

A Framework for Expanding and Harmonising Sugar Industries within Africa

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Abstract: African agriculture can be expected to expand over the next few decades, in line with population growth. The production of staple foods, including sugar, is expected to rise substantially to meet the needs of more than a quarter of the world's population that is expected to live on the continent by 2050. Africa currently produces 6.5% of the world's sugar, with most of this being supplied by six countries with established sugar industries. Natural trade barriers and slow progress with free trade agreements are likely to keep intra-continental trade relatively low over the next decade. Yet opportunities exist to expand sugar industries to serve local and regional markets. An overview of current sugar production, and the policies adopted by the six largest producers, provides lessons for the future expansion of smaller operations in many of the 35 African countries that currently produce sugar. The study assesses the policies adopted by the countries with large-scale production to create a framework for the expansion of smaller, regional sugar industries. The eight policies recommended cover tariffs, regional economic communities, price-setting intermediaries, guaranteed higher domestic prices for small-scale growers, contracting outgrower suppliers, partnerships with research institutes, the promotion of responsible farming practices, and the formation of a stakeholder committee. Appropriate policies, combined with an opening of regional markets, will enable continued growth of African sugar production to meet the needs of a growing consumer base.

Keywords: Sugar, Africa, Sugarcane, Policy, Industrialisation, Agriculture, AfCFTA, Trade

1. Introduction

Africa has large tropical regions suitable for sugarcane growth and a few temperate regions suitable for sugar beet growth. Sugar (sucrose) production is widespread but has only become commercially well established in a few regions. Both the demand and production of African sugar have been steadily growing along with population growth trends. Egypt and South Africa are the largest producers by a wide margin, although there are several other countries with increasing output. The top six producers, by tonnage, make up almost two thirds of total African production [5]. Relatively stable economies, policies, and industry structures have allowed for large-scale commercial agriculture and sugar production in these six countries.

What policies have been adopted within these six countries that could potentially be adopted in smaller, developing African sugar industries? A multifaceted approach is required

to expand sugar industries in areas that have previously received little investment. Despite obstacles, the comparative advantages of having favourable agricultural conditions, low-cost labour, and a track record of steadily increasing demand, make it financially viable to expand the sugar sectors in some countries. This report reviews the status quo African context and recommends eight policies for investors looking to expand sugar production in Africa. The policy recommendations are based on what has worked in the past, to create established sugar industries, whilst considering the current regional business environments.

2. Methods

Case studies of the large African sugar producers are used to identify policies that have enabled the growth and success of their sugar industries. 'Large' was defined as a country producing at least 0.5 million tonnes of raw sugar equivalent per annum. This includes cane or beet sugar, but centrifugal

only. Data from the Food and Agriculture Organization (FAO) was used to identify African countries producing more than 0.5 million tonnes of sugar per year. The FAO is a specialized agency of the United Nations with data on food staple production in every African country.

Seven countries were identified but Sudan was excluded because macroeconomic conditions in early 2023 have destabilised rapidly with the Sudanese military involved in armed conflict and unrest. If macroeconomic conditions and military unrest stabilise in Sudan, it could be a useful future case study. The study starts with an overview of how African countries fit into global sugar production and trade, to assess the relative scale of production, local markets, and growth trends. Data and reports on the other six countries with large production were reviewed to examine sugar industry structures, supporting organisations and agricultural ministries, policies, trade, and tariffs. Key industry experts were interviewed to direct the research focus and identify relevant data. The study ends with policy recommendations for sugar industrialisation in existing smaller African markets.

3. Overview of Global Sugar Trends

African countries currently produce 6.5% of the world’s sugar. Asia and South America still dominate the global market and, together, account for around 72% of global production. Worldwide, sugar consumption has remained flat, declining consumption in many developed countries has been offset by increased consumption in India and China, and most African countries [11, 4]. African consumption is expected to

continue growing as the population expands. The United Nations’ medium projection for population growth (2019) estimates that over a quarter of the global population will live in Africa by the year 2050.

