



# Agro-Processing Industries in the Zambian Economy

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## Abstract

The agro-processing sector has been recognized in most of Zambia's development policy documents as a priority sector. The strategic importance of agro-processing industries in the Zambian economy is attributed to the sector's potential to contribute to economic structural transformation, diversification and inclusive growth. In this chapter, we highlight the importance of the agro-processing sector in the Zambian economy, and we show that the sector has not only been the biggest segment of the manufacturing sector since independence, but also that it has great potential to contribute to creating the much-needed employment in the country. We show in the chapter agro-processing industries (particularly textile, clothing and leather, and wood and wood products) are the most labour-intensive, with an average of 18 workers per every K1 million kwacha invested compared to just 9 workers in the non-agro-processing manufacturing industries. Using trade data, we also show that the country has revealed comparative advantage in a number of agro-processing products including animal feed, essential oils, cereals and milled flour, soya cake, non-alcoholic beverages, sugar and confectioneries, and a huge untapped potential (latent comparative advantage) in wood and wood products, fabrics, synthetic fibers, footwear and manufactured tobacco products. In view of this, we argue in the chapter that agro-processing offers great potential for Zambia to tap into the large and expanding regional markets. But to realise this potential, the country has to address some of the enduring challenges which make local agro-processing firms less competitive at the regional level.

**Keywords:** Agro-processing industries, Zambia, regional markets, inclusive growth, agriculture, processed foods.

**JEL Codes:** O18, F15, R11, O10, O13

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## Introduction

The agro-processing sector constitutes a set of strategically important industries in the Zambian economy. The strategic importance of this set of industries has been recognized in all major policy documents including the Fifth National Development Plan (RoZ, 2006), the Seventh National Development Plan (RoZ, 2017), the National Industrial Policy (RoZ, 2018a) and Vision 2030 (RoZ, 2018b). Out of the eight priority industrial clusters identified in the National Industrial Policy (NIP), four belong to the agro-processing industrial cluster<sup>1</sup>. The importance of agro-processing industries in the Zambian economy is attributed to the sector's potential to contribute to economic structural transformation, diversification and inclusive growth. One of the reasons for the centrality of the agro-processing sector in the Zambian economy is its strong linkages with the agriculture sector where majority of Zambians (58 percent in 2018) work. Sustained growth of agro-processing industries has the potential to induce productivity growth in the agriculture sector, especially now when the demand for processed foods is steadily rising as urban population as well as the middle class continues to grow in the country and the region<sup>2</sup>. Current estimates suggest that the value of food processing industries in Zambia is expected to grow to US\$25 billion by 2030 (Muwowo and Hamusimbi, 2020). If we include the other non-food agro-processing industries, the sector's role and contribution to the economy in terms of value added, job creation and diversification is huge. But in order for Zambia to realise the full potential of the agro-processing industries, the country has to address some of the challenges which undercut the advantage the country has in the southern and eastern Africa region in agro-processing.

In this chapter, we show that the agro-processing cluster of industries has consistently been the largest portion of the manufacturing sector in terms of output, and has great potential to promote the growth of non-traditional exports (NTEs), especially in the Southern Africa region. Zambia's agro-processing industries enjoy Revealed Comparative Advantage (RCA) in cereals, milling products, soy products, animal feed, tobacco, non-alcoholic beverages, sugar and confectioneries. We also illustrate that the agro-processing industrial cluster has the highest employment-intensity in the entire manufacturing sector, with the textile, clothing and leather products, and the wood and wood product clusters having the highest number of workers per million Kwacha invested in 2018. These labour-intensive industries have great potential to contribute to the creation of productive jobs in the country.

The chapter presents a profile of the agro-processing sector in the Zambian economy to highlight the scope and size of the sector. We argue that for Zambia to realise the potential of agro-processing to contribute to economic diversification, industrialisation, inclusive growth and the creation of productive employment, the country has to competitively participate in some of the emerging regional agro-processing value chains<sup>3</sup>. The Growing urban population in Zambia and in the region is likely to increase demand for processed foods (ACET, 2017; das Nair et al, 2018; World Bank, 2018; Chitonge, 2021a), and this offers an opportunity for the country to expand its production capacity and

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<sup>1</sup> The eight priority manufacturing industries identified by the National Industrial Policy are: food processing, textiles and apparel, wood and wood products, oil and non-metallic minerals, basic metals and fabricated metals, engineering products, pharmaceuticals, leather and leather products and the blue economy (RoZ, 2018).

<sup>2</sup> Resnick (2015) cites growth in the number of investors on the Lusaka Stock Exchange (LSE) from just 700 in 1994 when it was established to over 30 000 in 2010, and majority of investors at LSE are Zambians. He also points to the growth of formal employment as well as the growth of the mortgage loan market as examples of a growing middle class.

<sup>3</sup> There are several RVCs, mainly in the agro-processing sector such as processed foods, vegetables, cotton and textile, horticultural products, rubber, leather and beverages (ACET, 2017; UNCTAD, 2019).

market share in products where Zambia has RCA. Agro-processing industries are becoming strategically important in many countries in Africa given the current rapid growth of the urban population as well as the growth of the middle class in the region due to rising average income (Shimeles and Ncube, 2015; Tschirley et al, 2017). Given Zambia's rich endowment in land, water, ecological resources and skills, agro-processing industries offers huge potential for the country to expand its share of the growing regional market (World Bank, 2018).

### **Outline**

The chapter is organised in six sections. The next section provides a brief discussion of the strategic importance of agro-processing industries in Zambia and developing countries, generally. This is followed by a general profile of the agro-processing sector, including its composition, employment and value-added trends over time. Section three presents a disaggregated picture of the sector, to show the scope and size of the sector. Section four looks at some of the products in which Zambia enjoys RCA to highlight the potential for to tap in the expanding regional market in the southern Africa. Section five identifies some of the challenges which must be addressed to realise the full potential of the agro-processing sector in Zambia's economy. The final section offers concluding remarks.

### **The Agro-processing Sector: an Overview**

Before presenting the profile of the agro-processing industrial cluster in Zambia, it is important to establish what constitutes agro-processing industries. As Chitonge (2021b) shows, there are different definitions of agro-processing industries, and the definition and approach one adopts can affect the scope and size of this set of industries. For example, sometimes the term agro-processing is used to refer to the processing of raw food into final and intermediate products (see DTI, 2016). This definition of agro-processing excludes the processing of other non-food primary sector products such as leather, forestry, wood, cotton and textile products, and this does impact on the scope and size of the sector. In this chapter, we argue that restricting the agro-processing sector to the processing of food and beverages, reduces its size and scope, and its contribution to the economy. In order to highlight the importance of the agro-processing sector in the Zambian economy, this chapter adopts the Food and Agriculture Organisation (FAO, 1997: 222) definition of the agro-processing sector, as a subset of "manufacturing that processes raw materials and intermediate products originating from agriculture, forestry and fisheries. Agro-processing thus means transforming products originating from agriculture, forestry and fisheries."

If we adopt this definition, it becomes apparent that this cluster of industries is big and diverse, ranging from the simple processing of meat and meat products to the medium technology activities such as the manufacture of rubber, leather and wood products, including furniture. According to the International Standard Industrial Classification (ISIC Rev 4), agro-processing industries account for 11 of the 24 divisions of the manufacturing sector. In most low and middle-income countries, the agro-processing sector is the largest cluster of industries in the manufacturing sector, accounting for the largest share of value added as well as employment (UNIDO, 2016; ACET, 2017). In Zambia, for instance, the agro-processing sector has consistently accounted for an average of 60 percent of manufacturing value added, although this dropped to about 40 percent in 2018 (see Table .2). In terms of employment, the agro-processing sector in Zambia accounted for 60.7 percent of the total manufacturing employment in 2017 and 2018 (ZamSA, 2019). In South Africa, while agro-processing industries have consistently accounted for about one-third of manufacturing output since the 1970s, they have accounted for over 40 percent of employment over the same period (see Chitonge 2021a).

