

**CONCENTRATION,
MARKET STRUCTURE
AND BARRIERS TO
ENTRY IN THE
VEGETABLE OIL
VALUE CHAIN IN
EAST AND
SOUTHERN
AFRICA**



Executive Summary

This paper analyses the markets for vegetable oil and the main inputs in and across seven COMESA member states. Vegetable oil is a staple food product and, as such, affordable vegetable oil is important for households' food security.

Prices of vegetable oil increased substantially over 18 months from the beginning 2021 to mid-2022, by 50 to 100 per cent in foreign currency terms. These increases have been much larger than the increases in the main input costs. Furthermore, prices did not adjust downwards again to reflect the fall in input costs to their normal levels.

The vegetable oil markets are characterised by high levels of concentration in terms of the major suppliers and producers across the East and Southern African (ESA) countries studied. Around three to four companies account for the majority of supply in each of the seven countries examined, namely, Kenya, Rwanda, Uganda, Malawi, Zambia, Zimbabwe and the DRC. The largest companies are integrated across countries and along the value chain. In Eastern Africa vegetable oil is supplied mainly from refining of imported crude palm oil, while in Southern Africa oil is mainly from processing of soybeans and other oil seeds which are locally grown. The vegetable oil prices are far above the costs of sourcing and processing inputs.

In terms of markets and economic development, the vegetable oil industry is a striking example of the wider phenomenon of ESA being a net food importer even while having very good conditions for growing the agricultural commodities required for the food products. This is the case even while there have been some investments in expanding capacity by the main incumbents. Poorly functioning markets along the value chain mean that the excellent growing conditions co-exist with extremely high vegetable oil prices and constrained production.

Trade within regional markets is very important for the market outcomes. The main inputs of oil seeds and crude palm oil are highly traded, while the operations of the main producers extend across borders in the East and Southern African region. A national perspective will therefore not necessarily comprehend the market dynamics and the industry demonstrates the importance of regional competition enforcement which considers international trade and integration, as per the mandate of the COMESA Competition Commission ('the CCC').

The high levels of concentration in the region are further underpinned by high barriers to entry and have been reinforced by a number of mergers. A review of the mergers that have taken place in the market shows that there may be need to enhance the cooperation and collaboration to address the possible regional effects of the mergers, as well as their effects on coordination.

Government regulations appear to be hindering rather than assisting inclusive and competitive regional markets. Policies are required to support farmers in expanding oilseed production, with fair market prices and investment in competitive vegetable oil production.

The main recommendations from the study are as follows:

- Monitoring the changes in shareholding of the firms in the value chain for vegetable oil, including assessing the effects of mergers and the extent of common shareholdings. This can feed into improving merger review.

- Continuous tracking of vegetable oil and oilseed prices in the region with the national competition authorities, as part of price monitoring for the African Market Observatory, including improving product and country coverage.
- Drawing on trade flows, market analysis and policies to advocate for appropriate policy package to develop the regional value chains to expand agriculture, increase investment and ensure competitive production at lower consumer prices. This is part of a wider structural transformation agenda to reverse the trade deficit in staple food products and industrialise East and Southern Africa.

Table of Contents

Executive Summary	2
1 Introduction	6
1.1 Overview	6
1.2 Approach	7
1.3 Market structure, market power and barriers to entry in regional markets	7
2 Vegetable oil supply and demand in East and Southern Africa	9
2.1 The vegetable oil value chain	9
2.2 Apparent demand for vegetable oil by country and main sources	10
2.3 Trade, geographic markets & product substitutability in inputs and final products ..	11
3 Market outcomes, structure and major firms	16
3.1 Pricing	16
3.2 Market structure within and across countries	20
3.2.1 East Africa	21
3.2.2 Southern Africa	24
3.3 Major firms	27
4 Consideration of competition issues	28
4.1 Review of mergers	28
4.2 Market concentration and co-ordination	31
4.3 Barriers to entry	32
5 Conclusions	33
References	35

List of figures

Figure 1: Oilseed to vegetable oil regional value chain.....	9
Figure 2: Production of soybean (left) and sunflower-seed (right)	12
Figure 3: Trade of soybean (left) and soybean oilcake (right).....	13
Figure 4: Trade balances for refined soybean (left) and sunflower oil (right)	14
Figure 5: Trade balances of crude palm oil	15
Figure 6: Trade balances for refined palm oil	16
Figure 7: Consumer prices of cooking oil (including sunflower oil for selected countries) excluding VAT.....	17
Figure 8: Consumer prices of blended vegetable oil in Zambia against input and production costs, excluding VAT.....	18
Figure 9: Consumer prices of blended vegetable oil in Malawi against input and production costs, excluding VAT where relevant	19
Figure 10: Consumer prices of cooking oil in Kenya against input & production costs, excluding VAT.....	20

List of tables

Table 1: Approximate demand for vegetable oil by country, and main sources of supply	11
Table 2: Main companies in East African countries, refining capacity in thousand Mt of oil, per annum.....	20
Table 3: Production capacities of the main companies, by oil (and volume of beans crushed, thousand Mt per annum)	21

1 Introduction

1.1 Overview

African countries continue to be net food importers while having the potential for substantially greater agricultural production. In addition, food in African cities is expensive as prices have been found to be generally much higher than in other developing regions in the world (Tshabalala and Roberts, 2022; Paremoer, 2021; Allen, 2017). While Russia's invasion of Ukraine has caused global food price increases, the food price hikes in many African countries, including in East and Southern Africa (ESA), have been much greater than the global increases and have been sustained during 2022 and into 2023 despite decreases at the global level. At the same time, climate change is forecast to make access to food increasingly difficult, as seen over 2020 to 2022 with the extreme drought in the Horn of Africa and East Africa.¹

Against this backdrop, regional markets need to work well, including for small and medium-scale farmers, traders and agro-processors. Ongoing work on the African Market Observatory (AMO) finds that markets are not working well across the ESA region with farmers receiving low prices for the produce while prices in consuming cities are unjustifiably high (Roberts and Tshabalala, 2022; Nsomba et al, 2022a).² Shocks such as conflict and climate change exacerbate these market outcomes. This paper seeks to further investigate rising prices of vegetable oil in selected COMESA member states, namely, Kenya, Uganda, Rwanda, Malawi, Zambia, Zimbabwe and the DRC.

The production of vegetable oil in the ESA region originates from two main sources: oilseeds and the fruit of oil palm trees. Vegetable oil production and use amongst the studied COMESA countries is typically split by region, given the growing conditions and availability of these inputs. For the countries in the southern part of the region (in this paper, Malawi, Zambia and Zimbabwe are covered), soybeans are the main input for vegetable oil production, given the favourable growing conditions and rising production levels. There are also some levels of imports of palm oil, used to blend with soybean oil to produce blended vegetable oil. In addition, sunflower and cottonseed have been earmarked as key inputs into production, however, low production levels and difficulties with seed varieties has meant that production has predominantly focused on soybeans.

In the eastern part of the region (including Kenya and Rwanda covered in this paper), production levels of oilseeds are much lower. In these countries, crude palm oil is the main input into vegetable oil production. Globally, the bulk of palm oil is produced by Malaysia and Indonesia, from which these east African countries import through the port of Mombasa. Therefore, in the case of east Africa, global oil prices and import costs form part of the cost build-up of production. This means the region is susceptible to global economic and supply shocks as far as they affect the price of crude palm oil.

The report is structured as follows. Section 1.2 sets out the approach of the research and section 1.3 provides an introduction to competition issues in a regional context and details the underlying literature and theories of harm applied in the analysis. Section 2 describes the

¹ This was under La Niña conditions, while the El Niño for the 2023/2024 season is predicted to lead to dry weather conditions and severe drought in southern Africa and floods in East Africa.

² See www.competition.org.za/africanmarketobservatory

structure of the vegetable oil value chain by region, considers apparent levels of demand, and reviews trade and production data. An assessment of market outcomes in terms of prices, market structure and market dynamics is provided in section 3, followed by analysis of competition issues in section 4. Section 5 concludes and draws implications.

1.2 Approach

The study draws on literature on competition, trade and regional integration as a basis for analysis, with a focus on market structure and power, theories of coordination and barriers to entry. The paper also provides a brief overview of these areas of literature in section 1.3 to enable the identification of whether there are potential competition issues in the value chain that require attention and interventions.

The main data used in this paper is trade data (by volume and value) and price data. Trade data is sourced from the Trade Map portal of official data. Data is also sourced from statistics authorities and other relevant departments in the countries, in which interviews were conducted.

Semi-structured interviews were conducted in seven COMESA member states between March and June 2023. In each country, contacts were made with government departments, farmers and producer associations, NGOs and market participants. The views expressed through these interviews have been anonymized in the interest of confidentiality. In preparation for the interviews, a general questionnaire was provided to interviewees (see the appendix for the topic guide provided for the interviews).

1.3 Market structure, market power and barriers to entry in regional markets

In regions like southern and east Africa, composed of many small economies with relatively small domestic markets and often not well-integrated into the global economy, regional integration enables producers to realise greater economies of scale and to benefit from the establishment of shared infrastructures. However, while regional integration allows for the removal of trade barriers for increased trade, there is also scope for anticompetitive conduct which erode the benefits of integration. This is possible where there is substantial market power in concentrated markets where firms choose not to compete but rather divide markets and set prices.

The power and interests of large firms shape economic development as they can make investments required in large-scale productive capacity. At the same time, where there are high levels of concentration, which are observed in the vegetable oil value chain across the region, large firms will tend to have market power (Motta, 2004; Roberts, 2016). Market power is defined as the ability of firm(s) to unilaterally or jointly set prices to earn supra-competitive profits. Given that efficiencies and competitiveness in small economies is dependent on achieving economies of scale and scope, the outcomes in markets when high levels of concentration prevail depend on whether firms compete or coordinate in regional markets.

Analysis of trade flows allows an inference of how wide geographic markets through assessing are whether imports impose a competition constraint on the decisions firms make in terms of their production and pricing decisions. In defining a relevant geographic market, the focus is on identifying alternative sources of supply, within and across borders, to meet consumer demand and constrain the potential market power of firms (Motta, 2004). For example, if there

is a domestic monopolist, its market power maybe constrained by imports from a competitor in a neighbouring country. However, where the same companies operate across borders, market shares are likely to be high when viewed at a regional level. This means that contraventions of competition rules, such as coordinated conduct, are also likely to be regional in their nature.

As a starting point in the analysis, while deep sea imported inputs play a significant role at least in the east African context, the study also observes cross-border trade flows within the region by few firms. Deep sea imports therefore do not negate important competition dynamics within the COMESA region. For example, the main vegetable oil refiners in East Africa located in Kenya also supply countries in the region such as Uganda, Rwanda and Burundi, in terms of both crude and refined palm oil.³

In the case of the studied southern African countries, soybeans are produced predominantly in Malawi and Zambia and traded into Zimbabwe (as well as other southern African countries). A regional perspective is therefore essential. For the most part trade is typically carried out by few large traders, some of which are vertically integrated into oil production.

Given the nature of the economies and the structure of the vegetable oil value chain, the study assesses competition in oligopolistic markets, specifically the factors and strategies that would provide firms with the ability to exert their market power. The study considers two main areas of literature in this regard. First, theories of coordination, where instead of competing to offer low prices and good quality products to attract customers, firms can collude to maximise their joint profits. Firms can explicitly or tacitly collude, through measures such as information exchange. They can also divide geographic markets to undermine competition. These arrangements can be facilitated through industry associations, vertical integration and cross-ownership (through which firm activity can be monitored much more easily).

These strategies are even more effective where there are substantial barriers to entry in the market, which keep out entrants and undermine smaller rivals, resulting in sustained supra-competitive profits. Barriers to entry create and reinforce market power held by large incumbent firms and tend to limit participation, given that rivals will not enter markets if it is difficult, time-consuming and costly. Understanding the constraints that entrants face in entering and expanding their businesses is thus essential.

