UNIVERSITY OF NAIROBI
COLLEGE OF AGRICULTURE AND VETERINARY SCIENCES
DEPARTMENT OF AGRICULTURAL ECONOMICS

PROJECT
AN ECONOMIC ANALYSIS OF TEAHAWKING AND CHALLENGES FACED BY
SMALL HOLDER FARMERS
A case study of Kericho County.

COMPiled BY: KIBET JARED
REG: A87/3561/2010

SUBMITTED TO: MR. KENNEDY PAMBO

A SPECIAL PROJECTSSubmitted IN PARTIAL FULFILMENT OF THE REQUIREMENT
FOR THE DEGREE OF BACHELOR OF SCIENCE AGribusiness management
© April 2014
Acknowledgements

I would like to acknowledge the invaluable efforts of Mr. Kennedy Pambo who assisted me in the knowledge of proposal writing and process of developing this research project. Further appreciations goes to my classmates who with tireless efforts agreed to discuss the writing of the proposal which has yielded this valuable knowledge.
Table of Contents

ACKNOWLEDGEMENTS............................................................................................................. I

TABLE OF CONTENTS ........................................................................................................... II

LIST OF ACRONYMS ............................................................................................................. III

LIST OF TABLES ...................................................................................................................... IV

CHAPTER ONE .........................................................................................................................1

1.1 Introduction.......................................................................................................................1

1.2 Problem Statement.............................................................................................................4

1.3 The Purpose of the Study..................................................................................................4

1.4 Hypothesis.........................................................................................................................4

1.5 Justification of the study ................................................................................................5

1.6 Study area........................................................................................................................5

1.7 Organization of the Project.............................................................................................6

CHAPTER TWO .......................................................................................................................7

LITERATURE REVIEW.............................................................................................................7

CHAPTER THREE ..................................................................................................................9

3.1 Data Collection and Sampling procedure.........................................................................9

3.2 Model Description ..........................................................................................................10

3.3 Factors expected to affect the choice of market ..............................................................10

CHAPTER FOUR ..................................................................................................................13

4.1 Demographic: social-economic characteristics of small holder farmers.........................13

4.2 Regression results.............................................................................................................15

5.0 CONCLUSION ..................................................................................................................16

6.0 REFERENCES.................................................................................................................18
## List of Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>KTDA</td>
<td>Kenya Tea Development Agency</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>KIHBS</td>
<td>Kenya Integrated Household Budget Survey</td>
</tr>
<tr>
<td>CPDA</td>
<td>Christian Partners Development Agency</td>
</tr>
<tr>
<td>OLS</td>
<td>Ordinary Least Squares</td>
</tr>
</tbody>
</table>
# List of Tables

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 1</td>
<td>Characteristics of Kericho County</td>
<td>5</td>
</tr>
<tr>
<td>Table 2</td>
<td>Factors expected to affect the market choice</td>
<td>11</td>
</tr>
<tr>
<td>Table 3</td>
<td>Demographic characteristics of tea small holder farmers’</td>
<td>13</td>
</tr>
<tr>
<td>Table 4</td>
<td>Factors affecting the choice of market</td>
<td>15</td>
</tr>
</tbody>
</table>
CHAPTER ONE

1.1 Introduction

Tea (Camellia sinensis), is a major perennial cash crop that was introduced in Kenya by GWL Caine in 1903. However, its commercialization started in 1924. Tea Act 1950, defines tea as plant Camellia Sinensis. During the colonial period, tea was only restricted to large scale production which hindered Africans from growing the crop, with an aim of maintaining high quality. After attaining independence in 1963, tea was made open for local farmers after passing land reforms bills by the African government. Since then the nation became a major producer of tea. Currently, Kenya is ranked third behind China and India in tea production (Kagira et al., 2012).

Tea production has been increasing over the years since its first introduction in 1903, from India. It has become the country’s leading export crop earning the country about Ksh. 43 billion in 2006. It also accounts for 4% of GDP, while providing employment to a tenth of the country’s population directly to farmers and workers. The 60% of the total tea production comes from the tea small holder farmers, who depend on tea revenue for their livelihood. The tea industry is composed of the estates (mostly owned by the multinationals) and the smallholder growers (Kagira et al., 2012). Prioritizing agriculture by the newly created county governments is the surest way of achieving national economic growth and meeting the ambitious targets outlined in vision 2030 of Kenya (GOK, 2012).

