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COFFEE AND COCOA PRODUCTION IN AFRICA: A TREND ANALYSIS

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ABSTRACT

The Sub-Saharan region of Africa is very dominant in the production of economic beverage crop such as cocoa, coffee, tea, which are largely grown for export. This study was carried out to evaluate the-productivity of coffee and cocoa in Africa. Trend analysis was carried out to assess the performance of cocoa and coffee production in the continent for a period of forty five years (1976-2020). The study observed that coffee production in Africa did not improve significantly during the period. The highest coffee production in the continent was between 1991 and 2000 with an average of 1254127 tonnes, while the lowest production was observed between 2011 and 2020, with an average of 1138444 tonnes. This relatively stable but low figures was attributed tolow coffee yield across the continent. However, aggregate cocoa production in Africa has been on the rise throughout the period under study. Cote d'Ivoire and Ghana were the only two cocoa producing countries with sustained increase in production over the years. The observed rising cocoa production in the continent was adduced to increase in cultivation areas, new cocoa cultivars development and increasing grower prices. Despite the rise in cocoa production in the continent, farmers are still faced with the issue of low cocoa yield. The study recommends the need to prioritize new high yielding coffee and cocoa varieties in the respective producing nations.

Keywords: Coffee, Cocoa, Production, Trend

INTRODUCTION

Agriculture is a way of life in Africa. The agricultural sector is of great importance to any African economy. The sector is not only dependent upon for food availability, but also for employment opportunity (Osabohien et al. 2019). The Sub-Saharan region of Africa is very dominant in the production of economic beverage crops which are largely grown for export. They include cocoa, coffee and tea. Ethiopia, Uganda, Côte d'Ivoire, Tanzania, and Madagascar are the major producers of coffee (Ayeleet al. 2021). Cocoa is essentially a tropical forest crop. Its cultivation is concentrated in Western Africa, with the principal producers being Côte d'Ivoire, Ghana, Nigeria, and Cameroon (Meremet al.2020).

Coffee production is vital in the economic prosperity of producing countries especially in East and Central Africa (Bouët et al. 2022). Coffee production is mostly regarded as a labour-intensive process implying that

the activity assists in the employment of a significant number of people (Dube and Vargas, 2013). Rural smallholder farmers are responsible for the production of about 95 percent of the coffee produced in Africa (Wondemu, 2017). This implies that the production trends of coffee has serious implication on rural poverty alleviation and economic growth of producing countries. Cocoa production in West and Central Africa has been a bedrock for the economic prosperity and development of these regions overtime, however, the emergence of crude oil export and the popularity of other agricultural commodities as well as climate variability has affected cocoa production in Africa (Sonwaet al., 2019). This study therefore, seeks to assess the trends of coffee and cocoa production in Africa from 1976 to 2020.

The specific objectives of the study are to:

i. To identify the trend of coffee production from 1976 to 2020.
ii. To identify the trend of cocoa production in Africa from1976 to 2020.
iii. To identify the factors influencing the observed trends.

METHODOLOGY

Study Area

The study area adopted for this study is Africa. Africa is a vast continent with diverse physical features, including deserts, mountains, rivers, and lakes. Africa is situated in the eastern hemisphere, lies to the south of Europe and southwest of Asia. Its borders are defined by the Mediterranean Sea to the north, the Red Sea to the northeast, the Indian Ocean to the southeast, and the Atlantic Ocean to the west (Clarke et al., 2023). Covering a vast expanse, Africa spans from approximately Latitude 37°21'N to 34°51'15"S and Longitude 51°27'52"E to 17°33'22"W. From its northernmost point near Al-Ghīrān Point in Tunisia to the southern tip at Cape Agulhas in South Africa, and from Xaafuun (Hafun) Point near Cape Gwardafuy (Guardafui) in Somalia to its westernmost point at Almadi Point in Senegal, Africa extends around 5,000 miles (8,000 km) from north to south and approximately 4,600 miles (7,400 km) from east to west.

Figure 1: Map of Africa
Source: www.mapsofworld.com

Source of Data

The source of data adopted for this study is Food and Agricultural Organisation (FAO, 2020) statistics. This source was adopted due to the consistency and availability of adequate data suitable for this study.