There are generally two types of barriers to entry that exist: structural and strategic. Structural barriers arise primarily from market structure and have been described as important characteristics that hamper market entry by potential competitors (Lutz et al., 2010). Structural barriers include, but are not limited to, natural barriers (e.g., physical location), sunk costs, switching costs, economies of scale as well as network effects. In addition, large firms can leverage these features through arrangements which create strategic barriers to entry, which may be created through conduct by firms (Geroski et al., 1990; Banda et al., 2015). This behavior can include aggressive post-entry behavior to deter further entry (such as an over-investment in capacity) and raising rivals' costs and/or revenues (such as making key inputs more expensive).

Therefore, while market characteristics are important in determining market structure and participation, this paper emphasizes simultaneously the importance of firm strategy and the

³ Interview with vegetable oil producer in Kenya, 19 April 2023.

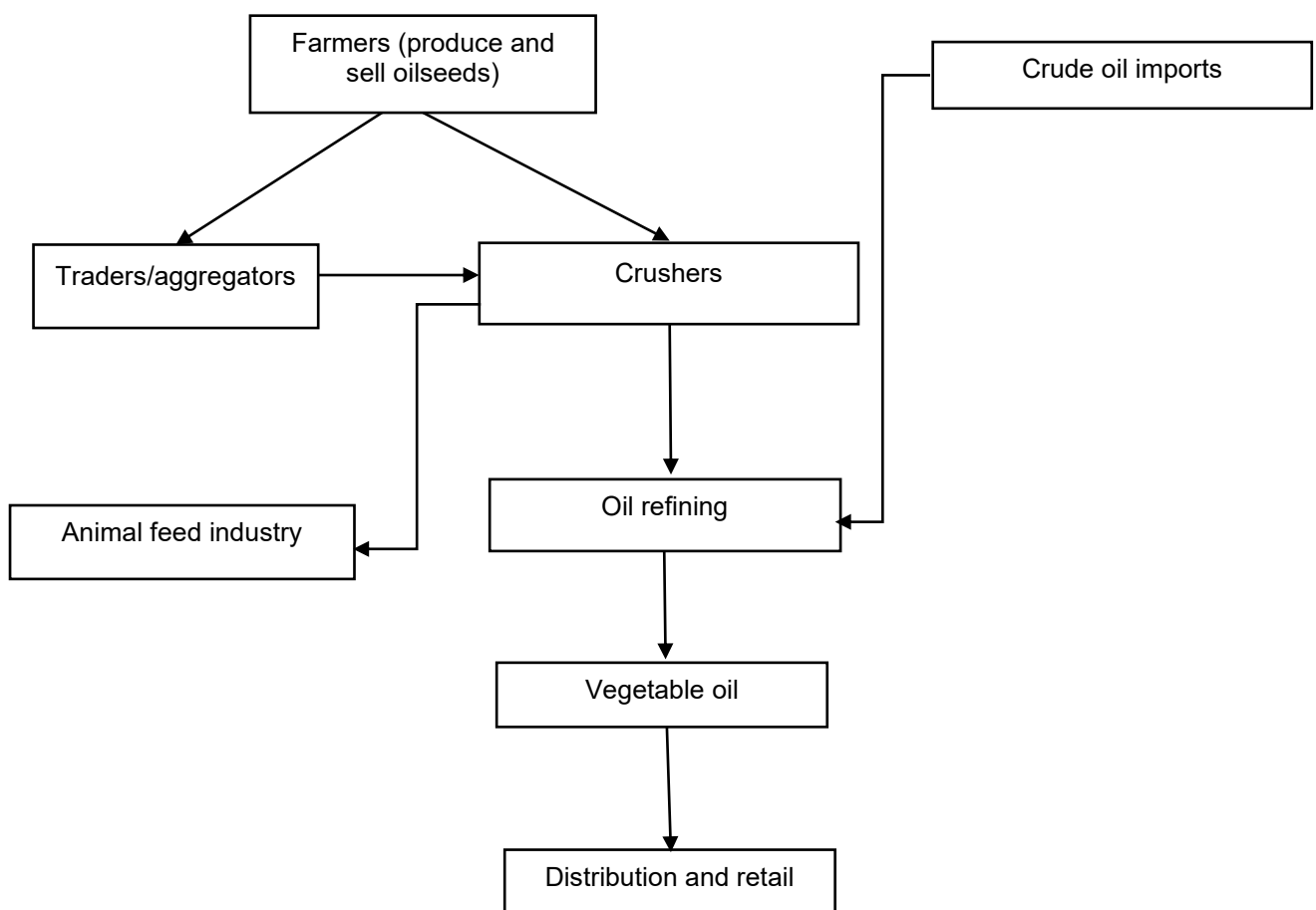
impact this might have on market outcomes. Strategic barriers need to be considered, as they may be relevant where there are markets characterized by large vertically integrated firms that typically have an incentive to protect their share in markets through attempting to frustrate entry at another level of the market (Banda et al., 2015; Nsomba, 2021).

2 Vegetable oil supply and demand in East and Southern Africa

2.1 The vegetable oil value chain

The vegetable oil value chain consists of three main levels: oilseed production and imports of crude oil, oilseed crushing for crude oil extraction, and crude oil refining to produce refined vegetable oil for household use. As described above, vegetable oil is produced from various oilseeds, which have different characteristics in terms of oil content.

Figure 1: Oilseed to vegetable oil regional value chain



Source: Compiled by authors from interviews

In Southern Africa for the countries that are part of the research, the main oilseed used for vegetable oil production is soybean, with some vegetable oil extracted from sunflower and cotton seed. However, for the purposes of analysis in this paper, the focus is on soybean as the main input in production and imported crude palm oil as the main input in east Africa.

In Malawi, Zambia and Zimbabwe soybeans are grown by small and medium-scale farmers who sell their produce to traders and processors at the harvest time. The earnings to farmers have been found to be low given low levels of price discovery (lack of information), limited access to storage and efficient transport rates. This forces farmers to sell at the harvest time while large traders can buy up stock, store and sell at more favourable prices (Nsomba et al., 2022a). Crushing of oilseeds is conducted in commercial large-scale facilities, and the main companies tend to be vertically integrated into vegetable oil production, animal feed production or both (Chisoro-Dube et al., 2018; Nsomba et al., 2022b).

The seeds are cleaned and graded before they are delivered to silos to be stored for processing. Ample storage facilities therefore play a critical role in being able to by-pass volatile pricing in inputs. Seeds are processed using either chemical or mechanical extraction methods.⁴ Crude oil is then refined through several stages to remove impurities and by-products (which are used in the production of soaps and detergents).

Oil content differs for various oilseed varieties. For instance, the sunflower seed generally yields 37-40% oil and 40% oilcake while the soybean seed yields 18% oil and 75-80% oilcake.⁵ Together with these characteristics, the links into the two value chains means that constraints to absorb increased seed production in one industry can in part affect the development of the other. For example, if the feed industry cannot absorb increased oilcake production (or if there are constraints to exports of oilcake), growth in the oilseed to vegetable oil value chain can become constrained.

Vegetable oil production in the southern part of Africa is also supplemented by imports of soyabean crude oil from countries such as South Africa and Argentina. The imported crude oil is refined for distribution and for sale to retail markets.

In Kenya and Rwanda, the vegetable oil value chain starts from the importation of crude palm oil for refining and sale in the retail market. DRC grows the palm fruit which it processes into vegetable oil but local production is not sufficient and this is supplemented with imports of crude palm oil for processing. In Uganda, in addition to the importation of crude palm oil for refining, sunflower is locally grown and crushed for vegetable oil.

2.2 Apparent demand for vegetable oil by country and main sources

As a staple food, vegetable oil is consumed in substantial quantities in all countries. The demand is met by various sources including local production, local refining of imported crude oil, and importation of refined oil (Table 1). Countries with production have differing levels of capacity utilisation, while there are also exports meaning production may exceed local demand. The basic industry facts are summarised by country from the available data and interviews. This highlights the reliance on imported crude and refined palm oil in Kenya, Rwanda and Uganda, while there are major crushing and refining plants for oil seeds in Zambia and Malawi along with some imports (Table 1). Data is less clear for the DRC, however, locally produced palm oil is significant.

⁴ Interview with oilseed processor in Zambia, 22 March 2023.

⁵ Interview with oilseed processor in Zambia, 22 March 2023.

Table 1: Approximate demand for vegetable oil by country, and main sources of supply

Country (population)	Apparent demand, th tonnes of oil	Main products	Oil production capacity, from crushing and refining; Imports & exports	Main sources
Kenya (53mn)	750-800 ⁶	Palm oil	Refining capacity for 1.5mn; imports of 900 th crude palm being refined, with exports of refined oil	Crude oil imports from Malaysia & Indonesia, local refining
DRC (96mn)	300	Palm oil	Refining of locally produced palm for 250 th plus imports of refined palm and sunflower	Local production, Malaysia & Indonesia
Rwanda (13mn)	90-100	Palm oil	Refined imports of palm oil (80 th) and refined sunflower (10-20 th)	Mainly refined oil imports from Kenya
Uganda (46mn)	400-500	Palm oil Sunflower oil	Imports of crude palm oil and refined palm oil, 300-400 th Crushing capacity of sunflower & soy for ~40 th oil, refined sunflower exports	Crude oil imports from Malaysia & Indonesia; Local seed production, crushing & refining
Zimbabwe (16mn)	150-200	Soybean oil	Crushing capacity ~60 th oil Imports of around 150 th of refined oil	Seed imports from SA, Zambia, Malawi, local crushing & refining
Zambia (20mn)	150-200	Soybean oil	Crushing capacity ~170 th oil; production at half capacity ~85 th Imports of around 100 th t of refined and crude oil	Local seed production, crushing & refining
Malawi (20mn)	100-150	Soybean oil	Crushing capacity ~85 th oil, (approx 80% capacity) Imports of around 50 th of refined and crude oil	Local seed production, crushing & refining

Source: Compiled from industry interviews, trade data and company information

As the products are traded, from the agricultural inputs such as soybeans, to crude and refined oil, markets have important cross-border dimensions and a regional assessment is essential. We consider the trade balances for the main products along with information on production.

2.3 Trade, geographic markets & product substitutability in inputs and final products

Given the structure of the vegetable oil value chain, there are questions around substitutability between different vegetable oils in terms of the upstream production and in terms of downstream supply to customers. Can producers easily switch between producing different types of oils, and are consumers able to substitute one type of oil for another? While the east African countries studied predominantly produce refined palm oil and the southern African countries predominantly produce refined soybean oil, interviews have indicated that the capabilities of oilseed crushers and oil refiners can allow for crushing and refining of different types of oilseeds and crude oils.⁷ The paper therefore considers the production and trade of the main inputs and refined soybean and palm oil together although market definition would require more detailed data than available for the paper. These product differentiations and

⁶ Industry interviews.

⁷ Interview with oilseed processor in Malawi, 30 March 2023; Interview with oilseed processor in Malawi, 29 March 2023; Interview with oilseed processor in Zambia, 22 March 2023; Interview with oilseed processor in Zimbabwe, 8 May 2023; Interview with oil refiner, 20 April 2023.

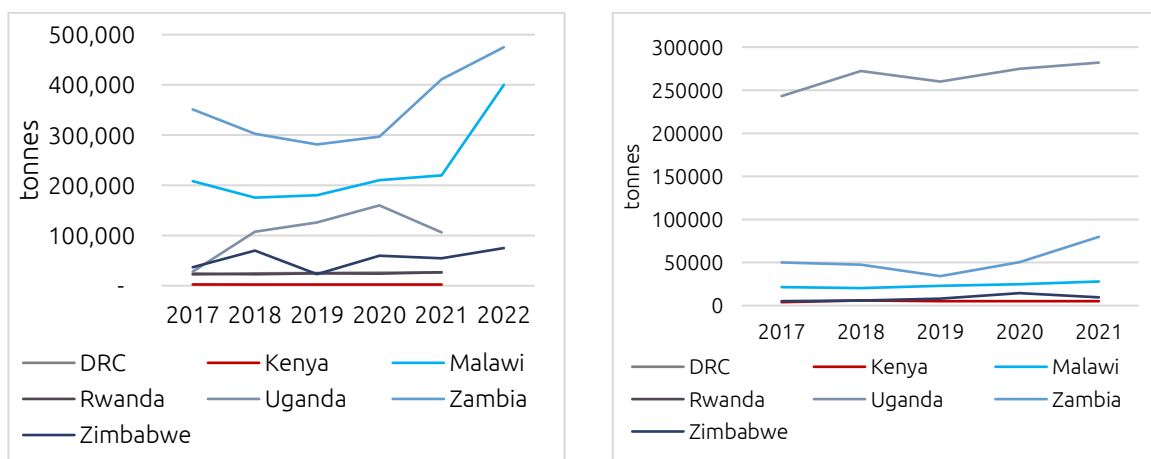
trade dynamics are crucial for product and geographic market definition, which in turn can allow for the relevant competition analysis.