After liberalization of tea production in Kenya in 1963, there has been a tremendous improvement, according to the report on small scale tea sector in Kenya by Christian Partners Development Agency (CPDA) of 2008 and the findings were as follows: the farms occupied by small holder farmers increased from 3527 ha in 1963, to 67041 by 1990. In the year 2006 small holder farmers had occupied a larger part of 95,779 ha while the estates occupied 51,297; which makes the small holders occupy 65.1% of the total tea area coverage in Kenya. The tea in terms of kilograms had increased from 311,980 kilograms in 1963 to 191,177,061 kilograms by 2006 by small holder farmers (CPDA, 2008).

According to Kagira et al. (2012) a supply chain management approach, challenges faced by small holder farmers can be put in five categories: Production challenges, Management challenges, Local market challenges, Regulatory challenges and International market challenges.
Rising of new tea factories, who have different terms of delivering tea leaves and offer different prices, makes the small holder farmers to be indifferent, in deciding whom to deliver to. Such tea factory companies fail to stipulate well how a single farmer is going to benefit. Some of the companies rent the tea plantations from the farmers, and when the contracted period expires, the farmers faces challenges in putting the plantation to shape, because the companies hardly maintains the plantation as a way of reducing cost (Kagira et al., 2012).

Small holder farmers face big challenges in the cost of production. Labor costs for plucking the tea leaves have escalated and mostly unavailable. The able workforce prefers not to work in the agricultural sector by relating it to illiteracy, which is also caused by rural-urban migration. For instance the cost of plucking tea leaves has risen from ksh 5 in 2008 to ksh 8 in 2012; this rise continues to reduce the returns to a farmer (Keraro et al., 2012).

Maintenance of tea farms is also a big challenge to small holder farmers as argued by Mwaura and Muku(2012). The type of fertilizers the farmers receive from the KTDA, rarely have effects on the production, an increase is only evident for a shorter period. The cost of fertilizers is high and most of the small holder farmers cannot afford the fertilizers due to the pay they get from tea. Tea is one of the major cash crops that contribute to the GDP, the maintenance of the tea plantation requires expertise, which small holder farmers rarely get, one of the reasons for the poor production. (Kagira et al., 2012; Keraro et al.,2012; Omosa, 2003; Mwaura and Muku, 2007)

The small holder farmers depend on rain fed agriculture. On extreme weather conditions, the farmers stand to lose, since mostly KTDA, only buy the two leaves and a bud standard. During such adverse climate conditions, tea might get scorched and damaged, which makes them not to reach the standards required. The farmers end up plucking the tea and using as manure. In 2000 the tea production went down due to drought where tea was severely scorched (Kagira et al.,2012).

Tea prices depend on the prices at which tea is auctioned at in the Mombasa tea auction. These prices vary and fluctuate each year, depending on the level of production, quality of tea produced, regional market prices and the trade policy. The small holder farmers get no chance to decide on the price, and end up accepting the prices offered, which normally don’t favor them (Mwaura and Muku, 2007).
Tea hawking goes against the tea amendment act 1999 and regulations 2000; which prohibits small holder farmers from trading tea leaves among themselves; tea factories from purchasing fresh green tea leaves from farmers who obtained tea leaves illegally and also prohibits small holder farmers from selling green tea leaves to factories or agents they are not registered with (Omosa, 2003). Tea hawking has an adverse effect on small holder farmers’ revenue. The population living in the tea growing zones depends on the revenue from tea for food, health care, clothing, education and other social amenities. Ironically, 82% of the farmers are considered poor, which make the farmers unable to cater for their basic needs (Mwaura&Muku, 2007).