Analytical Techniques

Descriptive statistics technique, specifically trend graphs, charts and tables were adopted in the course of this study. Both tables and graphs were used in tandem to offer a comprehensive understanding of the data. Tables used provide exact figures, while graphs and chartsillustrate trends and patterns present in those figures. These tools were adopted in order to enhance the comprehension of data and make findings more accessible to a wider audience.

RESULTS AND DISCUSSION

Coffee Production in Africa

Coffee is one of the most important agricultural products in Africa. The crop serves as a major source of foreign exchange for many African countries. Coffee exports is responsible for about 30 percent of the export earnings in Ethiopia and Uganda (FAOSTAT, 2020). The crop has been having a huge impact on the GDP of many African countries. Coffee crop is classified into different species. However, the two most common species in Africa are Coffea Arabica and Coffea canephora. The crop is of the tropical woody genus, Coffea belongs to the Rubiaceae family. Coffea arabica originated from southwestern Ethiopia and can be found in Boma plateau in Southern Sudan, as well as in Mount Marsabit in Kenya (Meyer, 1965; Thomas, 1942). C. canephorahas much wider distribution, from West to East Africa in Ghana, Guinea, Guinea Bissau, Cote d'Ivoire, Liberia, Nigeria, Cabinda, Cameroon, Congo, Central African Republic, Democratic Republic of Congo, Gabon, Sudan, South Sudan, Tanzania, and Uganda and to the south to Angola (Davis &Rakotonasolo 2021).

According to FAOSTAT (2020) there are 30 countries involved in the production of coffee in Africa(Table 1) in the year 2020.

Ethiopia is the largest producer of Coffee in Africa (Fig. 2). Close to a quarter of the population in Ethiopia derive their livelihood from coffee production, marketing, and export (Abafita & Tadesse 2021). Uganda is the second largest producer of coffee, producing only about half of what is being produced in Ethiopia. About half a million smallholders in Uganda produce coffee, and it is the primary source of income for 2.5 million people, which is about 8 percent of the population (FTF, 2012). The next eight highest coffee producing countries in Africa did not produce up to 100000 tonnes of coffee in the year 2020 (Fig.2).

Africa's Aggregate Coffee Production

Africa's aggregate coffee production has been steady in the past 45 years. Although, there are times in which the production increases significantly and there are periods of decline (Table 2). However there is no observed significant deviation in the trend of coffee production in Africa since the mid 70's. The continent experienced the highest production level in the years 1981, 2020, 2019 and 2000 all within the range between 1,280,779 and 1,293,046 tonnes. One of the major reasons for the rise in coffee production is Africa is due to the high demand for the commodity in the international market (Balgah, 2019). The lowest production of coffee was witnessed in the year, 2003 with production quantity of 811,189 tonnes. Aggregate coffee production in Africa was

Table 1. Coffee Production in selected countries in Africa

Countries	Production in tonnes
Angola	14855
Benin	55
Burundi	15900
Cape Verde	48
Cameroon	36207
Central African Republic	10448
Comoros	140
Congo	3043
Cote d'Ivoire	59412
Democratic Republic of the Congo	29834
Equatorial Guinea	4187
Ethiopia	584790
Gabon	99
Ghana	736
Guinea	38572
Kenya	36900
Liberia	638
Madagascar	42220
Malawi	10000
Mozambique	805
Nigeria	1887
Rwanda	20459
Sierra Leone	2400
Togo	17404
Uganda	290668
United Republic of Tanzania	60651
Zambia	6536
Zimbabwe	508

Source: FAOSTAT, 2020

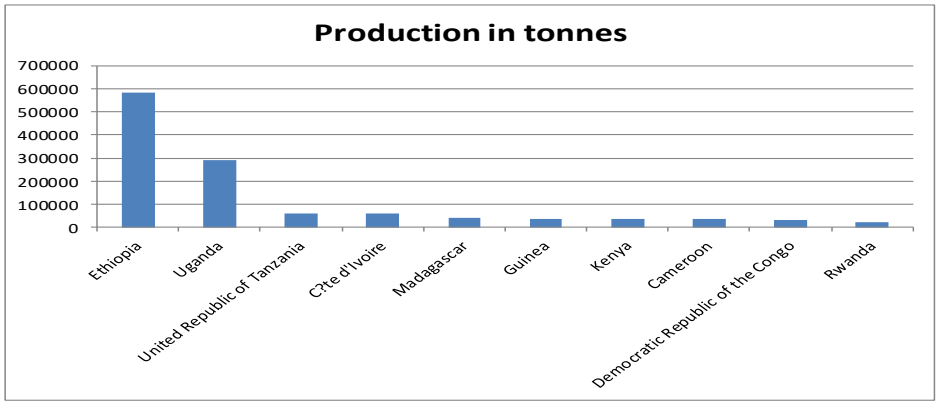

Figure 2. Top ten producers of coffee in Africa in the year 2020
Source: FAOSTAT, 2020

