for relevant quantitative measures. This means that the opportunities and obstacles that are found in the qualitative part will be compared to the general situation in Kenya by using statistics that is found at Kenya National Bureau of Statistics and the African Development Indicators of the World Bank. The stress in the analyses is however on the quantitative part, since that is generally more reliable, and enables generalisation of the results. Doing this enables the study to identify and generalize the analysis of what risk affecting factors that women in Kenya face when trying to improve their economic situation by horticulture (Johnson & Onwuegbuzie, 2004 p.17-21). The results are compared to the hypothesis from our theoretical framework of risk and risk aversion and an analysis is made in order to answer the research question.

The weakness of the study is mainly the representation of the interviewees which is explained by the small sample in a limited geographic area. The farmers that are selected are often members of a cooperative or a Community Based Group which implicates that they may have better conditions than other farmers. The quantitative data is used to limit this weakness and, thus, the conclusions from the study should be well-founded.

4 RISK AND RISK AVERSION

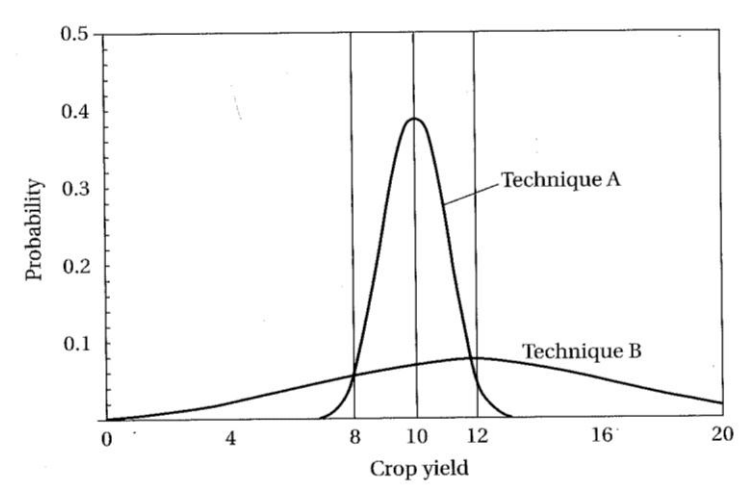


So far, the essay has focused on the possibilities and incentives with horticultural production for women in Kenya. However, horticulture is empirically a sector characterized with high risk (Dolan & Sutherland, 2002 p. 19). Furthermore, 69 percent of the economically active women in Kenya are subsistence farmers, compared to 43 percent of the men; subsistence farmers are among the poorest in the country and women are the most vulnerable to poverty (Dolan & Sutherland, 2002 p. 6). Horticulture also requires a high use of inputs (Dolan & Sorby, 2003 p. 61) which makes the cost of entering horticultural production relatively high. The facts that horticulture is risky and costly to involve in, and female subsistence farmers are among the poorest in the country, indicate that women in Kenya find it hard to enter horticulture and gain from it. The risk with horticulture can be explained through different risk-affecting factors which are, to some extent, hindering or enabling the farmers from gaining of the sector. If the risk, connected to horticulture, is too high; then the farmer is unlikely to enter the sector at all. Women generally face more obstacles or are more affected by certain obstacles compared to men. Hence, the risk with entering horticulture will, therefore, be higher for women. This essay will try to examine how risk increasing and risk decreasing factors are affecting the incentives of women in entering and gaining from horticulture.

In order to be able to gain as much as possible from horticulture, a more advanced technique is often required, in comparison with the technique that is used in the production of non-horticultural crops. The horticultural techniques can be irrigation system, green houses and pesticides among others. The technique is however expensive and requires knowledge and skills, and the access related to the technique depends on factors such as culture, institutions, land access, time restraints and the possibility of cooperating with other farmers. If farmers are under circumstances where the mentioned factors increase their risk, their incentives to devote and invest in horticulture will be lowered. If they on the other hand, face conditions which serve as insurances, their risk will be lowered and their incentives for horticultural investments will consequently rise. Insurances can be seen as “a way to transfer wealth from good states of nature to bad states of nature” (Varian, 2006 p. 219). While poor farmers are

not likely to sign insurances with insurance companies they can use informal ways to transfer and decrease the risk.

FIGURE 4.1 CROP YIELD PROBABILITY DENSITIES OF TWO DIFFERENT FARMING TECHNIQUES



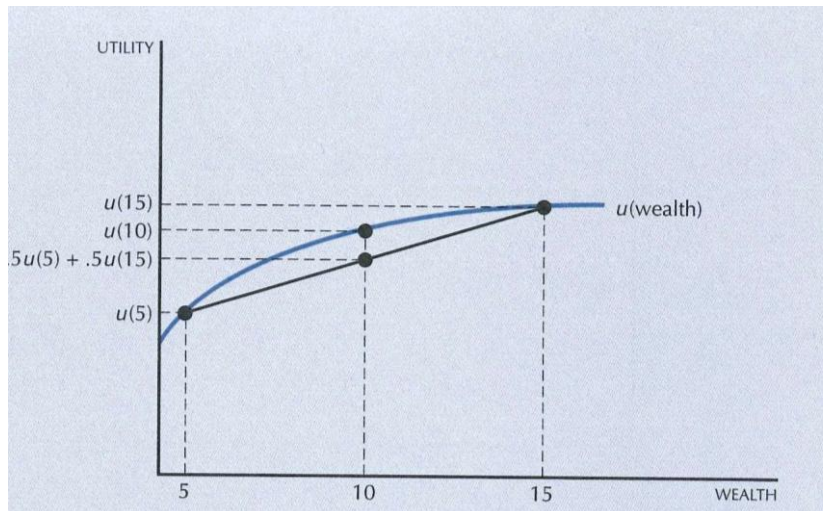
SOURCE: TODARO & SMITH, 2009 P. 456

The illustration of *crop yield probability densities of two different farming techniques* in figure 4.1 is useful for illustrating differences in risk and agricultural techniques for peasant farmers. It shows how two different agricultural techniques are constructed; technique B, that causes greater risk for the farmer but also a greater mean crop yield, and technique A, which has a lower variance around the mean yield but also a lower mean crop yield (Todaro & Smith, 2009 p. 456). Horticulture can correspond to the risky but profitable technique B, and non-horticultural crops, hence, correspond to technique A, with lower- risk and mean yield. The decision to use the technique with the higher mean yield depends on many factors which increase or decrease the risk (Todaro & Smith, 2009 p. 456f). The woman is often responsible for providing a household with food, and the risk to have a bad horticultural harvest is generally higher than with a non-horticultural harvest. Considering the fact that she has several mouths to feed she can not afford the lack of food and/or income as a consequence of a bad harvest and, thus, the risk related to horticulture is considered to be too high.

A household is more risk averse, and less likely to take any kind of risk, the poorer it is. Financial investments are generally very risky and that makes the subsistence farmers hesitate investing in new agricultural technique. They continue to use the more traditional technique that is less efficient and yields lower incomes. This phenomenon is especially seen in female headed households where assets and income are very restricted (Todaro & Smith, 2009 p.

451). Since risk-aversion is common for female headed households, and figure 4.2 illustrates how it appears.

FIGURE 4.2 RISK AVERSION



SOURCE: VARIAN, 2006 P. 225

Figure 4.2 assumes that the utility of the expected value of wealth $u(10)$ is greater than the expected utility of wealth $0.5u(5) + 0.5u(15)$ for a risk averse person, where 0.5 represent the probability of the expected utility of wealth (Varian, 2006 p. 225f).

A concave utility function is characteristic for a risk-averse person. The slope of the curve is flatter, the higher the wealth of the person (Varian, 2006 p. 225). A poor female farmer is, thus, likely to have a steep slope and to be very risk averse. In terms of figure 4.2, $u(10)$ corresponds to the utility of the income the farmer has in the less risky non-horticultural production. The expected utility of wealth, $0.5u(5) + 0.5u(15)$, corresponds to the utility of the income in the risky horticultural production. For a risk-averse person, the utility of the expected value of wealth is preferred to the expected utility of wealth (Varian, 2006 p. 225). According to the theory, the farmer would choose non-horticultural production.

If the farmer chooses to stay in non-horticultural production, the income will be 10. We consider horticulture to be a game where the probability of winning/gaining from the production is 50 percent and the probability of loosing/not succeeding with the production is 50 percent. Assuming a fair gamble means that the expected value of wealth, if accepting the gamble, corresponds to the certain value of wealth if refusing the gamble. A risk-averse person will always refuse the gamble (Frank, 2008 p. 183). Hence, the farmer will not start

with horticulture. In order to reduce uncertainty, information that helps reducing it, has economic value (Frank, 2008 p. 186).

The essay analyses several factors that affect the risk with horticulture, and the choice of involving in the production or not, and those ones are: Socio-cultural influences, domestic responsibilities, income, expenses and credit, access to information and education, institutional factors, market access, cooperative groups and demography.

Hypothesis

Based on the theory, the hypothesis presumes that if women are facing several factors that increase the risk, and they are choosing from technique A and B in figure 4.1, they will choose the alternative A that represents non-horticultural crops.

This choice will be related with a higher probability of a stable yield and thereby lower the risk, but which is a relatively low mean crop yield compared to the other choice. This is explained by the assumption that poor women are risk averse.

On the other hand, if they face several risk decreasing factors, which function as insurances to the risk that women face, they are more likely to choose technique B with a high but uncertain yield. Decreasing the risk will consequently enhance the possibilities for women to gain economically from horticulture.

5 THEORY OF EXAMINED FACTORS AND THEIR RISK CONTRIBUTION



The following part examines the risk-affecting factors mentioned above, in order to determine whether women are likely to enter-and gain from horticulture or not, according to theory.

5.1 SOCIO-CULTURAL INFLUENCES IN KENYA

There are obviously inequalities between the sexes in Kenya; however, not everyone recognizes them, not even the women who are the most affected by them. It is important to

point out that there are great differences in Kenyan culture because of the many tribes, and also the diverse views on gender issues, therefore, this discussion can not be exhaustive.

Women stand for the largest contributions to the household, measured in working hours Smallholder Horticulture Empowerment Project (SHEP). The women should be seen as the key economic agents of change, in attempts developing food security and economic growth on local, national and global level (Mehra & Rojas Hill, 2008 p. 1). Still, the general view is that men are the key economic actors, which limits the women in their contacts with stakeholders as government officials, finance institutions and customers, (USAID, 2009 p. 21ff). As women are not regarded to be key economic actors it will increase their risk to have an occupation which is not considered to be appropriate for females.

The perceptions of task division in the labour market are taught to girls and boys at an early age. Each sex learns different things during their child hood since they are expected to work in a specific field, doing specific tasks, according to their sex. In addition, women face a greater time constraint, which is discussed further in the section of domestic chores and child care access. (USAID, 2009 p.10, 18, 21). Table 5.1 from Dolan & Sutherland (2002) shows the division in pack houses and farms between the sexes. Women do often have low skilled jobs compared to men. The tasks for a female farmer are normally digging, planting, weeding, cutting, picking, stringing, sorting and packing while the male tasks are construction work, digging trenches, driving, irrigating, making plant beds, doing mechanics and spraying. The sex division among low-skill tasks and high-skill tasks are more or less equal in pack houses as in the farms.

TABLE 5.1 TASK DIVISIONS

Packhouse		Farm	
Men's Jobs	Women's Jobs	Men's Jobs	Women's Jobs
Electricians	Cleaning	Construction work	Digging
Loading	Cleaning vegetables	Digging trenches/terraces	Planting
Mechanic	Cutting/slicing	Driver	Weeding
Packing crates	Grading/Sorting	Irrigation	Cutting
Stacking crates	Packing	Making plant beds	Picking
	Sealing	Mechanics	Stringing
	Slicing	Spraying	Grading/Sorting
	Weighing		Packing

SOURCE: DOLAN & SUTHERLAND, 2002 P.22

Less mobility is another constraint which is connected with socio-cultural issues. Mobility does restrict women from network opportunities and information access (discussed further in the section about information access) (USAID, 2009 p. 18)

Hypothesis

Our hypothesis concerning socio-cultural factors is that socio-cultural influences will increase the risk since women are not considered key economic actors, there are task divisions between the genders which disadvantage women, and women have less mobility than men. These issues decrease the incentives of women to involve in horticulture. The socio-cultural believes do change over time and, thereby, also the conditions that affect women in horticulture.

5.2 DOMESTIC RESPONSIBILITIES AND CHILD CARE

There is a gender specific time constraint that women face as a consequence of their responsibilities in domestic chores and the lack of child care access. Women in rural Kenya are estimated to work more than men per day. They have to do domestic reproductive chores at home and productive tasks at the farm (or equivalent). These tasks together cause the women double work loads in comparison to men (SHEP). Recognizing the time constraint enables an increase of the productivity since it visualizes the connection between productive and reproductive activities (USAID, 2009 p.10ff). Consequently, women can often not spend enough time in productive activities in order to have a fair chance to improve the economic situation through involving in income generating activities such as horticulture.