Hawking reduces the monthly revenue, or may totally eliminate the monthly earnings. In result the farmer will not be in position to purchase fertilizer, employ workers for weeding leading to low yield and poor quality. The farmers are also crippled financially, putting them in no position of availing the basic needs and reduces the motivation of working in the tea plantations. In a broader picture hawking removes the chances that the farmer will earn a bonus remuneration that is added on top of the monthly pay at the end of each financial year (Kagira et al., 2012 and Keraro et al., 2012).
1.2 Problem Statement
Without a proper address of tea hawking and market related challenges faced by small holder farmers will have a negative impact on the revenues to farmers. In consideration of the fact that majority of the small holder farmers depend only on tea for their livelihood. A study conducted by Kagira et al. (2012) showed that 82% of the tea small holder farmers are considered poor. The study also showed that number of farmers began diversifying due to little revenue from tea. If this trend continue it will further increase the poverty level among the tea growing farmers rather than reduce.

A study conducted by Keraro et al. (2012) showed that management of the small holder factories had a hand in the problems faced by the farmers. After liberalization of the tea industry and introduction of new factories in the tea sub-sector, increased competition among the tea processing companies, offering different prices. Due to the difference of quality produced, affect the tea market prices.

Tea growers cannot dictate tea prices. All the tea prices are determined by the tea auction, which largely depends on the quality, packaging. This makes the farmers be a price taker and leads to tea hawking as farmers tries to sell the green tea leaves at prices that are better (Hazarika, 2011).

The economic problem in this study is to explore the possible options to resolve above issues in the tea industry. In order to understand how to reduce the information asymmetry between the regulatory institutions and the smaller holder farmers and best way to ensure the farmers benefit from their produce.

1.3 The Purpose of the Study
The purpose of the study is to analyze the economic effects of tea hawking and challenges faced by small holder farmers to their income and output level. The Specific Objectives are;

i) To assess the challenges faced by small holder farmers on their tea sales.
ii) To identify the factors influencing tea hawking within small holder farmers.

1.4 Hypothesis
a) Tea hawking and challenges faced by small holder farmers have a direct impact on the income of farmers.
b) Tea prices and revenue to farmers influences tea hawking.
1.5 Justification of the study

This study established essential information on challenges faced by small holder farmers which enabled establishment of possible ways of mitigating them in protection of farmers. It is as well important to the stakeholders in the tea industry and country at large.

The government may use this information in making policies that if put in place will be one way of eradicating tea hawking and reducing market related challenges faced by small holder farmers. Several stakeholders in the tea Industry may use this information to understand the loop holes in the supply chain. With this they can be able to monitor the quality of tea and put measures in place of increasing the prices of tea to farmers. Farmers might also be interested to know the illegality of tea hawking.

1.6 Study area

The study was conducted in Kericho County, the highlands of Kenya. The socio-economic characters of the area of study is presented in table 1. In this highland area tea is grown between 4500 feet (1500m) and 6750 feet (2250m) above the sea level. Ontropical, red loam soil and decomposed volcanic deposits. The soils are well drained and have a ph. on the range of (4.5-6.5). Straddling the equator, Kericho County as one of the tea growing zone, have an ample supply of sunlight and even distribution of rainfall throughout the year. Providing the optimal conditions for growing tea. The rainfall in this area ranges between 1200mm and 2500mm annually (the rainfall pattern is unimodal) while the temperature ranges between 12°C and 28°C.

<table>
<thead>
<tr>
<th>Table 1: Characteristics of Kericho County</th>
</tr>
</thead>
<tbody>
<tr>
<td>Characteristics</td>
</tr>
<tr>
<td>Population (2009)</td>
</tr>
<tr>
<td>Surface area $km^2$</td>
</tr>
<tr>
<td>Density (people/$km^2$)</td>
</tr>
<tr>
<td>Poverty rate based on (KIHBs)</td>
</tr>
<tr>
<td>Population with Primary Education (%)</td>
</tr>
</tbody>
</table>

Kericho County is characterized by small holder farmers and tea is the dominant cash crop. However Kericho county is also known to host the multinational companies that are involved directly in tea production e.g. Uniliver, James Finlay, Williamson tea, Kapchebet and the new rising companies, Kabianga tea factory which are owned privately. There is also the government owned factories; KTDA and they all compete for the tea leaves from the small holder farmers. This makes it suitable to undertake the study.

