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# FACING THE FUTURE

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TECHNOLOGY UPGRADATION IN  
EAST AFRICA'S TEXTILES AND  
APPAREL SECTOR

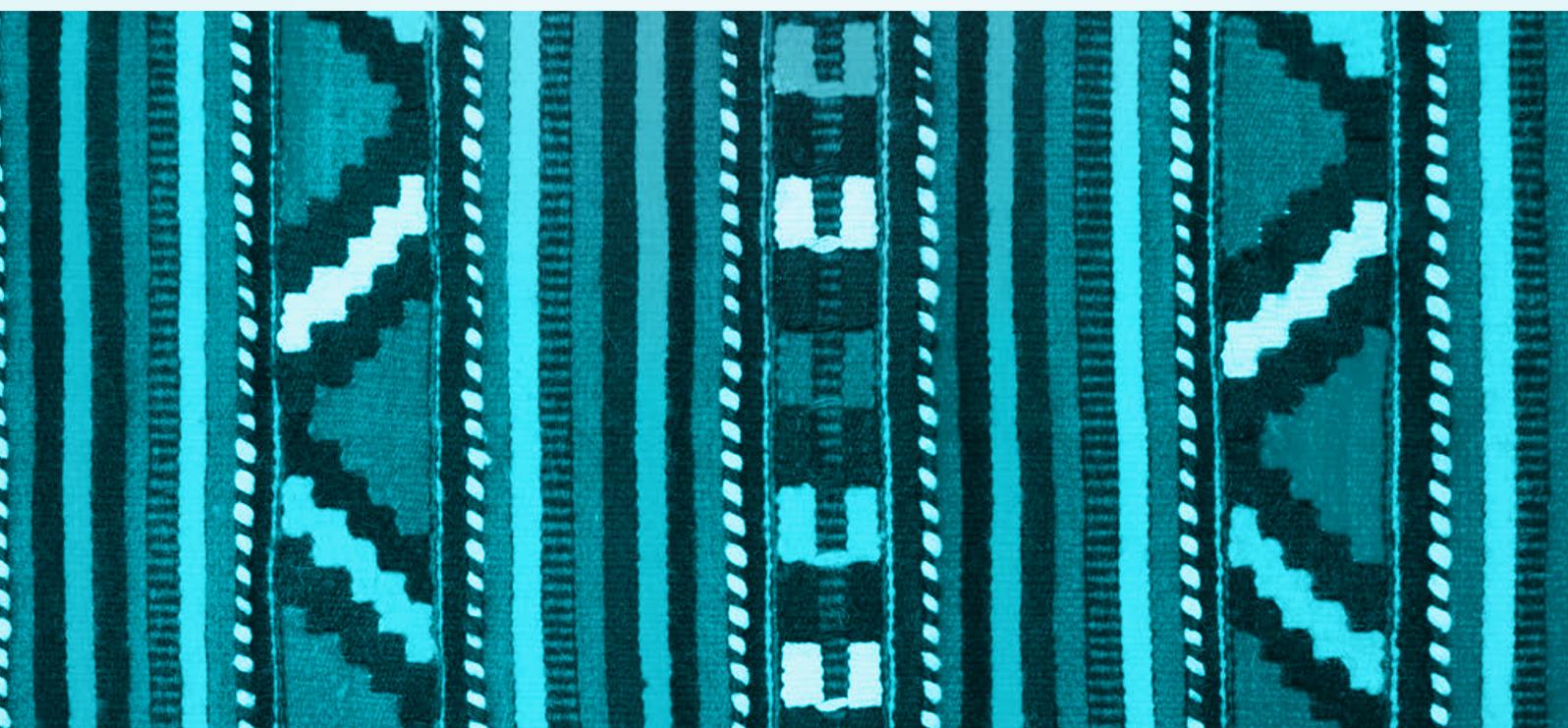
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LAUNCH VERSION



# FACING THE FUTURE

Technology Upgradation in East  
Africa's Textiles and Apparel Sector



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# ABOUT THE REPORT

This report identifies demand for, and challenges towards, technology upgradation by textiles and apparel manufacturing companies in five East African countries – Ethiopia, Kenya, the United Republic of Tanzania, Uganda and Rwanda. Findings are based on face-to-face interviews with 112 out of the 190 (approximately) textile and apparel manufacturing companies that are currently active in these five countries.

Whilst about 84% of all surveyed firms expressed an interest to upgrade equipment, the report finds that, lack of adequate skills among technicians and factory workers, and poor access to finance emerged as the biggest constraints to upgradation. The report also presents insights from industry leaders and experts in the East African textile and apparel industry on technology upgradation, and on the outlook for the industry in the aftermath of the Covid-19 pandemic. A majority of the experts consulted concur on the integral role national governments must assume in catalysing technology upgradation, as well as in driving a robust recovery in the post Covid-19 paradigm. The report concludes with policy recommendations on facilitating technology upgradation in the sector, such as easing access to finance, offering financial incentives to manufacturers, developing workers' capacities and investing in renewable energy, among others.

# PREFACE

Technology upgradation is one of the principal drivers of productivity in the textile and apparel industry in East Africa. It helps undertake vertical integration, achieve cost reduction and resource efficiency, reduce waste, diversify products and comply with international standards on sustainability.

This report is based on a survey of 112 textile and apparel manufacturing units in five East African countries –Kenya, Ethiopia, Rwanda, Tanzania and Uganda. Results of the survey were released at ITME Africa 2020, an international textile engineering event in Addis Ababa, Ethiopia, organized by the India International Textile Machinery Exhibitions Society (India ITME Society). The analysis looks at the nature of the value chains within these five countries –and the effect that technology upgradation may or may not play in the current or future competitiveness of the industries operating there. It is important to highlight that many of the findings conveyed through this report are applicable to other countries in Sub-Saharan Africa that are seeking to build their textiles and apparel sectors. These include Botswana and Ghana, which sent delegations to ITME Africa 2020, and indeed all of the signatories to the African Continental Free Trade Agreement. The agreement, which was signed by all but one of 55 African countries, establishes a single continental market and seeks to increase intercontinental trade. Trade in accordance with the AfCFTA provisions was due to start in July 2020, but owing to the global coronavirus pandemic, operationalization is scheduled for January 2021. The issues explored in this report are of a Pan-African nature.

The focus of this report is the textiles and apparel sector. However, several issues around technology upgradation are equally relevant to other subsectors and ancillary industries, including fashion accessories, leather goods and home décor.

The report identifies the crucial challenges limiting technology upgradation in the region and provides policy recommendations to help overcome them. While over 4 in 5 manufacturers are willing to undertake machinery upgradation, they are constrained by a lack of affordable financing opportunities, insufficient technical capacity of workers and high power costs. Quality compliance, resource efficiency, and product and market diversification are the key drivers of textile technology upgradation in East Africa.

Thought pieces from industry leaders address specific aspects such as access to finance, sustainability, innovative distribution channels, etc. While case studies on India's experience in removing some of the constraints faced by East African manufacturers can serve as examples of successful and replicable policy initiatives. Furthermore, the discourse on the impact of Covid-19 also provides recommendations on what national governments could do to ride the crisis and translate it into an opportunity. Development finance is a promising source of financing that could be tapped by manufacturers in the region, but this should be coupled with apt financial incentives from the government to eliminate financial constraints. Moreover, sustained investments in renewable energy (especially wind and solar) can combat high power costs.

The present report has been prepared by Supporting Indian Trade and Investment for Africa (SITA). SITA is funded by the United Kingdom of Great Britain and Northern Ireland's Foreign, Commonwealth and Development Office (FCDO) and implemented by the International Trade Centre (ITC). SITA supports increased trade and investment flows, and technology transfer, between East Africa and India as a global public good.

This report is not an academic study; it is intended as an actionable document for East African stakeholders – manufacturers, business support associations and policy makers – as well as for investors and suppliers of textile machinery around the world. For instance, the interest among East African manufacturers to invest in technologically advanced machinery, especially from India, represents a potential business opportunity for suppliers of textile machinery, looking to expand into East Africa. This edition is a technical paper, intended for inauguration at ITME India 2020.

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# ACRONYMS AND ABBREVIATIONS

Unless otherwise specified, all references to dollars (\$) are to United States Dollars, and all, references to tons are to metric tons.

<b>AfCFTA</b>	African Continental Free Trade Area
<b>AGOA</b>	African Growth and Opportunity Act
<b>CAGR</b>	Compound Annual Growth Rate
<b>CMT</b>	Cut, Make and Trim
<b>EPZ</b>	Export Processing Zone
<b>EU</b>	European Union
<b>FDI</b>	Foreign Direct Investment
<b>HS</b>	Harmonized System
<b>ITC</b>	International Trade Centre
<b>ITME</b>	India International Technology Manufacturing Exhibition Society
<b>SITA</b>	Supporting Indian Trade and Investment for Africa
<b>SMEs</b>	Small and Medium-sized Enterprises
<b>UK</b>	United Kingdom of Great Britain and Northern Ireland
<b>US</b>	United States of America

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# EXECUTIVE SUMMARY

This report analyses the demand for, and challenges towards, technology upgradation by textiles and apparel manufacturing companies in five East African countries: Ethiopia, Kenya, Tanzania, Uganda and Rwanda. There are approximately 190 active textile and apparel manufacturing companies in these five countries – 112 have been interviewed for this report.

East Africa has become an emerging hub on the continent for sourcing apparel. Buyers have increasingly established regional sourcing offices in Kenya and Ethiopia. Sourcing apparel from the region by major international brands has increased, as has the number of foreign apparel manufacturing companies, in particular in Ethiopia and Kenya. Preferential market access to the United States of America is a key pull factor for attracting export-oriented foreign direct investment (FDI) into the region.

Kenya is the largest apparel exporter for cut, make and trim (CMT) in the region, with the highest level of productivity. Some of the foreign companies based in Kenya specialize in the production of higher quality garments, while apparel production in Ethiopia is still dominated by basic apparel items. Ethiopia, however, is on the rise – its industrial parks with available plug and play infrastructure have recently attracted a number of foreign investors. Tanzania and Uganda are significant cotton producers and exporters; some of the very few integrated textile mills in the region are based here. Rwanda currently has two operating manufacturing units.

Across all five countries, textile production in the region is mostly for local apparel companies serving domestic and regional markets in basic goods. Export-oriented apparel factories source their inputs internationally, from Asia. Backward integration is in a very early stage; the very first textiles companies have started supplying to export-oriented apparel companies in the region.

Governments in East Africa view the textiles and apparel sector as crucial for industrialization, job creation and economic growth. The sector has been given priority status in all five countries covered in this report. Given the fragmented nature of value chains, countries are prioritizing backward integration, with an emphasis on revamping the textiles subsector. This means upgrading the technology being used, particularly within existing textiles mills, and bringing in foreign direct investment.

Technology and machine upgradation are also critical to the sector's ability to capitalize on the shifting demands of global buyers. Companies that source from Africa are beginning to push factories to utilize technologies that are both more efficient and better for the environment.

All of the companies interviewed for this report recognize the importance of technology to the competitiveness of their businesses. Among the units surveyed, an overwhelming majority (84%) expressed a willingness to upgrade their machinery. The motivation for upgradation is varied – quality compliance features as the most common driver, followed by a drive to achieve resource efficiency through technology upgradation, with about 55% of respondents indicating so. Lack of appropriate skills among employees to undertake upgradation and leverage it for enhanced competitiveness features as the most common constraint in the region, among close of 64% of respondents. Access to finance is the next common constraint, followed by steep energy costs and the lack of an enabling business environment.

Machinery used in the region is of varying levels of age; in some countries and in some segments of the value chain, machines are more than 20 years old. In the spinning and weaving segments, more than 30% of the surveyed units use machinery older than 20 years.