The cooking is primarily seen as the responsibility of the woman, and it is a time- requiring task. In Kenya the most commonly used fuel for cooking is firewood, which is used by 60 percent of the total rural households (KNBS, 2009 p. xi). To be able to cook the women need to gather the firewood, go to the source of water and wait for the water to be drawn, in some areas it can take more than one hour to draw water (KNBS, 2009 p 24f). These tasks are being done before the actual cooking and, moreover, the woman should clean, wash dishes, take care of the children etc. The woman is therefore “overwhelmed by the multiple responsibilities as compared to men” (SHEP). 16-19 hours of work every day is normal for a poor woman in Africa (Todaro & Smith 2009 p. 469). Horticulture requires more time at the farm compared to non-horticulture, but since the women have to do domestic chores at home she will have less time in the farm, and as a consequence, the risk concerning horticulture is likely to increase.

Child care is another time-requiring responsibility which is often in the hands of the woman. The average family size in the rural areas in Kenya is 5-6 persons (KNBS, 2009 p. x) and the women have therefore generally a great deal of work concerning the children, in addition to

all the other chores. Even though the large amount of children is an obstacle for women with regard to their possibilities of doing productive work, in the farm for instance, the fact remains that most families often have several children. This problem can be explained by the Malthus Population Trap that describes the high fertility rate as a coordination failure. It further implicates that everyone will benefit if the average fertility rate declines, but for the single family it is hard to make the decision of having fewer children, since, if they are the only one doing so they will be worse off (Todaro & Smith, 2009 p. 165).

Hypothesis

Hypothetically, the risk with entering horticulture will be high for women since they spend many hours in the household doing domestic chores every day and have to take care of several children. The women have little time to do productive work because of all the work with reproductive tasks. She is also unlikely to have incentives to engage in a new activity such as horticulture bearing in mind her current work load.

5.3 INCOME, EXPENSES AND CREDIT OF HOUSEHOLDS

Income is a determining factor that affects the access to initial capital. Farmers who are not able to receive financial loans for starting businesses, are likely to be stuck in subsistence agriculture, even though they could be better off if they received a financial loan or if the income were more equally distributed in the economy (Todaro & Smith, 2009 p. 178).

Horticulture generally generates a large yield. However, it requires more inputs, compared to non-horticulture, which are very costly. The higher costs linked to high-value production thus excludes the poor-assets farmers to a large extent since they often lack finances and possibilities of receiving loans. (Mehra & Rojas Hill, 2008 p. 9). The women are the poorest assets holders and they are, for that reason, the ones to face the largest obstacles with entering horticulture production. If you do not have money enough to buy land, you are very unlikely to start horticulture production. As a result, if the household has more land it is likely to invest in, and start with horticulture production, especially if the land is irrigated (McCulloch & Ota, 2002 p. 25).

Even though the income of horticulture usually improve the income of the household, the fact remains that the profit share for the women is still low; many times as little as five percent (Todaro & Smith, 2009 p. 469). On the other hand, five percent profit share of horticulture is normally more than five percent of a non-horticultural profit share; therefore, women could

still improve their economic situation by changing non-horticultural production to horticultural production. Because of the general assumption that women are secondary earners in the household, they are sometimes paid less (Mehra & Rojas Hill, 2008 p. 12) and therefore cultural attitudes contributes to the lower income of women

Hypothesis

If a woman has many people to provide for, and the income of the household is low, then she will probably face a higher risk in horticulture, and will be less likely to have incentives to involve. Even if horticulture offers a possibility of higher yield, still it is connected with a higher risk. To enter horticulture, when being responsible for the providence of several people, is too risky since the low income does not offer any security in the case of a bad harvest. Further, it limits investments in pesticides and irrigations systems for the same reason. The hypothesis therefore claims that the low income levels of women, the lack of credits in combination with low profit shares and economic responsibility, carried by women, are some of the most contributing factors to risk.

5.4 ACCESS TO EDUCATION AND INFORMATION

The *traditional neoclassical growth theory* describes how three factors, one or all, affect the growth of output. One of those factors is education (Todaro & Smith, 2009 p. 129). The *human capital approach* is also promoting education as one factor that increases productivity (Todaro & Smith, 2009 p. 375). The importance of education is consequently one factor determining whether women successfully can gain from the horticultural sector or not.

Horticulture often necessitates more advanced technology and more knowledge than non-horticulture. Compared to non-horticultural crops, horticulture requires a different knowledge about cultivation, pesticides, irrigation, standards, market and processing among other things. Therefore, low education can be an obstacle, and implies a higher risk for the women who would like to start with this kind of production.

Access to information can be an obstacle for a farmer who wants to start with horticulture. Information can consist of brochures, courses, instructors, formal education, books and neighbours among other forms. Information has a crucial impact on the possibilities to gain from horticulture. Although, there are several aspects that aggravate individuals from having the information they need, the problem could be explained by asking the questions: why,

what, where, who, when, and how. Beginning with the issue of why to look for information; a recurring issue is that the farmers do not recognize the obstacles, and that means that they do not realise the effect of low educational levels. They may not know that learning more about agriculture can make their farming much more effective in terms of lower costs, higher yields, diversifying to spread the risk and seeding at a time that will make the harvest face the highest demand. Furthermore, they do not know what to look for; if they need books, instructors or to attend courses, this is of course obstructing when they try to find relevant information sources. Even if you know what you are looking for, it is difficult unless you know where to find it and who to consult. When, is a question of an alternative cost; when can a farmer afford to leave work in order to seek for information that may, but only may, increase her future yields. It is risky, and women do often have small opportunities to attend, for instance, seminars and programs, since they have the domestic responsibilities to do at home. Finally, the question remains: how to find the relevant information. How to pay for material or the education fees, how to use written information if you are illiterate etc, are obstacles that women find hard to overcome.

In most developing countries in Asia, Middle East and Africa, women are less educated than men. This fact is a great constraint when they try to adapt new technology, since horticulture generally requires more advanced technology than non-horticulture. Education and information is therefore a key to succeed in horticulture. Furthermore, improving the primary and secondary education for girls is the most effective way of empowering females (Clunies, Forsyth & Huq, 2009 p. 443).

Agricultural extension service is a mean used to inform farmers. There was a study done in Kenya in the 1970s that explained the exclusion of women from agricultural extension services. It was explained by the fact that few women are extension service agents, and as a consequence, few women meet extension agents because of negative attitudes towards male-female contacts. This issue is important since it could increase the productivity of smallholders if it is done right. If the number of female extension agents rouse, there could be a better focus on women and their needs (USAID, 2009 p. 20, 45) (Khaemba, interview, 2010).

Education also affects the division of labour between the sexes. A low educational level often results in low-skilled required tasks or jobs. Most of the workers in the horticultural sector are unskilled, and here the women are overrepresented as the table 5.2 indicates. This fact is

shown in the pack houses, as well as on the farms. In the table below, the share of women who have high-skilled jobs is zero percent but the number of men is 16.7 percent in farms, and 12 percent in pack houses. Furthermore, the share of unskilled female farmers is 87.7 percent in the farms and 79.5 percent in pack houses, whereas the share of males in unskilled work is only 36 percent in the farms and 66.6 percent in the pack houses. The access to information and education is not a complete explanation to this oblique position, but it is a great contributor. The disproportionate share of women in the unskilled workforce is not specific for the horticultural sector (USAID, 2009 p. 18).

TABLE 5.2 SKILL LEVEL OF EMPLOYMENT

	Packhouse		Farm		All	
	% Male	% Female	% Male	% Female	% Male	% Female
Unskilled/manual work	66.6	79.5	36.0	87.7	41.9	84.4
Semi-skilled/on-the-job training	16.7	20.5	52.0	12.3	45.2	15.6
Skilled	16.7	0	12.0	0	12.9	0
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Field Study, 2001 and data derived from McCulloch and Ota field survey, 2001

SOURCE: DOLAN & SUTHERLAND, 2002 P.19

Hypothesis

The risk faced by a farmer is likely to increase due to less education and access to information. If one does not have the knowledge about the possibilities with horticulture there are no incentives to engage in the sector and women are therefore unlikely to take advantage of the possibilities offered by the sector. If the knowledge of what is required from the farmer in order to gain from horticultural production is too costly or too hard to find, implies that the risk with entering sector is too high. But higher levels of education can also decrease the risk as it provides more opportunities to alternative occupations if the horticultural activity fail, and therefore education can serve as an insurance.

5.5 INSTITUTIONAL FACTORS

Formal laws and institutional policies often create barriers towards women who are trying to gain from economic activities. The laws and policies are often extensions of discriminatory socio-cultural beliefs which are now formalized (USAID, 2009 p. 24). Legal frameworks set many of the constraints or possibilities that the women face in everyday life and, therefore, also their possibility to enhance their economic situation through horticulture.

In 2010 there was a referendum for a new constitution in Kenya, the response was positive and thus a comprehensive reform was voted through. The law passed in 2008, and the Constitution of Kenya Review Act was created to guide Kenya through the implementation of the new constitution. The act includes the values which are the base of the new constitution. It consists of:

- a free and democratic system of government

- human rights and gender equality

- people's participation in government

- enduring basic needs and well being of all Kenyans (Committee of Experts on the Constitutional Review, 2010 p.1). However, it is important to keep in mind that these changes are formal and the implementation may take a long time, or not occur at all.

Hypothesis

The land reform, which is part of the new constitution, contains elements that will affect agriculture and women. The new constitution does empower women formally through the legislation and it can lead to increased land ownership among women. The access to land can thus decrease the risk and increase the incentives for the women to start with horticulture. Furthermore, the reform implicates that issues such as equal representation of sexes among officials will improve, which should address the institutional obstacles that increase the risk connected to horticulture that women face. These obstacles can be access to assets, entitlement to sign contracts and open bank accounts, which all should ease the engagement in horticulture for women, especially for smallholders who want to develop their business. In addition, education should improve since it is considered as a basic need in the new constitution.

5.6 MARKET ACCESS

Market access is one important factor when it comes to the decision of whether to enter the horticultural sector or not, and the ability to gain from it. If there is no market, there are no buyers, and that implies that one will not be able to profit from horticultural production which eliminates the incentives of investing in the sector. Market access depends on various factors such as capital, knowledge, resource endowments and patterns of resource allocations (USAID, 2009 p. 39). Some of these factors are already discussed in the essay but another

important variable is transport. Middlemen as a mean of reaching markets will be discussed in the section of cooperative groups.

In order to reach a profitable market for horticultural produce, the transport network is of major importance. The horticultural crops are very delicate and fragile and, hence, the time spent in transport and the mean of transport are great obstacles that require improvements in Kenya (McCulloch & Ota, 2002 p. 4). According to USAID women do specifically need better access to transport to be able to attend for instance farmer field days more easily (2009 p. 34).

Access to an international airport is a necessary condition to export horticulture produce to Europe from Kenya. However, the air freight access can also be a great concern due to the high costs related to it (McCulloch & Ota, 2000 p.4). There are several problems related to the export of crops that are not found in the export market, however, if you succeed to export your produce the return is much higher.

Hypothesis

The access to transport is a factor that affects farmers by increasing their risk of not reaching potential buyers. It is a necessary condition to have a functioning system of transport in order to reach a profitable market, domestically as well as internationally. If the farmer does not have access to a good mean of transport to take the produce to the market, efficiently and safely, the risk of involving in horticulture may be too high to create incentives.

5.7 COOPERATIVE GROUPS

Creating cooperative groups with other farmers in order to split the risk within a group is an alternative to formal insurances. The groups can be seen as pooling arrangements which is a good strategy for reducing risk through the *law of large numbers*:

“Accidental losses pose a problem of inherent uncertainty. But for a large group of individuals, the proportion of people that will have accidents is extremely stable and predictable” (Varian, 2006 p. 188).

The groups are a good way of decreasing the risk related to horticulture, and make it more likely for women gain from the production. Problems of high costs, access to key markets, doing business, supply of inputs and financial obstacles are easier to handle as a group than as

an individual farmer. There are incentives for buyers as well as producers (cooperatives) to collaborate through horizontal market relationships, in order to overcome market failures, through economies of scale. These failures can be found in “[...] credit, information, factors of production, procurement of raw materials, as well as in transaction costs that govern the identification of sellers, and the management, negotiation, and enforcement of the market linkages” (USAID, 2009 p. 38). The cooperatives of the farmers can be a part of this horizontal linkage where they collaborate with input suppliers, processors, exporters and other buyers, where all actors can be in different positions of the chain. These chains have better capacity to deal with the leading firms in the market and, hence, improve their positions, compared a single group or an individual farmer (USAID, 2009 p. 34f).