1.7 Organization of the Project
The first part of the report provides a brief introduction to the study, reasons for the study and justification of the study. The rest of the report is set up in the following manner: chapter two; which provides the literature review on both the theoretical and verifiable work done in the past related to the study of economic analysis of tea hawking and challenges faced by tea small holder farmers. It further gives the theoretical foundation and different approaches used to achieve the objectives of the study. Chapter three; outlines an overview of the methodology applied in the study. Chapter four; gives the findings of the study, and discussions of the results. Chapter 5, gives the conclusion and recommendations of the study. Chapter 6 contains the references of study material that were used in the research and carrying out the study.
CHAPTER TWO

LITERATURE REVIEW

The study was to assess the impacts of tea leaf hawking and challenges faced by small holder tea farmers in identifying the market for their produce. The need for the research arose from the realization that marketing small scale tea leaf produce is currently faced with various challenges. There is need for agricultural policy makers to get empirical insight in the levels of small holder tea farmers’ efficiency as well as different determinants factors in order to be able to more effectively address the performance of marketing of tea leaves by the farmers. This study attempts to investigate the challenges faced by small holder tea farmers in selling their produce.

Omosa (2003) argued that KTDA had failed in executing its functions and farmers were losing through low prices. The returns to the tea delivered by farmers were low and made the farmers to be trapped in a vicious cycle of poverty. This made the farmers to look for alternative market outlets. She found out that the movement of farmers to other alternative market had a direct impact on the quality of tea and the Kenyan tea prices fetched on the world market. This was because the alternative markets did not follow the two leaves and a bud standard of plucking that KTDA follows strictly as required by the Kenya tea board.

Hazarika (2011) conducted a study in India on the changing scenario of market for tea in India. She realized that in the tea industry producers are not the actual markets and not want to be. Most of the owners of tea farms were satisfied with the auction system. This was because tea growers did not give much attention on marketing aspect as they always have a ready market for the tea leaves. The study also showed that the quality of tea had a different effect on prices in the auction. She recommended that the tea producers take a proper initiative in the marketing field they can achieve a higher profit margin which ensure a higher revenue.

Small holder tea farming covers a large proportion on the tea production on the total tea production in the tea producing countries. A study carried out by CPDA, 2008 showed that by 2006 the small holder farmer was contributing 60% of the Kenya’s total tea production. However the small holder farmers are faced by several challenges, and end up making the small holder farmers losers in the industry. In a case study conducted in Malawi, relates the challenges faced by small holder farmers in supplying their produce to poor governance and management of the lucrative sector and also poor resource allocation. The authors argued that the government allocated much resources to subsidize production of other crops like cotton, making a tea farmer
to incur a lot of cost during production. The farmers had to pay taxes for their produce and transportation cost to deliver their produce.

Small holder farmers in the tea growing zone areas have devoted all their land to mainly tea production with an expectation of making an income from it. A study by Mwaura and Muku (2012) further showed that a large proportion of farmers are living below the poverty line. They argued that the small holder farmers faced a lot of challenges and there were no returns to their production.

Kalunda (2013) conducted a study in Nyeri County on financial inclusion of small scale tea farmers. She realized that the level of poverty among the tea small holder farmers denied them access to credit. Mainly because of the ever fluctuating tea prices and furthermore the low prices, making the financial institution indifferent to lending them. The study also showed that a large percentage of farmers had difficulty in repaying the loan. She recommended that a financial literacy be made available to the farmers.

The reviewed literature shows that a proper marketing and farm management in the subsector by the small holder farmers presents a huge opportunity in increasing the country’s GDP. With better market prices, and fair channels of tea leaves delivery system by small holder farmers offers an opportunity in increasing farm incomes to small holder farmers and facilitate the millennium goal of poverty reduction. The current study considers tea hawking as a major challenge facing small holder farmers. The previous studies have not shown in detail the economic effects of tea hawking. Tea hawking affects prices, revenue and quality of tea. This study will try to enumerate the reasons for tea hawking, awareness of farmers of the law implications of tea hawking and also suggest the possible ways of resolving the problem.
CHAPTER THREE

3.1 Data Collection and Sampling procedure

Primary data were collected from the small holder farmers’ tea factories and institutions under the tea industry. A purposive, multistage and simple random sampling technique will be employed to select 40 tea small holder farmers in the four KTDA managed factories in Kericho County. The study will sampled each of the multinational tea companies that hadout growers section meant for the tea small holder farmers. Each of the factory sampled cover small holder farmers randomly selected.