Agro-processing sector's share in total manufacturing value added (MVA) varies, though high in most African countries, ranging from 77 percent in Mauritius, 60 percent in Tanzania, 55 percent in Ethiopia, 40 percent in Kenya, 53 in Algeria, 42 in Morocco (ACET, 2017: 125). However, although agro-processing industries account for more than half of MVA in most countries, the industries' share in GDP is relatively low at an average of 4 percent, except in Mauritius where the sector accounts for 11 percent of GDP (ibid). The high proportion of value-added originating from agro-processing in most low- and middle-income countries is partly a reflection of the small size of the manufacturing sector, often dominated by the processing of natural resources (UNIDO, 2016). The large share of agro-processing industries in the manufacturing sector of less industrialised countries is not surprising, given that this set of industries often constitutes the first stage of industrial development (Chenery, 1986).

Processing of natural resources often form the first stage of the industrialization ladder, and countries which have managed to industrialise have used agro-processing industries to build capabilities for medium and hi-tech industrial production. In most African countries, including Zambia, the agro-processing sector presents great opportunities for not only building industrial capacity but also creating the desperately needed jobs, primarily because agro-processing industries are on average more labour-intensive, and require low skills compared to other industrial clusters. This is one of the reasons why agro-processing industries in Zambia and other less industrialised countries offers great potential for an agro-led industrialization.

### **The Strategic Importance of Agro-processing industries**

#### **Promoting Industrialisation**

There are several reasons why agro-processing industries are widely believed to be strategic industries in developing countries. As noted above, agro-processing industries are regarded as the first phase of industrial development, largely because they are characterised by relatively low technology and low skills requirements (Kaldor 1966). In low- and middle-income countries where technology advancement is low and labour is dominated by low to medium skills, agro-processing industries have an important role to play in driving economic growth and structural transformation. Agro-processing industries also play an important role in meeting domestic demand for food in less industrialised countries where the larger share of income for majority of the people go to the consumption of food and other non-food basic needs (Syrquin and Chenery, 1989). It has been estimated that countries at low per capita income (less than US\$ 300 in 1970 prices) spend between 40 and 50 percent of household income on procuring food (Chenery, 1982). This structure of domestic demand in most low and middle income countries, coupled with the increasing difficulties of breaking into export markets, explains why agro-processing industries are regarded as strategic activities in developing countries. In the context of developing countries where the largest share of income is dedicated to consumption of basic food and non-food products, processing of food is a rational response to the structure of domestic demand and market conditions.

The processing of food and other agriculture products helps countries to start building industrial capabilities and this can assist countries transition into medium and high-tech manufacturing activities (FAO, 1997). The importance of agro-processing in this regard is not only to meet a country's food needs, but also to use the experience of processing agricultural raw materials products to learn and build industrial capabilities. Most of the industrialised countries started with low technology production, concentrated in the processing of food and other natural resources primarily the processing of cotton into textile, leather into leather products and wood into paper and other wood products (Kuznets, 1966). A growing and dynamic agro-processing sector can be used to import and

transfer technology, which contributes to promoting learning by doing to build, upgrade and deepening industrial capabilities in developing countries.

### **Sectoral Linkages**

A dynamic agro-processing sector can also stimulate growth and transformation in the agricultural sector through backward linkages. Agro-processing industries by nature rely on agriculture for inputs, and growth in agro-processing can exert a strong pull on the agriculture sector in terms of expanding production but also stimulating new agricultural products to meet the growing but changing demand. In-input and output data show that agro-processing industries source up to 90 percent of inputs from the agricultural sector (Dube et al, 2018), especially in low-income countries where import of raw agricultural products is small (Fukase and Martin, 2018). In Zambia, for instance, the 2010 input and output tables show that agro-processing and other manufacturing industries source 86 percent of inputs from agriculture (CSO, 2015).

Mandle (1985) explains the importance of agriculture-industry linkages in terms of what he calls the “double dependence” of industry on agriculture. He argues that the growth of the manufacturing sector in the initial stages of industrial development depends on agriculture for inputs (through backward linkages) as well as demand for its finished products which include chemicals, machinery, processed food and non-food consumer goods (forward linkage). According to Mundle(1985, the “pace for industrialisation is set by developments in agriculture since it is these developments which govern the growth of the market for the manufacturing industry” (Mundle, 1985: 63). Seen from this angle, growth in the agro-processing industries contributes both to the growth of the industrial sector as well as stimulating growth and transformation in the agriculture sector where the bulk of inputs for agro-processing is sourced. Heavily reliance of agro-processing for inputs from agriculture, forestry and fisheries creates a strong backward linkage with agriculture. Albert Hirschman (1958) highlighted the importance of linkages in an economy, pointing out that fast growing sector(s), when they are strongly linked to other sectors, can exert a pull on other sectors with regard to demand for inputs from the supplying sectors. As Chitonge(2021a:194-195) argues,

One of the greatest potentials the [agro-processing] sector offers is its ability to stimulate growth in the agriculture sector through backward linkages. A thriving agro-processing sector creates demand for agriculture produce which in turn can stimulate productivity and income growth in the agriculture sector. Growing income in the agriculture sector can expand the market for manufactured products.

The importance of agro-processing in this regard is not just backward linkages; it also involves forward linkages from agro-processing to other manufacturing and service sectors. A thriving agro-processing sector can induce the growth of downstream activities such as packaging materials, transport and distribution.

In the Zambian context where more than half of the population is still engaged in the agricultural sector, mainly at the subsistence level, agro-processing industries have huge potential to induce productivity and income growth in agriculture (World Bank, 2018). A recent study on intersectoral linkages in Zambia found that agro-processing industries have the strongest linkages with the agriculture sector (Chitonge and Kabinga, 2019). As the demand for food and other agro-industrial products grows, the market for agriculture products is expected to expand, and this in turn can contribute to productivity and income growth in the agricultural sector, which are critical to the transformation of the economy and promoting inclusive growth. In this way, growth in the agro-processing sector can have multiplier effects on other sectors in the economy especially agriculture

and downstream manufacturing activities which rely on inputs from upstream agro-processing. Jayne et al (2018:779) highlight the importance of raising productivity growth in the agriculture sector in economies where majority of people derive livelihoods from agriculture, when they observe that “agricultural productivity growth is generally necessary to generate transformative income growth and money circulating in rural areas...” The strategic importance of agro-processing in this regard is that its growth has huge potential to stimulate productivity growth in agriculture.

### **Employment Creation**

The other strategic importance of agro-processing industries is its high labour-intensity feature. Within the manufacturing sector, agro-processing industries tend to be the most labour intensive, a feature that makes agro-processing industry more strategic in terms of creating productive employment. As shown below, in 2018 the agro-processing industries on average used 50 percent more labour per unit of capital, compared to the non-agro-processing manufacturing industries (see Figure . 3 below). Industries such as textile, clothing leather and leather products, and wood and wood products are many times labour-intensive, and can thus contribute to creating employment in the low and medium skill employment categories (UNIDO, 2020). In a study that analysed labour intensity in the manufacturing sector in the South African economy, Black et al (2016:9) also found that agro-processing industries were the most labour intensive in the manufacturing sector, with furniture, textile, and leather and leather products being the most labour-intensive (least capital-intensive) in both 1990 and 2011.

The employment creation potential for agro-processing is not restricted to the processing of food only; it also includes employment growth in the agriculture sector. There are segments of the agricultural sector linked to agro-processing which are highly labour-intensive, and these can benefit more when agro-processing activities expand. For instance, the horticultural industry, particularly the growing of deciduous fruits, requires 300 times more labour per hectare compared to maize production. The growth of the horticultural value-chain in the country offers great opportunity to create jobs which are badly needed in the current situation where measures implemented to curb the spread of the Covid-19 pandemic have resulted in massive job losses. In Zambia, the agro-processing industries accounted for over two-thirds of total manufacturing employment in 2018 (see Table .3 below). Labour-intensive industries are important for job creation and promoting inclusive growth, especially in segments of the industries which employ low and semi-skilled workers. According to the 2018 Labour Force Survey, out of the 314 000 workers in the manufacturing sector in 2018, 201 000 (67 percent) were in the agro-processing, though more than two-thirds of these were in informal employment (CSO, 2019). Here, we see the potential for agro-processing to contribute to employment creation when the sector grows, given that the sector is largely dominated by a large number of small enterprises, most of them operating in the informal sector(ACET, 2017).

