NATIONAL COMPETITIVENESS COMMISSION

"Enhancing Zimbabwe's Global Competitiveness"

SOYA BEAN VALUE CHAIN

Competitiveness Report

2023

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ACRONYMS

AfCFTA	African Continental Free Trade Area
FAO	Food and Agriculture Organization
GMB	Grain Marketing Board
MLAFWRD	Ministry of Lands, Agriculture, Fisheries, Water and Rural Development
MT	Metric Tonnes
NDS	National Development Strategy 1
NCC	National Competitiveness Commission
NEAPS	National Enhanced Agriculture Productivity Scheme
SADC	Southern African Development Community
SMA	Stockfeed Manufacturers Association
TVP	Texturized Vegetable Protein
WASDE	World Agricultural Supply and Demand Estimates
ZAMACE	Zambian Agricultural Commodities Exchange
ZMX	Zimbabwe Mercantile Exchange

FOREWORD

Mr. Phillip Phiri
Executive Director, NCC

The National Competitiveness Commission conducted a Soya Bean Value Chain Competitiveness analysis, which is an evidence-based study that outlines the challenges weighing on the sector's competitiveness along the whole chain. It also proffers appropriate policy interventions for improving productivity and competitiveness of the industry.

To this end, implementation of the proposed interventions by both Government and industry stakeholders along the value chain is expected to achieve the soya bean value chain objectives and goals outlined in the National Development Strategy 1 (2021 – 2025).

Among many bottlenecks in the value chain, the report notes the producer price being the major sticky issue on the production of soya bean. The farmers and processors are hopeful that the intervention by Government to allow self-financed farmers to sell soya bean at the commodity exchange market and to other registered contractors will result in competitive pricing and increase the production of the commodity in the long run.

May I, take this opportunity to thank representatives of the various nodes for their insightful inputs in the development of this report. The Commission will continue to engage through a Technical Working Group, dubbed the ***"Soya Bean Value Chain Competitiveness Lab,"*** to track progress on implementation of recommendations, as well as monitor the impact of emerging issues on the value chain's competitiveness.

PREFACE

Mr. Brighton Shayanewako
Director Competitiveness, NCC

Global Soya Bean production has grown over the past years, mainly emanating from increased hectarage. However, African producers supply less than 1% of the world's soya beans. In 2022, South Africa supplied 35%, Nigeria 27%, while Zambia and Uganda contributed 8.5% each of total Africa soya bean production, making them the top producers on the continent. Zimbabwe contributes about 1.2% of the African produce, while Malawi, Ethiopia, Ghana, Sudan and Ethiopia also contribute sizable commercial soya bean production.

In an effort to facilitate the domestication of the soya bean value chain and enhance competitiveness, in line with the National Development Strategy 1 (2021-2025) (NDS1) objectives, the Commission conducted an analysis and proffers evidence-based recommendations to address the identified gaps.

It is expected that improvement in competitiveness of the value chain will lead to self-reliance, thereby saving the country about US$292.7 million, being average import values for soya bean and edible crude soya bean oil, per annum. Addressing constraints in the soya bean production node and other issues along the value chain will not only assist in saving foreign currency, but also has the potential to earn more foreign currency through exports of surplus soya edible oil, cake meal,soap, and margarine, among other products.

The report benefitted from stakeholder consultations, desktop research, as well as visits to players in different nodes of the value chain in Zimbabwe. To this end, I would like to thank all the stakeholders for their support during the consultative and validation process of the Report.

The Commission will continue to engage relevant stakeholders on the implementation of recommendations for the development and enhancement of a competitive soya bean value chain. With Zimbabwe being a signatory to the African Continental Free Trade Area (AfCFTA), a competitive value chain is a prerequisite if the country is to tap from the opportunities availed by the trading bloc.

EXECUTIVE SUMMARY

Soya bean was declared a strategic crop in Zimbabwe and the value chain is prioritised under the National Development Strategy 1. This report complements the existing policies by identifying challenges that are weighing on competitiveness, and proffers evidence-based recommendations to enhance competitiveness of soya bean production in the country.

Soya bean is currently the main input for cooking oil production in Zimbabwe, contributing about 57%, with the remainder coming from cotton seed and sunflower. It is also used in the production of stockfeed, soap and margarine, among other products. However, the country has low soya bean production, having produced around 82 000 Metric Tonnes (MT) in 2022, against an estimated demand of 400 000 MT. The low soya bean production resulted in the importation of edible crude oil worth US$289.5 million in 2022.

The main findings of the report show that competitiveness of the value chain is mainly affected by high production costs, and low Government producer price, which is sometimes not adequate to meet costs, thus rendering commercial soya bean production unattractive to farmers. Resultantly, some farmers prefer to produce soya beans for their livestock feed as opposed to selling it to processors, as it is not economically viable. Consequently, self-financed farmers have welcomed the introduction of Statutory Instrument 129 of 2023, which allows them to sell to processors, the Grain Marketing Board (GMB) as well the Zimbabwe Mercantile Exchange. This is expected to offer more competitive prices and attract more farmers to invest in the production of the crop.

Further, all the players along the value chain are also affected by the general adverse macroeconomic conditions, characterised by high cost of borrowing, the short-term nature of the available borrowing facilities, high inflation, inadequate foreign currency and exchange rate volatility, resulting in companies forward pricing their products in local currency, thus rendering them uncompetitive.

This report was produced following extensive stakeholder consultations (relevant Government Ministries and Departments, farmers, processors, amongst others) and provides the following key recommendations to address the competitiveness gaps in the value chain:

- Local production of raw materials for fertilizer - Primary fertilizer producers are urged to prioritise investment in new plants, to enhance production of high analysis, phosphate and urea fertilizers, thereby minimising costs and achieving import substitution;
- Use of certified seed from reputable seed houses by small-scale farmers, to enhance productivity and competitiveness;
- Upscale contract farming, which will guarantee supply of certified seed that produce quality soya bean for the processing of edible oil and its by products;
- Lower the bank rate to below 30% per annum and have long-term loans so that farmers can venture into soya bean farming as a business, in line with comparator countries;
- Sensitize smallholder farmers on the operations of the Zimbabwe Mercantile Exchange (ZMX) as an open market for commodities, with willing buyers and willing sellers providing price discovery mechanisms; and
- GMB urged to timeously pay farmers upon delivery of soya bean, so as to enable them to reinvest in their operations and cover costs promptly.

Implementation of the proffered recommendations for both the Government and the private sector is expected to result in import substitution, foreign currency savings and generation through the exports.

1.0 INTRODUCTION

1.1 Soya bean is a grain legume that is directly consumed as food, or processed into animal feed, flour, soya milk, cooking oil, margarine, infant weaning food, meat substitute as Texturized Vegetable Protein (TVP), biofuel, input into soaps and fortification for food products. The Food and Agricultural Organization (FAO) classifies soya bean as an oilseed.

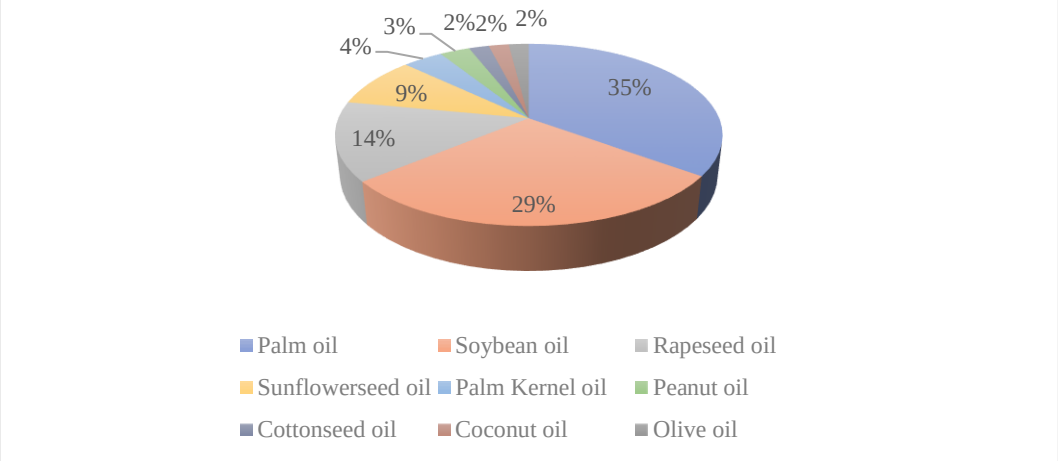
1.2 Globally, soya bean production has more than doubled over the past 20 years, expanding into a US$127.8 billion market. This is attributed to increased demand for high-protein animal feed like soya bean meal and adoption of veganism as consumers are now more health conscious.

1.3 Soya bean contains, on average, 35 – 40% protein and 20% oil. About 85% of global soya bean production is crushed into meal and vegetable oil. The other 15% is sold as whole beans. Of the soya beans crushed, 80% is used for meal and 20% for vegetable oil.

1.4 Although edible (cooking) oil is also produced from other seeds such as sunflower, groundnuts, olives, coconut and cotton seed, among others, globally, the use of soya bean cooking oil is second to palm oil.

1.5 Figure 1 below shows the average global edible oil consumption by type for the period 2021 to 2022.

Figure 1: Global Consumption of Edible Oil by Type, 2021 – 2022



Source: Statistica

1.6 Palm oil consumption was 35%, translating to 71.12 million MT over the period 2021 to 2022, while soya bean was 29% (59.3 million MT).

1.7 Africa is a minor player in global soya bean production, as it contributes less than 1%. However, African soya bean production levels are rising at an average rate of 6.84% per annum, attributed to an increase in area under crop as opposed to improvements in yield per hectare.