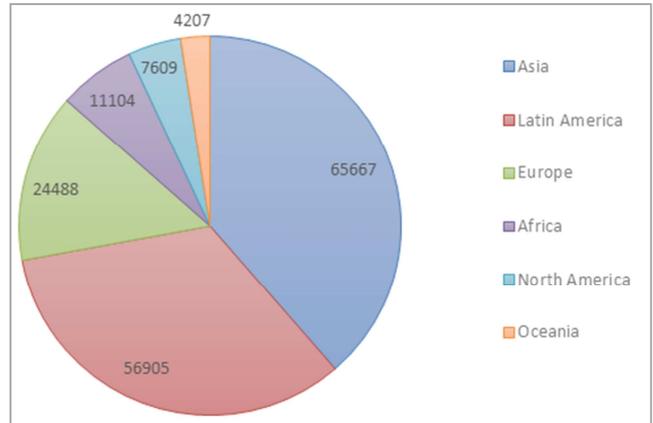


Figure 1. Global sugar production average 2019-2021 (annual kt) [14].

Sugar production in Africa is widespread and has been growing at a faster pace than on other continents over the past ten years, shown in figure 2. Sugar is produced in 34 African countries, although the industry remains fragmented with trade and policy gaps. Population growth, urbanisation, and income gains are the main factors that have driven up sugar consumption Africa. Higher sugar consumption trends are expected to continue in Africa since sugar is a low-cost source of calories, a sweetener, and common preservative.

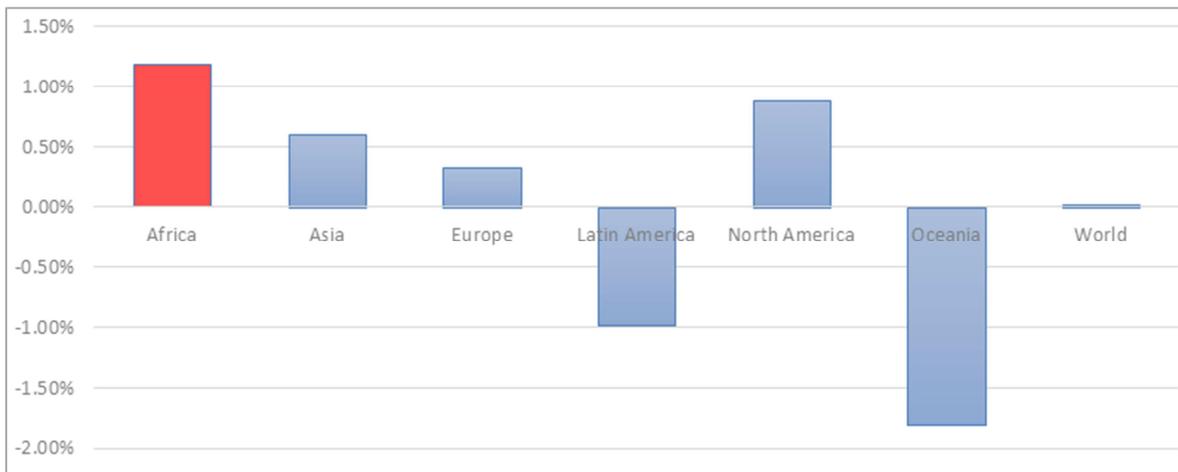


Figure 2. Average annual sugar production growth, 2012-2021 (%) [14].

4. Overview of African Sugar Producing Countries

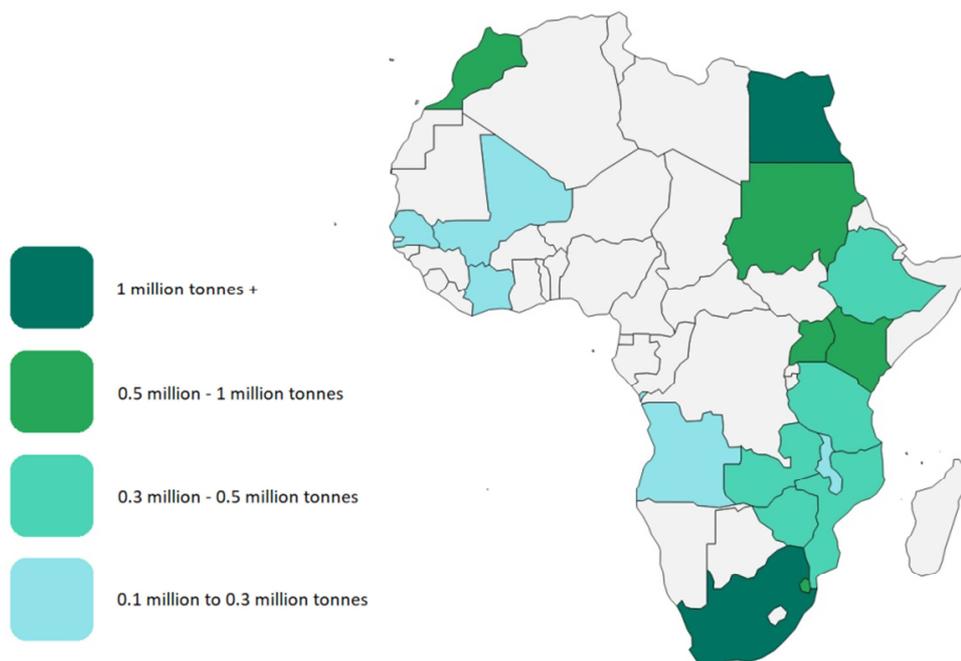
There are 35 sugar-producing countries in Africa, outlined in Table 1. Egypt and South Africa are the largest sugar producers and the top 5 countries produced over 6.8 million

