



**The National Consumption Requirement Study for Edible Oils in
Zambia**

by

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EXECUTIVE SUMMARY

In Zambia, a decade of strong economic growth has contributed to rising demand for edible oils. However, majority of the demand for edible oils in Zambia is currently being met through imports of palm oil, rather than through domestic production. The rise in imports is undermining prospects for growth in the domestic industry, which has experienced substantial investments in processing capacity as well as oilseeds production. The study, therefore, sought to provide evidence on the important parameters such as national requirements, national production, installed capacity, consumption, imports and other market dynamics of the edible oil sector in Zambia. The findings from this study will inform government on appropriate policy actions that will bring about desirable economic outcomes in the edible oils and oilseed sectors

The study utilized qualitative as well as quantitative data. Qualitative data were collected through Key Informant Interviews (KII), Focused Group Discussions (FGDs) and observation. These were augmented through a review of secondary quantitative data sources, including from previous surveys such as Crop Forecast Survey (CFS) conducted by CSO and MAL, and data obtained from government departments. The research also reviewed literature such as NGO reports, media and other publications.

Key highlights from the study findings are summarized below:

Demand for oilseeds (mainly soybeans) has increased tremendously over the last 10 years. However, rapid increases in edible oils imports (some of which are illegal) are reversing the positive gains. Following steady growth in soybeans demand and prices in the last 5 years, the 2013 marketing season saw reduced up-take of soybeans by edible oils processors as a result of reduced crushing capacity by oilseed crushers due to increased imports. Between January and September, 2013, the price of soybeans dropped by about 12 per cent. Both small scale and large scale farmers have been affected by the instability created in the market, more so for the small scale farmers with limited technical know-how and reliance on spot markets. On the other hand, the challenge posed by import competition reveals inherent inefficiencies at processing and farming levels.

Zambia has more than enough installed capacity to supply all its edible oils requirements with its installed processing capacity of more than 161,000 tonnes of refined edible oils which corresponds with a crushing capacity of 375,000 tonnes of oilseeds per year. Zambia has a national edible oils requirement of 120,000 tonnes per year. Despite having sufficient capacity, almost 70 percent of its national edible oils requirement is met through imports.

Imports of refined, crude and semi-processed edible oils have risen sharply in the last 10 years to reach 104,000 tonnes in 2012. The imports originate from SADC region, mainly South Africa followed by imports from Asia mainly from Singapore, Malaysia, and Indonesia. Although the SADC regions is the major source of edible oils imports, imports originating from Asia have been rising displacing SADC imports in the last 3 years. Notably, 2013 data already indicates that imports from Asia are higher than SADC imports. Edible oil imports consist of both legal and illegal imports. Although most imports enter the country by road, the amount of imports entering by rail is also significant. Weaknesses in the enforcement mechanism of import

procedures, uncoordinated inspections and the lack of systems for determining the true value of imported edible oil products have led to the rise in imports.

Based on the highlighted study findings, we propose a number of policy recommendations for short-term and medium term implementation:

i) Short-term implementation:

- Government should increase duty on crude edible oil to 10 per cent; and semi-processed edible oil to 15 per cent in order to encourage local value addition.
- Government should also VAT zero-rate locally produced edible oils in order to improve competitiveness against imported products.
- Government should revise the ZMW 0.85/kg alternative charge on finished edible oils upwards.

ii) Medium-term implementation

- Government through ZRA should expedite the process of developing and implementing a standardized system for valuation of imported edible oils in order to prevent undervaluing edible oil imports.
- Government through ZRA, ZABS and MOH should strengthen inspections including physical inspections at border posts to prevent misclassification and circumvention of border authorities.
- Government should consider providing incentives for oilseed crushers such as lower corporate tax or duty free importation of equipment for oilseed crushing and refining.
- Government should invest in research and extension and develop infrastructure in order to increase production efficiencies for oilseed producers.

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List of Acronyms

| | |
|--------|---|
| ZRA | Zambia Revenue Authority |
| CSO | Central Statistical Office of Zambia |
| SADC | Southern African Development Community |
| COMESA | Common Market for Eastern and Southern Africa |
| FTA | Free Trade Area |
| KII | Key Informant Interviews |
| FGD | Focused Group Discussion |
| CFS | Crop Forecast Survey |
| MCTI | Ministry of Commerce, Trade and Industry |
| TAZARA | Tanzania Zambia Railway Authority |
| ZNFU | Zambia National Farmers Union |
| VAT | Value Added Tax |
| DRC | Democratic Republic of Congo |
| EFE | Emman Farming Enterprises |
| MAL | Ministry of Agriculture and Livestock |
| NGO | Non-Governmental Organizations |
| SME | Small and Medium Enterprises |

1.0 INTRODUCTION

1.1 Background

In Zambia, a decade of strong economic growth has contributed to rising demand for edible oils¹. Due to its potentially strong urban/rural growth linkages, the growth in demand for edible oils could prove beneficial to the agricultural sector. However, the majority of the demand for edible oils in Zambia is currently being met through imports of palm oil, rather than through domestic production.

According to the Zambia Revenue Authority (ZRA) data, total edible oil imports in Zambia between January 2012 and May 2013 amounted to 131,163.74 tonnes, consisting mainly of unfinished edible oils (crude and semi-processed oil). Edible oils imports have risen from 21,309 tonnes in 2002 to reach 104,383 tonnes in 2012 (ZRA, 2013 a). Our analysis estimates national edible oils demand to be 120,493 tonnes, implying that imports make up about 67 per cent of the national requirements. The rise in imports is undermining prospects for growth in the domestic industry, which has experienced substantial investments in processing capacity as well as oilseeds production. If the rate of growth of edible oil imports exceeds the growth rate of domestic edible oil production, there is likely to be a negative net effect on the domestic edible oils industry, oilseed production, and related industries. Reduced edible oils processing implies that the industry would have to operate far below the current processing capacity and consequently reduce the uptake of inputs (oilseeds) upstream in the value chain. This implies job losses for those employed in the industry and loss of market opportunities for farmers and the eventual loss of domestic competitiveness in domestic edible oils production.

On the other hand, increased competition from imported edible oils exposes inherent inefficiencies in the domestic production system that fails to compete effectively with imports from abroad. It can be argued that exposure to import competition is necessary as it will induce innovations in the industry as well as efforts by farmers that would result in lower costs of production, thereby increasing their ability to compete with external markets.

The growth in edible oil imports has been facilitated by the development of regional trade agreements and regional economic communities, such as the SADC and COMESA Free Trade Areas (FTAs), where goods can be imported duty free. Thus, goods produced at a lower cost within the trading bloc can find easy markets in other countries, because they are not required to pay duty. However, the worry is that Free Trade Areas may become conduits for traders outside trading bloc to access duty free markets, practice dumping of commodities as well as selling sub-standard commodities. In this context, the edible oils sector in Zambia provides a case for exploring the design and enforcement of policies which can result in growth of the domestic sector while keeping within the tenets of trade liberalization.

In the wake of the recent spate of imports, a detailed understanding of edible oils market with regard to the national requirements, national production, installed capacity, consumption, imports and other market dynamics is important. This study, therefore, seeks to provide evidence on the

¹ Edible oils refer to all products with HS heading 15 under (ZRA, 2013 b). They can broadly be categorized into crude oil, semi-processed and refined oil.

important parameters of the edible oil sector in Zambia. The findings from this study will inform government and stakeholders on appropriate policy actions that will bring about desirable economic outcomes in the edible oils and oilseed sectors

The report is organized as follows: Following this background section, the report discusses the study objectives, research questions and study purpose in sections 1.2, 1.3 and 1.4 respectively. This is followed by a description of the study methodology used in section 2. The results of the study are discussed in section 3 and the report makes conclusions and recommendations in section 4.

1.2 Study Objectives

The study was guided by a number of objectives which are stated below.

1. To determine the capacity of the domestic edible oils industry to meet domestic consumption requirements;
2. To review trends in edible oils production, consumption, imports and exports and underlying economic factors
3. To determine the effects of edible oil imports on the edible oils and oilseeds market;
4. To identify policy options for the development of the edible oils sector in Zambia.