steady between periods of 1976 to 1985, with an average aggregate production of 1,173,685 tonnes (Table 2). However, in the eighties, the average production was 1,210,080 tonnes which was a bit higher than what was obtained in the previous period. Much promise was shown in the production of the crop in the 90's as the average production for the decade was high with a value of 1,254,127 tonnes. The same cannot be said for the following decade as there was a fall in the aggregate production of coffee in Africa to 1,141,356 tonnes. The fall in coffee production during this period (2001-2010) can be attributed to high transaction cost and information asymmetry in the market which reduces the economic benefit of coffee production (Barret, 2008).The last decade (2011 to 2020)had the lowest average with 1,138,444 tonnes. Kudama (2019), cited aging coffee farms and the increasing incidence of pests and diseases as the major factors that could be attributed to the fall in coffee production during this period.

Table 2. Production of coffee in Africa 1976-2020.

YEAR	Production Quantity in Tons
1976	1165512
1977	1235352
1978	1063658
1979	1110744
1980	1163648
1981	1293046
1982	1206872
1983	1113475
1984	1036465
1985	1181857
1986	1274895
1987	1235947
1988	1218793
1989	1256511
1990	1254209
1991	1192734
1992	1156200
1993	991822
1994	1058408
1995	1127036
1996	1254436
1997	1176346
1998	1219222
1999	1254045
2000	1280779

2001	1121272
2002	1098674
2003	811189
2004	1063193
2005	984258
2006	1060500
2007	999820
2008	1079152
2009	1001933
2010	1085219
2011	987479
2012	975108
2013	1104530
2014	1086609
2015	1153373
2016	1192022
2017	1158042
2018	1207175
2019	1282933
2020	1289409

Source: FAOSTAT 2020

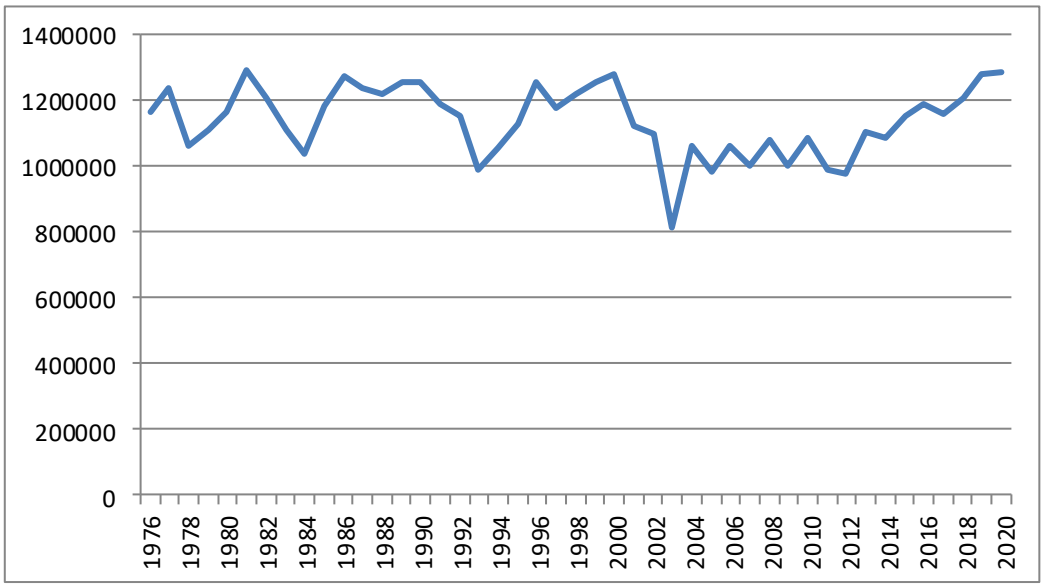

Figure 3: Trend of coffee production in Africa (1976-2020)
Source: FAOSTAT 2020

Factors Influencing Coffee production in Africa

According to the International Coffee Council (ICC, 2015) the factor which could be attributed to the relatively stable trend observed in coffee production is the increased cultivation of the crop among the smallholder farmers. Due to the increasing economic benefit attached to the production and marketing of the crop, many smallholder farmers get involved in the cultivation of coffee, thereby increasing the cultivated area for the crop.