Production and trade of soybeans and soybean oil

From the interviews conducted in Malawi, Zambia and Zimbabwe, producers indicated that vegetable oil can be produced from oilseeds such as sunflower and cotton, however, soybeans are produced in much larger quantities.⁸ The majority of oil production is skewed towards soybeans, given that Malawi and Zambia have increased soybean production (Figure 2) with Zambia’s production growing from approximately 200,000 tonnes per annum in 2013 to an estimated 750,000 tonnes in 2023. This has been met with investments in increasing crushing capacity in Malawi, Zambia and Zimbabwe (see section 5, and in part a response to the growing local and regional poultry industries, Nsomba et al., 2022b).

Sunflower seeds are a good source for vegetable oil production given the high oil content but have not received extensive policy support to encourage farmers to expand production such as through improved seed varieties.⁹ There has been increasing production in Zambia (Figure 2), which is now estimated at 80,000 tonnes as of 2021 after production in 2019 was low at 34,000 tonnes. Malawi and Zimbabwe are also not substantial producers, with Malawi having produced 28,000 tonnes in 2021 and Zimbabwe 9,400 tonnes in the same year.

Figure 2: Production of soybean (left) and sunflower-seed (right)



Source: FAOSTAT

Uganda, however, is a significant sunflower seed producer, and produced just over 280,000 tonnes in 2021. As discussed below, this has brought in interesting dynamics in terms of oil production, where Uganda has switched from a producer of refined palm vegetable oil to a refined sunflower oil producer. This illustrates a degree of substitutability of the products from both the producer and consumer perspectives.

Across the three southern African countries, cotton production was historically high with extensive policy support from the governments. However, production has drastically fluctuated

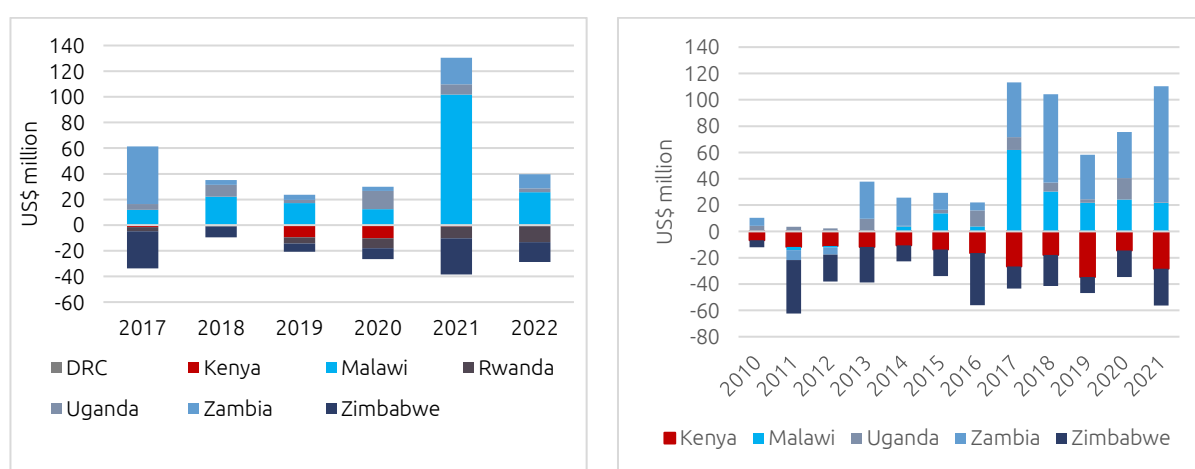
⁸ Interview with oilseed processor in Malawi, 30 March 2023; Interview with oilseed processor in Malawi, 29 March 2023; Interview with oilseed processor in Zambia, 22 March 2023; Interview with oilseed processor in Zimbabwe, 8 May 2023.

⁹ Interview with oil processor in Zimbabwe, 8 May 2023; interview with interview with oilseed crushers association, 19 March 2023; interview with oilseed farmer in Malawi, 31 March 2023.

across the three countries. For example, in Zambia, cotton seed production has declined from around 200,000 tonnes per annum to just over 25,000 tonnes over the last 10 years.¹⁰

Oilseed crushers have over the last five years moved to installing or renovating production capacity to allow for crushing of various types of seeds, with a combination of mechanical crushing and solvent extraction.¹¹ The increases in crushing capacity in Malawi and Zambia have meant there is more trade in oilcake than there is in soybeans (Figure 3). Malawi, however, exported a considerable amount of soybeans in 2021, including to deep sea markets. Malawi exported 63,000 tonnes of soybean to Tanzania, while Zambia's exports to Tanzania were entirely of oilcake (Nsomba and Roberts, 2023). Malawi also exported around 50,000 tonnes of soybeans to India, with just under the same volume to the UAE (Nsomba and Roberts, 2023). This has raised questions around the decisions of firms to export to deep sea markets in the presence of regional demand.

Figure 3: Trade of soybean (left) and soybean oilcake (right)



Source: TradeMap

There are a few major companies operating across the region that are involved in trading, processing and refining of soybeans, and in some cases have increased their capacity through mergers across the region. The decisions and reach of these countries are therefore regional in nature. Analysis done by Nsomba and Roberts (2023) shows evidence that exports into deep sea markets were in fact an avenue for processors and traders to create an artificial scarcity in Malawi, which drove up prices of soybean and oilcake. The question relevant for this research, is how this impacts on the supply and pricing of vegetable oil, as a by-product of soybean crushing activities.

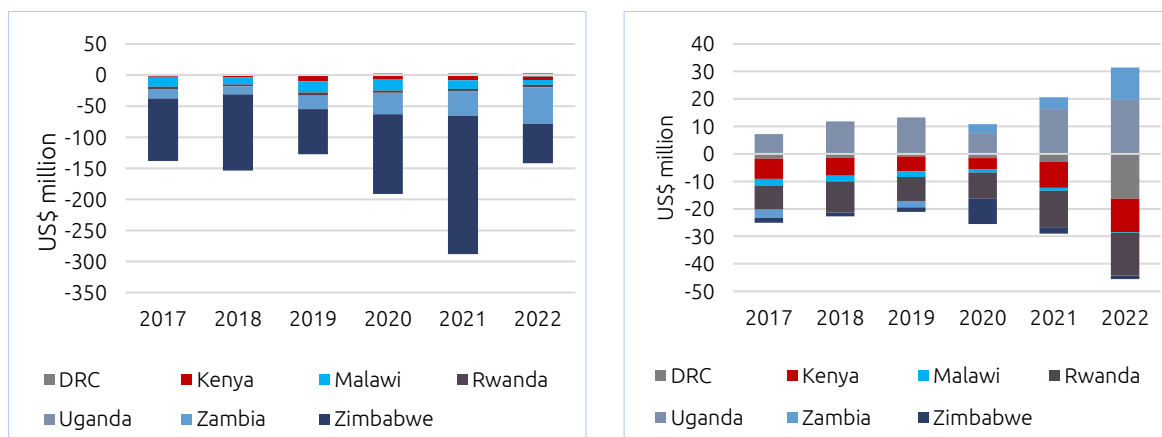
Malawi and Zambia are the largest producers of soybeans, and traders of soybeans and oilcake. The bulk of trade takes place in the form of oilcake, which is a product of the processors and is used as an input for animal feed production. Zimbabwe is a consistent net importer of soybeans, which originate from Malawi and Zambia. All three countries are also net importers of refined soybean oil (Figure 4). Malawi's imports of refined oil have decreased from US\$14 million in 2021 to US\$8 million in 2022. Malawi's decrease in imports of refined

¹⁰ Interview with oilseed processor in Zambia, 23 March 2023; interview with oilseed crushers association in Zambia, 19 March 2023.

¹¹ Interview with oil processor in Zimbabwe, 8 May 2023; interview with interview with oilseed crushers association, 19 March 2023.

soybean oil have also happened in the context of declining imports of refined sunflower oil. This could be explained by increased local production of refined soybean oil given expanded production and crushing capacity.

Figure 4: Trade balances for refined soybean (left) and sunflower oil (right)



Source: TradeMap

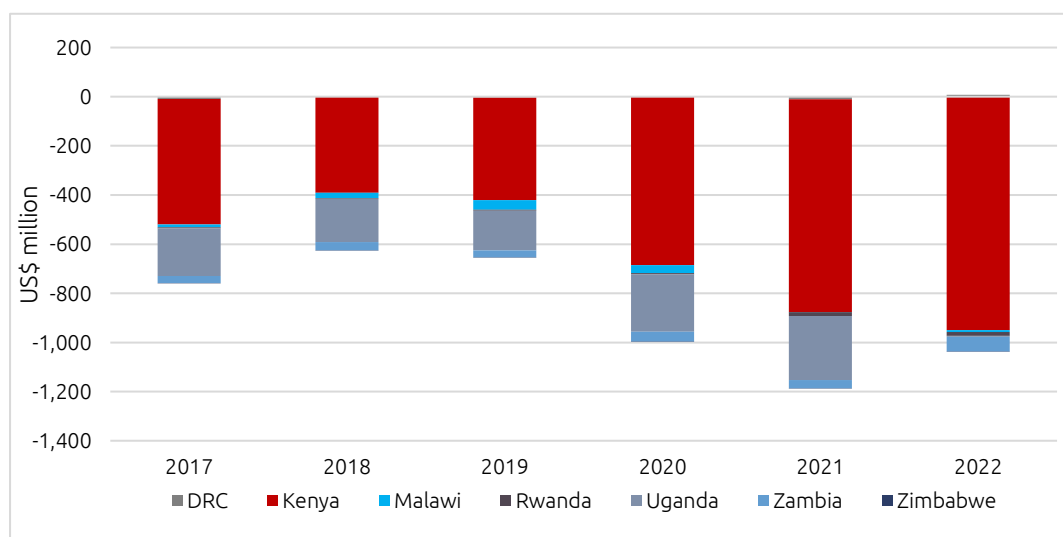
Zambia and Zimbabwe are relatively substantial importers, with Zambian net imports increasing from US\$39 million in 2021 to US\$58 million in 2022, despite higher soybean production levels. Increasing levels of imports could be explained by high local prices, assisted by the periodic removal of VAT on imports, as a policy response to local price hikes. In the case of Zimbabwe, however, a reduction in imports of refined soybean oil reflects policy measures to protect the local industry.

Production and trade of crude and refined palm oil

Except for Uganda and parts of Tanzania, east Africa does not have substantial production of oilseeds, and therefore produces vegetable oil predominantly from crude palm oil, which is imported from Indonesia and Malaysia.¹² Imports take place through Mombasa by traders and the large refiners. Large and integrated refiners have operations across the east African region and supply and trade refined palm oil across the east African region, with the bulk of the refining capacity being located in Kenya (see section 4).

Kenya’s net imports of crude palm oil has increased substantially between 2019 and 2022 from US\$419 million to US\$950 million (Figure 5). Uganda has also imported although not in 2022, which appears to reflect Uganda’s increased sunflower seed production and resulting increase in the local supply of crude sunflower oil. This is indicative of how crude palm oil and sunflower oil (and likely soybean oil) are close substitutes from the production perspective.

¹² Interview with oil refiner in Kenya, 20 April 2023.