1.3 Research Questions

The following research questions were developed in order to address the stated study objectives:

1. Is Zambia's edible oils production capacity sufficient to meet current consumption levels?
2. How much of the total installed edible oils production capacity is actually utilized?
3. How much edible oils are imported into Zambia and what is the source of these imports?
4. Are the edible oils imports compliant with Zambia's regulations as well as SADC and COMESA rules of origin?
5. What is the effect of imported edible oils on the domestic market for edible oils as well as oilseed production under smallholders and commercial farmers?
6. How effective are the regulatory mechanisms for managing edible oil imports in Zambia?
7. What policy measure can government ensure that there is sustainable growth in the edible oils and oilseed sectors in Zambia

2.0 STUDY METHODOLOGY

The study utilized both qualitative and quantitative methods of analysis in order triangulate the study findings. This means that the different methods of analysis complemented each other. Although sampling units were selected purposively, efforts were made to ensure that interviews made and data collected were as representative of the industry and farmers as possible.

Qualitative data were collected through Key Informant Interviews (KII), Focused Group Discussions (FGDs) and observation. These were augmented through a review of secondary quantitative data sources, including from previous surveys such as Crop Forecast Survey (CFS)

conducted by CSO and MAL, and data obtained from government departments. The research also reviewed literature such as NGO reports, media and other publications.

2.1. Primary Data Collection

2.1.1 Key Informant Interviews

Key informants included well positioned and well informed individual in the edible oil value chain, as well as government agencies. A total of 11 oilseed seed crushing companies and refineries were visited during the study against a total of 16 processors². The Ministry of Commerce, Trade and Industry (MCTI) headquarters in Lusaka, particularly the Domestic Trade Department was targeted as they are mandated to facilitate growth in domestic industries and where necessary regulate trade. Zambia Revenue Authority (ZRA) is important to the study as enforcers of import and trade policies. Hence, border post staff at Nakonde border post was visited. In addition, the international trade and policy department at the head office in Lusaka was visited to clarify some of the issues raised at the border post. Tanzania Zambia Rail Authority (TAZARA) was included because they transport edible oils from Dar e salaam bound for Zambia or the DRC through their passenger and freight train.

2.1.2 Focused Group Discussions

Focused Group Discussions were conducted for small and medium scale oil seed (soybeans) producers in Copperbelt (Luanshya district) and Central Province (Serenje district). Each FGD constituted 8 small and medium soybeans producers.

2.1.3 Semi-structured Questionnaire Interviews

To obtain data from large scale oilseed producers, semi-structured questionnaire interviews were conducted. A total of 8 soybeans commercial farmers were interviewed in Mkushi and Mpongwe districts using semi-structured questionnaires.

2.2 Secondary Data

Review and analysis of agricultural data was conducted primarily utilizing the MAL/CSO Crop Forecast Survey (CFS) from various years, and the Indaba Agricultural Policy Research Institute's (IAPRI) Rural Agricultural Livelihoods Survey 2012 (RALS). These surveys provide nationally representative data on smallholder agricultural production and rural livelihoods in Zambia. Secondary data on the trade and consumption of edible oils was obtained from government institutions including CSO and the Zambia Revenue Authority (ZRA).

A desk review of existing literature such as government reports, reports from NGOs and other stakeholder reports on the edible oil sub-sector in Zambia were carried out in order to establish the current status of knowledge on edible oils in Zambia.

2.3 Study Limitations

Efforts were made to ensure that interviews made and data collected were as representative of the industry and farmers as possible. However, budgetary limitations could not allow a nationally

² Some edible oils processors refused to be interviewed while others selected indicated that they did not crush oilseeds hence the estimates presented on the edible oils processors does not include some processors. It was also found that 3 of the stock feed manufacturers visited did not process edible oils

representative sample survey to be conducted. Although the study did not cover all the border posts in the country, nationally representative statistics on imports and exports were obtained from ZRA and CSO.

3.0 STUDY FINDINGS

3.1 Overview of the Edible Oils Value Chain in Zambia

The edible oils industry plays a critical role in Zambia's economy. The industry directly employs more than 2000 people in the manufacturing process and indirectly provides employment for farmers who supply oilseeds as raw materials in the processing of edible oils (ZNFU, 2013). With the recent growth in the oilseeds sector in Zambia, particularly soybeans, and the proliferation of edible oil imports, there is growing interest in understanding the dynamics of the markets.

The manufacture of edible oils mainly utilizes soybeans, cotton seed and sunflower as raw material. The large processors use solvent extraction technology while smaller plants use mechanical methods to extract oil from soybeans. Globally the main source of edible oil is palm oil which produces more oil. The use of food crops and, to a lesser extent cotton seed, is one of the reasons why domestically produced oil is relatively more expensive.

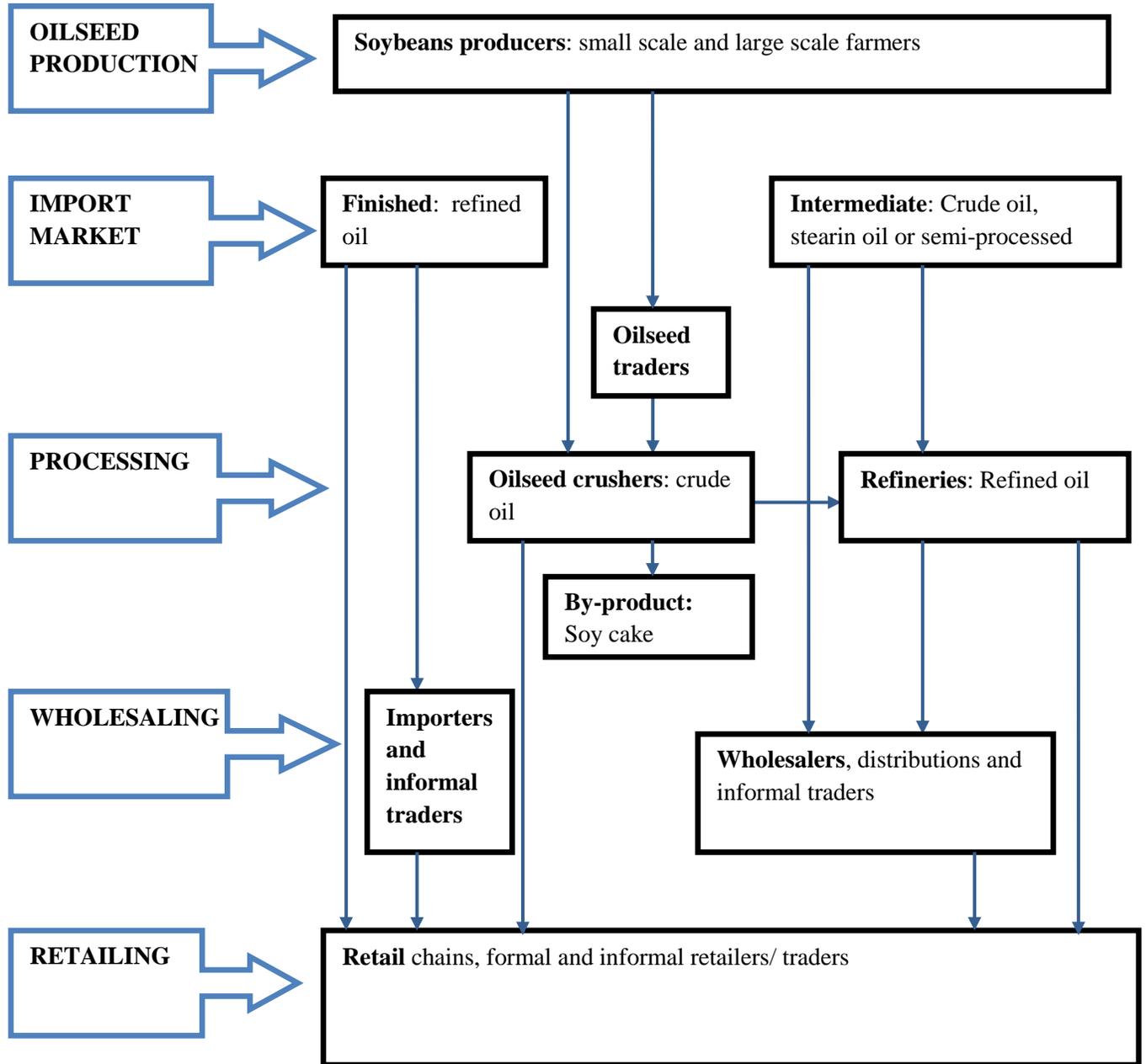
Figure 1 is a representation of the edible oils value chain in Zambia. The input or raw material stage of the value chain consists of small scale and large scale farmers who supply oilseeds to oilseed crushers. About 80 per cent of soybeans production is under large scale farmers while small scale farmers contribute only 20 per cent. Oilseed crushers purchase oilseeds either on contract or on spot market through traders or directly from farmers. Through processing, edible oils crushers extract crude oil and a by-product cake, which is used in the livestock sector mainly as feed for poultry and pigs. Although cake can be considered to be a by-product in edible oils processing it is a significant income earner for oilseed crushers. On average when crushed, oilseeds produce 81 per cent of soy or cotton cake, 14 per cent of edible oils and about 5 percent of waste³. Hence, in addition to demand for edible oils, cake demand is regarded to be a major off taker for soybeans and cotton. As a result, the edible oils and feedstock sectors are closely intertwined. It should also be noted that Zambia is currently exporting soy cake and feed to Zimbabwe, Botswana and South Africa (Technoserve, 2011).