According to Oko-Isuet al. (2019), the international commodity price for coffee is important to growers in Africa. It influences the prices growers get for coffee in their respective countries. However, the growers have little to no control over the international commodity price for coffee, thus farmers have been advised to target yield increase as this will help increase the economic benefits from coffee production. In Africa, average yields are generally poor and have even declined in some countries (Otieno et al.,2019). They range from 100 to 800 kg/ha. Estimates for crop years 2011/12 to 2014/15 indicate an average of 408.7 kg/ha (FAOSTAT, 2020). However, yields from estate farms are slightly higher. Generally, African agriculture is characterised by low productivity due to underfertilization of soil and the lack of regular husbandry.

Cocoa Production in Africa

Cocoa (Theobroma cacao), a tree crop from the family of Sterculiaceae and genius Theobroma was discovered in the Amazon basins in the 18th century (Ajewole and Iyanda, 2010). The crop was first introduced to Africa by the Portuguese; although the timing is still debatable but many researchers agree that it must have been around the 19th century (Opokuet al. 2007). They are reputed to have planted cacao on the island of San Thome" (off French Gabon) as far back as 1822. It was not until about 1870, however, that cultivation was undertaken seriously there. By 1895, the export of cocoa beans from this island had reached a million kilograms, which was a considerable quantity for those days. The crop has since then become a highly valuable commercial crop for many African economies.

Cocoa is perhaps one of the most popular crops in Africa. According to Wessel and Quist-Wessel (2015), West Africa alone accounts for about 70% of the global cocoa production. Over the years, Cocoa has been the bedrock of many economies in Africa and most especially, West Africa.

Many countries depended on the crop for their foreign exchange, employment creation, gross domestic product and ultimately economic growth. West Africa is regarded as the cocoa hub of Africa and arguably that of the world (Schrothet al. 2016). This is because majority of the cocoa producing nations in Africa are from the West African sub-region. Cote d'Ivoire is the largest producer of the crop in Africa with 56% percent of the total cocoa production in Africa(Fig. 4). The country is followed by Ghana, Nigeria, Cameroon, Sierra Leone and Uganda with production contribution of 20%, 9%, 7%, 5% and 1% respectively (FAOSTAT, 2020). Cote d'Ivoire's production is the largest by a wide margin and the largest producer of the crop in the world.