Shahe Emran and Forhad Shilpi claim that middlemen are an essential part in the development of agricultural markets. If no middlemen (which are the links between the producing farmers and the market) are available, the farmers are likely to stay in their subsistence farming and will not specialize in crops that are demanded by the market. This outcome can be seen as an underdevelopment trap (Todaro & Smith, 2009 p. 160). According to the approach of *multiple equilibria*, it is described how the numbers of middlemen who act in the region decide what price the farmers receive for their produce. The number of other farmers who specialize in the same product decides in turn how many middlemen there will be in the region. The equilibrium is found where the supply and demand curves cross; which will be where all participants are doing what is best for them regarding what they expect that other farmers are doing. The outcome to what the others are actually are doing does in this point correspond to the expectations of the farmers (Todaro & Smith, 2009 p. 162f).

For female small scale farmers, cooperatives are better options than individual farming when it comes to agribusiness since a woman’s voice alone is rarely heard. The groups are of special importance since it is more profitable to bargain collectively with large buyers than individually (Mehra & Rojas Hill, 2008 p. 11). The groups are good knowledge sharers. Both women groups and mixed gender groups in horticulture are good bases for the individuals to share knowledge and information of crops, pesticides, irrigation, prices, market access, and middlemen among other things. In the rural areas access to internet and other sources of information are limited and, therefore, the knowledge needed for the horticultural production will reach the farmers through neighbours and cooperative group members. It is discussed that the social capital of women might have a positive effect on rural producers and agents to

collaborate successfully and, therefore, the women can be useful to have in leading positions in the groups (USAID, 2009 p. 43).

However, there are remaining obstacles in order for the women to gain effectively from horticultural cooperatives. In many groups the criteria for entering a group can be restricted to only one membership per family which often leads to that the head of the household (often a male) becomes the documented member. Another obstacle can be the fact that membership requires demonstration of legal land ownership, and that is normally in the hands of the man in the household (USAID, 2009 p. 36).

Hypothesis

The cooperatives can hypothetically be expected to decrease the risk significantly since it provides knowledge, information, initial capital and a stronger voice towards external agents. But since there are barriers restricting women from being members of cooperatives group the reduction of risk can be marginalized. The incentives of women concerning horticultural investments are expected to be enhanced due to cooperative groups, as long as women can access the membership of these groups.

5.8 DEMOGRAPHICAL CHARACTERISTICS

In the survey of McCulloch and Ota they found that the household is less likely to start with horticultural production the older the head of the household is. Consequently the young ones are more likely to enter horticultural production. Although, the younger ones need help from more experienced family members with good knowledge, and in order to start the horticultural production they will also need the other family members as labour in the farm. The fact that young people are more likely to start with horticulture, *ceteris paribus*, indicates that they are less risk averse than older people and (2002, p.27).

Due to high birth rates most developing countries experience high population growth rates. This correlation implies that there is a large share of dependents which are mainly children. Thus, the dependency ratio in these countries is high, since the active labour force is relatively small in comparison to the total population (Todaro & Smith, 2009 p. 62f). If a female farmer has several children, and perhaps older parents to provide for, she is unlikely to invest in risk related production as horticulture. The dependency issue can lead to a concept of *the hidden momentum of population growth*. This idea explains the reasons for a continuing high

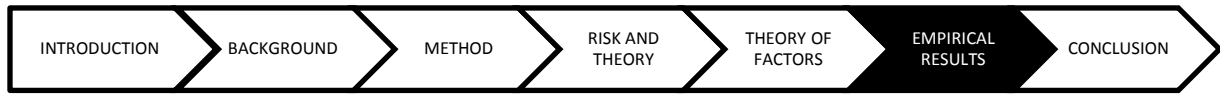
population growth rate even though birth rates have declined. There are two reasons for this phenomenon: The first cause is connected to the time demanded to decrease the birth rates. This cause demands a change of the general perceptions among the population regarding child birth. The second one highlights the fact that the age structure with a youthful population increases the number of future potential parents (Todaro & Smith, 2009 p. 281f). If the growth rate declines, the dependency ratio will also decline and that will lower the risk connected to horticulture.

As stated before, the women in rural areas are to a large extent involved in some kind of agriculture. Previous involvement in agriculture, before starting with horticulture should make it easier for the women to enter the sector and benefit from it. The knowledge from agricultural production can be useful in horticulture. Thereby, it decreases the risk and removes an obstacle considering the entrance into the sector, if the woman (or the household) were involved in agricultural production before. Previous involvement in agriculture does also increase the likeliness of having a plot of land which now can be used for horticultural production instead.

Hypothesis

The demographical conditions that most women face can decrease or increase the risk that women face in horticulture. If the dependency ratio of Kenya is declining the women will experience lower risk in horticulture in the future. The assumption that a large share of the population has previous experience of agricultural activities is likely to lower the risk of engaging in horticulture.

6 EMPIRICAL RESULTS AND RISK



In chapter five we discussed some variables which could decrease or increase the risk related to horticultural production, faced by female farmers. A risk-averse farmer has lower incentives of entering the horticultural sector. This chapter will continue this analysis by discussing the empirical results of those factors that influence the risk, and thereby the possibilities for women in horticulture. The section of empirical results presents the outcome from our field study. These results are being discussed and compared to Kenyan statistics.

6.1 SOCIO-CULTURAL INFLUENCES AS A FACTOR

As the legal process is now clear with the new constitution which is discussed section 6.5; women can do all the formal processes, but the main problem is still the cultural influences concerning women in horticulture (Mbithi, interview, 2011). All factors that are discussed in this essay do affect the risk faced by women; however, social and cultural influences do further affect all of these variables. The interviewees were asked about the attitudes of the households concerning their entrance to horticulture; only two out of the twelve had experienced any problem with the opinions of the other household members. What is important to notice is the fact that these women are already involved in horticulture and some of them are singles and do not have other household members. This fact implicates that there might be far greater constraints facing other women who would like to enter the horticultural sector.

There were some significant factors which has been emphasised in previous research that the interviewees seldom recognised; while the information from officials revealed problems that can be found in other quantitative statistics. Using previous research we could see differences between the answers of our respondents and other studies. O.J Arim, the General Manager at HCDA in Nairobi (2011) says that people are often aware of how it should be even if their situation is not that way, and people are conservative and do not easily speak out about certain issues. He considers perceptions to be among the greatest obstacles for female smallholders in horticulture to. Starting an (horticulture) enterprise is considered to be something that men do; women and children can be included in the labour force. Marketing, for example, is not

considered an appropriate task for females. The division of work does also leave all the domestic responsibilities to the women, which implicates that they have less time for productive activities. It is of great importance that the women, as well as men, realise the significance of good allocation between productive and reproductive work, in order to improve the livelihood of the whole family. This fact is also emphasized by Khaemba (interview, 2010) who says that HCDA tries to create awareness about gender roles and responsibilities by emphasizing the household contributions made by each sex.

The Smallholder Horticulture Empowerment Project is an attempt to scheme the awareness and attitudes of task division within households. The project was undertaken in collaboration between the Ministry of Agriculture, HCDA and the Japan International Cooperation Agency. The results were clear, showing that the women's partners often did not realise the work load of their women. After increasing the awareness of the work loads which women respectively men carry, there were great improvements observed in the households concerning the sharing of responsibilities. This increases the time that women can spend in productive work and thus the household income.

The interviewees were divided in the question of whether men are more suitable for some tasks than women are. A common thought is that men have to work with tasks that demand more physical strength. An example of vertical division is how high-low skilled tasks are divided between men and women at pack houses. Most of the packers were women while men often had more skilled tasks. A worker at a pack house in Nairobi says that there are often just one or two men- while there are about 70 women working at their pack house. This perception about gender roles does naturally lead the concentration of women in specific sectors- and doing specific tasks which could create distortion and inefficiency in the labour market.

Khaemba (interview, 2010) explains that the limited mobility is an obstacle for women, for example women are considered to be cheating, prostitutes or misfits in some areas if they are too far away and away too long from their household. The problem of mobility hinders women from moving to areas where they can gain from the horticultural sector, for instance, to move to Nairobi where landless women can be offered jobs at pack houses. The social aspects can also hinder women to move because it is not always accepted by the community for a woman to stay alone.

Analysis

The conservative characteristic of the culture in Kenya is affecting the chances for women to enter and gain from horticulture. Our hypothesis is confirmed since women are not considered key economic actors as they are not expected on certain markets or in certain positions. The heavy workload of women is seldom recognized and, therefore, it is a risk contributing factor. In some areas and contexts there are also limited because of perceptions concerning the mobility of women. The socio-cultural aspect is not an independent factor, but influences all the other variables in this area negatively; it increases the risk of women.

6.2 DOMESTIC RESPONSIBILITIES AND CHILD CARE

Women in Kenya generally spend several hours doing domestic chores at home every day. However, in the interviews made with female farmers, the women did not always consider the hours spent in the household to be an obstacle. It can be explained by socio-cultural perceptions. When the women were asked if they had enough time to spend in their horticulture farm, the answer could be that it was no problem because they could wake up early in the morning, as early as four a.m., to start with domestic chores in order to spend more time on the farm later on during the day. The ones who recognized the domestic chores as a problem said that they would be able to improve their income if they could spend more time in the farm, and less time in the household if they had someone to help them. However, to hire someone to help them with daily domestic chores was out of their budget. Only one of the interviewees had someone hired, and the same woman did also have a family that shared the domestic workloads. That situation was however an exception rather than the rule.

Florence Khaemba (interview, 2010) comments that the fact that women do not consider their domestic responsibilities as an obstacle by saying “they don’t even know what they are going through”. It is so deep rooted in their culture that they do not see it as an issue. Further, she explains that HCDA encourages the women to be aware of gender roles and responsibilities, and the organisation also promotes new technology such as fire-less cooker and more, that would help to minimize the time spent on domestic chores for the women so they can focus on income generating activities instead; in this case horticulture.

Five of the interviewed women spend less than two hours on domestic chores every day, these women are often relatively young and stay with their mother and siblings so that they can divide the chores. Four interviewees spent up to four hours a day, while additional five women spent more than four hours each day on tasks in the household. The time spent in the household decreases the time left for horticultural activities, and since the majority of women spent at least three hours and often five hours we can conclude that this is a time constraining obstacle for them which increases the risk.

Another obstacle that women face to a greater extent than men, as a result of the domestic responsibilities, is the time spent on child care. The Senior Horticultural Assistant at HCDA, Kisumu (Khaemba, interview, 2010) tells us that women are usually presumed to take care of the agricultural tasks but also the domestic chores, and among that, child care (SHEP). This fact implicates that women will have a tougher time, from the sowing to the trading at the market, as they need to take care of the children at the same time.

The results that were found during the qualitative tell that the horticultural female farmers who had children, in the ages where child care was needed, often had no access to child care. Out of the few who had help, half of them paid for the child care by having a maid, and the rest of the interviewees had a family member who took care of the children, for instance a grandparent or elder siblings. In order to have access to paid child care, the household income must be sufficient to pay a maid or fees for Early Childhood Development (ECD) centres, which is not affordable or accessible for most of the farmers. On the other hand, leaving family members to care for the children also create negative effects. If elder family members take care of the children the alternative cost for them is less time spent on productive work, which could increase the income of the household. Further, if elder siblings are left to take care of the younger children; the alternative cost will be missing school, and less time to do home works. However, few of the interviewees recognized it as a crucial issue that was hindering them to gain from horticulture.

Quantitative data in table 6.1 shows a trend where the pupil enrolment in ECD centers are increasing during the period from 2004 to 2008. Gross Enrolment Ratio (GER)⁵ for Pre-primary school increased with 0.5 percentage points to 59.8 percent between the years 2007 to

⁵ Enrolled children of all ages / Total number of children in the official school age group

2008, while the Net Enrolment Rate, (NER)⁶ increased with 3,3 percentage points to 43.0 percent (KNBS, 2009 p. 48f). Even though the changes moving towards a direction where the child care access is increasing, still it is a slow change. Since only 43.0 percent in the relevant age group are enrolled in ECD centres, the issue of child care access remains a big issue of women in horticulture. The table shows that the numbers of children in ECD centres are increasing but since Kenya has a high population growth the enrolment ratios are more relevant to look at.

TABLE 6.1 GER IN ECD CENTERS YEARS 2004-2008.