Edible oil can be either crude, which still needs further processing, or refined oil which is ready for consumption. Some oilseed crushers have refineries at their factories and hence proceed with the refining process while others only produce crude oil which they sell to refineries at other factories for onward processing. In some cases, oilseed crushers sell crude oil as a final product to retailers or through wholesalers and distributors who may be formal or informal traders. Refined oil is often distributed through more formal channels such as registered distributors, wholesalers and retail chains but informal channels are also common. According to ZNFU,

³ Based on interviews with edible oils processors

edible oils produced domestically constitute 30 per cent of the total edible oils market in Zambia, while the remaining 70 per cent are made up through imports (ZNFU, 2013).⁴

Figure 1: Edible oils value chain in Zambia



Source: Authors' compilation

⁴ Note that the ZNFU estimates complements the estimates made in this study. This study finds that 67 per cent of the edible oils requirements is met through imports which is almost 70 per cent.

The import market for edible oils is highly significant and a major source of concern by some in the sector. However, if almost 70 per cent of domestic demand is met from imports, this raises concern about the competitiveness of domestic production systems. The scale of imports of edible oils suggests that inefficiencies exist within the domestic and production markets that need to be addressed.

This edible oils import market can be broken down into import for finished products as well as imports for intermediary commodities for further processing as shown in figure1. It is also worth noting that the edible oils import market has two distinct sub-sectors; legal and illegal imports.

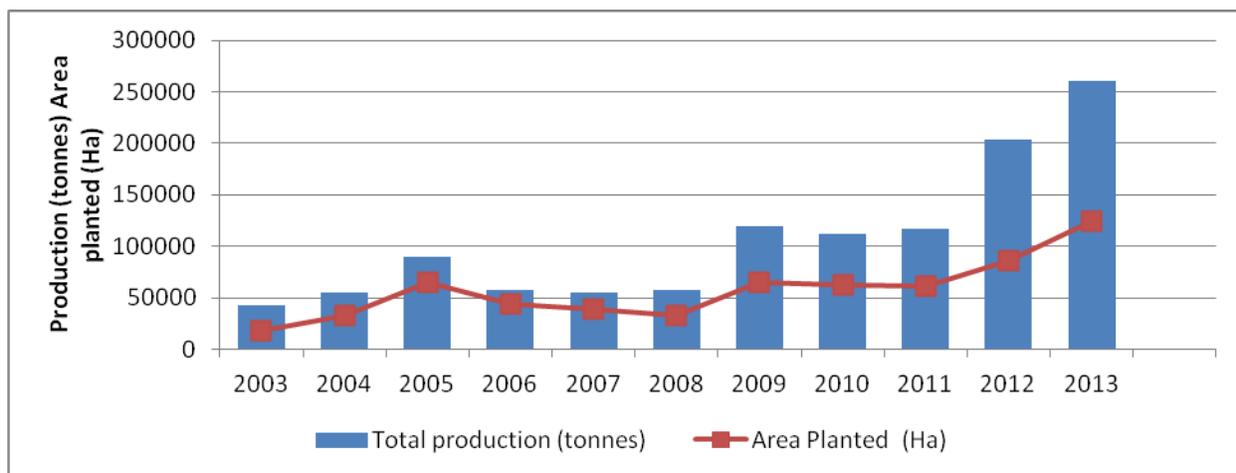
Finished or refined edible oils, mainly palm oils, are imported into the country and are channeled through wholesalers, distributors and retailers who may be formal or informal traders. This part of the chain presents a plethora of challenges for the sector because it is dominated by illegalities such as smuggling, evasion of the rightful duties and VAT and other obligations, as will be discussed in later sections.

The other component of the import market is the intermediate imports which include crude and semi-processed edible oil imports. This is a significant proportion of the market as it greatly affects the off-take of locally produced oilseeds. Edible oil processors with larger processing capacity tend to also import large amounts of crude oil (about 90 % of total edible oils imports between January, 2012 to May, 2013 were crude oils mainly crude palm oil from Malaysia and Singapore). Semi-processed edible oils, such as Stearin oil and RBD Olein from South Africa, are also imported by processors. These edible oils are simply refined and sold in the domestic market through distributors, retail chains and informal traders.⁵

3.2 Oilseeds Production in Zambia

Oilseed production largely depends on the edible oils and feedstock markets as off-takers. Oilseed crushers in Zambia mostly utilize soybeans and therefore, there is a high correlation between the soybeans production and the edible oils market developments.

Figure 2: Soybeans national production and area planted: 2003-2013



Source of data: Crop Forecast Survey CSO/MAL

⁵ Formal traders are formally registered trading companies whereas informal traders are unregistered entities

As shown in Figure 2, there has been significant growth in the soybeans production and area planted, particularly over the last five years. Total soybeans production was 42,000 tonnes in 2003 while area planted was 17,400 hectares. Production and areas planted have increased tremendously to reach 261,000 tonnes and 124,858 hectares respectively in 2013. This could be attributed to growth in the edible oils and soy cake demand, which have increased particularly, in the last 5 years or so. About 80 per cent of soybeans production is under large scale farmers while small scale farmers contribute only 20 per cent.

3.2.1 Large Scale Production

Soybeans production by large scale commercial farmers is three times higher at present than it was in 2003 (MAL & CSO, 2011). An assessment of commercial farmers' soybeans production revealed that out of an average area under crops of 3,966 hectares per farmer, 2,558 hectares (64.5 %) is under soybeans leaving about 35.5 per cent for other crops. The predominance of soy bean production in commercial farming systems is likely the result of a combination of factors. On the one hand, demand growth for edible oils and stock feed industries has spurred production growth. On the other hand, many farmers have shifted out of maize production due to poor maize market conditions resulting from high levels of government interference in the maize markets.

Data from our survey of commercial farmers suggests that average production per farmer has increased by about 33.5 per cent from 2007/8 season to 2012/3 season (the last five years). Average area planted of soybeans per farmer has risen by an average of 13 per cent per annum over the same period, while yields have risen by an average of 10 per cent. The drivers of the observed growth in soybeans production include the expansions in the soybeans crushing capacity in Zambia and the rise in the price. There are also a number of larger farmers and corporate farming entities that have made green field investments in soybeans in the last five years, which is boosting production.

Table 1 shows the major buyers of soybeans as indicated by commercial farmers during the assessment. Considering that most buyers are stock feed manufacturers and that even oilseed crushers utilize a greater percentage (81%) for stock feed, it appears that stock feed demand is the major off-taker of soybeans from commercial farmers.

