



## **Factors Influencing Hefty Bonus Payout In Agribusiness Entrepreneurship: A Case Of Tea Farmer Of Imenti**

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***Abstract:***

*The demand for tea has been rising over the years as consumers have become aware of the health benefits of consumption of this product. Tea production in Kenya contributes to (7%) of world tea in comparison to other countries such as Sri Lanka (3%), Bangladesh (24%) and India (11%). Many farmers in Kenya are abandoning tea production due to low returns. The objective of this study is to investigate the various factors that determine hefty bonus payout in agribusiness- case of tea farmers. The study adopted a descriptive research design, which is used when the problem has been defined specifically and where the researcher has certain issue to be described by the respondents about the problem. The target population compose of farmers who sell to Imenti tea factory. The study used simple random sampling to select respondents. Primary data being information gathered directly from respondents, the researcher used questionnaires to collect mainly quantitative data although some qualitative data was collected from the open-ended questions. The researchers carried out a pilot study to pretest and validate the questionnaire. Quantitative data collected was analyzed by the use of descriptive statistics using SPSS and presented through percentages, means, standard deviations and frequencies. The information is displayed by use of bar charts, graphs and pie charts and in prose-form.*

***Key words:*** Environment, Financial Costs, Entrepreneurship, Agribusiness, Kenya and Government.

### **1.Introduction**

Tea was a top foreign exchange earner until tourism and horticulture overtook it. Over 60% of Kenyan tea is produced by the small-scale farmers under KTDA. In the first three decades (60s, 70s and 80s) after independence, the industry was well run and farmers promptly received good prices for their tea. According to Chang and Yabuki (2003), this became a big motivator and with the active support and encouragement from the government, more and more small-scale farmers went into tea growing or expanded their tea acreage.

### **2.Statement Of The Problem**

According to Bliss (2003), tea is one of the most popular beverages in the world today. The world trade in tea is more than 2.5 million tones annually. Tea is billion dollar industry and this commodity contributes significantly to the economic revenue of tea producing countries. The demand for tea has been rising over the years as consumers have become aware of the health benefits of consumption of this product (Davies, Jud, Baer, Clevideine, Paul, Edwards, Wiseman, Muesing, and Chen, 2003). Tea production in Kenya contributes to (7%) of world tea in comparison to other countries such as Sri Lanka (3%), Bangladesh (24%) and India (11%). Many farmers in Kenya are abandoning tea production due to low returns (Tea News Magazine, (2010). To increase tea production in the country, it is imperative for tea factories to increase returns to farmers. Increase in returns to farmers is only possible through prudent financial management practices.

Christian Partners Development Agency (2008) argues that over the last one decade, the economic performance of Kenya has declined considerably. The decline is attributable to poor macro-economic policies, governance problem, droughts, floods and reliance on exports. As a result poverty has increased significantly over the recent years; 56% of Kenyans are living below the poverty line. According to the East Africa Tea Trade Association (2010), in a quest to develop solutions to the problems ailing the country the government has cited transparency and accountability management as fundamental in all economic sectors in the country. Tea one of the major cash crops in Kenya contributes to a significant portion of export revenue in the country. The tea industry plays a key role in the agriculture sector and the economy at large contributes to 17-20% of total export revenue in the country. However, the tea industry has been facing challenges which are hindering the industries competitiveness on the global market.

In Kenya, imprudent financial management practices are a major problem in tea factories. According to an article in the Sunday Nation, Why Imenti Tea Farmers are Earning Hefty Bonus Payout (Wahome, September 30 2012) there are huge disparities in farmer bonus earnings between factories and regions in the tea. The pay variations between tea factories are attributable to four factors including demand for tea from different geographical zones due to quality, financial costs, environmental factors and labor costs. Kenya Tea Development Agency has called upon tea factories in different regions to review their financial management practices and system in order to reduce the bonus earnings variations and ensure 75% of returns are paid to farmers.

There are significant disparities in bonus earnings between different tea factories and regions. For instance Imenti Tea Factory and Kiegoi/Igembe Tea Factory both in Eastern province have a huge variation of 10% return to farmers. In addition, there are huge disparities between the regions. The average returns to farmers in Eastern, Rift valley, Nyanza and Central provinces are 77.5, 62, 74 and 70 percent respectively.