tonnes or 59% of Africa’s 1.15 million tonne total in 2020. Some of the African producers have formed regional economic communities (RECs). The general purpose of RECs is to facilitate regional economic integration between members, including trade. However, most of the sugar markets in Africa are small and serve regional demand. Figure 3. Highlights all African countries that produced at least 0.1 million tonnes of raw sugar equivalent in 2020.

Table 1. 2020 African sugar production.

2020 Sugar production rank	Country	Raw sugar equivalent (cane or beet sugar, centrifugal only, in tonnes)	Sugar beet tonnes	Sugar cane tonnes
1	Egypt	2900000	15335972	10284350
2	South Africa	2106000		18220000
3	Eswatini	673000		5690062
4	Kenya	603788		6810898
5	Morocco	525734	3631554	792492
6	Sudan	501304		5135862
7	Uganda	500000		5360000
8	Zambia	457857		4823222
9	Zimbabwe	427099		3543771
10	United Republic of Tanzania	370000		3609995
11	Ethiopia	363000		1345431
12	Mozambique	305000		2737556
13	Mauritius	270875		2620874
14	Malawi	269862		3059597
15	Côte d'Ivoire	225000		2100000
16	Senegal	160000		1380000
17	Cameroon	115504		1219228
18	Angola	115000		865000
19	Mali	100000	8223	650000
20	Madagascar	83000		3116601
21	DRC	81285		2162895
22	Congo	70000		685641
23	Niger	41932		440814
24	Chad	30625		380286
25	Gabon	26400		288071
26	Burkina Faso	25000		504017
27	Burundi	22000		209118
28	Somalia	20000		213000
29	Guinea	20000		318713
30	Nigeria	17800		1516175
31	Central African Republic	11794		128600
32	Rwanda	10185		98283
33	Benin	10000		75500
34	Sierra Leone	6000		80785
35	Liberia	4653		275092

Source: [5]

*Figure 3. African countries producing more than 0.1 million tonnes of raw sugar equivalent in 2020 [5].*

5. Trade

The following eight RECs are recognised by the African Union [1]

1. Arab Maghreb Union (UMA)
2. Common Market for Eastern and Southern Africa (COMESA)
3. Community of Sahel–Saharan States (CEN–SAD)
4. East African Community (EAC)
5. Economic Community of Central African States (ECCAS)
6. Economic Community of West African States (ECOWAS)
7. Intergovernmental Authority on Development (IGAD)
8. Southern African Development Community (SADC)

Many countries fall within one or more REC. For example, Kenya is a member of COMESA, the EAC, and IGAD. Tariffs have long been used to prop up homegrown industries by raising import prices and inducing citizens to buy goods produced domestically. The negative effects of tariffs are that higher prices for consumers can also significantly dampen domestic demand and harm industries that require sugar inputs or cause these industries to countries with lower domestic sugar prices.

A strategic framework to facilitate economic integration between all African countries is currently being developed. Once completed, the African Continental Free Trade Area (AfCFTA) will include 55 country members. This presents a major opportunity for Africa, but implementation will be a challenge. Previous regional African trade agreements have had limited impacts because removing tariff barriers is only part of the process of removing on-the-ground constraints, natural trade barriers, and non-tariff barriers.