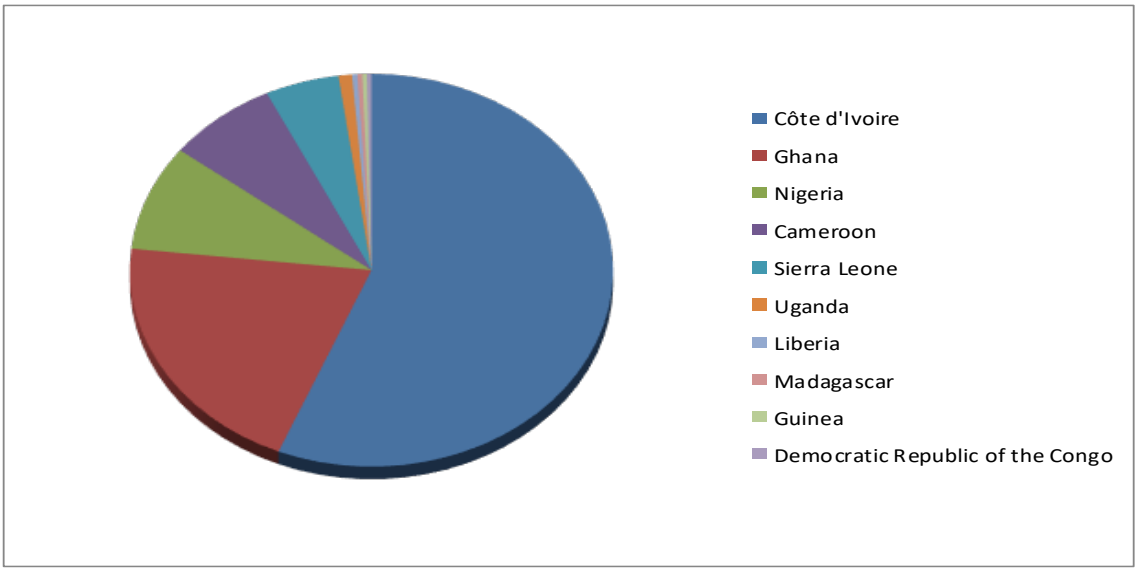

Figure 4: Top cocoa producing countries in Africa
Source: FAOSTAT 2020

Trends of Cocoa Production in Africa

Aggregate cocoa production in Africa has been experiencing an upward trend over-time. This is in spite of the challenges such as climate change, incidence of pests and diseases and high price volatility of cocoa constantly thwarting the progress of the sector (Hütz-Adams et al.,2016). Even though there were noticeable drops in aggregate production levels in the years 1982, 1992, 2007 and 2016, there has been an upward trajectory in the production of cocoa in Africa(Fig.5).The year 2020 had the highest aggregate production level since 1976.

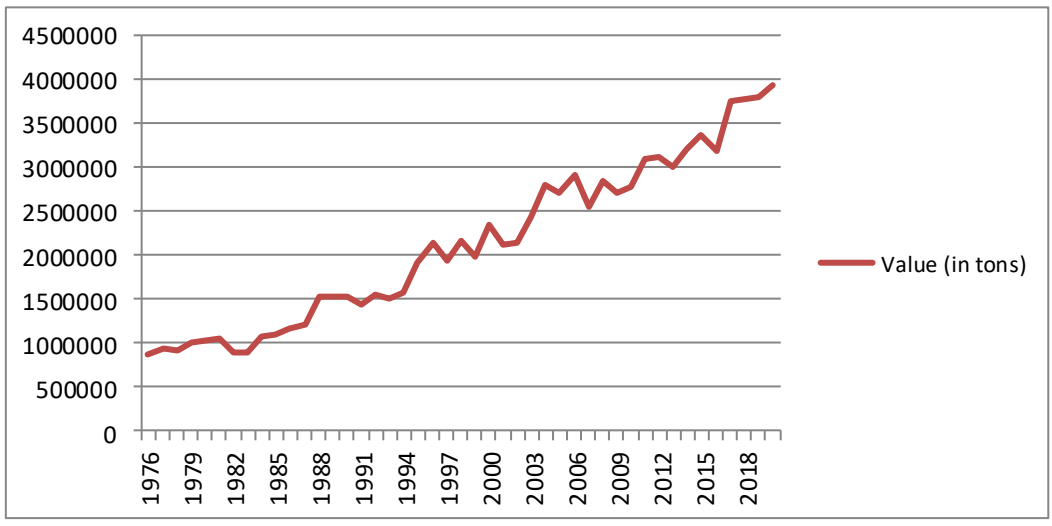

Figure 5: Trend of cocoa production in Africa (Aggregated)
Source: FAOSTAT 2020

Cote d'Ivoire has been the power house where cocoa production in Africa is concerned and has maintained this position overtime (Fig.6). The graph also shows how much disparity exists between the production levels obtainable in Cote d'Ivoire compared to the remaining countries. Yao et al. (2020) attributed the growth in cocoa production in Cote d'Ivoire to favourable climate, good farm practices and government support.

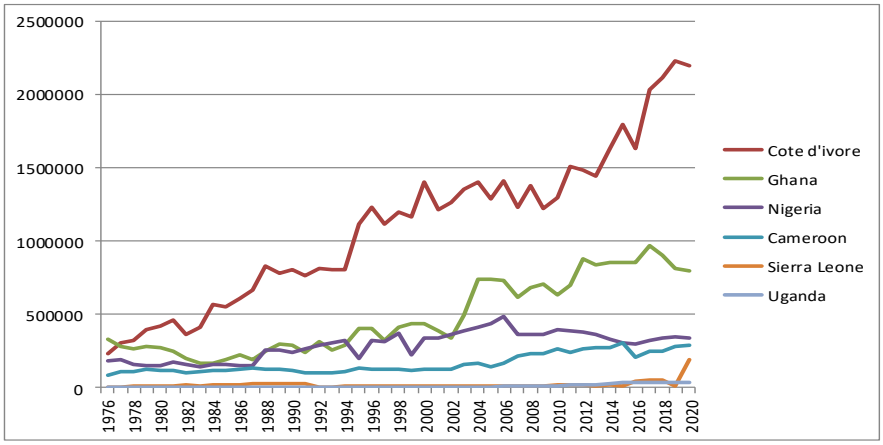

Figure 6: Cocoa production in Africa by the top producing countries
Source: FAOSTAT 2020