Table 1: Soybeans buyers from large scale farmers

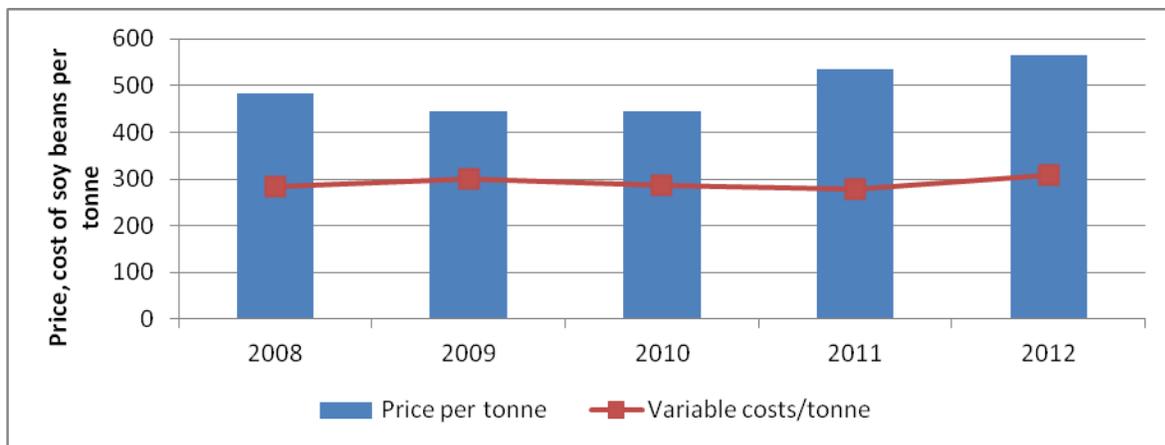
| Soybeans Buyer | Main utilization of soybeans |
|---------------------|------------------------------|
| 1) Zamanita | Oilseed crushing |
| 2) Mt. Meru | Oilseed crushing |
| 3) Olympic milling | Stock feed |
| 4) Tiger feed | Stock feed |
| 5) Nutri feed | Stock feed |
| 6) Quality feeds | Stock feed |
| 7) National milling | Stock feed |
| 8) Ross Maclaude | Stock feed |

Source: Authors' compilation

Large scale farmers also indicated that there has been a rise in the price of soybeans over the last 5 years. On average the contract prices of soybeans have risen from an average of US\$ 483 per tonne in 2008 to about US\$ 566 per tonne in 2013 representing a price rise of 17 per cent (see figure 3). Despite growth in production of soybeans in response to rising demand and corresponding prices, the variable costs of production for soybeans have been high over the past 5 years remaining stubbornly high and increasing marginally by 8 per cent as shown in figure 4. This is indicative of the fact that soybean is a high cost farming enterprise with low margins.

The rise in the price of soybeans and the corresponding increase in the amount of soybeans crushing could be resulting from increased demand for soybeans for stock feed use which is rising rapidly. In contrast, it appears that oilseeds demand for edible oils is on the decline. Demand for oilseeds for edible oils manufacture slumped in 2013 possibly due to increased competition from imports. By April, 2013, the major oilseed crushers, Mount Meru, EFE limited and Zamanita had a total of 5.8 million litres of unsold edible oils, causing them to reduce their capacity by about 35 percent and momentarily halting soybeans purchases from farmers (ZNFU, 2013). To some extent, demand for soy cake complements and even sustains demand for oilseeds.

Figure 3: Variable costs of production of soybeans under commercial production: 2008-2012



Sources of data: Large scale farmers

Data collected from ZNFU indicates that average prices (delivered to the processors' gate) of soybeans have dropped from US\$ 528/kg to US\$ 466/kg between January and August 2013, a drop of about 12 per cent between.⁶ The implication of this drop in the prices is that margins have declined which negates the previous rising trend and further threatens the future prospects for the market.

Despite the challenges, most large scale farmers indicated that the soybeans market is functioning better than the maize market due to limited government interference. However the rapid increase in the importation of edible oils was noted as a major threat to the development of the sector. Most large scale farmer's contracts to supply edible oils processors have been affected by rapid rise in edible oils importations as it has increased uncertainty from buyers. Although

⁶ ZNFU price database (ZNFU 4455) for into-mill soybeans prices

most large scale farmers were able to sell all the soybeans they produced, the marketing modalities presented major challenges. During the 2012/13 marketing season, edible oils processors announced that they were not taking any more soybeans as a result of reduced operating capacity creating uncertainties for farmers. In cases where supply of oilseeds was on contract, the situation came close to breach of contract by the buyers. As a result of perceived improvements in maize marketing in 2013, resulting from the removal of into-mill maize subsidies, some farmers have indicated that they will be allocating some of the land under soybeans to maize in the coming season.

3.2.2 Small Scale Soybeans Production

Soybeans production under small scale farmers has more than doubled since 2003 on the basis of government statistics (CSO/MAL, 2012). Among other factors, this increase can be attributed to the growing demand from off-takers as well as deliberate interventions by organizations such as ZNFU and USAID to promote its production among small scale farmers. It was revealed during interviews with smallholder farmers in Serenje, in Central Province that they had not produced soybeans for over 5 years because of perceived poor markets and lack of access to inputs. Interventions by ZNFU in the 2012/13 season through a credit scheme has resulted in rising number of farmers who took up soybeans production-many of them for the first time. About 80 farmers were recipients of the scheme in Serenje District. In Luanshya district, small scale farmers have been producing soybeans for some time due to the availability of off-takers (edible oils processors and stock feed manufacturers).

There is an increase soybeans area planted by soybeans farmers in the two study areas following the realization by most farmers that the crop provides an alternative to maize production. Soybeans marketing is perceived to have some advantages over maize in that farmers receive cash on the spot in comparison to maize where payments by the Food Reserve Agency (FRA) are often delayed. The risk however, is that prices fluctuate making it difficult for farmers to plan from season to season. It was found that production and yield under smallholders still remains low with an average of 1.2 tonnes per hectare. Inadequate access to inputs and lack of access to extension services were cited as some of the reasons for the low yields. However, some farmers in Luanshya indicated that they had seen some improvements in overall production over the last 5 years. In comparison to other crop markets, farmers perceive soybeans to be better in the sense that payments are made on the spot and prices are relatively better than maize.

The interviews with farmers in Serenje and Luanshya allowed us to understand two different scenarios regarding marketing of soybeans. Serenje is located far from any soy bean crushers or large traders with the closest being large grain traders in Mkushi which is 100 km way. However, farmers have to incur transportation cost (K0.60/kg) to sell soybeans to Mkushi. Luanshya on the other hand has sufficient off-takers and input suppliers such as EFE limited, Zambeef, Specialty Foods and Golden Lay, SeedCo and Bati fertilizer. Inevitably, prices of soybeans in Luanshya were higher with an average of K2.42 to 3.00 per kg compared to Serenje where the price is K1.80 to 2.42 per Kg.

The price differential between soybeans prices in Luanshya and Serenje works out to be about K0.60/kg which happens to be the same as the transportation cost of soybeans from Serenje to Mkushi. It appears that the market is pricing the cost of transportation well and not exploiting farmers due to relative market isolation. In as far as the price is concerned, farmers in relatively

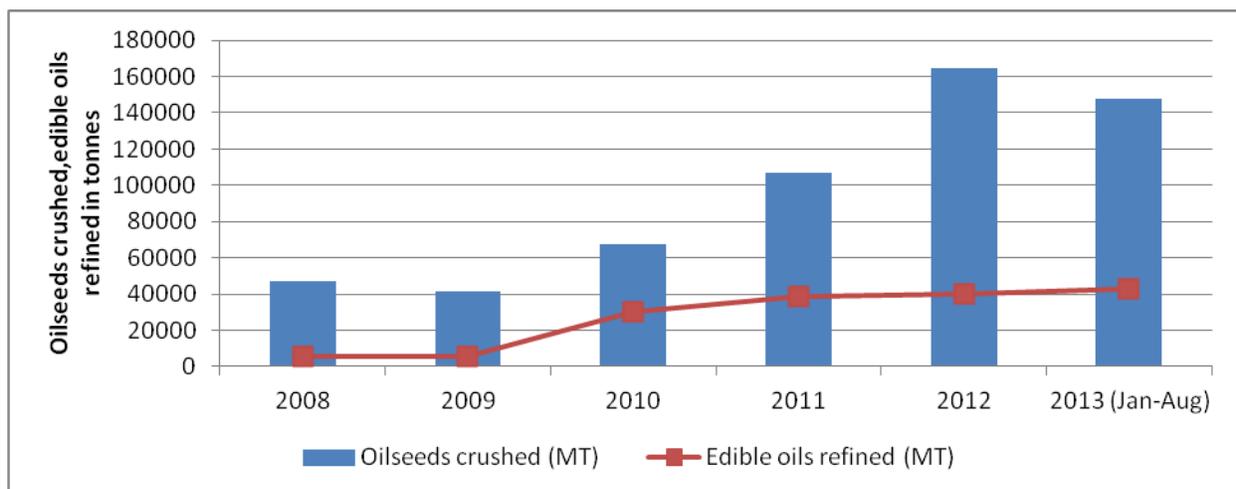
isolated markets are not worse off than farmers producing close to the off-takers of oilseeds once transport costs are accounted for.

3.3 Edible Oils Production in Zambia

Large scale corporate businesses produce the majority of edible oils in Zambia, though significant production does occur by small and medium-scale enterprises (SMEs). In addition there are a number of informal, rural based processors who extract oil from own-produced oilseeds, mainly sunflower, for consumption and sale within rural communities. However, due to a lack of information on this category of processors we confine our analysis to the large and SME sectors.