The study adopted a survey research design. Under this approach a specifically defined group of farmers were requested to respond to identical questionnaires. The targeted population for the study were all small holder tea farmers in Kericho County. According to the ministry of agriculture a small holder farmer is any farmer with not more than 50 acres of land under production. Kericho County was a strategic position for the study in that farmers have almost equal preference to the two markets for their green tea.

The study was largely based on Radom selection of small holder tea farmers in four KTDA factories in Kericho County, specifically in two constituencies namely: Buret and Belgut where tea factories companies and brokers are located. Questionnaires consisting of both open-ended and closed questions were administered to small holder tea farmers scattered in the selected tea factories some of the sampled tea farmers were taken up for in-depth study through open interviews.

Simple random sampling was used in selecting a sample from the population. A sample size of 40 households (tea small holder farmers) was used. The sample size was determined using the central limit theorem, where \( n \geq 40 \). This is because a larger sample size increases the accuracy of the results. A semi-structured questionnaire was used in data collection. Administration of the questionnaire was through face to face interviews.
3.2 Model Description

Ordinary least squares model was used to test the factors affecting the choice of market. OLS is a method of estimating unknown parameters in a linear regression model. The model was thought to be important since it calculates the slope coefficient so that the difference between the predicted y and actual y is minimized. Also, OLS was used because the independent variable was quantitative (numerical).

Model equation:
\[ y = \alpha + \beta_i x_i + \mu_i \]

Where;
Y is the Choice of market by tea small holder farmer
Y= 1 if the individual farmer sells green tea to middle men
Y= 0 if the individual farmer sells to KTDA
\( \alpha \) is the y intercept, which is a constant
\( \beta_i \) is coefficient of the variables that market choice
\( x_i \) is the farmer characteristics that have an influence choice of market
\( \mu_i \) is the standard error and represents other farmer characteristics that influence market choice but not included in the analysis.

SPSS version 20.0 was used in data entry and analysis. The descriptive statistics was used to describe the basic features of the sample households by means of percentages. Descriptive are useful in analyzing characteristics of households as well as analyzing relationship between variables. Therefore, descriptive statistics was used because they present quantitative data in a manageable form.

3.3 Factors expected to affect the choice of market

The age of the farmer is an important aspect. The study has purposefully not selected respondents below the age of 18, under the Tea Act, a farmer has to be 18 years and above. Age is important in that it shows the experience of a farmer in tea production, as well as choice of market for their tea leaves. It is expected that age will have either inverse relation to market
choice, if the farmers are dominated by young farmers (below the age 35 years). If the age of farmers is dominated by elderly farmers of 35 years and above.

Table 2. Factors expected to affect market choice

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>DESCRIPTION</th>
<th>EXPECTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGE</td>
<td>Age of the farmer in year’s</td>
<td>±</td>
</tr>
<tr>
<td>Education</td>
<td>Level of education of farmer</td>
<td>±</td>
</tr>
<tr>
<td>Gender</td>
<td>Sex (%) of the respondents</td>
<td>-</td>
</tr>
<tr>
<td>Land size</td>
<td>Total land size in Hectares+</td>
<td></td>
</tr>
<tr>
<td>Land under tea</td>
<td>Land size with tea trees in hectares</td>
<td>-</td>
</tr>
<tr>
<td>Duration in Farming</td>
<td>Length of farming in years</td>
<td>-</td>
</tr>
<tr>
<td>Price of Tea</td>
<td>Price of tea leaves in KSH/kg</td>
<td>+</td>
</tr>
<tr>
<td>Knowledge of tea hawking</td>
<td>Farmers (%) who knows; binary (Yes/ No)</td>
<td>-</td>
</tr>
<tr>
<td>Income</td>
<td>Farmers income in Ksh per month</td>
<td>+</td>
</tr>
</tbody>
</table>