Several studies have been carried on tea farming but under different contexts. Boriah (2002) carried out a study on factors affecting farmers' shares of the auction prices. Boriah stated that tea growers stress that they ought to get higher shares of the final prices where farmers also get bonus from the auction price of tea made from their produce. D.M. Kamau, (2007) carried out a study on understanding smallholder tea farmers by closing the loop between expectations and realities. Francis Mwaura, Ogise Muku, D. Marangu, E. Towett and D. Otieno, ( 2008) carried out a study on the technological and socio-economic factors affecting tea productivity among smallholders in imenti and kapkoros. No study has been done to determine the factors influencing hefty bonus payout for tea farmers in meru tea factories. There is need therefore to determine the factors influencing hefty bonus payout for tea farmers specifically in meru tea factories.

### **3.Objectives of the study**

#### *3.1.General Objectives*

The main objective of this study is to establish the factors that influence hefty bonus payouts for tea farmers.

### 3.2. Specific Objectives

The study will pursue the following specific objectives.

- To identify how quality of tea influences hefty bonus payouts to farmers in agribusiness.
- To find out whether environment influences hefty bonus payouts in agribusiness.
- To assess the role of operational costs in determination of hefty bonus payouts in agribusiness.
- To determine how financial costs affects hefty bonus payouts in agribusiness.

### 4. Conceptual Framework

Mugenda and Mugenda (2003) advance that a conceptual framework is a graphical or diagrammatic presentation of the relationship between variables. It tries to explain how the independent variables affect the dependent variable. This study has identified the following independent and dependent variables.

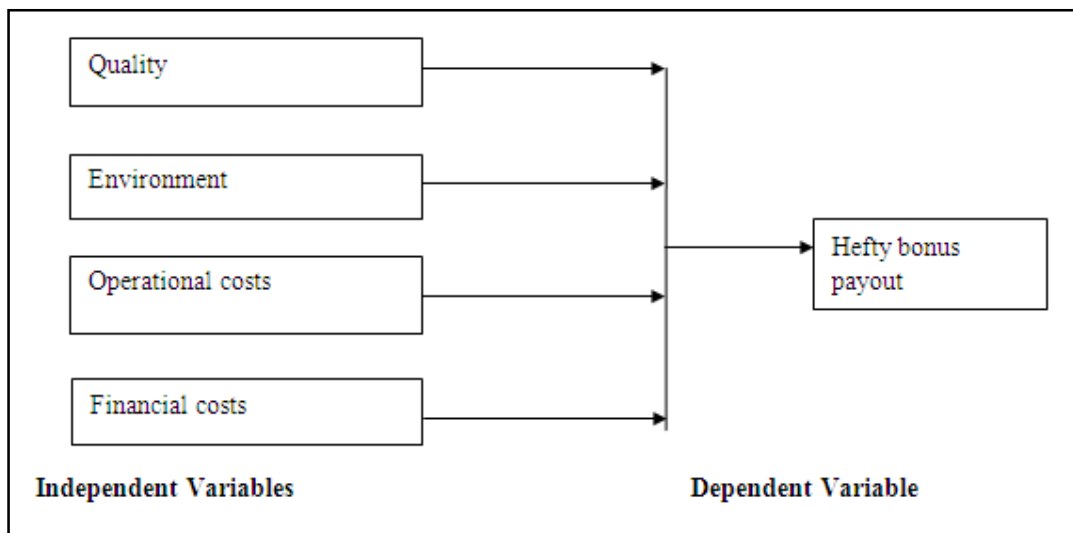


Figure 1: Conceptual framework

### 5. Empirical Review

#### 5.1. Quality Of Tea Leaves

Tea is an evergreen plant of the *Camellia* genus. According to Chung, Schwartz, Herzon, and Yang (2003), its scientific name is (*Camellia Sinensis*) and it originated in China, Tibet and Northern India. The tea plant has thick leaves, dark green in color, and a strong

thick stem. The tea flowers bloom in white or pink and have a delicate fragrance. There are about 200 different species of the tea plant around the world. Kenya tea is some of the best quality black tea in the world. Tea from Kenya has won international acclaim for its taste and aroma. Kenya tea is so popular that it is the beverage of choice served in restaurants and cafés across Kenya (Traidcraft, 2007). Kenyan black tea is known to have higher levels of antioxidants compared to teas from other parts of the world. The quality of black tea depends on the number of top young leaves harvested, the mode of harvesting, and the care with which the green leaves are handled. Only the upper young leaves and a bud are handpicked and skillfully processed.