Data collected from edible oils processors indicate that Mount Meru has the largest crushing capacity among all the edible oil crushers in Zambia with a total capacity of 400 tons per day followed by Zamanita and EFE limited with 300 tons and 100 tons respectively. The other oilseed crushers in the study were found to have moderate capacities ranging from 15 to 75 tonnes per day with the exception of Global Oil Industries, without any investments in oilseed crushing. Based on the data, the study estimates the total installed oilseed crushing capacity for Zambia to be 1,085 tonnes per day or 375,575 tonnes per year. With regard to refining capacity, Global Oils Industries has the largest installed refining capacity followed by Mount Meru and Zamanita. Since Global Oils industries has not invested in any crushing capacity, it relies entirely on imported crude oil. Cotton Seed has a refining capacity of 20 tonnes of edible oils per day, EFE Limited, 18 tonnes per day while rest of the crushers have not invested in any edible oils refining capacities. The total edible oils refining capacity for Zambia is about 518 tonnes per day which is equivalent to 161,616 tonnes per year.

Figure 4: Oil seeds crushed and edible oils refined: 2008-2013(January to August)



Source of data: Edible oils processors

Figure 4 shows trends in edible oils crushing and refining for Zambia from 2008 to 2013 (January to August)⁷. Trends in edible oils crushing show that there has been a significant rise in

⁷ Since 2013 data is incomplete, the trends analysis focuses on 2008 to 2012. Data for 2013 is provided to give indications of current production at this point in 2013.

the amounts of oilseeds crushed from 46,930 tonnes in 2008 to 164,529 tonnes in 2012 and 147,894 tonnes in 2013 (from January to August). In tandem with crushing, edible oils refining has increased from around 5,828 tonnes in 2008 to 40,096 tonnes in 2012 and 43,179 tonnes in 2013. Out of the total installed refining capacity, only 25 per cent is actually utilized.

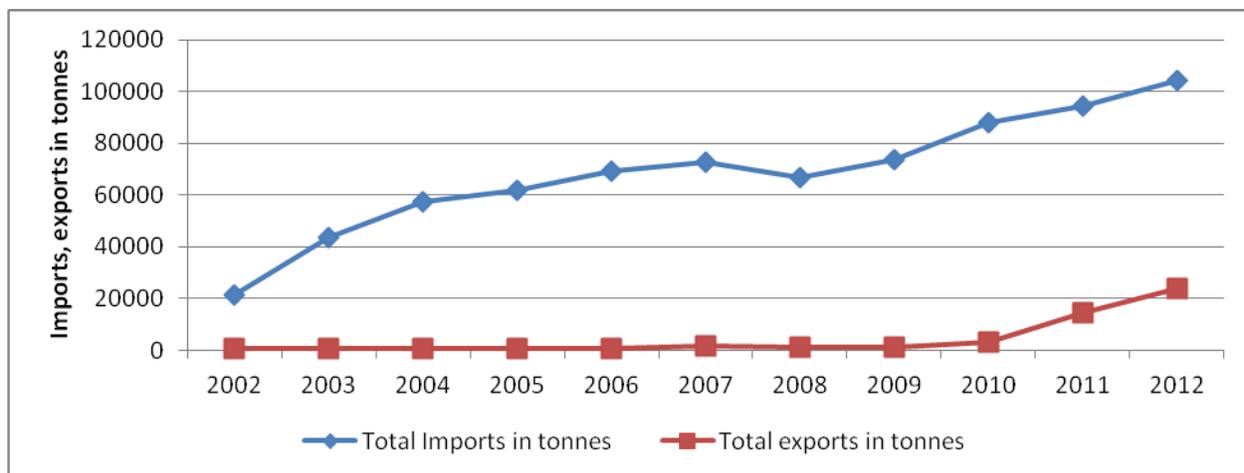
It is worth noting that despite the large amounts of refined oils, much of this is not utilizing locally produced oilseeds but rather imported crude and semi-refined edible oils. Despite not investing in any oilseed crushing capacity, Global Oil industries has the highest refining capacity as the company imports most its crude oil requirements (mainly palm-based oil) from Malaysia and Indonesia. Zamanita has been importing palm oil, but this is on a declining trend as it invests in soybeans production on its farm in addition to its purchases from farmers.

Zampalm a subsidiary of Zambeef Zambia Plc is in the process of establishing a palm oil processing plant to be based in Mpika district in Zambia's Northern Province. Such an investment can be viewed as a positive development in that on average palm produces more oil compared to soybeans and therefore likely to result in increased efficiency in the market. Domestic palm oil production is also likely to increase competition to oilseed based edible oil production. It also remains to be seen whether domestically produced palm oil can compete with imported palm oil under the prevailing market conditions

3.4 Edible Oils Imports and Exports

Edible oil imports have been on the rise in the past ten years. Figure 5 shows the amount of edible oils imported into Zambia from 2002 to 2012 which include crude, semi-processed and refined (finished) oils based on ZRA data. Total imports of edible oils have increased tremendously from 21,309 tonnes in 2002 to reach 104,383 tonnes in 2012. Exports of edible oils by Zambia have been low, although they have increased in the past 3 years from 440 tonnes in 2002 to 23,986 tonnes in 2012.

Figure 5: Edible oils imports by Zambia: 2002 to 2012

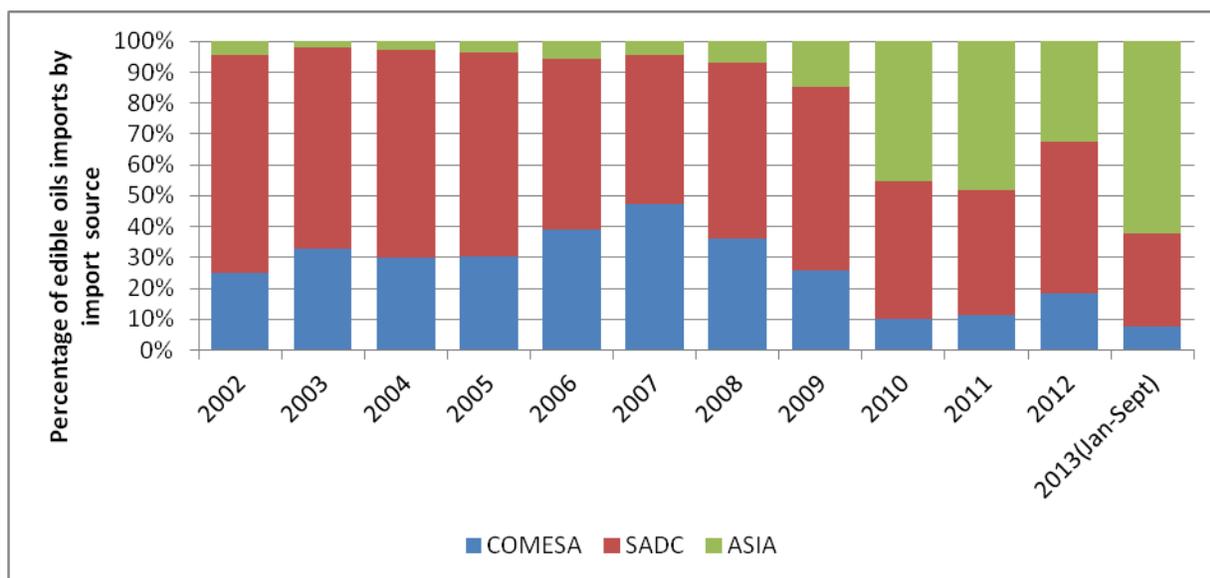


Source of Data: ZRA

Figure 6 shows imports of edible oils by the region of origin based on CSO data. Most of the imports of edible oils originate from the SADC region, mainly South Africa followed by imports

from Asia mainly from Singapore, Malaysia, and Indonesia. Imports of edible oils originating from COMESA have been relatively low mainly coming from Kenya and they have been declining. Although the SADC regions is the major source of edible oils imports, imports originating from Asia have been rising displacing SADC imports in the last 3 years.