Respondents’ education level was expected to affect the choice of market. Judgment of market prices, terms and conditions that are provided by different companies is determined by education level. Interpretation of laws and regulation pertaining the sale of tea leaves is determined by education level. This study identified four levels; no education, primary level education, secondary level education and tertiary level education. It is expected that the education will have both inverse relation and direct relation to market choice depending on the general level of education of tea small holder farmers.

Gender of the farmer could affects directly the choice of market. Female gender are more cautious to supplying to new companies. They are more contented with companies they have known for a long time hence have a greater chance of supplying to KTDA. On the other hand the male counterparts are more curious what other companies can offer. It was expected that the gender will have a negative relationship to market choice.
Land holding size determines the level of wealth that a single farmer has. When a farmer is rich the choice of market of their tea leaves is affected. Farmers having small size of land are more likely to choose other companies that offer better prices. While the ones with large farms will supply to KTDA due to return to scale. It was expected that the land size will have a negative relationship to market choice.

Land under tea represents the size of land that is committed to tea plantation. The land under tea determines the amount of Kilograms that a farmer will harvest per month and determines the choice of market for their tea leaves. It was expected that land under tea will have positive relationship to choice of market.

Duration of tea production in years was taken as a measure of experience of a farmer in tea production. The longer the farmer has been in the tea production the much more accurate choice of market the farmer will make. It was expected that years in farming to have a negative relationship with market choice.

Price of tea leaves per kg is a key determinant of choice of market. Different companies offer different prices for every kilogram supplied by tea small holder farmers. It was estimated that Price will have a positive relationship to market Choice.

Knowledge of tea hawking portrays if the farmer knows the illegality of selling or buying green tea leaves to unauthorized persons and agents or buying tea leaves from other small holder farmers. Under the Tea Act, a tea farmer is not allowed to sell their green tea leaves to other agents or companies they are not registered with. It was expected that knowledge of tea hawking will have a negative relationship to market choice.

Income of a farmer was included in the model because its income that influence the choice of market. Farmers choose different companies to sell their tea leaves with a primary Aim of improving their income. Farmer’s income is obtained by multiplying the harvested kilograms in that period (1 month) with its price per kilogram. It was expected that income will have a positive relationship with market choice.
CHAPTER FOUR

This chapter contains the findings and results of the study and discussion of the same results. The results and discussion are presented in two ways; the descriptive and the regression analysis.

4.1 Demographic: social-economic characteristics of small holder farmers

Table 3: Demographic

<table>
<thead>
<tr>
<th>Item</th>
<th>variable</th>
<th>percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male (%)</td>
<td>75</td>
</tr>
<tr>
<td>Age</td>
<td>Below 35 years (%)</td>
<td>35</td>
</tr>
<tr>
<td>Education</td>
<td>None</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Primary level education</td>
<td>17.5</td>
</tr>
<tr>
<td></td>
<td>Secondary level Education</td>
<td>22.5</td>
</tr>
<tr>
<td></td>
<td>Tertiary level education</td>
<td>40</td>
</tr>
<tr>
<td>Type farmer</td>
<td>type of farmer (% yes a farmer)</td>
<td>80</td>
</tr>
<tr>
<td>Land size</td>
<td>land size in Hectares (Ha) mean</td>
<td>7.04 (7.974)</td>
</tr>
<tr>
<td>Land tea</td>
<td>Land under tea in Hectares mean</td>
<td>4.64 (6.868)</td>
</tr>
<tr>
<td>Tea harvest</td>
<td>Average harvest per month in Kgs</td>
<td>2922.125</td>
</tr>
<tr>
<td>Type of payment</td>
<td>total payment per month (%)</td>
<td>37</td>
</tr>
<tr>
<td>Tea supply</td>
<td>Farmer supplies tea leaves to KTDA</td>
<td>70</td>
</tr>
<tr>
<td>Others (30%)</td>
<td>other companies supplied with tea</td>
<td></td>
</tr>
<tr>
<td></td>
<td>James Finlay(Kenya) Ltd. (%)</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>George Williamsons Tea (%)</td>
<td>72</td>
</tr>
<tr>
<td></td>
<td>Unilever Tea (%)</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Kapchebet Tea Factory (%)</td>
<td>7</td>
</tr>
</tbody>
</table>