1.8 In line with regional and global trends, Zimbabwe prioritized soya bean production under the National Development Strategy 1 (NDS1) (2021 – 2025). This is attributed to the fact that soya bean is a strategic crop used for the provision of food, cash, improved soil fertility and industrial raw materials for production of stock feeds, cooking oil, margarine, soap and milk, among others.

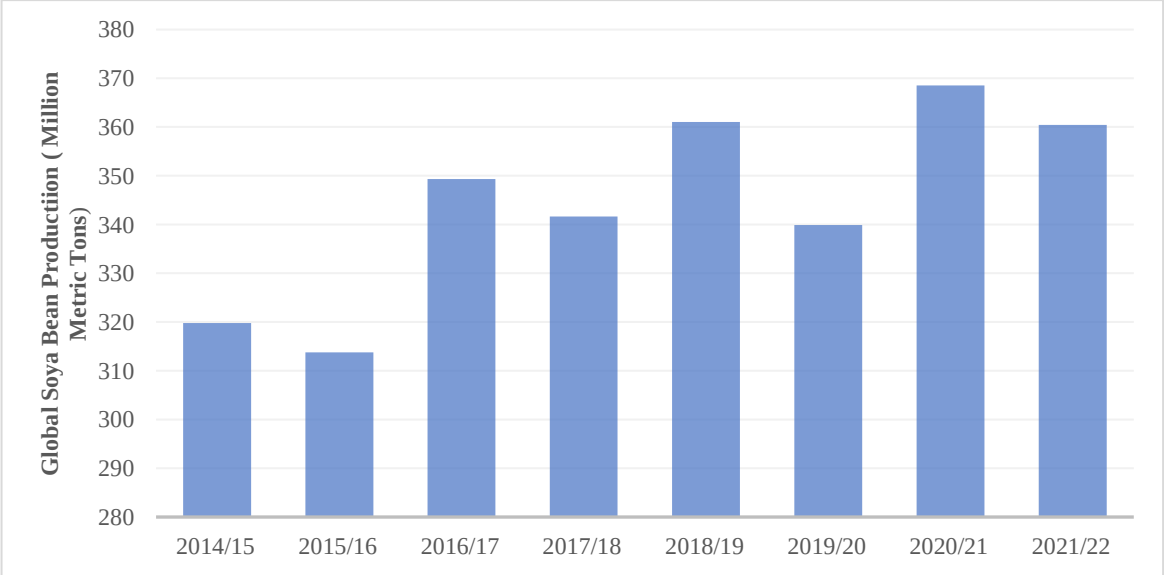
1.9 The NDS1 targets to increase both local soya bean throughput and crushing from 60 000 MT in 2020 to 300 000 MT by 2025, and the country is currently below the set targets.

2.0 OVERVIEW OF GLOBAL SOYA BEAN PRODUCTION

2.1 According to the October 2023 World Agricultural Supply and Demand Estimates Report, (WASDE), an estimated 360.43 million MT of soya bean were produced during the 2021/22 season. In 2022/23 season, a 2.73% increase to 370.24 million MT was projected.

2.2 Figure 2 below shows global soya bean production trend from 2014 to 2022.

Figure 2: Global Soya Bean Production Trend: 2014 – 2022



Source: World Agricultural Supply and Demand Estimates Report

2.3 Globally, the production of soya bean has been oscillating over the period 2014 to 2022. Production rose by 12.7% from 319.78 million MT in 2014 to 360.43 million MT in 2022.

Major Soya Bean-Producing Countries

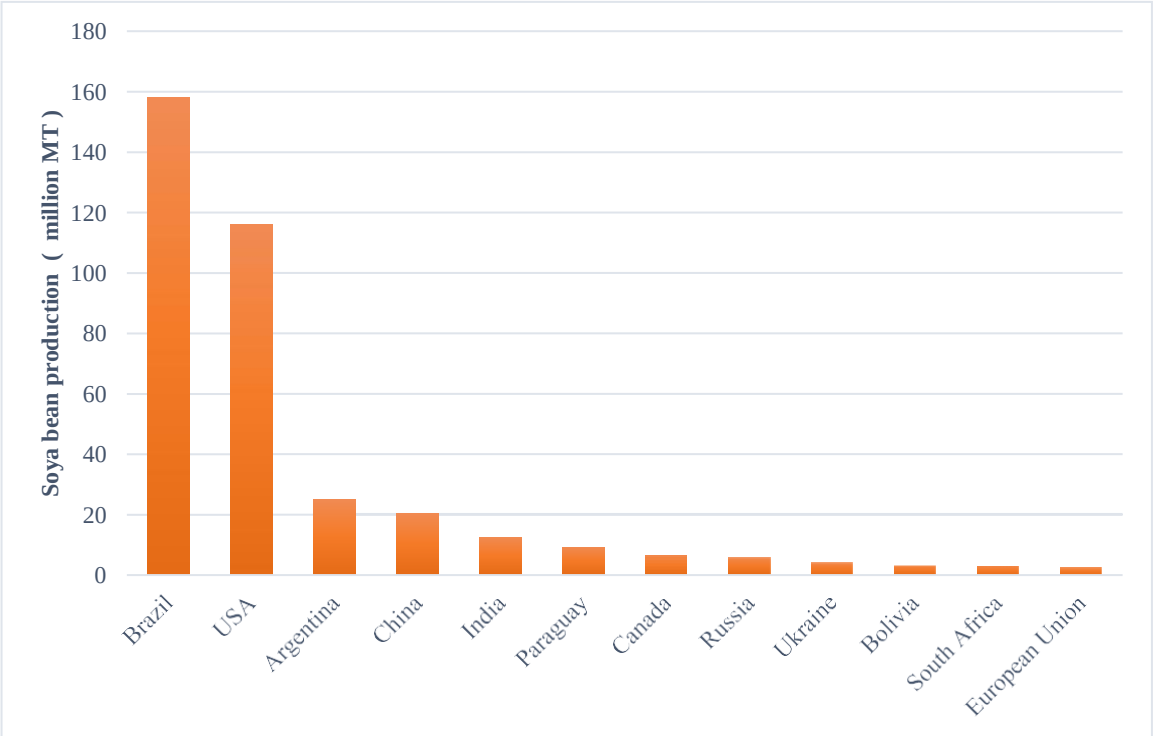
2.4 Globally, the United States of America, Brazil, Argentina, Canada, Paraguay, and Uruguay are the largest producers and exporters of soya bean, accounting for more than 85% of the production. From 2015/16 to 2018/2019, the United States of America was the leading global producer of soya bean, with a production volume of 120.52 million MT in 2018/19.

However, South America became the largest market for soya bean production with Brazil, being the leading producer at about 129.5 million metric tons in 2021/22.

2.5 According to FAO, in 2020, soya bean production increased dramatically in Brazil to more than 33 million tons for the period 2019 – 2020 harvest, representing an increase of almost 80% compared to the last ten years of cultivation. Furthermore, in 2021/22 Brazil contributed 36% of global production, followed by the United States (34%), making them the biggest soya bean suppliers. The increase is attributed to a rise in global demand, which encouraged farmers to expand soya bean hectarage.

2.6 Figure 3 shows the global production of soya bean, whilst Figures 4 and 5 show the largest exporters and producers.

Figure 3: Global Soya Bean Production: 2021–2023



Source: US department of Agriculture

Figure 4: Soya Bean Largest Exporters, 2022

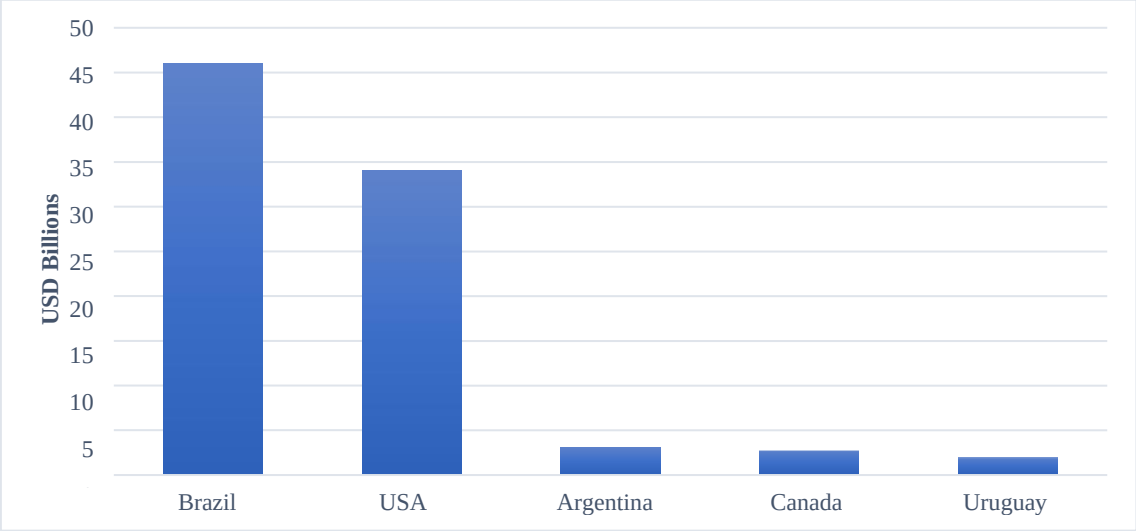
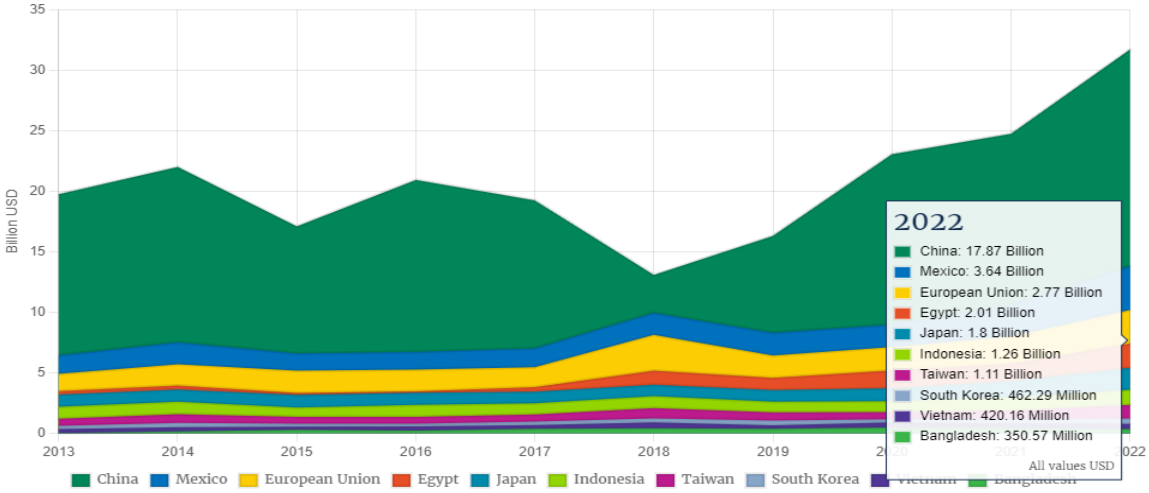