Figure 6: Edible oils imports by origin: 2002 to 2013(January to August)



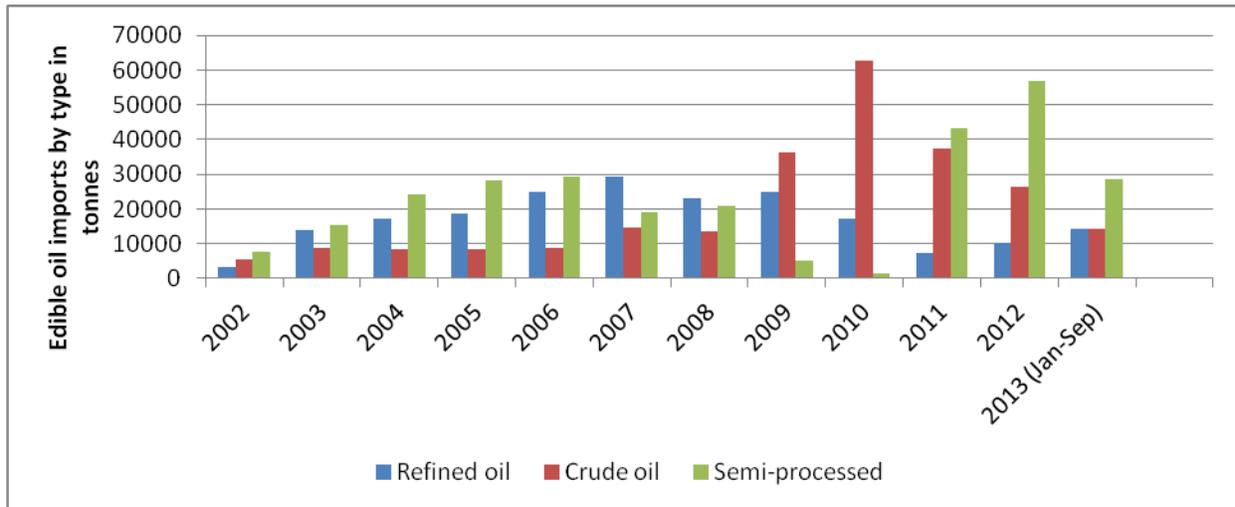
Source of Data: CSO

The 2013 import data already indicates that edible oils from Asia have surpassed SADC imports as shown in figure 6. The SADC region accounts for a larger proportion of refined and semi-processed edible oils rather than crude oils. There is also evidence that some of the semi-processed edible oils may be ending up on the market rather than going for further processing⁸.

Figure 7 shows edible oils imports by type based on ZRA data. Imports of refined edible oils rose from 2002 to 2007 but since then there has been a marked decline to about 10,164 tonnes in 2012. Semi-processed edible oils followed a similar trend to refined oils but further declined significantly by 2010. Since 2010, however, there has been a rapid increase in imports reaching 56,955 tonnes in 2012. There has been a steady rise in imports of crude oils from 2002 to 2010, then followed by a steady drop to 26,530 tonnes in 2012. It appears that in the last three years, importer are increasingly substituting crude oil imports with semi-processed oils. The study estimates that between 80 to 90 per cent of total edible oil imports consist of crude and semi-processed edible oils.

⁸ Interview with processor

Figure 7: Percentage of edible oils imports by type: 2002 to 2013(January to September)



Source of Data: ZRA

Edible oils processors import large amounts of crude and semi-processed oils for further processing which they find cheaper than crushing local oilseeds and refining. It can be argued that there is limited value added in refining edible oils from imported crude or semi-processed edible oils. However, there are more incentives for processors to utilize imported products than local raw materials in the manufacturing process because of the current tariff structure.

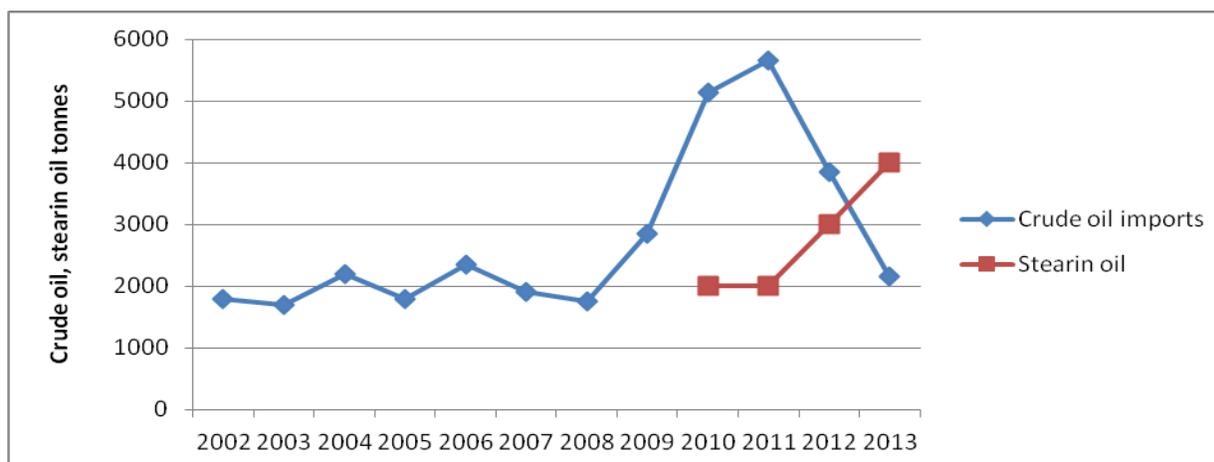
Under the current tariff structure for, crude oils imports are charged duty at 0 per cent, semi-processed at 5 per cent⁹ and finished (refined) oil at 25 per cent in addition to VAT which is 16 per cent. For refined edible oils there is a provision that states that either 25 per cent or ZMW 0.85/kg whichever is higher (ZRA, 2013 b). This structure creates further incentives for importers to misclassify their imports as crude or semi-processed rather than refined oils in order to avoid or reduce the amount of duty payable. It has been argued by some stakeholders that the 0.85/kg alternative charge on finished oil is too low and has not been reviewed for some time.

Figure 8 shows the amounts of crude oils and stearin oils imported into Zambia by processors in the last 10 years as indicated by edible oil processors during this study. Data from edible oil processors shows that importation of edible oils by processors has been on the rise from around 1800 tonnes in 2002 to 7030 tonnes in 2012 and 7320¹⁰ tonnes in 2013. This has been as a result of an increase in the number of edible oils processors utilizing imported crude palm oil and semi-processed oil in the manufacture of refined oil. Crude oils are originating from Malaysia, Indonesia, Singapore, Argentina and Brazil, semi- processed oil such as (RBD Olein) are origination from South Africa.

⁹ Some semi-processed products are charged 15%

¹⁰ Actual imports of crude and semi-processed oils are likely to be higher than the reported figure because some large importers did not participate in this study

Figure 8: Imports of crude and semi-processed oils by edible oils processors



Source of data: edible oil processors

The total amount of edible oil imports reported by edible oil processors appears to be low considering that about 80 to 90 per cent of total edible oil imports in Zambia are crude and/or semi-processed oil. One possibility is that importers may be deliberately misclassifying crude and semi-processed oil imports when importing refined oil in order to avoid paying duty. This suggests the need for greater inspection of products at border crossing to ensure the proper duty levels are being applied to imported oil products.

Illegal imports are difficult to quantify primarily because they circumvent border authorities hence not recorded. Although, it is difficult to quantify the amount of illegal edible oil imports entering the country, anecdotal evidence indicates the practice is widespread, particularly at the Nakonde border posts. It has been estimated that as much as 30 tonnes per day (close to 11,000 tonnes per year) of edible oils may be entering the country by circumventing the border post. Weaknesses in the enforcement mechanism of import procedures, uncoordinated inspections and the lack of systems for determining the true value of imported edible oil products have led to this increase.

3.4.3 Challenges with enforcing import procedures

Importation of edible oils is not restricted per se in Zambia, which means that standard import procedures apply in any case. However, since edible oils are meant for human consumption they are subjected to scrutiny in accordance to the Food and Drugs Act, the Standards Act under the Zambia Bureau of Standards (ZABS) as well as the Ministry of Health (MoH) health certification. This study identified that compliance with the requirements is least among the prerequisites for importation and worst still, physical inspections are rarely conducted. Edible oils processors have also indicated that during importation, compliance with health and standard requirements is not prioritized at the borders. Emphasis has been placed on pro forma invoice, bill of landing, import declaration form and Statutory Instrument (SI) 55 forms.

There are weaknesses in inspection at the border as was noted by health and ZABS inspectors when interviewed during this study. They were of the view that there is lack of coordination between the inspectors and ZRA staff. Although Nakonde border, for instance, does not possess laboratory facilities to enable detailed tests on samples, it is supposed to recommend for further

tests at other laboratories whenever they suspected that products did not meet the required standards. However, the lack of coordinated inspections does not allow for physical inspections and as such importers normally elude the physical inspections.