Kenyan tea has a distinct bright color and aromatic flavor, thanks to the country's tropical climate and rich volcanic soils. Black tea is processed from young, downy leaves, buds and stems which are then fermented before being rolled and dried. Tea processing is accomplished through the cut, twist and curl (CTC) process, where all the leaves, buds and stems are crushed/ ground to equal sizes, mostly dust and fanning, yielding stronger, thicker and brighter teas and ensuring a higher number of cups of tea per unit measure. Most of the teas packaged in tea bags are produced using the CTC method. According to Turner (1999), the orthodox method of processing tea is a traditional method of Kenya tea production that involves rolling leaf into smaller particles, suitable for multiple infusions. Orthodox tea production uses only top quality leaves and buds that produce strong, robust flavor resulting in higher quality and better tasting tea than CTC teas. Most specialty tea is orthodox tea.

## *5.2.Environment*

Kenya is a tropical East African country with a wide diversity of climate and geographic regions. This diversity allows many crops to be introduced and grown successfully. According to Partners in Change (2006), tea production has contributed significantly to the Kenyan economy and it will continue to do so. Kenya's Tea growing regions endowed with ideal climate characterized by; tropical, volcanic red soils, well distributed rainfall ranging between 1200 mm to 1400 mm per annum and long sunny days.

### 5.2.1.Labor Cost

#### 5.2.1.1.Cost Of Production

According to Elias, Sarah and Kagwathi (2012), the cost of production (COP) of Kenyan tea is considered high when compared to other tea producing countries. This is causing

uncertainty in the future of tea farming in Kenya and it could be sad if this industry collapsed the way the South African tea industry did. The cost of production in Kenya is USD 1.33 per Kg of made tea (Huque, 2007). This compares poorly with other tea producing countries like; Vietnam (USD 0.81 per Kg), Indonesia (USD 0.58 per Kg), Rwanda (USD 1.32 per Kg), Uganda (USD 1.20 per Kg), Tanzania (USD 1.16 per Kg), Malawi (USD 1.14 per Kg), and Zimbabwe (USD 1.11 per Kg).

Among the main factors contributing to the high cost of production is high labor demand. Tea is a high labor demand crop because of the activities that have to be undertaken. Labor is needed for plucking that should be done at least once a week, weeding, fertilizer and manure application, tipping and pruning that are necessary for high yields. Most small holder farmers use family labor although casual labor is engaged during peak production periods. Children are engaged in the tea farms during weekends or during holidays when they are not going to school. The actual amount of time spent depends on the size of plot and is guided by the schedule provided by the KTDA factory serving each region. In many parts of Kenya daily labor is paid dismally (50 -100 KES, about 0.7-1.5 USD), depending on the area. The same payment is used for labor used to pluck tea in the small scale farms.

On some parts of the country, tea pluckers are paid on weight basis, which implies that one has to be good to receive a reasonable pay in a day. From focus group discussions, it was established that the rate of payment to tea pluckers is KES 4-5 per kg of Greenleaf. With an average of 15 kilograms per day<sup>4</sup>, this translates to between KES 60-75 per day (about 1 US \$). The low payments are due to poor tea payments at factory level. Table 6 gives comparative cost of production in different tea producing countries. Tea production takes the third place in terms of total costs among the major tea producers.

#### 2.4.4 Financial Costs

According to FOASTAT (2008), agricultural markets in many developing countries are characterized by market failures. This has prompted many governments to intervene in such markets in various ways including state involvement in the marketing and pricing of agricultural crops and establishment of out-grower or contract farming schemes. Management of capital investment required for production and Processing. Tea requires adequate fertilizers and is labor intensive, and we expect productivity to increase with increasing quantities of fertilizers and family labor. Owing to the high labor requirement in the production processes of tea, family labor may not be adequate and some smallholder farmers engage hired labor to augment household labor supply.

Farmers perceive the fertilizer prices imposed by KTDA to be high. According to FAO, (2001), there was a general feeling that KTDA should subsidize the fertilizer prices. On the other hand it was expressed that the SACCOs should get involved in the buying and distribution of fertilizers for the benefit of the farmers.