Figure 5: Trade balances of crude palm oil

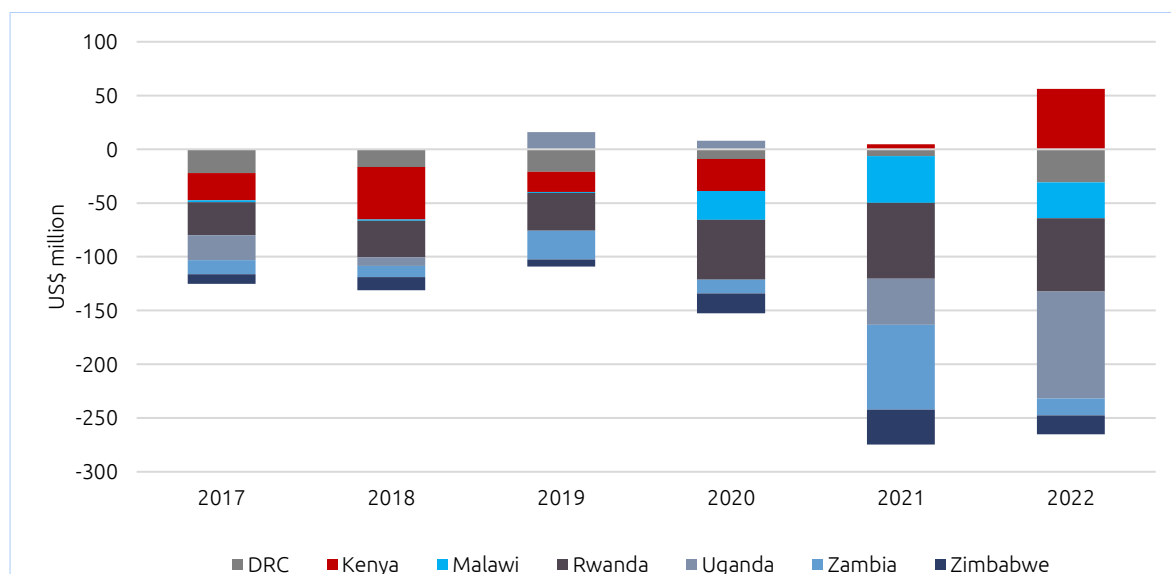
Source: TradeMap

Zambia's imports of crude palm oil have more than doubled between 2017 and 2022, but from a very low base of US\$28 million to US\$60 million. Malawi, on the other hand, imported just US\$7 million in the year 2022. While refining capabilities between crude palm oil and crude soybean oil do not vary substantially, it is not clear what proportions of crude palm oil are required to produce blended vegetable oil. For instance, in the case of Malawi and Zambia, where oil refiners blend palm oil and soybean oil, it is not clear what proportions of the two oils are required. What is clear is that soybean oil is still the predominant input where blended oil is concerned.¹³

The regional trade of refined palm oil is reflected in Kenya's net export status in 2021 and 2022, while Rwanda is a consistent net importer, which is further substantiated through interviews conducted (Figure 6).¹⁴ Uganda's trade in refined palm oil has oscillated between net imports and net exports between 2017 and 2022 and have moved in line with the levels of imports of crude palm oil. For example, refined oil imports increased in 2022 where imports of crude palm oil decreased substantially. This raises an interesting question around the decisions of large integrated traders and refiners with regional reach regarding the choice to supply in vegetable oil.

¹³ Interview with oil refiner in Zimbabwe, 8 May 2023; interview with oil refiner in Malawi, 30 March 2023.

¹⁴ Interview with oil refiner in Kenya, 19 April 2023; interview with oil refiner in Kenya, 20 April 2023.

Figure 6: Trade balances for refined palm oil

Source: TradeMap

3 Market outcomes, structure and major firms

This section provides an analysis of market outcomes in the focus countries across the region. The section begins with considering the prices of vegetable oil at the retail level in selected countries for the period January 2018 to March 2023. It then sets out the regional structure of the markets, with country reviews and a profile of the major firms. This provides the basis for the assessment of competition issues in section 4, including a review of mergers across the region as notified to the CCC and NCAs.

Generally, the markets are highly concentrated and oligopolistic in nature with a small number of major oilseed crushers in the southern region, and a small number of crude oil importers and refiners in the eastern part.

3.1 Pricing

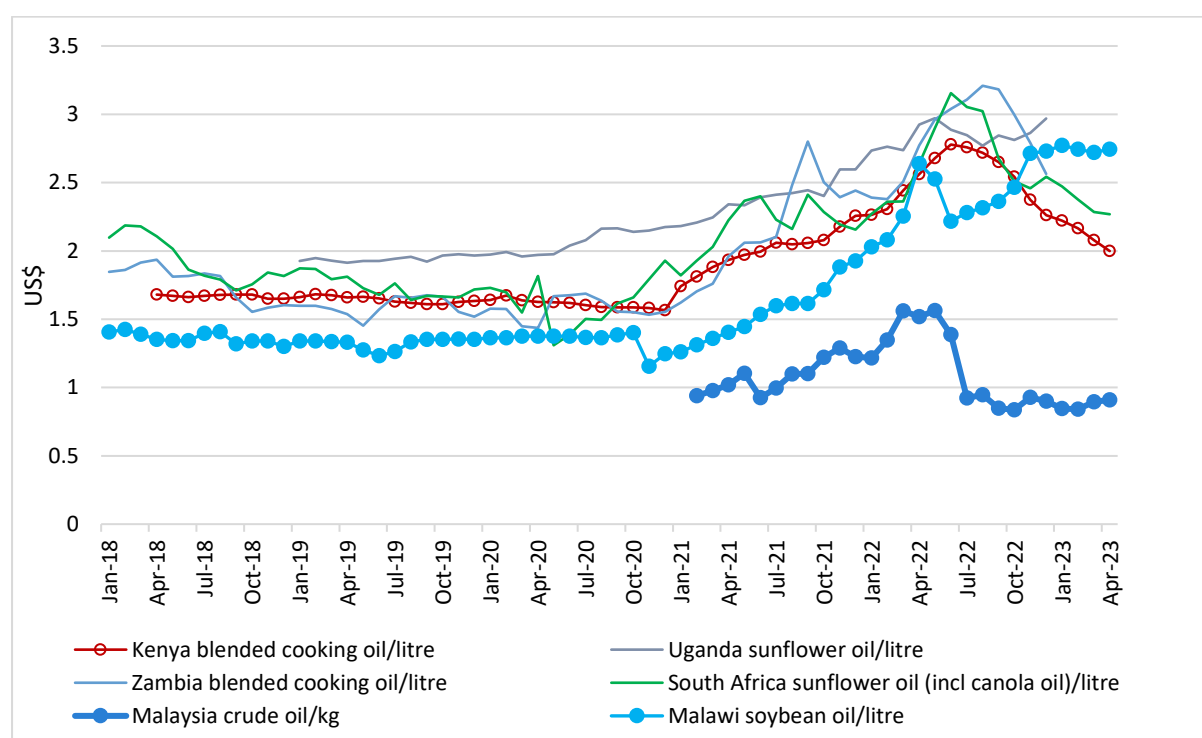
The study considers consumer prices of vegetable oil across selected countries between January 2018 and March 2023 for the specifications on which the data is available (Figure 7). For various reasons, pricing data for Zimbabwe, the DRC and Rwanda is not available.

The paper includes a comparison with sunflower oil in South Africa, and against the free-on-board export prices of crude palm oil from Malaysia (with data only available from January 2021 to March 2023). Palm oil is relevant as the major input for refined oil in the East African countries, as well as being an input into the blended oil in other countries.

Over the years 2018 to the end of 2020, vegetable oil prices (excluding VAT) in the countries ranged between US\$1.5 and US\$2 per litre. In fact, for the majority of 2019 and 2020, prices in Kenya, Zambia and South Africa were in line with each other at just over US\$1.6 per litre while Ugandan prices were somewhat higher and Malawian prices lower at under US\$1.5 per litre.

Prices increased sharply from the beginning of 2021. In Zambia prices doubled, from \$1.50 to over \$3/litre, while Kenyan prices peaked at \$2.78/litre, and in Uganda prices increased to \$3/litre but from a higher starting point of \$2/litre. Similar price increases were recorded in South Africa, to over \$3. Prices in Malawi increased from a much lower base by 100%, reaching the levels of Kenya, South Africa and Zambia by April 2022. These increases happened in the context of rising global crude palm oil prices and sea freight costs. However, the increases were larger than increases in crude palm prices and, while crude palm oil prices decreased after the first quarter of 2022, prices in the region remained high through to the beginning of 2023, meaning a much bigger gap between the consumer prices and this major input cost. By April 2023, prices in Malawi had continued to increase, while we can observe some levels of decreases in the other observed countries.

Figure 7: Consumer prices of cooking oil (including sunflower oil for selected countries) excluding VAT



Source: Uganda prices from Uganda Bureau of Statistics, South Africa sunflower oil prices are from Stats SA, Zambia cooking oil prices from the Zambia Statistics Agency, Zambia soybean prices are from the African Market Observatory. Kenya Statistics from the Kenya National Bureau of Statistics. Malawi prices are from the National Statistics Office. Crude palm oil prices from the Malaysia Palm Oil Board.

Notes: Prices from Kenya, Uganda and South Africa received as per litre, no conversions ratios were calculated for these. For Malawi, received per litre prices from two brands, these were averaged out. For Zambia, prices were received as 2.5 litres, these were converted to 1 litre prices using an average conversion ratio calculated from Uganda where prices were received as 1 litre, 2.5 litre and 5 litre. The ratio was also cross checked against prices collected in Zambia in the first quarter of 2023, where interviews collected prices between December 2022 and March 2023 in pack sizes of 1 litre and 2.5 litres. VAT in Malawi was removed on 1 July 2017 and reinstated on 3 November 2020. VAT was subsequently removed on 1 April 2022. VAT was therefore controlled for between November 2020 and March 2022.

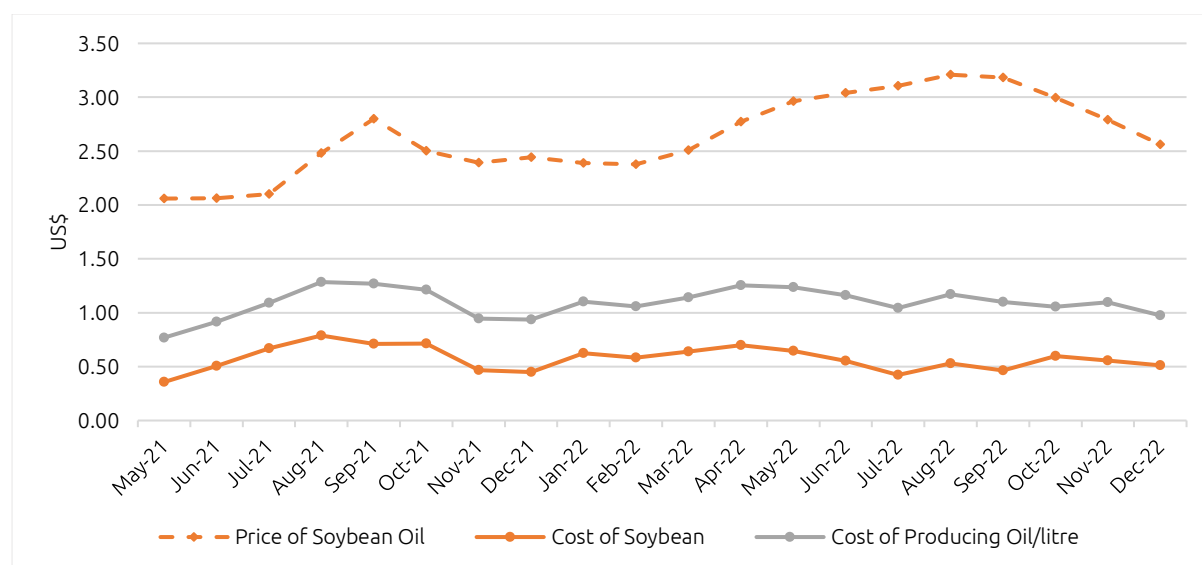
The higher price increases in the ESA region than in global markets suggest other regional factors need to be considered to understand the vegetable oil price increases. The paper

focuses in more detail on prices and costs in Zambia, Malawi and Kenya, drawing on information collected through interviews.