	Numbers				
	2004	2005	2006	2007	2008*
Enrolment					
Boys	823,417	830,828	866,445	876,163	885,320
Girls	804,304	812,347	805,891	814,930	834,925
TOTAL	1,627,721	1,643,175	1,672,336	1,691,093	1,720,245

SOURCE: KNBS 2009 P. 49

Analysis

Although not all off the interviewees considered the domestic responsibilities and the child care to be a significant obstacle, some of them did. The fact that not all of them thought of it as a problem can be explained by the culture where they live, where the awareness of gender inequalities is low, and the normal situation, where women do all of those tasks, is generally unquestioned. However, many of the farmers had problems with the time spent on reproductive work that made it impossible to work at the farm as much as they would like to. The choice of alternative costs due to time constraint, as horticulture is time demanding compared to non horticulture, is therefore a contributing risk factor. Since horticulture is time demanding, the risk with entering the sector will therefore be higher for the ones with many children and high burden of domestic chores. Quantitative data on domestic chores are hard to find, but at least we can see that the trend in child care goes towards right direction. Although, the change is too slow to implicate that it will contribute to the incentives of women's involvement in horticulture in near future.

⁶ Enrolled children in the official school age group / Total number of children in the official school age group

6.3 INCOME, EXPENSES AND CREDIT OF HOUSEHOLDS

Income, expenses and credit are crucial factors which affect the risk connected to horticulture through the high costs related to entering and investing in the production. Through the interviews we have found that the income of the farmers are varying considerably, and it is hard to make a general statement of what the average income is in horticultural- and non-horticultural production. The variations are explained by differences in the size of land but also because of variations in inputs. Almost all of the interviewees say that their income has improved since they entered in horticulture.

Season and income are highly related in horticulture. The fact that the fluctuation in income depends on season is one of the determinants of why the interviewed non-horticultural farmers have not started horticultural production. When it is rain season the harvest is excellent but when the dry season comes the farmers without an irrigation system are extremely affected with lower harvests and yields. Because of the fact that the horticultural harvest is more dependent on seasons, the risk-averse farmers often choose to start, or continue with non-horticultural crops.

As variables for income and expenses we have chosen to use the minimum wage and the household expenditures as indicators for the trend of this factor. Table 6.2 shows the minimum wages which are set by the government as guiding measure for reasonable shares that workers should be assured (KNBS, 2009 p.81) for unskilled employees in the informal sector where most of the horticultural workers and farmers are expected to be found. The minimum wages is more relevant compared to the average wages because of the big disparities in income which would make the measure deceptive. Those minimum wages are also corresponding pretty well to what the interviewees have told us that they earn. Most of the horticultural workers are among the poorest and the minimum wage is therefore a relevant measure. It shows a slightly increase of the minimum monthly salary of unskilled employees in the agricultural industry from 2004 to 2008, while the average paid employees earned Ksh 5,599.30 per month in rural areas with a minimal difference between males and females in 2005/2006 (KNBS, 2008 p. xi). However, considering the Consumer Price Index (CPI) presented in table 6.5 and 6.6 the real minimum wages have fluctuated much more than the nominal minimum wages. The wages have increased 18,3 percent from 2004 to 2008, while the CPI has increased with 74.9 percent for the same period, which implicates that the real wages have actually decreased. This trend shows a negative future for the income earners in

Kenya. The fluctuations in CPI that are shown in table 6.3 can be explained by high food prices which were a consequence of high agricultural inputs. The post election violence which affected the production and the global food crises and financial crises did also affect CPI (KNBS, 2009 p. 85). This is illustrated in table 6.4 where the CPI of each item group of commodities is shown for 2007 and 2008.

TABLE 6.2 MINIMUM WAGES FOR UNSKILLED EMPLOYEES IN THE INFORMAL SECTOR (AGRICULTURAL INDUSTRY)

Type of Employee	KSh				
	2004	2005	2006	2007	2008
UNSKILLED EMPLOYEES	2,096	2,285	2,536	2,536	2,536

SOURCE: KNBS 2009 P. 82

TABLE 6.3 CPI, KENYA YEARS 2004-2008

Month	October 1997=100				
	2004	2005	2006	2007	2008
January	151.83	174.41	201.25	220.72	260.94
February	154.56	176.10	209.33	223.59	266.37
March	156.47	178.61	212.80	225.30	274.49
April	158.12	183.45	210.69	222.61	281.88
May	160.73	184.48	208.62	221.83	291.79
June	163.08	182.51	202.45	224.93	290.75
July	162.07	181.14	199.52	226.57	286.62
August	168.62	180.21	200.94	225.79	288.06
September	172.04	179.38	204.22	228.16	292.57
October	173.38	179.83	208.04	229.99	295.38
November	171.59	181.96	208.60	233.28	301.79
December	172.16	185.18	214.05	239.81	306.28
Annual average	163.72	180.61	206.71	226.88	286.41

SOURCE: KNBS 2009 P. 87

TABLE 6.4 CPI BY COMMODITIES

October 1997=100

Broad Item Group	Weights (Percentage)	Annual Average	Annual Average	% Change
		Index 2007	Index 2008	
Food & Non-Alcoholic Drinks	50.50	281.84	381.19	35.3
Alcohol & Tobacco	2.97	185.24	212.33	14.6
Clothing & Footwear	9.00	126.98	133.65	5.3
Housing Costs	11.74	164.10	174.43	6.3
Fuel & Power	4.18	293.63	356.76	21.5
Household Goods & Services	5.82	147.90	161.76	9.4
Health & Personal Care	1.59	196.81	217.78	10.7
Transport & Communication	5.75	200.48	236.86	18.1
Recreation & Education	6.02	156.65	166.94	6.6
Personal Goods & Services	2.45	139.83	150.36	7.5
Average of all Items	100.00	226.88	286.41	26.24

SOURCE: KNBS 2009 P. 87

Another female specific problem is the fact that even if the women earn money their partner often controls it (Osoo, interview, 2011). This problem does decrease the profit share of women. The interviewed women were asked whether they control their income, if their partner controls it or if they control the income together with their partner. The most frequent answer was that the income was controlled commonly by the two of them. Nevertheless, when we talked with authority employees they told us that the women very rarely have a say about the income of Kenyan households but that is a fact that women will not recognize. Arim at HCDA says that this contradiction can be due to the conservative nature of Kenya, as well as the conservative ideological thinking that it pays more to say what is expected than how it actually is (interview, 2011). If the man controls the income of the household and the woman does not recognize or deny that as an obstacle, it can hinder her to improve her economic situation.

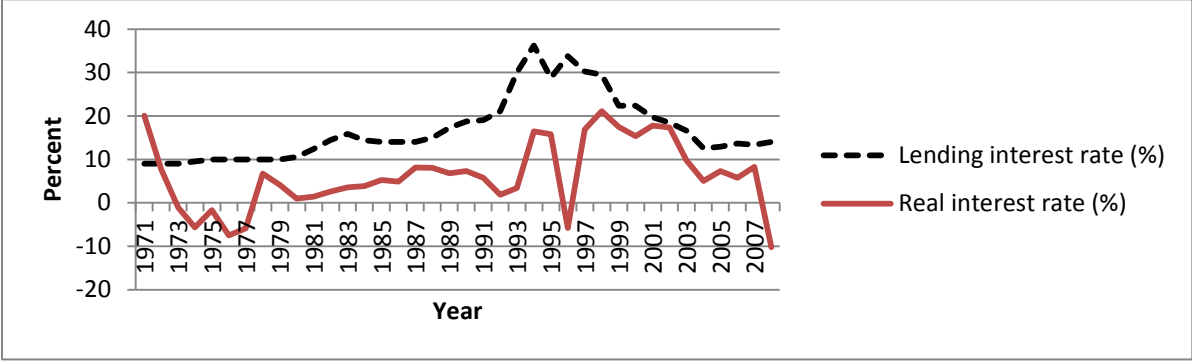
The interviewees were also asked what their main expenses were, and the answers were, not surprisingly mainly consisting of: education (school fees), food and health care. Those ones who have already entered horticulture have the production expenses as well, such as irrigation, pesticides and seeds. The average monthly household expenditures in 2005/2006 stood at Ksh 1,707 in rural areas which is 74.7 percent of the income in 2005 (KNBS, 2008 p. 26). The marginal left can seem to be relatively big, but with this amount as a marginal it will 34 months to buy an irrigation system at Ksh 20,000 if all the savings are used for this. Housing was also a large expenditure category according to the data; however, many of the

interviewed small scale farmers were not paying any rent. Comparing these essential expenditures to the minimum wage in 2005 and 2006 we can tell that single women are likely to experience the income and expenditure level as a great obstacle to enter horticulture and as a significant factor for risk.

Credit

Comparing income levels, expenditures and dependency ratio implicates difficulties in saving for initial capital, which is need for the inputs in horticulture. Many women would need to take a loan to be able to engage in horticulture. Micro Finance Institutions, (MFI), are the ones who are most likely to offer women loans if they do not have any security. In most of the MFIs examined in 2009, women borrowers have consisted of approximately half of the number of the active borrowers, other institutions have more or less variations in these figures. There is one major MFI which only offers loans to women, and one with a marginal share of women borrowers. The figures for 2008 are quite similar but with more MFIs that have a marginal share of female borrowers. Looking back in 2005 there are corresponding figures, but this year there were more MFIs with a major amount of female borrowers. Looking back even further, in 1999 the trend shows similar shares as in 2005, however, in 1999 he number of MFIs are fewer. In 1999 there were three MFIs reporting 14,186 borrowers compared to in 2009 when 13 MFIs were reporting approximately 1.5 million borrowers, a tremendous increase (MIX Market, Databases). The interest rates at MFIs are often high though. Although, considering the fluctuations in prices, the real interest rate is often far from the nominal interest rates which are the rates that prime customers are charged for loans, by banks. They are illustrated in figure 6.1 for a period stretched over almost 40 years time.

FIGURE 6.1 LENDING INTEREST RATES PERCENT



SOURCE: AFRICAN DEVELOPMENT INDICATORS 2010, DATABANK

Analysis

Considering the low wages in agriculture/horticulture, the access to initial capital for horticultural production is a major contributor to the high risk related to the sector. Taking into account the low profit share of income that women experience, the high dependency ratio and women's higher concern for collective welfare, this factor becomes even more significant for the risk related to the decision of involving in horticultural production or not. However, the access to credit seems to have improved rapidly over time, considering the large share of female borrowers at MFIs and the fact that the numbers are still increasing. The statistics of household expenditures were not exhaustive but rather weak. The conclusion would therefore be that in those cases where women can not receive a financial loan it can be hard to engage in horticulture due to high risks, but if they are able to access credits, the issue of capital access will not be a big obstacle since the risk than will decrease extensively and the incentives increase. The hypothesis about income and expenses is, therefore, correct except about the access to loans, however, the conditions for the micro credits are not examined further and this does also affect the possibility of gaining from horticulture.

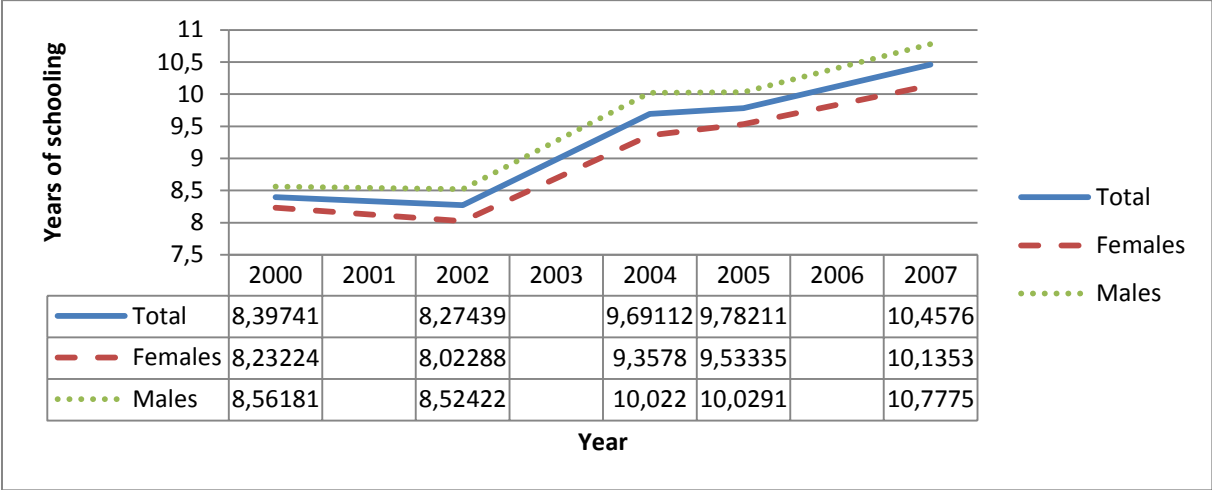
6.4 ACCESS TO EDUCATION AND INFORMATION

The education level among the farmers is quite low. Two of the horticultural smallholders have completed primary school but three out of eight have not finished it. One did begun secondary school, and the two remaining have completed it. The results among the farm workers are quite similar but with fewer who had not completed primary school and more who had secondary education. However, most of the interviewed farmers do not see it as a major problem; they do not believe that their occupation demands a lot of education.

