

**ÇUKUROVA UNIVERSITY
INSTITUTE OF NATURAL AND APPLIED SCIENCES**

MSc. THESIS

Jeniffer Wanjuhi WAINAINA

**EXPORT COMPETITIVENESS OF SELECTED
AGRICULTURAL PRODUCTS IN KENYA**

DEPARTMENT OF AGRICULTURAL ECONOMICS

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ABSTRACT

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This study was conducted to understand the competitiveness of some agricultural products between Kenya and the East African Community countries. The main objective of this study is to give an overall view and assessment of the level of competitiveness of the Kenyan agricultural sector in the international market. The methods used in this study to determine competitiveness are the Market Share Index, three Vollrath's Relative Trade Advantage Indices, and Balassa's RCA Index. These methods can show Kenya's market share pattern in the EAC and other global markets. The various countries are compared using calculated values and ranked accordingly. Consequently, Kenya dominated the tea and crude materials international market entirely, while most EAC member countries had a strong comparative advantage in coffee. In general, the Kenyan government and the private sector must strengthen high-level investments to boost the agriculture sector and diversify the agricultural export products. Consequently, developing standard agricultural trade policies would benefit all EAC co-member countries, which is also in line with the objectives of the EAC.

Keywords: Revealed Comparative Advantage Index, Export Competitiveness, Market Share Index, International Trade, EAC countries

ÖZ

YÜKSEK LİSANS TEZİ

KENYA'DA SEÇİLMİŞ TARIM ÜRÜNLERİNİN İHRACAT REKABETİ

Jenifer Wanjuhi WAINAINA

**ÇUKUROVA ÜNİVERSİTESİ
FEN BİLİMLERİ ENSTİTÜSÜ
TARIM EKONOMİSİ ANABİLİM DALI**

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Bu çalışma, Kenya ile Doğu Afrika Topluluğu (EAC) ülkeleri arasındaki bazı tarımsal ürünlerin rekabet edebilirliğini ortaya koymak için yapılmıştır. Bu çalışmanın temel amacı, Kenya tarım sektörünün uluslararası pazardaki rekabet edebilirlik düzeyi hakkında genel bir görüş ve değerlendirme sunmaktır. Bu çalışmada rekabet edebilirliği belirlemek için kullanılan yöntemler Pazar Payı Endeksi, Vollrath Görelî Ticaret Avantajı Endeksi ve Balassa'nın RCA Endeksidir. Bu yöntemler kullanılarak, Kenya'nın EAC ve diğer küresel pazarlardaki pazar payı modeli gösterilebilir. Çeşitli ülkeler hesaplanan değerler kullanılarak karşılaştırılabilir ve buna göre sıralanabilir. Sonuç olarak Kenya, çay ve diğer bazı hammaddeelerde uluslararası pazara tamamen hakim olurken, EAC üyesi ülkelerin çoğu kahvede güçlü bir karşılaştırmalı üstünlüğe sahiptir. Genel olarak, Kenya hükümetinin ve özel sektörün, tarım sektörünü canlandırmak ve tarımsal ihracat ürünlerini çeşitlendirmek için üst düzey yatırımları güçlendirmeye istekli olması gerekmektedir. Sonuç olarak, ortak tarımsal ticaret politikalarının geliştirilmesi, EAC'nin hedefleri ile de uyumlu olarak, tüm EAC eş üyesi ülkeler için çok faydalı olacaktır.

Anahtar Kelimeler: Karşılaştırmalı Üstünlük Endeksi, İhracat Rekabetçiliği, Pazar Payı Endeksi, Uluslararası Ticaret, EAC ülkeleri

EXTENDED ABSTRACT

Agriculture is an important sector in the Kenyan Economy as it provides livelihoods to 70 percent of the rural population and employs over 50 percent of the total population directly or indirectly. It also contributes to 33 percent of the country's GDP, making it a crucial sector in its economic development. Until the COVID-19 pandemic, Kenya was one of the fastest-growing economies in Africa, with an annual average growth of 5.9 percent between 2010 and 2018. With a GDP of \$95 billion, Kenya recently reached lower-middle income status, and has successfully established a diverse and dynamic economy. It also serves as the point of entry to the larger East African market. However, Kenya continues to face significant challenges to sustainable and inclusive economic growth, which have been exacerbated by COVID-19's economic disruptions, alongside long-running challenges, including corruption and economic inequality.

Agriculture is mainly subsistent, and productivity has stagnated in recent years, despite continued population growth. With limited Kenyan land being suitable for farming, maximum yields have yet to be achieved, leaving the considerable potential for productivity increases especially through irrigation which has not been heavily adapted as most crop production is rain-fed. In addition to underdeveloped supporting infrastructure and insufficient incentives, this has led to low productivity in most regions.

Over the last two decades, reforms in Kenya have been ongoing to help boost the agriculture industry. Despite Kenya's vast potential in manufactured exports and agriculture value addition, it largely exports raw materials, which limits job creation and does not capitalize higher value commodities and manufacturing. Consequently Kenya faces tremendous challenges in various agricultural products in the international market and competes with EAC countries. Therefore, a comparative analysis of the competitiveness of Kenyan agricultural

products with EAC member countries in the international market should be carried out to inform policymakers.

Kenya has great potential to increase competitiveness in international markets for its agricultural products. However, since there are competing countries in international markets, researching the competitiveness of exports will significantly benefit in identifying strong and weak points or areas that need improvement. Therefore, this research's main purpose is to attempt to analyze and determine the competitiveness of some of Kenya's agricultural products in international agricultural trade and to reveal products with a comparative advantage among EAC partner countries.

The study is based on secondary data, which was accessed from different sources, including the East African Community trade reports, the Food and Agriculture Organization of the United Nations (fao.org), the World Bank (data.worldbank.org), and the International Trade Administration. The data from these international organizations will either be from their trade reports, and website data. In addition, domestic and foreign reports, articles, books and journals related to foreign agricultural trade and global competitiveness were used in the study.

Various theories have been put forward about competition in international trade. These are the theories predicted by policymakers at both micro and macro level. The theory of competition in international trade reveals the competitiveness of a country individually or depending on a group of states. The mercantilist approach says that the protectionism policy can be beneficial in various ways. Some states, such as EU countries, have implemented this economic system and achieved economic growth. On the other hand, according to liberalism and comparative advantage theory, which is the most common approach and applied globally, specialization in certain goods in the free trade system will significantly increase countries' productivity and economic growth. However, dependency theory and structuralism may negatively affect the economic situation of underdeveloped countries.

In this study, Balassa's RCA index and Vollrath's trade advantage indices are used to show the comparative trade advantage of selected products in the Philippines. In addition, the market share index is used to reveal the market shares of Kenya and other EAC member countries. Although they have many limitations, such as costs, subsidies, exogenous factors, various trade policies and ignoring trade barriers, these methods were chosen because of their simplicity, comparability and widespread use.

The analysis results show that Kenya has a strong revealed comparative trade advantage position against other East African member countries for some of the selected agricultural products except maize, cereals and oil seeds. It also showed that Kenya completely dominates the international tea market. The study revealed that most of the EAC member countries have a strong comparative advantage in some specialty products. Therefore, policymakers should develop a standard agricultural trade policy in line with EAC's founding objectives and pursuit of the common good.



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ABBREVIATIONS

EAC	: East Africa Community
FAO	: Food and Agriculture Organization
USAID	: United States Agency for International Development
GDP	: Gross Domestic Product
REC	: Regional Economic Communities
RSCA	: Revealed Symmetric Comparative Advantage
EU	: European Union
B-index	: Balassa Index
COMESA	: Common Market for Eastern and Southern Africa
ITC	: International Trade Centre
AFA	: Agriculture and Food Authority
DRC	: Democratic Republic of Congo.
ILO	: International Labour Organization
RCA	: Revealed Comparative Advantage
RC	: Revealed Competitiveness
RMA	: Revealed Import Advantage
RTA	: Relative Trade Advantage
RXA	: Revealed Export Advantage
LnRXA	: Logarithm of Revealed Export Advantage
MSI	: Market Share Index
UNCOMTRADE	: United Nation Commodity Trade Statistic Database
MAFAP	: The Monitoring and Analysis Food and Agricultural Policies



1. INTRODUCTION

1.1. Agriculture in Kenya

Agriculture has remained Kenya's primary economic activity, as it has been for most East African Community and other African countries. According to World Bank, Kenyan agricultural land in 2018 was estimated to be 48.55 percent of the total land area, with arable land taking 10.19 percent of the total agricultural area. Irrigated land in 2009 was estimated to be 0.037 percent of the total agricultural area.

Kenyan Agriculture provides livelihoods to 70 percent of the rural population in the country, and it therefore plays a crucial role (USAID, 2022). According to World Bank the sector employed 54.34 percent of the total employment in the country directly or indirectly in 2019. However, the number has decreased gradually since 2000 as the economy moves to a service-driven economy.

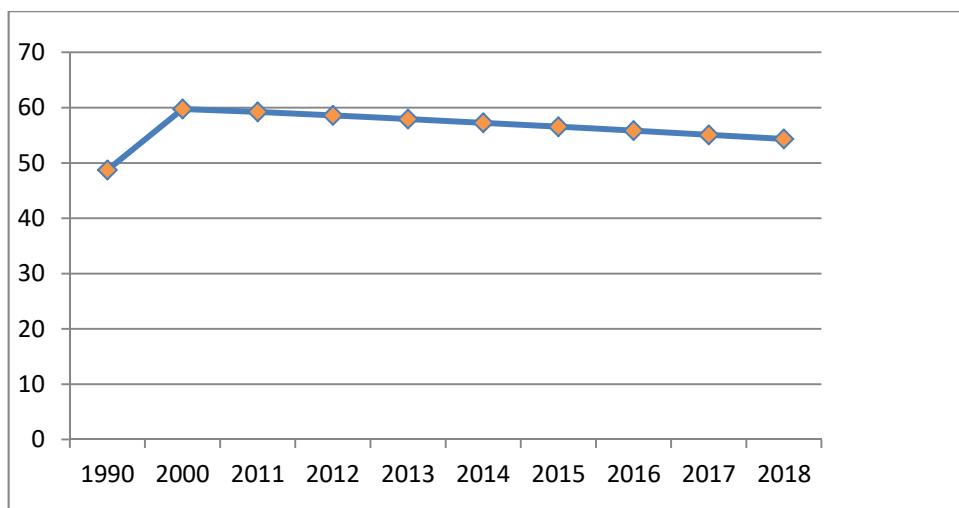


Figure 1.1. Kenyan Employment in Agriculture (percent of total employment) (modeled ILO estimate) (World Bank Data)

According to the most recent USAID assessment, agriculture accounts for around 33 percent of the country's overall Gross Domestic Product (GDP) (2022). Kenya's agricultural GDP as a percentage of GDP has fallen due to unclear policies that have resulted in an anti-export bias (Dorosh & Schmidt, 2010). In addition, as indicated in Table 1.1 below, several East African Community countries experienced a fall in the percentage GDP of agricultural goods between the 1980s and the 2000s. Overall, Uganda has been the hardest hit, with agriculture accounting for 26.2 percent of GDP in the 2000s, down from 57.6 percent in the 1980s (Dorosh & Schmidt, 2010).

Table 1.1. Percentage GDP Contribution of Agricultural Products (Dorosh & Schmidt, 2010)

	1980s	1990s	2000s
Ethiopia	56.5	58.4	45.6
Burundi	58.1	50.8	39.2
Kenya	32.4	30.7	27.9
Rwanda	40.2	40.6	38.0
Sudan	35.4	42.1	35.2
Uganda	57.6	47.9	26.2
East Africa	46.7	45.1	35.4

Kenya's heavy rainfall areas account for roughly 10 percent of the country's arable land and provide 70 percent of the country's commercial agricultural production. Farmers in semi-arid regions generate around 20 percent of the total output, while dry regions produce 10 percent. Due to insufficient incentives and underdeveloped supporting infrastructure and institutions, productivity is low in all

regions. Kenya has been reforming its agriculture industry since 2013, intending to boost growth. A new regulatory framework is being implemented due to the consolidation and harmonization of sectoral laws. Despite Kenya's enormous potential, it still deals mostly with the export of primary agricultural raw materials. The share of manufactured exports has remained tiny and has also been dropping. As a result, export growth has been unpredictable, owing to changes in earnings from a few conventional primary exports and the tourism industry.

Over time, there has been a significant decrease in the agricultural growth rate from 2000 to 2019. The drop in agricultural product growth can mostly be linked to confusing policies and commodity price reductions in the international trade market. As seen in Table 1.2 below, agricultural growth rate decreased by half from 2.8 in 2000 to 1.3 in 2019.

Table 1.2. Kenya's Agricultural Growth Rate compare to other Eastern African Countries, 2000-2019 (USAID, 2019).

Countries	2000	2005	2010	2015	2019
Rwanda	3.5	3.1	2.2	2.1	1.3
Uganda	3.4	2.3	2.1	1.7	0.6
Ethiopia	2.8	4.2	3.8	3.4	0.1
Sudan	2.3	1.1	0.9	0.4	0.2
Kenya	2.8	2.3	2.0	1.6	1.3
Burundi	1.5	1.2	0.9	0.3	0.1

In terms of Gross Value Added in agriculture, it has been declining yearly. Kenya's agriculture sector has had several setbacks over the last two decades. Figure 1.2 demonstrates that agricultural productivity fell substantially between 2015 and 2017 before increasing sharply again from -1.3 percent growth to a commendable 5.7 percent in 2018, the highest recorded annual growth in the study period. The decrease in the gross value-added annual percentage was mainly

attributed to weather-related shocks in the form of increasingly unreliable rainfall, drought and the prevalence of pests and diseases.

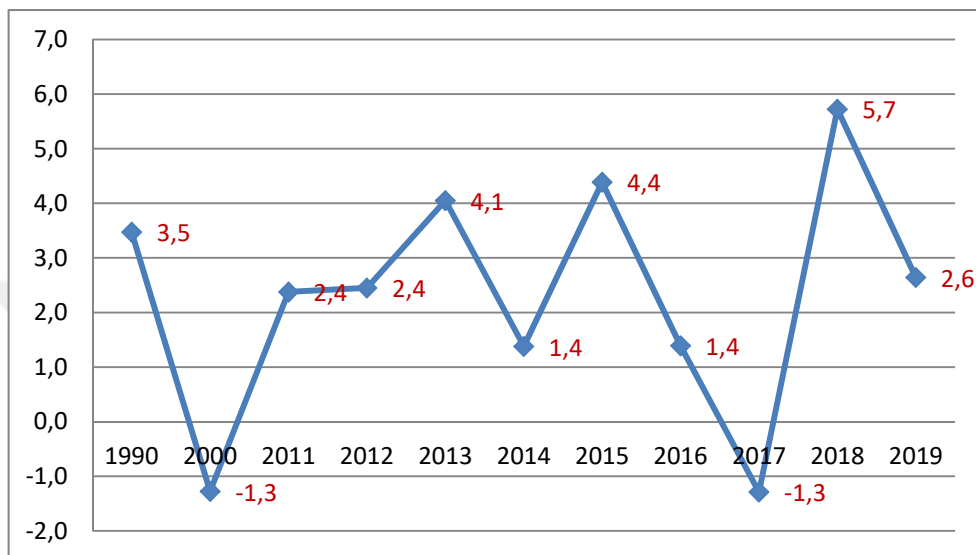


Figure 1.2. Kenya's Gross Value Added in Agriculture (annual percent growth) (World Bank Data 2022)

1.2. Agriculture in the East African Community Countries

Kenya, Uganda, Rwanda, Burundi, South Sudan, Tanzania, and the recently joined Democratic Republic of Congo make up the East African Community, which is a recognized Economic Bloc by the African Union. Agriculture has been a major priority policy area since the establishment of the economic bloc. Agricultural products from Kenya, Uganda, and Tanzania account for more than half of the region's overall exports. The entire value of agricultural exports in 2015 was \$7.6 billion, with Kenya leading the way with \$3.1 billion, Tanzania with \$2.8 billion, and Uganda with \$1.7 billion. Regarding the percentage of agricultural product exports share in total exports, Uganda leads the way with 76 percent, followed by Burundi with agricultural exports accounting for 65 percent of

total exports. Kenya is ranked third, with agricultural exports accounting for 60 percent of overall exports (The Exchange, 2018).

Agriculture is the principal source of employment for most people in the East African. It employs more than 50 percent of the population in all East African Community countries, as indicated in Figure 1.3 below, making agriculture a critical sector in the region.

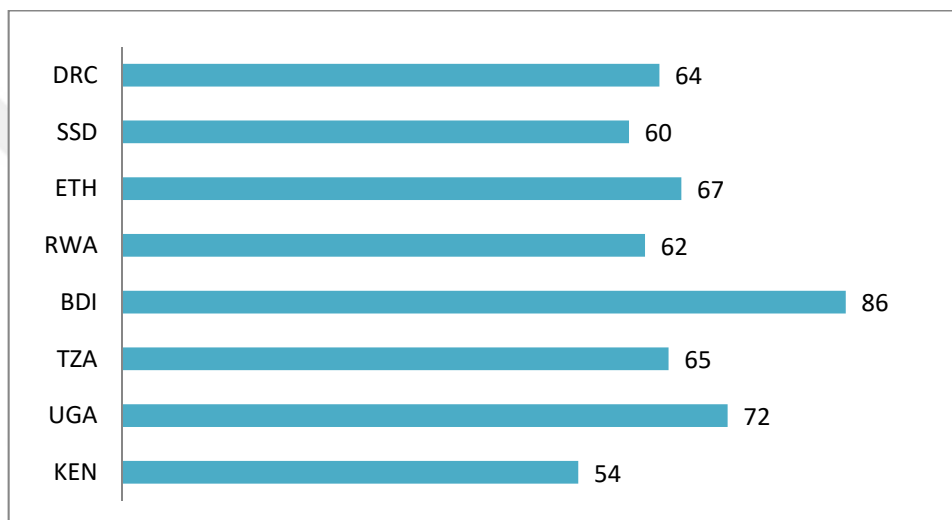


Figure 1.3. Percentage of Employment in Agriculture among East African Community and Ethiopia in 2019 (World Bank Data)

On average, agriculture accounts for 43 percent of the annual gross domestic product (GDP) of the examined countries. However, the exact quantities vary greatly from country to country. For example, it contributes for more than 50 percent of the GDP in Burundi and Tanzania, about 50 percent in Uganda and Rwanda, and less than 30 percent in Kenya. Kenya's low percentage is related to the country's structural shift away from agriculture.