The situation described above implies that there is plenty room for opportunistic behavior at border posts such as Nakonde. This includes misclassification of edible oil imports (declaring crude when importing finished edible oil products) in order to avoid paying duty. The ZRA staff experience another challenge with determining the true value of imported edible oils to enable them to charge the right amount of duty. Importers often undervalue edible oil products with the aim of reducing the amount of duty payable and have in most cases claimed that they receive discounts on bulk purchases. Efforts have been made by ZRA through its International Trade and Policy Unit to develop a valuation system that accurately captures the duties and other taxes applicable to edible oils imports.

Circumvention of inspectors at Nakonde border is possible because importers have created by-pass roads at Nakonde border post where goods are channeled without paying any taxes. Trucks are often offloaded at loading bays and 20 litres containers are re-loaded on bicycles which cross the border and then reload. In order to address this challenge, inspectors formed a Joint Border Committee (JBC) to enhance coordination among inspectors but at present the committee has not improved inspections.

The major brands that are imported through the Nakonde border post are as shown in table 2 below.

Table 2: Major brands of refined edible oils imported into Zambia

| Brand Name | Country of origin |
|-------------------|--------------------------|
| Ufuta | Kenya |
| OKI | Malaysia |
| Eagle | Kenya |
| Korie | Tanzania |
| Safi | Tanzania |
| Soja | Kenya |

Source: Authors' compilation

3.4.4 Edible oils imported by rail

The study also found that most of the imports that are monitored by ZRA at Nakonde involve edible oils that enter the country by road. However, rail is another channel through which a lot of edible oils are imported into the country. Edible oils are imported through a freight train and a passenger train from Dar e salaam to Kapiri-Mposhi. Most of the edible oils in the passenger trains are destined for the Northern Province (Kasama, Luwingu and Kaputa) and some of them end up in Luapula Province through a station called Ndabala. Interviews with TAZARA staff revealed that there is a passenger train twice in a week with a 15 ton luggage allowance and about three quarters of this is edible oils mainly Oki oil. Approximately 11.25 tonnes (or 1,170 tonnes per year) is imported into Zambia through rail mainly by local traders. ZRA monitors the imports at Nakonde and at Kasama.

The freight train transports edible oils destined for Congo from Malaysia and Singapore which are offloaded at Kapiri Mposhi then transported by road or through Zambia Railways train. There is very high frequency of edible oils destined for Congo. It was revealed, however that there is strict monitoring of the transit edible oils by ZRA to ensure that they are not offloaded into Zambia. Data obtained from TAZARA indicates that between January, 2013 to August, 2013 imports destined for the Congo amounted to about 764 tonnes or 809,000 litre of edible oils (OKI brand) all of which were imported from Singapore and destined for DRC.

Rules of Origin are guidelines that serve to prevent goods from non-members of a Regional Economic Community such as COMESA and SADCs from benefiting from the preferential tariff treatment offered under the trade regime (SADC, 2003). All edible oil imports originating from the FTA under COMESA and SADC do not pay duty for all types of edible oils. Edible oils originating from outside the region pay 0 percent for crude oils, 5 per cent for semi-processed oil and 25 per cent for refined or finished oils. The study found that among all the brands imported into Zambia through Nakonde border, the only edible oils that qualify for preferential treatment under COMESA rules of origin are refined edible oils from Kenya which include Eagle and Ufuta. Indications from interviews with stakeholders are that edible oil imports generally comply with rules of origin.¹¹

3.6 Oilseed and Edible Oils Consumption in Zambia

Soybeans are used to satisfy three separate markets: soybean oil, soybean cake (both low fat cake and full fat cake) and soybean products for human consumption, with the first two dominating Zambia's domestic market (Southern Africa Trade Hub (SATH), 2011). Demand for oilseed crushing is closely linked to soybeans demand for the stock feed market because stock feed is manufactured from soy cake which is a by-product from edible oils crushing. It can be argued as to which is the larger off-taker for soybeans between the edible oils and the stock feed. However, estimates from this study are that from the total soybeans production of 203,038 tonnes in 2012, 164, 529 tonnes were crushed for the purpose of edible oils production. Assuming extraction rates of 14 per cent and 81 per cent for crude oils and soy cake respectively, this means that 23,034 tonnes of crude oil and 133,268 tonnes of soy cake were produced.

Reduced processing capacity by most edible oil processors and low oilseed purchases characterized this year's marketing (ZNFU, 2013). Demand for soybeans experienced unprecedented decline at least for oilseed processing in and this pattern might carry on through to next year if the situation is left unchecked. The dampening soybeans price, particularly in 2013, implies that low supply is expected and this would precipitate into increased imports as processors substitute edible oils based on local oilseeds processing with imported crude and semi-processed edible oils to remain competitive. On the other hand, demand for stock feed manufactured from local soy cake has been on the rise especially from the poultry sector which has been growing at a very fast pace and could sustain demand for oil seeds to some extent. This may help to off-set declining demand for soybean oils.

National edible oils consumption in Zambia is not easy to determine, firstly because data on this is not captured in survey data. Secondly, it is difficult to determine the true consumption levels when there are so many informal and in most cases illegal imports that have not been recorded. Regardless of this, the study estimates consumption based on a number of assumptions.

¹¹ Based on interviews with ZRA and MCTI

Table 3 is a summary of the computations for estimating national consumption of edible oils for Zambia.

Table 3: National requirement for edible oils estimates for 2012

| | Edible oil amounts tonnes |
|---|----------------------------------|
| 1) Domestic production of edible oils | 40,096 |
| 3) Total imports of edible oils (crude, semi-refined and refined) | 104,383 |
| 4) <i>Total national supply of edible oils (1) +(2)</i> | <i>144,479</i> |
| 5) Exports of edible oils | 24,039 |
| 6) <i>National requirements (4)-(5)</i> | <i>120,493</i> |
| 7) National requirement supplied by domestic production | 33.27% |
| 8) National requirement supplied by utilizing local oilseeds | 19.12% |

Source: Author's compilation

If total domestic production of edible oils in 2012 was 40,096 tonnes and imports were at 104,383 tonnes then total supply in 2012 stood at 143,789 tonnes. Of the total supply of edible oils, 28.5 per cent is supplied from local production. If Zambia then exported 24,039 tonnes in 2012, then the national consumption in that year stood at 120,493 tonnes of edible oil¹². This means that of the total requirements 33.27 per cent was locally produced and 66.73 per cent was met by imports. On the other hand, it must be noted that the 40,096 tonnes of locally produced edible oils also consisted of imported raw materials and that only 23,034 tonnes was manufactured wholly from local products. This means that only 19.12 per cent of the total national consumption is supplied from refined oil manufactured from local raw materials.

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 Conclusions

The national requirement for edible oils in Zambia on the basis of national consumption estimates is estimated at about 120,000 tonnes per year. Of this amount, 33 per cent is supplied by domestic production 67 per cent is supplied by imports of refined, semi-processed and crude edible oils. Edible oils manufactured domestically from local raw materials only constitute almost 20 per cent of the national requirement. Despite having a larger proportion of edible oils supplied by imports, Zambia has more than enough installed capacity to supply all its edible oils requirements with its installed processing capacity of more than 161,000 tonnes of refined edible oils which corresponds with a crushing capacity of 375,000 tonnes of oilseeds per year.

¹² Note that the estimated figure for national consumption consists of crude, processed and semi-processed edible oils.

Actual refined edible oils production only accounts for a paltry 25 per cent of installed capacity and most of the edible oils refined are refined from imported crude oil and semi-processed oil. The actual oilseeds crushed amounts to around 160,000 tonnes which goes to satisfy demand for both edible oils and stock feed. It appears that oilseed demand for stock feed to supply the rising poultry demand is a major off-taker of oilseeds. Oilseeds demand from the edible oils sector is limited because of imported crude and semi-processed edible oils offering stiff competition to domestically produced edible oils. As a result of imported edible oils, processors have less incentive to utilize local oilseeds in the production process. It is cheaper for them to import crude and semi-processed oils for refining domestically. Further, evidence shows that semi-processed oil imports have escalated surpassing crude oil imports by 2012. Although the SADC region accounts for a larger share of Zambia's edible oil imports, trends show a rapid increase in Asian imports most of which are semi-processed and crude oils. The 2013 data already indicates that more imports are originating from Asia. Although 80 to 90 per cent of imports are in crude and semi-processed form according to official figure, there may be misclassification by importers who have an incentive to avoid paying duty or pay 5 per cent when importing refined oils.