Figure 5: Major Soya Bean Importers, 2022



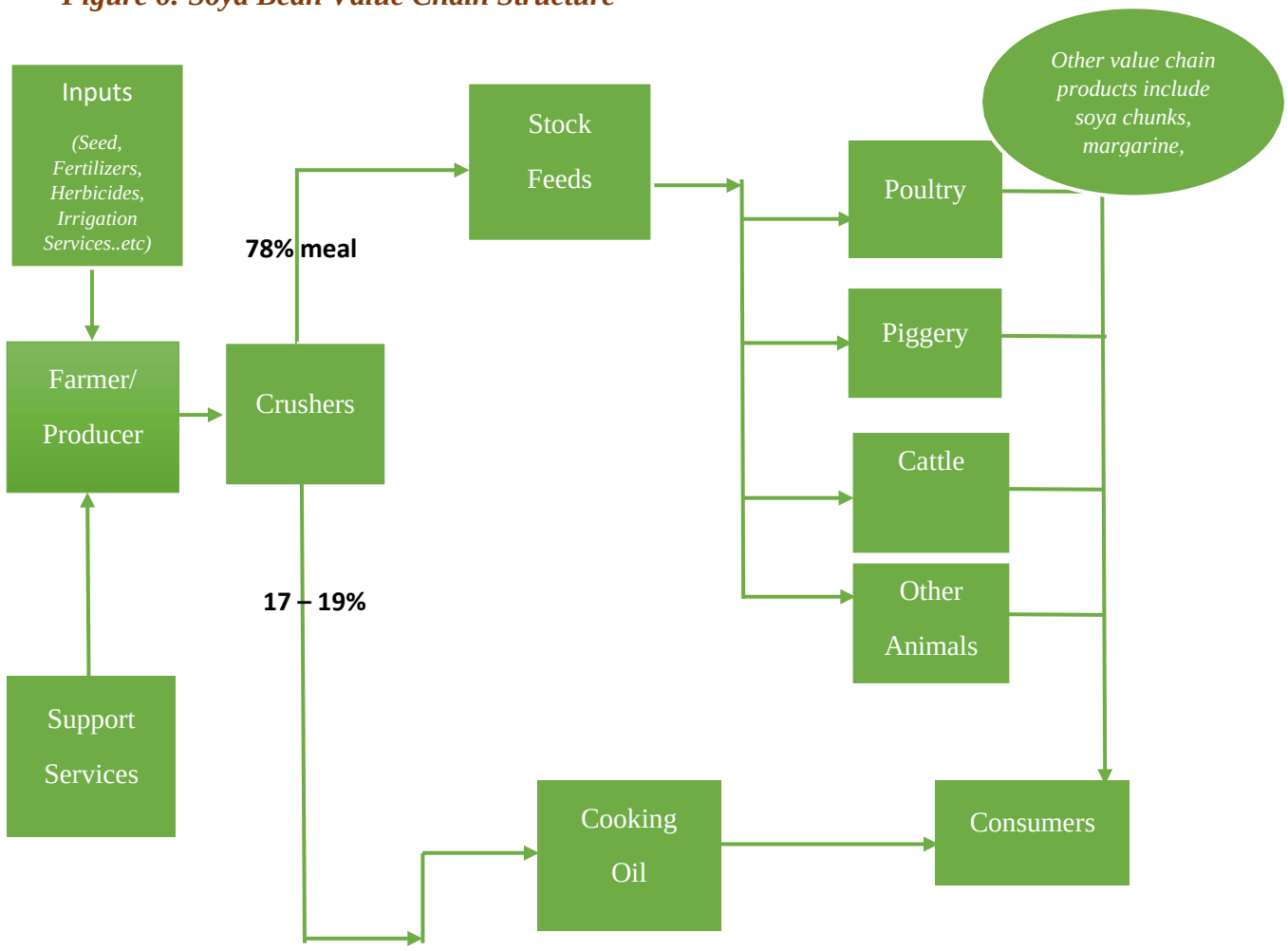
Source: Trendeconomy

2.7 Over the period 2013 – 2022, China remained the largest soya bean importer worldwide, importing US$17.87 billion during the 2021/22 season, followed by Mexico, which imported US$3.64 billion worth of soya bean. Egypt is the only African country among the world's top 10 importers, having imported soya bean worth US$2.01 billion during the 2021/22 season. Egypt is a member of the Common Market for Eastern and Southern Africa and AfCFTA, hence this presents a ready market for soya bean exports for Zimbabwe.

3.0 SYNOPSIS OF THE ZIMBABWE SOYA BEAN INDUSTRY

3.1 In Zimbabwe, soya bean is mainly produced in Mashonaland Provinces[1] with small scale farmers constituting 35%, while large-scale farmers represent 65%. The sector comprises of input suppliers such as seed producers, soya bean producers/farmers, processors, retailers, wholesalers, and customers as depicted in Figure 6 below.

Figure 6: Soya Bean Value Chain Structure



[1] Mashonaland West, Mashonaland Central and Mashonaland East

3.2 Soya bean is currently the main source of edible oil in Zimbabwe, contributing 57%, though there are also other sources such as cotton seed and sunflower. Other countries such as Nigeria, Ghana and Cameroon utilize palm to produce cooking oil. Sunflower and palm oil are high oil yielding seeds producing 40% and 23%, respectively. This contrasts with the average yield of 18% produced by soya beans, thus Zimbabwe is at a competitive disadvantage, since the bulk of edible oil is from low yielding soya beans.

3.3 Against this background, Government prioritized soya bean crop under the National Enhanced Agriculture Productivity Scheme (NEAPS) funded by AFC Land and Development Bank, and CBZ Bank Agro-yield scheme from the 2017/18 agricultural season. The intervention contributed to improving the yields from 1.48 tons per hectare in 2017/2018 season to 1.59 t/ha in 2021/2022.

3.4 In addition, the introduction of Statutory Instrument 129 of 2023, amending Statutory Instrument 97 of 2021, provides for self-financed soya farmers to also sell their produce at competitive prices on the Zimbabwe Mercantile Exchange (ZMX).

3.5 This is expected to address farmers' concerns of delayed payments, attributed to GMB being the sole buyer of soya bean, which deprived them the option to find alternative buyers offering competitive prices.

3.6 Despite the above initiatives, the private sector has not fully complemented Government efforts, as few oil processing and stockfeed manufacturing companies have entered into contract farming with soya bean producers, due to uncompetitive local pricing.

Soya Bean Seed

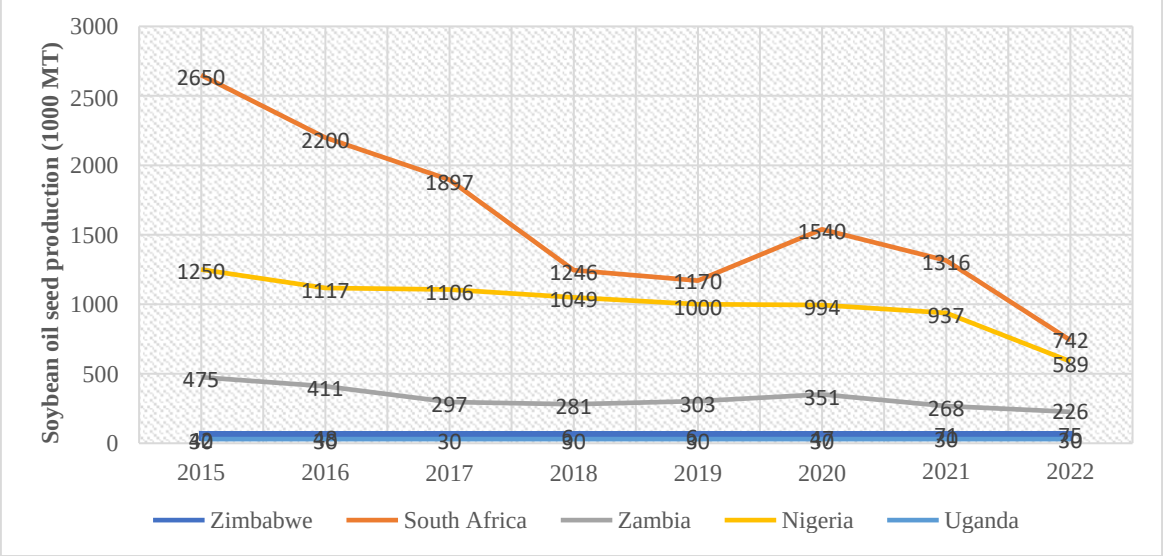
3.7 The choice of soya bean seed is critical for enhanced productivity, competitiveness and profitability. This is achievable through seeds contribution to improved yield, disease resistance, adaptation to environmental conditions and oil content.