Main sources of existing technology across the five countries are Germany, China, Switzerland, Italy and India. China has successfully positioned itself as a machinery supplier across all segments of the textiles and apparel value chain – from spinning to finishing technology. In the spinning segment, German and Indian technologies are prevalent. Weaving machinery mainly originates from Switzerland, Italy and China, while knitting machinery originates from China and Germany. Sewing machines are mainly imported from Japan, followed by China. In the processing segments (printing, dyeing and finishing), China and Germany are strong, as are India and Japan.

Indian technology is relatively under-represented in Ethiopia, and more prevalent in the other four countries. This appears reflect the types of technologies in demand by many of the newer investors in Ethiopia in the industrial parks, primarily garment units where the machinery needs are mostly sewing machines and related equipment. Indian technology is better represented in

Kenya, perhaps unsurprisingly given the recent massive modernization of the Kenyan Rivatex East Africa Limited textiles mill, where all of the machinery came from India, courtesy a line of credit from the Government of India. Indian machinery can be found in other segments of the Kenyan value chain as well, especially spinning and some segments of processing (e.g. printing). In Tanzania, Indian technology is well represented. About one-third of the knitting and weaving machines are from India. India also supplies approximately one-third of the dyeing and printing machines.

The appetite for textiles technology upgradation seems to be largest in Kenya, with companies looking to upgrade their machinery across the textiles segment. In both Kenya and Ethiopia, garment-making machinery and related auxiliary machines are in highest demand, followed by finishing machinery (printing and digital printing, washing and dyeing). In Tanzania, good potential exists to supply machinery to certain segments of the value chain, including knitted fabrics and garments, which have shown growth in recent years. If Tanzania is able to capitalize on its investment targets through attraction of FDI, there will be increased demand for sewing machines as well as new technologies in the textiles subsector to fuel export-led growth in apparel production. In Uganda, companies currently have a strong interest in expanding the textile segment; in both Uganda and Rwanda, companies are motivated to upgrade their technologies across the value chain, from spinning through to finishing.

While there are a number of challenges that companies face in the region, there is one area that is common to all countries in this report: the high cost of, and limited access to, finance. Financing from commercial banks is difficult given their generally risk-averse nature, and even where it is available, interest rates are high – as high 18% in the region – putting financing out of reach for many companies. Consequently, companies must often consider other sources to fund capital investments. This lack of access to finance impedes companies' ability to fund the purchase of new technologies. Companies that have numerous investment needs must often put off investing in new machinery. This constrains the sector from growing and increasing its efficiencies.

Governments in the region need to step up and take the necessary steps to create an enabling environment for the textiles and apparel sector to grow further. This report presents ten thought pieces from industry leaders who propose how this might be achieved, emphasizing a myriad relevant areas – from access to finance and technical capacity building to investments in renewable energy and supporting e-commerce brands.

In the current paradigm of the global economy reeling from the shock of a global pandemic, the role of the governments becomes even more prominent. The Covid-19 pandemic had severe implications for the sector, textiles and apparel being among the worst affected in the world. The pandemic manifested in East African textile and apparel manufacturing units in the form of cancelled orders, depleted working capital reserves and employee layoffs. While lockdowns curtailed access to chief export markets in the EU and the US, they also made import of raw materials difficult. Despite all its short-term ramifications and blows to the economy, the crisis can also be construed as an opportunity for governments to build back stronger and provide the support needed to investors and manufacturers. One key area of support is in upgrading technology to enable better compliance with international environmental standards, which is pivotal to securing future orders and investments.

The last chapter presents policy recommendations for using technology upgradation to build a robust textiles and apparel sector in East Africa. These can be used by both policy makers as well as private businesses and business associations in overcoming some of the key challenges in the region. The recommendations are as follows:

- Explore development finance options to improve access to finance
- Ensure financial incentives complementary to access to finance
- Promote a local market for textile machinery and technology upgradation
- Use technology upgradation for resource efficiency and environmental compliance
- Extend technical assistance to manufacturers, especially SMEs
- Promote e-commerce: upgradation in distribution channels
- Establish a longer-term outlook on investment in technology

The utilization of new technology is of paramount importance for establishing more integrated value chains in East Africa. As new entrants come into the market with foreign direct investment and as the sector expands, the demand for new technology will increase. This is a continued strategic priority for all of the countries covered in this report. Consequently, suppliers of technology to the sector will find a new, growing market, fertile with opportunities.

# CHAPTER 1.

# THE TEXTILES AND APPAREL

# VALUE CHAIN IN EAST

# AFRICA – FRAGMENTED

# YET PROMISING

## Regional overview

### HISTORIC ROOTS

The African textiles and apparel sector has a long and rich history dating back to the early 1900s. Many countries developed robust cotton and textiles sectors, with cotton production reaching its peak in the 1960s. Trade liberalization that began in the 1990s reversed this trend, with imports flooding the market, leaving much of Africa unable to compete and largely dependent on imports. Today, while close to 10% of the world's cotton is produced in Africa – and two countries in East Africa, Tanzania and Uganda, are significant producers – the majority is exported.

The value chains in East Africa are incomplete and disjointed. There are fewer textiles mills in Africa today than there were in the 1960s. The textile mills that do operate produce primarily for domestic markets. The phasing out of apparel quotas in 2005 – the end of the Multifibre Arrangement (MFA) – led to massive shifts in the industry, with China benefitting most. While China's worldwide apparel exports increased exponentially, Africa's textiles and apparel sector also entered a new phase in 2000, spurred by the African Growth and Opportunity Act (AGOA).

### PREFERENTIAL MARKET ACCESS TO THE USA IS A PULL FACTOR FOR FOREIGN INVESTMENT

The African Growth and Opportunity Act (AGOA) is a non-reciprocal preference programme extended by the Government of the United States to eligible African countries. Signed into law in 2000 and in effect until September 2025, AGOA provides duty-free access to the United States of America's (USA's) market for apparel that is manufactured in an AGOA-eligible country using fabrics from anywhere in the world. The advent of AGOA led to investors setting up factories in export processing zones. Indeed, these investors rapidly set up operations in AGOA countries specifically to benefit from duty-free access of apparel to the United States.

Apparel products exported under AGOA effectively gain a tariff advantage over its competitors of between 16% (for cotton-based garments) and 32% (for synthetics and other man-made garments). AGOA has been a major reason why the apparel industry has grown so impressively during the past 19 years. Paradoxically, the ability of African apparel producers to cut, make and trim using fabrics from outside of Africa while still benefitting from duty-free access to the USA market – the so-called "third-country fabric provision" – is an incentive to continue to source cheaper and better quality inputs from outside the country. This has led to a situation

where countries in Africa have not had the incentive to develop backward linkages within the value chain, which, in turn, has led to the “fabric gap” that exists in Africa today. Indeed, it is telling that more than 90% of garments produced in Africa for export markets still use fabrics produced outside of the continent.

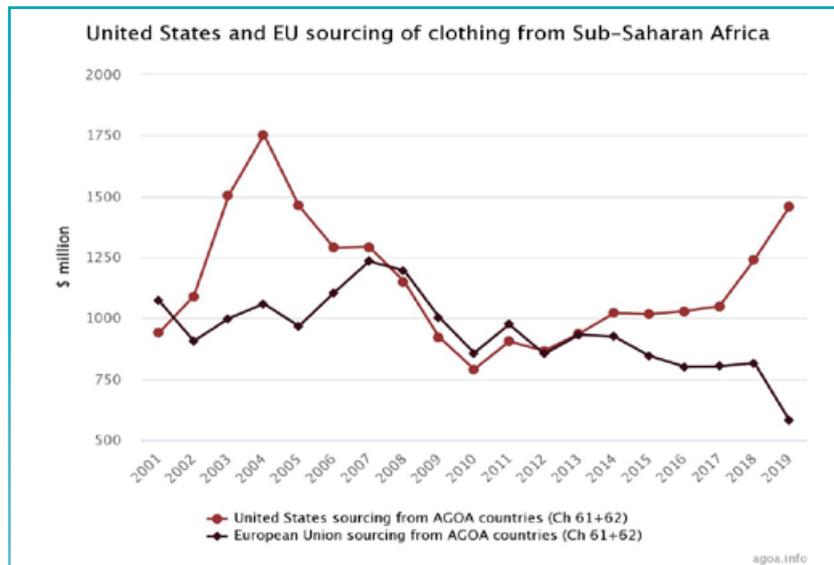
It is clear that technology plays a paramount role in reversing this trend to establish a fuller, and more, robust value chain. Sustained efforts to upgrade the capacity of textiles producers in the region through the use of technology and modern machinery would begin to provide apparel manufacturers with local and regional options for their fabric needs.

All five countries examined in this report are AGOA-eligible (except Rwanda, which lost its eligibility in 2018 due to a ban on the importation of second-hand clothing from the United States). Excepting Kenya, all other countries in the report are classified as Least Developed Countries (LDCs). Kenya is in the process of negotiating a Free Trade Agreement (FTA) with the US post AGOA.

## REGIONAL RELIANCE ON APPAREL PRODUCTION FOR EXPORTS

While the five countries analysed in this report have differing levels of development within their respective cotton-textiles-apparel sectors, and varying degrees of prioritization within the value chain, they have one area in common (with the possible exception of Rwanda in the short-term): a heavy reliance on the US market for its apparel exports. As a result of AGOA, the region has largely oriented its apparel production for exports, mostly cut, make and trim (CMT) factories operating in export processing zones or industrial zones, specifically to the United States market. Indeed, since 2000, apparel exports to the United States from AGOA-eligible countries have increased exponentially.

**Figure 1: USA and European Union sourcing of clothes from Sub-Saharan Africa (\$ million)**



Source: [www.agoa.info](http://www.agoa.info)

Exports to the United States spiked after AGOA was introduced in 2000, reaching a pinnacle in 2004 (Figure 1). Exports then steadily declined, hitting a low point after the 2009 financial crisis. With the worldwide economic recovery, the numbers began a steady rise, though generally levelling off and not reaching the previously attained highs.

East Africa has been a top region for apparel exports under AGOA, with Kenya (\$391 million in 2018), Madagascar (\$187 million in 2018) and Mauritius (\$137

million in 2018) historically among the largest suppliers to the US market (Table 1). Ethiopia, a fast-emerging player on the scene (\$110 million in 2018), may join the “big three” East African apparel producers if its growth trajectory of recent years continues. Ethiopia has shown the greatest trajectory in the past five years, increasing from a very low base in 2014 and doubling in 2018. Of the surveyed countries, the top exporters to the United States, by rank, are: Kenya, Ethiopia, Uganda, Tanzania and Rwanda.

African apparel exports to the rest of the world is significantly lower. Worldwide exports of apparel by the five countries taken in aggregate totalled \$820 million in 2018 (Table 2). A full 90% of this total comprises

exports from the region to the United States. In the case of the largest exporter, Kenya, the United States represents more than 90% of its apparel exports.

**Table 1: East African apparel exports to the United States under AGOA (\$ 000)**

Year	Ethiopia	Kenya	Madagascar	Mauritius	Tanzania	Uganda
2014	\$ 12 741	\$ 391 845	\$ 20 924	\$ 230 366	\$ 18 224	\$ 110
2015	\$ 18 789	\$ 381 070	\$ 53 396	\$ 221 918	\$ 28 000	\$ 71
2016	\$ 34 392	\$ 352 269	\$ 107 509	\$ 203 358	\$ 37 879	\$ 78
2017	\$ 55 748	\$ 348 696	\$ 165 193	\$ 151 551	\$ 42 051	\$ 437
2018	\$ 115 813	\$ 403 598	\$ 205 961	\$ 152 057	\$ 42 967	\$ 101
2019	\$ 217 458	\$ 466 885	\$ 252 304	\$ 145 685	\$ 53 428	\$ 103
Total	\$ 454 941	\$2 344 363	\$ 805 287	\$1 104 935	\$ 222 549	\$ 900

Source: Trade Map, International Trade Centre, 2020.