Despite these disparities, smallholders that rely on rainfall dominate farming in all countries studied. Land degradation, inadequate soil fertility management, and continuous cropping are some issues that these farmers face.

Sluggish agricultural productivity growth results in sluggish overall growth and poor per capita income. Meanwhile, population growth in EAC countries is among the world's fastest, threatening to exacerbate already acute food insecurity.

High quantities of agricultural imports, particularly staples, appear to meet only a portion of a population's consumption needs, resulting in widespread adult and child malnutrition and high child mortality rates. Sharp increases in the pricing of staple items, and excessive price fluctuation, have been overwhelming for the poorest customers since 2008. These consumers spend a considerable amount of their income on food and can not respond to price rises quickly. Because there is a finite amount of agricultural land, raising farm productivity and strengthening sustainability in higher-potential areas, which tend to have large population concentrations and a reliance on agriculture, is critical.

According to projections, the temperatures in East African countries are expected to rise by 1.3°C to 2.1°C. On average, precipitation will either increase or remain constant across the region. However, local precipitation may differ from the national average. Some scientists suggest that East Africa will become substantially drier in the future, especially during the "long rains" period from March to June. Crop modeling analyses of the possible consequences of climate change show a rise in maize yields in most parts of East Africa, but yield losses in major parts of Tanzania, Ethiopia, and northern Uganda. However, when technological progress (including higher fertilizer use) is considered, food production is expected to improve, despite climate change effects, due to area expansion in some circumstances and increased productivity in general.

1.3. Trade Structure of Eastern African Community

The Eastern African Community's goods trade has grown significantly over the last decade, with the value of exports and imports rising by more than 60 percent to about US\$ 13.5 billion and US\$ 31.6 billion in 2016, respectively, though at a slower rate than GDP, which quadrupled during the same period. Its

economic performance has been outstanding recently, with a yearly average growth of 5.6 percent between 2012 and 2016, well exceeding the global and African averages. However, growth has been hampered by underperforming exports, as demonstrated by structural trade deficits.

While the trade composition has not altered much since a decade ago, primary commodities dominate EAC exports, placing countries at the bottom of global value chains and exposing them highly to commodity price shocks. This, combined with the countries' excessive reliance on capital and consumer goods imports, indicates the productive structure's vulnerability. Indeed, the massive net imports of manufactured products have contributed significantly to the trade deficits compared to the composition of exports to the rest of the world. Intra-EAC trade shows a very different picture, with manufactured goods accounting for over half of all exports, demonstrating the importance of intra-regional trade for industrial development and the enormous opportunity for countries that can produce in these industries.

While intra-EAC exports and imports were essentially unchanged over the last decade at roughly 20 percent and 6 percent, respectively, the proportion of manufactured items in intra-EAC exports increased noticeably. Despite having a much lower level of intra-regional trade than other regional blocs, such as the Asia-Pacific Economic Cooperation and the European Union, the EAC has the highest intra-regional trade share among Africa's major Regional Economic Communities (RECs).

In reality, the EAC is one of Africa's best-performing RECs in terms of regional integration, with an exceptionally high score in trade integration. Regional trade integration is a cornerstone of EAC policy, and Partner States should benefit from increased trade flows and increased production efficiency in the community, particularly through trade in intermediate commodities, which helps to develop regional value chains.

1.3.1. Top Agricultural Export Products in Kenya

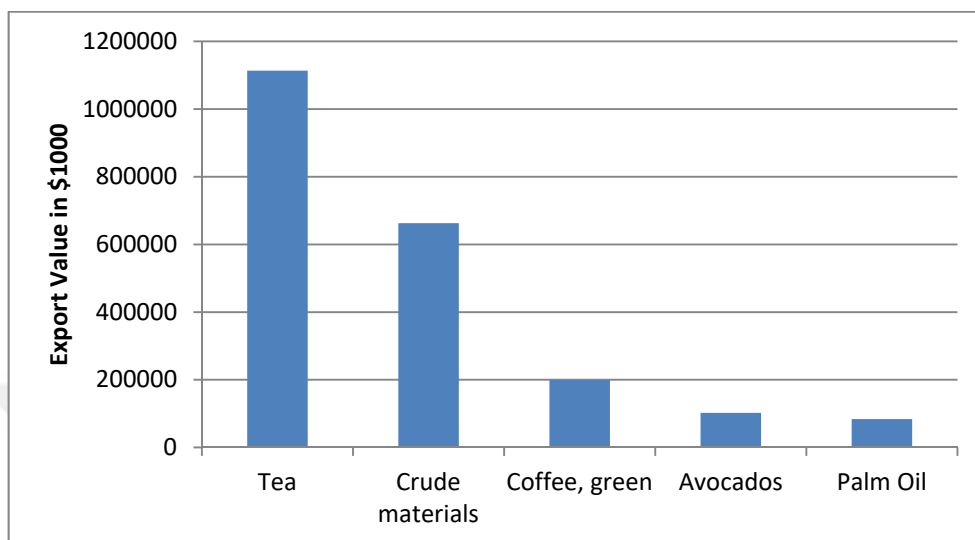


Figure 1.4. Top 5 agricultural export products in 2019 (FAO, 2022)

Tea exports ranked highest, even with a 23 percent decrease from \$1.370 billion in 2018 to \$1.113 billion in 2019. The largest trading partner for this commodity was Pakistan accounting for 38.8 percent of the total tea exports.

Crude materials, which the FAO defines as of vegetable origin, cut flowers and flower buds and other materials, ranked second most valuable export product, with a total value of 662 million dollars, a 2.7 percent increase from 644 million dollars in 2018. This commodity's largest trading partner was the Netherlands, which accounted for 47.7 percent of all crude material exports.

With a value of 199 million dollars in 2019, coffee ranks third in total agricultural exports, a 14.5 percent decrease from over 227 million dollars in 2018. Belgium was the largest trade partner accounting for 19.1 percent of the total coffee exports.

Avocado was the fourth most exported product in 2019, at 102 million dollars. Exports of this commodity decreased by 15.5 percent from 118 million

dollars in 2018. The Netherlands was this commodity's largest trade partner accounting for 25.9 percent of the total avocado exports worldwide.

With a value of 83 million dollars, palm oil was the fifth most exported product, up from 65 million dollars in 2018. This was a 21.9 percent increase between the two years. The largest trade partner of this product is Uganda which accounts for 76.1 percent of the total palm oil exports from Kenya.

Agricultural products from the country are exported to over a hundred countries. Uganda is still the most important, importing 9.9 percent of the country's exports in 2019. The United States, Canada, The United Kingdom, the Netherlands, Pakistan, and the United Arab Emirates are the top countries exported to (The Observatory of Economic Complexity, 2020).

1.4. Importance and Objectives of the study

Table 1.3. Value of Agricultural Export Product of Eastern Africa Countries, (Value in .000000 US\$) (FAOSTAT Data)

Countries	2000	2010	2019
Rwanda	69	297	1166
Uganda	469	1619	3472
Ethiopia	482	2330	2761
South Sudan	-	-	1553
Kenya	1774	5169	5839
Burundi	43	101	180
DRC	892	5300	13382
Tanzania	664	4051	5005

Exports are key in a country's growth process, and expanding exports is an important aspect of the economic growth process. The East African Community's agricultural exports have skyrocketed in recent years, as seen in the table 1.3,

agricultural exports are unquestionably an important source of foreign exchange for Kenya and other East African Community countries. Kenya faces competition from its EAC neighbours and Ethiopia in exporting agricultural products to the International market. Although Kenya's agricultural exports are mostly beyond those of its competitors it still has a lot to do to improve its products' competitiveness and market share in the International market. Assessing the competitiveness of some of Kenya's exported agricultural products will provide opportunities and lay the groundwork for policy recommendations to increase the country's export competitiveness. Kenya can have the potential competitive advantage in products like coffee, palm oil, cut flowers and some vegetables.

Therefore, the general objective of this research is to analyze the competitiveness of selected agricultural export products of Kenya against other East African Community member countries and Ethiopia in international markets, to determine which products have competitive power, and to develop suggestions for the development of exports of low competitive products.

The aim of the study can be summarized as follows:

1. To reveal the historical development of agricultural product exports in Kenya.
2. To identify the comparative advantages and disadvantages of Kenya's selected agricultural export products against other East African Community member countries and Ethiopia.
3. Identifying Kenya's competitors in the world market in East African Community partner member countries.

2. PREVIOUS STUDIES

Nyoro, Wanzala, and Awour (2001) undertook their research to understand the farm level issues that help increase Kenya's agricultural competitiveness. One of the major crops identified by the researchers was maize which happens to be the country's staple food. Despite being a major crop produced in the country, its competitiveness, mainly from the local market, was on the issue of competition mainly from Uganda, which is the immediate neighbor cultivating the same crop. The research identified farming inputs as the immediate issues that tend to impact the competitiveness of agricultural products. The identified factors worth considering included machinery costs, technology, fertilizers, and extension. The researchers were keen to note that the farmers could only compete favorably with these in international markets if they are helped to lower their cost of production and be offered competitive prices for their products. Additionally, financial institutions were also recommended to increase farmers' financial support to help them cater to production costs.

Uysal and Mohamoud (2018) focused their research on identifying the potential determinants of export performance of East African countries and were keen to note that the export performance from these countries was not just about the natural resources and the favorable climatic conditions. The main factor that influenced the export competitiveness on the exports was the labor force which was not only easily accessible but also affordable, and this was down to the large population in East Africa. However, the researchers were keen to note that these exports, especially the agricultural exports, had a low improvement comparative advantage in the market because they lacked an essential element: value addition. It was for this reason that industrial goods happened to have a more excellent value than agricultural goods. The researchers recommended the need to process and manufacture agricultural goods before exporting them.

Farole and Mukim (2013) focused their research on looking at the export competitiveness of Kenya's manufactured goods. The industrial sector was identified as one that needed immense input because of its huge opportunity. The researchers also noted that with increased investment in manufacturing, Kenya's exports tend to increase in value because of the added value and therefore fetch an increase in foreign exchange. However, the researchers were keen to point out the lack of diversity, quality competition, and difficulties in entering new markets as the main competitive challenges for industrial products in Kenya.

Yego and Siah (2018) used the RSCA model to determine the competitiveness of livestock and livestock products between the years 1980 and 2013. The researchers were keen to note that despite the livestock and livestock products contributing substantively to agricultural employment to the people of Kenya, there was less that was being done to understand the impact of this sector. The researchers were keen to note the country's competitive advantage over the study period except for the periods when the country was experiencing civil unrest. This leads to the fact that Kenya's export competitiveness depends heavily on its state of politics. The most significant recommendation offered by the researchers was for the government to be more involved in the livestock activities of the people. One way was by the government to enhance policies that would enforce the sanitary and phytosanitary standards (SPS), which will make the exports from the country favorably compete with exports from other countries. Additionally, the authors advised the government to support the export process both at the national and international stages.

Keror, Yego and Bartilol (2018) used the RCA model to analyze the competitiveness of Kenya's cut-flower exports to the market in the European Union between 2001 and 2017. The researcher was driven to this study because of the country's cut flower's huge potential as far as the European market is concerned. The findings showed that Kenya's cut flowers had a strong export competitive advantage over several countries better off than her. Some of these

countries include Malaysia, Germany, Italy, and Belgium. However, the RCA results revealed that the country had a moderate advantage against Israel and Belgium and was struggling to compete with Colombia. There was no competitiveness between the cut flowers exported by Kenya and those exported by Ecuador and Ethiopia. Just as in the recommendations offered by Yego and Siahi (2018), the authors recommended that the government be involved in making exportation favorable through policy formulation that would promote a real exchange rate that creates a favorable and competitive advantage for Kenya's exporters.

Annur Empal (2019) in a study titled "Competitiveness of selected agricultural products of the Philippines" used a few methods to do a comparative advantage analysis of some agricultural products from the Philippines compared to the ASEAN (Association of Southeast Asian Nations) co- members in the global trade market. For the study period 2000 to 2016 the researcher concluded that Philippines had comparative advantage in banana, coconut oil and pineapple in the international market and recommended some ways in which the government and the private sector would help in boosting the agriculture sector.

Ishchukova and Smutka (2013) employed the Balassa's RCA index, Vollrath's trade indices, and the Lafay index to analyze the comparative advantages of agricultural products and foodstuffs in Russia from 1998 to 2010. In the period 1999-2001, Russia had a comparative advantage in by-products such as rice bran, while in the period 2002-2010, it had an advantage in primary products such as wheat, cow's milk, sunflower seeds, and others. For the study period, Russia had a comparative advantage position over the Asian countries and EU.

Isaac Mensah (2010) in the study titled "An Analysis of the Performance of Ghanaian Canned Tuna Export to EU Market (1999-2009)" discovered that Ghana possessed a strong comparative advantage in canned tuna exports in the EU-27 throughout the study period. However, despite the strong comparative advantage Ghana's Canned Tuna market share value had decreased constantly over the study

period. The country had become less competitive against major competing countries globally such as Ecuador and Thailand. The results of the analysis showed that the price ratio, trade policy and level of expertise have significantly affected Ghana's market share internationally.

Serin and Civan (2008) examined the comparative advantage of selected agricultural products in Turkey such as tomatoes, fruit juice and olive oil to the EU market from the year 1995 to 2005. With EU being the largest market for these products from Turkey, RCA analysis was used to measure the comparative advantage and it revealed that Turkey had a very strong comparative advantage in olive oil and fruit juice but not in tomatoes.

Çoban ve Kök (2005) using Balassa's RCA index analyzed the comparative advantage of Turkey's textile industry in comparison to EU member countries for the period 1989 to 2001. The results showed that Turkey had a strong revealed comparative advantage in the textile industry and its sub-industries in the global market. They suggested that there should be emphasis in production of high value-added products in the textile industry in order to sustain its market share in the international market.

Fert and Hubbard (2002) studied and analyzed 22 aggregated agri-food products in their research paper "Revealed Comparative Advantage and Competitiveness in Hungarian Agri-Food Sectors." The results indicated that Hungary had comparative advantage in eleven products, including live animals, meat, oilseeds, cereals, vegetables and fruit, sugar, cork and wood, beverages, animal and vegetable materials, and fats and oils. Political distortions on the international market led to a decline in Hungary's level of international competitiveness, despite the country's significant progress in agriculture and food processing, as noted in the paper.

Kılıç (2013), in her thesis study "Analysis of International Competitiveness of Turkish Cotton and Determining the Factors Affecting it" used Balassa's RCA and Vollrath's Trade Indices for analysis. The results pointed out that Turkey had

lost its comparative advantage position in cotton's international foreign trade throughout the study period from 2000 to 2016. The results of the RCA index values were negative. On the other hand, the RCA for cotton yarn and weaving have illustrated positive values which illustrated a comparative advantage for these products. The main factors that affected the competitiveness of Turkish cotton were found to be high costs of production, financial insufficiencies, marketing and sales capabilities, inadequate R&D studies among others. They suggested that the government makes a plan and implements necessary steps and studies to ensure that Turkish cotton and cotton-based industry will be brought back into having a competitive position in the international market.

Sukati (2016) discovered in his research paper titled "COMESA's Revealed Comparative Advantage in Common Agricultural Commodities" that the majority of COMESA member countries have a strong revealed comparative advantage in raw or semi-processed agricultural commodities, whereas only a few countries have a comparative advantage in highly processed agricultural commodities. Using abundant raw materials, the agro-processing sector presents COMESA member states with additional opportunities, according to the research. However, it was suggested that nations prioritize industries in which they possess a high RCA value.

Hassanpour and Ismail (2010) investigate "Regional Comparative Advantage and Competitiveness of Malaysian Palm Oil Products." Using RCA and RSCA analyses, the authors of this study determined that Malaysia possessed a comparative advantage for commodities such as palm oil, coconut (copra) oil, palm kernel oil, cocoa butter, cocoa powder, cocoa paste, and pepper, but a comparative disadvantage for tea. Furthermore, they discovered that Malaysia ranked first in export competitiveness on the global market for commodities such as cocoa butter, cocoa powder, and cocoa paste, second in palm oil and pepper after Indonesia, and third behind the Philippines for coconut oil. They also revealed that although

Malaysian palm oil was the first in terms of area planted, it did not acquire the top position in terms of export competitiveness in the global market.

Ilyas (2009), in his study titled "Competitiveness among Asian Exporters in the World Rice Market," evaluated the competitiveness in rice exports of major Asian rice exporting nations, including Pakistan, India, China, Thailand, and Vietnam, from 1985 to 2005. According to the results, Pakistan had a comparative advantage over the other competing nations in rice exports, while Vietnam and Thailand had a comparative advantage over India and China in rice exports on the international market. Among the top rice exporting nations in Asia, Pakistan was ranked first, Vietnam and Thailand were ranked second and third, respectively.

The regression results of a study on the determinants of the Kenyan exports by Orindi (2010) indicated that explanatory variables namely, the importer's GDP and population provided most of the explanatory power in the regression. The coefficients of these variables had positive signs and hence they were consistent with theoretical expectations. The positive coefficient for the importer's GDP was due to the positive effects of foreign income on the level of Kenya's exports. The Kenya's GDP and population were found to be insignificant in the model and hence the two variables were dropped out of the regression model. The distance variable was found to be significant at 5percent and had negative sign as was expected. In this study, the distance had been factored in as the proxy for the transportation costs. The distance in this case had inverse relationship with exports. This implied that the further away from the Nairobi the importing country is located the higher the transportation costs. High transportation costs have negative effects on the exports. However the author did not take into consideration of the fact that there are countries which are nearer to Kenya and yet exports to these countries from Kenya are less than countries that are far away from Kenya. This implies that the level of trade between countries that have close proximity will be influenced by other factors such as; income, trade agreements, and similar comparative advantages. For example the exports from Kenya to countries in

Europe and USA are more than exports to countries such as Somalia, Southern Sudan and Ethiopia. Fewer exports to these countries could be as a result of poor infrastructure, similarities in climate and output.

Hatab et al. (2010) employed the gravity model strategy. The authors analyzed the pattern of Egyptian agricultural exports from 1994 to 2008 in order to determine the factors influencing Egyptian agricultural exports to the major importing markets. In this study, the authors performed regression in three different ways: the fixed effect model, the random effects model, and the model with common intercepts. The authors used the fixed effects model in the analysis (based on the Hausman test). According to the findings of this study, the patterns of Egyptian agricultural exports followed the gravity model. The Egyptian gross domestic product was positive and significant, indicating that an increase in the Egyptian GDP would result in a rise in Egyptian agricultural exports. However, the importer's gross domestic product was insignificant, indicating that foreign income had no significant impact on Egyptian agricultural exports. The distance coefficient was negative and statistically significant. The distance was substituted for transportation costs. The negative value of the distance variable's coefficient indicates that transportation costs increase as the distance between two countries increases, thereby having a negative impact on exports. The importer's per capita gross domestic product proved irrelevant in determining agricultural exports. However, the Egyptian per capita income was negative and statistically significant, indicating that an increase in the Egyptian per capita GDP would reduce agricultural exports. Authors attribute this to a rise in local consumption due to a rise in household income.