### **6.High Cost Of Energy/Fuel At The Factories The Kenya**

According to KTDA (2003), due to high cost of fuel and electricity, many KTDA tea factories in Kenya use wood fuel. The consequence of this practice has been environmental degradation. Cutting of trees for factories use is likely to affect the amount of rainfall in tea growing areas in the long run. Kenya Tea Development Agency should encourage tea farmers to implement wood fuel planting and harvesting policies. The factories should develop plant nurseries that they can provide farmers at reduced prices.

Tea Development Agency (KTDA) has a massive power bill from over 60 factories that process tea from 500,000 farmers. The supply from the national grid is costly and erratic, so last summer the KTDA created an energy subsidiary to pursue locally generated hydropower, reducing factory costs and boosting farmers' incomes. The Kenyan Ministry of Energy identified 12 sites for the KTDA to develop distributed hydropower generation

### **7.Imenti Alternative Energy Source**

Imenti Tea Factory Company is already generating 1 megawatt through the Imenti mini-hydro project. Last June, the factory signed a power purchase agreement (PPA) with the Kenya Power and Lighting Company to supply surplus power to the national grid. The second project still under construction at Gura River in Nyeri is a four-factory partnership that will serve the KTDA factories at Gitugi, Iriani, Chinga and Gathuthi.

#### *7.1.High Cost Of Transport Due To Poor Road And Rail Transport System*

Plucked tea is usually collected from the various tea buying centers by the KTDA trucks. The poor road infrastructure, affects the ability of tea farmers to meet the required processing schedules contributing to a lot of tea wastage (Kegonde, 2005). To ensure sustainability of the sector farmers should come together and improve the quality of these roads. For instance, farmers can have a communal work day when they can dedicate the time in unblocking the drainage and repairing bad sections of the roads. Farmers should also be educated on the importance of electing effective directors to the

tea factories boards. The elected directors manage the KTDA fund on roads improvement in respective tea growing areas. Since most of the elected directors are not effective it has resulted in improper use of these funds and thus poor roads.

According to Kimenyi (2002), poor transportation methods used lead to further losses of green tea leaf while in transit. One reason for this is because the factory had few green leaf tea collection trucks. This caused the factory to use alternative means of transportation that are not suitable for ferrying green leaf tea. Some factories use a partially closed truck was used to ferry green tea. This inevitably leads to withering losses of the green leaf in transit to the factory. Secondly, because of few tea collection trucks green tea is collected long after it has been delivered to the TCCs. Because of the long wait, the tea withers before delivery to the factory. Most of the tea collection and weighing bags are old and worn-out, occasioning losses to farmers

### **8. Supply Chain Costs and Challenges**

Factors driving supply chain costs include:

#### *8.1. Losses And Corruption*

According to KTDA (2007), stolen tea disappears into another country and the insurance has not yet compensated the farmers despite long cries and follow-ups by them. This pointed something to us concerning corruption at the insurance level and Factory/KTDA level in respect to the insured risk. Apart from factory/KTDA level, most tea theft occurs at the TCCs as a result of a combination of factors. The weighing scales at the TCCs are either faulty or “doctored”. Measurements done at the TCCs do not tally with on-farm measurements. The falsification of green leaf weights is a clear indication of theft and results in losses to the farmers. Farmers are deducted a mandatory 2 kg from every bag weighed yet the weighing bag is hardly 0.5 kg. The factory allows a maximum weight of 16 kg per bag. This means that a farmer delivering more than 16 kg of green tea will have to divide it into several batches, each not exceeding 16 kg. The result is multiple deductions hence more losses/theft. Weight of tea is recorded as round figures of 1, 2, 3, 4 etc. Any fractions are ignored or rounded downwards. This is a direct loss to the farmer and provides an opportunity for theft.



### *8.2.Lack Of Value Addition*

According to Export Processing Zones Authority (2005), in Kenya the majority of agricultural products are sold abroad as raw materials. Investment opportunities for value adding activities through processing and packaging for agricultural commodities have not been exploited to increase farm incomes and off-farm employment (Kimenyi, 2002). Nyangito (2001) has noted that value adding to a crop like tea can fetch up to six times more revenue than unpacked tea. Kenyan tea is sold in semi-processed form to exporters who use it to blend lower quality tea from other countries (Tea Board of Kenya, 2009). To ensure sustainability of the sector KTDA managed factories should diversify from production of only black tea and produce a variety of branded tea products. This will help to improve farmers' income and reduce poverty levels in tea growing areas of Kenya.