**Table 2: East African apparel exports to the United States versus worldwide exports (2019)**

Ethiopia, Kenya, Rwanda, Tanzania, Uganda	Exports to USA (aggregated)
Exports to USA (aggregated)	\$737 million
Worldwide exports (aggregated)	\$820 million

Source: Trade Map, International Trade Centre, 2020.

## THE “MISSING MIDDLE” TEXTILES SUBSECTOR

The flip side of this, of course, is the over-reliance on a single export market – and perhaps more critically, the value chain structures to which it caters – CMT apparel manufacturing, whereby the majority of fabrics are imported. The result has been a “missing middle” textiles subsector in the countries of East Africa. That is, the textiles subsector has not developed and evolved to adequately supply apparel manufacturers in the region. Very few textiles mills operate in these countries, and most textile production is for local apparel companies servicing domestic and regional markets in basic goods (uniforms, work wear, shawls, kikoyos – traditional woven cloth, similar to sarongs – and home textiles, etc.).

In most cases, local fabric production cannot meet the quality standards or price of export-oriented apparel companies. In some cases, specific fabrics are not available locally. There is also a handful of fully integrated factories producing fabrics for in-house apparel production though these produce chiefly for domestic markets. There have been some new investments in textiles, particularly in Ethiopia. However, in all five

countries, the sector is dominated by an export-oriented apparel production using imported fabric, with a smaller number of local producers focused on production of fabric for domestic consumption.

## TEXTILES AND APPAREL SECTOR – RECENT TRENDS

Governments in East Africa have given priority status to the textiles and apparel sector, including in all countries that this report covers. Also the East African Community (EAC) prioritizes textiles and apparel. In November 2019, EAC launched its Cotton, Textiles and Apparel Strategy, which aims at an integrated and globally competitive cotton, textiles and apparel industry for its six member countries.<sup>1</sup> Technology upgradation of existing textiles mills and ginneries as well as to promote investments in integrated textile mills is a key strategic objective. By 2029, the current spinning capacity of less than 500,000 spindles shall be increased to at least 2.7 million spindles. Countries in the region are diligently working to build the value chain through backward integration focused on revamping the textiles subsector.

1.– Kenya, Rwanda, Tanzania, Uganda, Burundi and South Sudan.

Upgrading the technology being used within existing textiles mills, as well as bringing in foreign direct investment, are critical components to accomplish this goal. Kenya is a good example with its recent revamp of the old Rivatex factory with Indian technology. Kenya is seeking to replicate this model in other regions of the country. Ethiopia has primarily grown its textiles base more recently through foreign direct investment.

The number of textiles and apparel companies is on the rise. While Kenya is the biggest player in terms of apparel production, Ethiopia has seen the sharpest rise of new entrants. Recent investors are mainly from China and India, but also other Asian countries, including Bangladesh, Sri Lanka, as well as Turkey and some European investors. In most cases, the factories are outfitted with machinery through established contacts of the mother company. Consequently, the machinery in these factories is often on par with comparable technologies worldwide.

In terms of machinery supply to the industry, there has been some movement toward greater local capacity. Few textile machine manufacturers now have offices in the region. Currently, the majority of machines are imported and there is a lack of technical support (which has limited the ability of manufacturers to service their machines locally) and spare parts. This has increased the burden locally in terms of time and cost, particularly when machines break down resulting in extended periods of down-time. Increasingly, service providers and suppliers to foreign investors are looking for distribution channels within the region. There are indications that companies supplying testing equipment and services now aim to set up offices in the region.

The African Continental Free Trade Agreement envisions the largest free trade area and economic zone in the world. It has been signed by all but one of the continent's 55 countries. The global coronavirus pandemic delayed the operationalization of the agreement in 2020, and trade under AfCFTA provisions is currently scheduled to start in January 2021. Tariff liberalization will boost regional exports and spur investments in the textile and apparel sector. E-commerce is one of the areas that featured in the discussions around AfCFTA negotiations and will be further integrated into the agreement through successive negotiations. Population trends, too, are favourable to Africa. The United Nations estimates that, in the next 15 years, Africa's working age population will equal to that of China.<sup>2</sup>

Many countries in Africa have experienced high economic growth rates. The middle class in Africa has also grown substantially during the past decade and the trajectory is expected to continue. Increased buying power has led to greater demand for quality garments.

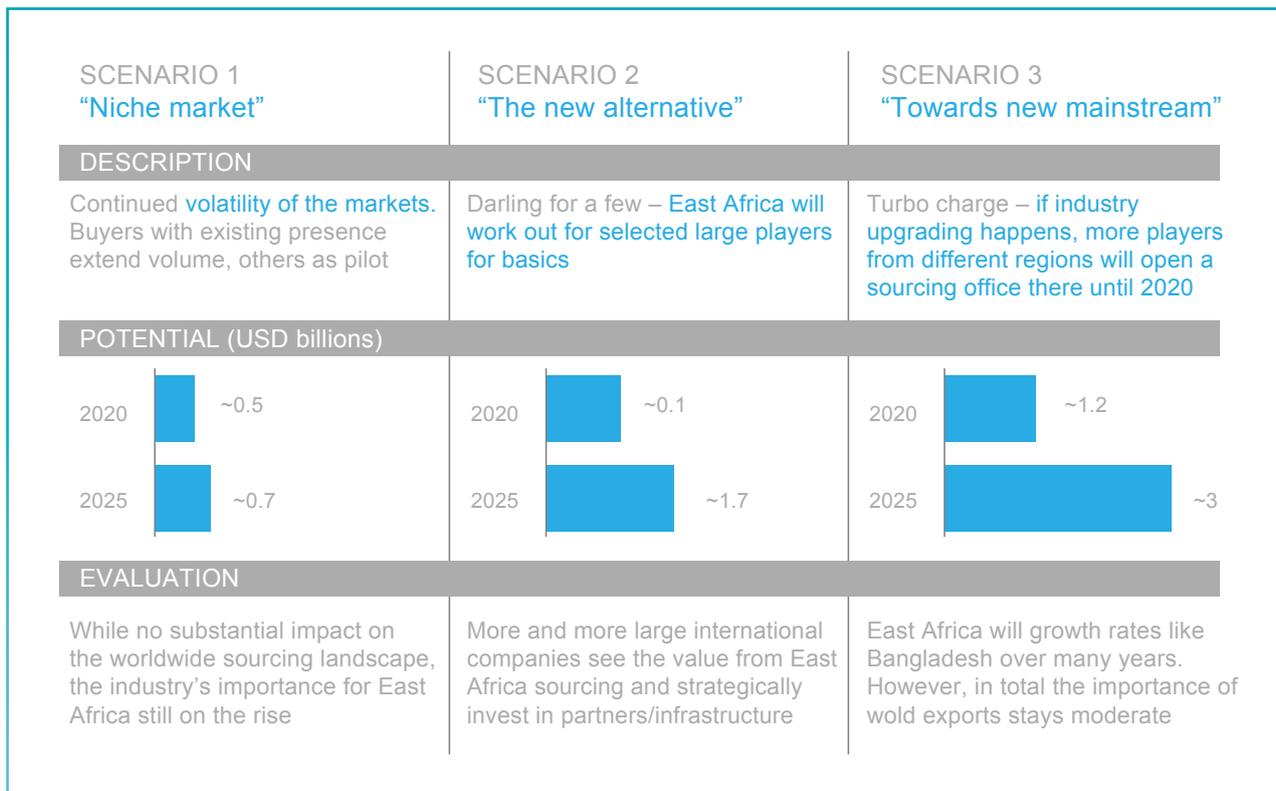
Many Africa-focused and domestic companies have sprung up catering to this new class of consumer. This is certainly observed in the fashion realm, where African-produced products are increasingly available on the local market.

## EAST AFRICA AS A SOURCING DESTINATION

A McKinsey report in 2015 looked at the implications and possible future scenarios for the East African textiles and apparel sector (Figure 2). The report underscored the fact that the East Africa region has become an emerging hub for sourcing in Africa, and that Kenya, with its well-established industry and Ethiopia, a newer player in the industry with high growth rates, are particularly well placed. Today, East Africa has achieved the status of "new alternative" for global apparel sourcing. One global brand owner has committed to allocating a certain percentage – at least 15% – of its worldwide sourcing to Africa by 2022. In some product categories, this percentage has already reached 40%. Strategic investments are increasingly taking place in the region, which is driving the growth of production and exports.

As stated, brand-owners have increasingly established regional sourcing offices in East Africa, chiefly Kenya and Ethiopia. Sourcing from the region by a few large, international brands has increased. In some cases, the bulk of capacity within a given factory is dedicated to servicing these large clients. These buyers have sought longer-term relationships with apparel producers in the region, an indication that they plan to sustain sourcing connections with suppliers that are consistently able to meet quality and production standards. Indeed, some large brands with global footprints have made corporate decisions to move a certain percentage of their worldwide apparel sourcing to the region. However, a major caveat here is African firms' commitment to compliance of global environmental standards. In order to enter global supply chains and attract international buyers in the textile and apparel sector, countries in the region must empower manufacturers to conform to increasingly strict standards in chemical and waste management and resource efficiency, besides health and labour standards. International buyers as well as consumers are demanding and rewarding sustainable production techniques and compliance with globally agreed guidelines is steadily becoming a non-negotiable eligibility criterion. Technology upgradation in fact is crucial to compliance as obsolete machinery and backdated technologies contribute to pollution, improper waste management and inefficient production.

2.– United Nations, World Population Prospects, 2019.

**Figure 2:** Three scenarios for the future of East Africa as a sourcing spot are possible

Source: McKinsey & Company, Sourcing in a Volatile World: The East Africa Opportunity (2015).

## TECHNOLOGY UPGRADATION AND THE ENVIRONMENT

Technology and machine upgradation are crucial components in effectively “retooling” in response to fast changing industry paradigms. The increasing focus on environmental compliance is a good example where technology upgradation can aid compliance. In this respect, it is important to note that, while some major companies are increasing their sourcing from East Africa, they are not awaiting governmental action on environmental regulation. While government action is seen as necessary to set clear parameters for the industry and create a conducive business environment, the companies are largely charting their own path. Indeed, these companies, with their massive buying power, are actively seeking to bring their global supply chains to Africa. They are effectively partnering with factories in East Africa to drive technology and sustainability.

The push for new technology utilization has implications for the environment. A large brand that sources significant volumes of apparel from East Africa selected the continent as a pilot for its corporate strategy on

the use of environmentally friendly technology. This includes considerations of water and waste management and treatment, which are, in fact, often prerequisites for sourcing from a given supplier. Companies that source from Africa are beginning to push factories to use technologies that are both more efficient and environment friendly.

International buyers representing major apparel brands across the world have doubled down on their efforts to create sustainable brands and have thus become increasingly strict in ensuring the compliance of environmental standards by suppliers. These standards chiefly appertain to chemical management, waste reduction and treatment and resource efficiency – common standards which are demanded by most international buyers. Technology upgradation has a direct bearing on compliance as obsolete technologies often hinder efficient waste and chemical management and lead to inefficient production lines. In turn, compliance has a direct effect on the competitiveness of the East African textile and apparel sector as in the absence of satisfactory compliance, manufacturers in the region will not be able to attract buyers and investors.

There are several challenges faced by East African manufacturing units in complying with environmental guidelines demanded by international buyers. Chief among them are –limited financing opportunities in upgrading machinery commensurate with the

requirements, lack of technical knowhow among workers to implement the regulations and best practices, and information asymmetries, wherein manufacturers do not have a reliable understanding of what international standards entail.