In Zambia the majority of oil is produced from soybeans which represent approximately 75-80% of the total vegetable oil production cost.¹⁵ The remainder of the production costs include labour, electricity, packaging, and distribution. Costs for storage and warehousing are considered to be sunk costs (particularly by the large producers) as these are once-off investments made at the time of the set-up of the production facilities.¹⁶

Oil is a co-product from soybeans which are processed primarily for the oilcake as an input for animal feed, while the oil is 17% by volume from the processing of soybeans. The price of soybeans in Zambia did increase from May to August 2021 (Figure 8) although it is important to note that the great majority of beans were purchased by the main traders and processors at the lower May price at the harvest (Nsomba et al., 2022; Nsomba and Roberts, 2023). The soybean price did not change substantially over the following 18 months and when all other variable costs are included there was no significant change over this period. The margin of the consumer price over the costs increased from around \$1.15 in mid-2021 to over \$2/litre in the third quarter of 2022 (Figure 8).

Figure 8: Consumer prices of blended vegetable oil in Zambia against input and production costs, excluding VAT



Source: Zambia Statistics Agency, African Market Observatory data and interviews in Zambia 20 – 24 March 2023
 Note: costs are calculated using soybean costs as the main cost component indicated to make up 80% of all production costs. To this we add labour 5%, electricity 10%, packaging, distribution and other sundries 5%.

The increase in margins by more than 70% were attributed by industry participants to various factors such as the depreciating value of the Zambian Kwacha, as well as the availability of crude soybean oil.¹⁷ However, the comparisons have been done in foreign currency terms meaning the depreciation is factored in. Despite having substantial net exports of soybeans,

¹⁵ Interview with industry association, 23 March 2023

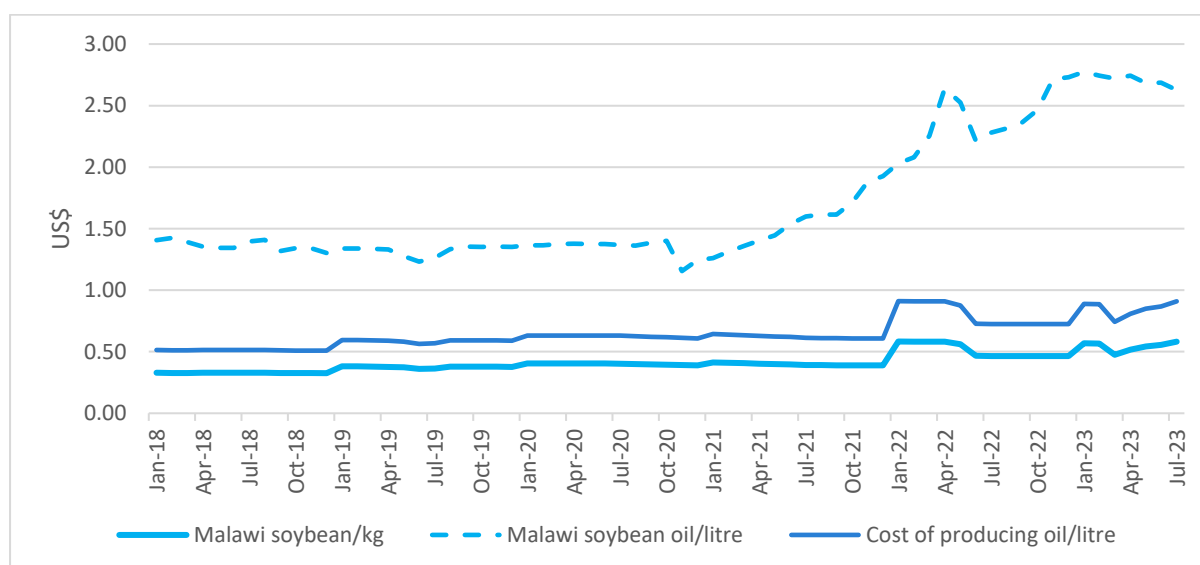
¹⁶ Interview with oil refiner, 22 March 2023.

¹⁷ Interview with oil refiner, 22 March 2023; interview with oil refiner 23 March 2023; interview with industry association, 23 March 2023.

Zambia is a small net importer of soybean and palm oil, which means it is relevant to consider the costs of these imports, as we do for Kenya.

The vegetable oil industry in Malawi is similar to that of Zambia, in that soybeans are the main input into production, with processors noting that soybeans account for 75% of vegetable oil production.¹⁸ There are also small and in fact decreasing imports of crude palm oil, which matches the growth in soybean production over the last three years. There have also been significant foreign currency fluctuations over the observed period, with the Malawian Kwacha subsequently being devalued by 25% in May 2022.¹⁹ This is an issue that was flagged by oil refiners.

Figure 9: Consumer prices of blended vegetable oil in Malawi against input and production costs, excluding VAT, where relevant



Source: Malawi National Statistics Office, African Market Observatory data and interviews in 2023

Note: costs are calculated using soybean costs as the main cost component indicated to make up approximately 75% of all production costs. To this we add 20% in costs inclusive of labour, electricity, packaging and distribution.

However, Malawi had a substantial increase in soybean production, together with exports in 2021 and 2022, as well as the largest component of production being locally sourced. Furthermore, the rise in vegetable oil prices in between January 2022 and January 2023 by over 100% is far beyond what can be explained by a devaluation. In fact, despite a slight rise in soybean prices, these prices remained relatively stable throughout the same period.

In Kenya imported crude palm oil represents the main cost, estimated to account for 80% of the total production costs.²⁰ Total variable costs were estimated by adding shipping to the international price, along with the additional processing costs from industry interviews (Figure 10). The increased consumer prices from January 2021 to March 2022 closely tracked increases in costs, as international crude palm oil prices increased from US\$0.93 per kg to US\$1.56 per kg, together with an increase in sea freight prices from November 2021 into 2022 by approximately 50%. However, by July 2022, prices of crude oil dropped by 40% and have remained at levels below prices in the first half of January 2021. However, prices of refined

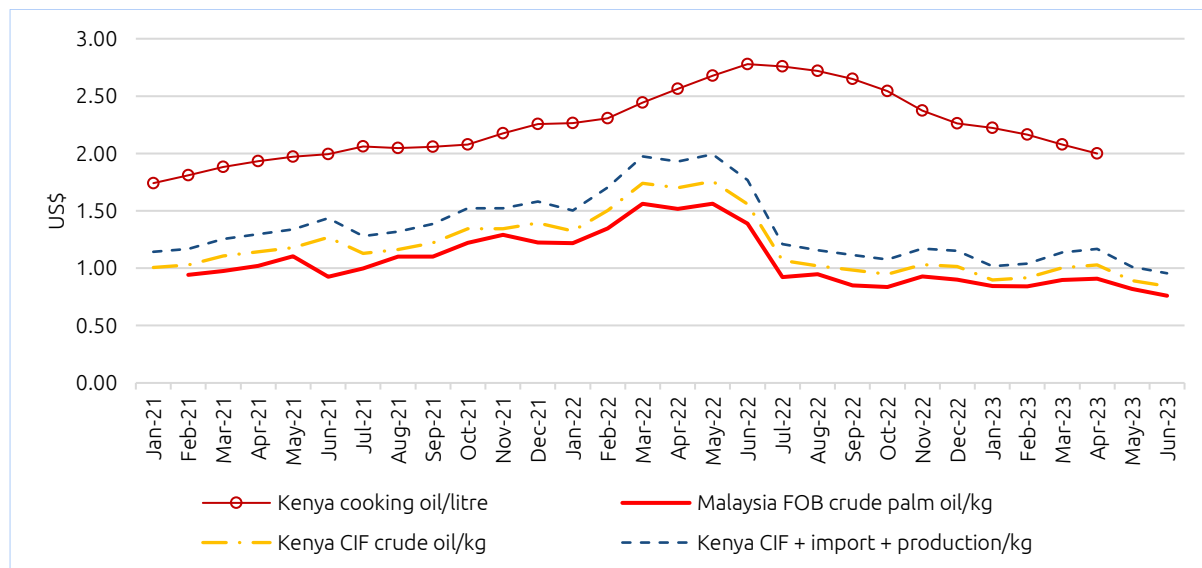
¹⁸ Interview with oil refiners, 29 March 2023.

¹⁹ Interview with oil refiners, 29 March 2023.

²⁰ Interview with oil refiner in Kenya, 19 April 2023; interview with oil refiner in Kenya, 20 April 2023.

cooking oil continued to increase and margins over costs in the second half of 2022 were more than double those of the previous 18 months.

Figure 10: Consumer prices of cooking oil in Kenya against input & production costs, excluding VAT



Source: Interviews in Kenya, UN Comtrade and Malaysia Palm Oil Board

Note: The cost calculation used Malaysia FOB crude oil prices as a basis, which was cited as 75-80% of production costs in interviews. We use sea freight costs collected from interviews for February, March and April 2023 and the Baltic dry index to calculate average sea freight costs dating back to January 2021. These were added to the FOB crude oil price to generate CIF crude oil prices landed in Kenya. To this we added other import costs obtained from interviews (railway development levy 2%, insurance 1% and import declaration 2%), all calculated on the CIF value of crude oil as well as additional production costs of electricity and fuel 8-10%, labour 3% and packaging 2%. Note that import costs are factored into production costs as 5% of production,

3.2 Market structure within and across countries

This section provides an overview of the main companies and production capacities, where available, in terms of refining of oil and processing of oil seeds. The companies operate at differing levels of capacity utilisation. In East Africa, Kenya has very substantial refining capacity of close to 1.5mn Mt of oil (Table 2) and exports of refined oil to other countries in the region. As in Kenya, there are five major companies in Uganda, albeit with lower capacities although we have not been able to estimate the individual company capacity levels. In Rwanda Mount Meru is the leading supplier. In each of Malawi, Zambia and Zimbabwe there are also around five major suppliers, producing mainly from crushing oilseeds. A few companies have operations across the selected countries: Mount Meru has facilities in five of the seven countries, Wilmar in four (including in various partnerships), and ETG also in four countries (see section 3.3 below).

Table 2: Main companies in East African countries, refining capacity in thousand Mt of oil, per annum

Kenya ²¹	Uganda	Rwanda
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²¹ This compares with recent estimate of market shares in Kenya by supply not capacity of: Bidco 42%; Kapa 21%, Menengai 15% and Pwani 11% (<https://www.africon.de/en/what-opportunities-exist-in-the-edible-oil-industry-in-kenya-slide-of-the-month-sotm-july/>)

Bidco/Wilmar, 450	Bidco/Wilmar, 78	Mount Meru, 72
Pwani Oil, 360	Pembe, 15	Kuyonja Distributors
Kapa, 400	Mukwano, 36 (90 sunflower & soy crushing capacity)	ETG Parrogate, 6 (as Agri Value Chain)
Gil Oil, 75	Mount Meru	
Menengai Oil Refiners, 100	Nayo Agro	

Source: Interviews in Kenya, Uganda and Rwanda

Note: italics indicate actual oil production rather than capacity

Table 3: Production capacities of the main companies, by oil (and volume of beans crushed, thousand Mt per annum)

Malawi	Zambia	Zimbabwe	DRC
ETG/Parrogate, 17 (100 soy)	Wilmar/Global, 61 (360 crushing)	ETG/Parrogate, 14 (80 soy)	Palmco
Sunseed Oil, 31 (180 soy)	ETG/Parrogate, 41 (crushing of 240, soy and some sunflower, cotton, palm)	Surface Wilmar, 17 (100 soy)	Congo Oil
Mount Meru, 25 (150 soy)	Mount Meru, 60 (128 soy; 84 sunflower/cotton; 73 palm)	Mount Meru, 13 (75 soy and other seed)	Marsayco
Capital Oil Refiners, 12 (70 soy)	Alliance Ginneries, 17 (100 cotton & other)	Can Grow, 8 (50 soy)	
	Sunglobe/Sunseed, 9 (55 soybean)	United Refineries, 15 (90 soy)	

Source: Interviews in Malawi, Zambia and Zimbabwe

Drawing from interviews conducted across the selected countries, the section below reviews the market structure and vegetable oil value chains by country beginning with the East African countries.