In the case of Zambia, however, the challenge is that labour intensive industries such as leather and leather products, textile and apparels, and wood and wood products have almost been wiped out due to pressure from imported products, highlighting the lack of competitiveness of the local firms. In the case of the textile industry in Zambia, it has almost collapsed despite several attempts to revive and revitalise it since the 1990s (Eliassen, 2012; Chitonge, 2021a). A recent report has estimated that the textile industry in 2019 was only 5 percent of its 2000 production volume (UNIDO, 2020; ZDA, 2020). If these labour-intensive agro-processing industries can be revitalised, the contribution to employment creation is likely to be significant.

### **Promoting Inclusive growth and Poverty reduction**

Agroprocessing industries, as noted earlier, have the potential to contribute to promoting inclusive growth and poverty reduction (see Chitonge 2021b). Due to its strong connection to the agriculture sector, agro-processing industries can play an important role in inducing productivity growth among small scale farmers. Rising productivity and income among small and subsistence farmers can contribute significantly to promoting inclusive growth (ACET, 2017). Promoting inclusive growth has been difficult to realise in Zambia because income and productivity in the agriculture sector, particularly, have remained low (Chitonge, 2016). The growing demand for food and other agricultural products due to the expanding agro-processing industries and regional markets for processed foods, offers great potential to transform the agricultural sector by pulling emerging small and medium farmers into high value-added activities linked to several agro-processing value chains (Reardon, 2015).

If a significant number of small and emerging farmers participate in the agro-processing domestic and regional value chains, this can contribute to promoting inclusive growth by giving small farmers access to the growing regional market for agriculture produce and processed foods. Access to growing domestic and regional markets is critical to raising income and the productivity of the majority of people who are currently engaged in subsistence and small-scale farming. Rising income among subsistence farmers can contribute to reducing income inequality that has been rising for the past two decades in Zambia, with a Gini Coefficient rising to 57.1 in 2015 (UNIDO, 2020).

The potential for increasing production and raising productivity for farmers is high given that the demand for processed food is projected to increase rapidly as urbanisation, population growth and growth in income combine to push the food demand up (Reardon, 2015; Tschirley et al, 2017). According to recent estimates, "In Zambia, food demand is expected to grow more than threefold in the next 15 years, to over US\$25 billion<sup>4</sup>. This offers prospects for agro-led industrialisation for Zambia. Linking small farmers to local and regional value chains is key (World Bank, 2018). Given Zambia's natural resource endowment, the country's agro-processing sector has great potential to contribute to raising income among small scale farmers by competitively participating in regional agro-processing value chains which offers opportunity for growth and transformation in the broader society. A number of agro-processing firms such as Speciality Foods, Zambeef and several beverage producers are now actively participating in regional food value chains via the growing retail chain stores, including Shoprite, Pick n' Pay, Spur (Fessehaie et al, 2015).

### **Diversification of the economy**

Growth of agro-processing industries in Zambia can also contribute to the diversification of the economy, especially the growth of non-traditional exports (NTEs) which have remained a small component of the country's export (ibid). As is well-known, the Zambian economy has continued to rely heavily on a small number of export commodities, mainly mineral ores and metals, for foreign exchange earnings. In 2018 for instance, only five export goods (all concentrated around the mining industry) accounted for 82 percent of total export earnings, and the export of copper alone (refined and unrefined<sup>5</sup>) alone accounted for 75 percent export value (UNIDO, 2020: 11). Few commodities make up the export basket outside of the mineral and mineral ore cluster, making the country among the top countries with the highest export concentration index (UNCTAD, 2019). The successive Zambian governments have been aware of the challenges this export structure entails for the

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<sup>4</sup> This is close to Zambia's current GDP of about US\$27 billion in 2020.

<sup>5</sup> In 2018, 68 percent of the copper exported was unrefined (see UNIDO, 2020:11)



economy, and efforts to diversify not only export, but the entire production base has been ongoing (Chitonge, 2021a).

Given the country's urgent need to diversify its export basket, agro-processing industries are seen to offer great potential to contribute to achieving this objective. Several official documents have acknowledged that agro-processing industries have the potential to increase the growth of NTEs which can broaden the structure of the country's export earnings. There are several agro-processing value chains in which the country enjoys a reveal comparative advantage in the Southern Africa and the Africa region including soybeans and related products, animal feed, cashew nuts, and oils (ZDA, 2014). Growth of NTEs exports can contribute to reducing the country's heavy dependence on a narrow range of traditional exports.

There are of course other reasons why agro-processing industries are believed to be strategic in the Zambian economy. The factors discussed above only highlight some of the key factors. A more general contribution of agro-processing to economic development is captured in Adelman's(1984) agriculture-demand led industrialisation (ADLI) model, where he argues that,

The proposed strategy[ADLI] is simultaneously a growth programme, an employment programme since agriculture is considerably more labour intensive than even labour-intensive manufacturing, a basic needs, food security and income distribution programme, and an industrialization programme. It also constitutes a foreign exchange-saving programme by reducing the need for food imports which, in the 1970s ... accounted for an average of 13% of total LDC imports. Finally, the proposed strategy is also a risk-reducing programme ...(Adelman, 1984: 938).

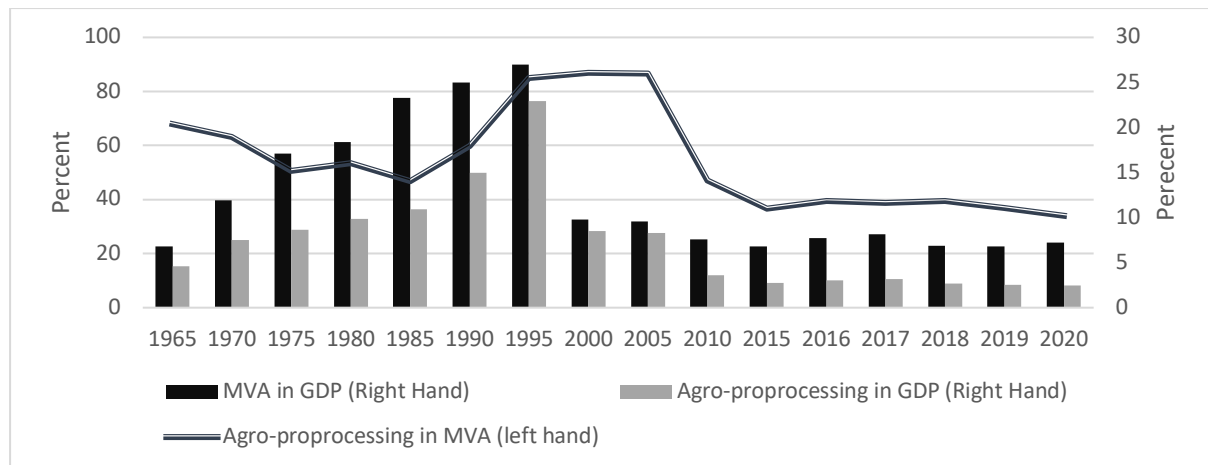
Certainly, the growth of agro-processing industries can contribute to improving the balance of payment situation by replacing imported processed food with locally produced food. This can also contribute to improving food security by using modern methods of food processing, preservation and enrichment which extend the shelf life and improves the taste of food. This is why many countries at the early stages of industrial development see the agro-processing sector as a strategic set of industries.

### **Composition of the Agro-processing Sector in Zambia**

The agro-processing sector is a diverse set of industries involved in the processing of agriculture, forestry and fisheries products into intermediate and final goods. This section looks at the size, composition, trends and contribution of the sector in terms of value added and employment to the economy as whole. As figure 1 shows, the contribution of agro-processing industries to the manufacturing sector and the economy has varied over time.