Salasya (1989), in a study on analysis of factors that influence export of French beans from Kenya used linear regression of total French beans exports on price and air freight charges. The regression results showed that the co-efficient for price was positive but insignificant at 5percent level. The air-freight co-efficient

was negative and was significant at 5percent significance level. She argued that price influenced the quantity of French beans exported by a small margin.

Ndubuto et al. (2007) conducted a study on the competitiveness and determinants of cocoa exports in Nigeria. They used a multiple regression analysis. They fitted the four functional forms of the regression models (linear, double log, exponential and semi log) to the data by the method of the ordinary least squares. They took the exponential function as the lead equation (main equation) based on the econometric and statistical criteria (Coefficient of multiple determinations). The authors employed export performance ratio (EPR) in the analysis of the export performance in which the trend was estimated inter-temporally. They estimated the export performance ratio to establish the comparative advantage of Nigeria in cocoa export sector. The regression results for the factors influencing cocoa exports in Nigeria indicated that the coefficients of total world quantity, exchange rate of Nigerian currency (Naira) against the dollar and the Nigerian cocoa production (output) were statistically significant. The coefficients explained 70.3 percent of the variability in the export of cocoa from Nigeria. This had an implication that these variables are the major factors influencing the Nigeria's cocoa export. The coefficient value of the world volume, exchange rate and the Nigerian cocoa production were significant at both 5percent and 1percent level of significance. The coefficients of the world volume of cocoa and Nigeria's cocoa production were positive while the coefficient of the exchange rate was negative. The positive coefficients of world volume and Nigeria's cocoa production implied that the two variables positively influenced export of cocoa. The authors attributed the negative coefficient of the exchange rate to the declining productivity in the Nigerian economy during the period under study.

Were et al. (2002) in a study on analysis of Kenya's export performance used an error correction model in their estimation. They estimated three models in their analysis; tea exports model, coffee exports model, and model for other exports from Kenya. In the model for coffee, the error correction results showed that all the

variables used in the regression had the expected sign. The coefficient for the real exchange rate and investment as a ratio of GDP were positive and significant. However the price effect was only significant at the 10 percent significance level. In addition, the authors found that the export supply was responsive to prices in the long run. The income of the trading partners was not significant. Manufactured exports are relatively more sensitive to foreign income than agricultural exports. This was evident from the results of analysis of determinants of other exports (excluding coffee and tea) from Kenya in the same study by Were et al. (2002). Unlike the regression for coffee exports, income of the trading partners was significant in the model for other exports. However private investment as a proportion of GDP was not significant. The authors partly attributed the significance of foreign income to exports of processed and manufactured goods to Uganda and Tanzania. The exchange rate was not significant in the regression for tea exports. However investment as a proportion of GDP was significant and positive. This implied that investment had positive impact on tea exports. In this case, an increase in investment as a proportion of GDP would lead to an increase in tea exports. The exchange rate was not significant in the tea model but a one period lag was significant but had a negative sign. The authors attributed this to lack of adjustment to price responses in the short-run. To measure the impact of the liberalization on coffee exports the authors introduced a dummy for the liberalization for the period 1993-1999. The liberalization impact as proxied by the dummy had a negative effect on the exports. Therefore trade liberalization impacted negatively on the exports of coffee. The authors attributed this to the nature of these crops i.e. longtime lags. In addition they linked this problem to the inefficiencies in the coffee institutions. They argued that these institutions are rigid and exhibit inefficiencies.

In a study about the export of gherkin and cucumber in India, Kumar et al. (2008) estimates the factors affecting cucumber and gherkin exports by use of a log linear demand function. The world volume of internationally traded cucumber and

gherkin products and the exchange rate were found to be significant. According to that study, the world traded volume of these commodities was used to capture the change in international demand for these products. Therefore an increase in this variable was expected to lead to an increase in the quantity of exports of cucumber and gherkin products from India. Both coefficients were positive and significant. The regression results indicated that an increase in volume of international trade in cucumber and gherkin products (increase in international demand) would lead to an increase in exports of the same products from India. In addition the positive coefficient of the real exchange rate had an implication that depreciation of the real exchange would lead to an increase in the exports of these commodities.

Edwards and Alves (2006) conducted a comparative analysis of South Africa's export supply determinants using 28 manufacturing sectors over the period 1970-2002. In their pooled estimation model the dependent variable was the export volume and explanatory variables were exchange rate, infrastructure costs, tariff rates and variable cost. The generalized method of moment results indicate that exchange rate, infrastructure costs, tariff rates and labour costs, are also shown to be important determinants of export performance.

Roberts and Tybout (1997) studied export booms among many firms in developing countries. Their study revealed that firms, which are sources of manufactures, were already exporting before the export booms did not dramatically adjust export volumes in response to evaluation. The explanations given for the response include demand elasticities that are not large, risk averse behavior and near full capacity utilization. These explanations varied from one country to another in importance.

Mody and Yilmaz (2002) analyze the relationship between export competitiveness and investment in machinery. They estimate a translog export price function for developed countries; export oriented developing countries and import-substituting developing economies in panel data framework using data on 14 developed countries and 25 developing countries for 1967-1990 period. The

explanatory variables in the model are world income, capital stock, wage rate and exchange rate. Results show that capital stock influences export competitiveness.

Morrison (1976) investigated the effects of protectionism on manufactured exports of developing countries. The regression model had a dependent variable being manufactured exports of the year 1968-70 and explanatory variables are population, GDP tariff and literacy levels.





3. MATERIALS AND METHODS

3.1. Materials

The research will rely on secondary data, information already existing on agricultural exports of existing products. The data will be accessed from different sources, including the East African Community trade reports, Food and Agriculture Organization of the United Nations, World Bank, and the International Trade Administration. The data from these international organizations will either be from their trade reports and website data. Books and journals will be used to substantiate the collected data from these different organizations.

Revealed Comparative Trade Advantage Indices and Market Share Indexes were used to analyze the data. The data was based on the export and import data as the Harmonized System classification and was sourced from the East African Community trade report, International Trade Centre (ITC) and COMTRADE databases. Also, the study covers the period from 2000 to 2019. Agricultural products are defined in Annex 1 of the Agreement on Agriculture, and the definition refers to the Harmonized System of product classification. The definition of agricultural product covers the basic agricultural products in Kenya, such as tea, avocados, coffee and palm oil.

3.2. Research Area

The East African Community is among the recognized Regional Economic Communities (RECs) in Africa by the African Union. The member states are all from the eastern part of the continent and include Kenya, Rwanda, Tanzania, Uganda, South Sudan, Burundi and the recently joined the Democratic Republic of Congo, with the headquarters based in Arusha, Tanzania. The economic bloc covers a total area of 4.8 million square kilometers and has an estimated 283.7 million people. With a cumulative GDP of about US\$ 305.3 billion, the East

African Community is among the most integrated of all trade blocs in Africa, as it has a free trade area and while there are presently six currencies recognized in the EAC, there are plans to establish a common currency to be universally used in all member states. Ethiopia which is also located in eastern Africa and north of Kenya will also be examined as part of the research area as it possesses the same agricultural potential as the East African Community countries, and is also among Kenya's main trade competitors in some agricultural products.

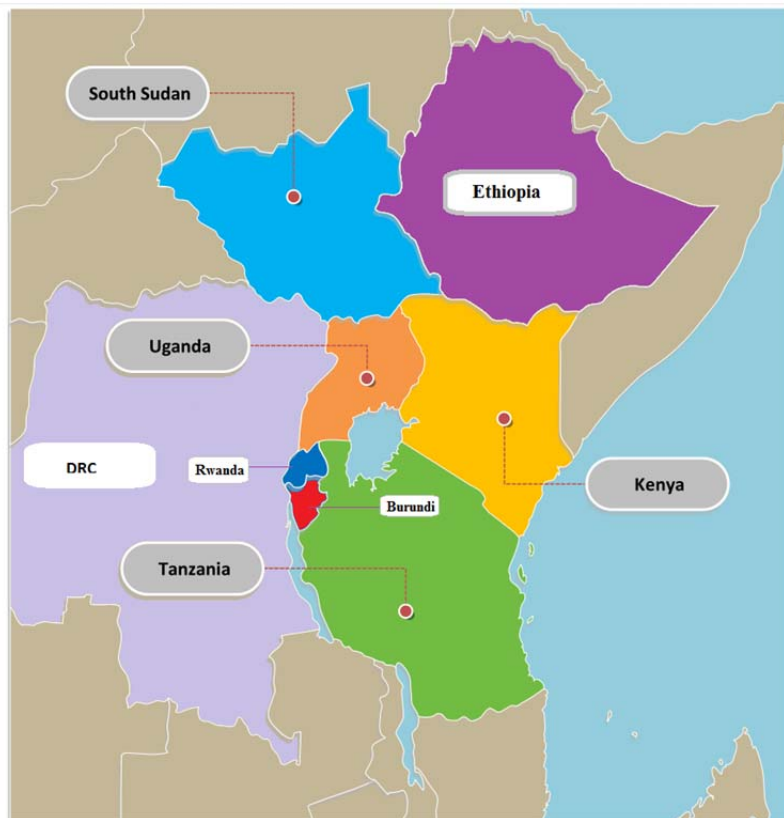


Figure 3.1. East Africa Community and Ethiopia Map

3.3. Selected Products

The products exported by the countries in the East African region range from food crops to cash crops, for example tea, coffee, horticultural products, cereals, legumes, sisal, and pyrethrum among many others (CEIC, 2020). The study will discuss the products highlighted below, among others.

Tea: The commodity is a major foreign exchange for Kenya. The country is also one of the leading exporters of tea in the world. Although it recorded a decrease in the export value according to a report in January 2022

Coffee: Coffee continues to have high global demand, and consumption doubled over the past decades. Among Eastern Africa member countries, Ethiopia and Uganda are the countries included as top producers and exporters of coffee.

Maize: The maize context in the EAC is partially separated from global trends. This is because maize is a primary food crop in East Africa, accounting for roughly half of the calories and protein ingested. Kenya, in particular, is a voracious consumer.

Crude materials: These materials mainly include those of vegetable origin, cut flowers and flower buds. Kenya is a known cut flower exporter in the global market with its main destination market being the United Kingdom.

Palm oil: According to the Kenya Agricultural and Livestock Research Organization (KALRO), the oil palm tree can thrive along the Equator, particularly in Western Kenya. Kenya exported \$115 million in palm oil in 2020, making it the world's 16th largest exporter of palm oil. Palm oil was Kenya's ninth most exported product in the same year. Kenya's most significant destinations for palm oil are Uganda, Rwanda, the Democratic Republic of Congo, South Sudan, and Burundi.

Cereals, legumes, tobacco and oil seeds are also among the products that will be examined.

3.4. Theoretical Framework

There are several theories regarding international trade that has a relative attachment to the factors of production and are openly based on the concept of competitiveness between countries, and such theories are: The theory of comparative advantage, dependency theory and structuralism.

3.5. The theory of comparative advantage

The comparative advantage theory is basically derived from the propositions on opportunity cost and labor specialization (Leishman, Menkhaus and Whipple, 1999). The theory explains that the driving force behind international trade is not “absolute” but “comparative” advantage. That is, even if an autarky country has an absolute advantage in all the goods (i.e., it can produce all the goods more efficiently than other countries), it can still benefit from international trade through increasing specialization in the goods where its comparative advantage lies (Leung and Cai, 2007). Although contentious and indefinable, the notion of international competitiveness has gained acceptance and continues to draw the interest of academics and policymakers worldwide. Global competitiveness, within the framework of trade in goods and services, refers to a country securing and sustaining a trade advantage over the rest of the world (Bobirca and Miclaus, 2011)

3.5.1. Dependency theory and Structuralism

Dependency theory and structuralism posed a significant challenge to the liberals’ orthodox position of the free trade system on economic development. Dependency theorists and structuralists, by contrast, claimed that trade relations between core countries and peripheral countries would only strengthen higher levels of development in the core countries, and thus free trade could harm the less developed countries. The main difference between dependency theory and structuralism is that dependency theorist mainly depends on external factors (such as dependency relations) when explaining relations between core and peripheral

countries while structuralism depends on internal factors (such as elasticities of several goods) in doing so. Prebisch (1950) who developed the structuralism theory, argued that peripheral countries in any trading relationships between core countries will have a natural disadvantage position because industrial products manufactured in core countries would have higher values in relation to the raw materials and agricultural commodities that peripheral countries produced. He added that prices of industrial products made by advanced economies tended to rise faster than those made by backward economies; as a result, the terms of trade of these countries will have deteriorated. In the long run, peripheral countries would not benefit on free trade system because they need to export more just to gain the same amount of imports from core countries. Furtado (1965), a structuralist, believed that the economy was shaped by power and politics like that of the Eastern Africa Community, which is controlled by elites and oligarchs. Thus, he suggested that Eastern African Community should look into reforming the structure of their economies. Moreover, Prebisch also suggested that the Eastern African economy should create more industries and reduce their dependency on producing and exporting primary products.

3.6. Methods

There exist a number of methods that can be used for the calculation of the competitive advantage of exported products. The methods are important as they are able to provide valuable information on whether the selected country has a competitive advantage over its competitors or not. In agricultural sector, this information is crucial for countries as they are able to guide their efforts in agricultural trade.

In this study, the methods applied were the Balassa's RCA Index, the three Vollrath's Relative Trade Advantage Indices and the Market Share Index to show the competitive advantage of selected agricultural products between Kenya and the East Africa Community and Ethiopia. The methods can clearly show Kenya's

competitors in the global market, and reveal its market share pattern among the East African Community and Ethiopia.

Based on the available data, the methods were chosen for their widespread use in determining comparative advantage even if they have some limitations like not considering factors like subsidies, trade policies, costs, trade barriers and external factors. The methods are also simple to use and easily comparable.

3.6.1. Revealed Comparative Advantage Index

RCA corresponds mostly to an index introduced by Balassa (1965). The RCA index is used to analyze different sectors, especially in agriculture, and it is generally used in the international economy to calculate the relative advantage or disadvantage of a particular country in the class of goods or services. The weighting of exports from different product groups like agricultural products is examined with respect to the economies of the relevant export destinations. With its original definition, the Balassa's index (RCA index) gives the ratio of the share of a certain product or industry in the total world exports to the share of the total exports of the country in order to measure the comparative advantage of the country in a particular commodity or industry trade.

Table 3.1. Industrial Categorization of the RCA Index (Khadan & Hosein, 2015)

States	Range	Interpretation
Class a	$0 < RCA < 1$	Industries with a comparative disadvantage.
Class b	$1 < RCA < 2$	Industries with a weak comparative advantage.
Class c	$2 < RCA < 4$	Industries with a medium comparative advantage.
Class d	$4 < RCA$	Industries with a strong comparative advantage.

The formula for this model is:

$$RCA = (X_{ij} / X_{it}) / (X_{nj} / X_{nt}) \text{ where:}$$

“i” denotes the country in which the export originates, “j” denotes the specific product exported, and “n” denotes the country group of the export source. “X” is the value of the export at any given time. Therefore, “X_{ij}” means the value of export from product j from country i. X_{it} means the total export value of a particular country in terms of a specific product. X_{nj}, on the other hand, refers to the total value of exports from a particular country in a given country group. Lastly, X_{nt} refers to the total export of a particular country.

Based on the calculation, a country with an RCA_j index greater than 1, then that particular country can be concluded to have a comparative advantage as far as that particular product is concerned. On the other hand, an RCA_j index less than one shows the contrary; that country lacks a comparative advantage in that particular product or industry.

3.6.2. Vollrath's Trade Indices

Balassa's Revealed Comparative Index only takes export as its basis for the measure of a country's competitiveness and disregards the level of import and its effects, for this reason, Vollrath (1991) has proposed and developed three different alternative specifications of Balassa's Revealed Comparative Advantages.

The three specifications suggested by Vollrath are the following:

3.6.2.1. Relative Trade Advantage

$$(RTA) RTA = RXA - RMA$$

$$RXA \text{ or B-index} = (X_{ij} / X_{it}) / (X_{nj} / X_{nt})$$

$$RMA = (M_{ij} / M_{it}) / (M_{nj} / M_{nt}) \text{ Where;}$$

M_{ij} = ith country's imports of commodity j;

M_{it} = ith country's total imports (total commodity);

M_{nj} = nth world's total import of commodity j;

Mnt = nth world's total imports (total commodity).

The first measure is the Relative Trade Advantage Index (RTA), which includes imports as well as exports. The RTA index is calculated as the difference between the Relative Export Advantage (Balassa Index) and the Relative Import Advantage Index (RMA), and the Balassa index is also based on the observed trade models. If $RTA > 0$, a relative comparative advantage arises, that is, the product or commodity of that country is more competitive.

3.6.2.2. Logarithm of Revealed Export Advantage Index

$$\ln RXA \text{ or } \ln B\text{-index} = \ln(X_{ij}/X_{it}) / (X_{nj}/X_{nt})$$

The second specification by Vollrath is the logarithm of the Revealed Export Advantage Index (Balassa Index).

3.6.2.3. Relative Competitiveness

$$RC = \ln RXA - \ln RMA$$

The third one is the Index of Revealed Competitiveness (RC), calculated as the logarithm of the Relative Export Advantage and the logarithm of its counterpart, the Relative Import Advantage.

Balassa's revealed comparative advantage index has been criticized for not considering another trade factor such as import values while other are concerned about the equation's asymmetric properties. To address these problems Vollrath has developed the Logarithm of the Revealed Export Advantage Index and Relative Competitiveness.

In this study to easily and well interpret the results of the analysis, $\ln RXA$ and RC were divided into three levels of classifications:

Level 1, $\ln RXA/RC < 0$ (product with weak advantage position);

Level 2, $1 < \ln RXA/RC \leq 0$ (product with moderate advantage position);

Level 3, $\ln RXA/RC > 1$ (product with strong advantage position).

3.6.3. Market Share Index

A product's competitiveness and competitive position in the market is amply reflected in the product's market share. This index measures the ability of an exporting country to increase its market share in the target market with respect to countries exporting the same product to the same target market. As defined by Hawkins and Meindertsma (2004) competitiveness is the ability of a country to increase its share in local and export markets by sustaining or increasing its profitability and productivity.