As education is one of the factors that are assumed to affect the possibilities of the women to gain form horticulture; quantitative statistics is presented to give an overview of the general situation in Kenya. The enrolment in primary school has risen between the years 2004 and 2008, from 1,627,721 to 1,720,245 pupils in total. Boys have a higher enrolment than girls but the difference is small. GER was 112.2 percent for girls and 107.3 percent for boys in 2003, as to compare with 108.9 percent and 109.8 percent respectively in 2007. The high numbers of GER implicates that many children either enter school late or have to repeat grades. NER on the other hand increased from 91.6 percent to 92.5 percent, from 2007 to 2008. These improvements can be a consequence of Free Primary Education (FPE) (KNBS, 2009 p. 49ff).

Figure 6.2 illustrates the expected years of schooling for girls and boys as an average between the sexes in Kenya between 2004 and 2008. The trend shows a general improvement but the gap between the sexes remains, more or less, constant. Moving on to secondary education; it shows the net enrolment for females and males in Kenya. In 2008 the Free Secondary Tuition Education was implemented, and increased the enrolment. However, since the figure does only include year 2000-2007 it does not show the effect of this change, but enrolment increased by 17.1 percent the year of 2008, mainly in those schools that only required a fee for lunch and development. Between 2007 and 2008 GER increased from 38,0 percent to 42.5 percent and NER from 24.2 percent to 28.0 percent. Because of boarding expenses many children still cannot access secondary education (KNBS, 2009 p. 53).

FIGURE 6.2 EXPECTED YEARS OF SCHOOLING



SOURCE: AFRICAN DEVELOPMENT INDICATORS 2010, DATABANK

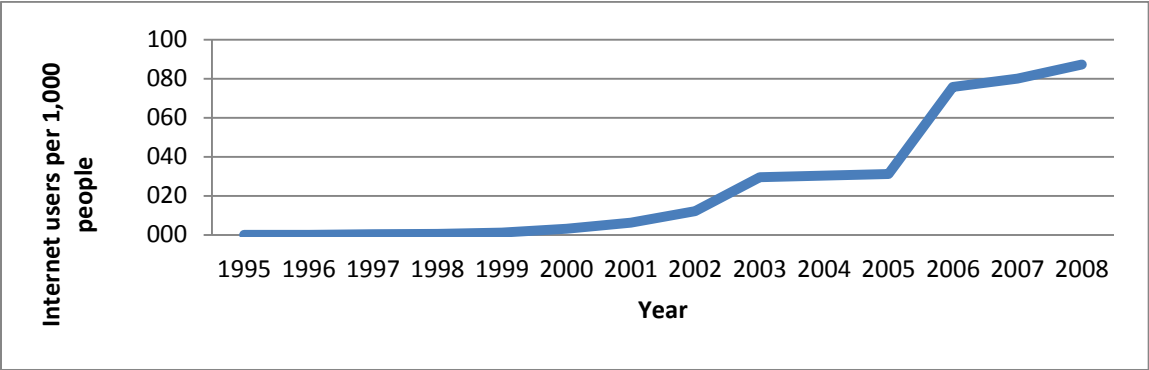
Adult education can be one good way of educating people. It has increased during the last years; from 2007 to 2008 it increased with 51.9 percent, to 179,598 learners. The female enrolment is higher than the enrolment of men in most provinces (KNBS, 2009 p. 65). This fact improves the education and information access of many illiterate women.

By looking at the statistics one can see that there is a positive trend in the expected years of schooling. In addition, this variable will not be a major constraint for women in the future if the new constitution is implemented.

Concerning the access to information we have chosen to use internet access as an indicator for the development of this factor. Figure 6.3 shows a rapid increase of the share of internet users in Kenya. This is a growth rate that can be explained by the fact that internet is a relatively

new phenomenon, but since it is a great source of information, more and more Kenyans are having access to it. Still, over 90 percent of the population are not internet users and, therefore, they lack this crucial source of information, which can improve their probability of gaining from horticulture.

FIGURE 6.3 INTERNET USERS PER 1,000 PEOPLE



SOURCE: AFRICAN DEVELOPMENT INDICATORS 2010, DATABANK

The trend of increasing information access can also be found in statistics with radio access. What can be seen is a steady increase from 1975 when there were 30 radios per 1000 people, in comparison with 2002 when there were 209 radios per 1000 people. It can be a useful source of information since the household can be updated about markets, prices, crops or other relevant information about the new constitution and its possibilities, only to mention a few examples. The share of the population that has radio access has increased from 6 percent to 93 percent, from 1985 to 2007, which together with internet access indicate a significant improvement in information access.

Analysis

The interviewees often said that education and information is not a big problem in horticulture. It can be explained by the fact that those factors are not a problem for women in horticulture, or, it can also be seen as a fact that the farmers are not aware of what knowledge and information they lack due to the low degree of education. When the farmers said that knowledge was not a problem, they often referred to a relatively simple crop to grow, and to the local market. However, in order to gain from horticulture they would need knowledge about how horticultural crops generate higher yield, how they can reach a more profitable market, what possibilities there are to export etc. Since they are not aware of the possibilities, they do not see education and information as a problem. If the factors of information and

education are contributing, or to what degree they are contributing, to risk in horticulture is therefore hard to decide. However, the statistics show that expected years of education and the access to information increase, which indicates that the risk connected to horticulture that is faced by women can be decreasing. Education can also be seen as a way of insuring income. If the horticultural production gives a bad yield and the farmer search for a secure income through employment in the formal sector for instance than a high level of education will improve the chances of getting a job with a good income. A high level of education can, therefore, be seen as a factor that decrease the risk related to horticulture since it is something to fall back on if the horticultural production does not turn out well.

6.5 INSTITUTIONAL FACTORS

Concerning the institutional factors there have been major changes as a consequence of the new constitution. The new constitution affects the empirical results and is a good indicator for institutional factors. Most of the interviewed farmers talk very positively about the new constitution and see it as a possibility for improvements in society, but some are also worried about the implementation being too slow. Among 19 interviewees, there are 15 who believe that the new constitution will have a positive impact on them and society, two who do not believe in a positive impact and two of them who do not know. Some of the female interviewees recognize their entitlement to inherit land as an enhancement since they can either use it for farming or sell it in order to receive capital. There are also women who view it as an unnecessary source of conflict, and others who think they knew to little in order to express their opinion about it.

The articles in the new constitution, that concern women specific issues according to the Federation of Women Lawyers in Kenya, are discussed below and compared to data to enable a prediction about the future impact on women's involvement in horticulture.

Socio-cultural issues

Article 45 (3) *“Parties to a marriage are entitled equal rights at the time of marriage, during the marriage and at its dissolution”*

Article 68 (c)(iii) *“Parliament shall - enact legislation - to regulate the recognition and protection of matrimonial property and in particular the matrimonial home during and on the termination of marriage”*

Article 53 (1)(e) *“Every child has the right to parental care and protection, which includes equal responsibility of the mother and father to provide for the child, whether their are married to each other or not”*

The three articles should improve socio-cultural factors which affect the risk that women face, if successfully implemented. We can expect women to face fewer obstacles during their entrance and work in horticulture, as many of the female specific conditions are connected to these articles. These conditions are, for instance, the right to matrimonial assets which has been an obstacle to women earlier, as well as the access to mutual assets, particularly land. Since the responsibility for the providence of a child is clearly stated to be a common issue of both parents the issue of child care access might also improve.

Land access

Article 60 (1)(f) *“Land in Kenya shall be held, used and managed in a manner that is equitable, efficient, productive and sustainable, and in accordance with the following principles - elimination of gender discrimination in law, customs and practices related to land and property in land”*

According to the new constitution, land must be classified as public, private or community land by the government and all people must have access to the public land. There are commissions set up to protect the constitution, among these there is The National Land Commission which guards public land (Committee of Experts on the Constitutional Review, 2010 p.10, 26). The land reform might empower the Kenyan citizen. There is a need of securing property rights in order to increase agricultural productivity, since this will raise the incentives for investments and increase output. The entitlement of owning land is also important in order to have access to certain products such as goods, services and membership in associations (The Proposed Constitution of Kenya, 2010 p. 43ff). The most of the interviewees tell us that their assets belong to both partners in the household, even though access to assets is often highlighted as a major issue for women. Khaemba discusses this issue by saying that the whole family does often have access to the land, as far as it is for the purpose of producing food for the family, however, they are seldom allowed to use it for commercial purposes. The resources are shared to some extent but they are actually controlled by the man in the household (Reka & Roka 2008, p. 8), (USAID, 2009 p. 18ff), (Khaemba, interview, 2010). The implication of this land access problem is that women need permissions from their partners if they want to grow horticultural crops. The risk with horticulture that

women face should decrease as access to land is formally improved and women do not need permission from their partner anymore. Arim (interview, 2011) thinks that a consequence of the equality in land inheritance, according to the new constitution, implies that women are more likely to have more to say about the land issue, since there are now equal (formal) opportunities, not only to access land but also to determine the use and control of it. He says that this fact does put the destiny of the women in their own hands, as they determine what way they want to go.

Representation

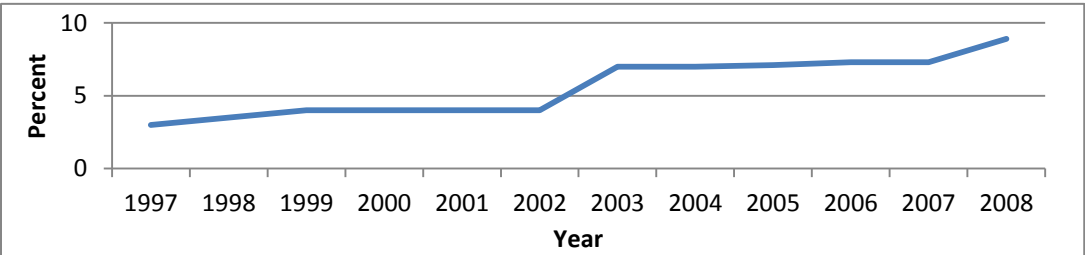
Article 81 (b) *“The electoral system shall comply with the following principles - not more than two-third of the members of elective bodies shall be of the same gender”*

Article 91 (1) (f) *“Every political party shall - respect and promote human rights and fundamental freedoms, and gender equality and equity”*

Article 100 (a)-(e) *“Parliament shall enact legislation to promote the representation in Parliament of - women, person with disabilities, youth, ethnic and other minorities; and marginalised communities”*

The aspect of equality among politicians and other officials is also relevant in this discussion. A larger share of women in the decision making process can be expected to bring female specific issues on the agenda, if the articles are implemented in the next election. If female specific issues are highlighted, it is more likely that obstacles for women would decrease little by little, and thereby the risk connected to activities such as horticulture. Women have had a low proportion of the seats in Public Offices; this is illustrated below. The changes have been slow but should be more rapid as the new constitution is now voted through. Figure 6.4 shows that women have held less than 10 percent of the seats in the national parliament, with a slow increase from 1997 to 2008. With the new constitution they must have at least one third of the seats, a share that would have taken a long time to achieve with the slow rate of improvement in the figure.

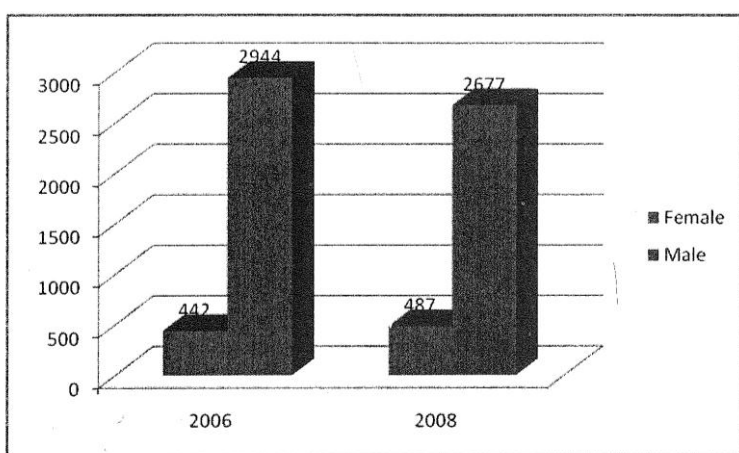
FIGURE 6.4 PROPORTIONS OF SEATS HELD BY WOMEN IN NATIONAL PARLIAMENT (IN PERCENT)



SOURCE: AFRICAN DEVELOPMENT INDICATORS 2010, DATABANK

The same can be said about elected ministers and councillors where the female representation has been 16.7 percent respectively 15.8 percent in 2008. These statistics can be compared to 5.8 percent of female ministers and 13.3 percent of female councillors in 2006 (KNBS, 2009 p. 67). Figure 6.5 shows the women representation in decision making in selected public offices, where it has improved from 13.1 percent to 15.4 percent between the years 2006 and 2008.