# CHAPTER 2.

# GOVERNMENTS AS

# ENABLERS OF TECHNOLOGY

# UPGRADATION

## What industry leaders think – governments need to take charge, but work together with stakeholders

In February 2020, as part of ITME Africa, an international textile engineering event in Addis Ababa, Ethiopia, organized by the India International Textile Machinery Exhibitions Society (India ITME Society), SITA facilitated an investment seminar on “Opportunities for investment and technology upgradation and related financial solutions”. Panellists included representatives from financial institutions, business associations, and international and local textile and apparel manufacturing investors. The panel identified the need for:

- Technology upgradation to ensure global cost competitiveness of African textile and apparel companies, and to create integrated value chains on the continent, from farm to fashion.
- Government initiatives and technical assistance programs that focus on skills development.
- Designing an integrative framework to foster and finance technology upgradation coupled with technical assistance through a multi-partner approach.
- Longer-term strategies by the private sector, including with international buyers who are driving the shift in the textiles and apparel sector.
- Government policies that enable access to affordable and reliable energy, including an incentive package that stimulates private sector production and utilization of green energy.

Furthermore, the Covid-19 pandemic and the ensuing economy-wide lockdowns and fall in global trade and investment have particularly affected the textile industry, through both demand and supply channels. In June 2020, SITA, in collaboration with the Confederation of Indian Textile Industry (CITI), India International Textile Machinery Exhibitions Society (India ITME Society), Kenya Association of Manufacturers (KAM) and Ethiopian Textile and Garment Manufacturers Association (ETGAMA), organized a webinar to bring together industry experts and discuss the implications of the pandemic for the industry.

The panellists identified three broad areas which would help the African textile industry bounce back stronger after the crisis:

- Making concerted efforts towards integration and achieving higher value addition
- Attracting investment
- Embracing sustainability in all aspects of production

The following ten thought pieces shed light on some of the key issues germane to technology upgradation in the East African textiles and apparel sector. The authors include industry leaders and experts from East Africa and represent a myriad of backgrounds relevant to the textile industry – development financial institutions, manufacturers’ associations, and investors,

entrepreneurs, among others. The points covered in the thought pieces are thus varied – access to finance for technology upgradation, strengthening the policy infrastructure for attracting investment, directives on due diligence for potential investors, green energy in textile manufacturing, e-commerce in the apparel industry and technical assistance to firms on technology upgradation. A majority of the thought pieces also discuss the ramifications of the Covid-19 pandemic for the industry in Africa and offer recommendations to adapt to a new paradigm post Covid-19.

The pandemic can be construed as an opportunity to emerge stronger, especially in the domain of environmental compliance and creating an enabling ecosystem for investment. Public-private partnership will be a crucial dimension in the post-Covid paradigm and is indispensable to catalysing the required changes. A flourishing textile sector can bring new jobs to the region, and to contribute enormously to socio-economic and industrial development.



# Investment and technology upgradation in Africa's textiles and apparel sector- Opportunities & challenges



Navdeep Sodhi,  
Partner, Gherzi Textile  
Organization,  
Switzerland

The global textile and clothing industry is undergoing major structural changes. Since the phasing out of the Multi-Fibre Arrangement (MFA) in 1995–2005, the industry consolidated

its roots in major producing countries, with China dominating the production and international trade. In the last decade, international textile and apparel buyers are keen to develop alternative sources of supply, in a move to shift their sourcing away from China to other competitive destinations in Asia and Africa. Sub-Saharan Africa has the potential to expand its textile industry owing to natural endowments in the form of raw material and manpower complemented by preferential market access to the US and EU markets. In recent years, North and East/Southern Africa have attracted FDI in the textile industry and emerged as important suppliers of apparels to the EU and the US. Besides export opportunities, Africa, with a population of 1.2 billion and an economy worth \$2.5 trillion (International Monetary Fund), constitutes a large market in itself. The African Continental Free Trade Area (AfCFTA) will help to realize this opportunity.

The following sections provide an overview of the textile value chain in Africa and analyse recent trends relating to trade and investment. The attractiveness of the economic opportunities available in the textile and clothing sector has been examined and risks highlighted for potential investors. Technology upgradation is an issue central to this discussion, and has also been examined.

## AFRICAN TEXTILE VALUE CHAIN

### Cotton production

The textile value chain in Africa is highly fragmented. A disaggregation of the value chain from fibres to fashion reveals that the four major components of the value chain are mutually independent, lacking cohesion. According to the International Cotton Advisory Committee (ICAC), Africa produces approximately 2 million tons of cotton, representing 8% of global production. Five million hectares of area is under cotton cultivation across 30 countries. However, the West African Francophone countries account for two-thirds of the continent's output. Less than 20% of African cotton is transformed and the rest is exported as a raw material, indicating tremendous potential for value addition. According to Gherzi estimates, even if 50% of Africa's cotton exports is converted into value-added textiles, its impact will be significant in terms of:

- Investment: \$25 billion (new investment needed in textile manufacturing) until 2030;
- Exports: \$45–\$50 billion by 2020 (5% market share of global trade in textiles and apparel) until 2030;
- Employment: 5 million new jobs until 2030;
- Integration with a global textile supply chain.

### Textile mills

Most of the vertically integrated textile mills were established in Africa during the 1960s to 1980s. These mills used local raw materials such as cotton and synthetic fibres and supplied textiles for domestic and regional consumption. Egypt had the largest manufacturing capacity, followed by Nigeria. However, with the liberalization of trade and lack of cost competitiveness, the local textile mills could not compete in the international market. Import of goods through informal channels poses a major challenge for local producers. As per Gherzi estimates based on UN Comtrade data, presently, more than 90% of the continent's textile demand is met by imports. At a regional level, the industrial garment industry developed in the Maghreb region and East and Southern Africa to take advantage of the preferential market access to the EU and the USA. The creative

fashion industry at an artisanal scale has also flourished in West Africa and other regions to meet the local demand for ethnic clothing.

This segment in the value chain has been starved of investment, as reflected in the outdated equipment in many textile mills. Only pockets of modernization have taken place in a few countries such as Egypt and Ethiopia. The industry lacks economies of scale and modern equipment to produce at a competitive cost and quality. The industry's product range is limited to the domestic market, due to which the apparel exports depend on imported fabrics. Another characteristic of the sector is a lack of downstream linkages. Unlike in Asia, there are very few countries in Africa that have SMEs comprising knitters, weavers or independent processing companies or those producing home textiles.

### Trade and distribution

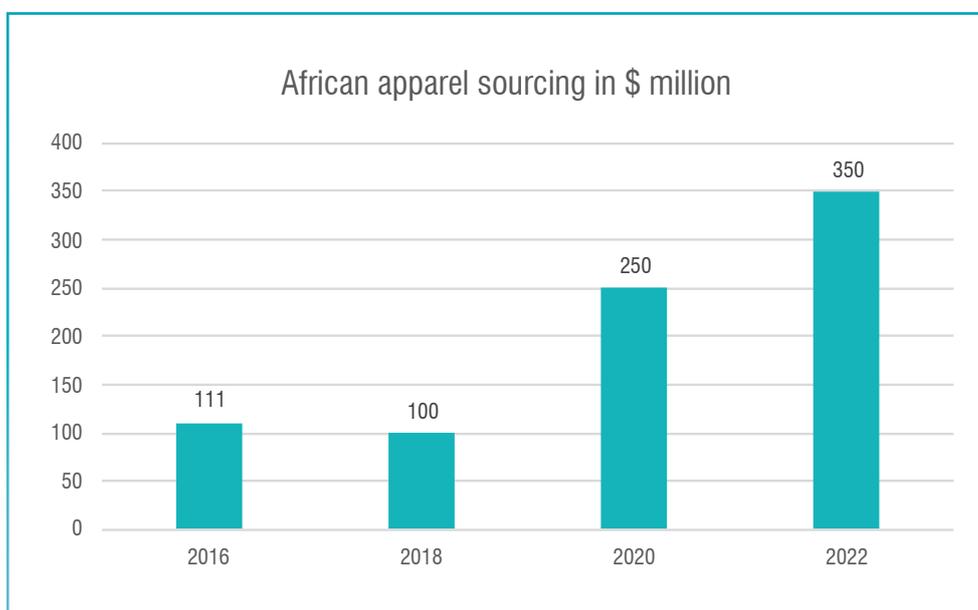
Africa has thriving wholesale markets that sell traditional fabrics and garments. These are supplied by regional import trade hubs and then distributed through a vast

network of retailers and itinerant salesmen. This trade is mainly conducted through grey channels that import textiles in containers, evading customs duties and taxes. Lagos, Cotonou and Lomé in West Africa and Mombasa in East Africa are major ports through which textile goods enter African markets. Modern shopping malls have come up across African cities and e-commerce portals are also expanding to meet the growing demand for consumer goods, including apparel.

### Apparel exports

This segment operates independent of the domestic value chain and has witnessed expansion due to the interest shown by international buyers to attract their Tier-1 vendors to set up apparel assembly factories, especially in East Africa. Ethiopia, Kenya, Lesotho and Madagascar have emerged as major garment manufacturing hubs in Sub-Saharan Africa. Egypt, Morocco and Tunisia account for a significant percentage of Africa's apparel exports. However, these are mainly based on imported inputs to benefit from preferential market access to the US and EU.

**Figure 3:** African apparel sourcing in \$ million



Source: Lee and Fung

## TRADE AND INVESTMENT TRENDS Investment

### Trade

Africa's global trade in textile and clothing, at \$46 billion, is characterized by imports surpassing exports. In 2019, the total imports of textile and clothing amounted to \$29.7 billion, growing at 5% CAGR.<sup>3</sup> Imports of readymade garments have been growing faster at 9% CAGR (ITC).

Exports of textile and clothing from Africa reached \$16.3 billion in 2019 (ITC), indicating a decline in 2018. Exports are expected to pick up as international buyers diversify their sourcing outside China.

Investment in the primary textile industry in Africa has been slow. However, there has been an increase in new shipments of textile machinery in weaving and circular knitting in recent years.

Table 3 shows the degree of modernization (or conversely, the extent of technological obsolescence) in the African textile industry. According to the International Textile Manufacturers Federation (ITMF), only 23% of Africa's installed spinning capacity (Dec. 2019) can be considered modern as being less than 10 years old compared to 50% for Asia. In weaving, the picture is better, with 50% of installed machinery being "older".

**Table 3: Degree of technological obsolescence**

	Age	Africa %	Asia %
Spinning	< 10 Years	22 %	45 %
	> 10 Years	78 %	55 %
Weaving	< 10 Years	60 %	73 %
	> 10 Years	40 %	27 %

African ring spinning and rotor spinning capacity has faced decline and stagnation in 2010–18, contrary to other countries like India, Pakistan, Turkey and Viet Nam. However, there has been a slight increase in the installation of modern circular spinning, knitting and weaving machines in recent years, indicating a positive trend towards technological upgradation.

The potential for modernization and expansion of Africa's textile manufacturing capacity is huge, especially in spinning, weaving, knitting and finishing. Eighty per cent of the firms recognize technology upgradation as a priority in order to improve quality

and sustainability of the industry, both in economic and environmental terms, and increase resource efficiency and competitiveness. However, this requires big-ticket investments, as textile equipment is highly capital intensive and requires skilled manpower and efficient infrastructure, especially energy. Access to finance and affordable borrowing is a key issue for technology upgradation at the firm level as well. Major textile countries in Asia encouraged investments in machinery through liberal incentives and creation of an enabling environment with five building blocks:

**Table 4: Key elements in spurring investment in machinery**

	Building block	Description
1	Vision and policies	Political commitment towards recognition of the textile industry as a priority sector
2	Infrastructure	Energy, industrial zones and access to port
3	Investment and incentives	Incentives are needed to attract investment – both local and FDI FDI will bring three things – capital, customers and know-how
4	Market access	Most African countries enjoy preferential market access to developed countries (EU/US) Access to local and regional markets is also important. This will gain impetus under AfCFTA
5	Capacity building	Institutional, enterprise and human capacity in terms of skills

3.– Compound annual growth rate.