AfCFTA will require policy and regulation reforms at both the supranational and national levels. This will include harmonising product standards, the standards required for the mutual recognition of qualified professionals, and trade standards for both services and goods. The depth and breadth of commitments to the free trade agreement are still being negotiated and successful implementation on the ground will require the buy-in of all stakeholders, and complimentary initiatives.

Many African countries retain policies that keep their domestic markets small and closed, and this can encourage smaller informal (unrecorded or illegal) trade. Other obstacles that have historically hampered formal trade include long distances, small trade volumes that hamper economies of scale, landlocked countries located large distances from seaports, transit regimes, and inefficient governance [24]. It is possible to gradually lower tariff barriers, non-tariff barriers, and natural trade barriers with neighbouring countries and RECs, whilst larger-scale AfCFTA policies are a long way from being realised.

6. Lessons from the Largest African Sugar Producing Countries

The study focuses on the structure and status quo of sugar industry production in six African countries. Namely, Egypt,

South Africa, Eswatini, Kenya and Morocco. These were Africa's largest sugar producers in 2020 and together make up roughly 64% of African sugar production out of an estimated total of 11.47 million tonnes, shown in Figure 4. The report looks at the structure of the industry in the six countries, and what has enabled them to achieve large outputs. These six countries have also achieved relatively stable macroeconomic conditions which has enabled their sugar industries to become more established. The remaining 29 countries account for the other 36% of production, with many having excellent agricultural conditions to grow sugarcane [5].

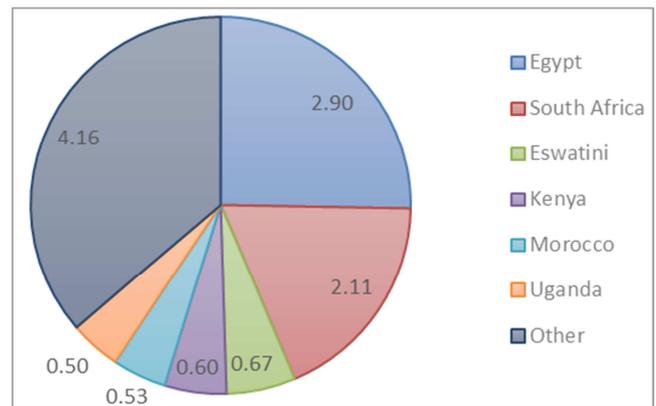


Figure 4. African sugar production (millions of tonnes 2020, total=11.47 million tonnes) [5].

6.1. Egypt

Egypt grows both sugar beets and sugarcane and is the largest sugar producer in Africa. Production totalled about 2.85 million tonnes of sugar in 2020/2021, a combination of 1.58 million tonnes from sugar beets and 1.27 million tonnes from sugarcane. Egypt has a long history of sugar production after sugarcane was introduced from Persia around the seventh century. There are 15 sugar mills in Egypt, eight processing sugarcane and seven processing sugar beets [15]. All eight sugarcane processors and four of the beet processors are state-run, the remaining three beet mills (and the mill under development) are privately run. The local industry supplies most of Egypt's sugar consumption needs.

The Egyptian government oversees most of the industry. In 1913 the government established the Sugar Crops Research Institute (SCRI). The main objectives of the SCRI are to increase crop yields and quality of sugarcane, sugar beet, sweet sorghum, and other natural sweeteners [19]. The Ministry of Agriculture and Land Reclamation (with the U. S. government) also funded a project to develop sugarcane varieties resistant to the culmicolous smut pathogen.

Beet seed production requires packing the roots at eight degrees centigrade for three months and daylight duration of 16-18 hours. Therefore, beet seed varieties need to be imported from Germany, Sweden, Denmark, the Netherlands, and France. Every season, the Ministry of Agriculture and Land Reclamation distributes between 20 to 30 different varieties of seed to lessen the risk of crop failure. Currently,

the SCRI is testing breeds of U. S. beet to find those suitable for conditions in Egypt.