Production

3.8 Seed houses, which include Seedco, K2, Mukushi and Agri Seeds, have dedicated soya bean breeders, who constantly develop new varieties that adapt to prevailing weather conditions. The continuous investment in Research & Development by seed houses is important in improving yield, pests & disease tolerance and drought resistant crops.

3.9 Figure 7 below shows Zimbabwe's Soya Bean seed production to comparator countries.

Figure 7: Soya Bean Seed Production, 2015 – 2022



Source: Indexmundi

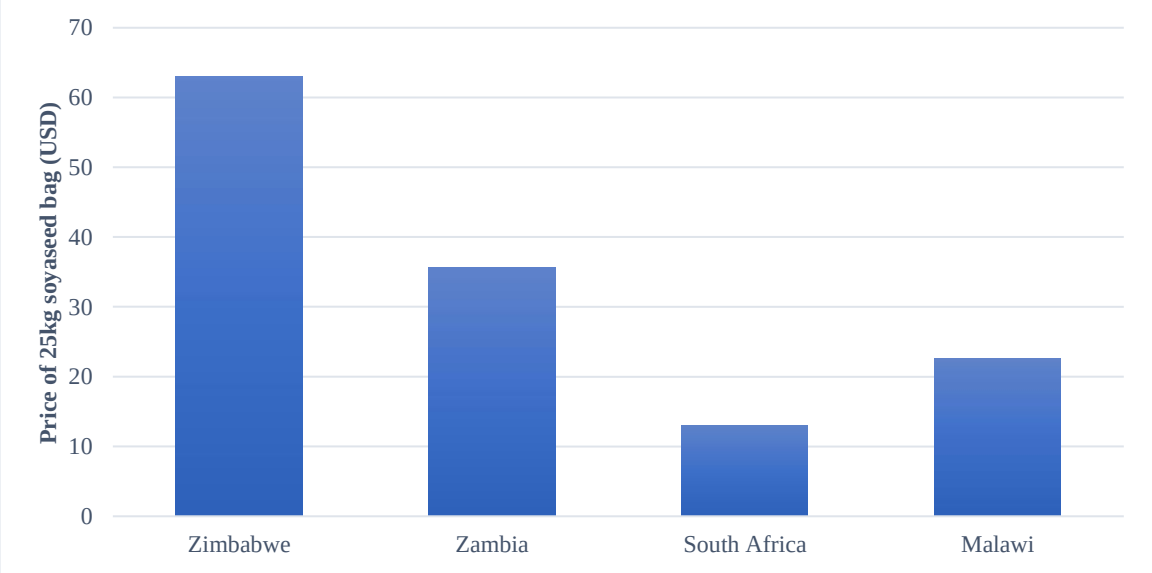
3.10 The country is producing low quantities of soya bean seed compared to regional counterparts like South Africa and Zambia. In 2022, a total of 75 000 MT was produced compared to South Africa (742 000 MT) and Zambia (226 000 MT).

Prices

3.11 Zimbabwe soya bean seed is uncompetitively priced at US$63 for a 25kg bag compared to Zambia (US$36), South Africa (US$13) and Malawi (US$23). For Zimbabwe, Zambia and Malawi, the quoted prices are from the same seed house and the difference reflects variance in cost structures, among other things.

3.12 Figure 8 below shows seed prices for Zimbabwe and comparator prices.

Figure 8: Seed Prices, 2023



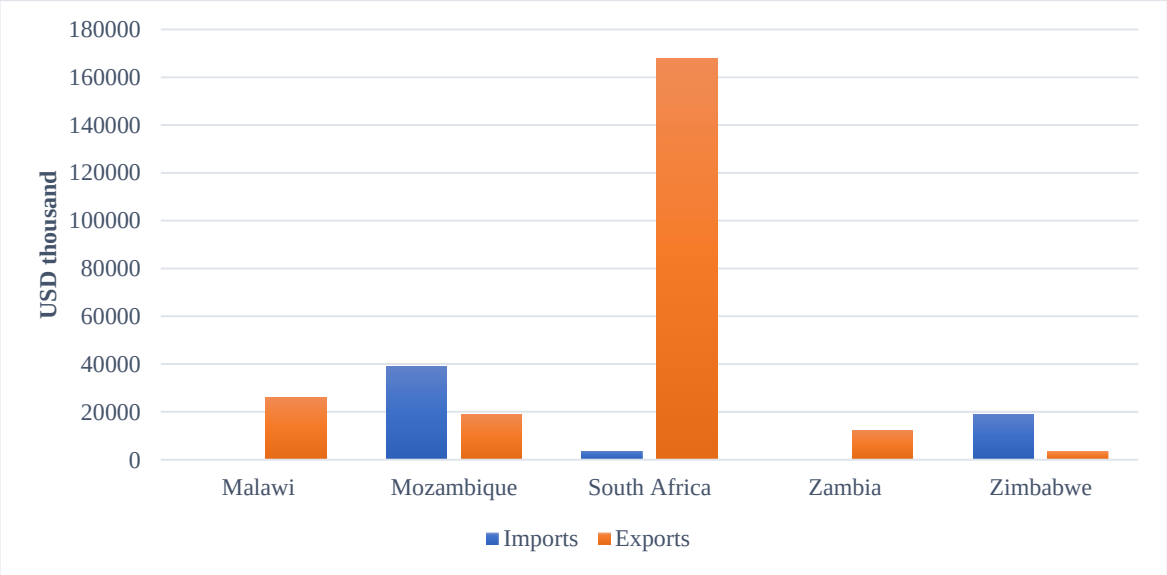
Source: Tradewheel, South Africa, Seedco websites

Imports and Exports

3.13 Local soya bean seed production is not adequate to meet local demand. As a result, the country was a net importer in 2022, with imports and exports amounting to about US$18.6m and US$3.2m, respectively.

3.14 Figure 9 below shows Zimbabwe's imports and exports of soya bean seed against comparator countries.

Figure 9: Zimbabwe Imports and Exports of Soya Bean Seed Against Comparator Countries, 2022

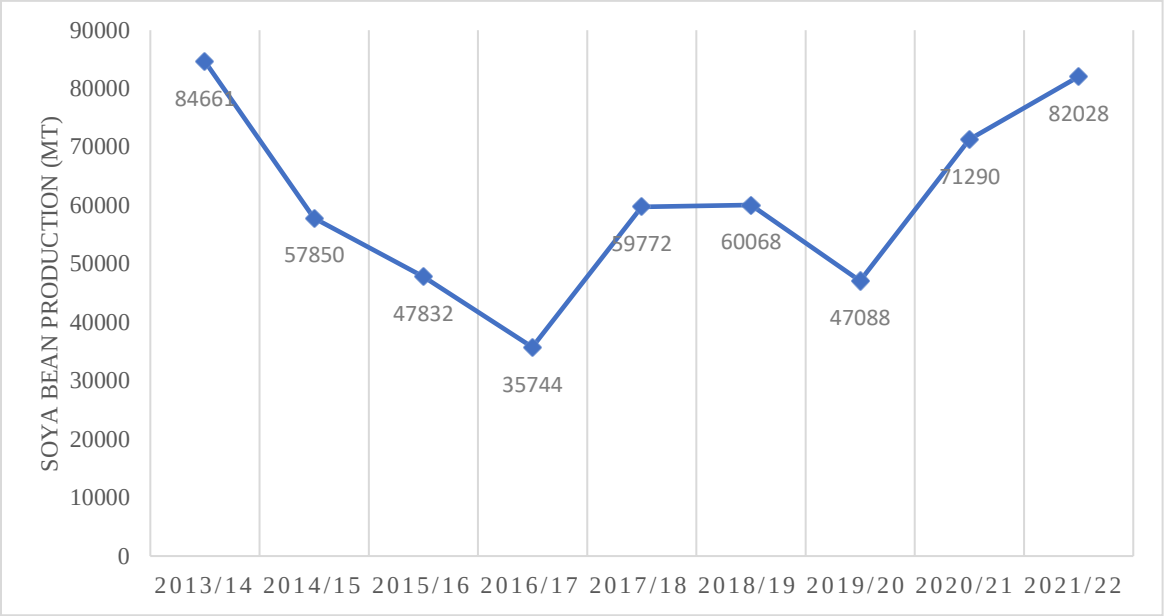


Source: Trademap

Soya Bean Production

3.15 According to the Ministry of Lands, Agriculture, Fisheries, Water and Rural Development (MLAFWRD), Zimbabwe had 51 488 hectares under soya bean cultivation in 2022. Soya bean average yield per hectare stood at 1.59 tonnes, which translated to production of about 82 000 tonnes in 2022. Figure 10 shows Zimbabwe's soya bean production.