If we look at the sector's long-term trends contribution to GDP, we see that its share increased steadily from 1965, peaking at 23 percent in 1995, but declined steadily after 1995, to just about 2.5 percent in 2020. These changes in the share of agro-processing in Zambia's economy are largely influenced by the performance of other sectors, particularly mining. During the periods when mining activities were low (particularly during the 1990s) the share of agro-processing rose sharply, but fell when mining activities recovered, starting from the early 2000s. A similar picture emerges when we look at the sector's share in MVA. Agro-processing share in MVA decline sharply after 2005. However, this does not mean that the sector has been contracting; this is largely due to the recovery in the other sectors both in the manufacturing sector and mining-related activities. In fact, the volume of production index shows that the sector as a whole grew, steadily between 2000 and 2018 (Chitonge, 2021a).

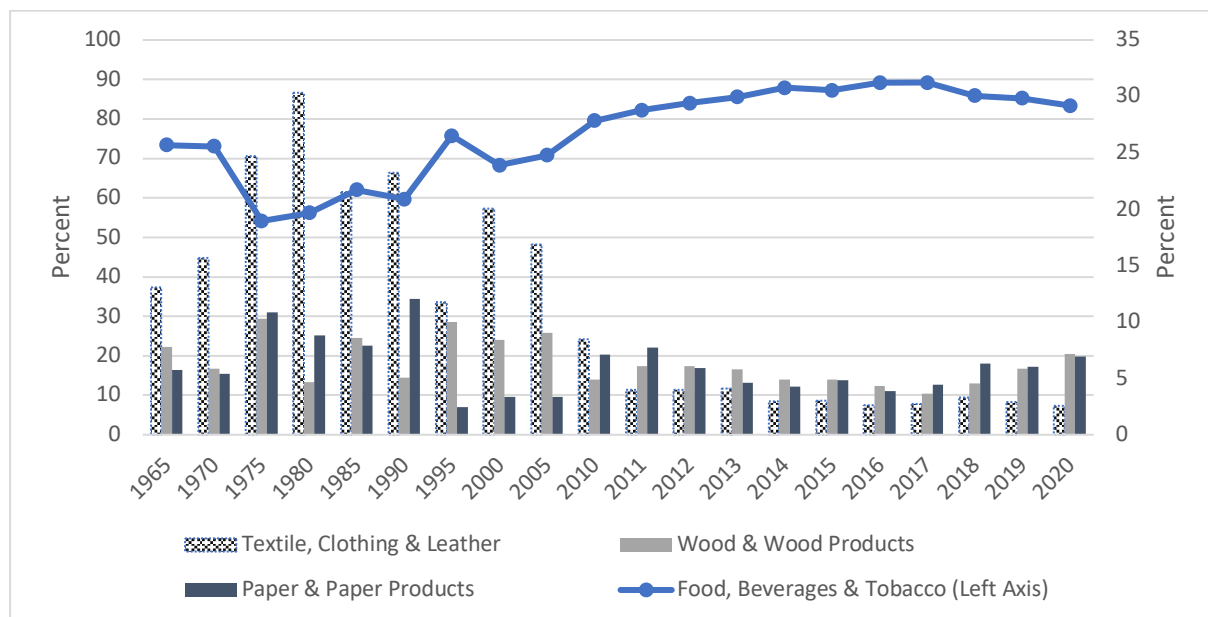
Figure .1: Agro-processing Share in Manufacturing Value Added (MVA) and GDP (%) 1965-2020



Source: Author based on data from Zamstats (various years)

If we look at the agro-processing share in MVA, it is clear that the sector has been the largest in the manufacturing sector since 1965, peaking at 84 percent between 2000 and 2005, though its share has been declining since then, but still accounting for about 40 percent on MVA since 2015. Although its share in GDP has declined sharply, agro-processing industries constitute an important cluster of industries in the Zambian economy as highlighted above. In case of the manufacturing sector, agro-processing has been a dominant subsector since independence, and it remains the largest cluster of the manufacturing sector even today. The fact that agro-processing industries constitute the largest subsector of the manufacturing sector should not be surprising given the wide scope of activities which fall under agro-processing. Thus, its importance in the economy is not limited to the fact that it plays an important role in making different types of foods available in the country, but it also provides input for other downstream manufacturing activities such as confectionery, furniture and the apparel industries (ZDA, 2020).

Figure 2: Composition of Agro-processing Industries 1965-2020 (%)



Source: Author based on data from Zamstats(various years)

In terms of the composition of the agro-processing sector in Zambia, there are four broad clusters of industries: the food, beverage and tobacco, Textile, Clothing and Leather, Wood and wood products (including furniture) and Paper and paper products. Of the four broad clusters of agro-processing industries, it is the food, beverage and tobacco (FBT) which is the largest subsector, accounting for over 70 percent of value added since 1965 (Figure 2)

In 1965, the FBT cluster accounted for more than 70 percent of value added for the agro-processing sector. However, the FBT's share in agro-processing value added declined to about 52 percent in 1975, but increased steadily after that, peaking at about 76 percent in 1995 and has stabilized around the 80 percent mark since 2010.

### **The Food Beverage and Tobacco (FBT) Cluster**

The share of FBT in total agro-processing value added rose after 2010 peaking at 90 percent of the total value added for agro-processing between 2014 to 2017, before declining to 80 percent in 2020. As noted earlier, the dominance of the FBT in the agro-processing cluster should be expected for countries at lower levels of industrial development, because the larger portion of the manufacturing sector is dedicated to the production of food which constitutes the bulk of domestic demand. Countries at lower levels of industrial development tend to have a domestic demand structure with a relatively high food component (Syrquin and Chenery, 1989). It has also been observed that for less industrialised countries, the larger proportion of manufacturing activities are directed towards natural resource processing, mainly food and related resources from the primary sector (UNIDO, 2016).

The African Centre for Economic Transformation (ACET, 2017:125) report also shows that the processing of food dominates the agro-processing industrial cluster in most African countries, with the processing of food accounting for 86 percent of the total agro-processing value added in Senegal, 76 percent in Kenya, 78 percent in Tanzania, 74 percent in Ethiopia, 59 percent in Mauritius, 75 percent in South Africa, with the average for the continent being 69.5 percent. The dominance of the food processing explains why agro-processing accounts for a large share of the manufacturing output. Agro-processing share in MVA in most African countries are among the highest in the world, over 62 percent in Tanzania, 53 percent in Algeria, 55 percent in Ethiopia and Ghana, 43 percent in Morocco, 40 percent in Kenya, 38 percent in Senegal, 29 percent in South Africa; compared to 17 percent in the USA, 22 percent in China and 19 percent in India (ACET, 2017: 125).

The trend we are seeing in Zambia are typical of countries with low levels of industrialisation. The FBT cluster is expected to continue growing as the demand for processed food, as a result of the growing population in Zambia grows. Further, agro-processing activities in the country are likely to grow as some of the agro-processing firms in the country seek to participate in some of the emerging and expanding regional food value chains, which are expected to be boosted by the African Continental Free Trade Area (AfCFTA) and other regional trade agreements to which Zambia has signed up (ZDA, 2020). Some of the managers of the agro-processing firms reported that they are exploring the possibility of entering the export regional market, particularly in the maize and the beverage value chains (Chitonge and Mundia, 2019). Given this context, the potential for growth in the FBT sector is high, and this offers real opportunities for growth and diversification in the Zambian economy (World Bank, 2018).

### **The Textile, Clothing and Leather (TCL) Cluster**

The second broad cluster of the agro-processing industries in Zambia is the textile, clothing and leather cluster. As figure .2 shows, the Textile, clothing and leather cluster's share in agro-processing, grew steadily between 1965 up to 1980 when it peaked at 27 percent of agro-processing value added.