6.2. South Africa

South Africa is the second largest African producer, making 1.97 million tonnes of sugar from sugarcane farms and mills in the KwaZulu-Natal and Mpumalanga provinces in 2020/2021. There are 13 privately run sugar mills in South Africa, although two mills have recently been closed due to financial challenges faced by the sugar industry. Sugar cane production has been under pressure recently. The Darnall mill was temporarily closed in 2020/2021 and the Umzimkulu mill was permanently closed [12]. Financial challenges have arisen due to lower global sugar prices, increased competition from producers in neighbouring Eswatini, and the introduction of a South African tax on sugar-containing drinks in 2018. The challenges have been exacerbated in 2022 by fuel and fertiliser cost inflation, and heavy flooding in the KwaZulu-Natal province in April 2022.

Most of South Africa's sugar needs are met by local producers, with industrial demand accounting for roughly 60% of sugar sales, and direct home consumption accounting for 40% [12]. To address the short-term crisis and create a sustainable industry in the long-term, a Sugarcane Value Chain Master Plan to 2030 has been developed by the South African Sugar Association and various stakeholders.

“This Masterplan for the South African Sugarcane Value-chain is the result of a process of extensive engagement and consultation amongst sugar industry stakeholders and the social partners, particularly small and large cane growers, millers and refiners, retailers and industrial users of sugar and sugar-derived products as well as workers and government.” [17]

The South African Sugarcane Research Institute (SASRI) works towards, variety improvement, crop protection, crop performance & management and systems design & optimisation. An Extension Service provides the essential link between researchers and sugarcane farmers. SASRI also offers a range of services to sugarcane farmers through an extension service where specialists offer advice and support on fertiliser, disease diagnoses, education courses, and other issues. [18]. SASRI assists with the determination of price-setting variables that determine the total Recoverable Value (RV) that millers can extract from sugarcane every month. Paying growers an RV price incentivises millers to become more efficient and growers to improve the quality of their sugar cane to produce more sucrose and molasses per tonne. The final RV formula used to calculate the RV percentage is:

$$RV = S - dN - cF$$

S = sucrose % in cane

N = non-sucrose % in cane

F = fibre % in cane

d = Factor that reduces the amount of sugar that will be made due to losses in molasses

c = Factor that reduces the amount of sugar that will be made due to losses in bagasse

Source: [8]

6.3. Eswatini

Sugar is Eswatini's main export commodity and serves the neighbouring South African market. The land-locked country is the third largest producer in Africa and grows sugarcane under irrigation and in the lowveld, producing 0.69 million tonnes of sugar in 2020/2021. Lowveld areas lie between 150m and 600m above sea level. The area planted has grown steadily from 55000 ha ten years ago to over 70,000 ha of land at present. Three sugar mills operate in Eswatini. One owned by Illovo Sugar (Umbombo Mill) and two by the Royal Swaziland Sugar corporation (the Mhlume and Simunye mills). The Royal Swaziland Sugar Corporation is majority owned by the royal Tibiyo Taka Ngwane wealth fund, with the RCL Sugar Company owning the second largest share. The Eswatini Water and Agricultural Development Enterprise are building new dams, to enable the sugar industry to increase the area planted with sugar cane [20].

The Eswatini Sugar Association (ESA) is an organisation with equal representation from the Eswatini Cane Growers Association and the Eswatini Sugar Millers Association. The ESA regulates and works to develop and market the industry providing support services to the sugar value chain, including research, testing, warehousing, distribution, policy advocacy and marketing [3].

6.4. Kenya

Kenya produced 0.6 million tonnes of sugar in 2020/2021, with approximately 80% coming from private mills. Nine of Kenya's thirteen operational mills are privately owned. The Government of Kenya has various incentives to encourage sugar production such as setting farmgate prices, import quotas, and writing off debt and tax liabilities prior to 2009. Most of the sugar production is for the local market [21]. In 1973, the Government established the Kenya Sugar Authority (KSA) to foster development and efficient management and regulation of the sugar industry [10]. In 2001 the Kenya Agricultural Research Institute and Kenya Sugar Authority provided the initial resources to create the Sugar Research Institute (SRI). The SRI has a national mandate to promote research and support the activities and industries related to sugarcane, sugar, and by-products [9].

“Kenya's SRI reports that new private sector-supported sugarcane plantations produce up to 140 MT/HA of cane compared to yields of 90 MT/HA in traditional areas serviced by public mills. This difference in yields is largely due to better harvesting practices and lower transportation losses in farms contracted with private sector mills. Private sector mills also tend to provide more robust extension services than public mills. Additionally, private mills convert sugarcane to sugar at a more efficient rate, averaging a cane to sugar ratio of 10: 1 compared to 18: 1 in public mills.” [21].