## SWOT ANALYSIS

The African textile industry faces several opportunities due to the structural transformation of the industry and a strong interest among international buyers to diversify the sourcing. The preferential market access and the integration of the market under AfCFTA present a great

opportunity to attract investment in the textile industry. Africa's strengths in terms of raw material availability and demography should also be leveraged. However, this will require a concerted effort from all stakeholders to overcome the weaknesses and mitigate the perceived threats highlighted below.

**Table 5: SWOT analysis of Africa's textile industry**

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> <li>• Large domestic market of 1.2 billion consumers</li> <li>• Demographic dividend (median age 20 years)</li> <li>• Abundant labour supply – largest labour force in the world (2035 projection: 1.1 billion people)<sup>4</sup></li> <li>• Raw material supply(cotton)</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of an enabling environment</li> <li>• Weak (although improving) infrastructure and logistics</li> <li>• High cost of doing business</li> <li>• Unskilled manpower</li> <li>• Lack of an integrated value chain</li> <li>• Technological obsolescence in existing textile mills</li> <li>• Lowest yield in cotton</li> </ul>
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> <li>• Shift of labour-intensive, light manufacturing industries from China</li> <li>• Preferential market access – international and regional market</li> <li>• Possibility to attract FDI</li> <li>• Improve cotton yield</li> </ul>	<ul style="list-style-type: none"> <li>• Growing protectionism in global trade</li> <li>• Lack of import tariff enforcement resulting in grey trade in textiles</li> <li>• Lack of political will in certain countries</li> </ul>

## POLICY FRAMEWORK

Attracting investment across the textile value chain should be a policy imperative for African countries. There is a need to create a shared long-term vision and a strategic blueprint at the continental level to develop the industry by 2040. This would provide the political capital. At the policy level, governments should foster an enabling environment to provide efficient infrastructure to the sector, fiscal and non-fiscal incentives to attract investment, and capacity building complemented by marketing efforts to promote an “Invest in Africa” brand. I am optimistic that in today's multi-polar environment the international buyers and African countries have realized the potential and are taking steps and the momentum is building up. Therefore, whether one is an institution or a buyer or seller, one needs to pay attention to Africa as the new hub for the textile and apparel industry.

## COVID-19 – IMPACT ON AFRICA

The Covid-19 pandemic will potentially have significant development implications for African countries. The International Monetary Fund (IMF) has described it as an “unprecedented threat to development”. The following are some of the effects the pandemic might have on the textile sector in African countries:

- On the one hand, domestic demand will be depressed. The IMF has projected a contraction of 3.2% in Sub-Saharan Africa's gross domestic product (GDP) in 2020, while, on the other hand, African farmers will face a loss of market and income due to the decline in global demand for cotton. The United States Department of Agriculture (USDA) has projected a 15% decline in cotton consumption in 2019/20. According to an International Cotton Advisory Committee (ICAC) estimate, 3.3 million people in Africa depend on cultivation of cotton over approximately 4.1 million hectares for their source of livelihood.

4.– McKinsey Global Institute.

- Fall in demand is the major challenge facing the clothing suppliers in countries such as Egypt, which have faced cancellation of export orders since the outbreak of the pandemic.
- On a positive note, however, international buyers are expected to accelerate efforts to diversify their sourcing channels; therefore, the existing apparel manufacturers in Africa should expect a recovery once the lockdown phase in Western markets is over.
- As per statistics available from Office of Textiles and Apparel (OTEXA), imports of textiles and apparel under the African Growth and Opportunity Act (AGOA) decreased 11% to \$574 million in January–June 2020 compared to \$647 million in the corresponding period in 2019. Textile and apparel imports under AGOA increased from \$1,217 million in 2018 to \$1,415 million in 2019 (a 16.5% increase), indicating the potential for diversification in sourcing from destinations outside China.
- The pandemic will have an adverse impact on investment in the textiles and apparel industry in the near term, and dampen FDI prospects; however, in the medium term, the mills will consider retooling to introduce automation and digitalization. In general, being among the most globalized industries, textiles has been severely hit by the pandemic. A brief overview of the impact on both the demand and supply sides shows that it will take a few years for the industry to fully recover from the crisis.

**Table 6: A demand-supply analysis of the effect of Covid-19 on the textiles and apparel industry**

DEMAND	SUPPLY
<p><b>GDP:</b> There is a direct correlation between economic growth and textile consumption. Since the last financial crisis, textile consumption recovered, but, in the wake of the present crisis, the demand is expected to dampen again, taking several years to bounce back.</p>	<p><b>LIQUIDITY:</b> The major challenge facing the industry is liquidity, with most textile companies having exhausted their working capital in April 2020.</p>
<p><b>RETAIL SALES:</b> The closure of retail activity in all the major developed countries, which account for the largest share of global sales and the lockdowns imposed by most countries, have resulted in widespread cancellation of orders worth billions.</p>	<p><b>SUPPLY CHAIN DISRUPTION:</b> The impact of supply chain disruptions already started in January, affecting garment-producing countries that depend on CMT operations. Most Sub-Saharan countries rely on import of fabrics from third countries and thus have been adversely affected.</p>
<p><b>LIVELIHOODS LOST:</b> The unemployment levels in the US and EU have risen to historic levels. In the US alone, unemployment in May hit 14.7%. In Europe, 35 million people filed for unemployment benefits. This will affect textile consumption, which is discretionary.</p>	<p><b>RAW MATERIAL SUPPLY:</b> Prices of textile raw materials (both natural and man-made) have declined to record levels due to the closure of mills and decline in future demand. Prices have plummeted by more than 20% and remain volatile.</p>
<p><b>CONSUMER BEHAVIOUR:</b> Consumer habits will undergo change. Spending will become extremely selective. Online shopping will grow.</p>	<p><b>EMPLOYMENT:</b> The textile value chain is the largest employer in the world after agriculture. Globally, there are an estimated 350 million people employed along the value chain, of which 200 million are in cotton production. The pandemic will have an impact on these millions.</p>
<p><b>TRADE POLICY DISRUPTION:</b> The trade friction between the US and China had already had an impact on clothing sales and will continue to have an adverse effect in 2020 as international trade continues to navigate choppy waters.</p>	

# Textile machinery in East Africa – A recipe for growth



**S. Hari Shankar,**  
Chairman, India ITME  
Society

As a new decade set in with the start of the year 2020, Africa was widely regarded to have a potential for rapid economic growth, with a strong vision for the future. Specifically, with a population estimated at approximately 448 million in

East Africa alone, and a median age of 18, the region was seen as one of the key emerging markets. In the backdrop of this demographic promise, ITME Africa 2020, a global exhibition series was conducted in the millennium hall in Addis Ababa in February. The focus was to create awareness on globally affordable modern technology in the textile industry in East Africa by means of technological displays, technical seminars and to facilitate high level networking. The end goal was for East African countries to be self-reliant in cotton and textile production through modern as well as affordable technology.

A pre-event survey conducted by the ITC highlighted the need for modernization of equipment, which in some cases were outdated by over 20 years. Manufacturing units currently have smaller capacities and low manufacturing efficiencies, factors, which render them disadvantageous in the global value chains. To bring them at par with global counterparts there is a need for affordable modern technology. In other words, the integration of manufacturing processes is required for achieving scale and success (currently the individual segments i.e., weaving, garmenting, processing are isolated). Thus, technology upgradation is an immediate need in order to comply with scale and quality requirements, and to diversify products and markets.

As the ITME Africa 2020 drew to a close, the Covid-19 pandemic struck the world resulting in massive disruptions due to the rare “twin supply-demand shock” caused by both production shut downs and supply chain interruptions. However, the old saying “a crisis is also an opportunity” comes to the fore in this context and we should capitalize on the disruption caused by the crisis and focus on expanding East Africa's market and trading opportunities. FTA advantages to supply in the US and EU markets remain, and the demand for African textiles and garments is increasing globally with fashion and trends endorsing them. Furthermore, there is a voice pointing towards the localization of value chains and an ambition to be self-reliant.

## Support required by suppliers of textile machinery to develop their business in East Africa:

- A conducive textile ecosystem needs to be created, making it locally inclusive and policy makers need to remove barriers inhibiting business growth, including logistical costs which are often high.
- Local textile parks and clusters need to be nurtured, to benefit from productivity gains. Additionally special manufacturing clusters with an anchor investor(s) may be created in the textile parks or in suitable locations in the industrial corridors.
- Textile testing centres need to be established in textile clusters to optimize quality and productivity.
- Textile research institutes need to be established to bridge the gap between industrial requirement and research activities.
- Capital investment and government support through targeted schemes (e.g. financial incentives like soft loans) for machinery upgradation is an imminent need, to catalyse the demand from textile manufacturers.
- For a robust and sustainable textile sector in the long run, promotion of R&D (research and development) activities need to be encouraged by means of tax benefits. Moreover, partnerships between private and public enterprises are needed to foster business process innovation through brand building and design creation along with long term environmental sustainability.

### Recommendations for suppliers of textile machinery interested in the East African region:

- Market development activities need to be initiated for both medium and long term benefits in identifying areas for entry and expansion.
  - In order to achieve the production capacities envisaged, skilled manpower is needed. This is only possible by means of empowerment, skill development programs and making locally inclusive development strategies.
- Focus should be given towards integration of the textile value chain in the region and the machinery upgradation or installation that entails. Spinning, weaving, processing, garment manufacturing etc. are currently operating as isolated units, and to achieve scale and success integration is imperative.



## Supporting firms in technology upgradation: Technical assistance, but also development capital



**Phyllis Wakiaga,**  
CEO, Kenya Association  
of Manufacturers

Kenya Association of Manufacturers (KAM) is a business membership organization representing Kenya's manufacturing sector. We have categorized our members in 14 sectors and we have presence in seven regions across the country. KAM'S key mandate is to provide fact-based policy advocacy. As such, we continuously engage and partner with the executive, legislative and judicial arms of the government to shape Kenya's policy environment to the favour of a competitive manufacturing sector. For our members, we identify specific demands and provide demand-driven services to enhance their competitiveness. We consistently engaged with stakeholders and governments, within the African continent and around the world, to further the manufacturing discourse and enhance the competitiveness of the country's manufacturing sector.

Technology upgradation is a key requirement across our sectors, more so in the textiles sector. The sector has been prioritized by the Kenyan Government and it is expected to support the country's industrialization roadmap. Under the Big 4 Agenda, the entire manufacturing sector is expected to contribute to 15% of the country's GDP. The textile sector is among the top sectors expected to drive this growth from the current 8%.

The textile sector finds itself in dire need of technology upgradation following years of recorded negative growth. The current technology gap contributes to the reduced competitiveness that the local manufacturing sector faces. Therefore, technology upgradation comes in handy in bridging the gap between Kenyan and global industries. A key challenge towards technology upgradation is the high cost of financing and thus the low motivation among manufacturers to upgrade. In fact, affordability and availability of finance remain at the heart of the problem. Thus, impactful interventions should couple technical assistance with

development capital. KAM is keen on developing such a framework with other partners and stakeholders, towards taking the textile sector to the next level of global competitiveness.

Currently, KAM houses the Sustainable Use of Natural Resources and Energy Finance (SUNREF) programme, funded by the Agence Française de Développement (AFD, French Development Agency). The programme combines both technical and financial support, and its uptake by KAM members has been commendable. So far, SUNREF has supported 39 projects across manufacturing, power, real estate and hospitality sectors valued at \$72 million. Within the textiles and apparels sector, the SUNREF project has supported the partial upgradation of the spinning unit within Thika Cloth Mills and the knitting unit of Alpha Knits Limited. This upgradation has been with modern, highly productive and energy efficient machinery.

In addition to the financing, the companies now have trained in-house technical expertise and a monitoring and evaluation framework within the energy audit services offered by KAM. Similar partnerships would go a long way towards extending firm-level support to our members and ultimately developing a competitive textiles and apparel sector.