3.2.1 East Africa

Kenya

With almost no production of oilseeds such as sunflower and soybean, Kenya's vegetable oil production is reliant on crude palm oil imports. The port of Mombasa provides for a gateway for imports of crude palm oil from Indonesia and Malaysia.²² Large scale refiners therefore typically have operations (through warehousing) in Mombasa to facilitate inhouse transportation of crude oil from the port to their production facilities in inland areas such as in Nairobi. The vegetable oil market is characterised by the ability of producers to import and refine crude palm oil. As will be highlighted below, vertical integration into transport and logistics, access to large capital outlays to facilitate imports and working capital, as well as access to retail markets, all play crucial roles in the ability of firms to remain competitive.

The paper identifies the five main vegetable oil refiners, the largest of which operate across east Africa with vertically integrated operations. There are smaller firms that produce small volumes of vegetable oil. The total installed refining capacity is estimated to be 1.5 million

²² Interview with vegetable oil producer in Kenya, 20 April 2023.

tonnes per annum, with capacity utilisation being estimated between 850 000 to 900 000 tonne per annum (consistent with the imports of crude palm oil).²³ The main producers listed in Table 3 are estimated to hold approximately 90% of the production capacity.²⁴

As crude palm oil is the main input into production in Kenya, prices on the international market in part dictate the costs of producing refined vegetable oil. Producers noted increases in crude palm oil prices between pre-pandemic levels and 2022. In mid-2019, a ton of crude palm oil was recorded at \$700 per ton.²⁵ By August of 2022, prices had risen to \$1850 per ton.²⁶ In April of 2023, price had come down to \$1100 per ton.²⁷

There are various costs that importers have to meet together with the actual price of crude oil. These include transport costs, an import declaration fee of 3.5% on the FOB value of the imports, a railway development fee of 2% and 16% VAT on the CIF value of imported goods.²⁸ There is also a lead time of 30-45 days on the importation of crude palm oil. Producers noted that it is much cheaper when transportation is handled in house. A producer with integrated transport and logistics functions benchmarked their transport costs against prices charged by third parties and found that third parties typically charge 3250Ksh/Mt (US\$24) from Mombasa to Nairobi or 400Ksh more per tonne than it costs them to transport through their inhouse transport.²⁹

Offtake agreements, access to major retailers, as well as the agro-processing industry are the main channels to access markets, with some portion of sales of the main producers going into more informal retail markets.³⁰ The interviewed producers explained that approximately 60-70% of their production is geared towards formal retail channels and industrial manufacturers. On the other hand, some other producers have opted to change to contract production where refining is conducted on behalf of importers and distributors of refined vegetable oil, citing exchange rate fluctuations and high prices of crude palm oil as the main contributing factors.³¹ Producing vegetable oil on contract has meant that it is easier to plan production.

Rwanda

Cooking oil is among the top ten products that are shipped into Rwanda.³² The country's current consumption of vegetable oil is approximately 7,000-8,000 tonnes per month (90th Mt per annum)³³. A substantial amount of cooking oil in the Rwandan market is imported by wholesalers as the finished product. The vegetable oil companies in the country are mainly

²³ Interview with vegetable oil producer in Kenya, 21 April 2023.

²⁴ Interview with vegetable oil producer, 19 April 2023; Interview with vegetable oil producer in Kenya, 21 April 2023.

²⁵ Interview with vegetable oil producer in Kenya, 20 April 2023.

²⁶ Interview with vegetable oil producer in Kenya, 20 April 2023. This is higher than the fob export price referred to above as it includes shipping costs.

²⁷ Interview with vegetable oil producer in Kenya, 20 April 2023.

²⁸ Interview with vegetable oil producer in Kenya, 20 April 2023.

²⁹ Interview with vegetable oil producer in Kenya, 20 April 2023.; Interview with vegetable oil producer, 19 April 2023

³⁰ Interview with vegetable oil producer in Kenya, 20 April 2023.; Interview with vegetable oil producer, 19 April 2023

³¹ Interview with GilOil, 19 April 2023.

³² <https://www.newtimes.co.rw/article/187437/News/rwanda-eyes-new-investments-to-help-trim-cooking-oil-imports>

³³ Interviews conducted in March 2023

refining crude palm oil. There is insufficient soybean in the country to justify crushing of soybean for soybean oil.

Crude palm oil is generally cheaper by approximately 20% on the international market compared to crude soybean oil, while the refining costs of both are the same.³⁴ Importing crude palm oil from Malaysia is more affordable than importing crude soybean oil from regional suppliers such as Malawi or Zambia.

Mount Meru is the biggest player in the vegetable oil market in Rwanda with approximately 40% market share.³⁵ The company has the capacity to refine 6,000 tonnes per month but is currently not operating at full capacity. It refines 3,000 tonnes per month (36,000 tonnes per annum). ETG Parrogate, a subsidiary of ETG Group, operates in Rwanda as Agri Value Chain in the market for refining and packaging of crude palm oil, as well as soybean meal distribution. The company imports crude palm oil from Malaysia, through Mombasa, and refines about 500 tonnes of palm oil per month³⁶ (6,000 tonnes per annum). Another player in Rwanda's vegetable oil market is Kayonza Distribution Company, a local retail and distribution company that invested US\$10 million in a cooking oil manufacturing plant in 2021.³⁷

Rwanda is among the countries in East Africa that have imposed an import duty on refined edible oils to protect their manufacturing industries from products that are already packaged.³⁸ The import duty was reduced from 35% to 25%³⁹ in June 2023.

Uganda

As with Rwanda, the Ugandan market has historically predominantly consisted of palm oil production and supply. The oils that are consumed are pure palm oil, blended palm oil, pure soybean oil and pure sunflower oil. Blended oil is the most widely consumed, which consists of 80-90% palm oil and 10-20% sunflower and/or soybean oil. The amount of soybean and sunflower seed that is available in the market is too little to encourage investment in crushing mills with only one major crushing plant, Mukwano Industries. Mukwano has a crushing capacity of 90th Mt per annum for both sunflower and soybeans which equates to 15th Mt of soy oil or 36th Mt of sunflower. It sells locally and exports.

Bidco Uganda Limited, a company that is partially owned by Wilmar, is the leading edible oil firm in Uganda. It is the biggest supplier in the market in terms of the volumes of oil they produce. Bidco produces around 78th Mt per annum. Bajaber Industries (Pembe Oil) produces around 15th Mt of cooking oil from refining crude palm oil imported from Malaysia and Indonesia. They are a recent entrant in the Ugandan market and are also present in Kenya and Zambia. It was reported that the companies in Uganda all buy crude palm oil from the same source, Louis Dreyfus Company (LDC), one of the largest global commodity traders.⁴⁰ The Uganda producers are members of the Uganda Oil Producers Association with close connections with the government.

³⁴ Interviews conducted in March 2023

³⁵ Interviews conducted in March 2023

³⁶ Interviews conducted in March 2023

³⁷ <https://www.newtimes.co.rw/article/187437/News/rwanda-eyes-new-investments-to-help-trim-cooking-oil-imports>

³⁸ <https://www.theeastafrican.co.ke/tea/business/cooking-oil-why-consumers-will-pay-more-4296962>

³⁹ <https://www.newtimes.co.rw/article/8298/news/economy/budget-import-tax-on-cooking-oil-cut-by-10>

⁴⁰ Interviews with industry participants.

There is a 10% import duty on crude oil in Uganda⁴¹ and as a result of this, refiners are moving to semi-refined oil imports to avoid paying the duty.

3.2.2 Southern Africa

Malawi

The main types of vegetable oil produced in Malawi are soybean, sunflower, cotton and blended oils (including of imported palm oil). The main oil seed used for the production of vegetable oil in Malawi is soybean, which is produced locally. There are substantial volumes of locally produced soybeans with some additional imports of crude soybean oil and palm oil for refining to meet the local demand.⁴²

Given rising levels of production of soybean as well as some increase in sunflower production, there has been an expectation that this would translate to better access to inputs for vegetable oil production.⁴³ Trade data in Malawi reflect decreased imports of crude and refined oil. Crude palm oil imports declined from US\$39 million in 2019 to US\$7 million in 2022. Refined oil imports also declined, indicative of local production replacing imports. However, the same period has also seen growing concerns over price increases of refined vegetable oil. Prices by the end of 2022 were reported to have increased by up to 63% for a 1 litre sized bottle of cooking oil.⁴⁴

Malawi's vegetable oil market has been characterised by a series of price increases, government interventions in a bid to reduce prices and currency devaluation and forex shortages. Producers indicated that there have been several issues contributing to the rising prices of vegetable oil, as follows: (1) rising prices of crude palm oil on the global market and supply chain difficulties; (2) the importance of oilcake demand alongside oil; (3) the devaluation of the Malawian Kwacha and shortages in foreign exchange; and (4) VAT on cooking oil.

The main product from crushing soybeans is oilcake for animal feed. Oil is around 17% of the production from the beans. The demand for the oilcake is therefore important for the returns to processing.⁴⁵ Malawi has substantial local and export demand for oilcake and the main companies are regionally integrated and readily able to export without restrictions.⁴⁶

The devaluation of Malawi's currency (by 25% in mid-2022) and shortages in foreign exchange were noted by all four producers in interviews to have significantly affected the operations of the businesses and their ability to source inputs.⁴⁷ Despite also being exporters of oilcake, which is a way of generating foreign exchange, local regulations require foreign earned funds be declared and converted into local currency.⁴⁸ However, the companies are using locally sourced inputs with competitiveness benefitting from the devaluation and the main firms are internationalised with sister companies and operations in other countries in the region.

⁴¹ Interviews conducted in March 2023

⁴² Interviews conducted in March 2023

⁴³ Interview with the Consumer Association of Malawi, 31 March 2023.

⁴⁴ Interview with the Consumer Association of Malawi, 31 March 2023.

⁴⁵ Interview with Mount Meru, 29 March 2023.

⁴⁶ Interview with CP Feeds and Sunseed Oil, 18 March 2022.

⁴⁷ Interviews with vegetable oil producers, 29 – 31 March 2023.

⁴⁸ Interview with Sunseed Oil, 29 March 2023.

VAT on the retailing of vegetable oil is an issue that has been contentious amongst vegetable oil producers, consumers and the government.⁴⁹ Following further price increases in vegetable oil in mid-2021, the government initiated consultations with producers through the Edible Cooking Oil Manufacturers Association (ECOMA). Malawi has at various point removed and reinstated VAT on vegetable oil dating as far back as 2005.⁵⁰ Since then, VAT on vegetable oil has been removed in 2015, 2020 and 2022.⁵¹

Zambia

The main types of vegetable oil consumed in Zambia are soybean, sunflower, and cotton seed based. These are supplemented by imports of crude palm oil which are blended with the other types of vegetable to meet local demand. Soyabean accounts for 60% of local edible oil production, cotton seed oil extraction accounts for 19% while sunflower oil accounts for 15% with the remaining 6% of edible oil sourced from minor oil seeds such as groundnuts.⁵²

There have been major expansions in soybean crushing capacity along with increased soybean production and growing exports of oilcake as a co-product of the oil. The installed soyabean crushing capacity stands at around 1mn Mt per annum, which equates to 170th Mt of oil produced (although production has been below capacity). This is produced by three main companies, Wilmar (formerly Global Industries), ETG and Mount Meru which produce around 70 percent of vegetable oil supplied in Zambia (Table 3 above). The fourth largest processor, Alliance Ginnners does not have a refinery and sells crude oil to the other producers (which means the share could be divided between them when measured in terms of the refined oil produced). There are also small volumes of sunflower and cottonseed oil produced.⁵³ Cotton seed oil is sold to industrial customers with some of it used for blending with soyabean oil.⁵⁴ Sunflower seed is mainly processed by small-scale producers. Zambia has imported around 120-150th Mt of crude palm oil from countries such as Indonesia and Malaysia to meet local demand.