The index is measured by the following formula:

$$MSI = X_{ik} / M_k * 100$$

Where;

M_{ik} = is the market share of product k by country i in the target market;

X_{ik} = the total export of product k by country i to the target market;

M_k = the total export of product k by area or region constituting the target market.

The main advantage of this index is that it is easy to calculate and perceive. It provides simple but useful information for evaluating the international competitiveness of a country. Even though changes in the market share are not totally attributable to changes in competitiveness, the index nevertheless provides an accepted indication of the exporting country's or region's competitiveness in relation to the export market.



4. RESULTS AND DISCUSSIONS

This chapter covers the study findings based on mainly of the computed Revealed Comparative Trade Indices and Market Share Index that measures the export competitiveness of selected Kenyan agricultural products. It should be noted that South Sudan did not have enough data for this analysis and has been excluded even if it is part of the research area.

4.1. Selected Agricultural Products

Individual commodities played a significant role in export industries in Kenya and are significantly kept growing as the investments in the country are mounting. The selected individual products' Revealed Comparative Trade Advantage Indices are presented in the next section for the period 2000 to 2019.

4.1.1. Tea

Kenya is the largest tea exporter in the East African Community and the 2nd largest in the world (ITC, Trade Map 2022). Production is done mainly through multinational companies and small scale growers, and although average yields in the small scale sector are below those by the multinational sector, they have managed to achieve higher quality standards resulting in consistently higher auction prices. The industry is the largest employer in the private sector, with more than 80,000 people working on the tea estates and about 3 million people earning their livelihood from the sector. (Gesimba, Lang'at, Liu and Woukau, 2005).

As shown in Figure 4.1 the area harvested has gradually increased from 2000 to 2019 and has more than doubled from 120,390 ha to 269,400 ha in 2019. Tea production, however has always fluctuated but gradually increased from 236 thousand tons in 2000 to 458 thousand tons in 2019, while yield per ha reduced from 19 thousand kilograms per hectare to 17 thousand kilograms per hectare.

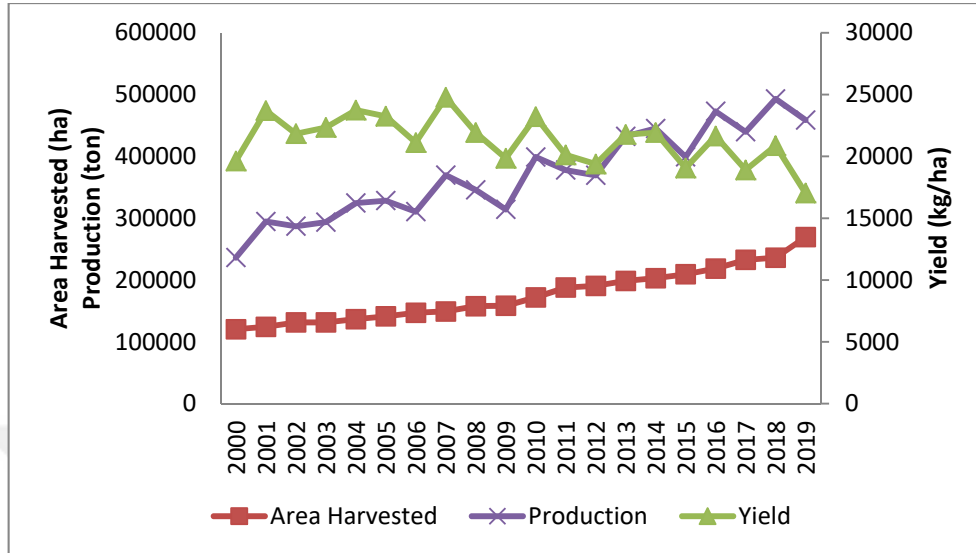


Figure 4.1. Kenya's Tea Area harvested, Yield and Production (FAO, 2022)

Kenya is a net exporter of tea with local consumption amounting to 6.6 percent with per capita consumption standing at 0.5 kilograms per person as compared to 1 kilogram per person global average per year (Agriculture and Food Authority, AFA 2022). Throughout the study period, Kenya imported the high amounts in 2011, 2012, 2014, 2015, and 2016 with 2014 being the highest with a quantity of over 114 thousand tonnes.

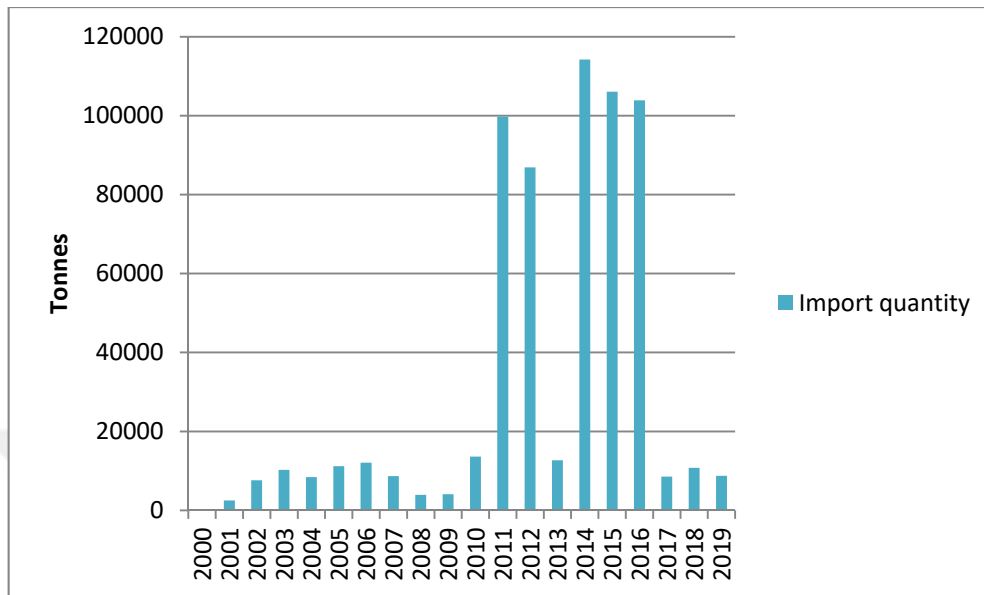


Figure 4.2. Kenya's Tea Import Quantity (FAO, 2022)

To investigate the revealed trade indices for tea, Balassa Export Advantage Index (B-Index), Logarithm of Export Advantage Index (lnRXA), Relative Trade Advantage Index (RTA) and the Revealed Competitiveness Index (RC). Additionally, the Import Advantage Index (RMA) and Logarithm of Import Advantage Index (lnRMA) were also used after considering imports. For better presentation and analyzing of the results, the results were split into four sub-periods. According to the results, for the entire period 2000 to 2019 all countries apart from DRC have a strong revealed comparative export advantage for tea ($B\text{-index} > 1$ and $\ln RXA > 1$), same results were also obtained for Relative Trade Advantage ($RTA > 0$) and a strong Revealed Competitiveness ($RC > 1$) index values. Kenya, however, needs to be watchful of its competitors like Ethiopia which has the highest indices and therefore indicates the strongest comparative advantage, and also for Burundi has managed to have a steadily rising Comparative advantage within the study period.

Table 4.1. Revealed Comparative Trade Indices of Tea (Author's calculation based on FAOSTAT data)

2000-2004				
Country	B-Index	InRXA	RTA	RC
Rwanda	166.957	4.683	166.941	6.176
Uganda	114.758	4.609	114.697	7.761
Ethiopia	819.650	6.683	819.181	7.060
Kenya	519.640	6.252	516.239	5.428
Burundi	131.341	4.512	131.092	5.298
DRC	0.265	-1.665	-2.365	-2.596
Tanzania	80.052	4.323	79.999	7.423
2005-2009				
Rwanda	132.444	4.676	132.124	5.936
Uganda	99.469	4.583	99.412	7.501
Ethiopia	890.523	6.717	890.470	9.684
Kenya	539.626	6.286	536.692	5.384
Burundi	209.150	5.135	209.068	8.314
DRC	0.188	-3.166	-1.230	-3.146
Tanzania	51.861	3.935	51.837	6.945
2010-2014				
Rwanda	582.696	5.909	582.371	7.115
Uganda	94.767	4.550	94.647	6.759
Ethiopia	709.584	6.544	709.508	9.350
Kenya	414.362	5.996	394.659	3.450
Burundi	282.773	5.629	282.712	8.507
DRC	0.032	-3.962	-0.304	-2.861
Tanzania	27.454	3.312	27.398	6.322
2015-2019				
Rwanda	294.445	4.673	294.011	5.533
Uganda	67.363	4.202	67.159	5.834
Ethiopia	522.323	6.232	522.278	9.781
Kenya	450.310	6.083	436.856	4.229
Burundi	313.964	5.743	313.903	8.621
DRC	0.010	-3.890	-0.310	-2.740
Tanzania	23.061	3.116	22.857	4.762

Kenya dominated market share in tea, independently has an average of 83.61 percent (Table 4.1). Uganda, Rwanda and Tanzania follow with 5.88 percent, 4.76 percent and 4.65 percent, respectively. Uganda and Rwanda demonstrate slight improvements in their market share, while Tanzania is losing due to a continuous decrease of MSI value throughout the entire study period. Despite having a strong revealed comparative advantage, Burundi and Ethiopia have an average of 0.91 percent and 0.17 percent market share. This shows that Kenya possesses a complete significant comparative advantage in tea in the international market compared to its competitors.

Table 4.2 Market Share Indices of Tea (Author's calculation based on FAOSTAT data)

Country	2000-2004	2005-2009	2010-2014	2015-2019	Average
Rwanda	2.29	4.85	5.61	6.30	4.76
Uganda	4.73	5.46	7.23	6.11	5.88
Ethiopia	0.24	0.14	0.12	0.20	0.17
Kenya	86.48	84.42	81.19	82.34	83.61
Burundi	0.46	0.46	1.18	1.54	0.91
DRC	0.02	0.02	0.01	0.00	0.01
Tanzania	5.79	4.65	4.66	3.50	4.65

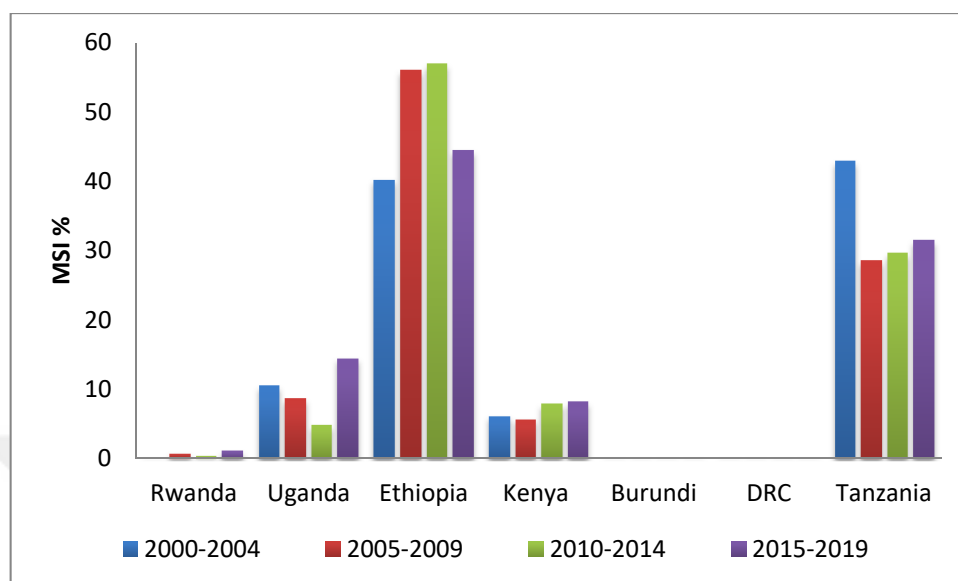


Figure 4.3. Market Share Index of Tea (Author's calculation based on FAOSTAT data)

4.1.2. Coffee

Coffee was the first major export in Kenya and has remained an important part of its economy throughout history. It was first brought to the region by French missionaries in 1893. Simultaneously the British, who controlled the coffee industry throughout much of the 20th century, encouraged settlers to invest in coffee farms in and around Nairobi. By 1910, coffee had become Kenya's largest export and the local industry had built a reputation for quality.

As shown in Figure 4.4 the area harvested, production and yield of coffee has declined over the years. The area harvested reduced from 17 thousand hectares in 2000 to 11.9 thousand ha in 2019 as yields reduced from 5.9 kilograms per hectare to 3.7 kilograms per hectare. Production reduced by more than half from 100 thousand tons in 2000 to 44.5 thousand tons in 2019. Some factors that led to the sector losing competitiveness were increasing cost of labor and inputs; high incidences of pests and diseases; and poor governance of marketing cooperatives (Kennedy Gitonga, 2019).

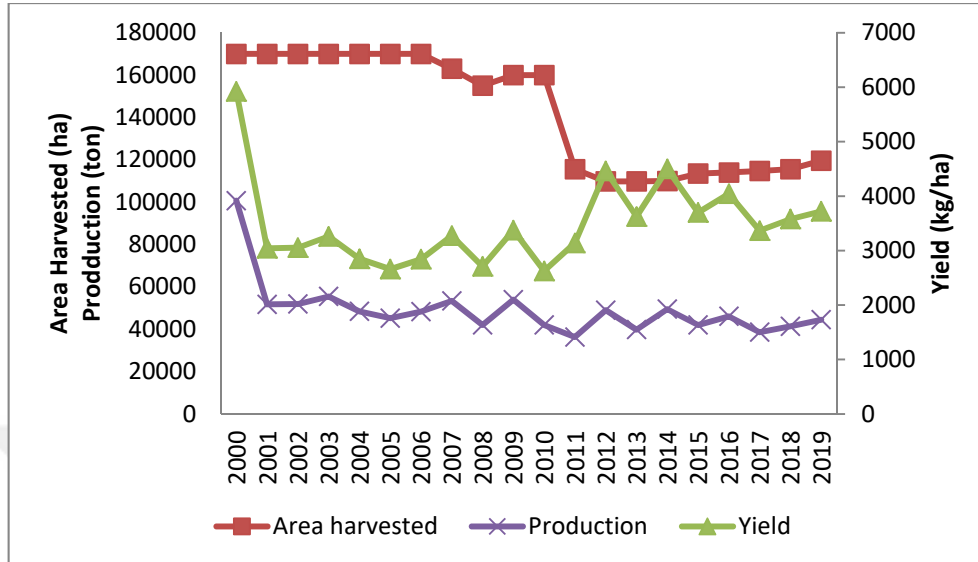


Figure 4.4. Kenya's Coffee Area harvested, Yield and Production (FAO, 2022)

To investigate the revealed trade indices for coffee, Balassa Export Advantage Index (B-Index), Logarithm of Export Advantage Index (lnRXA), Relative Trade Advantage Index (RTA) and the Revealed Competitiveness Index (RC). Additionally, Logarithm of Import Advantage Index (lnRMA) and the Import Advantage Index (RMA) were also used after considering imports. For better presentation and analyzing of the results, the results were split into four sub-periods. According to the results, all the countries revealed a strong revealed comparative export advantage for coffee ($B\text{-index} > 1$ and $\ln RXA > 1$), same results were also obtained for Relative Trade Advantage ($RTA > 0$) and a strong Revealed Competitiveness ($RC > 1$) index values. DRC however over the years went from a strong comparative advantage to having a weak comparative advantage. Kenya, compared to Rwanda, Uganda, Ethiopia and Burundi has lower indices and therefore shows that it should be watchful of these countries.

Table 4.3. Revealed Comparative Trade Indices of Coffee (Author's calculation based on FAOSTAT data)

2000-2004				
Country	B-Index	InRXA	RTA	RC
Rwanda	262.773	5.540	262.149	5.964
Uganda	175.273	5.093	175.202	9.340
Ethiopia	384.453	5.936	384.452	6.989
Kenya	46.774	3.775	46.770	9.777
Burundi	642.651	6.442	642.431	6.423
DRC	7.887	1.872	7.661	3.717
Tanzania	69.764	4.168	69.747	8.292
2005-2009				
Rwanda	232.131	5.396	231.829	7.657
Uganda	168.187	5.115	168.153	8.205
Ethiopia	296.995	5.642	291.132	8.069
Kenya	36.758	3.598	36.747	8.634
Burundi	713.099	6.552	707.236	8.347
DRC	3.512	1.156	3.427	3.727
Tanzania	41.602	3.707	41.597	9.611
2010-2014				
Rwanda	99.364	4.549	99.286	8.261
Uganda	147.843	4.988	147.798	8.681
Ethiopia	217.787	5.379	217.761	9.529
Kenya	31.552	3.451	31.289	5.369
Burundi	387.389	5.928	387.369	10.966
DRC	1.688	0.513	1.671	4.789
Tanzania	24.331	3.178	24.331	10.267
2015-2019				
Rwanda	63.986	4.152	63.881	6.813
Uganda	140.615	4.941	139.903	6.434
Ethiopia	194.03	5.242	194.019	10.893
Kenya	33.249	3.498	33.080	4.757
Burundi	233.413	5.435	233.412	10.612
DRC	1.444	0.319	1.430	4.761
Tanzania	20.769	2.606	20.769	8.979

Ethiopia, Uganda and Kenya dominated the market share in coffee. Over 80 percent of the combined market share was accounted from those countries, with an average MSI value of 43.88 percent, 22.98 percent and 15.15 percent, respectively (Table 4.4). Between the three countries, Ethiopia and Uganda demonstrate improvements in their market share while Kenya is losing due to a continuous decrease of MSI value throughout the entire study period. Tanzania which had an average of 9.23 percent show a decrease in its MSI from 8.21 in the 2010-2015 sub-periods to 6.89 percent in the 2015-2019 sub-period. Burundi and DRC also showed a decrease in their MSI value.

The market share shows that Kenya, even if it poses a strong comparative advantage should be watchful and look for ways to improve its market share in the international market compared to its competitors.