FIGURE 6.5 WOMEN REPRESENTATION IN DECISION MAKING IN SELECECTED PUBLIC OFFICES



SOURCE: KNBS 2009 P. 67

Formalised entitlements

Article 232 (1)(i) *“The values and principles of public service include - affording adequate and equal opportunities for appointment, training and advancement at all levels of the public service of men and women, the members of all ethnic groups and persons with disabilities”*

Article 27 (3) *“Women and men have the right to equal treatment, including right to equal opportunity in political, economical, cultural and social spheres”*

Another problem is legal rights to credits; women seldom have assets that can be used as collateral, for instance, land. Few women own land because of traditions. A woman tells us about the situation before the new constitution was imposed, when she needed the signature of her partner to access the bank services for the business which she was responsible for. Bank policies are often built on the perception that men are the only important economic actors in a

household (USAID, 2009 p. 24), (Khaemba, interview, 2010). There is often a similar problem concerning registering a business, since a formally registered business is more likely to grow than an unregistered firm. An unregistered firm does often have less access to credit and public services (electricity, phone, water etc.) (USAID, 2009 p. 23f, 29, 45). With the new policies about these formal rights, the risk with horticultural production can be expected to decrease for the women who enter or who already are engaged in the sector.

Analysis

As it has been stressed, the formalization of the issues mentioned, does not necessarily lead to a change in practice. It can be viewed that socio-cultural norms affect society more than laws and, therefore, discriminating believes continue to disadvantage women. There are plenty of lobby groups and organizations that support women who lack education, and since women are now formally entitled to land there will be lobby groups helping women to implement these rights (Arim, interview, 2011). Khaemba (interview, 2010) does agree with Arim and says that the new constitution will empower even those women who are not able to read between the lines. However, it will take a lot of awareness creation for men to see the importance of equal allocation of resources among spouses. With this in mind, the institutional factors may have been a risk increasing factor, but can now be expected to decrease the risk that women face in horticultural production. It can be seen as insurance since the women have formal rights of owning land and other legal rights that cannot be taken away without reasons. The constitution is actually affecting most of the factors examined in this study. The incentives of engaging in the sector should increase the more the new constitution will be practised .

6.6 MARKET ACCESS

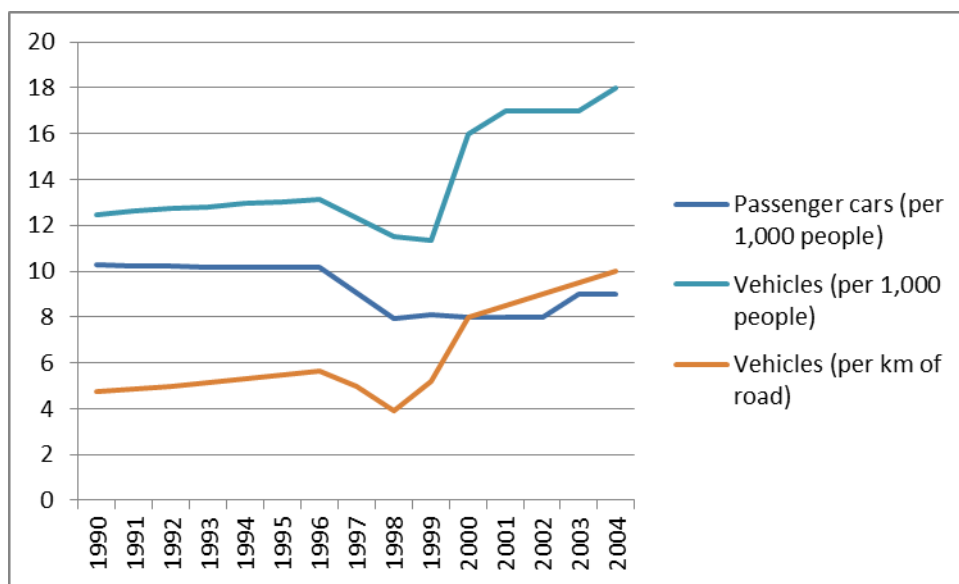
In our field study, non-horticultural- and horticultural farmers were asked if they found market access/ reaching buyers to be a problem. The conclusion was that 100 percent of the non-horticultural farmers and 80 percent of the horticultural farmers thought of that as a mayor obstacle.

Transport is a problem of reaching markets. When asked whether the transport was a problem, with the aim to reach a good horticulture market, almost everyone said that it is a great obstacle. It is a hindrance since it cost too much to buy a vehicle of their own and to afford fuel, among other things. It was a problem also to the cooperative groups even though they together could share the costs related to transport. Most smallholder farmers do not have

access to a vehicle of their own for transporting what they produce to the market. If farmers do not have a middleman then they are dependent on public transportation. Mary Mbithi (interview, 2011) explains that some farmers carry their produce with donkeys or go with matatus (a kind of van that is functioning as a public mean). If they carry tomatoes for instance; the risk that the crops will be spoiled during the transport to reach the market is quite high. The matatus are crowded with people most of the times and, hence, the farmer (most likely a woman, since she is generally the one who sells in the market) has to wait for a less crowded matatu to come because the produce will not fit in the vehicle when it is too crowded. Waiting for an almost empty matatu to pass by can take a long time, and sometimes she will not reach the market early enough to make a profit (Khaemba, interview, 2010).

Figure 6.6 shows that the numbers of vehicles per 1.000 people and the numbers of vehicles per km of road have increased since the beginning of the millenium. It indicates that more and more people have access to a vehicle. However, we cannot see if the vehicles are equally distributed among the people, or if it is a small share of the population who access a large share of the vehicles. The numbers of passenger cars is not following the same trend, but is slightly decreasing. There is an increase in the numbers of vehicles, and that is a possitive trend for farmers who depend on a good transport net. However, the numbers are still on a low level; 10 vehicles per 1.000 people in 2004 implies that the transport is an obstacle for women concerning market access. Furthermore, the roads are another problem. The building of roads and road construction is a long term process that is in the hands of the government, although, it needs to be done, because sometimes the roads to the nearest market are “kind of a nightmare” (Mbithi, interview,2011,).

FIGURE 6.6 TRANSPORT ACCESSABILITY



SOURCE: AFRICAN DEVELOPMENT INDICATORS 2010, DATABANK

Exports

Horticultural export is the most profitable way of gaining from horticultural production.

Kenya has a disadvantage in its geographical location since it does not make it possible to export vegetables and flowers with sea freight to Europe and else. It would take a long time and, hence, the produce would be deteriorated since horticultural crops are fresh produce.

Even though air freight is more expensive and worse for the environment, the fact remains that Kenya is highly dependent on that sort of transportation (Arim, interview, 2011). In Kisumu, the largest city in Nyanza district, there is for the moment an international airport being constructed and which is prospected to be completed within 2011. Currently that means that even if the farmers have the volume to export their crops, the transport from Kenya to other countries still remains a problem. For horticultural farmers, even smallholders, the airport is a great future opportunity to enter the horticultural export sector (Mbithi, interview, 2011) where the pay off is much higher. The interviewees see the construction of the new airport as a good opportunity for exporting their produce, although, it is more of a future aim for many farmers since they have to develop and increase their production first. However, many cooperative groups see the opportunities within reach and hoping to be able to export in the near future.

The problem with having to small volumes for export can be solved by the formation cooperative groups according to Biwott (interview, 2010). He claims that Canken International Ltd is an example of a company that brings smallholders together in order to

export their crops. Mbithi (interview, 2011) says that smallholders will gain from the new airport since they produce about 55 percent of all horticultural crops. The airport accountant in Kisumu continues the discussion by saying that small scale farmers will enter the export sector little by little, and several companies will get contracts. Osoodo (interview, 2010) is a farmer who grows summer flowers for export and he does currently use middlemen for taking his produce to the exporting companies. However, he sees better opportunities now when the airport in Kisumu is being build. Khaemba (interview, 2010) at HCDA in Kisumu confirms his claim by saying that the distance to Nairobi from the Nyanza region is one of the biggest challenges to someone in the Nyanza area who wants to export his/her produces.

Mbithi points out that at least tariffs are not an issue concerning the export since Kenya is among the African, Caribbean and Pacific Group of States. The economic partnership agreements offer Kenya free market access to EU-countries. Furthermore, the demand in EU is always high in the fruit- and vegetable market, and it should continue to increase according to the trends. The flower market is more fluctuating, and more sensitive to economic downturns (Mbithi, interview, 2011).

The issue of standards is one of the biggest challenges that the horticultural export sector faces, since they are dynamic (Mbithi, interview, 2011). A District Agricultural Officer in the Maseno district of Kisumu points out standards as a major problem because the farmers lack training in fulfilling international requirements. Similar statements are asserted by Khaemba (interview, 2010). A female pack house supervisor at Canken International Ltd, further discusses the fact that there are not enough smallholders who are capable of exporting horticultural produce. There are global standards, region specific and standards set by private companies in the market. For a farmer to be allowed to export the produce, the exporting company requires well kept records of the process of production. The exporters are also well informed and know what is required to enable exports to the EU market but that is usually not the case for a low- educated small scale farmer (Mbithi, interview, 2011).

Analysis

The market access is a major problem for female farmers due to low access of functioning transportation. Even if they succeed in the production of the crops, the fact remains that if the market is unreachable; the risk is too high to enter horticulture since it is hard to achieve a significant pay-off. However, we can see an increase in the numbers of vehicles, which is indicating that the trend goes towards right direction. The export sector is profitable but

includes plenty of obstacles that have to be overcome. However, the building of the international airport implies new opportunities for the farmers in the Nyanza region who aim for exporting. A shorter distance to the airport implies a lowering of the risk related to the transport of the crops. Access to a profitable market is of major importance when it comes to gaining from horticultural production. If the woman has no problems with market access; the incentives for entering the sector will be higher.

6.7 COOPERATIVE GROUPS

The interviewed farmers in the cooperative groups generally improved their economic situation after the entrance into the groups. The groups could now provide them with information about crops, seeds, pesticides, irrigation and joint investments in inputs. For instance, they are able to share the cost and use of irrigation system, which is often out of reach for the single farmer or household. Furthermore, the group has better chances of receiving financial loans since they aggregately have a greater saving and they are able to share the risk. The groups make it possible to market collectively which is more efficient. With the groups, the summed production volume increased and that is a necessary condition for being able to reach a larger market internationally as well as domestically. According to Florence Khaemba (interview, 2010), volume is the biggest problem when it comes to market access for horticultural farmers and, therefore, they encourage them to form groups.

The middlemen buy the produce from the farmers and transport it to a more profitable market where the prices of the crops are higher. The problems that arise with middlemen concerns the possibility that they take advantage of the position they are in. First of all, contracts are rarely conducted and as a consequence the middlemen can choose not to show up and take the produce to the market, but the farmers receive no compensation since they have no written agreement. Florence Khaemba claims that a contract, *codes of conduct* should be declared between the producers and the buyers (interview, 2010). Secondly, the farmers do not generally have access to transport themselves and, hence, they are highly dependent upon the middlemen. The middlemen are aware of that dependency and can take advantage of the situation by paying the farmer less than they would have done if the farmers had negotiated cooperatively. The middleman problem is easier to handle as a group since they have better chances of conduct a contract and to negotiate about prices, due to the strength of a group they are in a less subordinate position. If the group does well in the long run, they can be able to purchase a vehicle among the group in order to transport their produce to the market, and

that is an even better solution (Khaemba, interview, 2010). There are also problems caused by cooperatives, they tend to do well in the beginning but as the groups become stronger and wealthier power and trust issues arise. A likely outcome is that one or a few elites will take the roll as leader/s in the group who are often literate and have more years of education than the rest of the group and, therefore, consider themselves as the natural leaders. Because of the fact that women are generally less educated than men, the women will not be the leaders of the group, rather, the leaders can easily take advantage of them (Arim, interview, 2011).

Women groups

The economic survey from 2009 (KNBS, p. 66) shows that the numbers of registered women groups in the country was 140,482 in 2008. This large amount of groups is often considered to be something positive, but their emergence can also be due to exclusion of women in mixed gender groups because of cultural and other norms (Mehra & Rojas Hill, 2008 p. 15). The women groups have benefitted communities by income generating activities. There are also contributions made to the groups by the Kenyan Government through the Department of Gender and Social Development and their Social Protection Fund (KNBS, 2009 p. 66). Table 6.5 illustrates the increase in numbers of women groups and memberships from 2004 to 2008. The increase is not huge but the grants given by the government to the groups have almost doubled during these years. Among the registered women groups there were 5,484,275 members but more members can probably be found in unregistered groups and mixed gender groups.