Figure 10: Zimbabwe Soya Bean Production 2013/14- 2021/22

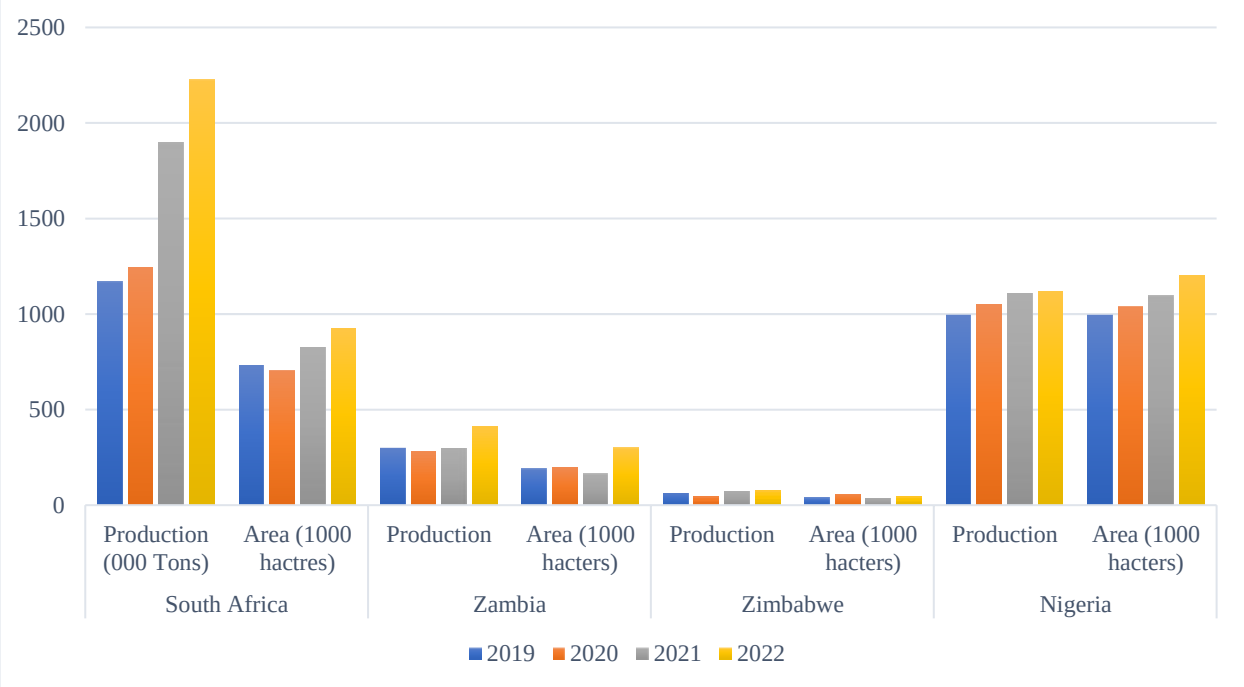


Source: Ministry of Lands, Agriculture, Fisheries, Water and Rural Development – Livestock, Crop Assessment Reports

3.16 Figure 10 shows that soya bean production has been improving from 2019 to 2023 and the trend is expected to continue in 2023 estimated at 93 086 MT, on the back of support initiatives,by the Government, such as provision of inputs to farmers.

3.17 Figure 11 below shows a comparative analysis of soya bean production and hectarage, under the crop, for Zimbabwe and comparator countries.

Figure 11: Zimbabwe Soya Bean Production and Hectarage Against Comparator Countries, 2019 – 2022



Source: US Department of Agriculture

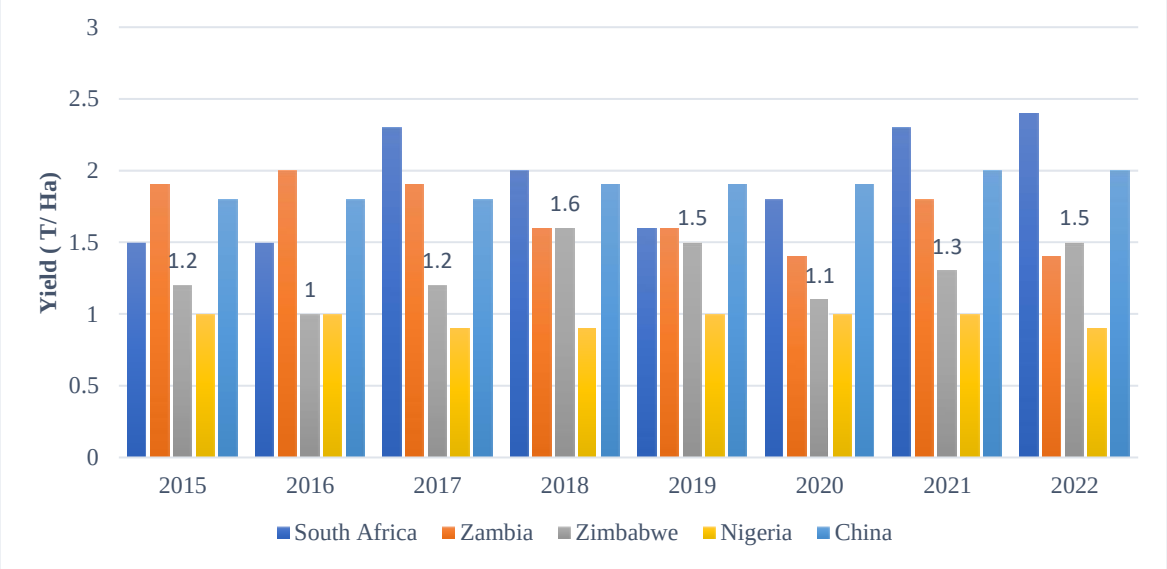
3.18 Although Zimbabwe soya bean production recorded significant growth of 15.5% in 2022, it averaged 63 000 tonnes over the period 2019 to 2022. This was lower when compared to countries such as South Africa, Zambia and Nigeria, which averaged 6.5 million, 323 000 and 1.1 million tonnes, respectively. For example, Zambia's soya bean demand of 200 to 250 thousand tons per annum, has seen the country becoming a net exporter in 2020. Notwithstanding the fact that Zambia's Soya bean farming is dominated by smallholder farmers, who constitute more than 90%, it produces more than Zimbabwe, indicating that the country has great potential to improve production and competitiveness of the sector, given that small-scale and large-scale farmers constitute 35% and 65%, respectively.

Soya Bean Yield

3.19 In terms of yield, for the past five years, from 2018/19 to the 2022/23 season, Zimbabwe averages 1.59 tonnes per hectare, which is uncompetitive compared to the global average of 2.4 tonnes per hectare and to that of largest soya bean producers, namely, United States of America & Brazil (3.4) and Argentina (2.7). In addition, Zimbabwe's yield is lower compared to South Africa (2.4) as depicted in Figure 12. The higher yield in South Africa may be attributed to the use of Genetically Modified Organisms seed. Further, South Africa has lower interest rates resulting in better mechanization, which is more efficient with better yield.

3.20 Figure 12 below shows soya bean yield per hectare against comparator countries.

Figure 12: Soya Bean Yield per Hectare



Source: US Department of Agriculture

3.21 As indicated in Figure 12, Zimbabwe's average yield is competitive to Sub-Saharan Africa's (SSA) 1.1 tonnes per hectare, and to that of Nigeria (0.9) and Zambia (1.4). This

is attributed to Government's effort towards improving production, through the Command Agriculture Program, which availed US$3.7 million during the 2022/2023 agriculture season. The farmers were supported with inputs such as fertilizer, seed, chemicals and fuel. Furthermore, the Government encourages oil expressors, stockfeed manufacturers to fund at least 40% of their raw material requirements through contract farming.

Cost Drivers Analysis in Soya Bean Production

3.22 Soya Bean production in Zimbabwe is impacted by high production costs such as labour, seed, fertilizer, fuel, herbicides, high cost of borrowing, limited mechanization[2], shortage and high cost of electricity.

3.23 Zimbabwe's total soya bean cost of production per hectare of about US$1 249.52, is uncompetitive compared to Malawi (US$208.50), Zambia (US$222) and South Africa (US$530). The high costs impact on farmers capacity to grow the soya bean crop. Table 1 shows a summary of the major cost drivers.

Table 1: Estimated Cost of Soya Bean Production for Zimbabwe and Comparator Countries, 2023

	ZIMBABWE	MALAWI	ZAMBIA	SOUTH AFRICA
VARIABLE COSTS	**US$/ha**	**US$/ha**	**US$/ha**	**US$/ha**
Labour	34.00	75.71	37.43	-
Seed	180.00	69.48	108.35	90.76
Innoculant	12.00	5.34	6.19	21.35
Fertilizer	250.00	65.63	47.99	-
Diesel – discing	23.52	22.68	16.24	17.64
Herbicides:Glyphosate (Roundup)	12.83	23.75	11.22	-
Electricity (KwH)	0.13	0.10	0.09	0.11
Cost of borrowing per annum	130%	23.60%	25.80%	11.75%
Cost of Production	**1,249.52**	**208.50**	**222**	**530**

Source: NCC compilations

[2] Tractors, irrigation equipment, harvesters, sprayers

Cost of Borrowing

3.24 Zimbabwe has high cost of borrowing averaging 130% per annum on local currency and 12 - 15% on United States Dollars, compared to Malawi (23.60%), Zambia (25.80%) and South Africa (11.75%), and this discourages farmers from borrowing to invest towards mechanization of their business. This negatively impacts on productivity and competitiveness of local soya bean production.

Seed

3.25 Cost of seed in Zimbabwe is higher at an average price of US$180 per hectare compared to Malawi (US$69.48), Zambia (US$108.35) and South Africa (US$90.76). This contributes towards uncompetitiveness of soya bean production given that seed is a critical input.

Diesel

3.26 Diesel is an essential enabler in land preparation, planting, harrowing, spraying of chemicals, harvesting and distribution of both inputs and final products. It is also used as an alternative source of power for crop irrigation and manufacturing during load shedding. Resultantly, Zimbabwe's high cost of diesel per hectare of US$23.52, which is higher than Malawi (US$22.68), Zambia (US$16.24) and South Africa (US$17.64) has an adverse impact on production and competitiveness of the soya bean value chain.

Electricity

3.27 Availability and cost of electricity are key determinants of competitiveness. Zimbabwe's electricity charges of US$0.13/KwH are uncompetitive against South Africa (US$0.11), Zambia (US$0.09) and Malawi (US$0.10). The high cost is exacerbated by non-availability of electricity, which results in farmers having to resort to expensive alternative sources such as diesel.