Table 4.4. Market Share Indices of Coffee (Author's calculation based on FAOSTAT data)

Country	2000-2004	2005- 2009	2010- 2014	2015-2019	Average
Rwanda	3.71	4.18	3.56	4.26	3.93
Uganda	17.51	23.86	22.28	28.26	22.98
Ethiopia	41.23	42.22	48.93	43.13	43.88
Kenya	18.75	15.00	12.96	13.90	15.15
Burundi	4.85	4.31	3.29	2.55	3.75
DRC	1.59	0.98	0.77	1.00	1.08
Tanzania	12.37	9.45	8.21	6.89	9.23

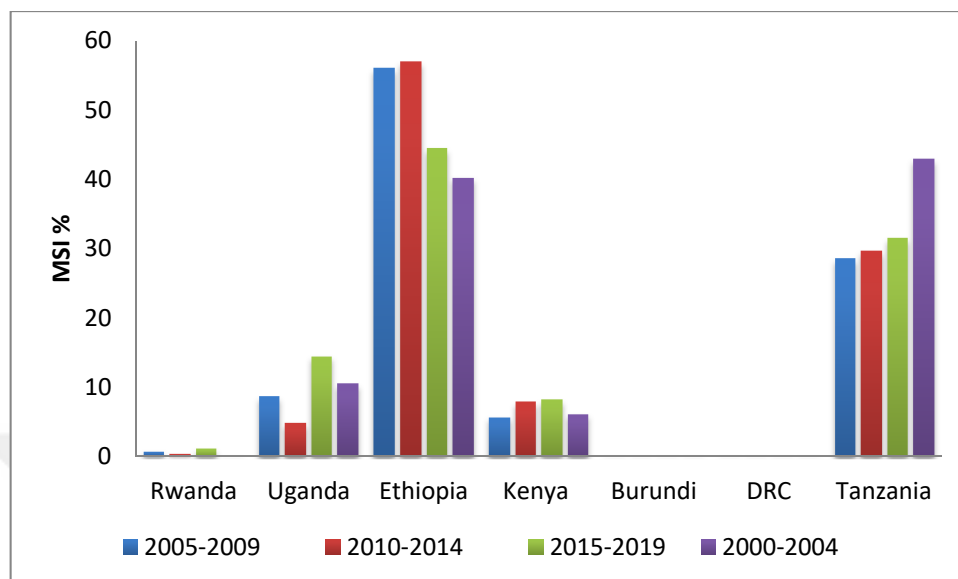


Figure 4.5. Market Share Index of Coffee (Author's calculation based on FAOSTAT data)

4.1.3. Palm-Oil

Palm oil production is strategic industry in Kenya economy, because it contributes to employment opportunities and increases export and trade balance. In addition, palm oil has also become an important part of the Kenyan economic system and has a potential to grow. Kenya exports palm oil mostly to the East African Community with their largest consumers being Uganda (\$63.8M), Rwanda (\$8.31M), the Democratic Republic of the Congo (\$3.73M), Burundi (\$2.81M) and South Sudan (\$1.54M) (The Observatory of Economic Complexity, 2022)

As shown in Figure 4.6, Kenya is a net importer of palm oil. Throughout the study period, the quantity of palm oil imports has consistently exceeded the quantity exported. The imports increased over the last three years of the study period with the highest imported quantity reported in 2019 with a total of over 915 thousand tonnes. In 2019, Kenya was ranked 3rd country with the highest value of palm oil consumption and value of import in Africa (FAO 2022).



Figure 4.6. Kenya's Palm Oil Import and Export Quantity (FAO, 2022)

To investigate the revealed trade indices for palm oil, Balassa Export Advantage Index (B-Index), Logarithm of Export Advantage Index (lnRXA), Relative Trade Advantage Index (RTA) and the Revealed Competitiveness Index (RC). Additionally, Logarithm of Import Advantage Index (lnRMA) and the Import Advantage Index (RMA) were also used after considering imports. For better presentation and analyzing of the results, the results were split into four sub-periods. According to the results, for the entire period 2000 to 2009, Kenya showed a strong revealed comparative export advantage while Uganda and Tanzania showed a moderately revealed comparative export advantage for palm oil. However, when imports were factored in all countries revealed a negative index for Relative Trade Advantage ($RTA < 0$) and Revealed Competitiveness ($RC < 1$), indicating a trade disadvantage. In the period 2010-2019, Uganda, Kenya, Rwanda and Tanzania have a strong Revealed Export Advantage among competing East African member countries, but all have negative Import advantage index. This

shows that all the countries import more palm oil than they export hence the results.

Table 4.5. Revealed Comparative Trade Indices of Palm-oil (Author's calculation based on FAOSTAT data)

2000-2004				
Country	B-Index	InRXA	RTA	RC
Rwanda	0.000	0.000	-25.197	-2.995
Uganda	1.662	-0.183	-13.821	-2.868
Ethiopia	0.008	-0.638	-6.577	2.522
Kenya	3.570	0.497	-27.461	-2.889
Burundi	0.259	-1.998	-2.655	-0.751
DRC	0.013	-3.810	-5.675	-5.499
Tanzania	3.315	0.893	-31.140	-34.127
2005-2009				
Rwanda	0.021	-0.447	-15.718	-3.062
Uganda	4.064	1.310	-16.15	-1.682
Ethiopia	0.000	0.000	-8.942	-2.084
Kenya	6.327	1.840	-16.971	-1293
Burundi	0.089	-1.444	-1.995	-1.994
DRC	0.056	-3.268	-7.243	-5.186
Tanzania	3.087	0.772	-21.156	-2.247
2010-2014				
Rwanda	0.442	-2.617	-5.751	-4.424
Uganda	8.432	2.107	-9.833	-0.795
Ethiopia	0.000	-3.528	-14.038	-6.166
Kenya	4.163	1.053	-6.429	-1.166
Burundi	0.542	-1.464	-2.584	-2.446
DRC	0.047	-3.452	-8.158	-5.545
Tanzania	5.677	-0.046	-5.316	-2.417
2015-2019				
Rwanda	8.605	2.081	-1.483	-0.189
Uganda	8.689	2.156	-11.133	-0.818
Ethiopia	0.019	-1.287	-16.707	-4.001
Kenya	6.252	1.778	-7.192	-0.751
Burundi	0.118	-2.484	-4.995	-4.055
DRC	0.176	-1.791	-7.899	-3.830
Tanzania	2.688	-1.430	-10.180	-3.973

Kenya, Uganda and Tanzania dominated the marked share of pal oil, respectively. Over 95 percent of the combined market share was accounted from those countries, with an average MSI value at 49.39 percent, 24.50 percent and 22.71 percent, respectively (Table 4.6), Uganda demonstrates improvements market share between the three countries while Kenya and Tanzania are losing due to a continuous decrease of MSI value over the entire study period. Rwanda showed a good performance with a significant increase in its MSI from 0.01 percent in the 2000-2009 sub-period to 5.05 percent in the 2010-2019 sub-period. Meanwhile, DRC also shows an increase in MSI value throughout the entire study period.

Kenya should view this as an opportunity because if it reduced importation by producing and exporting more palm oil, it would have a strong competitive advantage among its East African competitors and would have a good international market share. However it should be watchful of Uganda as over the years it has gained market share from 14.09 percent in the 200-2004 sub-period to 30.46 percent in the 2015-2019 sub-period.

Table 4.6. Market Share Indices of Palm oil (Author's calculation based on FAOSTAT data)

Country	2000-2004	2005-2009	2010-2014	2015-2019	Average
Rwanda	0.00	0.02	0.28	9.82	2.53
Uganda	14.09	14.93	38.51	30.46	24.50
Ethiopia	0.04	0.00	0.00	0.06	0.02
Kenya	48.22	68.03	37.20	44.11	49.39
Burundi	0.19	0.01	0.11	0.02	0.08
DRC	0.16	0.39	0.41	2.12	0.77
Tanzania	37.30	16.63	23.49	13.40	22.71

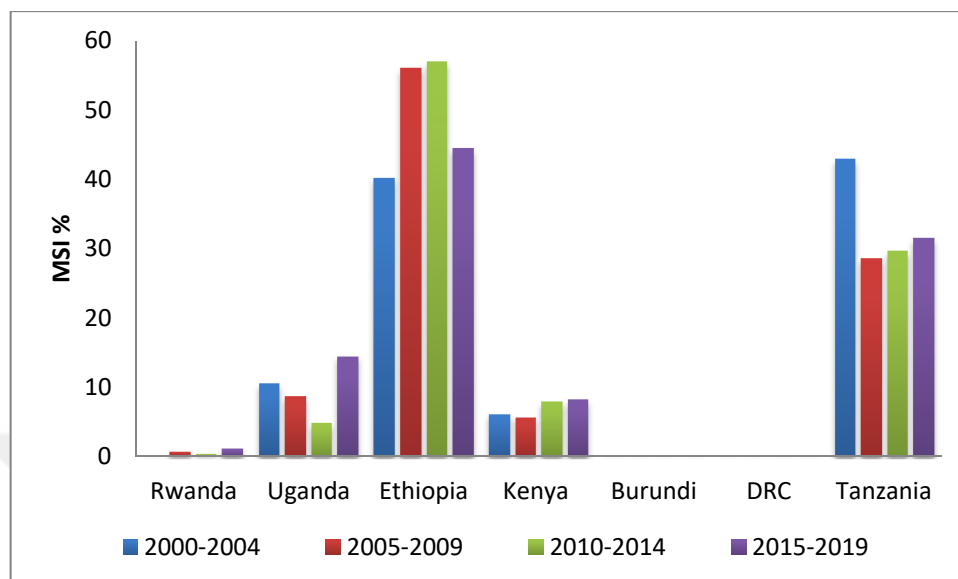


Figure 4.7. Market Share Index of Palm Oil (Author's calculation based on FAOSTAT data)

4.1.4. Crude Materials

Kenya is the second most exporting country of crude materials in Eastern Africa (FAO, 2017). It is a net exporter of crude material and has remained an important part of the Kenyan recent economy. The value of exportation increased gradually throughout the study period, as shown in the figure 4.8 below with the highest export value of over 720 million dollars seen in 2014.

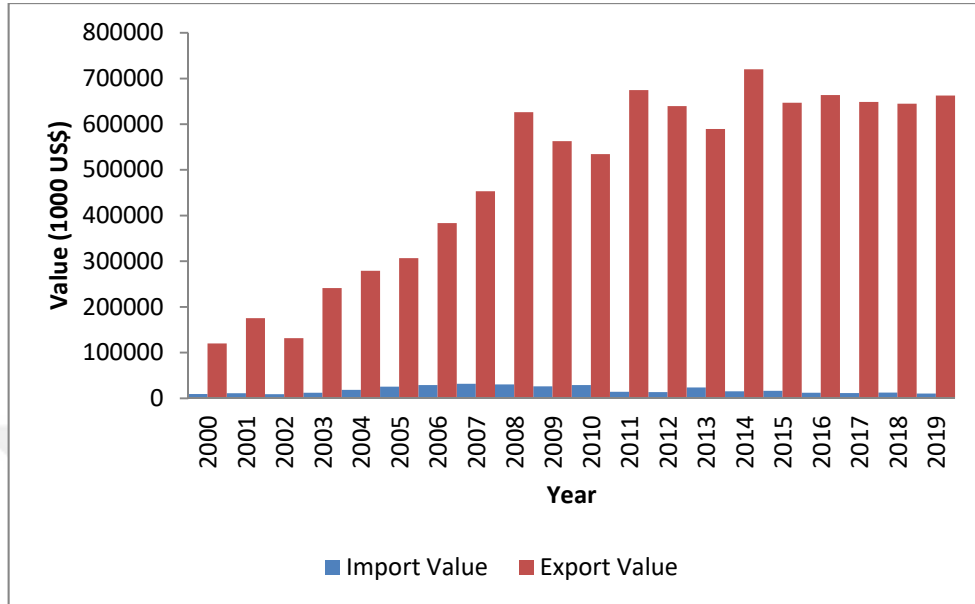


Figure 4.8. Kenya's Crude oil Import and Export Values in 1000 US\$ (FAO, 2022)

To investigate the revealed trade indices for crude materials, Balassa Export Advantage Index (B-Index), Logarithm of Export Advantage Index (lnRXA), Relative Trade Advantage Index (RTA) and the Revealed Competitiveness Index (RC). Additionally, Logarithm of Import Advantage Index (lnRMA) and the Import Advantage Index (RMA) were also used after considering imports. For better presentation and analyzing of the results, the results were split into four sub-periods. According to the results, for the entire period Kenya, Ethiopia and Uganda have a strong revealed comparative export advantage for crude material ($B\text{-index} > 1$ and $\ln RXA > 1$), same results were also obtained for Relative Trade Advantage ($RTA > 0$) and a strong Revealed Competitiveness ($RC > 1$) index values. Tanzania starts with a weak comparative advantage but achieves a strong comparative advantage across the sub-periods. In contrast, Burundi does the opposite by creating a medium comparative advantage, and performing comparative disadvantage in the 2015 to 2019 sub-period. DRC shows a trade disadvantage in the entire period compared to the rest countries.

Table 4.7. Revealed Comparative Trade Indices of Crude Materials (Author's calculation based on FAOSTAT data)

2000-2004				
Country	B-Index	InRXA	RTA	RC
Rwanda	1.306	0.327	0.895	0.575
Uganda	11.617	2.373	11.235	3.375
Ethiopia	24.247	1.304	23.517	2.791
Kenya	30.551	3.400	29.409	3.279
Burundi	2.266	0.631	1.146	0.725
DRC	3.251	1.135	2.956	2.442
Tanzania	1.060	-2.062	0.907	0.050
2005-2009				
Rwanda	3.432	0.950	2.855	1.521
Uganda	13.762	2.618	13.134	3.086
Ethiopia	43.493	3.698	40.930	2.969
Kenya	45.187	3.803	43.794	3.485
Burundi	3.172	1.069	2.146	1.354
DRC	0.686	-0.437	0.134	0.870
Tanzania	6.950	1.916	6.575	2.989
2010-2014				
Rwanda	2.811	0.912	2.169	1.540
Uganda	10.865	2.376	10.413	3.266
Ethiopia	42.950	3.671	42.346	4.210
Kenya	43.013	3.754	42.451	4.421
Burundi	0.541	-0.707	-0.645	-0.777
DRC	0.697	-0.368		
Tanzania	5.109	1.577	4.876	3.056
2015-2019				
Rwanda	2.400	0.797	2.138	2.156
Uganda	8.901	2.176	8.656	3.606
Ethiopia	17.914	1.382	17.627	2.646
Kenya	48.111	3.873	47.736	4.868
Burundi	0.374	-1.407	-0.362	-1007
DRC	0.630	-0.647	0.103	0.009
Tanzania	3.951	1.333	3.762	3.007

Kenya and Ethiopia dominated the market share of crude materials.. Over 85 percent of the combined market share was accounted from those countries, with an average MSI value at 67.68 percent and 19.07 percent, respectively (Table 4.8). Tanzania showed a good performance by increasing its MSI from 1.12 percent in the 2000-2004 sub-period to its highest which was 6.01 percent in the 2010-2015 sub-period. Meanwhile, DRC, Uganda and Burundi show a decrease in MSI value throughout the study period.

Even though Kenya has the highest average MSI among its competitors, it should be cautious as not to lose its international market share to Ethiopia in the coming years. This is clearly seen in the 2005-2009 and 2010-2015 sub-period when Kenya lost its MSI to Ethiopia.

Table 4.8. Market Share Indices of Crude Materials (Author's calculation based on FAOSTAT data)

Country	2000-2004	2005- 2009	2010- 2014	2015-2019	Average
Rwanda	0.14	0.22	0.36	0.70	0.35
Uganda	7.31	6.97	5.28	6.68	6.56
Ethiopia	12.74	21.66	30.72	11.16	19.07
Kenya	74.19	64.71	56.60	75.22	67.68
Burundi	0.10	0.06	0.02	0.01	0.05
DRC	4.40	0.69	1.01	1.44	1.88
Tanzania	1.12	5.68	6.01	4.75	4.39

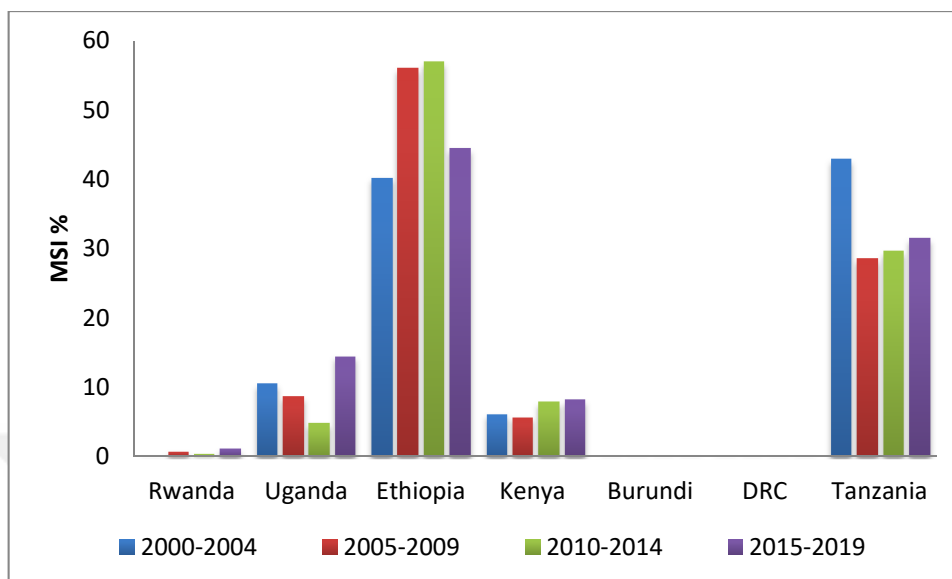


Figure 4.9. Market Share Index of Crude material (Author's calculation based on FAOSTAT data)

4.1.5. Maize

Maize is an important crop in Kenya as it is the staple food. As seen in the figure 4.10 below, the harvested area has gradually increased from 1.5 million hectares to 2.3 million hectares over the years. Production and yields have fluctuated over the years but slightly increased from 2000 to 2019, from 2.1 million tons to 3.5 million tons and from 14 thousand kilograms per hectare to 15 thousand kilograms per hectare, respectively.