Kenya's textiles and apparels sector has been adversely affected by the Covid-19 crisis. The slowdown of export business, disruption of supply chains and fall of the consumer market have all led to a considerable lag in this sector. Amidst the crisis, however, local manufacturers have innovatively repurposed their production lines to now manufacture personal protective equipment to support the Kenyan Government in the fight against Covid – in doing so, they have also shown a tremendous capacity to export these products. With this, the sector is looking towards a strong rebound in the new normal; i.e. the post-Covid-19 period. Specifically, the sector aims to position itself strategically as a competitive sourcing partner with the expected shifts in global supply chains.

As the world adjusts to the new normal of changes brought in by the Covid-19 pandemic, there will be a need to build a more resilient, competitive and market-driven manufacturing sector. This means expanding partnerships among multiple stakeholders and players across different geographies. As part of our core

mandate, KAM will continue to build relevant and sustainable partnerships with governments, manufacturers and like-minded organizations, including ITC through its SITA project, towards creating synergies and frameworks aimed at bolstering the manufacturing sector's productivity.



Image by Andrea Don from Pixabay

## Due diligence and a longer-term outlook: What every investor needs



**Sanjeeva Ileperuma,**  
CEO/Director,  
Strathmore Apparel  
Manufacturing PLC,  
Ethiopia

The Covid-19 pandemic had a devastating impact on most of the foreign investors and businesses in Africa, as elsewhere. The impact was two-

fold – first, supply chains were interrupted, as Chinese companies could not resume production post-Chinese New Year and ports limited their operations. This, in turn, affected our operations, as most of our sourcing happened in China. Secondly, when the supply chain slightly recovered, the pandemic started spreading to the US and Europe, which constitute our principal export market, and all our buyers started closing their sales outlets. Consequently, our company, like many others, lost its market, and witnessed the cancellation and hold-up of orders without further notice. It was a challenge for most of the businesses to sustain without having a commercially viable order book to continue operations in the face of loss of markets.

This kind of situation with a global impact is very rare and unprecedented, and cannot be accounted for in decision-making processes towards a foreign investment. There are also a lot of lessons to learn from the current scenario and these should be capitalized. The biggest challenge in the wake of the crisis has been to effectively engage with all the stakeholders. This should be taken as a major concern in investment decision-making processes in the future. Furthermore, in such a situation, host governments should support investors, offering some additional concessions and incentives aimed at the survival of businesses and resuscitation of economic activity. In parallel, existing legislations in most countries need certain amendments to respond efficiently to these kinds of force majeure situations.

In general, it is of utmost importance for investors to carry out due diligence and to conduct feasibility studies prior to investment. As a human capital-based industry, we are always looking for geographies where one can find an abundant, affordable and trainable workforce. Moreover, tax incentives, duty benefits and market access to countries are important macro-level factors that need to be considered in investment decisions. In addition, regional differences in terms of culture and political situation are significant factors for an investor to consider.

Our sourcing is currently almost entirely based on imports, and we have invested in state-of-the-art machinery, and do not deem technological obsolescence as a challenge as far as our own operations are concerned. However, our long-term goal is to undertake the sourcing locally, which would significantly reduce costs and help improve the lead time. In this scenario, technological obsolescence will be a major hindrance, as the current technology in Ethiopia is not advanced enough to cater to the demand and the required quality standards.

It is also imperative for an investor to operate with a longer-term outlook. In the next 5–10 years, we aim to create more than 10,000 jobs, in line with our medium – and long-term plans. Due to our location in Ethiopia, we make approximately 30% in duty savings for man-made fabric; however, logistical challenges continue to be an issue. We try to address these challenges and other constraints through discussions with all stakeholders involved and find joint solutions. Ethiopia has just begun the phase of sustained industrialization and, without government support and intervention to address on-the-ground challenges faced by the foreign and domestic investors, the industrial agenda will not move forward. Moreover, in the absence of said support, it will be difficult to attract FDI, which is of great importance at this stage of Ethiopia's development.

## African governments play a vital role in putting their manufacturers on the global supply chain



**Pankaj Bedi, Chairman, United Aryan (EPZ) Ltd., Kenya, and Chair, apparel export sector, Kenya Association of Manufacturers**

Kenya, where our operations are based, offers a plethora of advantages to export-driven manufacturing, relative to other African economies. Its policy on export processing zones (EPZs) is clear, concise and specific and is coupled with a good logistics infrastructure. Its population is English-speaking and the workforce is young, dynamic, eager to join the labour market and easy to train. Kenya's supporting infrastructure is also robust – its banking system is strong, and internet and mobile phone connectivity are reliable. It has duty-free access to the markets of the United States, the United Kingdom and the European Union, besides being a member of two key free trade areas on the continent: the East African Community (EAC) and the Common Market for Eastern and Southern Africa (COMESA). Most importantly, the last 20 years of AGOA-led local manufacturing experience has resulted in several companies with high standards of social, environmental, health, wages and safety compliance. Moreover, these companies have a good understanding of the local contexts as well as of global sourcing and logistical needs.

However, continued increases in wages and cost of living is resulting in Kenya gradually losing its cost competitiveness in the textile industry, compared to other African countries. Furthermore, unlike Egypt, Madagascar and Ethiopia, Kenya opted for a managed floating exchange rate regime, while the former devalued their currencies to retain their competitiveness in the global sourcing matrix. Thus, even though Kenya has a favourable ecosystem to further develop its textile and apparel sector, the lack of competitiveness is a threat that needs to be addressed. The government could explore using the exchange rate to give a competitive edge to the industry and actively pursue policies to tackle wage inflation. If necessary, wage

increases should be introduced in phases so as not to hinder medium-term orders from buyers and longer-term projections and purchase plans.

Value chain integration from farm to fashion is an organic process, and it naturally follows a vibrant textile and apparel market with the demand to support it. The benefits of a move towards value chain integration are manifold in Kenya. It will generate more employment, empower cotton farmers and women, who make up the bulk of the workforce in the industry, and allow small and medium-sized enterprises (SMEs) to flourish in the sector. At a systemic level, it will also lead to an increase in tax collections for the government, textile being in the formal sector of economic activity. Furthermore, with domestic production of the higher-value items in the value chain that are currently being imported, the pressure on the exchange rate will likely be mitigated through reduced imports and, eventually, increased exports. It is also imperative for manufacturers to be strategic and focused, develop a core competency and possess a longer-term outlook.

Unemployment remains a key issue in several African countries and the government and the industry should work together to address the ensuing challenges. In most developing countries in Africa and elsewhere, employment generation is one of the key expected outcomes of developing the textile and apparel industry. In the apparel sector, there could be such a thing as too much technological upgradation, as automation could bring about job loss, which would contradict the industry's role in promoting jobs. In the textile sector, however, which normally does not generate as many jobs as the apparel sector, technology upgradation is a viable means to add value and increase competitiveness, though access to finance to fund such capital expenditures remains a challenge.

The potential to develop the textile industry and generate employment is huge, especially in Kenya. However, as of now, due to the high cost of operations, in spite of a relatively good industrial infrastructure and skilled labour force, this potential is still unrealized. As more and more international buyers are committing themselves to long-term sourcing from Africa, African governments should prepare the ground to realize the gains from the shifting winds in the global sourcing matrix in the wake of recent trade wars. This is essential, as presently, Bangladesh, India and Viet Nam already have the ecosystem required to benefit from the shift away from China. African countries should be able to compete with them as well as get integrated into their value chains.

The good news is that governments are becoming increasingly committed to the sector, willing to support it and thus facilitate employment generation. However, active technical assistance is required to upgrade the skills of the workforce, cost of operations need to be globally competitive and financing with tailor-made solutions needs to be made available for the sector, as was done in emerging Asia, in order to make manufacturing in Africa more competitive and sustainable.

## COVID-19: A CRISIS, BUT ALSO AN OPPORTUNITY

Our company's primary objective during the crisis has been to protect the value we created in the past two decades, and to support our workers and the communities around them. To this end, we established mutual cooperation with our buyers through discussions, which is key to riding this crisis affecting buyers as much as manufacturers. To safeguard our workers and value, we were prepared to lose money in the short run rather than completely shut down.

Going forward, this crisis also presents an opportunity, which could serve to strongly establish Africa's footprint in the global textile and apparel industry as sourcing patterns change. Several international brands are committed to contributing to the sector's recovery and are keen to develop value in Africa. The thread that binds everything, however, is active collaboration between the manufacturers, buyers and government. The government especially should create a robust bounce-back strategy and work together with the industry in order to stabilize the sector and make it sustainable in the long run. In the wake of the 2008 crisis, we faced a similar challenge, but, through our experience and skills, we have managed to grow by four times since then.



ITC SITA

# West Africa as a future destination for sustainable textiles and garments



Philip Osafo-Kwaako

## THE COVID-19 CRISIS: A WAKE-UP CALL

The Covid-19 crisis has been a wake-up call for manufacturing businesses around the world – particularly in the textile and apparel industries.

Once the storm passes, this industry will wake up to two important trends – *re-inventing supply chains* and *delivering sustainable production*. Many fashion businesses are now examining ways to optimize their supply chains – which are often geographically dispersed – to ensure that they stay resilient when disruptions occur in one part of the world. This would mean nearshoring some production activities and also strengthening regional supply chains where possible.

At the same time, post-Covid, the global fashion industry must prepare for consumers, especially younger ones who would demand more sustainable production. Some governments have also launched initiatives to demand more sustainable production in the fashion industry, for example the Green Button initiative for sustainable textiles recently announced by the German government.

## THE POTENTIAL OF THE WEST AFRICA REGION

The West Africa region, comprising of countries in the 16-member ECOWAS economic bloc is well-positioned to play an important role in this effort in supporting this push towards an optimized and sustainable supply chain for the global fashion industry, particularly the major manufacturing countries (such as Ghana and Côte d'Ivoire) and cotton producers (such as Burkina Faso, Mali and Benin). There are five reasons underlying this assessment:

1. The region today accounts for nearly 10 percent of global cotton exports – producing about 1 million metric tonnes in 2018 and 2019. Much of this production is by rural smallholder farmers utilizing sustainable production methods and who depend on the cotton industry for their livelihoods. Moreover, most of this production is exported in its raw form, and less than 1 percent of the region's current production is processed locally.
2. The availability of an abundant labour force – with a population of over 400 million people is also significant. Much of this population is young and well-educated, with competitive wage rates when compared with workers in Asia.
3. Like much of the rest of Africa, the region also enjoys preferential tariffs for exports to the USA and Europe. These preferential tariffs imply about 10-20 percent cost savings for buyers, and served to attract a first wave of garment manufacturers to locations in southern Africa such as Mauritius and Lesotho. For example, for exports to the USA, duty savings are about 15 percent on cotton garments, and 30 percent on knitted polyester garments.
4. West Africa is geographically closer to developed country markets in North America and Europe – compared to production in Southeast Asia. Indeed, container travel times from major West African ports to Europe are about 15 percent shorter compared to travel time from Asia.
5. The increased emphasis on sustainability means that there is an opportunity for the global fashion industry to hit the reset button and get things right from the start in West Africa. Raw materials such as cotton would be sustainably produced, using land and water resources responsibly, and supporting livelihoods of smallholder farmers. Sourcing locally would also minimize the environmental footprint of transporting raw materials from farmers to factories. Production could now be developed in modern factories – adopting best-in-class labour practices and environmental standards.

The West Africa region could thus provide integrated operations, from fibre to garment, which would be attractive to a new generation of consumers who demand transparency and traceability in production supply chains for their end-products.

## SEIZING THE OPPORTUNITY

West Africa is well-positioned to capture this niche of sustainable production for the global textile and apparel industry. The size of the prize is substantial; to capture this opportunity, manufacturers in Africa, global buyers, and indeed West African governments, need to work in concert.