Inoculants

3.28 The cost of inoculants, such as rhizobium, are competitive in Zimbabwe at US$12 per hectare, compared to South Africa US$21.35, whilst the country is uncompetitive against Zambia (US$6.19) and Malawi (US$5.34). Although the cost of using rhizobium is higher than Malawi and Zambia, the country can further improve competitiveness by upscaling the utilisation of rhizobium as a substitution agent of nitrogen fertilizer on soya bean production. It costs about US$250 per hectare if chemical fertilisers are used, compared to the US$12 per hectare, indicating about a 1 983% reduction in the cost of fertilizer per hectare.

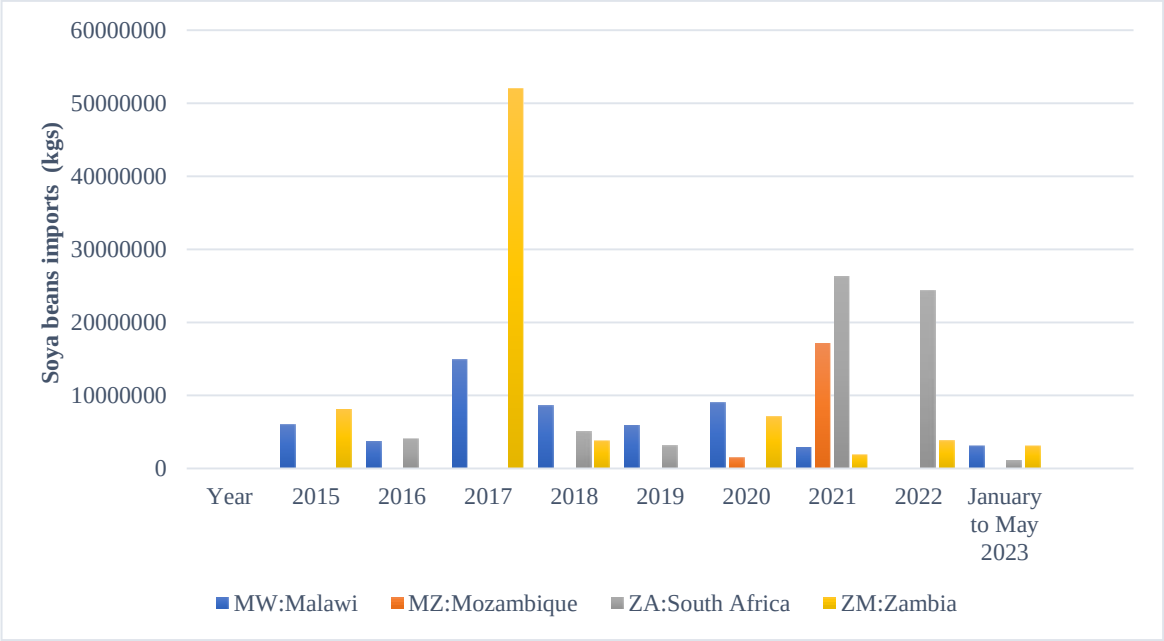
Fertilizer

3.29 Cost of fertilizer per hectare is very uncompetitive at US$250 compared to Malawi, which costs US$65.63 and Zambia US$47.99. This adds to high cost of production, which is passed on to the final price of soya bean.

Impact of uncompetitive Soya Bean Production

3.30 The country needs about 400 000 MT of soya beans per annum to be self-sufficient in cooking oil production and other by-products such as stock feed. However, about 82 000 MT of soya bean was produced in 2022, giving a national deficit of 318 000 MT. To augment local soya bean production, oil expressors import soya beans from neighboring countries for crushing as well as edible crude oil for refining. Figure 13 shows soya bean imports for Zimbabwe over the period 2015 to 2023.

Figure 13: Zimbabwe Soya Bean Imports from Neighboring Countries



Source: Zimbabwe National Statistics Agency

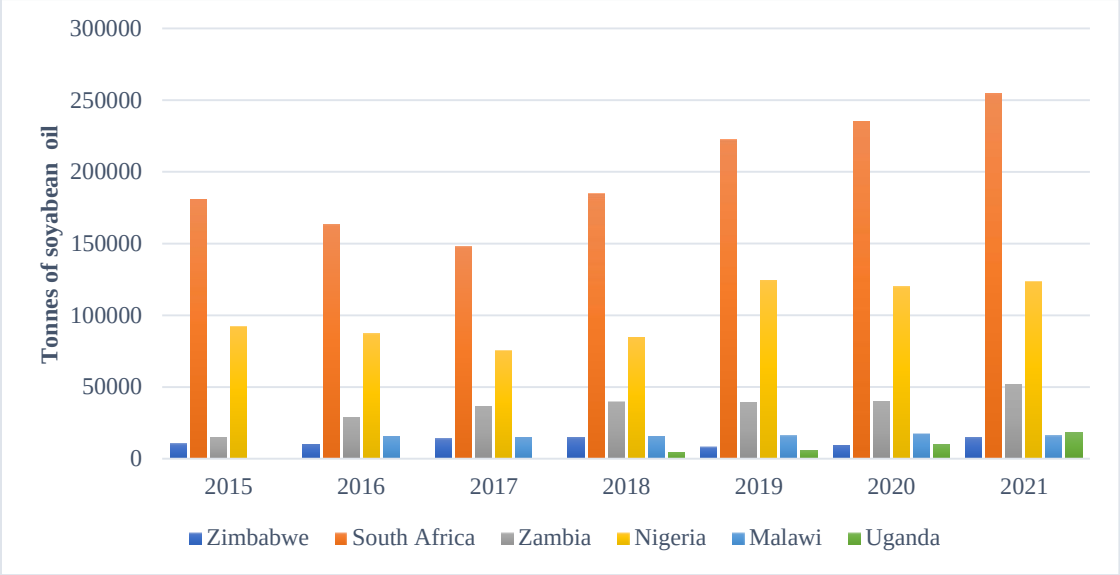
3.31 In 2022, the total value of imported soya bean from all over the world by Zimbabwe was 29.9 million kilograms worth US$19.5 million, indicating a 55.2% decline from a peak of about 67.2 million kilograms in 2017. The imports were mainly from SADC member states such as Malawi, South Africa and Zambia, on account of the low prices and zero tariff preferential treatment. Furthermore, the country also imports limited quantities from China and the United States of America, at a modest duty rate of 5%.

Processors

3.32 Edible oil processors, which include Pure Oil Industries, United Refineries, Surface Wilmar, Olivine Industries, Cangrow, Willowton Group and Mount Meru Millers have an estimated oil seed crushing capacity of 610 000 MT per annum. Notwithstanding the capacity, which is sufficient to satisfy domestic demand for cooking oil, there is over reliance on imported soya bean and crude oil due to uncompetitive soya bean production.

3.33 Figure 14 shows the cooking oil produced by Zimbabwe and its comparator countries.

Figure 14: Soya Bean Cooking Oil Production, 2015 – 2021



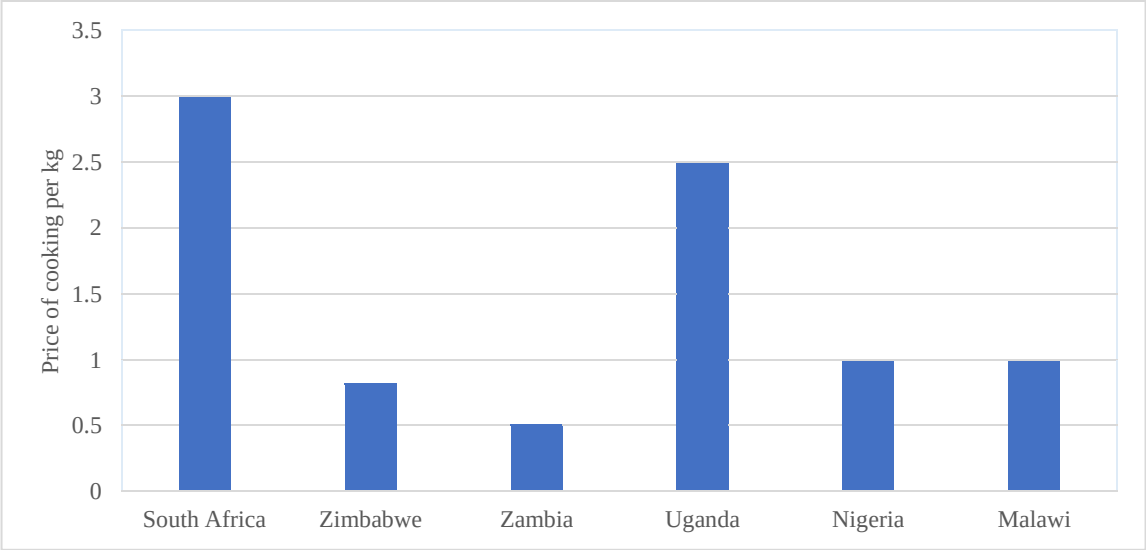
Source: Food and Agriculture Organisation

3.34 Zimbabwe produces little quantities of soya bean cooking oil, only higher than that of Uganda, when compared to comparator countries. However, quantities produced using both local and imported edible crude oil are sufficient to meet local demand of 12 million litres per month. According to the Zimbabwe National Statistics Agency (ZIMSTAT), the country imported soya bean cooking oil valued at US$496 332 and exported a paltry US$57 513 in 2022.

Prices

3.35 In terms of soya bean cooking oil prices, Zimbabwe is competitive to comparator countries, such as South Africa, Malawi, Uganda and Nigeria. However, the country is uncompetitive against Zambia, as shown in figure 15 below.