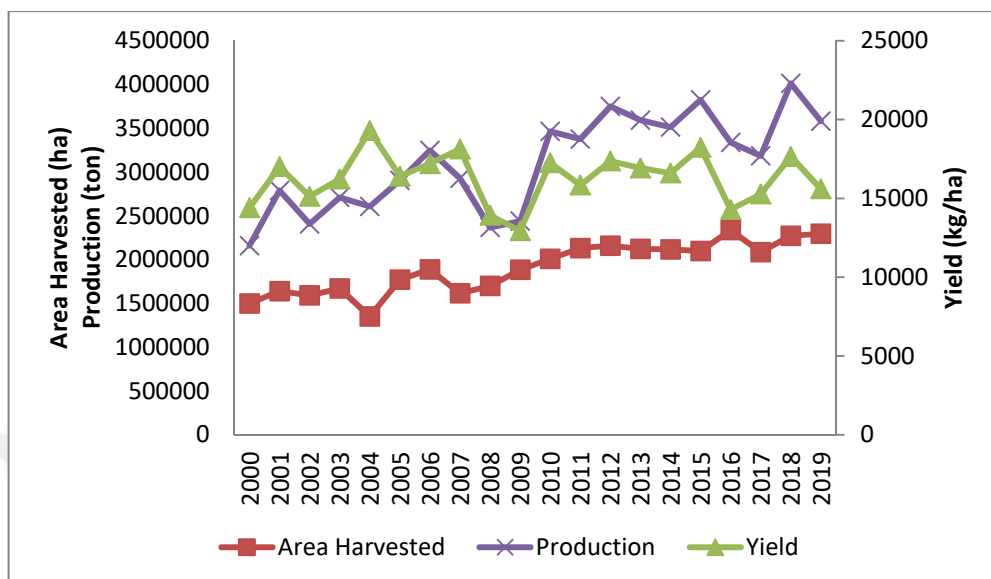


Figure 4.10. Kenya's Maize Area harvested, Yield and Production (FAO, 2022)

The amount produced does not meet the domestic demand, so Kenya imports maize from the East African Community countries. During the study period, the highest recorded import quantities were in 2009 and 2017. In 2009 Kenya experienced a drought that affected many countries in the region which affected the production of maize (MAFAP, FAO 2013).

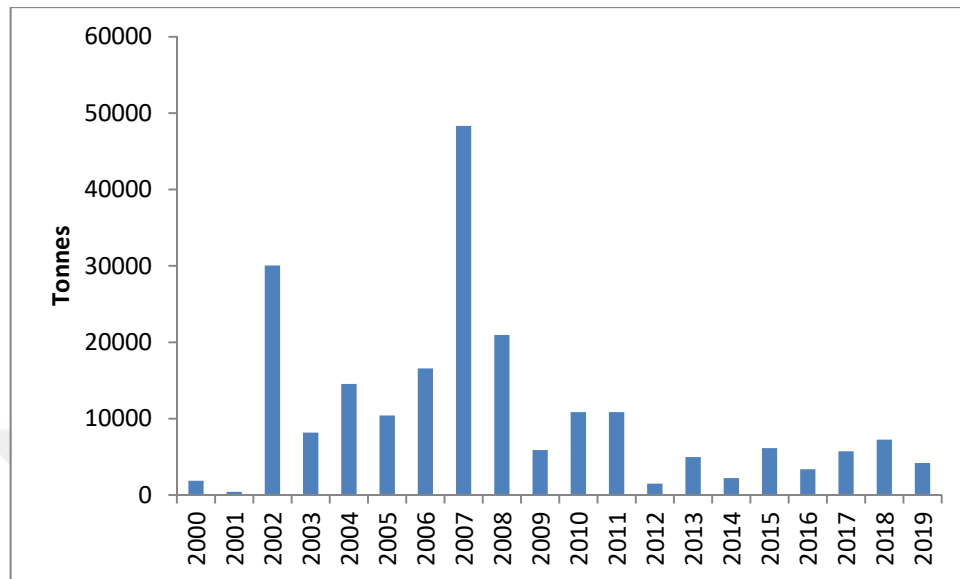


Figure 4.11. Kenya's Maize Export Quantity (FAO, 2022)

To investigate the revealed trade indices for maize, Balassa Export Advantage Index (B-Index), Logarithm of Export Advantage Index ($\ln R_XA$), Relative Trade Advantage Index (RTA) and the Revealed Competitiveness Index (RC). Additionally, Logarithm of Import Advantage Index ($\ln R_{MA}$) and the Import Advantage Index (RMA) were also used after considering imports. For better presentation and analyzing of the results, the results were split into four sub-periods. According to the results, for the entire period 2000 to 2019, Uganda and Tanzania are the only countries with a strong revealed comparative export advantage for maize ($B\text{-index} > 1$ and $\ln R_XA > 1$), same results were also obtained for Relative Trade Advantage ($RTA > 0$), but only Uganda has a strong Revealed Competitiveness ($RC > 1$) index value. Kenya shows a comparative disadvantage in maize.

Table 4.9. Revealed Comparative Trade Indices of Maize (Author's calculation based on FAOSTAT data)

2000-2004				
Country	B-Index	InRXA	RTA	RC
Rwanda	0.627	0.229	-14.643	-1.210
Uganda	8.497	1.919	4.016	0.873
Ethiopia	0.890	-0.816	-1.564	-1.484
Kenya	0.773	-0.780	-5.873	-2.193
Burundi	0.000	0.000	-23.902	-2.812
DRC	0.142	-1.861	-1.724	-2.246
Tanzania	7.672	1.774	2.183	0.156
2005-2009				
Rwanda	0.857	-2.035	-7.431	-3.559
Uganda	7.369	1.831	5.230	1.639
Ethiopia	0.065	-1.826	-1.947	-2.396
Kenya	1.129	0.041	-6.254	-1.445
Burundi	0.706	0.252	-20.690	-2.517
DRC	1.027	-1.945	0.079	-1.831
Tanzania	2.710	0.536	-0.212	0.325
2010-2014				
Rwanda	0.903	-0.682	-2.552	-1.816
Uganda	7.614	1.976	7.354	3.741
Ethiopia	1.337	-1.401	0.881	-0.444
Kenya	0.426	-1.156	-2.081	-1.935
Burundi	0.082	-0.177	-4.878	-1.194
DRC	0.763	-3.602	0.073	-2.927
Tanzania	3.656	0.158	2.477	0.045
2015-2019				
Rwanda	0.381	-1.786	-4.228	-3.243
Uganda	14.042	2.607	13.920	4.790
Ethiopia	0.225	-0.747	-0.412	0.021
Kenya	0.523	-0.743	-3.765	-1.858
Burundi	0.125	-0.093	-5.010	-1.596
DRC	0.003	-5.190	-0.646	-4.694
Tanzania	3.335	0.771	1.920	0.549

Market share of maize was dominated by Uganda and Tanzania, with an average MSI value of 46.38 percent, and 31.7 percent, respectively (Table 4.10). Between the two countries, Uganda demonstrates improvements in its market share from 34.68 percent in the first sub-period to 69.07 percent in the last sub-period while Tanzania is losing from 50.72 percent in the first sub-period to 23.58 percent in the last one. Kenya has an average MSI of 11.02 which is significantly lower than Uganda and Tanzania but higher than all the other competitors.

Table 4.10. Market Share Indices of Maize (Author's calculation based on FAOSTAT data)

Country	2000-2004	2005-2009	2010-2014	2015-2019	Average
Rwanda	0.23	0.61	1.76	0.61	0.80
Uganda	34.68	41.43	40.34	69.07	46.38
Ethiopia	3.09	0.44	10.63	1.33	3.87
Kenya	9.92	22.73	6.13	5.31	11.02
Burundi	0.00	0.39	0.03	0.02	0.11
DRC	1.36	11.20	11.82	0.07	6.11
Tanzania	50.72	23.21	29.30	23.58	31.70

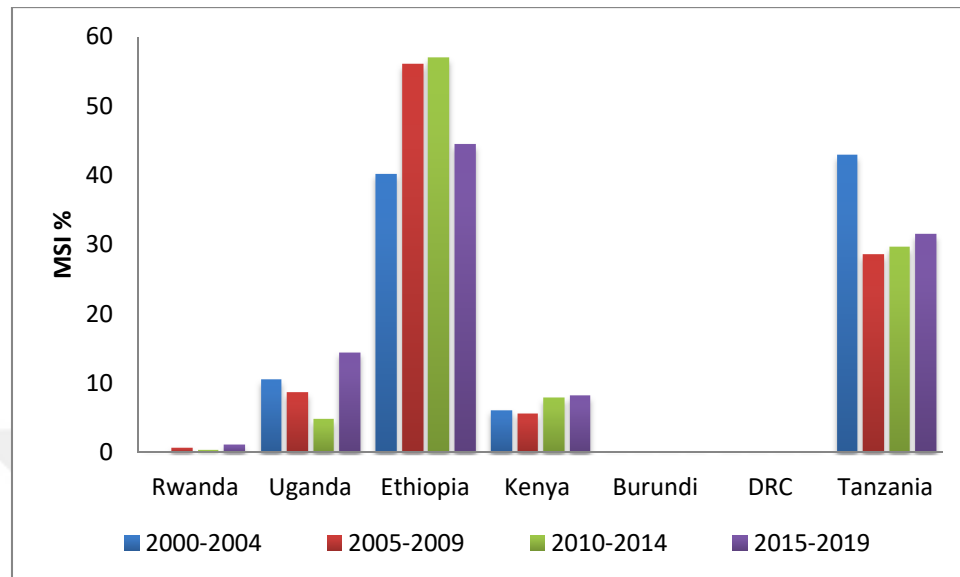


Figure 4.12. Market Share Index of Maize (Author's calculation based on FAOSTAT data)

4.1.6. Tobacco

Production, yield and area harvested for tobacco in Kenya is far lower than in other East African Community. From 2005-2009, the production and yield experienced a deep decrease to less than 15 thousand tonnes and from then have struggled to get the production to where it was before.

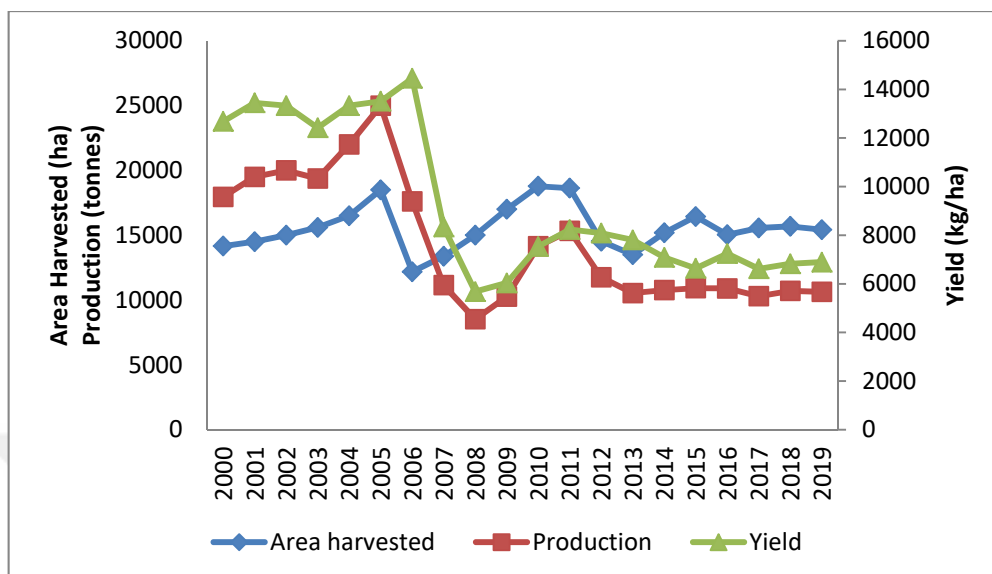


Figure 4.13. Kenya's Tobacco Area harvested, Yield and Production (FAO, 2022)

The quantity of tobacco exported has fluctuated over the years during the study period but generally shows an increasing then decreasing trend (Figure 4.14). The year with the highest export value is 2013 which was followed by 2015 and 2016 being the years with the lowest recorded export quantity during the study period.

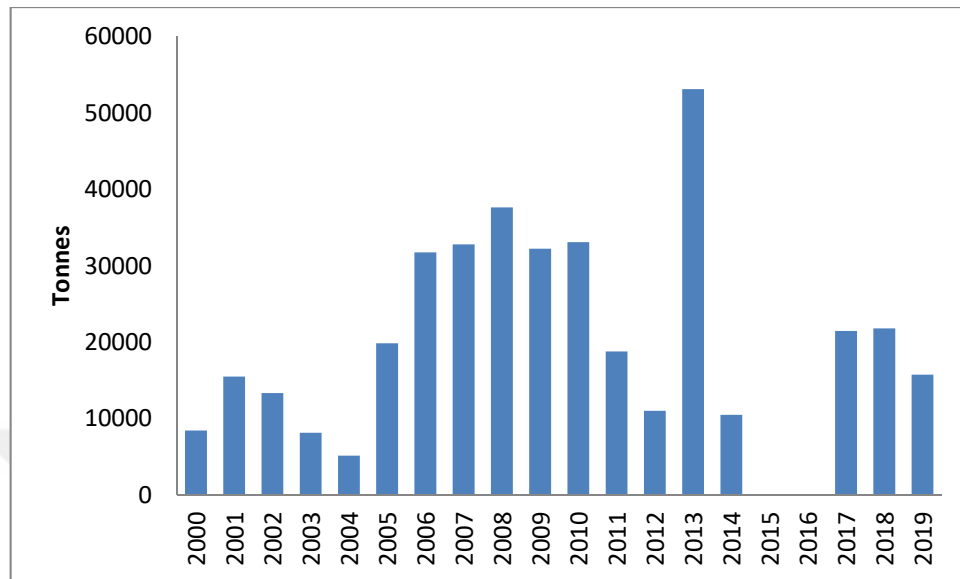


Figure 4.14. Kenya's Tobacco Export Quantity (FAO, 2022)

To investigate the revealed trade indices for tobacco, Balassa Export Advantage Index (B-Index), Logarithm of Export Advantage Index ($\ln R_XA$), Relative Trade Advantage Index (RTA) and the Revealed Competitiveness Index (RC). Additionally, Logarithm of Import Advantage Index ($\ln R_{MA}$) and the Import Advantage Index (RMA) were also used after considering imports. For better presentation and analyzing of the results, the results were split into four sub-periods. According to the results, for the entire period 2000 to 2019, Tanzania, Uganda, Kenya and Burundi are the only countries with a strong revealed comparative export advantage for Tobacco ($B\text{-index} > 1$ and $\ln R_XA > 1$), same results were also obtained for Relative Trade Advantage ($RTA > 0$) and a strong Revealed. Kenya, however, has the lowest indices among those countries indicating that Tanzania, Uganda and Burundi might have a stronger comparative than it has.

Table 4.11. Revealed Comparative Trade Indices of Tobacco (Author's calculation based on FAOSTAT data)

2000-2004				
Country	B-Index	InRXA	RTA	RC
Rwanda	0.161	-0.511	-1.175	-0.785
Uganda	17.386	2.756	17.122	4.178
Ethiopia	0.013	-2.040	-0.786	-1.724
Kenya	5.675	1.727	4.568	1.794
Burundi	5.254	1.317	4.885	2.744
DRC	0.968	-0.440	-1.653	-1.369
Tanzania	17.792	2.866	17.259	3.707
2005-2009				
Rwanda	0.137	-2.475	-1.800	-3.119
Uganda	15.268	2.697	14.295	2.739
Ethiopia	0.025	-1.910	-0.685	-1.532
Kenya	12.535	2.508	10.721	1.942
Burundi	8.041	1.936	6.732	2.951
DRC	2.172	0.714	0.017	0.287
Tanzania	23.284	3.103	22.683	3.642
2010-2014				
Rwanda	0.151	-1.797	-0.855	-1.797
Uganda	16.233	2.755	15.390	2.958
Ethiopia	0.041	-3.528	-0.632	-3.110
Kenya	9.608	2.218	7.822	1.694
Burundi	10.267	2.226	8.768	1.858
DRC	0.521	-1.147	-1.083	-1.595
Tanzania	17.858	2.821	17.161	3.438
2015-2019				
Rwanda	0.055	-3.228	-0.589	-2.783
Uganda	10.398	2.322	9.766	2.805
Ethiopia	0.002	-3.595	-0.428	-2.690
Kenya	5.733	1.354	4.506	1.164
Burundi	14.102	2.611	12.137	1.951
DRC	0.045	-5.196	-2.488	-4.328
Tanzania	19.917	2.904	19.484	3.772

Tanzania, Kenya, and Uganda dominated the tobacco market share, respectively. Over 95 percent of the combined market share was accounted from those countries, with an average MSI value at 46.98 percent 30.68 percent and 19.20 percent, respectively (Table 4.12). Between the three countries, only Tanzania demonstrates improvements in its market share from 43.35 percent in the first sub-period to 57.98 percent in the last sub-period.

Kenya losses its competitiveness by losing some of its market share to Tanzania in the last sub-period. It should therefore be careful not to lose its competitiveness in the coming years.

Table 4.12. Market Share Indices of Tobacco (Author's calculation based on FAOSTAT data)

Country	2000-2004	2005-2009	2010-2014	2015-2019	Average
Rwanda	0.02	0.02	0.05	0.03	0.03
Uganda	22.20	16.62	19.38	18.62	19.20
Ethiopia	0.03	0.03	0.07	0.01	0.03
Kenya	31.15	38.34	31.34	21.88	30.68
Burundi	0.51	0.37	0.64	1.32	0.71
DRC	2.74	4.79	1.77	0.16	2.37
Tanzania	43.35	39.84	46.73	57.98	46.98

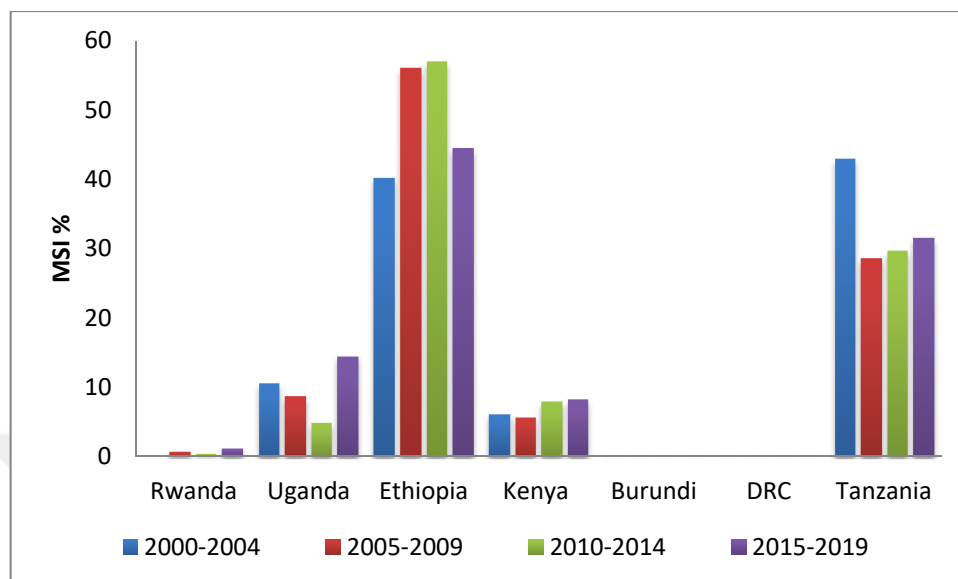


Figure 4.15. Market Share Index of Tobacco (Author's calculation based on FAOSTAT data)

4.1.7. Oil Seeds

Ethiopia is one of the oil producing country in the world, one spot behind its neighbour Burundi, as the top global oil seeds producing country (FAO, 2017). Kenya's oilseed export has generally shown a decreasing trend while the imports are increasing (Figure 4.16). During the study period, 2006 and 2007 were the only years that Kenya exported more oil seeds than it imported.