Since the 1980s, the sector's share in agro-processing value added has varied, declining steadily to the current low of just 2.5 percent in 2020 (see figure .2). This is not surprising; the TCL cluster in Zambia has been under extreme pressure from cheaper imported textile, clothing and leather products, mainly from China. The extent of the pressure on local textile and leather industries become evident when we consider, for example, that the textile industry alone had almost 140 companies employing close to 25000 workers during the 1980s, compared to just 12 medium-size enterprises and 1 500 workers in 2012 (Dhin, 2014). The volume of production index for the textile industry, also confirm that production declined by 95 percent between 2000 and 2020 (see UNIDO, 2020:49). Chitonge(2021a:175) also shows that while in 2000 the TCL cluster of industries contributed about 17 percent to agro-processing value added, this dropped to just 1.3 percent in 2018. A study that focused on the Chinese investments in the textile industry in Zambia concluded that "the textile industry in Zambia is in dire straits. The impact of imported TC [textile and clothing] products has resulted in a decline of the national TC industry and employment opportunities in the formal sector"(Eliassen, 2012: 21). In terms of export, the decline in the sector is also highly visible: the total value of export in the TCL industry declined from US\$136.5 million in 2012 to just US\$41.4 million in 2017 (ZDA, 2020: 6).

Some of the factors which have contributed to the decline in the sector is the penetration of cheap imports and second-hand clothing, the fragmentation of the sector, poor coordination within the sector, lack of technology and modern machinery and poor investments which have left firms in the sector highly uncompetitive (ibid). These factors point to the decline in the capacity to compete with global production, which in itself is a reflection of the constrained local conditions in which the sector operates. Part of the challenge is that although Zambia is currently the third largest producer of cotton in the Southern Africa region (ibid), due to the lack of spinning facilities, the country exports almost 90 percent of the raw cotton produced in Zambia (Eliassen, 2012; Dhin, 2014)<sup>6</sup>. This means that little value is added to raw cotton, and the country loses its opportunity to create employment from further processing of cotton beyond ginning. Being a sector with high labour-intensity (i.e., the number of workers per unity of capital), the sector offers great opportunity to contribute to the creation of productive employment and the diversification and the industrialisation of the economy. Textile industries widely regarded as starter of industrial development because they offer countries the opportunity to build capacity for high value-added manufacturing. But in the Zambian context, the contribution of this cluster of industries to the economy has been far below its potential. There have been efforts to revive the industry by attracting foreign investments (mainly from China) to recapitalise the industry (Eliassen, 2012), but this has not yet resulted in increased production and revival of the sector.

### **Wood and Wood Products**

The Wood and wood products cluster is another component of the agro-processing industries involved in the processing of forestry products into final and intermediate products. As evident in figure .2, the performance of the wood and wood products has been unpredictable. The best performance in the sector was between 1995 and 2005 when the sectors share in agro-processing averaged 8 percent. In terms of the production volume index, the wood and wood products cluster has been doing well, with production volumes increasing by 57 percent between 2010 and 2019. This increase can be attribute partly to the growing construction industry which requires various types of wood products (Chitonge 2021a: 202; Fessehaie et al, 2015). Although production in this cluster has

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<sup>6</sup> The top cotton producing country in Southern Africa is Tanzania, followed by Zimbabwe, with Zambia being third.

been growing steadily, the sector has faced similar challenges to the TCL; mainly competition from imported materials. Ratinsingam et al, (2014) argue that there is great potential for this sector to contribute to economic growth and employment creation, although currently the sector suffers from what they call the “bountiful mentality”<sup>7</sup>.

The bulk of Zambia’s wood and wood products is supplied to the local markets, with limited export mainly to the DRC (Chitonge, 2021a). Like the TCL cluster, this cluster is highly labour-intensive and therefore has the potential to contribute to job creation. A recent report argues that “The wood processing sector is a key sector for employment creation as it has by far the largest employment intensity of all manufacturing sectors...” (UNIDO, 2020: 51). However, most of the jobs in the sector are informal and this is why the productivity rates in the sector is the lowest in both agro-processing and in the broader manufacturing (see Table .3). The wood and wood products cluster also include the manufacture of furniture, which is dominated by informal activities. In the Zambian setting, while there are formal medium furniture manufacturers, the sector is dominated by a large number of small and largely informal ventures. The activities of the informal furniture manufacturers are visible in any markets in Zambia as well as along the main roads in major cities and towns, and it certainly provides employment and income to many people.

### **The paper and paper products**

This is the fourth segment of the agro-processing sector. This cluster of industries is mainly involved in the production of paper and related products such as cardboards, boxes, wrapping paper, printing paper, pulp, etc. In terms of its contribution to agro-processing, the sector’s performance has varied since 1965. The sector’s contribution rose from the 1990s until 2010 when declined 2013 until 2017 before recovering after 2017(Figure .2). The biggest component of this cluster is the packaging material segment, with the cardboard segment being the biggest component (ACET, 2017). The growth of this cluster is largely influenced by the demand from other sectors, particularly the food and beverage sector which requires a lot of paper-based packaging material. This is one of the reasons why the industry expanded at the same time as the FBT. The industry however has low labour intensity and is usually dominated by medium and large firms which control the market. Because of its low labour-intensity, the paper industry is one of the clusters of the agro-processing clusters with the highest labour productivity, and compares well with other clusters of the manufacturing sector (see Table .2).

### **Agroprocessing in Manufacturing Sector in Zambia**

As noted earlier, the agro-processing sector is a component of the manufacturing sector which transforms agriculture, forestry and fisheries products into intermediate and final goods. Table .1 below provides an overview of the agro-processing industries share in (MVA).

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<sup>7</sup> This refers to the lack of care for forestry resources as a result of the perception that the resources are naturally abundant.

Table 1 Agro-processing Cluster Value Added in the Manufacturing Sector (2010 – 2020) %

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Food, Beverages & Tobacco	37,4	30,6	33,8	36,8	37,4	32,0	35,3	34,6	33,9	31,4	28,3
Textile, Clothing & Leather	4,0	1,5	1,6	1,8	1,3	1,1	1,0	1,1	1,3	1,1	0,9
Wood & Wood Products	2,3	2,3	2,5	2,5	2,1	1,8	1,7	1,4	1,8	2,2	2,4
Paper & Paper Products	3,3	2,9	2,4	2,0	1,8	1,8	1,5	1,7	2,5	2,2	2,4
Chemicals, Rubbers & Plastics	6,1	15,0	14,8	7,4	9,7	10,1	9,3	8,7	13,1	8,8	7,5
Non-metallic Mineral Products	9,0	7,7	8,2	9,6	11,1	12,5	14,6	13,5	12,4	14,6	17,9
Basic Metal Industries	25,7	26,5	24,6	27,0	25,5	28,5	26,6	28,9	22,9	24,2	23,5
Fabricated Metal Products	12,1	13,6	12,1	12,8	11,2	12,2	10,0	10,1	12,2	15,6	17,1

Source: Author based on data from Zamstats( various years)

From table 1 above, it is evident that agro-processing industries in Zambia have consistently constituted the largest component of the manufacturing sector in the period between 2010 and 2020. If we look at the composition of MVA by manufacturing subsectors, while the agro-processing sector continues to be the dominant sector, the other non-agro-processing clusters seem to have been recovering, and this has accounted for the decline in the agro-processing share in MVA. The share of agro-processing in MVA trend we see in Table .1 above is largely a reflection of the changing fortunes of the manufacturing sector in the country. At independence, when there were few industrial activities and firms, agro-processing's share in manufacturing was high. As more industrial activities, particularly manufacturing, were established during the late 1960s and early 1970s, the share declines. The share of agro-processing in manufacturing sector starts to rise again during the 1990s when most of the parastatal companies (including manufacturing firms) were privatised from the early 1990s to 2000 (Chitonge, 2021a).

It has been shown that during this period, the other segments of the manufacturing sector, particularly the basic metal and fabricated metals declined sharply between 1990 and 2005, but recovered, as mining activities from 2005 onwards recovered (ibid). The declining share of agro-processing in MVA during this period reflects the rapid growth in other sectors particularly mining and related activities such as construction, fabricated metals and basic metals as indicated above; it does not mean that the sector has been shrinking. However, although the share of agro-processing in MVA has largely declined from the 2005-peak of 87 percent, the sector has still remained the largest cluster of the manufacturing sector.

If we look at the sector's labour productivity by subsector, we see that agro-processing industries, relative to other manufacturing industries, have lower productivity. Table2 also shows the relative labour productivity ratio by sector for 2017 and 2018 when employment data at ISIC Rev 4 IV-digit level become available.