The results of the study showed that; 75 % of tea small holder farmers were male. The same 75% represents the male- headed families. The rest 25% represents the female tea farmers and the female-headed households. This implies that the women do not get involved so much in tea production. The results however showed that 65% of the small holder farmer are elderly having more than 36 years of age. 35% of the small holder tea farmers fell in to age of 18-35 years. This is the age bracket considered as youth. The youth took small part in tea production, since majority of the youth had advanced in education hence being employed in other industries rather than agriculture. The results showed that 20% of the tea small holder farmers have no education, 17.5% have primary education, 22.5 % have secondary education and 40 % have tertiary level
education. This shows that education have an effect on the choice of leasing the tea plantation, company to supply the tea leaves to, as well as the type of tea hawking involvement.

The study showed that 80% of the respondents were Tea farmers while 20% are non-farmers. A tea farmer as defined by the Tea board of Kenya is one who owns Tea plantation. The study further showed that the 20% of the non-farmers also participated in tea production by buying Tea leaves directly from tea farmers and leasing tea plantation from other farmers. This implies that the non-farmers are the primary reason for tea hawking

The study showed that 80% of the respondents had tea plantation while the remaining 20% did not have tea plantation. All the respondents showed to own an average of 7.0375 ha of tea. From the study a farmer who owned the least was 1 ha and one who owned the most was 40 ha. The study further showed that on average the farmers committed 4.6425 ha of the land owed to tea plantation which translate to 66% of their land. This showed that people from this region devoted depended on tea for their livelihood, and as a way of poverty reduction. Resources and policies should be channeled through tea.

The study further showed that the farmers who owned the most tea plantation owned 33 ha of land under tea and the least was 0.2 ha of land under tea. 82.5% of tea plantation owners did not lease out their plantation while 17.5% of the respondents leased out their plantation. The study showed that the farmers who rented out their plantation owned plantation less than 5 ha. This is to mean that the returns on tea for the farmers did little to cover their operational cost this is to mean that it would be fair for them to rent out since renting will confer management expenses on the lease.

The study showed that all the Areas under tea plantation was mostly owed by male 84.5% while female gender only owned 15.5% of the total area under tea. This shows that male dominated the tea production and women were not given opportunities tea plantations.

The study showed that the tea small holder farmer can harvest as little as 170 kegs of green tea leaves in a month and as much as 19200 kegs and even more depending on the size of the land and tea type widely known as tea clone. A single farmer could harvest an average of 2,922.125 kegs of tea leaves per month. Tea industry has offered two widely known ways of paying farmers for supplying their tea leaves. First, where a farmers earns a higher price per kilo each month without an annual accumulated payments. And secondly, where a tea small holder farmer earns a
low monthly payment a high annual accumulated bonus. The study showed that 37% of the respondents preferred a high monthly payment without a bonus and the rest 62% preferred a low monthly payment with an annual accumulated bonus.

70% of tea small holder farmers preferred to sell their tea leaves to KTDA, while 30% sold their tea leaves to other companies. Out of the 30% who sold their tea leaves to other companies, 91.7% were male and 8.3% were female, this is to show that female farmers did not prefer to sell their tea leaves to other companies.

Respondents’ preferences to these companies were as follows: George Williamsons tea was much preferred by farmers as its prices is Ksh. 29 per month and also pays the farmers an annual bonus for the accumulated kilograms of tea. James Finlay (Kenya) Limited comes second preferred by farmers, it pays Ksh. 37 per kilogram of green tea leaves without an annual accumulated kegs. Kapchebet and Unilever have the same market share. This is because Unilever recently opened an out grower section in its company.