### *8.3.Tea Hawking*

According to Kegonde (2005), the tea sector in Kenya face challenges of tea hawking practices that are widespread in the West of Rift Valley tea growing region. This happens among the small scale farmers who prefer to sell their green leaves for immediate payment than wait for the monthly payment. This practice may be attributed to high poverty levels. The problem with tea hawking is that the farmer only gets the farm gate payment which is usually very low and misses out on the annual payment commonly called "bonus" that is usually high in price per kilogram. In Kenya, tea hawking is illegal because it leads to exploitation of the small holder farmer by the middlemen who normally buy tea leaves from farmers at very low prices and later resell the produce to large multinational tea firms. Kim (2006) argues that to ensure sustainability of small holder tea sector tea hawking should remain illegal and outlawed. Small holder tea should continue selling their tea through KTDA as this helps farmers to achieve enormous economies of scale leading to high farmers' incomes.

### *8.4.Low Local Consumption*

Although the inter-governmental group on tea exports consultation on tea market issues (Thomas Jefferson Auditorium, 2002) projected that consumption of tea in tea growing countries would grow by 2.1% per year, this may not have been realized in Kenya because generally the promotion of tea especially among the young generation is still low. Aggressive advertising, coupled with conviction messages of health and style of tea

consumption is needed to ensure sustainability of small holder tea sector. In addition production of variety of tea based products will increase total demand of tea in the country. Gesimba et al. (2005) has further noted that elimination of value added tax (VAT) on tea can promote local consumption.

#### *8.5. Management Of Investment Capital*

Tea farming is a high fixed investment at production and processing levels, and requires large economies of scale in factory operations (The Tea Research Foundation of Kenya, 2002). Tea has a five year period to full maturity for farmers to start plucking at economic levels, and a short-time span is required between harvesting and processing. At farm level, cultivation requires continued financing to pay for inputs and labor. At the processing level, a steady flow of green leaf is required to support expensive specific investments in processing plants. The production structures of tea, therefore, require heavy investments in tea plantations and factories for processing. Thus, the tea industry makes major financial demands at the establishment stage which cannot be met by capital-constrained smallholder farmers. In such cases, the market may limit the participation of smallholder farmers in a high value export crop. The financial crisis and service erosion of the state-owned enterprise have resulted in a reconfiguration of the contractual arrangements in the production and marketing of smallholder tea.

There are three market channels through which smallholder farmers sell their green tea leaf (KTDA, 2007). First, some farmers sell their leaf to the restructured state-owned tea factory, which still provides inputs to growers but no longer offers extension services to smallholder farmers. Secondly, a large proportion of farmers, particularly those in the catchment areas of commercial estates, sell their green leaf to factories owned by commercial estates. These commercial estates in turn provide services such as fertilizer credit, extension services and social services such as health facilities and market for maize. Finally, some farmers belonging to a new smallholder farmer association have leased one of the factories owned by the Tea Research Foundation, and purchase tea from some of the association members. This smallholder-leased factory also provides inputs to its farmers but does not offer extension services.

#### *Ownership of assets and resources*

According to KTDA (2006), legal ownership of “KTDA” Factories and other properties is not clear. On paper the factories are owned by the farmers, yet no dividends are paid to

the farmers for every successful year of trading. Other KTDA properties do not benefit the farmers as well.

On the other hand farms are predominantly owned by men in Kenya because of the traditional land ownership tenure. However the tea earnings are considered family earnings in most cases, and in some cases the factories issue payments directly to women (wives, daughters etc). Access to the tea earnings by women is not always guaranteed since men have the upper hand in the control of the earnings. In the latest development in Kenya, women are recognized owners of land in instances where the spouse dies. The legal system allows the land title deed to be transferred to the woman. There are no restrictions on the expansion of tea farms at individual level. The land put under tea depends on crop preference and perception of competitiveness.

#### Tea trading

According to the KTDA briefs, the tea produce by the small scale farmers has four market outlets.

This shows that Mombasa Tea Auction dominates the tea-buying scene in Kenya. The small-scale tea farmers who contribute 60% of tea play no role in its trading and neither do they have access to trade information from MTA. For example the commission rates for Tea Brokers at the auction are pre-determined and negotiated with KTDA with no farmer representation. The process of determining these rates need to be all-inclusive and transparent. The producers and buyers are not represented yet the costs are passed to them. The rates should also reflect prevailing market trends. Other private tea sales at Mombasa and at the factories are shrouded in secrecy. Little information is available on these.

