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Factors Leading to Decline of Coffee in Vihiga County, Kenya

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Authors' contributions

This work was carried out in collaboration between both authors. Authors CL and CO designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors CL and CO managed the analyses of the study. Author CL managed the literature searches. Both authors read and approved the final manuscript.

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Case Study

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ABSTRACT

Coffee is grown in many countries in the world including Africa and America. Kenyan coffee has been known to be among the country's agricultural exports and contributes greatly to the growth of Kenyan economy. Coffee production yields has been declining from a peak of 128,700 metric tons per year to an average of 49,088 metric tons. Many industries have tried to address the issues identified to be contributors to the decline but the problem of production of coffee has not been fully solved though there is slight increase in production. The establishment that was under study was small scale farmers of coffee in Vihiga County, Vihiga Sub-county. The primary sources used during data collection include; interviews, observation and questionnaire while secondary sources used were; library research journals, textbook and factory publications. The target population of the study was 300 small scale farmers in Vihiga Sub-county. Ratified sampling technique was used to compare views among coffee producers from various coffee societies and farmers in the area. Data analysis was both quantitative and qualitative using descriptive statistics and data collected was analyzed using statistical program for social as (SPSS).Pests and diseases as well as poor management if adequately addressed by the government can help to increase production.

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1. INTRODUCTION

Coffee is grown in many parts of the world and plays an important role in many developing countries. It originated from Ethiopia and was first grown by the Europeans and British only because Africans were not allowed to venture into any industry activity [1]. This went on until independence when many African countries started venturing into coffee production in Africa. In East Africa, coffee is grown in Ethiopia and Kenya [2].

Coffee was introduced to Kenya back in 1893 and was grown by British and European farmers, when Kenya gained independence in 1963 it had freedom to farm coffee [3]. From independence, Kenyans were now allowed to venture into coffee production which led to an increase in production in 1988/89 when the country at its peak produced 130,000 metric tons [3]. In the later years after 1989, coffee production trend has seen to be declining up to 40 tons in 2011/12. This was attributed to property boom in areas that grew coffee and price instability and other factors such as liberalization of coffee industry [4].

In Kenya, coffee is the third most important agricultural commodity after horticulture and tea in the agricultural sector. Kenya is also known to be among the top five countries that export the best quality of coffee that comes from the best species Arabica. In international markets, it is used to blend other coffee from other origins [5]. Kenya is also known to be the best producer of Robusta coffee in the world. Coffee generally contributes to about 10 percent of the agricultural export and up to 30 percent of total employment in Kenya. This is evidenced by people who are employed in agricultural sector. Coffee has created employment to about 250,000 people being employed directly and an estimated people of 6 million are employed indirectly by the coffee sector [6]. This shows that, as one of the important commodity that is traded globally, coffee plays a crucial role in the livelihood of many rural household across the developing countries in the world.

Kenya being the best producer of coffee has its 65 percent of its population living in rural areas and therefore they derive their livelihood from farming hence contributing to about 24 percent of Gross Domestic Product and another 27% indirectly. Agriculture is the main productive sector upon which success of vision 2030 is anchored and therefore the sector remains critical to attaining 10% of economic growth from year 2009 to 2030 [7].

Despite the fact that coffee plays an important role in the economic development of many countries including Kenya, there has been a decline in coffee production in Kenya in terms of production and quality in past two decades [2]. The decline is experienced because many farmers are uprooting there coffee trees and replacing them with other enterprises such as maize, beans, bananas or intercrop coffee with other subsistence crop as a strategic measure of food insecurity and reduced farm income especially when coffee prices becomes consistently low [8]. This shows that there is a problem that should be solved and therefore, there is need to seek measures that will help to increase the production of coffee.

Kenyan coffee has been of the best quality and therefore high demand because it is grown in the areas with best agronomic conditions and this gives it a pleasant flavor that makes many people to like it [8]. Vihiga County is one of the counties in Kenya that has favorable ecological conditions for growing coffee which includes acidic soils, sunlight, right temperature and rainfall [9]. The county is among those counties that experiences high decline of coffee production. Production of coffee declined may be due to the price fluctuations of coffee prices, government policy and other factors that affect coffee production.

Many coffee farmers have been discouraged and even lost their confidence in the management of affairs due to low prices and delayed payments of coffee making them cut down their coffee trees or even uproot them [10]. When there is price decrease and delayed payments, farmers are definitely affected negatively by making their level of income decrease hence low living standards, poor nutritional services are acquired. This study therefore seeks to determine ways in which coffee production can be improved so as to improve the livelihood of the farmers in Vihiga County.

2. METHODOLOGY

The study was carried out in Vihiga County which is situated in Western Kenya boarding Kakamega County to the north, Nandi County to the east, Kisumu County to the south and Siaya County to the west. It lie between 34 30' and 35 0' east between latitude 0 and 0 15 north. The county is covering the area of 531.0 km^2. The area has climate that support a variety of crop farming such as coffee, tea, bananas and horticulture crops as well as rearing of livestock [10]. Vihiga sub-county because most people living in this area highly depend on income from agriculture.

2.1 Research Design

The research adopted the survey research design. Descriptive research determines and report the way things are [11] argues that the method has an advantage in enabling the researcher to collect direct information about human behavior which is complex and more difficult to study.

2.2 Sampling Procedure and Sample Size

Sampling is the process of selecting a number of individuals or objects from a population such that the selected group contains elements representatives of the characteristics found in entire group. According to [12], the purpose of sampling is to ensure that a representative sample which will enable the researcher to gain information about the population. A sample size is a set that has relative small, clearly defined population; sample size of at least 10% of the target population would be representative of the whole population. [13] suggested that at least 10% of the population is a good representation where the population is large whereas [12], suggests that for descriptive studies, 10% of the accessible population is enough for representative sample.