Cocoa production in these countries has been on an upward trend over the course of the 45 years under review(Fig. 6). The trend of cocoa production in Sierra Leone, Uganda, Nigeria and Cameroon are similar for the years under study (Fig.7). This implies that although cocoa production in these countries may not have been greatly improved there still exist some increase in production. Although the increase in aggregate cocoa production in Africa may be largely influenced by the production level in Cote d'Ivoire, other producing countries have also been experiencing production growth albeit in negligible quantities(Fig. 6).

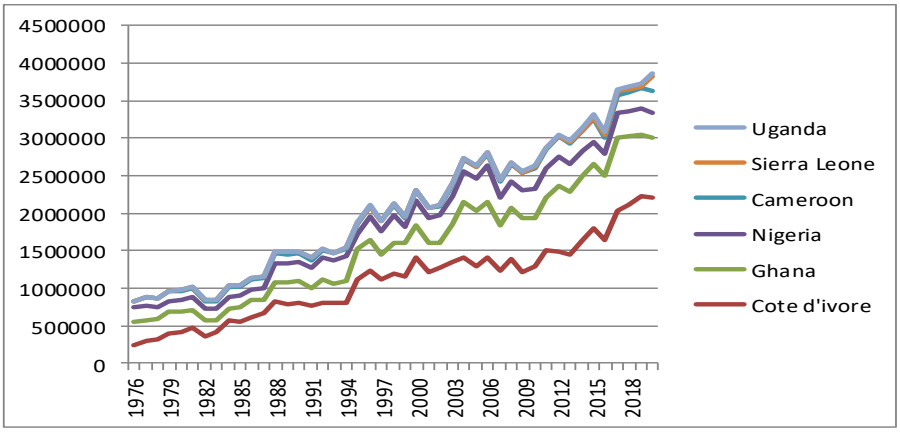

Figure 7: Trend analysis of the top cocoa producers in Africa (1976-2020)
Source: FAOSTAT 2020

The harvest areas for many of the cocoa producing countries has increased overtime. Ghana's harvested area for example increased from 1million ha in 1995 to over 1.6million ha in 2010(Wessel and Quist-Wessel, 2015). Also, the emergence of some high yielding cocoa hybrid (TC 1-8) developed by Cocoa Research Institute of Nigeria (CRIN) may also be a reason for the positive trend in cocoa production especially in Nigeria. Increasing grower prices experienced in many of the cocoa producing countries such as Nigeria, Cameroon and Ghana especially could also be the reason for the increasing production levels in Africa (Wessel and Quist-Wessel, 2015). Despite all these advantages, there seems to be a general problem low yield across the continent.

CONCLUSION AND RECOMMENDATION

The study assessed the trends of coffee and cocoa production in Africa from 1976 to 2020. The trend analysis for aggregate coffee production in Africa showed that coffee production in Africa has been relatively stable during the period under study. Coffee production in Africa peaked in the nineties while the lowest production during the 46 years under study occurred in 2003. Low yield was identified by literature as the major factor inhibiting coffee production in Africa.

Furthermore, the aggregate cocoa production in Africa was on an upward trend throughout the period under study. However, the trend analysis for the top six cocoa producers in Africa showed that only Cote d'Ivoire and Ghana experienced a sustained upward trend in cocoa production during this period while countries like Nigeria, Cameroon, Sierra Leone and Uganda had a somewhat stable production level over the years. Factors such as increasing cultivation areas, development of new varieties and increase in grower prices were identified in literature as the main propellers of cocoa production in Africa. However, low yield remains the common factor militating against cocoa production across the continent.

Based on the findings above the study recommends the following:

- Coffee producing countries in Africa should prioritize the development of high yielding coffee varieties so as to improve coffee yield and production in the continent
- Stakeholders in cocoa producing countries in the continent should the cocoa farming practices adopted in Cote d'Ivoire as this may boost the production in other producing countries.
- More research into the development of high yielding cocoa varieties should be encouraged in cocoa producing areas of Africa.

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