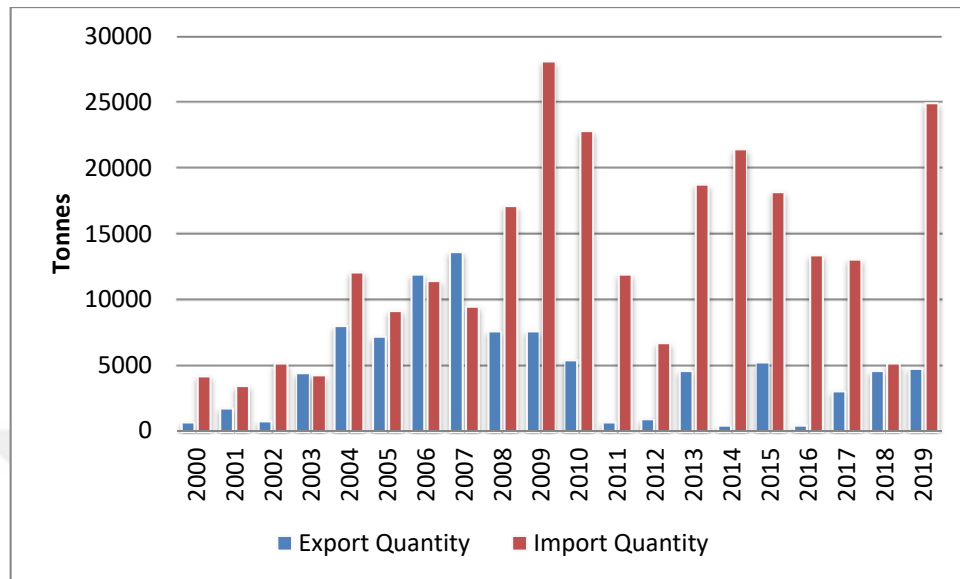


Figure 4.16. Kenya's Oilseeds Import and Export Quantity (FAO, 2022)

To investigate the revealed trade indices for oil seeds, Balassa Export Advantage Index (B-Index), Logarithm of Export Advantage Index ($\ln R_XA$), Relative Trade Advantage Index (RTA) and the Revealed Competitiveness Index (RC). Additionally, Logarithm of Import Advantage Index ($\ln R_{MA}$) and the Import Advantage Index (RMA) were also used after considering imports. For better presentation and analyzing of the results, the results were split into four sub-periods. According to the results, for the entire period 2000 to 2019, Ethiopia and Tanzania have a strong revealed comparative export advantage for oil seeds ($B\text{-index} > 1$ and $\ln R_XA > 1$), same results were also obtained for Relative Trade Advantage ($RTA > 0$) and a strong Revealed. Uganda started with a weak comparative advantage but from 2010-2019 it achieved a moderate comparative advantage. Kenya, Burundi, Rwanda and DRC have a trade disadvantage compared to other East African countries.

Table 4.13. Revealed Comparative Trade Indices of Oil Seeds (Author's calculation based on FAOSTAT data)

2000-2004				
Country	B-Index	InRXA	RTA	RC
Rwanda	0.000	0.000	-0.027	-3.286
Uganda	1.096	-0.012	0.389	1.690
Ethiopia	32.401	3.405	32.121	3.278
Kenya	0.271	-1.633	-0.169	-0.356
Burundi	0.000	0.000	-1.529	0.304
DRC	0.001	-4.103	-0.000	-1.827
Tanzania	5.287	1.623	4.871	2.522
2005-2009				
Rwanda	0.111	-1.207	-0.006	1.766
Uganda	2.614	0.940	1.669	1.496
Ethiopia	58.637	4.045	57.766	4.725
Kenya	0.655	-0.505	0.240	0.430
Burundi	0.000	0.000	-0.099	3.639
DRC	0.004	-5.900	-0.012	-2.066
Tanzania	5.287	1.629	5.163	3.928
2010-2014				
Rwanda	0.012	-6.279	-0.133	-4.031
Uganda	3.131	1.037	2.804	3.981
Ethiopia	37.374	3.617	37.303	6.465
Kenya	0.146	-2.792	-0.132	-1.377
Burundi	0.001	-2.473	-2.808	-1.581
DRC	0.000	-3.991	-0.188	-2.210
Tanzania	7.401	1.833	7.074	3.849
2015-2019				
Rwanda	0.078	-4.124	-0.141	-1.861
Uganda	3.414	1.147	3.343	3.833
Ethiopia	31.222	3.434	31.187	7.443
Kenya	0.166	-2.153	0.053	0.110
Burundi	0.061	-3.221	-0.032	0.852
DRC	0.000	-7.416	-0.014	-0.611
Tanzania	6.325	1.812	6.169	3.872

Market share of oil seeds was dominated by Ethiopia and Tanzania, respectively. Over 94 percent of the combined market share was accounted from those countries, with an average MSI value at 75.58 percent and 18.59 percent, respectively (Table 4.14). Between the two countries, Ethiopia demonstrates a decrease in its market share MSI value throughout the entire study period while Tanzania demonstrates an increase in Uganda shows an increase in its MSI from 2.33 percent in the 2000-2004 sub-period to 6.64 percent in the 2015-2019 sub-period. Meanwhile, Kenya shows a decrease of MSI value throughout the entire study period.

Table 4.14. Market Share Indices of Oil Seeds (Author's calculation based on FAOSTAT data)

Country	2000-2004	2005-2009	2010-2014	2015-2019	Average
Rwanda	0.00	0.02	0.00	0.03	0.01
Uganda	2.33	3.74	3.96	6.64	4.17
Ethiopia	73.12	82.23	75.80	71.18	75.58
Kenya	2.28	2.55	0.59	0.69	1.53
Burundi	0.00	0.00	0.00	0.01	0.00
DRC	0.00	0.01	0.00	0.00	0.00
Tanzania	22.27	11.45	19.59	21.05	18.59

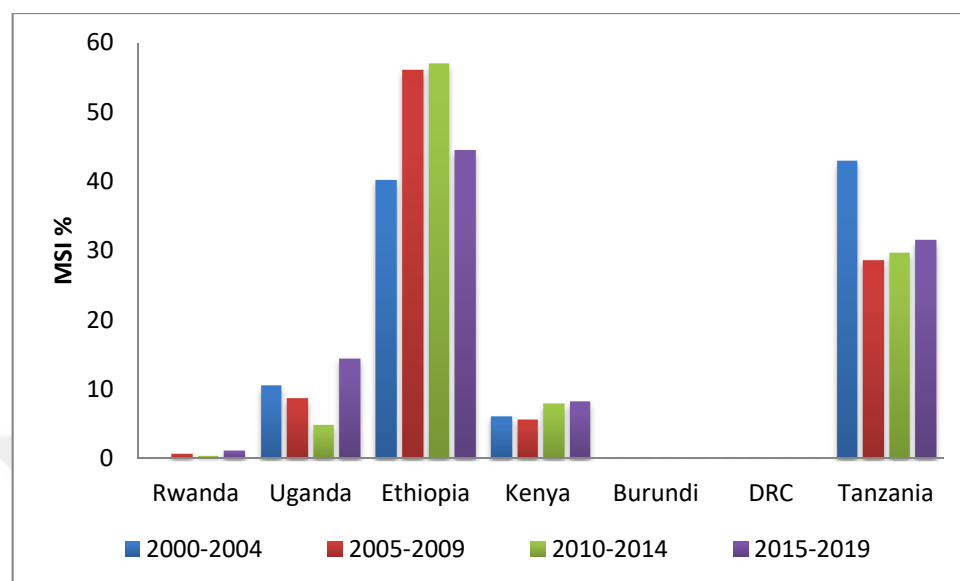


Figure 4.17. Market Share Index of Oil seeds (Author's calculation based on FAOSTAT data)

4.1.8. Cereals

Over the years, the production of cereals has fluctuated but has generally shown an increase during the study period. The area harvested has slightly increased while the yield has fluctuated over the years.

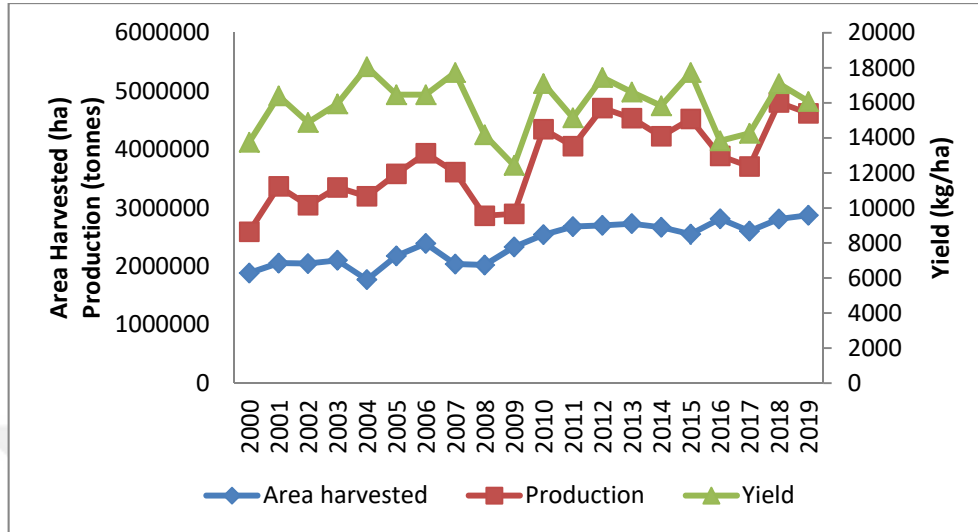


Figure 4.18. Kenya's Cereals' Area harvested, Yield and Production (FAO, 2022)

Kenya exports cereals to its fellow Eastern Africa, mainly Uganda, Tanzania, Somalia, Ethiopia, Rwanda and South Sudan and mainly imports from United Kingdom, Malaysia and Spain. In the last three years of the study, from 2017 to 2019, the country recorded its highest export quantity in the whole study period. This shows the potential of maintaining this trend over the coming years.

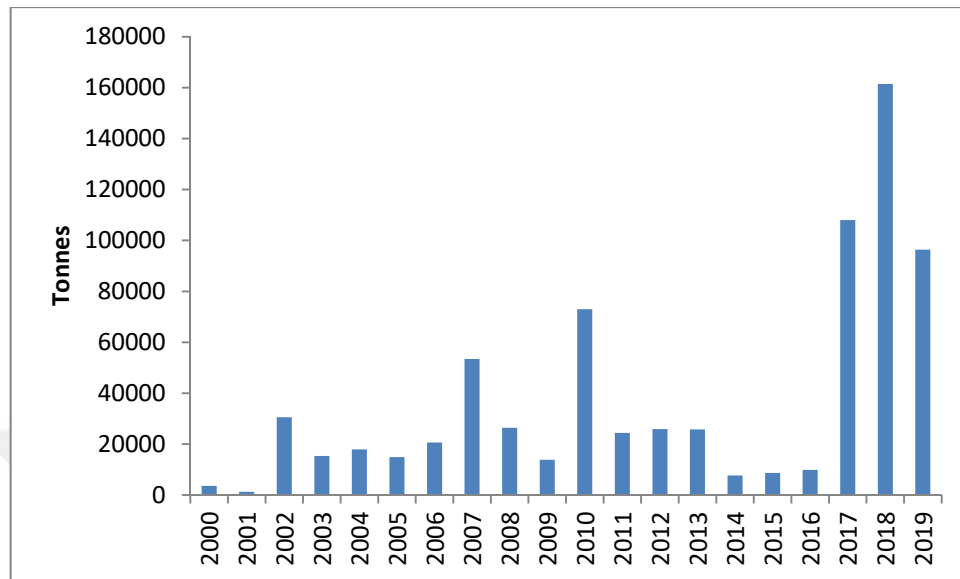


Figure 4.19. Kenya's Cereal Export Quantity (FAO, 2022)

To investigate the revealed trade indices for cereals, Balassa Export Advantage Index (B-Index), Logarithm of Export Advantage Index ($\ln R_XA$), Relative Trade Advantage Index (RTA) and the Revealed Competitiveness Index (RC). Additionally Logarithm of Import Advantage Index ($\ln R_{MA}$) and the Import Advantage Index (RMA) were also used after considering imports. For better presentation and analyzing of the results, the results were split into four sub-periods. According to the results, Uganda shows a strong comparative export advantage for cereals ($B\text{-index} > 1$ and $\ln R_XA > 1$) between 2005-2019, while Tanzania shows a strong revealed comparative advantage in the first and last sub-periods. However, the same results were not obtained for Relative Trade Advantage ($RTA > 0$), and Revealed Competitiveness ($RC > 1$) index values as all countries showed a trade disadvantage when the imports were factored in. Kenya has a trade disadvantage in cereals for the entire analysis period due to the low production level and high quantity importation.

Table 4.15. Revealed Comparative Trade Indices of Cereals (Author's calculation based on FAOSTAT data)

2000-2004				
Country	B-Index	InRXA	RTA	RC
Rwanda	0.174	-1.056	-8.705	-3.225
Uganda	2.568	0.801	-4.965	-1.036
Ethiopia	3.360	1.049	-18.229	0.383
Kenya	0.365	-1.078	-7.160	-3.049
Burundi	0.095	-0.149	-12.007	-2.544
DRC	0.166	-3.131	-12.451	-5.665
Tanzania	7.266	1.965	-3.806	-0.418
2005-2009				
Rwanda	0.487	-1.437	-6.945	-3.260
Uganda	3.294	1.148	-6.393	-1.021
Ethiopia	0.486	-1.888	-9.027	-4.118
Kenya	0.451	-0.828	-6.151	-2.677
Burundi	0.316	-0.572	-9.484	-2.743
DRC	0.321	-3.231	-9.971	-5.435
Tanzania	3.168	0.958	-3.565	-0.894
2010-2014				
Rwanda	4.508	0.977	-0.077	-0.495
Uganda	6.158	1.759	0.492	0.056
Ethiopia	1.156	-0.025	-7.632	-2.160
Kenya	0.457	-0.914	-5.556	-2.691
Burundi	2.086	-1.043	-4.284	-2.813
DRC	0.273	-2.121	-5.944	-3.941
Tanzania	2.747	0.810	-3.409	-0.990
2015-2019				
Rwanda	8.668	2.158	0.134	0.047
Uganda	10.156	2.303	4.622	0.600
Ethiopia	0.280	-1.473	-7.523	-3.519
Kenya	0.618	-0.819	-7.000	-2.837
Burundi	7.922	2.063	0.038	0.070
DRC	0.012	-4.868	-4.593	-6.388
Tanzania	3.317	1.148	0.972	0.537

Tanzania, Uganda and Ethiopia dominated market share in cereals. Over 80 percent of the combined market share was accounted from those countries, with an average MSI value at 41.51 percent, 32.26 percent and 8.30 percent, respectively (Table 4.16). Between the three countries, Uganda demonstrates a massive improvement in its market share from 11.9 percent in the first sub-period to 53.47 percent in the last sub-period while Tanzania and Ethiopia are losing due to a continuous decrease of MSI value throughout the entire study period. Kenya recorded the least MSI in the last sub-period as compared to the previous ones.

Table 4.16. Market Share Indices of Cereals (Author's calculation based on FAOSTAT data)

Country	2000-2004	2005-2009	2010-2014	2015-2019	Average
Rwanda	0.07	0.55	6.69	15.23	5.63
Uganda	11.90	30.92	32.75	53.47	32.26
Ethiopia	15.70	6.62	8.94	1.96	8.30
Kenya	7.19	11.63	7.11	5.99	7.98
Burundi	0.03	0.13	0.53	2.30	0.75
DRC	1.66	7.32	5.03	0.21	3.56
Tanzania	63.44	42.83	38.94	20.83	41.51

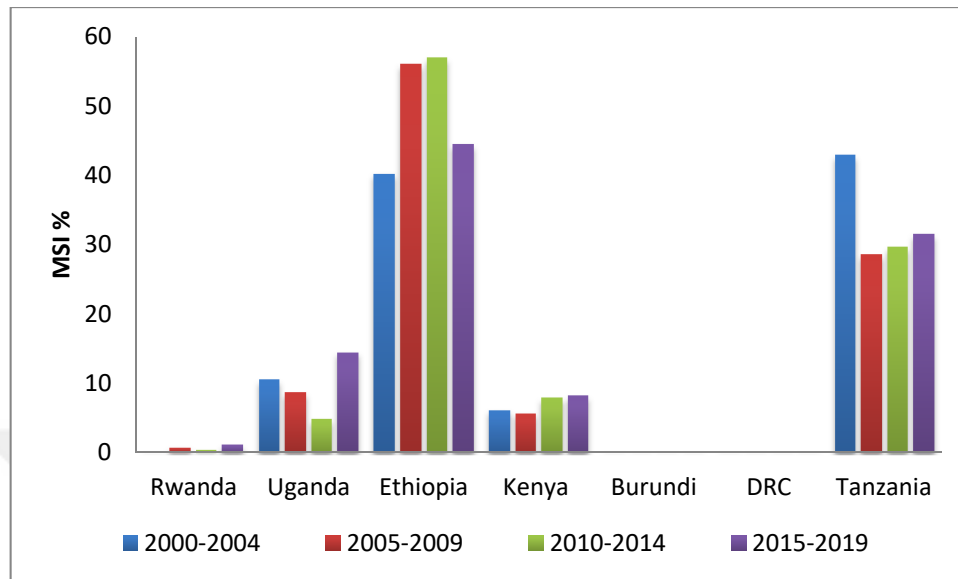


Figure 4.20. Market Share Index of Oil seeds (Author's calculation based on FAOSTAT data)

4.1.9. Pulses

The most common pulses in Kenya are dry beans, followed by cowpeas, pigeon peas and chickpeas. Although the production of pulses in Kenya has fluctuated over the years, there has been an increase in the production and yield per hectare.