Even if the female farmers can overcome entrance obstacles of cooperative groups, still there are cultural matters that make many women prefer to sell the produce next door, or to a middleman, so that she can be close to home and “continue doing what culture expects them to do in the household” (Khaemba, interview, 2010).

TABLE 6.5 WOMEN GROUPS AND GRANTS 2004- 2008

Year	No. of Women Groups	Membership	Group contributions (KSh Million)	Grants by GOK	
				Women Group (KSh Million)	Women Enterprise Fund (KSh Billion)
2004	133,135	5,115,980	531.6	46.0	-
2005	135,294	5,279,691	538.4	48.1	-
2006	136,972	5,353,607	540.3	44.4	-
2007	138,753	5,417,850	544.6	40.1	1.0
2008*	140,482	5,484,275	547.3	80.0	0.3

Source: Department of Gender and Social Development.

Analysis

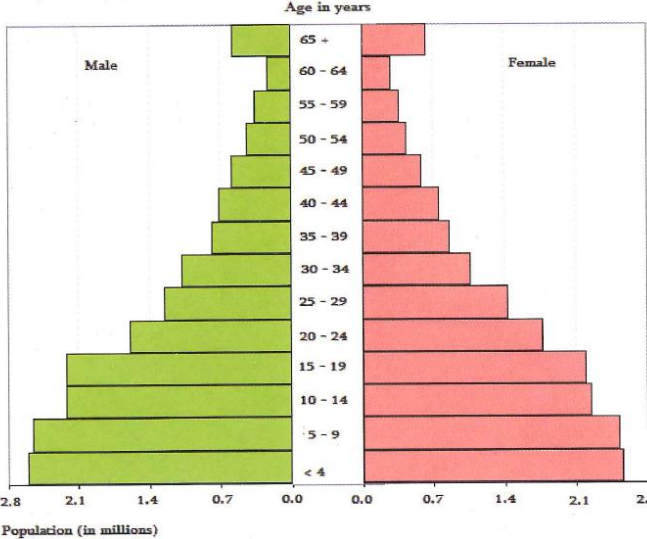
The cooperative groups are a mean of reducing risk connected to horticulture. The cooperative groups provide knowledge, information, joint investments and a stronger voice towards external agents and that seems to be correct according to the hypothesis. The barriers for entering the groups do, however, not seem to be a big problem as it did theoretically. The fact that the new constitution has eliminated most of the formal obstacles makes the entrance into the groups even easier. This issue is also weakened by the fact that a high and rising number of women are members in registered women groups according table 6.5. The issue does instead seem to be the power balance within mixed groups. The factor of cooperative groups can, overall, be said to reduce the risk faced by the women involved in horticulture. It will continue doing so in a larger extent in the future as the number of women groups increase and the effects of the new constitution will be seen. What is important with this factor is the fact that it does not only reduce the risk of one variable, but for several of the significant factors, such as access to initial capital, knowledge and contact with external agents which otherwise are disadvantaging women in horticulture. The cooperative group is a great insurance for the individual farmer since it spreads the risk among several people, the knowledge and information it provides makes it likelier that the farmer will succeed with the harvest, the chances of receiving financial loans increase and the individual farmer is less probable to be taken advantage of by the middleman. According the empirical results, women should have incentives to start with horticultural production.

6.8 DEMOGRAPHICAL CHARACTERISTICS

The demographical conditions of Kenya do naturally affect the horticultural sector. When the interviewees were asked if they believe that their age affect their entrance into horticultural production or employment, none of the interviewees say that it hinders them. A couple of women say that they feared that problems would rise as they entered a female horticultural cooperative, because of the age differences, but in the end it turned out to be a very positive thing. The mean age among the interviewees is 28.5 years old, which implicates that the sector is dominated by a young working force. Looking at the population pyramid in figure 6.7 one can tell that the majority of the Kenyan population is below 20 years of age. As young women are more likely to enter horticulture for reasons such as greater mobility, open-

mindfulness and less responsibility of supporting family members, which decreases the risk, many of the Kenyan women are likely to enter horticulture concerning the aspects of age.

FIGURE 6.7 POPULATION PYRAMID



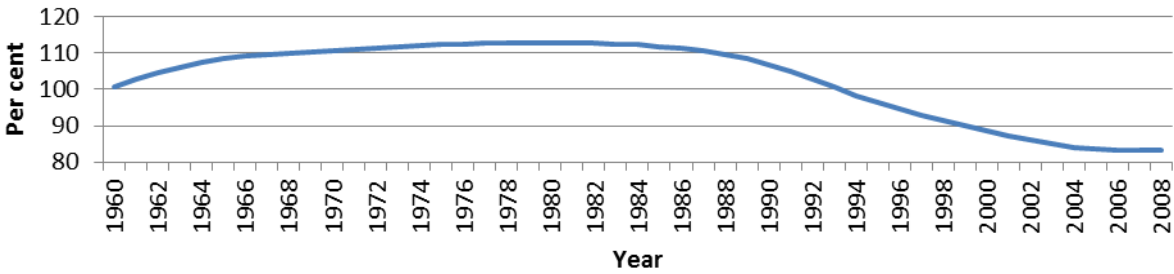
SOURCE: KNBS 2008 P.18

Statistics from the World Bank show that the Kenyan population growth rate has been increasing since 1960 when it was 3.07 percent, and it peaked in the mid 1980s with a growth rate at 3.8 percent. In 2009 the population growth rate had declined to a level of 2.64 percent, which implicates a steady decrease of the growth rate. The decrease is explained by the decline in birth rates (Databases). Applying the situation of the Kenyan population in the concept of the *hidden momentum of population growth*, one can expect a high growth rate even though the birth rate is declining. Even if the growth rate of the population is declining there is still an increase of the population due to the young population concept. Considering the conditions and the phenomenon the growth rate will decline slowly.

A high growth rate is correlated with a high dependency ratio. We can expect the burden of a single woman to be high because of the fact that the age dependency ratio is the age dependency ratio in the country is 76.8 all over the country, and the rural area has an even higher number: 84.6 percent, which is illustrated in figure 6.8. Although, the number is slowly decreasing. Kenyans face the problem that a small share of the population has to provide for a large share. 52.9 percent of the population is between 0-19 years old (KNBS, 2009 p. x), consequently, the country consists of a relatively young population. The age dependency ratio is defined as the ratio between the population considered dependent (0-15 and 64 years and

above), to the working age population (15-64) (KNBS, 2009 p. 20). As a small share of the population has to support a great number of people the working age population must have an income enough to support all of those who are not able to provide for themselves. A woman in Kenya is, therefore, likely to face a high risk in involving in horticulture, albeit the statistics implicate that the risk is declining due to the decreasing dependency ratio.

FIGURE 6.8 AGE DEPENDENCY RATIO DEPENDENTS TO WORKING-AGE POPULATION



SOURCE: AFRICAN DEVELOPMENT INDICATORS 2010, DATABANK

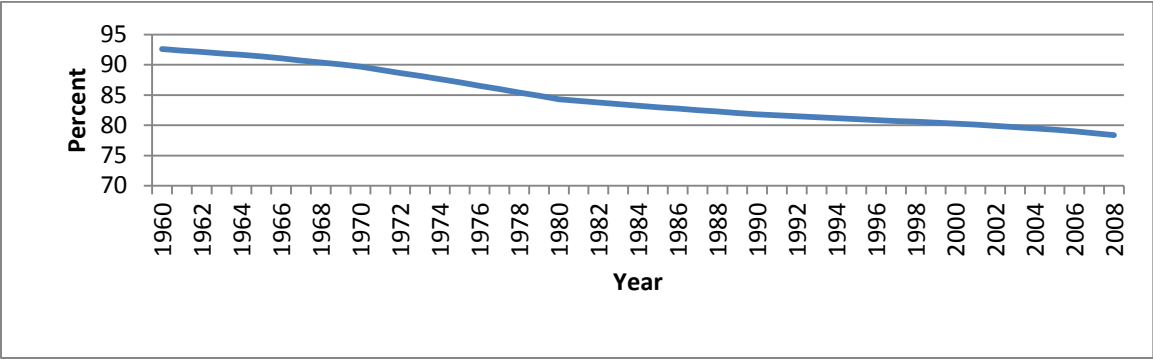
The interviewees who were involved in horticulture were asked about their previous experience of agriculture. They had different backgrounds before starting with horticultural production; many of the smallholders and contract workers had worked in agriculture before, while most of the pack house workers lack that experience. In total, 7 out of 14 have been involved in some kind of agriculture previously and out of the horticultural smallholders, a little more than half of the sample has been occupied in some kind of agricultural production before starting with horticulture.

When it comes to pack house workers, three out of four had no previous involvement in agriculture and that are some results that are strengthened by the fact that many young women, without partners, children and land access, are likely to search for employment in pack houses. Those ones who have families are more restricted to work in the area where they live so they still can take care of the household and, therefore, the possibilities of moving to work at a pack house are very low (many pack houses are located round Nairobi).

The majority of the farmers can be found among the rural population. The high growth rate of the country is corresponding to a high growth rate in the rural areas, which was 2.25 percent in 2008. The high growth rate that Kenya has experienced contributes to problem of land access. Because of the high population density people are migrating to the cities and leaving

the rural areas. This trend implies that the women who do migrate to urban areas are only likely to become involved in horticulture through pack house employment. Nevertheless, more than 75 percent of the population is located in rural areas, as can be seen in figure 6.9. They are likely to have agricultural experience and land access that could ease the entrance into the horticultural sector, as smallholders or farm workers.

FIGURE 6.9 RURAL POPULATION IN PERCENT OF TOTAL POPULATION



SOURCE: AFRICAN DEVELOPMENT INDICATORS 2010, DATABANK

Analysis

The statistics show that the declining population growth rate has a correlation with the declining dependency ratio. Even though the growth rate is high, it is heading towards the right direction. The dependency burden for a woman is still high, which implies a risk connected to the involvement in horticulture, even though the risk is decreasing with the declining dependency ratio. Nevertheless, young women are generally less risk averse compared to older women, and that means that they would have greater incentives to involve and invest in horticulture. The majority of the population in Kenya is located in the rural areas, hence, we can assume than many of them are likely to have previous experience of agriculture which lowers the risk and increase the incentives of investing in horticultural production.

6.9 PERSPECTIVES OF MEN

We have also interviewed men in order to have an understanding of their attitudes towards women and horticulture. Most of the men are positive towards the involvement of women in horticulture, but this can also be explained by the fact that most of the interviewed men have wives who are already involved in horticulture, and that those men in our sample could view

horticulture more positively than men do in general. We also asked about power balances in the households concerning decisions; it was a common answer that decisions are made commonly and that the income is spent in agreement. Concerning the domestic responsibilities some of the men realise the difficulties that women face, as a result of their heavy work load, but many see it as a natural division of tasks. As among the women, the majority of the men think that the new constitution is a great opportunity for improvements, but there are mixed feelings concerning the land entitlements that women could now enjoy, and the formalization of their rights. The negative viewpoints about the empowerment of women are expressed by men who claim that women do not need to inherit land since they move to the property of their partner when they marry, and which they share together with the husband. Some men also argue that women loose respect and responsibility for the family as they are empowered trough the new constitution, and that the situation of men was neglected. The sample of interviewed men is too small to generalise further, but what we do know is that there are mixed feelings and attitudes towards the empowerment of women and their involvement in horticulture.

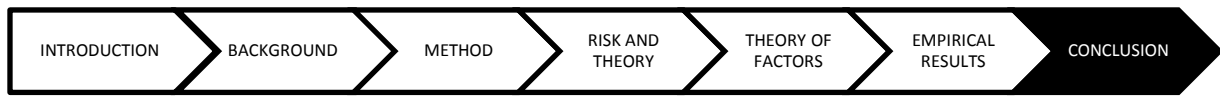
6.10 CONCLUDING ANALYSIS

Based on the theoretical hypothesis in chapter four it was presumed that women are facing several factors that increase the risk, but few which are decreasing the risk connected to horticulture. These factors also concluded to limit them from improving their economic situation by entering horticulture. Furthermore, reducing the risk was consequently said to enhance the possibilities for women to gain economically from horticulture by minimizing the entrance barriers, but also the hindrances for women already involved in horticulture.