4.2 Regression results

It was found earlier that middlemen paid a higher gate price for green tea than KTDA (see Table 4). The regression results indicates that price also predicted favorably farmers decision to sell green tea to middlemen and that the price difference was significant to influence farmers to forego the bonus payment that comes with supplying to KTDA. This implies that farmers are interested in the current value of money other than future payments.

<table>
<thead>
<tr>
<th>Table 4: Regression analysis results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variables</td>
</tr>
<tr>
<td>Constant (α)</td>
</tr>
<tr>
<td>Age</td>
</tr>
<tr>
<td>Gender</td>
</tr>
<tr>
<td>Education</td>
</tr>
<tr>
<td>Land size</td>
</tr>
<tr>
<td>Land under Tea</td>
</tr>
<tr>
<td>Duration (in years)</td>
</tr>
<tr>
<td>Price per Kg of tea</td>
</tr>
<tr>
<td>Knowledge of tea hawking</td>
</tr>
</tbody>
</table>
The $\beta$ values measures the expected change in market choice by a single farmer by the factors affecting the market choice. A positive value indicates an increase in the likelihood for a tea small holder farmer to choose middle men and or other companies other than KTDA. A negative value of $\beta$ values indicates the likelihood of choosing KTDA.

Age is inversely proportional to market choice. This implies that the older people are more likely to choose KTDA and the youth farmers will choose other companies. Youth population have a high tendency of selling their tea leaves for other companies that offer better prices. While the older farmers would choose KTDA because they have known it for years.

Gender is inversely proportional to market choice. To mean that female gender are more likely to choose KTDA while the male Farmers would choose other companies. It shows that male farmers are willing to take risk to try out new companies while female are more contented with what they have known for years.

The significant values (p-values) show whether or not a change in the independent variable at a given level. If the significant values is greater than or equal to 0.05, then it shows that the factor is less likely to influence the market choice for green tea leaves. However, if the p-value is greater than 0.05, then the factor has a greater likelihood to influence market choice for tea leaves? From the results presented in Table 5, as anticipated price is significant when it comes to choice of market followed closely by duration of the farmer in tea production and other factors that were not included in the model.

5.0 Conclusion

The aim of this study was to analyze economic effects of tea hawking and challenges faced by tea small holder farmers in Kericho County. The specific objective were to identify the factors influencing tea hawking and highlight challenges faced by tea small holder farmers. The study employed central limit theorem to sample forty (n=40) farmers to conduct the research. The results were analyzed using SPSS software with Ordinary Least Squares model(OLS)From the findings of the study it can be concluded that price offered to farmers the objective of the study was achieved which was to analyze the economic effects of tea hawking and challenges faced by
tea small holder farmers to their income and output level. As hypothesized the tea hawking and challenges faced by small holder farmers have a direct impact on incomes of farmers.

The study showed that the factors that lead to tea hawking include: Tea prices- tea farmers are rational consumers and after liberalization of tea industry farmers tend to look for the tea processing companies that will offer a better price. Lack of supervision by the KTDA and Natural climates

The study recommends that The government and policy makers should put in place measures seeking to secure income for farmers. In particular executing the fair trade deal such that it guarantees a fixed minimum price despite fluctuations of prices internationally. To reduce the chances of tea hawking the government should develop community monitoring system where the farmers monitor each other. Where a farmer is found selling they are reported to the authorities. To overcome the tea hawking by farmers who do not own tea farms, a policy should be provided that farmers seeking acquisition of the authority’s registration should produce the title deed for their lands and the confirmation of existence of the same should be done by the government staffs.
6.0 References

Christian Partners Development Agency.

ministry of state for planning, national development and vision 2030.

Hazarika, K. (2011). Chaning Marketing Scenario For Indian tea. *international journal of trade ,

challenges facing small holder tea sector in kenya: A supply chain management approach.

*proceeding of 6th International business and social sciences*, 18(4).

effective management of tea factories in liberalized small holder sub-sector in Kenya.

Mwaura, F., & Muku, O. (2007). tea farming enterprise contribution to small holders' well

Omosa, m. (2003). the interplay between commodity markets and rural livelihoods.