Processing of soybeans has been below capacity as this depends on the soybeans produced and the markets for oilcake. Zambia is a major exporter of oilcake, to other countries in the region and into deep sea markets. Crushers have argued that soya cake from Zambia cannot compete with the product from countries such as South Africa which tends to be cheaper. This therefore limits how much of the soya beans they crush.⁵⁵ However, there were very substantial exports to India in 2021. An Export Protocol Agreement was signed between Zambia and China in 2022 to facilitate oilcake exports.⁵⁶ Some producers also export cooking oil to other countries such as DRC, Zimbabwe and Namibia.

The challenges in the development of the value chain include apparent restrictions on soybean exports from time to time and the export permit system in place. The permits authorising exports of soya cake appear to allocate quotas to the crushers in consultation with the industry association which monitors the use of the quotas. There are also concerns with small-scale

⁴⁹ Interview with the Consumer Association of Malawi, 31 March 2023.

⁵⁰ Interview with processor in Malawi, 29 March 2023.

⁵¹ Interview with the Consumer Association of Malawi, 31 March 2023.

⁵² <http://zam.co.zm/upscaling-local-content-in-the-edible-oils-sector/> accessed on 24 July 2023

⁵³ Zambia Development Agency Food Processing Sector Investment Profile

⁵⁴ Interviews with stakeholders

⁵⁵ Interviews with stakeholders

⁵⁶ <https://www.foodbusinessafrica.com/china-zambia-sign-agreement-on-soya-bean-meal-stevia-export/> accessed on 26 July 2023

farmers crop yields on soybeans linked to the seeds being used and farming investments such as in irrigation. Government has participated in the soya bean market at times which has contributed to price volatility.

Zimbabwe

The main types of vegetable oil consumed in Zimbabwe are soyabean, sunflower, and cotton seed based, supplemented by imports of crude soybean oil. Zimbabwe relies very heavily on imports of crude oil. One of the major issues noted with increasing agricultural production is that all soyabeans (as with other crops) have to be sold to the government marketing board which on-sells to the crushers.

There are around six major producers led by Wilmar, United Refineries, ETG Parrogate, Mt Meru and Cangrow (Table 3). Other oil producers import and refine in Zimbabwe. The largest supplier of vegetable oil is reported to be Zimgold Oil (ETG Parrogate) with a share of around 30%, with the largest three suppliers having a combined market share of 69%.

DRC

The main local source of vegetable oil in the Democratic Republic of Congo is oil palm which is grown locally by large scale crude palm oil producers such as Brabanta, Plantations Et Huileries Du Congo (PHC), Groupe Blattner Elwyn (GBE) and HPEK and from small scale farmers.⁵⁷ PHC and Brabanta started operating after they acquired the assets that were operated by PLC, a Unilever company, which stopped operating in the 1990s and sold its assets in the 2000s to the two companies.⁵⁸

Around 1.5mn Mt of oil palm fruit is produced in the DRC, with around 250th Mt of oil being produced.⁵⁹ The largest refineries of crude palm oil in DRC are Palmco, Congo Oil and Marsayco. Imported crude oil supplements the demand for the product. Other types of oil seeds such as soyabeans, groundnuts and cotton seed are also grown but very little vegetable oil is derived from these products. In DRC soyabeans are not predominantly used for vegetable oil but for local consumption due to their high protein content. Cotton seed and groundnuts are used for vegetable oil but the quantities are very low.

PHC has the largest plantation for the fruit in three different areas totalling 21.4th hectares,⁶⁰ Brabanta has about 6.1th hectares,⁶¹ and other companies with plantations include GBE and Huilerie-Plantations Elevages Du Kwilu (HPEK). The crude palm oil is sold locally to the refineries who are required to purchase the product before they can start importing from other sources.⁶² Local refineries enter into yearly contracts with crude oil suppliers.

The production and main markets for oil in the DRC can be divided into three main regions that is Kinshasa and the west, East (Goma and Bukavu), and central/south (including Lubumbashi), with the market conditions are different in the different regions. The prices of

⁵⁷ Interviews with stakeholders in DRC

⁵⁸ Interviews with stakeholders.

⁵⁹ Extraction rates internationally are around 17-25%.

⁶⁰ <https://phc-congo.com/en/nos-sites/> accessed on 27 July 2023

⁶¹ <https://www.socfin.com/en/locations/brabanta/> accessed on 27 July 2023

⁶² Interviews with stakeholders,

the products are different in the different regions with Lubumbashi importing most of the products from the neighbouring countries.⁶³

3.3 Major firms

The major companies have operations across the focus countries in East and Southern Africa. The production in any given country therefore needs to be understood in the context of the overall investment, production and supply decisions. Regional trade is an important part of the picture - as exports from one country are imports to another country in the region. The markets are relatively concentrated, with three or four firms accounting for the majority of supply in each of the countries.

ETG/Parrogate/Agri Value Chains

ETG operates in multiple industries including agriculture inputs, logistics, merchandising and processing, supply chain optimisation, digital transformation and energy⁶⁴. Parrogate a company that forms part of ETG has operations Malawi, Zambia, Zimbabwe and Rwanda. In Malawi, the company is involved in cooking oil extraction and refining. In Zambia, the company is involved in grain, oil seeds, fertiliser trading, cotton ginning, oil extraction and refining, with processing of soy, sunflower, cotton seed and palm. In Zimbabwe, the company is involved in maize milling, snack production, oil extraction & refining and macadamia nuts⁶⁵. ETG also has operations in Uganda and Kenya, although not necessarily in vegetable oil.

Mount Meru⁶⁶

Mount Meru Millers was established in 1979 and operates in three business segments that is energy, agri and logistics. Under the Agri business segments, Mount Meru operates eight edible oils plants in Africa. Its value chain starts from directly sourcing seeds from farmers and from using its own logistics for bringing crude from Beira and Mombasa. It has crushing & solvent extraction, refining & fractionation, soap manufacturing and packaging operations. For sales and distribution, it has its own depots and logistics. In the COMESA Common Market, Mount Meru is present in Kenya, Malawi, Rwanda, Uganda, Zambia and Zimbabwe.

Mount Meru's largest vegetable oil production is in Zambia where it processes soy, sunflower, cottonseed and palm. In Malawi it processes soy and some palm. It refines oil in Rwanda and also supplies to Uganda and Zimbabwe, as well as supplying soymeal/cake and sunflower meal for animal feed, including as exports to Kenya.

Wilmar International Limited⁶⁷

Wilmar was established in 1991 and is headquartered in Singapore. Wilmar is involved in oil palm plantations & mills, edible oil refineries, oleochemicals, specialty fats and biodiesel. In Africa it is present in sixteen countries. In the Common Market it operates in Kenya, Uganda, Zambia and Zimbabwe and is engaged in edible oil refining. Wilmar has a vertically integrated business model that operates the entire value chain in agriculture commodities which starts from origination to processing, trading, merchandising branded products and distribution. Its

⁶³ Interviews with stakeholders

⁶⁴ <https://www.etgworld.com/about-etg.html> accessed on 25 September 2023

⁶⁵ <https://www.parrogate.com/#modern-organic-thai> accessed on 25 September 2023

⁶⁶ Interviews and <https://www.mountmerugroup.com/agri/> accessed on 25 September 2023

⁶⁷ <https://www.wilmar-international.com/about-us/integrated-business-model> accessed on 26.9.2023

expansion included through acquisition of Global Industries in Zambia and a partnership with Kenya's Bidco, including for investment in Uganda.

4 Consideration of competition issues

As reflected in section 3, the markets across the region are concentrated and oligopolistic in nature. Mergers, some being regional in nature, have been linked with increased investment as well as increasing levels of concentration. The study considers the mergers notified to the CCC and to national competition authorities (NCAs) and then assess the implications of the oligopolistic markets for competition and barriers to entry.

4.1 Review of mergers

For each of the mergers the study identified the merging parties, the year of the merger and the competition authority to which it was notified, starting with the mergers considered at the regional level by the CCC and then the mergers assessed by NCAs.

- **Olam Agri Holdings Pte and SALIC International Investment Company, CCC, 2022⁶⁸**

SALIC International Investment Company (SIIC) acquired 35.43% shares in Olam Agri from Olam Holdings resulting in joint control of Olam Agri. In the Common Market Olam Agri is involved in the wholesale trade of edible oils in Kenya, Madagascar, Malawi, Zambia and Zimbabwe, and in wheat trading in Egypt and Tunisia. SALIC the holding company of SIIC is active as a farmer of oilseeds (sunflower, rapeseed and soybean) in Ukraine and one of SALIC's portfolio companies acts as an originator of oilseed products in Canada. The relevant markets were defined as the origination of grains, origination of oilseeds, marketing of grains and marketing of oilseeds while the geographical market was global.

The CCC assessed whether the transaction was likely to create vertical concerns where the merged entity could either foreclose Olam Agri's competitors' access to SALIC's grains and oilseeds or foreclose SALIC's competitors' access to a significant buyer of grains. The assessment found that this was unlikely, and the transaction was approved without conditions as it was unlikely to substantially lessen or prevent competition in the relevant market.

- **Emerald Grain Pty Ltd and Louis Dreyfus Company, CCC, 2022⁶⁹**

Louis Dreyfus Company (LDC) acquired Emerald Grain from Longriver Farms Pty Ltd. In the Common Market LDC is involved in the originating, processing, storing and merchandizing different oilseeds and related processing by-products, for global food, feed, energy and other industries. It also provides oilseed meals (such as soybean meal), predominantly used as protein ingredient in animal and aquatic feeds, and vegetable oils, used as edible oil, to create biodiesel and other derivative products for industrial applications, specifically chemicals, personal care, cosmetic products and pharmaceuticals. LDC is also involved in other business lines such as grains, cotton, sugar, rice, coffee, juice, freight and carbon solutions. Emerald Grain is involved as a trader in the supply of a full range of grains, milling wheat, malting barley, food grade pulses and oilseeds, including specifically being active in trading of wheat in Burundi, Malawi and Rwanda. The relevant market was defined as the trading of grains

⁶⁸ COMESA Competition Commission Case File No. CCC/MER/06/28/2022

⁶⁹ COMESA Competition Commission Case File No. CCC/MER/11/47/2022

globally. The transaction was approved without conditions as it was unlikely to substantially prevent or lessen competition in the Common Market or a substantial part of it.

- **Viterra USA Investments and Gavilon Agriculture Investments, CCC, 2022**

Viterra acquired the grain and ingredients business lines of Gavilon. Viterra and Gavilon are involved in the origination, refining, storage and transportation of agricultural commodities globally. The relevant product market was defined as the origination and marketing of grains as well as the origination and marketing of oilseeds while the geographical market was defined as global. The transaction did not raise competition concerns and as such, it was approved without conditions.

- **Zamanita Limited by Cargill Holdings BV, CCC, 2015**

Zamanita, a subsidiary of Zambeef, was acquired by Cargill. At the time of the transaction, Zamanita was involved in the crushing of soyabeans and refining it to make Zamanita oil and was also importing palm oil and blending it with soyabean oil to make a brand of edible oil called Mama's Oil. Cargill on the other hand was involved in cotton originating and ginning as well as grain and oil seed origination and trading globally. There were adjudged to be no overlaps as Cargill was not involved in oil seed crushing, refining and retailing in Zambia. The transaction was assessed by the CCC as Zamanita at the time operated in Zambia and Zimbabwe, while Cargill generated turnover in Burundi, Djibouti, Egypt, Eritrea, Ethiopia, Kenya, Libya, Madagascar, Malawi, Rwanda, Seychelles, Sudan, Eswatini, Zambia and Zimbabwe.

The relevant market was defined as the edible oils market in Zambia and the transaction was approved without conditions as it did not raise competition concerns. It was particularly noted that the market had no barriers to entry, no abuse of dominance concerns, and the market was highly fragmented.

- **Capital Oil Refining Industries Limited (CORI) and Oil and Protein Company Limited, CFTC Malawi, 2020**

The horizontal transaction was approved on public interest grounds, even though the market was highly concentrated, due to public interest benefits which included saving a failing firm and saving jobs.