6.5. Morocco

Morocco predominantly produces sugar from sugar beets, with a smaller proportion from sugarcane. Farming is concentrated in large, irrigated areas in Doukkala, Tadla, Gharb, Loukkos, and Moulouya. Roughly 3.6 million tons of sugar beets, and just 0.8 million tons of sugarcane were harvested in 2020 to produce over 0.5 million tonnes of sugar [5]. Cosumar Group is the sole sugar refiner in Morocco. Cosumar Group specialises in the extraction, refining, packaging, distribution, and export of sugar. Cosumar Group operates five sugar mills for sugar beets and two for sugar cane. Imported raw sugar is refined at one refinery in Casablanca. Cosumar has created a real-time information system that monitors farming in all sugar growing areas and increases efficiency between the mills and farmers [2].

Created in 2007, the Moroccan Interprofessional Sugar Federation oversees the industry framework and assists with coordination, strengthening upstream and downstream activities [6]. The Interprofessional Sugar Federation brings together the Sugar Professional Association, the Cosumar group and the National Union of Sugar Plant producers of Morocco. The Moroccan sugar industry has strong international links and exports to approximately 40 countries, with only 20% of these exports going to regional West African markets [16].

6.6. Uganda

Sugar production has expanded rapidly in Uganda from 269 000 tonnes in 2010 to 500 000 tonnes in 2020 [5]. Sugarcane farming and sugar production in Uganda was first expanded by Indian-Ugandan entrepreneur Muljibhai Madhvani on the shores of Lake Victoria. The Kakira Sugar Works was established in the 1940s, but operations were halted in the 1970s after a coup d'état brought Idi Amin to power as president, and Indian-Ugandans were expelled from the country. It re-opened and rehabilitated in 1985 as investment reopened and the Madhvani Group's management was

reinstated. Uganda's three largest sugar producers are now Kakira Sugar Works, Kinyara Sugar Works, and the Sugar Corporation of Uganda [7].

The rapid expansion of sugarcane farming has largely been from increased outgrower supply and Uganda provides an excellent case study on how this has been achieved. Kakira Sugar Works increases in outgrower supply from only 13% in 2010 to over 74% by 2015. This was a deliberate move to concentrate on only a few upstream activities, such as supplying seeds and equipment, and downstream activities such as processing and trading. This strategy externalises many of the farming risks. The Kakira model involved a set of incentives including high prices for sugarcane, free seeds, and good terms of credit to access transport services and fertilizers. The model is not without issues, many small outgrowers have defaulted on loans or have found themselves in a cycle of indebtedness. Despite some issues, the overall the strategy has been effective for expansion of the industry. In addition, Kakira Sugar Works produces 20 million litres of fuel-grade ethanol from a distillery at its sugarcane mill [13].

7. Discussion

The sugar sectors in Egypt, South Africa, Eswatini, Kenya, Morocco and Uganda all have well established structures. Both the state dominated industries (examples in Eswatini and Egypt) and privately run industries (examples in Uganda and South Africa) are supported by bargaining structures (between millers and growers) and research aimed at improving the operations and outputs of growers, millers, and other value-adding activities, see Table 2. All six countries conduct local research, disseminate useful findings, and share improved crop varieties with their sugar growers. There are examples of collaborations between local and international research institutes. Every country's highest regulatory body is their Ministry of Agriculture, whereas other regulatory bodies differ greatly.

Table 2. Sugar industry overviews.

Country	Government agricultural ministry	Autonomous price bargaining body	National sugar act	Specialised research institutes
Egypt	Ministry of Agriculture and Land Reclamation	Farmers Syndicate	No	Sugar Crops Research Institute (state run in the Agricultural Research Centre)
South Africa	Department of Agriculture, Land Reform and Rural Development	South African Sugar Association	Yes	South African Sugar Research Institution, and the Sugar Milling Research Institute
Eswatini	Ministry of Agriculture	Eswatini Sugar Association	Yes	Eswatini Sugar Association
Kenya	Ministry of Agriculture, Livestock, Fisheries and Cooperatives	Kenya Sugar Authority	Yes	Sugar Research Institute
Morocco	Ministère de l'agriculture	Morocco's Inter-Professional Federation of Sugar	No	None. However, foreign research institutes provide support.
Uganda	Ministry of Agriculture, Animal Industry and Fisheries	Uganda Sugar Manufacturers' Association	Yes	Creation is outlined in the sugar act