Kasomo [14] adopted linear random sampling to determine the sample size defining this method as a process of selecting from population that provide every sample of a given size in equal probability of being selected into the a sample. This method is popularly used in the case where a complete list of population is from which the sample is to be drawn is available. A sample of 30 out of 300 farmers was used for the study representing 10% of the total target population of 300.

2.3 Instrumentation

The most mode of data collection was by use of questionnaire. Questionnaire is a carefully designed instrument that can be either written, typed or printed with an aim of collecting data from people [14]. According to [12], a questionnaire is a collection of items or questions to which a research subjected is expected to respond. The questionnaire were administered at Vihiga sub-county and it was divided into sections; the first section was about obtaining personal data and putting into consideration confidentiality of the respondent, the second section were the general questions about production of coffee, the third section was to find out government participation in the coffee and lastly to find out all about physical and human activities in relationship with coffee production. The questionnaire was administered physically by the researcher.

2.4 Data Collection

The target population of the study was; all coffee farmers in Vihiga sub-county. Both primary and secondary methods of data collection were used. Primary data was collected from administering of questionnaires to the target sampled while secondary data was obtained from magazines, textbooks, internet and journals.

2.5 Data Analysis and Presentation

After the questionnaires had been collected, they were first edited for consistency and for completeness. They were then arranged to simplification of code and analyzation. Internal and descriptive statistics was used to analyze the data due to simplicity in analyzing the data collected and also due to availability. Data that was collected was analyzed using statistical program for social sciences (SPSS). Descriptive statistics including frequency tables and percentage were used to present and summarize the data collected [12], define descriptive data as data that enables the researcher to organize data in an effective and meaningful way. Internal statistics including chi-square test and cross tabulation was used to test hypothesis. [11], defines chi-square test as a statistical technique which attempts to establish relationship between variables both of which are categorical in nature.

3. RESULTS

3.1 Response Rate

The findings are presented in the order of the questionnaires and are based on a total of 22 respondents which represented 73% of the target population of 30 farmers.

Table 1. Response rate

Questionnaire issued	Frequency	Percentage
Returned	22	73%
Unreturned	8	27%
Total	**30**	**100%**

This is indicative of the cooperation and support accorded by the respondent

3.2 Land under Coffee Plantation

The study was to determine the average land that was under coffee plantation for the respondents. Most of the respondents have between 1-4 hectors of land under coffee. This is represented by 59.1%, 5-8 hectors which is 27.3% and above 9 hectors is 13.6% as shown in Table 2.

Table 2. Land under coffee production

Hectares	Frequency	Percent	Cumulative %
1-4 hectares	13	59.1	59.1
5-8 hectares	6	27.3	86.4
> 8 hectares	3	13.6	100.0
Total	**22**	**100.0**	

3.3 Amount of Coffee Harvested Annually

The study was to determine the amount of coffee that is harvested in the area. It was realized that most of the respondents produce an average of 600-1000 Kgs yearly which is 50%, 100-500 Kgs which is 13.6%, 1100-1500 Kgs 22.7% and above 1500 Kgs is 13.6% as represented in the Table 3.

Table 3. Land under coffee production

Amount	Frequency	Percent	Cumulative %
100-500 Kgs	3	13.6	13.6
500-1000 Kgs	11	50.0	63.6
1000-1500 Kgs	5	22.7	86.3
Above1500 Kgs	3	13.7	100.0
Total	**22**	**100.0**	

3.4 Production Trend in Coffee

The increasing trend for coffee was the lowest with 13.6%, constant trend was 22.8 while the declining trend had the highest percent of 63.6% Table 4.

Table 4. Production trend in the previous years

Trend	Frequency	Percent	Cumulative %
Constant	5	22.8	22.8
Increasing	3	13.6	36.4
Declining	14	63.6	100.0
Total	**22**	**100.0**	

4. DISCUSSION

Most of the people who produce coffee are those who are over 40 years since they have already acquired land either through inheritance or purchasing and others lease land that is under coffee plantation so as to boost their productivity. Through the interviews with respondents they do not get financial assistance from the government and this has greatly contributed to decrease in coffee production potential since the cost of the inputs that are required is high. The inputs provide by the cooperatives are in form of advanced loans thus when farmers acquire them they will have lower payments at the end of the year. The coffee plantations are therefore continually infested by the coffee berry disease and the green scale hence low quality and low quantity of the production. Highest population sell the cherries to the cooperatives as they lack facilities to process the coffee in a way that it can be consumed directly by the consumers. This makes it to be bought at a low price in the international markets due to the flooding of the unprocessed coffee from other countries. Other approx. 59.1% of the respondents suggest that there is mismanagement of the cooperative societies. This supported their view that most of the people in the management have lower levels of education thus high illiteracy makes them distribute the available resources without use of any criteria hence some members do not get the services acquired from the cooperative societies.

5. CONCLUSION

From the study several conclusions were made in regard to the factors that contribute to decline in coffee production. They include; poor management has a negative impact on the coffee production as some farmers do not get the services that are rendered in the cooperative societies, lack of financial assistance by the government plays a role in the production of lower quantity and lower quality yields, sale of

the coffee cherries have greatly contributed to the pay of low income to the farmers therefore making them have poor standards of living and that sale of the dry processed coffee would increase the income of the respondents.

6. RECOMMENDATIONS

The study recommends that the people who are employed in the management of the cooperative societies should have attained higher level of education and they should have the technological advancements which will enable them to manage appropriately and enhance proper allocation and distribution of the resources. The government should also be ready to finance the coffee farmers which would help them boost their production in terms of quantity and the quality. The cooperative societies who sell the coffee on behalf of the farmers should negotiate for better prices of the yields to ensure that the farmers attain better incomes from their yields.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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