Table 2: Labour Productivity by Subsector (2017-2018) (Kwacha 000')

	2017	2018	Average	Relative Sectoral Labour productivity Ratio (Manufacturing=1)
Food, Beverages & Tobacco	87,76	91,09	89,32	1,59
Textile, Clothing & Leather	11,81	11,04	11,18	0,20
Wood & Wood Products	8,77	8,13	8,41	0,15
Paper & Paper Products	148,77	65,13	107,63	1,92
<b>Total Agro-processing</b>	<b>59,94</b>	<b>52,79</b>	<b>56,06</b>	<b>0,97</b>
Chemical rubber and plastics	90,18	163,30	122,34	1,98
Non Metallic Mineral Products	118,22	122,68	120,25	1,95
Basic Metal Industries	139,98	138,98	139,55	2,26
Fabricated metal Products	85,18	60,19	69,80	1,13
<b>Non Agro-processing</b>	<b>108,39</b>	<b>121,29</b>	<b>112,98</b>	<b>1,83</b>
Total Manufacturing	<b>63,42</b>	<b>60,00</b>	<b>61,72</b>	1

Source: Author based on data from Zamstats(various years)

In terms of labour productivity, the agro-processing sector has lower than the average labour productivity for the manufacturing sector. Within the agro-processing sector, the paper and paper products was the most productive, with productivity of almost twice the average for the manufacturing sector. The food, beverage and tobacco cluster was the second most productive cluster at 1.5 times the average labour productivity rate for the manufacturing sector. Wood and wood products and Textile, clothing and leather were the least productive sector, with labour productivity of only 15 percent of the manufacturing sector average, while the TCL's labour productivity was similarly low at only 20 percent. While it is important to improve the productivity of labour and other factors in agro-processing, the low labour productivity also suggest that these industries are more labour-intensive, which is good for low technology and low skills employment generation. This potential can be explored through appropriate policies aimed at promoting the growth of the sector but also by improving productivity levels in related sectors.

The high labour-intensity for agro-processing becomes clear when we look at the share of employment and value added by sector. Although agro-processing industries accounted for two-fifth of value added in 2017 and 2018, the sector's share in labour force was two thirds of the total manufacturing employment (see Table 3).

Table 3: Employment and Value-Added Share by Sector (%)

	Share in Employment			Share in Value Added		
	2017	2018	Mean	2017	2018	Mean
Agro-processing	66,0	67,1	66,5	38,8	39,4	39,1
Chemical rubber and plastics	6,1	4,8	5,5	8,7	13,1	10,9
Non-Metallic Mineral Products	7,3	6,1	6,7	13,5	12,4	13,0
Basic Metal Industries	13,1	9,9	11,5	28,9	22,9	25,9
Fabricated metal Products	7,5	12,1	9,8	10,1	12,2	11,1

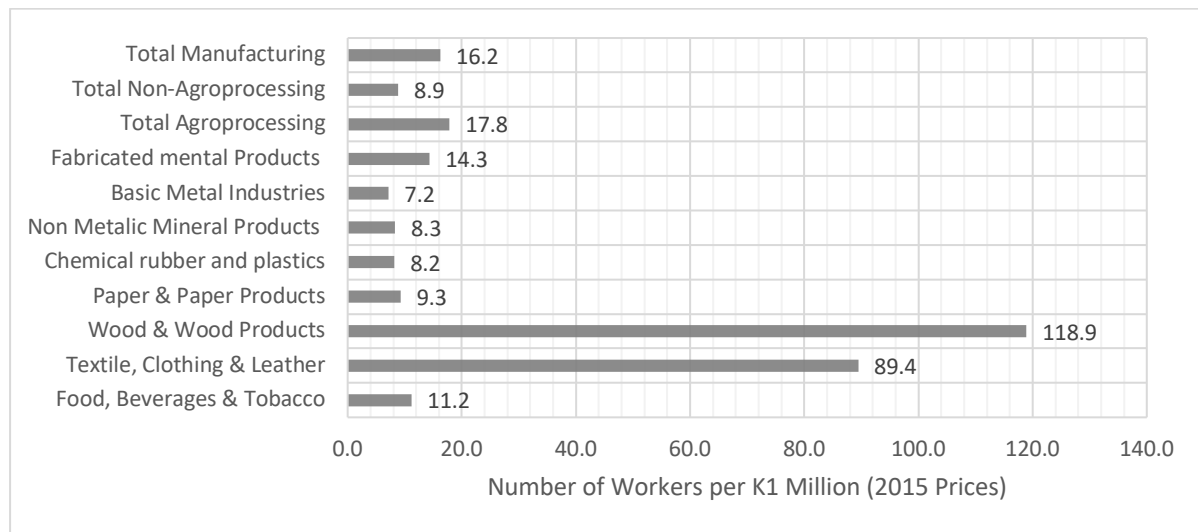
Author based on data from Zamstats(various years)

The low productivity in the agro-processing cluster could be attributed to the high number of small and medium enterprises which rely on low technology and sometimes manual processing. It has been

reported that most agro-processing firms on the continent are small artisanal ventures, relying on crude forms of processing including the use of manual tools (ACET, 2017). Some of these artisanal ventures face the challenge of irregular supply if inputs given that agricultural production is highly sensitive to the seasonal flow, which makes it difficult for some of these firms operate throughout the year.

However, the presence of small and medium agro-processors relying on low technology and manual processing contributes to the labour intensity of the sector. This is clear in figure .3, which shows that on average agro-processing industries use twice the number of workers per unit of capita compared to other average for the non-agro-processing industries.

Figure 3: Labour Intensity by Sector (Average for 2017 and 2018)



Source: Author based on Zamstats

Figure .3 shows that textile, clothing and leather and the wood and wood products are the most labour-intensive sectors. For example, for everyone million kwacha the TCL cluster employees 89 workers, compared to just 7 workers for the basic metal industries and 8 workers for chemicals and plastics sector. This is not surprising given that these are activities which do not require large capital outlay, which lowers the barriers to entry for small and medium entrepreneurs in these clusters. For example, in the apparel cluster, a person needs a sewing machine and a room to operate. Similarly, in the wood and wood products, it is possible to operate with the bear minimum of a bench and plainer. The participation of small and medium enterprises in agro-processing creates the potential for the generation of jobs especially when these businesses can be supported to remain viable.

### Opportunities in Agro-Processing in Zambia: A Regional Perspective

Given Zambia's natural and human resource endowment, the country has great potential to develop regionally competitive agro-processing and agribusiness enterprises. Zambia's advantage is largely linked to the abundance of land suitable for carrying out a variety of agricultural activities, due to a diverse set of agro-ecological conditions. The country also has adequate water resources (both rainfall and underground) as well as abundant labour (ZDA, 2014). Zambia's opportunities in agro-processing are boosted by the country's membership in several regional trade agreements, such as the Southern African Development Community (SADC), the Common Market for Eastern and Southern Africa (COMESA) and now the AfCTFA, which started operating at the beginning of 2021. The trade arrangements which Zambia is party to have created opportunities for the country to tap into the



growing regional and African market(ZDA, 2020). A recent World Bank report highlighted the significance of Zambia’s membership in regional trade agreements, pointing out that the potential for an agro-led industrialization in Zambia is “not only because Zambia has vast fertile lands and water, but also because it is surrounded by seven neighboring countries. Increased regional and urban demand for diversified and processed products provides opportunities to support the development of the manufacturing sector, specifically in agro-processing, which will provide employment and government earnings” (World Bank, 2018:4).

So far, the country’s agro-processing sector has largely supplied the domestic market, though analysis of trade data reveals that exports to neighbouring countries, mainly the Democratic Republic of the Congo (DRC), Zimbabwe, Malawi, Namibia and South Africa, have been growing rapidly since 2005 (Fessahaie et al, 2015). As a result of the opening up of regional market opportunities for agro-processing cluster, Zambia has revealed comparative advantage RCA) in a number of products including hides and skins, the cereal cluster, confectionery, molasses and oil seeds (Table .4)<sup>8</sup>.