- **ETG Parrogate and Cargill Holdings Plc (Zamanita), CCPC Zambia, 2019**

In October 2018, Cargill ceased operations of its edible oil production that it had acquired from Zamanita citing the presence of illegal import of vegetable oil as well as lower than expected production of the soyabean crop in the year which was making their operations uneconomical.⁷⁰ In August 2019, ETG Parrogate completed the acquisition of the assets of Cargill and the plant was recommissioned. The acquisition of Cargill by ETG Parrogate increased its crushing capacity to 219,000MT per annum and refinery capacity to 73,000MT

⁷⁰ <https://diggers.news/business/2018/10/31/cargill-shuts-lusaka-oilseed-refinery-260-jobs-lost/> accessed on 26 July 2023.

per annum. The transaction was assessed at national level by the Competition and Consumer Protection Commission of Zambia (CCPC).⁷¹

- **Wilmar and Olivine, CTC Zimbabwe, 2015**

Surface Wilmar Limited acquired 49.3 percent shares in Olivine Industries which was previously owned by AICO African now Cottco Holdings. The transaction was assessed by the Competition and Tariff Commission of Zimbabwe. Surface Wilmar is part of the Wilmar International Group of Companies and also has operations in Uganda and Zambia.

- **ETG/Vamara and Parrogate Zimbabwe, CTC Zimbabwe, 2013**

The transaction itself took the form of a joint venture between ETG/Vamara and Parrogate Zimbabwe to create Pure Oil Industries (POI), which was incorporated in Zimbabwe in 2012.⁷² Vamara's product portfolio includes: animal nutrition; flour and instant breakfast cereals, long-life dairy, edible oils and maize meal, amongst other consumer goods. Vamara owned manufacturing and/processing plants in Ethiopia, Kenya, Malawi, Uganda, Zambia and Zimbabwe.

Parrogate Zimbabwe was a company incorporated in Zimbabwe and part of the Parrogate Group of India with operations in Malawi, Zambia and Zimbabwe. The group was a global player in cotton, edible oils, and maize and fertilizer industries and expanded into grain trading and milling, real estate development, commercial farming and ferroalloys. Parrogate started operating in Zimbabwe in 2003 when it installed the Checheche Plant, followed by the Glendale Plant in 2006, both for cotton ginning and oil processing. In 2013 the company expanded the Harare Plant with a multi-seed oil complex for oil crushing and refining. Parrogate Zimbabwe's operations included oil seed crushing of 100th Mt, 50th Mt of cotton ginning and 50th Mt of oil refining.

Pure Oil Industries is a processor of edible oils such as soybean oil, palm oil, sunflower oil, canola oil, margarine and bakers' fat. The relevant market was identified as the production and distribution of edible oils, soap and fats in the Common Market. Parrogate and ETG/Vamara also both produced maize meal and edible oils prior to the merger in a number of countries in the region, even while the merger was assessed by the Zimbabwe CTC.

- **National Foods Ltd and Pure Oil Industries, CTC Zimbabwe, 2016**

The transaction involved the acquisition of 40% stake by National Foods Ltd in Pure Oil Industries Ltd. The owners of National Foods include the largest food business in Zimbabwe, Inncor and the largest business in South Africa, Tiger Brands. Tiger Brands has direct and indirect interests in international food businesses in Cameroon, Chile, Kenya, Mozambique, Nigeria, Zambia and Zimbabwe. National Foods manufactures and markets foodstuffs and stock feeds in Zimbabwe. Its range of basic foods products include maize meal, maize based cereal, flour, cooking oil, margarine, rice, salt, snacks, biscuits, pasta, sugar beans, baked beans, popcorn, as well as soap and a full range of animal feed.⁷³

⁷¹ <https://www.etgworld.com/zamanita.html>

⁷² <https://www.pureoils.com/>

⁷³ <https://www.world-grain.com/articles/557-tiger-brands-increases-stake-in-national-foods#:~:text=National%20Foods%20has%20the%20capacity,feeds%2C%20according%20to%20IH%20Securities>

Consideration of regional and national level competition issues in mergers

While each merger was approved on the grounds noted above (based on the available information), the review demonstrates the regional reach and vertical integration of the main companies notably ETG, Mount Meru and Wilmar, across products in the value chain. These relationships can provide efficiencies in being able to coordinate supplies such as sourcing of oilseeds, within and across borders. It was also noted in interviews that regional companies are able to benefit from access to group funds that purely national companies may not have.⁷⁴

The regional reach and vertical integration are also relevant for considering the possible effects on competition. Some of the companies are also involved in refining vegetable oil in other jurisdictions outside the region as is the case for Viterro, Olam and LDC. Because these are companies that are operating similar businesses outside the region, it makes them potential entrants in the refining of vegetable oil in the Common Market.

Additionally, companies operating in the region have been involved in the acquisition of vegetable oil refineries at national level as was the case in Zambia, where ETG Parrogate acquired the assets of Cargill, and in Zimbabwe where Wilmar acquired shares in Olivine. It is also noted that Wilmar's operations in Uganda are through a joint venture with Bidco. Mergers which were assessed nationally due to the nexus of the operations nevertheless need to consider possible wider regional implications. The transactions in Pure Oil in Zimbabwe brought together as common shareholders some of the largest food conglomerates across the region with potential implications for coordination which do not appear to have been fully assessed at the time.

4.2 Market concentration and co-ordination

The vegetable oil value chain exhibits high levels of concentration at multiple levels and in terms of both local and regional markets. The main companies typically operate across borders and at multiple levels of the value chain with close links in adjacent production activities such as for animal feed and poultry.

The oligopolistic nature of the industry means that market outcomes will depend largely on the extent to which firms compete or coordinate. Coordination can be tacit where firms recognise their mutual interdependence and forbear from competing to attract customers, and instead opt to focus within customer categories or geographies, for example. This can mean that mergers which increase the multi-market contacts between firms and/or increase concentration may reduce competition through coordinated effects.

Coordination can be explicit in the form of collusion between companies whether through agreements or concerted practices. The collusive arrangements may be through information exchange, the role played by industry associations and understandings reached by the companies which are monitored such that deviations can be responded to (see Marshall and Marx, 2012; Kovacic et al 2011). It is important for competition authorities to be able to screen markets which are susceptible to collusion to identify 'red flags' which point to where cartel conduct may be occurring (Harrington 2005; 2006a).

⁷⁴ Interviews with stakeholders

Government restrictions on trade can also undermine competition and add to the likelihood of coordination. This is especially likely where the restrictions are used by the main companies to undermine competition between themselves.

The pricing of vegetable oil and, in particular, the very high increases and the sustained high consumer prices even after input costs returned to their earlier levels, points to weak levels of competition. The phenomenon of prices rising quickly in response to cost shocks and only adjusting back slowly, exhibiting asymmetric adjustment, is known in competition economics as ‘rockets and feathers’ – increasing upwards like a rocket and only coming down slowly like a feather (see Meyer and von Cramon-Taubadel, 2005). If we consider the higher margins over variable costs in the second half of 2022, compared with the average margins over the previous year in Kenya and Zambia, then for the six months from July to December 2022 in Kenya consumers paid an additional US\$525mn and in Zambia an additional US\$60mn.⁷⁵

There are different possible explanations including low levels of competition and the existence of collusion, however, an investigation or inquiry is required to ascertain the factors at work. There are causes for concern in vegetable oil markets. The levels of concentration are extremely high across the region with multi-market contacts (World Bank, 2016). There are associations of producers which appear to discuss industry developments and share information. In some countries, notably Zambia, the association appears directly involved in the allocation and monitoring of quotas for export permits in the context of lower prices for exports of oilcake and higher local prices, which may provide a basis to undermine competition in oil as the co-product. There are also common ownership relationships between some companies, including by the shareholders of Pure Oil in Zimbabwe and the stake of Wilmar in Bidco Uganda.

4.3 Barriers to entry

Barriers to entry take into account the exogenous factors in establishing a business at scale to be an effective competitor, the regulatory requirements, and the strategic barriers to entry which relate to arrangements in the industry shaped by the large incumbent firms (Vilakazi et al. 2020). In the case of vegetable oil, the barriers depend on the production used. For crushing of oil seeds, large-scale and efficient operations require substantial investments, sourcing of inputs, and markets for the co-products, mainly animal feed.

For soybean oil the main product from the processing is in fact oilcake which is used in animal feed (and oil is just around 17% of the products from processing). This means that entry and expansion decisions are driven by the market considerations for animal feed while production of vegetable oil is a consequence of these decisions. For sunflower seed the oil is a larger proportion of the yield (at around 40%). For palm processing, oil is the main product. However, in the ESA region, the production of refined palm oil is almost all from imported crude palm oil, and barriers to being an effective competitor relate to being able to source, ship and transport the crude oil in international markets. Port and logistics capabilities are essential, with inland locations naturally involving more transport.

Barriers to entry are therefore significant but not insurmountable. The investments and other requirements to establish large-scale efficient production of vegetable oil are substantial

⁷⁵ This is based on margins being higher in Kenya by US\$1.4/l and in Zambia by US\$0.8/l (Figures 8 and 9) and demand over the six-month period of 375th Mt and 75th Mt of oil from the apparent demand in Table 1.

meaning that entry will likely take a number of years from decision to the production coming onstream. This does not meet the test for entry to be timely, likely and sufficient in merger review.⁷⁶ Markets are not contestable such that increased concentration would be unlikely to lead to higher prices. This differs somewhat from factors identified in some of the mergers, where mergers increasing concentration were nevertheless approved because, among other things, barriers to entry were adjudged to be low.

5 Conclusions

There have been very substantial increases in food prices across Eastern and Southern Africa in recent years which have had major adverse effects on consumers, especially low-income households for whom staple foods such as vegetable oil account for a large proportion of disposable income. Vegetable oil prices increased over 18 months from the beginning 2021 to mid-2022 by 50 to 100 per cent in foreign currency terms. These increases have been much larger than the increases in the main input costs. Furthermore, prices did not adjust downwards again to reflect the fall in input costs to their normal levels. Profit margins appear to have increased substantially, although other costs will have to be taken into account.

Trade within regional markets is very important for the market outcomes. The main inputs of oil seeds and crude palm oil are highly traded, as are the final products. In addition, the main producers have operations across the countries examined in East and Southern Africa in what are highly concentrated regional markets. A national perspective will therefore not necessarily comprehend the market dynamics. The vegetable oil industry powerfully illustrates the role for regional competition enforcement, as well as the importance of considering competition along with international trade as per the mandate of the CCC.

In terms of markets and economic development, the vegetable oil industry is a striking example of the wider phenomenon of ESA being a net food importer even while having very good conditions for growing the agricultural commodities required for the food products. This is the case even while there have been some investments in expanding capacity by the main incumbents. Poorly functioning markets along the value chain mean that the excellent growing conditions co-exist with extremely high vegetable oil prices and constrained production.

The assessment indicates that mergers have likely played an important part in continuing concentration and vertical integration at the regional level. There is need for enhanced cooperation in the assessment of mergers between national and regional authorities so as to pay attention to the possible coordinated effects of mergers, including vertical mergers, and mergers and acquisitions across borders.

Government regulations appear to be hindering rather than assisting inclusive and competitive regional markets which can realise the huge agricultural potential along with competitive prices to consumers. This requires policies to support farmers in expanding oilseed production, with investments to realise higher yields, alongside lower transactions costs and fair market prices instead of farmers being subject to buyer power of large processors. Lowering entry barriers and supporting investments in processing will mean growth and investment along with competitive outcomes for consumers.

⁷⁶ See CCC merger guidelines as well as ICN recommended practices in merger evaluation.

The main recommendations from the study are as follows:

- Monitoring the changes in shareholding of the firms in the value chain for vegetable oil, including assessing the effects of mergers and the extent of common shareholdings. This can feed into improving merger review.
- Ongoing tracking of vegetable oil and oilseed prices in the region with the national competition authorities, as part of price monitoring for the African Market Observatory, including improving product and country coverage.
- Drawing on trade flows, market analysis and policies to advocate to appropriate policy package to develop the regional value chains to expand agriculture, increase investment and ensure competitive production at lower consumer prices. This is part of a wider structural transformation agenda to reverse the trade deficit in staple food products and industrialise East and Southern Africa.

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