Sources: [5, 23, 25]

*Commodity code 1701 (Cane or beet sugar and chemically pure sucrose, in solid form)

The six sugar sectors are well established with a long history and long-standing relationships between growers, millers, other producers, and regulatory bodies. Price-setting

intermediaries (independent, except for the state in Egypt) exist between the millers and growers. Price-setting intermediaries are essential to streamline the supply chain,

create price stability, and allow a consistent flow of sugar crops to the mills during harvest seasons. Table 3 shows that all regions have large local markets for sugar and sugar products, except for Eswatini, which exports to the

geographically adjacent, South African market. The differences between the four established sugar industries and other (smaller) African industries are discussed in the next section.

Table 3. Sugar industry overviews.

Country	Population 2020	Sugar production in tonnes 2020 [5]	*Sugar imports in 2020	*Sugar exports in 2020	Hectares harvested 2020/2021	Final yield t/ha (Approximate tonnes of sugar produced per hectare harvested)
Egypt	107 465 134	2900000	\$104 072 128	\$120 321 484	385 000	7.22
South Africa	58 801 927	2106000	\$283 439 808	\$370 755 690	246 000	9.02
Eswatini	1 180 655	673000	\$207 191	\$393 114 305	61 000	11.31
Kenya	51 985 780	603788	\$232 653 733	\$490 444	89 803	6.68
Morocco	36 688 772	525734	\$468 404 234	\$285 938 538	58 537	8.98
Uganda	44 404 611	500000	\$67 998 492	\$71 578 162	85 313	5.86

Sources: [5, 23, 25]

The less developed sugar industries (in countries such as Mozambique, United Republic of Tanzania, Zambia, Zimbabwe, and Ethiopia) often have the comparative advantages of favourable agricultural conditions for sugarcane to grow and low-cost labour. Possibilities also exist to irrigate crops in many regions, leading to significantly higher yields than from rain-fed crops. However, industry structures are not established in most African countries need to be developed to facilitate growth. Investments in rural African areas will require substantial investments in training, the development of labour, health facilities, innovation, and soil development. Any expansion strategy into African sugar industries must take the continued viability of existing small-scale farms into consideration. Small-scale farmers will often only be able to sustain themselves if they receive the highest domestic prices

for their crops, especially in regions where largescale commercial farming is not dominant.

Higher domestic prices are achieved with import tariffs. Sugar tariffs already exist in most countries but differ greatly in size. Table 4 shows that most favoured nation duties range from 16.8% to 40.6% for six of the established sugar producers. Egypt and South Africa have average applied duties of 16.8% and 19.9% after striking a balance between domestic sugar producers and consumers. The relatively established food and beverage industries in these two countries regularly campaign against tariff increases and excise taxes. Companies that manufacture sugar-containing products are disadvantaged when local sugar prices far exceed world-market levels. Confectionary producers may be prompted to close factories if tariffs are set too high.

*Table 4. Sugars and confectionery, tariff summary (2022 and *2021).*

Country	Average most favoured nation applied duties	Maximum most favoured nation applied duties
*Egypt	16.8	60
South Africa	19.9	81
Eswatini	17.9	70
Kenya	40.6	100
Morocco	23.2	60
Uganda	38.2	80

Source: [27]

8. Investing in Less-Established Markets Responsibly

Investing in less developed, small markets requires a responsible and respectful approach. SOMDIAA (La Société d'Organisation, de Management et de Développement des Industries Alimentaires et Agricoles) is a privately run agro-industrial company which produces sugar and other agro-food products in central Africa. The company has adopted an efficiency-oriented farming philosophy by making the most of domestic and local resources and only importing complementary goods and services (such as equipment and expertise) where necessary. Imported expertise also includes joint efforts with international institutes of technology

specialized in tropical agricultural science.