Table 4: Revealed Comparative Advantage Index for Zambia 1995-2019

	1995	2000	2005	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
wheat & Meslin flour	0,0	20,2	28,2	23,2	16,3	12,7	18,6	17,0	9,6	4,5	0,6	0,0	0,0
Other cereal flour	0,5	47,1	42,1	5,1	9,3	3,2	2,3	2,4	3,7	6,7	17,7	1,0	4,6
Cereal preparations	0,2	0,6	0,0	1,5	1,1	1,7	1,1	1,2	1,0	0,7	0,7	1,4	1,8
Sugar confectionery	0,0	0,4	3,6	2,9	4,1	3,7	3,4	3,8	3,2	2,7	3,2	2,9	3,9
Animal Feed	0,0	2,0	0,4	1,2	1,2	2,1	3,6	2,2	1,2	1,1	2,3	2,7	2,3
Non-alcoholic beverages	0,0	0,2	0,4	2,0	1,1	0,4	2,0	1,8	2,7	4,8	6,8	7,1	6,6
Crude vegetable materials	1,0	12,7	3,3	1,4	1,2	1,3	1,5	0,9	1,1	0,9	1,0	1,0	1,0
Maize (unmilled)	1,0	9,9	20,2	5,7	15,4	24,6	9,3	6,0	27,4	25,6	8,4	3,9	3,2
Molasses and Honey	6,3	37,6	21,9	11,0	9,5	6,7	8,0	10,1	11,2	9,1	8,2	8,1	10,6
Hides and skins (raw)	0,4	2,0	3,1	0,4	0,6	1,0	4,9	6,4	2,2	1,9	7,9	5,4	5,5
Oil seeds & oleaginous fruits	0,0	1,5	0,1	0,2	0,1	3,9	5,7	11,6	11,2	9,7	13,0	6,4	17,6
Cotton	1,3	14,7	38,5	9,3	11,9	18,9	11,3	8,7	10,8	12,8	6,7	5,9	6,9
Tobacco (unmanufactured)	3,7	25,2	87,4	42,0	31,2	34,2	36,0	40,5	41,7	29,6	31,4	31,8	23,9

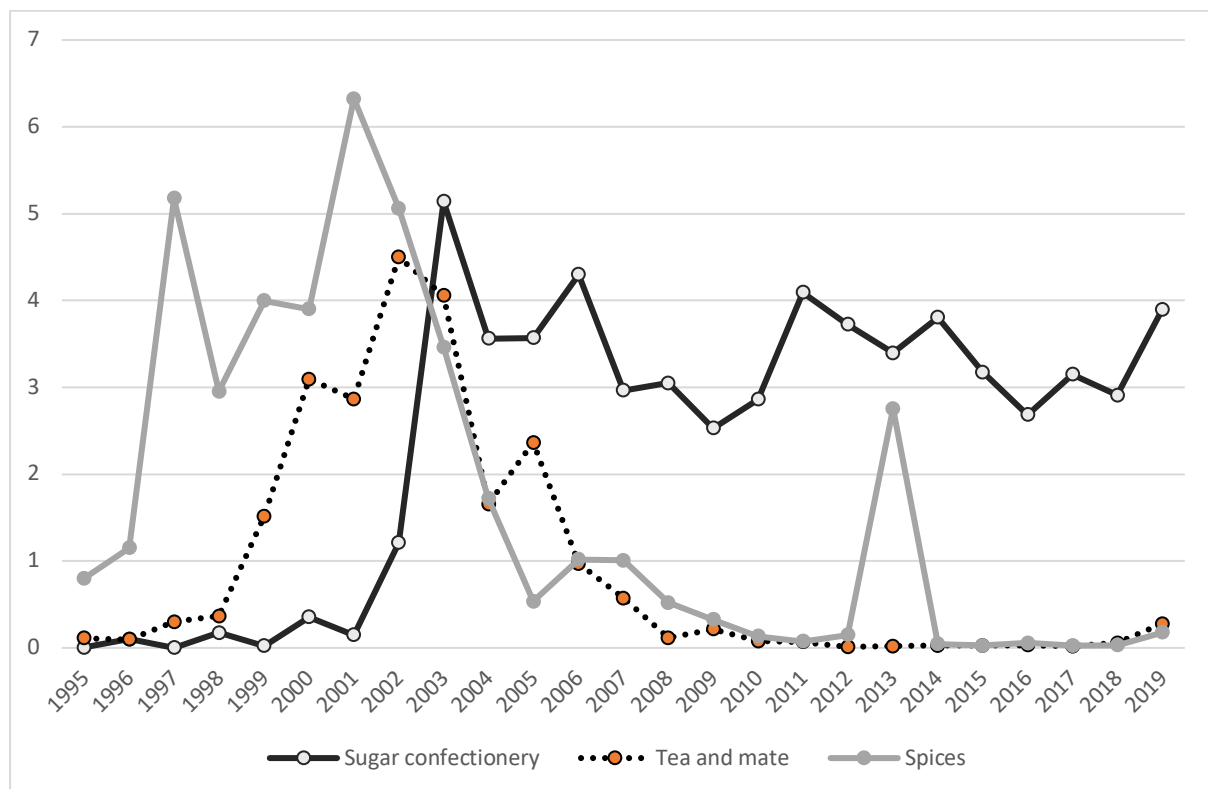
Source: Author based on Data from UN-Comtrade Database.

<sup>8</sup> Based on economic theory, “a comparative advantage is ‘recognised’ if  $RCA > 1$ . For an  $RCA < 1$ , the country is said to have a ‘comparative disadvantage’ in said commodity or industry. In other words, with an  $RCA = 1$  country  $i$  exports as much of good  $j$  as would be expected given its overall propensity to export. For example, assume that in 2018, honey represented 20% of world trade with exports of USD 500 billion. Of this, Zambia exported nearly USD10 billion, and since Zambia’s total exports for that year were USD25 billion, honey accounted for  $10/25 \times 100 = 40\%$  of Zambia’s exports. Because  $40/20 = 2$ , Zambia exports twice of what its ‘fair share’ would constitute. In other words, Zambia has a high revealed comparative advantage in honey and Zambia’s RCA for honey is 2” (Source: UNIDO,2020:45).

In 1995, for instance, the country had RCA in only 5 agro-processed products, but this has grown to 12 products in 2019. This shows that Zambia has developed capabilities in these products relative to world exports. In order to capitalize on these advantages, the country has to devise a strategy for building capabilities for local firms to become competitive at the regional level.

Although the country has lost RCA on some products over the year, its comparative advantage in sugar and confectionery has remained strong as Figure 4 shows.

Figure 5: Revealed Comparative Advantages for Sugar & Condiments (1995-2019)



Source: Author based on data from UNCTAD Data (2021)

The strong RCA in sugar and confectionery products the country has enjoyed since the early 2000s can be attributed to a number of factors including the good environment for growing sugar cane, which is now grown in different part of the country other than Southern Province as was the case in the past.

Looking at the country’s trade data, it is evident that Zambia possesses revealed comparative advantages in a number of agro-processing products, mainly processed foods and beverages (UNIDO, 2020). Similarly, prepared cereal flour, vegetable and fruit oils, and non-cereal animal feeds are some of the agr-processed products where the country has RCA. In the beverages and tobacco segment, non-alcoholic beverages also enjoy significant RCA and the opportunities for regional and continental export have been growing in the last two decades. Aquatic invertebrates, other meats (e.g. goat and quail), fresh fish and more conventional meats (like beef and chicken) have similarly demonstrated growing potential in the southern Africa region in the meat and fish products segment in recent years. Revealed Comparative Advantage for selected meat and fish products' has increased sharply after 2013, and Zambia’s export market in these products has expanded to include the middle East. While Zambia exhibits RCA for roughly squared wood and wood sleeper railways from various wood and processed products the wood and processed product subsector as a whole has laten comparative

advantage (LCA), suggesting that there is potential to develop competitive products in this cluster (UNIDO,2020).