Figure 15: Cooking Oil Prices in Zimbabwe and its Comparator Countries, 2023



Source: Selina Wamucii

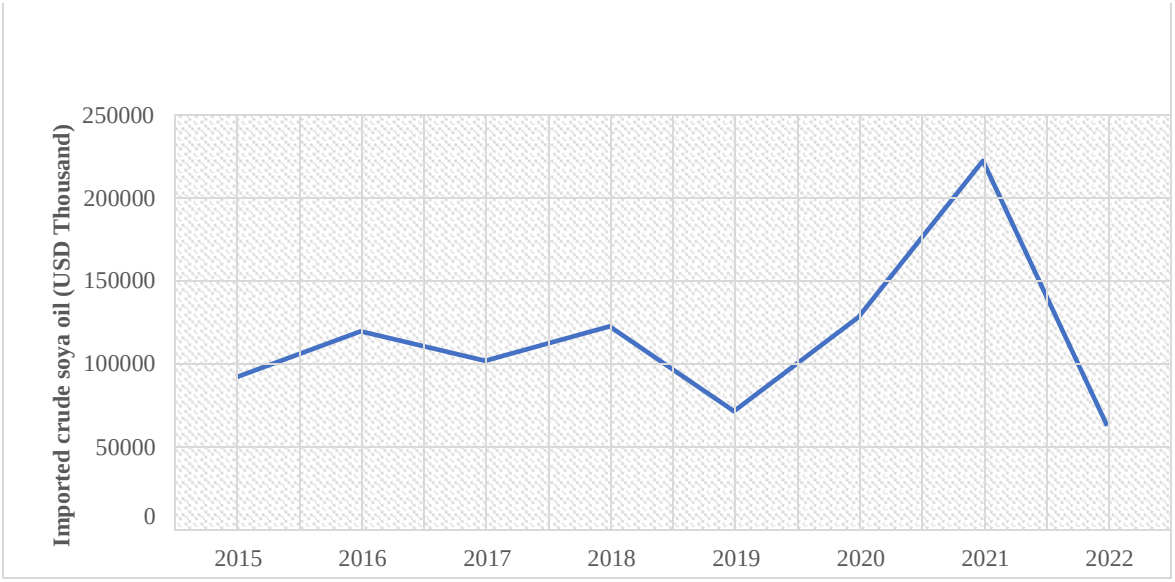
Edible Crude Oil

3.36 Due to the limited soya bean production, most of the cooking oil is produced from imported edible crude oil, which constitutes about 90% of the cooking oil processed locally. Most of the edible crude oil is imported from South Africa although it would have originated from Indonesia, Argentina, Malaysia, and Brazil. One of the major concerns is that low soya bean production has not encouraged some oil companies to invest in crushers and entirely depend on refining the imported edible crude oil.

3.37 The average landed cost of imported edible crude oil is US$1 200 per MT, of which approximately US$250 is transport cost.

3.38 Figure 16 shows soya crude oil imports.

Figure 16: Value of Edible Crude Oil imported by Zimbabwe, 2015 – 2022



Source: Trademap

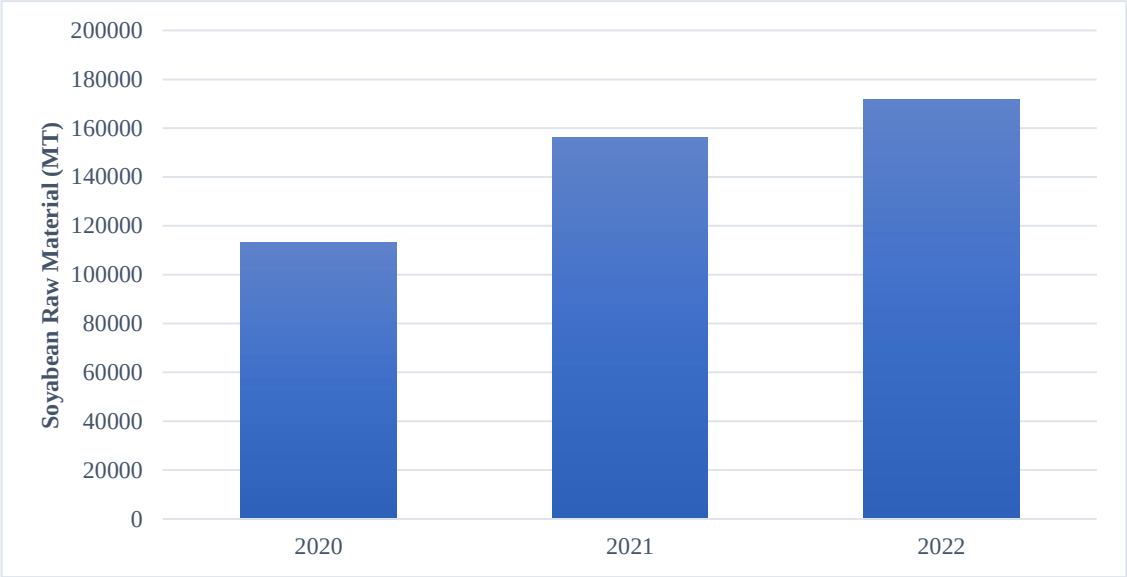
3.39 As shown above, soya crude oil imports oscillated and the lowest value of imports worth US$62m was recorded in 2022. Intervention by the Government, through the Soya Command Agriculture Scheme, saw importation of edible crude oil nosediving, as locally produced soya bean was absorbed for crushing. This indicates that with much support to soya bean farming, the country can significantly reduce the edible crude oil import bill.

Stockfeed

3.40 The low production of soya bean has a negative impact on stockfeed manufacturing in the country. Soya bean is one of the critical raw materials, as it constitutes about 40 - 49% of protein in the production of stockfeed. It is processed in the form of full-fat soya and solvent-extracted soya. Full-fat soya is produced from pure soya beans heated under high temperatures and constitutes about 8% of the raw materials in stockfeed production. On the other hand, solvent-extracted soya is obtained during the cooking oil-making process and constitutes 20% to 30% of the raw material.

3.41 Figure 17 below shows the soya usage raw material component in producing stock feeds.

Figure 17: Soya bean Raw Material usage in Stockfeed Production



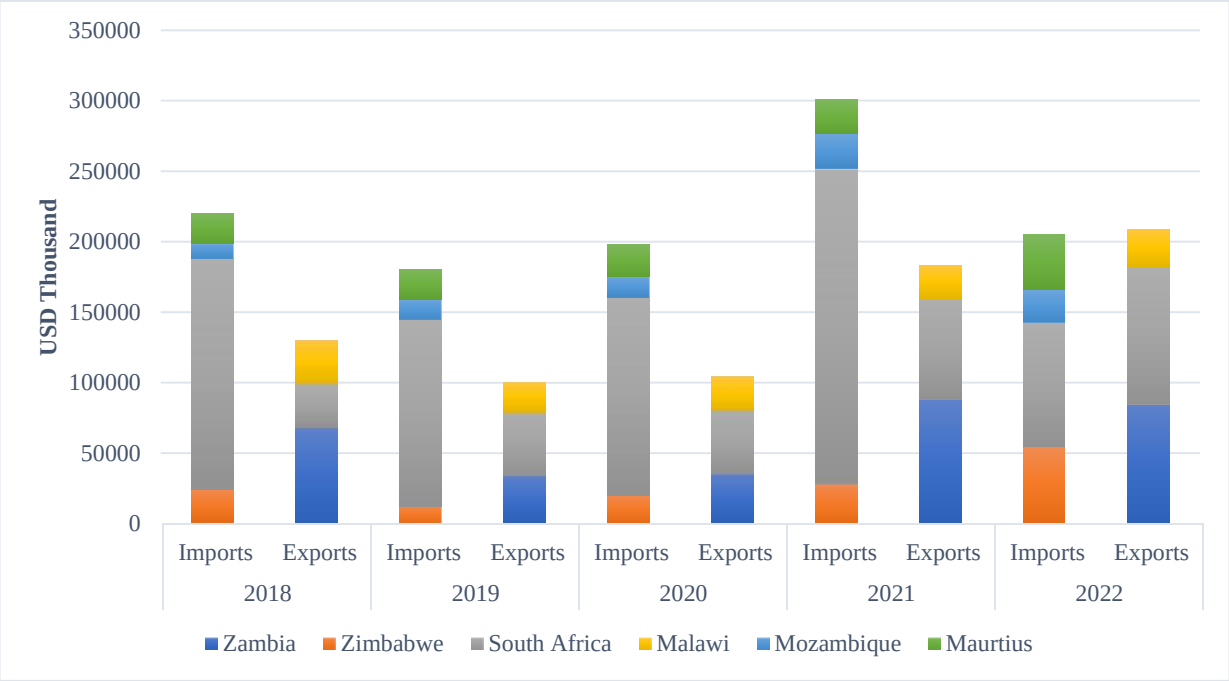
Source: Stockfeed Manufacturers Association

3.42 The use of soya bean as a raw material in stock feed production increased by 51.83% from 113 290MT in 2020 to 171 921MT in 2022. According to the Stockfeed Manufacturers Association (SMA), the increase is attributed to the rising demand from poultry and piggery, among others. During the same period, dairy and fish overall stockfeed demand decreasedas there were other alternatives like on-farm feed due to good rains.

3.43 Due to low production of soya bean, the country is also importing soya meal and soya cake, for manufacturing of stock feed.

3.44 Figure 18 below shows the Zimbabwe soya cake imports over the period 2015 to 2022.

Figure 18: Soya Cake Imports for Zimbabwe and Comparator Countries, 2018 – 2022



Source: Trademap

3.45 Zimbabwe is importing huge amounts of soya cake due to the low soya bean production. Import bill of soya cake increased by 130% to US$54 589 000 from US$23 636 for the period 2018 to 2022. Due to the uncompetitiveness of the soya bean value chain, soya cake landed price per MT is US$550 while locally it costs US$650.