**For manufacturers in Africa** – the primary goal should be to build world-class operations at competitive prices. Although global consumers often demand sustainably manufactured garments, they also continue to demand (and expect) ever lower prices. In what is a very competitive industry with thin margins, manufacturers in Africa would need to maintain a laser focus on costs – regardless of industry trends.

To build world-class operations, much of the existing technology in West Africa's textile and garment industries needs to be upgraded. In spite of West Africa's advantages noted earlier, significant capex investments are needed to upgrade the region's machinery, specifically for spinning, weaving, knitting, printing and dyeing, and garmenting. Such machinery would be needed to improve productivity of firms in the region.

For cost competitiveness, the main drivers are still energy costs and wage costs. Where possible, special bulk tariff rates need to be negotiated to ensure that energy costs are competitive, and comparable to costs in peer manufacturers in Southeast Asia. Wage costs for unskilled and skilled workers in West Africa are lower than that for Asian peers in China or Vietnam. There is also a pool of well-educated workers. However, manufacturers must be willing to invest in upgrading skills to improve labour productivity. The recent experience of garment factories in Ghana and elsewhere suggests that output per worker could be significantly improved once appropriate training and coaching has been provided.

**For global buyers** – once the dust settles on the current disruptions caused by Covid-19, and demand gradually recovers, the global fashion industry must take the lead in sustainability. Global buyers should look ahead – and start planning for the future, today. With their considerable in-house talent and expertise in global sourcing, they could serve to connect different actors in the supply chain e.g. equipment

manufacturers, raw material suppliers, factory owners, and skilled operators.

**For West African governments** – there is work to be done in providing the enabling business environment to support a competitive local textiles and garment industry – which could provide hundreds of thousands of jobs for the region. West Africa has a very young population (estimated median age of 19.6 years) – and over the next decade thousands of young, educated workers will enter the labour market. The anticipated demographic dividend for Africa, could easily become demographic disaster, unless decent jobs are created to harness the energies of these young workers. A vibrant textile and garment industry could become a major employer, similar to that in Vietnam or Bangladesh.

To capture this opportunity, West African governments need to articulate a clear plan which sets out their objectives with quantifiable targets, e.g. in total output to be obtained by a given date, number of workers to be employed, total exports to be achieved, etc. Next, they must ensure some basic guarantees – make it easy for entrepreneurs and investors to set up businesses, ensure port operations are efficient, reduce bureaucratic bottlenecks for local manufacturers, and provide incentives (e.g. tax breaks, duty concessions) for start-ups in the industry. These are well-known “investment climate” factors, but governments must take a specific industry lens to these concerns to ensure that they unblock challenges that may be faced by businesses operating in the textile to garment value chains. Finally, where possible, the government could appoint an industry liaison or *czar* (with significant seniority and reporting to cabinet ministers) who can ensure that there is steady progress to achieve tasks set out by the government and local industry.

## CONCLUSIONS

Covid-19 has been disruptive and challenging for the global fashion industry. Yet, we need to look boldly to the future – and build an industry which will continue to serve the needs of our customers, while supporting the livelihoods of workers in our supply chains. The textile and garment industry of the future, would be anchored around sustainability concerns – and West Africa could become an important sourcing destination for sustainably produced textiles and garments. We need to begin to re-imagine and re-invent that future industry, today.

# Access to finance for building improved supply chains



**Antje Steiner, Director,  
Regional Office East  
Africa, DEG Invest**

Deutsche Investitions – und Entwicklungsgesellschaft (German Investment Corporation, DEG) is the private sector arm of the KfW group, the German state-owned development bank. We provide long-term debt

and equity financing for privately owned companies. Our operations are sector-agnostic and all our projects have developmental impact. We work in many different industries in developing countries across the globe. Textile is one of the industries in which we have substantial experience, having worked on projects in the industry for several years, most notably in Asia.

For firms aiming to benefit from our financing, we look at different aspects. Firstly, we inspect their business model and financial strength, both of which determine their future market position. Secondly, we assess their environmental and social governance to elaborate a mutually agreed action plan for improvement. Financial feasibility of any project we finance is also an important criterion we look at. In our experience, this can be challenging at times, as companies often lack the operational knowledge to prepare the necessary financial reporting, like business plans or financial modelling. We are flexible about the type of projects we can finance – they could range from capacity expansion including technology upgradation to “green” projects, increasing the aforementioned compliance with environmental and social standards. Globally, SMEs have been one of our principal areas of focus and we aim to support SMEs in East Africa in the next five years as well. This includes support to an investment project in Ethiopia, where we hope to be able to provide financing and technical support to many firms in different industries, including the textile industry.

DEG pursues developmental targets based on the Sustainable Development Goals (SDGs), e.g. through the creation of sustainable jobs and fulfilment of requirements to combat climate change. In this context, we collaborate with several partners like other European

development banks, the International Finance Corporation (IFC) and other institutions to advance the developmental agenda and help our clients in complying with operational as well as social and environmental standards. The feedback from our clients has been positive, as, with better compliance, they made their way into the supply networks of European and American buyers, who increasingly demand the fulfilment of environmental and social compliance standards. Moreover, this helped the industry as a whole to improve the quality of the supply chains while making working conditions much better and safer.

In the last decade, we have worked within the textile industry in Asia with countries like Bangladesh, China, Viet Nam, Sri Lanka and India, and we have established sectoral expertise in improving access to finance while also adhering to social standards and security of workers. We plan to exploit this know-how in East Africa as well, and aim to avoid the mistakes made in Asia. African entrepreneurs can thus make a longer jump with fewer errors and in a much shorter time.

DEG is committed to work with its clients through this crisis and help them in their recovery in different ways. We started by inspecting our clients to identify areas of immediate assistance on the financing side (e.g. quantifying liquidity needs for upcoming months, and possible debt restructuring), but also indirectly through technical assistance programmes (e.g. granting urgently needed equipment like face masks), including consultancy support for elaboration of Covid-19 response action plans. Overall, our approach has been pragmatic and always mindful of the needs of our clients as the crisis evolves.

Generally, all export companies suffered from a dampened market demand, e.g. flower and nut producers in Kenya, but also textile firms in Ethiopia. In Ethiopia, following an absence of international orders for approximately three months, industrial parks in Hawassa and Mekele were partly closed down for a while. One key detrimental effect of the crisis has been the shortage of access to local financing options. Therefore, currently, protection of short-term liquidity is very important for our clients. However, we do not expect a deterioration of access to finance for SMEs within their respective markets in the long term.

## Exim Bank of India and textile technology upgradation in East Africa



**Sudatta Mandal,**  
**Chief General Manager,**  
**Lines of Credit Group**  
**Exim Bank of India**

India Exim Bank finances export of goods and services, as well as investment in capital out of India, including to East Africa. Our lines of credit follow a demand-driven business model.

The concessional credit provided by the Government of India to countries for their development needs are at the request of the recipient governments. As such, the Government of India does not stipulate any priority sectors for lending; the funds are used as per the development priorities and requirements of the recipient government. However, certain lines of credit are earmarked for the solar energy sector, in line with the International Solar Alliance pioneered by India. We finance and operate government-to-government lending under the aegis of the Government of India's Indian Development and Economic Assistance Scheme (IDEAS). Our other areas of intervention include credit facilities to Indian companies when they expand internationally, extended either to them in India or directly to their international ventures. We also support commercial businesses in India with funded and non-funded assistance to finance and facilitate their export operations.

In East Africa, in the textile sector, we undertook the financing for Rift Valley Textiles Factory (Rivatex East Africa Ltd.), under a \$30 million line of credit to the Government of Kenya, which included the upgradation of the entire facility, equipment and machinery. We also provided financing to Kanoria Africa Textiles Limited, Ethiopia, a denim manufacturing unit set up by Kanoria Chemicals & Industries Limited, India. We provided funds directly to this company in Ethiopia, a sum of \$21 million to finance the establishment of the factory, for producing 12 million metres of fabric per annum. We also finance SMEs in their international investment. For example, we financed the Indian company Geetanjali Woollens Pvt Ltd. for acquiring blanket manufacturer Debre Berhan Blanket Factory PLC in Ethiopia, as part of Ethiopia's privatization programme in 2008–09. Their primary product is relief blankets used by the Red Cross. We have also supported textile sector projects in Sudan, Ethiopia, Angola, Chad and Viet Nam, etc. under lines of credit extended to the respective governments.

We are present in 44 African countries, and most of the African development projects and priorities focus on the financing of social infrastructure projects. The representation of other sectors is gradually increasing as African economies are moving up the value chain. The use of lines of credit in textiles is presently not substantial, but we are seeing a slow increase in the interest among African countries to finance projects in this sector besides projects in renewable energy and information technology.

We are open to supporting companies requiring financing in the textile sector. We are also willing to finance Indian SMEs venturing into an East African country, by means of joint ventures with local partners.

## E-commerce in East Africa, a long but promising road



**Wandia Gichuru,**  
CEO and Founder,  
Vivo Active Wear,  
Kenya

Covid-19 has significantly impacted the East African fashion sector in both positive and negative ways. Supply chains for imported products (finished garments and textiles)

were badly disrupted, which provided an opportunity for local designers and manufacturers to showcase their brands and products. Like in every other part of the world, we also saw the inevitable shift towards e-commerce, as access to physical stores became more challenging. Hundreds of thousands (if not millions) of people started using apps and websites to order things as basic as groceries and medicines. In many ways Kenya has been fortunate in this regard as we have a very high penetration of mobile phone networks and the majority of the population is connected to the internet.

However, e-commerce in the fashion space still has unique challenges. According to our research, when it comes to making fashion purchases online, a key issue is trust, and currently the degree of scepticism is high. The main concerns are “Will I actually receive what I see in the images?” or “What happens if it doesn’t fit me and I need to return it? Will I really get my money back?” and “How do I know that the products being sold are genuine and not fake?” So, for any fashion brand to succeed in the online space, these need to be addressed. Our focus should be on doing whatever it takes to assure our customers that we are trustworthy. Incentives such as store pick-up options or allowing for cash on delivery are more valued here than they might be in other parts of the world, and it may take time before people are willing to pay for something before they have received it. We have also found that people value rapid delivery and are willing to pay a premium if they can receive their purchase in 1-2 days.

This is where the importance of growing brands comes in. People may like certain products, but they form relationships and opinions around brands. What quality and price point do they ascribe to the brand? What level of customer service do they expect from it? Is this a brand they can trust? There are strong local brands in banking, technology, food & beverages, hospitality, etc. but when it comes to fashion in the region, it is a different story. We are still at the very early stages of building local fashion brands that will hopefully become household names in the future. E-commerce brands require support and capacity building in building and continuously upgrading their websites so as to best showcase products for online customers; making better use of data and statistics; understanding effective SEO (search engine optimization) management and digital marketing; and in generally improving overall customer experience. The Kenyan Fashion Council has a huge part to play in this regard, and is actively supporting its members in their growth.

This is also where online marketplaces such as Shop Zetu that are dedicated to the promotion of brands come in. Instead of having to visit hundreds of individual websites or social media pages, one can come to a single platform and easily modify their search to find exactly what they are looking for, purchase products from multiple brands in a single order, pay once, and receive all items at once. Platforms such as Shop Zetu will also help promote smaller brands that may not have built sufficient following, or do not have the marketing budget to drive new traffic to their pages. Shop Zetu is still in its infancy, but we are growing rapidly and onboarding new brands every week. We are also working to build strong partnerships not only with the brands that we carry, but with actors across the entire value chain as well, which includes suppliers of material, influencers, the media, government and many others.

What is equally exciting is the work we are currently doing to bring Uhuru Market, which is an informal physical market made up of hundreds of small fashion and textile traders, online. By consolidating their products under one umbrella and creating a central coordination structure for content creation, order fulfilment and logistics, we are helping to digitally connect these micro entrepreneurs and their products to the rest of the country. It will be a win-win situation for the traders, customers and the government as well, as the revenues generated from the online sales can be formally taxed.