SOMDIAA [22] defines responsible and sustainable farming as farming that:

1. Complies with national policies and international agreements.
2. Respects workers and surrounding populations.
3. Preserves wooded areas, an ecosystem balance, and protects land against erosion.
4. Maintains soil fertility.
5. Undertakes pest and disease control.
6. Develops the agricultural settlement rural zone.

Obtaining political support for policies and investments in Africa's sugar sectors requires a strategic approach that involves building relationships with key stakeholders and demonstrating the benefits of your investments to these stakeholders. Political support will vary from country to

country and greatly affects the ease of doing business. The World Bank ranks countries on the ease of doing business, based on several factors that often relate to dealing with local governments, including paying taxes, trading across borders, and enforcing contracts [26]. African countries that rank relatively well in the World Bank's index (such as Zambia) should be considered as preferential investment destinations, where government support for policies is also more likely to be obtained.

9. Policy Recommendations

The future growth of African sugar industries will certainly rely on the expansion and opening of current small-scale markets. Taking lessons from the more mature markets in Egypt, South Africa, Eswatini and Kenya, the following policies are recommended:

Tariffs on imported sugar (Commodity code 1701) should be in the range of 16% to 20% to create a higher domestic price, give some protection to existing small-scale growers, and protect against global price fluctuations. Higher tariffs will likely suppress demand and value-added activities in the domestic market that require sugar inputs. 16% to 20% sugar tariffs have been shown to allow for the growth of internationally competitive value-added markets in the South Africa and Egypt.

Focus on strengthening trade and widening markets within regional economic communities. Gradually lower tariff barriers, non-tariff barriers, and natural trade barriers with neighbouring countries and RECs. Only once REC trade and representation has been strengthened can larger AfCFTA policies between RECs be harmonised.

Create an independent price-setting intermediary, between growers and millers, that oversees a predictable Recoverable Value payments system. The payment system must incentivise quality and efficiency and allow for monthly price changes over the harvest season.

All small-scale growers must be guaranteed higher domestic prices to support their future viability.

Contracting outgrower suppliers, as a growth strategy, that can externalise grower risks whilst building collaboration with, and providing support for, existing farmers.

Partner with global sugar and tropical agricultural research institutes and assist with the growth of local expertise and improved crop varieties, with the long-term goal of creating a local sugar research institute.

Ensure proactive self-regulation and private sector regulation to create sustainable and responsible farming practices that include the use of existing domestic and local resources and develops the agricultural settlement rural zone.

Create a committee with equal representation from large-scale growers, small-scale growers, millers, government, and related private sector firms. The committee performs the functions of developing policies, maintaining regulations, and developing trade policies.

10. Conclusion

Steady population growth, and urbanisation will continue to grow the African sugar consumer base for the foreseeable future. African countries currently produce about 6.5% of the world's sugar but will be home to over a quarter of the world's population by 2050. Natural trade barriers and slow progress with free trade agreements are likely to keep intra-continental trade relatively low over the next decade. Yet opportunities exist to expand sugar industries to serve local and regional markets. Any expansion of sugar industries in Africa must take proactive steps to ensure sustainable and responsible farming practices are adhered to that lead to the upliftment of local communities. The Ugandan example of sourcing sugarcane supplies largely from contracted outgrowers shows that this is a viable expansion strategy in regions where largescale commercial farming is not dominant.

Most of the 35 sugar-producing countries in Africa serve small regional markets with little trade and high natural and non-tariff barriers. Alternatively, the larger and well-established markets in Egypt, South Africa, Eswatini, Kenya have the necessary industry structures and policies that support and regulate all value-chain participants. Support includes price-setting structures, and research institutes that disseminate of useful information to the industry participants. Price-setting intermediaries between growers and millers are required to create a predictable Recoverable Value payments system, as an essential step towards promoting efficiency and quality within the supply chain.

Trade policies are complex and unique to individual countries that generally have varied preferential trade partners. Countries should aim to strengthen trade within RECs before attempting to harmonise trade policies within AfCFTA. A representative local committee (of large-scale growers, small-scale growers, and millers, government, and related private sector firms) is required to set appropriate local regulations and trade regulations. In addition, the top four African producers all have established and specialised sugar research institutes, something that could be replicated in other African countries. This would assist local sugar industries when adapting to country-specific conditions or variables. Overall, Africa's sugar industries are widespread, growing faster than other global regions and has significant further growth potential if managed with appropriate policies and an opening of regional markets.

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