4.0 COMPETITIVENESS GAPS IN THE ZIMBABWE SOYA BEAN VALUE CHAIN

4.1 Competitiveness of the soya bean value chain in Zimbabwe is affected by the general macroeconomic conditions such as the high cost of borrowing, the short-term nature of the available borrowing facilities, inadequate foreign currency, two tier foreign exchange system resulting in companies charging in local currency forward pricing their products.

4.2 Furthermore, competitiveness is affected by high production costs, and low Government producer price, which is sometimes not adequate to meet costs, thus rendering commercial soya bean production unattractive to farmers.

4.3 Despite the fact that Government has done a lot in promoting competitiveness of locally produced soya bean, a plethora of challenges continue to weigh on the value chain.

High Cost of Production

4.4 The 2022 hectarage of 51 488 under Soya Bean is limited, hence the average annual soya bean production of 82 000MT is still below the required estimated average annual demand of 400 000MT per annum. This is due to high input costs of mainly seed, herbicides & pesticides and fertilizer, among others.

4.5 Resultantly, some small-scale farmers who have limited access to finance resort to buy inputs from the informal market and also use retained or recycled, uncertified seeds, fertilizers and herbicides, thereby compromising on quality and yield. This ultimately has negative repercussions on competitiveness of locally produced soya beans.

Mechanisation

4.6 Limited access to agricultural equipment such as combine harvesters and irrigation infrastructure poses a significant challenge for smallholder farmers, who solely rely on rain fed production. Resultantly, farmers find it difficult to mitigate the risks associated with climate change such as droughts. This leads to decreased yields and competitiveness of local soya bean production.

Funding

4.7 Farmers require funding to purchase inputs and equipment. However, most of the farmers (especially smallholder farmers) have limited access to finance due to lack of collateral and the high cost of borrowing pegged at 130% per annum. This is also compounded by challenges linked to security of tenure for the resettled farmers, as the finalization of legislation, on transferable and bankable 99-year leases, is still pending.

4.8 Consequently, most banks prefer to curtail the risk of dealing with smallholder farmers by providing finance through third parties such as processors (who are risk bearers). However, some processors are equally financially constrained and not prepared to take the risk of venturing into contract farming.

Harvesting and Post Harvesting Loss

4.9 Some of the farmers supply soya bean with high moisture content to processors as they try to avert prolonged storage at their farms. The ideal moisture content for maximum oil extraction should be less than 11%. This results in the farmers not getting a competitive price for their produce.

Retooling

4.10 Some oil expressers and stockfeed manufacturers have antiquated equipment, that breaks frequently, thereby adding to costs in lost production hours and maintenance. This negatively affects production efficiency and quality, thereby affecting competitiveness.

Power

4.11 Load shedding affects the production of soya bean, cooking oil and stock feed. Some machines in cooking oil and stock feed manufacturing cannot be sustained by generators. Companies have resorted to pay for uninterrupted electricity supply in foreign currency, which is expensive given that it is not readily available on the formal market to finance domestic transactions.

Limited Coordination

4.12 There is information asymmetry amongst soya bean farmers due to the absence of a vibrant Soya Bean Farmers Association. In other countries, Farmers Associations play a key role in improving productivity and competitiveness through pooling of resources for investment in farm equipment and skills development.

5.0 SOYA BEAN BENCHMARKING SUMMARY

5.1 A comparison of Zimbabwe's soya bean value chain against regional comparator countries, shows that the country is not competitive, as shown in Table 2 below.

Table 2: Comparison of Zimbabwe Soya Bean Value Chain against selected Regional Countries

Issue	Zimbabwe	South Africa	Zambia
Soya Bean Production	• Production has generally been low, averaging 63 000MT for the period 2017 - 2022 • Government support translated to 128% increase in soya bean production from 36 000 MT in 2017 to 82 000 MT in 2022	• Contributes about 35% of soya bean production in Africa • 2 230 000 tons produced in the 2021/22 season, representing an 18% increase	• Third producer in Africa. • Produced 411 000 MT in 2022
Hectarage in 2022	• About 51 488 hectares • Planted area increased by 11.55% from 46 158 in 2021 • High cost of production and low producer price contributed to low hectarage	• Estimated at 925 000 hectares, which is a 12% increase from 2021.	• Estimated at 304 000 hectares, which is an increase of 85% from 164 000 in 2021.

Issue	Zimbabwe	South Africa	Zambia
Average Yield in 2022	• Increased by 7% from 1.48 tons per hectare in 2017/2018 season to 1.59 t/ha in 2021/2022	• Increased by 5% from 2.29 t/ha to 2.41 t/ha.	• Decreased from 1.8 t/ha in 2021 to 1.4 t/ ha
Marketing	• GMB is the sole buyer from Government supported farmers • Self-financed farmers can sell on the commodities exchange and also to oil expressers. • GMB is the sole exporter	• Farmers sell on Commodity Exchange. • Trade in oilseeds is generally limited, as the bulk of production is destined for local crushing. • Exports and imports are directed to oils and meals.	• Farmers sell to the Zambian Agricultural Commodities Exchange • Export quotas for farmers.
Cost of Borrowing	• 130%, for local currency, per annum • 12 - 15% for USD loans, per annum	• 11.75% per annum	• 25.8% per annum
Trade for Soya Bean Cooking Oil	• Very little cooking oil exported. • Production is sufficient to meet local demand. • The importation of cooking oil is not restricted.	• Exports a small amount of cooking oil to its neighboring countries.	• Cooking oil exports are restricted

6.0 RECOMMENDATIONS

6.1 Enhancing the soya bean value chain competitiveness is key in underpinning the country's food and nutrition security, import substitution and generation of jobs. In this regard, the recommendations in this report are expected to strengthen the value chain competitiveness.

Farmers

Seed

6.2 Soya bean farmers, especially small-scale, should use certified seed from reputable seed houses, to enhance productivity and competitiveness. Retained and farm saved seed, currently used by most smallholder farmers tend to deteriorate over time, resulting in low yields.

Inoculants

6.3 Use of rhizobium inoculants should also be prioritised by farmers, given that it costs US$12 to treat 100kg of soya bean seed, which covers 1 hectare, compared to US$250 that would be required for the same using additional fertilizers. The rhizobium inoculant is important in forming nodules in roots leading to biological nitrogen fixation, thereby enhancing yields.

Association

6.4 Establish a vibrant Soya Bean Farmers Association that is expected to invest in development of soya bean farming skills to improve productivity. In some countries such as Malawi, farmers are supported and trained by the National Smallholder Farmers Association of Malawi (NASFAM), which is a farmer-directed business network with 100 000 smallholder members, organized in 43 associations throughout Malawi. This increases access to information and educational programs on climate change, which helps smallholder farmers to make informed decisions on the adoption of climate-smart practices.

6.5 The proposed association could facilitate pooled procurement for smallholder farmers acquisition of modern machinery, which is more efficient in terms of farming and harvesting, in order to reduce the logistics costs and attract bulk discounts.

Grading System

6.6 Farmers are encouraged to invest in globally recognized grading systems so as to supply the required soya bean of less than 11% moisture content, for oil extraction, to processors. This will enable the farmers to get competitive prices given that improvements in the handling of the produce adds significant value and competitiveness.

Mechanisation

6.7 Zimbabwe could enhance productivity and become more competitive in the region, by adopting modern agricultural and equipment for land preparation, planting, harvesting, and post-harvest handling. Mechanization can increase efficiency, reduce labor requirements, and improve overall productivity in soya bean production as well as competitiveness.

Domestication of Fertilizer Production

6.8 Primary fertilizer producers, ZimPhos, Sable and Dorowa to prioritise investment in new plants, to enhance production of high analysis, phosphate and urea fertilizers, thereby minimising costs and achieving import substitution.

Processors

6.9 Upscale contract farming, which will guarantee supply of certified seed for production, resulting in quality soya bean for processing of cooking oil, stock feed and other by-products.

6.10 Processors are urged to invest in new and modern edible oil processing plants in order to increase productivity and competitiveness. Under equal soya bean quality conditions, a good soya bean pressing machine can improve oil yield by 2-3%.

Government

6.11 Government is urged to attend to the current macroeconomic challenges, characterized by volatile exchange rate, high cost of borrowing and inflation. To this end, lowering lending rates to below 30% per annum on local currency denominated loans, in line with comparator countries, needs to be prioritized.

6.12 Furthermore, to support farm mechanization, availability of long-term finance will assist farmers invest in advanced technology, irrigation equipment to mitigate climate change risks, as well as incentivize processors to invest more in contract farming. This will enable farmers and processors to improve productivity and competitiveness.

6.13 Sensitize smallholder farmers on the operations of the Zimbabwe Mercantile Exchange (ZMX) as an open market for commodities, with willing buyers and willing sellers providing price discovery mechanisms.

6.14 In addition, GMB should timeously pay farmers upon delivery of soya bean, so as to enable them to reinvest in their operations and cover costs promptly.

6.15 Expedite the finalisation of legislation, on transferable and bankable 99-year leases. This will enable farmers to use land as collateral as well as attract investment in agricultural projects.

6.16 Government is urged to continually capacitate agricultural extension officers so as to keep abreast with the latest trends in soya bean farming. This allows the extension officers to support farmers with best practices on production of the crop.

7.0 CONCLUSION

7.1 Soya bean is a strategic crop with multiple uses, such as for food, cash, industrial raw material and soil-improving crop. To this end, implementation of the identified recommendations is not only important in improving productivity and competitiveness of the value chain, but other ancillary benefits.

7.2 The farming node is the first stage of the value chain, hence its impact is huge, as it affects the entire value chain. There is therefore, need to promote increased production of soya bean competitively by farmers.

7.3 Addressing competitiveness gaps, requires collaborative effort among stakeholders, which will ultimately result in great foreign currency savings on importation of the soya bean, cake and edible crude oil, among other by products.

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