Illegal edible oils are imported mainly through false declarations, circumvention of border authorities and undervaluing of products. This is as result of weaknesses in the enforcement mechanism of import procedures, uncoordinated inspections and the lack of systems for determining the true value of edible oil products by ZRA. Importation of oils by rail is quite significant and there is also insufficient inspections resulting in rapid increase in imports mainly supplying Muchinga, Northern and Luapula provinces.

The effects of undervalued edible oil imports are evident for both small scale and large scale farmers. Large scale farmers are faced with the challenge of uncertainty with oilseed markets as well as declining price of soybeans in 2013 which could negate the positive developments achieved in the market in recent years. Smallholder farmers some of whom are new to the crop face limitations with productivity due to lack of technical knowledge and poor access to input markets except in situations where they receive inputs through interventions such as the one under ZNFU. Further, the lack of contracts with buyers increases their exposure to price risks. In a market faced with intense pressure from imported edible oils, there is a great risk that both large scale and small scale farmers might reduce production of soybeans. On the other hand, the soybeans market it pricing costs of production efficiently lessening the discrepancy in pricing between farmers close to processors and those in relative isolation.

However, the inability of the domestic edible oils and oilseeds industries to effectively compete also shows inherent inefficiencies in production and processing. This may be as a result of limited investments in research, development, and farm extension which might reduce costs of production both at the production and processing stages (Lubungu, Burke & Sitko, 2013).

4.2 Policy Recommendations

The study makes a number of policy recommendations for the short and medium term implementation which are summarized below:

4.2.1 Short-term implementation

The following recommendations have been made for short term (immediate) implementation:

- Government should increase duty on crude edible oil to 10 per cent; and semi-processed edible oil to 15 per cent in order to encourage local value addition.
- Government should also VAT zero-rate locally produced edible oils in order to improve competitiveness against imported products.
- Government should revise the ZMW 0.85/kg alternative charge on finished edible oils upwards.

These measures are expected to promote growth of the domestic edible oil and oilseed sector by:

- Reducing demand of imported crude and semi-processed edible oil on the local market and stimulate demand for the local industry
- Eliminating the incentive for importers to declare finished products as semi-processed. This will discourage misclassification, reduce revenue losses to government and create a level playing field for all industry players

4.2.2 Medium-term implementation

The following recommendations have been put forward for consideration in the medium term to complement the short-term policy recommendations:

- Government through ZRA should expedite the process of developing and implementing a standardized system for valuation of imported edible oils in order to prevent undervaluing edible oil imports.
- Government through ZRA, ZABS and MOH should strengthen inspections including physical inspections at border posts to prevent misclassification and circumvention of border authorities. Inspectors from MoH and ZABS should collaborate and ensure that before payment of taxes, thorough inspections have been conducted. Inspectors and law enforcers should carry out regular patrols to prevent illegal imports. Rail bound imports should be inspected at the point of entry at Nakonde and at the final destination.
- Government should consider providing incentives for oilseed crushers such as lower corporate tax or duty free importation of equipment for oilseed crushing and refining. Developments such as Zampalm should be supported with incentives so that Zambia can meet its palm oil requirements and henceforth substitute palm based imports with domestically produced palm oils.
- Government should invest in research and extension in order to increase efficiencies especially for small scale oilseed producers. Government should improve rural infrastructure such as road network in order to increase production and marketing efficiencies for oilseed producers.

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APPENDICES

Appendix II: Soybeans and edible oils

Soybeans Production, area planted and yields: 2003-2013

| Year | Large scale production(tonnes) | Small scale production(tonnes) | Total production (tonnes) | Area Planted (Hectares) | Yield (tonnes/Hectare) |
|-------------|---------------------------------------|---------------------------------------|----------------------------------|--------------------------------|-------------------------------|
| 2003 | 34279 | 7721 | 42000 | 17400 | 2.41 |
| 2004 | 46523 | 8477 | 55000 | 33200 | 1.66 |
| 2005 | 71344 | 18656 | 90000 | 65200 | 1.38 |
| 2006 | 44856 | 13144 | 58000 | 44000 | 1.32 |
| 2007 | 45852 | 9148 | 55000 | 38900 | 1.41 |
| 2008 | 42115 | 15885 | 58000 | 32400 | 1.79 |
| 2009 | 92835 | 26165 | 119000 | 64700 | 1.84 |
| 2010 | 93378 | 18510 | 111888 | 62300 | 1.80 |
| 2011 | 98029 | 18510 | 116539 | 61400 | 1.90 |
| 2012 | | | 203038 | 84800 | 2.39 |
| 2013 | | | 261063 | 121350 | 2.15 |

Total oilseeds crushed and edible oils refined (tonnes)

| Year | Total oilseed crushed (tonnes) | edible oils refined (tonnes) |
|----------------|---------------------------------------|-------------------------------------|
| 2008 | 46930 | 5828 |
| 2009 | 41647 | 5799 |
| 2010 | 67771 | 30123 |
| 2011 | 107178 | 38859 |
| 2012 | 164529 | 40096 |
| 2013 (Jan-Aug) | 147894 | 43180 |

Appendix II: Imports and exports of edible oils

Imports of edible oils by type

| Year | Refined oil | Crude oil | Semi-processed |
|----------------|-------------|-----------|----------------|
| 2002 | 3348.518 | 5465.396 | 7548.751 |
| 2003 | 13902.84 | 8693.481 | 15310.72 |
| 2004 | 17246.73 | 8536.491 | 24235.16 |
| 2005 | 18639.91 | 8246.336 | 28353.5 |
| 2006 | 24892.85 | 8630.239 | 29483.92 |
| 2007 | 29333.64 | 14804.06 | 19028.87 |
| 2008 | 23238.12 | 13702.33 | 20923.02 |
| 2009 | 24761.48 | 36290.91 | 5272.403 |
| 2010 | 17393.01 | 62892.67 | 1455.367 |
| 2011 | 7258.76 | 37456.94 | 43414.79 |
| 2012 | 10163.85 | 26530.05 | 56955.4 |
| 2013 (Jan-Sep) | 14308.29 | 14293.67 | 28626.34 |

Source: ZRA

Exports of edible oils

| Year | Exports (refined oils) |
|----------------|------------------------|
| 2002 | 7548.751 |
| 2003 | 15310.72 |
| 2004 | 24235.158 |
| 2005 | 28353.496 |
| 2006 | 29483.924 |
| 2007 | 19028.866 |
| 2008 | 20923.02 |
| 2009 | 5272.403 |
| 2010 | 1455.3667 |
| 2011 | 43414.792 |
| 2012 | 56955.399 |
| 2013 (Jan-Sep) | 28626.338 |

Source: ZRA

Appendix III: List of Organizations and People Interviewed

- 1) Allan Mulenga-Health Inspector, Ministry of Health, Nakonde
- 2) Andrew Simwanza-Acting Collector, ZRA, Kapiri-Mposhi
- 3) Charles Mbewe-Senior Passengers Officer, TAZARA, Mpika
- 4) Clement Mulenga-Senior Passengers Officer, TAZARA, Kapiri-Mposhi
- 5) CMR Farm, Kabwe
- 6) Cotton Seed, Kabwe
- 7) David Mungela-Senior Collector, ZRA, Nakonde
- 8) Emman Farming Enterprises, Luanshya
- 9) Global Oils Industries, Ndola
- 10) Golden Lay Limited, Luanshya
- 11) Jackson Sakala-Inspector, Zambia Bureau of Standards, Nakonde
- 12) Lester Shenton-Agri-Options Limited, Mkushi
- 13) Matila Ranch, Mkushi
- 14) Mount Meru, Lusaka
- 15) National Milling Corporation, Lusaka
- 16) Nutri-feed, Lusaka
- 17) Olympic Milling Stock feed Limited, Ndola
- 18) Rich Lands Farm, Mkushi
- 19) Somawhe Estates Limited, Mpongwe
- 20) Still Water Farm Limited, Mpongwe
- 21) Sydney Bwali-Marketing Officer, TAZARA, Kapiri-Mposhi
- 22) Trusted Mwiinga-Plantation Manager, Zampalm, Mpika
- 23) Willem Meyer-CEO, Chayton Africa (Chobe Agrivision), Mkushi
- 24) ZAMANITA, Lusaka
- 25) Zambeef, Lusaka