Looking closer at the theoretical- and empirical implications from the factors; we found varying results. Socio-cultural factors increase the risk aversion of female farmers. This factor is extra significant since it does also increase the risk aversion of other factors which set the conditions for women in horticulture. The factor of domestic responsibilities does increase the risk with horticultural production, but we can expect a slow improvement due to the new constitution and the increase of enrolment in ECD centres. Income, expenses and credit are theoretically expected to be some of the most important risk increasing factors, and this is supported empirically but not as thoroughly as would be desirable in order to make fair generalizations. This is the case since data is not sufficient to describe the initial economic

situation of women, and reliable statistics on income, wages, and expenses are hard to find. These factors are, however, great risk contributors since horticultural inputs are very costly. Nevertheless, we see a positive trend in the increase of financial loans among women, and that is something that will improve the chances of involving and succeeding in horticulture. Lack of education and information do increase the risk considerable, according to theory. The empirical results are vague since the women did not observe the factor as a major problem, but so did authorities, statistics and previous research. This outcome indicates that we cannot exclude it as a risk affecting factor, but maybe it is not as important as theory assumed. Although there is a gap between the sexes regarding access to education we do, however, see a positive trend of information- and education access among both sexes. Empirically, institutional factors have been main constraints to women, and have increased the risk with involving in horticulture. However, the implementation of the new constitution should be decreasing the risk factor because women now will have legal rights to land, among other things. Although, this will only be the result if the new laws will be implemented in practice, but if they are, this factor will be a risk decreasing factor to other factors as well and, therefore, be a very important factor. The market access is increasing the risk for women in horticulture since the transport net is malfunctioning and a vehicle is too expensive to buy. Improvements in the market access are seen, but it is a slow improvement. The membership in cooperative groups is also a factor that reduces the risk connected to horticulture through informal insurances, which makes it one of the most important variables. However, the effect is not always seen since cooperative groups sometimes have entrance barriers such as special requirements for membership, and which are often affecting women more than men. Thus, the new constitution has eliminated many of these barriers, and there are female groups that are easy to access for women. The demographical characteristics imply ambiguous results. The high age dependency ratio is affecting the risk with horticulture to increase, but previous involvement decrease the risk, and the young population of Kenya indicates that there is a large share of generally risk-averse women.

7 CONCLUSION



The study has examined factors which set the conditions for the entrance and involvement of women in the Kenyan horticultural sector. As the entrance to the sector implies a risk, the essay has examined how the factors affect the risk and incentives of women to invest in horticulture.

The research questions ask how relevant factors do affect the risk that women in horticulture face; but also which are the most significant factors, connected to the incentives of women for horticultural investments.

The hypothesis that assumed that women are risk averse concluded that they will not invest in horticulture the more significant the risk increasing factors are. It also concluded that risk decreasing factors can function as insurances and thus raise the incentives of women to engage in horticulture.

The conclusion of the empirical study is that out of eight studied factors, there are four which clearly can be expected to increase the risk in horticulture faced by women, while there are only two that can be presumed to reduce the risk. In addition, two factors are ambiguous regarding their effects on the risk. Socio-cultural perceptions, is the most outstanding factor that increases risk, which is explained by its influences on all of the other factors. However, cooperative groups limit the risk of all risk increasing factors including socio-cultural norms. The new constitution is also expected to influence the other factors as a risk decreasing variable. The conclusion will therefore be that women in Kenya face a high risk because of sectorial conditions that constraint them from entering and gaining from horticulture.

However, if the women are able to become members of cooperative groups, they can eliminate or decrease most of the risk contributing obstacles since the cooperatives function as insurances and eliminates some entrance barriers. Furthermore, the constitution is expected to limit the negative effects of other variables within time. Given these conditions women can also be expected to have greater incentives to enter and invest in horticulture due to the informal insurances that the risk decreasing factors provide. Noteworthy variables within

factors can also be expected to decrease the risk, such as better access to micro credits, change of attitudes and access to new markets due to the new international airport.

It is important to point out that all of the factors which showed a trend of change concerning their influence on risk were heading towards a positive direction, which indicates that the risk that women face in horticulture is decreasing. Some variables change slowly while some were moving rapidly and can be expected to contribute to a decreasing risk within the near future. Therefore, women can gain much from horticulture in Kenya considering the possibilities to limit the risk contributing factors.

Suggestions for future research

As some of the variables were extra significant regarding their effect on risk this could be studied further with a greater focus on a single variable and its relation to women and horticulture. Intra-regional trade should be an issue to highlight since the horticultural products are consumed all over the world, and intra-regional trade is normally low in developing countries. There are, for example, exports from Uganda to Eastern Kenya of horticultural products, and the effects and possible effects of this trade could be examined.

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APPENDIX 1

This list shows horticultural products in three categories: fruits, flowers and vegetables in order to illustrate what is considered horticultural crops. More information about the products and horticulture in Kenya can be found on which can be found on HCDA's website.

Fruits

Avocado, Bananas, Mangoes, Passion Fruit, Macadamia Nuts, Melon, Strawberries, Paw Paw, Peach, Nectarine, Apricot and Butternut

Flowers

Roses, Lillies, Solidaster, Strelitzia, Carnations, Arum Lillies, Veronica, Arabicum, Allium, Amarangus, Gladiolus, Anthurium, Easter Lily, Eryngium, Orchids, Leather Leaf Fern, Ornithogalum, Coloured Calla Lily, Delphinium, Bupleurum, Gerbera, Chrysanthemum, Rudbeckia, Gypsophila, Solidago, Aster, Agapanthus and Morbydick

Vegetables

Chillies, French Beans, Okra, Snow Peas, Brinjals, Leeks, Curry Leaves, Valore, Bobby Beans, Guwar, Karella, Dudhi, Runner Beans, Asparagus, Spinach, Tomatoes, Spider Plant, Kales, Black Nightshade, Cabbages, Cowpeas and Onions

APPENDIX 2

The field study consists of two major parts, one with respondents consisting of mainly female farmers, and one with informants who are officials at authorities and companies. The typical female respondent is 28.5 years old and is involved in some kind of cooperative. There is a mix of married women, singles and widows. The number of children in the household is on average 3.4. Furthermore, the typical respondent who is a smallholder in the horticultural sector grows a selection of tomatoes, onions, bananas but also maize since most farmers do not limit their production to horticultural crops. We interviewed nine horticultural smallholders, three non-horticultural smallholders, four pack house workers, five farm workers, seven men and one female large scale farmer. Altogether, there were 29 respondents. Besides this, we interviewed five authorities.

Most of the respondents are found in the Nyanza region in the surroundings of Kisumu, but six are also located in Eldoret where there is a pack house and contract farm and one worker in Nairobi. The respondents do seldom answer all of the questions and some questions do therefore have few answers which make their contribution to the analysis quite small; the interviews are rather made to identify and understand relevant variables. Some of the interviews differs from the template since they are done under special circumstances but still provide useful information.

The semi-structured interviews are done with approximately 25 questions which are found below. These questions give us information about the respondents' background and life situation, their involvement in agriculture and possible and experienced opportunities with horticulture.

QUESTIONS TO INFORMANTS

This are the guiding questions used during the interviews with informants at authorities, organizations and companies. The informants are found in the cities Kisumu and Eldoret but also in Nairobi.

What possibilities do women have in horticulture?

Which are the greatest obstacles that women face in horticulture?

What do you believe is the solution of this problem?

What is the impact of the new constitution for women and horticulture?

What will de new airport in Kisumu contribute to women in horticulture?
What do you think about the problems related to lack of access to initial capital?
What is the future trend of the land issue?
What influence do you believe that socio-cultural aspects have for women in horticulture?

INTERVIEW QUESTIONS – FEMALE SMALLHOLDERS IN HORTICULTURE

Marital status – does this affect the opportunity to enter the (export) horticulture market?
How long have you been involved in horticulture? What were you doing before?
Why did you start in this sector?
What did your household think about you entering the horticulture sector?
Age - Does this affect the opportunity to enter the (export) horticulture market?
How many years of education have you had (fulltime?) - Does this affect the opportunity to enter the (export) horticulture market?
Number of children (reflection of the number of children and why)
Do you have access to child care - Does this affect the opportunity to enter the (export) horticulture market?
How much time do you spend doing domestic chores a day? - Does this affect the opportunity to enter the (export) horticulture market?
What kind of assets do the household have (cattle, land, other), and how are they divided within the family? - Does this affect the opportunity to enter the (export) horticulture market?
How does the access to land affect your income? Do you believe that the new constitution, with the land reform, will affect your economic status as a women, positively?
How does the access to land affect the opportunity to enter the (export) horticulture market?
How big is your disposable income (compared to before)?
How big is the income of the household and who controls it? Does this affect the opportunity to enter the (export) horticulture market?
Did you move to start in this sector, was there any problems related to that? (child care , infrastructure, domestic responsibilities, permission from someone?)
Possibilities to change the working tasks? And are those possibilities limited to typical female tasks?
Security of income depending on season - Does this affect the opportunity to enter the (export) horticulture market?
Benefits with being a smallholder in horticulture (informal security, relatives, food security etc)
Transporting what you grow to the market - Does this affect the opportunity to enter the (export) horticulture market?
If your income is higher will it lead to a) you can decide about more in the household? b) you can decide more over your money? c) it will increase your status/role as woman?
Is there anything else affecting your entrance to the horticulture (export) market?
How big is your income (compared to before)?
What do you spend your income on?
What would you spend your income on if it was higher?

INTERVIEW QUESTIONS – MALE SMALLHOLDERS IN HORTICULTURE

Nine men were interviewed to receive a comprehension of how they view women in horticulture and some of the factors that we examine. The men were mainly partners of the women that we interviewed and they were often members of cooperatives.

Marital status
Occupation

Income (man)

What would you spend your income on if it was higher?

What would your wife spend her income on if it was higher?

Why did your wife start in horticulture?

How big is your wife's disposable income (compared to before)?

What did you think about your wife entering the horticulture sector?

How big is the income of the household and who controls it? Did this affect the opportunity for your wife to enter the (export) horticulture market?

Did your wife move to start in this sector, was there any problems related to that? (child care , infrastructure, domestic responsibilities, permission from you)

Number of children (reflection of the number of children and why)

Do you have access to child care - Did this affect the opportunity for your wife to enter the (export) horticulture market?

How much time does your wife spend doing domestic chores a day? - Did this affect the opportunity for your wife to enter the (export) horticulture market?

What kind of assets do the household have (cattle, land, other), and how are they divided within the family? - Did this affect the opportunity for your wife to enter the (export) horticulture market?

Do you believe that the new constitution, with the land reform, will affect the economic status for women, how?

What tasks are better suited for women, and what tasks are better suited for men, within horticulture?

Benefits with being a smallholder in horticulture (informal security, relatives, food security etc)

If your wife's income is higher will it lead to a) she can decide about more in the household? b)

She can decide more over your money?

INTERVIEW QUESTIONS – FEMALES AT PACK HOUSES AND FARM WORKERS

Marital status - Did this affect the opportunity to enter the (export) horticulture market?

How long have you been involved in horticulture? What were you doing before?

Why did you start in this sector?

What employment do you have?

What did your household think about you entering the horticulture sector?

Age - Did this affect the opportunity to enter the (export) horticulture market?

How many years of education have you had (fulltime?) - Did this affect the opportunity to enter the (export) horticulture market?

Number of children (reflection of the number of children and why)

Do you have access to child care - Did this affect the opportunity to enter the (export) horticulture market?

How much time do you spend doing domestic chores a day? - Did this affect the opportunity to enter the (export) horticulture market?

What kind of assets do the household have (cattle, land, other), and how are they divided within the family?

Do you believe that the new constitution, with the land reform, will affect your economic status as a woman, positively?

How does the access to land affect the opportunity to enter the (export) horticulture market?

How big is your disposable income (compared to before)? Did this affect the opportunity to enter the (export) horticulture market?

Do you have possibility/ have you tried to bargaining about your income, with your boss?

How big is the income of the household and who controls it? Did this affect the opportunity to enter the (export) horticulture market?

Did you move to start in this sector, was there any problems related to that? (child care , infrastructure, domestic responsibilities, permission from someone?)
Security of income depending on season - Did this affect the opportunity to enter the (export) horticulture market?
If your income is higher will it lead to a) you can decide about more in the household? b) you can decide more over your money? c) it will increase your status/role as woman?
Is there anything else affecting your entrance to the horticulture (export) market?
How big is your income (compared to before)?
What do you spend your income on?
What would you spend your income on if it was higher?
What possibilities are there for education and advance within the sector?
Benefits with being a pack house worker in horticulture (uppsägningstid, insurances, sick/maternity leave, food and transport)
Codes of conduct
Possibilities to change the working tasks? And are those possibilities limited to typical female tasks?
Possibilities to (further) education within the horticulture sector?
Working hours and working days, breaks, holidays