## **9.Methodology**

### *9.1.Research Design*

Research design is primarily the blueprint for scientific research. A research design offers a structure that enables researchers to define the variables of research and their relationship to each other, collect and analyze data in order to answer a predefined research questions (Heaton, 2006). There are three major types of research design; experimental, cross sectional and quasi experimental. The research design selected for any scientific research is determined by research questions. In order to select the most

appropriate research design for a given research project, it is imperative to understand the various types of research design.

### *9.2.Target Population*

A population can be described as any set of persons or objects that possesses at least one common characteristic (Barton, 2001). The target population in the study were farmers affiliated to Imenti Tea Factory in Meru. This study involved a total of 150 farmers.

### *9.3.Sample Size And Sampling Methods*

#### 9.3.1.Sample

Sampling enables researchers to select a subset of the population that are representative of the whole population. According to Mugenda et al (1999), a sample is a smaller group or sub-group obtained from the accessible population, and carefully selected to be representative of the entire population, with the desired characteristics.

#### 9.3.2.Sampling Technique

According to Cohen, Manion, Morrison and Morrison (2007),the sampling method used for research should be ensure that the selected subset is representative of the population in order to increase construct validity. This research will use both probability sampling and non-probability sampling during selection of departments and middle level managers from the selected departments.

#### 9.3.3.Sampling Method

This research will use a two tier sampling method including the random sampling and simple random sampling.

## **10.Random Sampling**

According to Berg and Latin (2004), random sampling essentially gives an equal chance for all items or persons in the sampling frame to be selected. Random sampling eliminates bias thus increasing validity of the research findings (Samkin& Schneider, 2008). According to Fischer (2005), random sampling may lead to reduction reliability of research findings due to randomness of this method. Random sampling may lead to selection of a sample which does not reflect the characterizes of the population.

**11.Simple Random Sampling**

Simple random sampling essentially gives equal chance of selection to all items or persons in a population (Bertini&Santucci, 2006). The simple random sampling method is fair and gives all sampling units an equal opportunity of being selected. Additionally, a simple random sampling method allows researchers to draw inferences and generalize the findings of the study.

**12.Description Of Data Collection Instruments**

The study will use a questionnaire as the main tool for collecting data since it is straightforward, less time-consuming and its ability to cover large sample size. The study will also use relevant documents from Imenti Tea Factory reports as a complementary source of information. The use of documentation will help to provide for explicitness, hence giving greater protection against bias, especially in the interpretation of qualitative data (Robson, 1993). The questionnaire will be designed to include mainly closed-ended questions, with a few questions being open-ended. According to Owens (2002), having more closed-ended questions ensured more precise and accurate responses. It also helped to determine the reliability of items under study. The open-ended questions will be meant to give room for any further elaboration or clarification from the respondents, as well as for the introduction of any issues that the respondents may have considered to be significant influencers of pay variations in the tea industry.

**13.Regression Analysis**

This section presents a discussion of the results of inferential statistics. The researcher conducted a multiple regression analysis so as to determine the relative importance of each of the variables with respect to investigating the factors influencing hefty bonus payout in agribusiness entrepreneurship, a case study of tea farmers of Imenti tea factory. The researcher applied the statistical package Easy Reg International to code, enter and compute the measurements of the multiple regressions for the study. Findings are presented in the following tables;

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.926 <sup>a</sup>	.768	.877	.544

Table 1: Model Summary

Source: Research, 2013

a. Predictors: (Constant), Quality of tea, Environment, Labor cost and Financial Cost.

b. Dependent Variable: Hefty bonus payout

Coefficient of determination explains the extent to which changes in the dependent variable can be explained by the change in the independent variables or the percentage of variation in the dependent variable (employee productivity) that is explained by all the 4 independent variables (Quality of tea, Environment, Labor cost and Financial Cost).

The four independent variables that were studied, explain 76.8% of variance in hefty bonus payout as represented by the  $R^2$ . This therefore means that other factors not studied in this research contribute 23.2% of variance in the dependent variable. Therefore, further research should be conducted to investigate the factors influencing hefty bonus payout in agribusiness entrepreneurship, a case study of tea farmers of Imenti tea factory.

Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	60.238	5	.178	52.3	.001 <sup>a</sup>
	Residual	10.345	100	.220		
	Total	70.583	105			

Table 3: ANOVA (Analysis of Variance)

Source: Research, 2013

a. Predictors: (Constant), Quality of tea, Environment, Labor cost and Financial Cost.

b. Dependent Variable: Hefty bonus payout

The F critical at 5% level of significance was 4.44. Since F calculated is greater than the F critical (value = 52.3), this shows that the overall model was significant. The significance is less than 0.05, thus indicating that the predictor variables, quality of tea, environment, labor cost and financial Cost explain the variation in the dependent variable which is employee productivity. Subsequently, we reject the hypothesis that all the population values for the regression coefficients are 0. Conversely, if the significance

value of F was larger than 0.05 then the independent variables would not explain the variation in the dependent variable.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.721	.78		6.674	0.000
	Quality	2.453	0.241	0.297	0.565	0.003
	Environment	3.233	0.256	0.510	0.245	0.002
	Labor Cost	2.254	0.577	0.346	0.123	0.004
	Financial Cost	3.967	0.286	0.310	0.232	0.001

*Table 3: Multiple Regression Analysis*

*Source: Research, 2013*

From the regression findings, the substitution of the equation ( $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4$ ) becomes:

$$Y = 2.721 + 2.453 X_1 + 3.233X_2 + 2.254X_3 + 3.967X_4$$

Where Y is the dependent variable (hefty bonus payout),  $X_1$  is quality variable,  $X_2$  is environment variable,  $X_3$  is labor cost and  $X_4$  is the financial cost variable.

According to the equation, taking all factors (Quality of tea, Environment, Labor cost and Financial Cost) constant at zero, hefty bonus payout will be 2.721. The data findings also show that a unit increase in quality variable will lead to a 2.453 increase in hefty bonus payout; a unit increase in environment will lead to a 3.233 increase in hefty bonus payout; a unit increase in labour cost will lead to a 2.254 increase in hefty bonus payout; and a unit increase in financial cost variable will lead to a 3.967 in hefty bonus payout. This means that the most significant factor is financial cost followed by environment.

At 5% level of significance and 95% level of confidence, Quality 0.003 level of significance; environment had a 0.002, labor cost had a 0.004 level of significance financial cost had 0.001 level of significance implying that the most significant factor is financial cost.

#### **14. Conclusion**

The study concludes that tea from Kenya had won international acclaim for its taste and aroma and that orthodox tea production used only top quality leaves and buds that produce strong, robust flavor resulting in higher quality and better tasting tea.

The study also concludes that climate change may have had played out differently to what had been predicted and therefore responses to climate change needed to be flexible and that Kenya's Tea growing regions were endowed with ideal climate, there was uncertainty associated with even the best climate change and that climate change had social as well as environmental and agronomic consequences.

The study further concludes that the cost of production (COP) of Kenyan tea was causing uncertainty in the future of tea farming in Kenya, that labor was needed for plucking that should be done at least once a week and that children were engaged in the tea farms during weekends or during holidays when they were not going to school and that tea production took the third place in terms of total costs among the major tea producer.

Finally, the study concludes that tea required adequate fertilizers and was labor intensive and that some smallholder farmers engaged hired labor to augment household labor supply and that management of capital investment required for production and Processing and that due to high cost of fuel and electricity, many KTDA tea factories in Kenya used wood fuel resulting in environmental degradation.

### **15.Recommendation**

The study recommends that that KTDA should subsidize fertilizer prices and on the other hand it SACCOs should get involved in the buying and distribution of fertilizers for the benefit of the farmers.

The study also recommends that due to high cost of fuel and electricity, many KTDA tea factories in Kenya use wood fuel. The consequence of this practice has been environmental degradation. Cutting of trees for factories use is likely to affect the amount of rainfall in tea growing areas in the long run. Kenya Tea Development Agency should encourage tea farmers to implement wood fuel planting and harvesting policies. The factories should develop plant nurseries that they can provide farmers at reduced prices.

Finally, the study recommends that to sustainably address the environment and energy use, the tea factories should be encouraged to develop and implement sustainable programs. Wood

being the major energy source at the factories, all factories are expected to have adequate source of wood fuel, and implement sustainable wood fuel planting and harvesting policies.



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