In terms of the country's imported agro-processed products, dairy products (HS 1520) along with meat and meat products (1511) are among the top imported products of the processed food sector in Zambia (UNIDO, 2020). The subsectors with the fastest-growing international market are cocoa, chocolate and sugar confectionery (1543) and prepared animal feeds (1533), growing at annual rates of 15 percent to 18 percent (UNIDO, 2020). The trends in RCA for agro-processed products confirm the view that the opportunities for Zambia to develop high capabilities in some of these industries are high and the country can capitalize on its internal advantages to expand its market.

### **The Challenges of Realizing the Agro-processing Potential**

But for the country to advantage of its natural endowment and the expanding regional markets for agro-processing, there is need to address some of the bottlenecks that constrain local firms from building capabilities to be able to compete with other firms in the region. For agro-processing firms operating in Zambia to become competitive and expand their market share in the region, it is important to address the key factors that constrain export growth. In this regard, it is important to address constraints which affect the production side as well as those which impact on trade (export of goods and import of inputs and intermediates) in order to remain competitive in the region. For a land-locked country like Zambia, promoting competitiveness is key to taking advantage of its location and regional connection to effectively participate in regional and global value chains (UNCTAD, 2016).

Like other developing countries, Zambia's policy has focused on liberalizing trade, without much attention given to addressing the production capability constraints, which have to be addressed if local firms are to become competitive regionally and globally. While addressing factors that constraint trade is an important step, measures aimed at improving trade should not replace strategies that aim to build productive capabilities, including industrial policy (UNCTAD, 2019). For instance, in Zambia, the lack of spinning weaving capacity has led to a situation where a country now exports all its lint cotton and then relies on imported yarn and fabrics. This has led to the country importing textile products worth US\$72 million compared to its export of US\$3.2 million, and importing US\$43.2 million worth of apparel compared to the country's apparel export of just 0.12 million (ZDA, 2020:2).

In general, the agro-processing subsector is hampered by policy inconsistencies and logistical constraints, which both reduce the competitiveness of local producers and act as a barrier to the subsector realizing its full potential in the region (Chitonge and Kabinga, 2019). Key policy and logistical constraints recognized by the actors in the subsector include: a volatile Zambian Kwacha-United States Dollar exchange rate; frequent reversals in energy, tax and agricultural exports policies; cumbersome export and import processes; lack of coordination between trade and industrial development strategies; low capacity in the product testing; and certification facilities (Chitonge and Kabinga, 2019:3). Specific interventions are needed to address these constraints.

Energy supply rationing and unexpected blackouts are affecting Zambian agro-processors. The interruption of energy supply negatively affect production, especially in the manufacturing sector, such as agro-processing, where production depends heavily on running machines; without electricity, production comes to a halt (Chitonge and Kabinga, 2019). Undoubtedly, the electricity crisis eats up the competitiveness of local producers, especially when it comes to securing regional markets where other producers have access to a steady and possibly cheaper supply of electricity. The problem is not just about higher costs of production, but also time lost without production.

Another bottleneck is an unstable currency. Unusually wide currency depreciations make it too expensive for manufacturers to import inputs. For instance, in 2015/16, the value of the local currency depreciated by more than 50 per cent in a short period, with a dollar-kwacha exchange rate jumping from 9 kwacha to 14 kwacha in the space of two months (World Bank, 2018). The working capital available to firms in kwacha terms was reduced to less than half due to the depreciation in the kwacha, and the cost of importing inputs went up as the kwacha depreciation. Unfortunately, the domestic market did not adjust prices of locally produced goods accordingly, resulting in the businesses operating without profit. This brings out the importance of maintaining a stable macro-economic environment for businesses to survive. An unstable macro-economic environment can destabilize local firms, primarily the smaller manufacturer who have to import most of their inputs and sell their produce on the local market.

High-interest rates are another factor that makes local producers less competitive. Because of high-interest rates, many small-scale manufacturers indicated that they have been unable to borrow; they have relied on investing their savings or re-investing their small profits. Most of them have grown their businesses organically by ploughing back whatever returns they get from the business. However, this has meant that the scope for growth has been limited.

In the agro-processing cluster, there are several non-trade related challenges which hinder firms in the country from becoming competitive in the region. Although some challenges are specific to particular agro-processing value chains, there are challenges, such as irregular supply of electricity, high cost of borrowing, lack of access to capital for small and medium enterprises, lack of policy coordination policy, poor infrastructure, and skills shortages, which have been identified to affect the entire sector (Chitonge, 2021a). If we look at the products in which the country has continued to enjoy RCA, it is evident that the country has not made any significant advances in upgrading into high value-added activities even in agro-processing.

High value added products such as industrial perfumes, fabrics, foot wear, synthetic fibres, pulp and waste paper, manufactured tobacco and floor vinyl which can be made from the raw materials produced in the country are largely imported. If there have been strategies to build productive capabilities in some of these value chains, the country can take advantage of its natural endowment and realise the full potential of the agro-processing sector. It has been observed that efforts to build productive capacities which enable firms to upgrade into high value-added activities in the agro-processing sector are constrained by a number of factors including stiff competition from outside, high transport costs, firm specific capabilities, and policy and regulatory environment (Fessehaie et al, 2015). Addressing these constraints require targeted policy interventions to create an environment where the right support and incentives can be provided to firms to upgrade and remain competitive.

Policy inconsistencies were identified as one of the bottlenecks. These bottlenecks are rooted in the government's consultative nature, resulting in listening to multiple voices and the inability to prioritize. The inconsistencies cited by the agro-processors are value chain specific, and they include inconsistencies in the ban on the export of maize and maize products, inconsistencies in VAT and other tax regimes, subsidies on fuel maize meal, etc. This lack of stability in the policy environment makes it difficult for firms to plan long-term. For example, in the past, there have been severe inconsistencies between trade policy directives that ban the export of particular agricultural products to the regional market and an industrial policy strategy that seeks to stimulate the growth of agriculture and manufacturing. In this regard, policy makers must play a more proactive role in synchronizing policy pronouncements and support coordinated and sustained implementation.

## Conclusion

This chapter has presented a brief profile of the agro-processing industries in the Zambian economy. Agro-processing industries constitute strategically important in the Zambian economy for various reasons including the sector's strong linkages to the agriculture sector where most of the people in Zambia, particularly in rural areas derive their livelihoods. Further, most agro-processing industries such as wood and wood products, textile and apparel, leather and leather are the most labour-intensive in the manufacturing sector, making these industries important for job creation. Apart from that, since Zambia's economy has low industrial capabilities relative to developed countries, agro-processing industries broadly can be used as a stepping-stone to build and upgrade the countries industrial capabilities, particularly manufacturing. The chapter has also highlighted the centrality of agro-processing in promoting inclusive and sustainable growth, particularly because the growth of agro-processing industries has the potential to stimulate productivity growth in the agricultural sector, and this can contribute to raising rural income.

The chapter has also highlighted the potential of agro-processing sector to expanding given Zambia's natural resource endowment including fertile land and abundant water resources. The potential of the agro-processing sector becomes more evident when we take into account Zambia's regional trade agreements which means that the country has access to larger and expanding regional markets in addition to the domestic market. The growing demand for processed foods and other agricultural products resulting from steadily rising income and growing urban population present high opportunities for Zambia to tap into this growing regional market. There are several products such as animal feed, cotton seed, cereal, milling products (including wheat and maize flour), sugar and confectioneries, and essential oils in which Zambia has revealed comparative advantage in the region. There are also other agro-processed such as non-alcoholic beverages, leather and leather products and wood and wood products where the country has *latent comparative advantage*, suggesting that the country has untapped potential in these activities. Given its superior advantage in land and water resources that Zambia enjoys over other countries in the region, the country's potential for developing a thriving agro-processing sector is huge.

However, realising this potential has been hampered by a number of factors including the country being landlocked, which increased transport costs for export and bringing inputs needed for industrial activities. But most of the factors which have constrained the growth of the agro-processing sector, despite the advantage the country enjoys, are policy related such as poor infrastructure (particularly manifested in the energy crisis), lack of policy coordination and sustained implementation, leading to weak support to local firms. All these factors render many Zambian firms less competitive in the region and in the end, undercut, the country's competitive advantage in the region. Appropriate policy and strategies have to be formulated and implemented to ensure that the country take advantage of the growth potential inherent in the agro-processing sector.

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