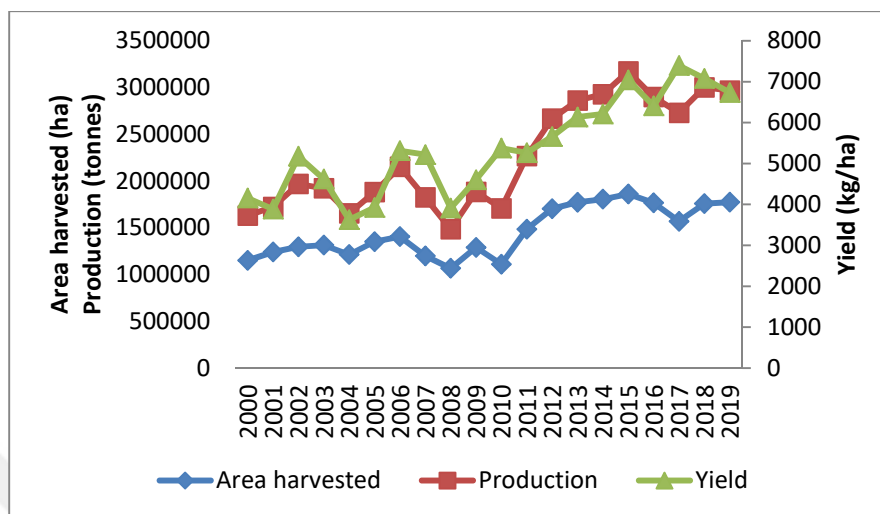


Figure 4.21. Kenya's Pulses Area harvested, Yield and Production (FAO, 2022)

The quantity exported, however, has fluctuated over the years and generally increased during the study period, as seen in figure 4.22 below. The export quantity increased dramatically from the year 2013, with the highest recorded quantity in 2016.

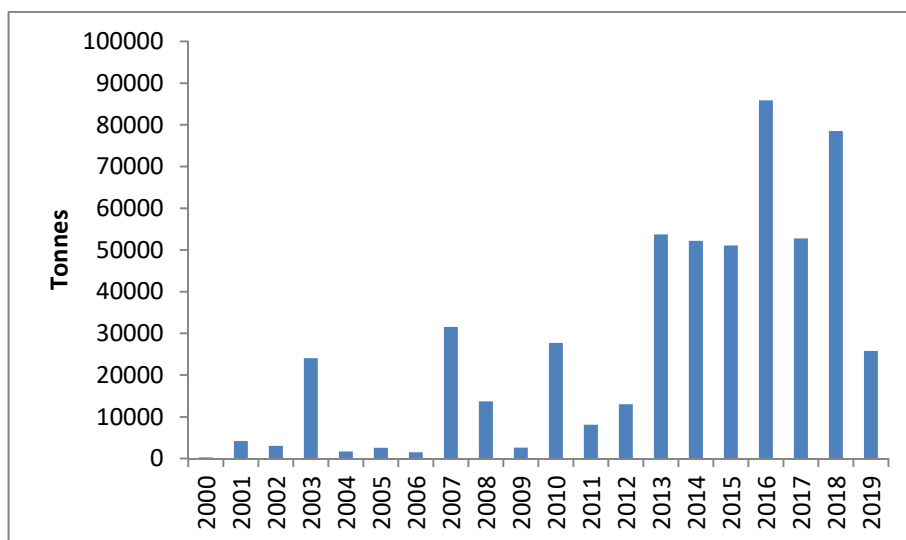


Figure 4.22. Kenya's Pulses' Export Quantity (FAO, 2022)

To investigate the revealed trade indices for pulses, Balassa Export Advantage Index (B-Index), Logarithm of Export Advantage Index (lnRXA), Relative Trade Advantage Index (RTA) and the Revealed Competitiveness Index (RC). Additionally, Logarithm of Import Advantage Index (lnRMA) and the Import Advantage Index (RMA) were also used after considering imports. For better presentation and analyzing of the results, the results were split into four sub-periods. According to the results, Ethiopia, Tanzania and Uganda showed a strong revealed comparative export advantage for pulses ($B\text{-index} > 1$ and $\ln RXA > 1$) for the entire period of the study, and the same results were obtained for Relative Trade Advantage ($RTA > 0$) and Revealed Competitiveness ($RC > 1$) index values. Kenya and Rwanda possessed a strong export advantage in the first two sub-periods but when imports are factored in, they have a trade disadvantage, but in the last two sub-periods from the year 2010 to 2019, they achieved both a strong Export advantage and a strong import advantage for Rwanda and a strong export advantage and a moderate Import advantage for Kenya. Burundi and DRC showed a trade disadvantage.

Table 4.17. Revealed Comparative Trade Indices of Pulses (Author's calculation based on FAOSTAT data)

2000-2004				
Country	B-Index	InRXA	RTA	RC
Rwanda	0.042	-0.313	-58.283	-2.824
Uganda	16.290	2.638	7.219	1.147
Ethiopia	68.256	3.966	54.051	1.779
Kenya	2.919	0.307	-2.701	-1.284
Burundi	0.000	0.000	-58.66	-3.702
DRC	0.000	0.000	-11.884	-2.438
Tanzania	36.842	3.552	27.861	1.438
2005-2009				
Rwanda	12.352	1.920	-2.605	-0.286
Uganda	19.070	2.930	4.488	0.753
Ethiopia	126.440	4.751	115.02	2.396
Kenya	4.881	1.244	-3.493	-0.791
Burundi	0.000	0.000	-44.034	-3.398
DRC	0.000	-1.353	-7.509	-3.260
Tanzania	38.124	3.611	35.427	3.026
2010-2014				
Rwanda	5.500	1.640	3.848	1.477
Uganda	14.815	2.669	14.554	3.788
Ethiopia	117.550	4.761	110.193	2.871
Kenya	9.915	1.982	4.416	0.324
Burundi	0.003	-0.850	-3.142	-1.592
DRC	0.000	-1.345	-4.606	-2.779
Tanzania	42.760	3.696	42.499	5.199
2015-2019				
Rwanda	8.137	1.973	7.012	2.003
Uganda	37.653	3.540	37.083	4.131
Ethiopia	101.524	4.607	96.563	3.013
Kenya	10.337	2.231	2.819	0.278
Burundi	0.247	-1.897	-3.103	-2.940
DRC	0.003	-6.046	-2.243	-6.784
Tanzania	48.542	3.821	47.629	4.082

Ethiopia and Tanzania dominated the market share in pulses. Over 80 percent of the combined market share was accounted from those countries, with an average MSI value at 49.45 percent and 33.22 percent, respectively (Table 4.18). Between the two countries, Ethiopia demonstrates a general improvement in its market share of 40.25 percent in the first sub-period to 44.48 percent in the last sub-period while Tanzania is losing due to a continuous decrease of MSI value throughout the entire study period. Kenya recorded an average MSI of 7.06 percent with a general increase across the study period. This shows that Kenya has a trade disadvantage compared to Ethiopia, Tanzania and Uganda which have higher market shares in the international market,

Table 4.18. Market Share Indices of Pulses (Author's calculation based on FAOSTAT data)

Country	2000-2004	2005-2009	2010-2014	2015-2019	Average
Rwanda	0.00	0.80	0.43	1.17	0.60
Uganda	10.61	8.74	4.86	14.49	9.68
Ethiopia	40.25	56.04	57.01	44.48	49.45
Kenya	6.21	5.77	7.95	8.31	7.06
Burundi	0.00	0.00	0.00	0.01	0.00
DRC	0.00	0.00	0.00	0.01	0.00
Tanzania	42.93	28.66	29.74	31.54	33.22

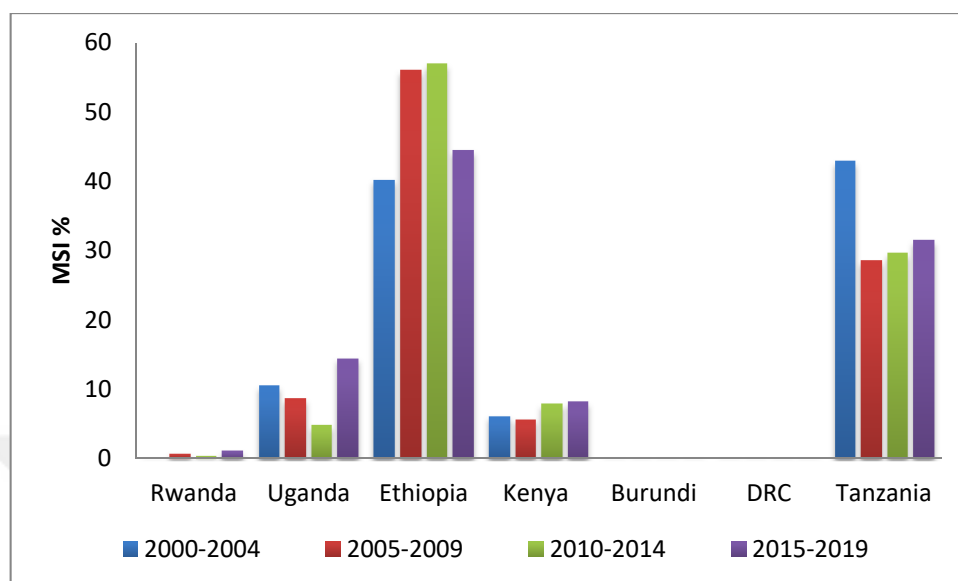


Figure 4.23. Market Share Index of Pulses (Author's calculation based on FAOSTAT data)

4.2. Summary of Some Selected Agricultural Products

Table 4.19. Summary of Findings in B-Index and InRXA of Selected Agricultural Product

	Tea	Coffee	Crude materials	Palm oil	Tobacco	Maize	Cereals	Oil seeds	Pulses
Rwanda	^***	^***	^**	X	X	X	^**	X	X
Uganda	^***	^***	^***	^***	^***	^***	^***	^**	^***
Ethiopia	^***	^***	^***	X	X	X	^*	^***	^***
Kenya	^***	^***	^***	^***	^***	X	X	X	^***
Burundi	^***	^***	^*	X	^***	X	^*	X	X
DRC	X	^*	X	X	X	X	X	^***	X
Tanzania	^***	^***	^**	^**	^***	^***	^***	^***	^***

Where ^ = advantage; x = disadvantage; * = weak; ** = moderate; *** = strong

The summary of the revealed comparative export advantage in selected agricultural products is shown in Table 4.19. For tea, all the countries announced a strong revealed comparative export advantage apart from DRC making it a highly competitive trade commodity. Kenya has a strong revealed comparative export advantage position; the same can be seen in the export market share, where it dominates with over 80 percent of the international market share for the entire study period but is slowly losing some of its market share across the study period. Uganda and Rwanda appeared to have performed well in increasing their market shares, as Ethiopia and Tanzania failed to maintain their export market share by decreasing it. In East African Community, coffee export competitiveness is similar to that of tea, all the countries under this study possess a strong revealed competitive advantage apart from DRC which possesses a weak export advantage. In terms of the market share however, Ethiopia is the most advantageous country followed by Uganda which has managed to increase its market share across the study period. On the other hand, Kenya has had a decrease of its market share which makes it lose its competitiveness among the other East African Countries.

For palm oil, Uganda and Kenya are the advantageous countries with a strong revealed export advantage position while Tanzania acquired a moderate revealed export advantage. In terms of the export market, Kenya is advantageous than the other competing countries but Uganda shows a massive improvement by raising its market share throughout the entire study period making it the second most advantageous in terms of market share.

For crude materials, Kenya, Uganda, and Ethiopia are the most advantageous countries; Rwanda and Tanzania follow with a moderate export advantage while Burundi had a weak trade advantage. Kenya was the most advantageous country in the export market share, and acquired the highest share in the sub-period 2015-2019 (Table 4.8). Ethiopia, DRC and Tanzania continued to be strongly advantageous in oil seeds. At the same time Uganda maintained a

moderate trade advantage, and when it came to the export market share in the international market, Ethiopia was the most advantageous country.

Uganda and Tanzania acquired a strong export advantage in maize while all the other countries had a trade disadvantage. Uganda emerged as the most advantageous country in the export market share among two countries. Additionally, Tanzania and Uganda achieved a strong export trade advantage in cereals; Rwanda achieved a moderate trade advantage while Ethiopia and Burundi acquired a weak trade advantage. Tanzania emerged as the most advantageous in the export market by acquiring the highest market share among all the countries.

For tobacco, Kenya, Uganda, Tanzania, and Burundi attained a strong export trade advantage among the East African Community but Tanzania emerged to have the strongest advantage in the export market share. Ethiopia, Tanzania, Uganda and Kenya all showed a strong export advantage when it came to pulses although Ethiopia was the most advantageous in the export market share among all the other countries.

4.3. Summary of Findings in RTA and RC of Selected Agricultural Products

Table 4.20. Summary of Findings in RTA and RC of Selected Agricultural Product

	Tea	Coffee	Crude materials	Palm oil	Tobacco	Maize	Cereals	Oil seeds	Pulses
Rwanda	^***	^***	^**	X	X	X	X	X	X
Uganda	^***	^***	^***	X	^***	^***	X	^**	^***
Ethiopia	^***	^***	^***	X	X	X	X	^***	^***
Kenya	^***	^***	^***	X	^***	X	X	X	X
Burundi	^***	^***	^*	X	^***	X	X	X	X
DRC	X	^*	X	X	X	X	X	^***	X
Tanzania	^***	^***	^**	X	^***	^*	X	^***	^***

Where ^= advantage; x = disadvantage; *=weak; ** = moderate; *** = strong

Taking into account the imports for the revealed comparative trade advantage positions between East African member countries, the level of positions for tea remained the same for all advantageous countries, whereas for coffee, DRC joined all the other countries by obtaining a weak comparative advantage. In Palm and cereals, all the advantageous countries lost their trade advantage; hence, no country had a revealed trade advantage in these commodities. In Tobacco, Uganda, Kenya, Burundi, and Tanzania continued to have a strong advantage over the other countries while in maize, Uganda remained strongly advantageous but Tanzania on the other hand dropped to having a weak trade advantage position. In oil seeds, Ethiopia, DRC and Tanzania continued to have a strong trade advantage while Uganda maintained a moderate trade advantage compared the other countries.



5. CONCLUSIONS AND SUGGESTIONS

5.1. Conclusions

According to the findings of the study, the following were determined: overall, Kenya possesses a strong revealed comparative trade advantage position against other East African member countries for some of the selected agricultural products except maize, cereals and oil seeds. However, Kenya's trade indices (B-index, RTA, InRXA and RC) had shown a strong comparative trade advantage in tea products. The strongest competitors for tea export product are Uganda, Rwanda and Tanzania. For coffee, the value of the Revealed Comparative Trade Indices and Market Share Index indicated that, among the selected East African countries, Ethiopia and Uganda have the strongest revealed comparative trade advantage over the other East African co-member countries. in the international trade market. Also, Kenya had utterly dominated the market for crude materials and was found to be the most competitive country, although potential competitors for these products were Ethiopia and Uganda. However, for palm oil, it is important to note that Kenya has a very weak revealed comparative trade advantage position when imports were put into account but still managed to have the biggest market share among the East African Countries making it the most competitive. For maize, Kenya has a trade disadvantage against other East African member countries. Uganda and Tanzania had a strong comparative trade advantage in maize. For tobacco, Kenya possesses a very strong comparative trade advantage position with its main competitors being Tanzania and Uganda. Ethiopia has the highest comparative advantage in oil seeds as it dominates the international market while Kenya still has a very weak comparative trade position. Similarly, Kenya still has a very weak comparative advantage regarding cereals while Tanzania and Uganda possess the strongest revealed comparative advantage. For pulses, Kenya has a strong comparative advantage position over the listed seven countries but when

imports are considered it has a trade disadvantage. Its main competitors which dominate the market share are Ethiopia and Tanzania.

Lastly, just like any other research papers previously done, this study encountered various limitations. Despite a comprehensive examination of the results of the analyses, this study has its own limitations, namely the characteristics of the methodology employed. For this reason, different approaches and perspectives of the history of economic thought were discussed to highlight the significance of these theories in economic policymaking. Some countries like South Sudan did not have enough data for the analysis and hence was excluded. Selecting products that were common and have a significant production and exported quantity in every East Africa Community country was also part of the limitations encountered in this study. While acknowledging these limitations, the researcher is confident that the objectives of the study were met largely due to the theories and relevant literature discussed in this research.

5.2. Suggestions

Based on the findings of analyses, it is apparent that Kenya has a strong agricultural trade competitiveness position in compared to other East African Community member countries in some of the discussed agricultural products. The competitive advantage theory has suggested that every country has its own particular industries that make it prosper in terms of competitiveness with other countries. Therefore countries vary in their level of competitiveness and no country can be globally competitive in all industries (Porter, 1990). While based on the findings of the study individual products have proved that Kenya can be competitive in certain products and not competitive in others.

Based on significant findings and conclusions, the following were suggested: Kenya has certain products that it has a competitive advantage in, which it could continue concentrating and specializing in by giving more efforts and resources in terms of investments in order to increase productivity and efficiency.

This would enhance the potential and performance of these products in terms of competitiveness in the East African market. In this case, it would be important for the government to be mindful in establishing if the country has succeeded in attaining a comparative advantage in tea and crude materials because being advantageous in one product and benefiting from this advantage are different concepts. A country should have strong marketing and distribution channels in order to fully benefit from the comparative advantage so that some other actors may not benefit more. There are several countries in the world getting more benefits through re-exporting some products despite not producing them. The Kenyan government should be watchful as threats in tea products are increasing by having too many competitors. Therefore, Kenya should either maintain or increase its productivity in order to increase its competitiveness for this product by conducting agricultural forecasting and planning to mitigate the effects of weather phenomena such as long droughts and pests and diseases on tea production.

The high volume importation of products such as palm oil, maize and pulses needs to be addressed as it hinders the competitiveness of these products. There is a need to implement policies and programs that will help reduce the gap between local supply and demand. To achieve this, the government should implement proper planning and measures to strengthening the capabilities of these products' capabilities.

Kenyan policymakers should come up with and implement policies that will strengthen the agricultural sector and attract private sector investment in order to increase the global competitiveness of the country's agricultural products. They can implement policies that promote value chains to respond to regional and international market opportunities through development of product development incubators which harness inventions and innovations geared towards production of value added products, establish free Economic Zones to expand production for export market and capacity building the farmers on the regional and international export opportunities. The country would benefit from moving from exportation of

raw materials to exporting value-added products that would fetch more in the global market.

The government should support trade outreach programs designed to sensitize and capacity build agribusiness community, especially the micro, small and medium enterprises on regional and international trade opportunities. There is also need to streamline the information system so that valuable information can be able to reach farmers for effective execution through extension services. This can be achieved by forming public-private partnerships in providing agricultural extension services that are affordable and accessible for all farmers.

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