Despite the challenges that Covid-19 brought us, there has definitely been some positive impact, and the fashion industry was no exception. We are ready and willing to step up to the challenges ahead of us. And we have learned that partnerships, both local and international, are critical in moving forward. There is no reason to reinvent the wheel when we can learn from other regions, especially on technology and e-commerce support strategies. Besides the more developed parts of the world, there are countries in Asia and Latin America that have strong e-commerce support ecosystems despite similar challenges around last mile delivery and brand creation that are great examples for us to study.



# Green energy in the textile industry: The case of Tamil Nadu, India



**B. Lakshminarayana,**  
Executive Committee  
Member, Southern India  
Mills Association Cotton  
Development and  
Research Association  
(SIMA CD&RA), India

Green energy has been a key area of discussion in several countries for the past three decades. Predominantly, it was the governments that invested in establishing the infrastructure for green energy and in distributing the power. However, with lofty investment outlays and fluctuating budgetary priorities, the development of green energy was put on the back burner in many countries. The state of Tamil Nadu in India formulated a model in the late 1990s, which saw the active participation of manufacturers in the investments to finance the move towards green energy and thus partially shifted the investment burden from the government to the industry.

Tamil Nadu currently contributes more than 35% of spinning capacity in India. In the 1990s, the state's contribution was more than 40%. Power is a major cost for the industry, representing typically 10%–13% of sales for a spinning mill. As India opened up its economy in 1991, the high power costs were a veritable threat to the long-term survival of the industry in the face of foreign competition. Moreover, power was almost entirely procured from conventional sources, while renewable energy sources like wind promised a significant reduction in costs. Wind energy and the allied technology, though nascent, was beginning to be seen as a viable alternative, and Tamil Nadu had some of the country's most promising wind sites. Thus, in 1996, the Southern India Mills Association (SIMA) took the initiative and discussed the opportunity of generating wind power with the Tamil Nadu State Government. The state government put together an attractive investment model for the industries that were committed to set up wind mills, route the energy produced through established networks and consume it in their factories. The following are the salient features of the 1990s' investment model that exists to this day:

1. Green energy zones were identified by the government for producing wind energy and wind farms were created in five clusters.
2. The investor could buy land in these zones and use it to install wind mills as part of their own capital investment.
3. The government then generated power from these wind farms and distributed it.
4. The units generated from each wind mill was credited into the investor's account and deducted according to usage.
5. The investor paid the government "wheeling charges" for the transmission and distribution of power.
6. The investors could claim 100% depreciation in the first year post-investment as an incentive given by the Government of India for the investment in green energy.
7. Soft loans were also provided to encourage investment by the firms.

## MERITS OF THE ABOVE POLICY FOR THE GOVERNMENT:

1. Investment for the capital equipment is zero, thereby reducing fiscal pressures on the government budget.
2. Investors tend to stay invested longer, as their cost of power normally flattens as they recoup the investment expenditure after the initial 5–7 years post-investment.
3. This model could also be exploited to attract potential investors from industries beyond textiles that have power-intensive production functions, like foundries and steel mills, etc.
4. Looping in more investors translates to more job creation without active investment by the government.
5. From an environmental standpoint, 1 MW of green energy reduces annual CO<sub>2</sub> emissions by approximately 2,000 tons, thereby reducing greenhouse emissions, while achieving better energy security.

Wind energy can be profitably and efficiently tapped only during 5–6 months in a typical year in Tamil Nadu. The power generated during these active months could be banked for future use by the factories, based on unit credits. The above model worked very well for the investor in Tamil Nadu due to this "banking of power", which

ensured a steady, year-round supply of energy. From 2018, the power banking facilities were terminated in favour of facilities to forecast power needs and consume the power generated immediately, in order to improve grid functioning. Power costs, which are usually 8.5–9 cents per unit, can be brought down to 3 cents per unit if it is generated via wind energy, entailing enormous cost savings for power-intensive industries. Moreover, the central government policy that allowed investors to claim 100% depreciation on the back of their capital expenditure for installing windmills ran for the initial five years after the roll-out of the model and was a significant factor towards its success.

Evacuation infrastructure and the availability of sites with the ideal wind speed are other physical factors that contributed to the model's success. The wind speed needs to be optimal to efficiently produce electricity, but also preserve the blade quality for a long period of time. Similarly, without an effective evacuation infrastructure, much of the power generated in the wind-rich months cannot be used during the rest of the year. Private investors from all over the country have invested approximately \$6 billion to reach an installed capacity 10,000 MW of wind energy as of 2019 in Tamil Nadu, a huge increase from the 200 MW generated in 1996. The reduced power costs have motivated investors to expand their business and, perhaps more importantly, allowed smaller firms to remain financially viable. A system of

“group captive usage” enables smaller firms to buy a stake in the wind power generation facilities of a larger firm and use the energy. This ensures that firm size is not a prohibitive factor in setting up wind power facilities for industrial usage.

As this model has shown, a key recipe for success is concerted investments made by both the public and private sectors. The state government in Tamil Nadu provided the evacuation infrastructure for routing the power generated, which otherwise would have been a challenge for private investors to undertake efficiently. Similarly, the central government schemes of allowing 100% depreciation claims on the investment cost and the availability of soft loans acted as a catalyst for the expansion of the model, allowing mills of all sizes to invest in generating wind power. On the other hand, private investment was channelled towards buying land and erecting the windmills as part of their capital expenditure, which averted fiscal pressures on the public budget.

Going forward, to optimize land usage with newer, more efficient windmills that take up a larger acreage, SIMA has proposed the installation of solar panels on the ground, thus creating hybrid green energy zones. Rooftop solar power generation is already growing in popularity across the state and, in coming years, it will represent an even higher percentage of industrial power supply.



ITC SITA

# Opportunity in a crisis – the impact of the Covid-19 pandemic

With the advent of the Covid-19 pandemic, the textile and apparel sector was one of the worst affected worldwide, with above two-thirds of manufacturers across the globe reporting declining revenues and 77% reporting a reduction in active labour or number of worker shifts<sup>5</sup>. Much like in the rest of the world, the crisis hit the sector in East Africa on both the demand and supply sides. A liquidity crunch and job loss precipitated by the lockdowns, together with supply chain disruptions starting with industrial shutdown in China and other fabric exporting countries contributed to a supply shock of unprecedented proportions. At the same time, retail sales, including in the export destination, plummeted due to the lockdowns dampening demand across the globe. Several international brands and retailers in the sector have cancelled orders, and deferred or renegotiated payment contracts, leading to a dearth of working capital among manufacturers and layoffs across the industry. MSINGI surveyed 35 textile and apparel manufacturers in Kenya, Rwanda, Tanzania and Uganda and found that as a result of the lockdowns between March and June 2020, 28% of the respondents had shut down operations while 29% had scaled down; another 20% of the respondents were able to shift to producing personal protective equipment (PPEs)<sup>6</sup>.

Household income is expected to fall in East African countries as a direct result of the pandemic induced economic lockdowns. A World Bank survey in June 2020 had 55% of the respondents (households) report a reduction in earnings in Ethiopia<sup>7</sup>; the corresponding figure being as high as 87% in Uganda<sup>8</sup>. A survey conducted by the Boston Consulting Group in Kenya in May 2020 found 93% of the respondents reporting a drop in household income<sup>9</sup>. Among discretionary expenditure, clothing items took the largest hit with about 60-70% of the respondents declaring a drop in spending on apparel in the next six months. Reduced household earnings can potentially decelerate recovery in the sector by dampening domestic demand.

According to a survey conducted by the ITMF on 216 textile and apparel manufacturers across the world in April 2020, respondents in Africa forecast a reduction

in turnover by over 40% between 2019 and 2020<sup>10</sup>. Successive iterations of the survey have seen African manufacturers be progressively more optimistic with a less than 10% projected reduction in turnover reported in September 2020. As of June 2020, African manufacturers suffered a reduction of about 42% in orders, the same as the worldwide average. While global recovery in the textile industry's turnover is expected to materialize only in 2022, African respondents were positive on experiencing a growth in turnover starting in 2021.

## ETHIOPIA

In-depth interviews undertaken by ITC's Supporting Indian Trade and Investment for Africa (SITA) project among eight manufacturers in the Ethiopian textile and apparel sector in June 2020 indicated shortage of raw materials, spare parts and accessories, and increased production cost arising out of a rise in freight charges as the main challenges. These manufacturers represented Ethiopian companies and were not based in the industrial parks. As employee layoffs were prohibited by government decree, manufacturers chose to operate at 30% capacity, while some of the respondents experienced a drop in sales by as much as 70%. In order to ride the crisis, manufacturers considered the following alternatives:

- Adding new production lines for faces mask, medical uniforms, bed sheets and medical supplies;
- Improving production technology to stay competitive during and/or after the pandemic;
- Searching for alternative markets (such as China);
- Product diversification (from fashion based to basic textile/apparel products);
- Negotiating with financiers to restructure or reschedule previous loans;
- Extending forward linkages by processing by-products (of ginnery plants).

5.– <https://cdn.sedex.com/wp-content/uploads/2020/05/Sedex-Insights-Report-Covid-19-Impacts-on-Businesses.pdf>

6.– <https://www.msingi.com/wp-content/uploads/2020/06/MSINGI-East-Africa-Survey-Report-of-the-Impact-of-Covid-19-on-the-Textiles-and-Apparel-Industry.pdf>

7.– <https://microdata.worldbank.org/index.php/catalog/3716/related-materials>

8.– <https://microdata.worldbank.org/index.php/catalog/3716/related-materials>

9.– <https://media-publications.bcg.com/East-Africa-Rebound.pdf>

10.– ITMF Corona Survey, multiple rounds <https://www.itmf.org/covid-19>

However, the respondents also reported on the need for support from the government on access to finance for technology upgradation, facilitating the logistics for importing raw materials, finding new markets, and in providing technical capacity to manufacturers on shifting to production of healthcare products relevant during the pandemic.

An ILO survey among 433 workers in the textile industry conducted between March and April 2020 in Ethiopia revealed that 59% experienced decreased earnings due to the crisis<sup>11</sup>. While this figure was 39% for workers in locally owned factories, for FDI factories producing for export, it was 63%. Furthermore, 10% of the workers had been terminated, 7% had their contracts suspended while another 8% were sent on leave; 44% of the respondents were using their savings to cover for daily expenses.

## KENYA

According to a survey by Kenya Association of Manufacturers, 87% of domestic producers said that they were exposed to a shortage of raw materials owing to reduced supply from China, and 23% had downsized. In the textile and apparel sector, over 60% of the units had reduced their production capacity by 40%<sup>12</sup>. Out of the 52,000 workers in the textile and apparel sector, about 30-35,000 had been sent home on leave by May 2020. A Gatsby study estimated that as of early June 2020, 20,000 jobs had been lost in Kenya's EPZs<sup>13</sup>. The April-June 2020 lockdowns caused a monthly productivity loss of 25% in the textile sector, and a projected export loss of 5.2% annually<sup>14</sup>. These lockdowns and factory closures clearly had a negative effect on worker productivity in the sector and most anticipate a recovery in productivity levels starting in early 2021.

In the EAC region, Kenya is the major exporter as well as importer, accounting for about half of its total exports (46%) and 41% of imports<sup>15</sup>. Suspension of international trade and reduction in demand gravely affected Kenya's textile exports to the US. The American Apparel and Footwear Association (AAFA) predicts that US textiles and apparel sales could decline by 50% to \$200 billion in 2020, an observation with potentially serious implications for the Kenya textile and apparel

sector<sup>16</sup>. Several of the manufacturing units surveyed by MSINGI faced order cancellations and delays in payment, and had to scale down production, put workers on leave and let contractual workers go. However, the Textile Desk at the Ministry of Industrialization was optimistic by October 2020, as orders for EPZ based garment units were back to 70% of pre-Covid levels.

## RWANDA

The Ministry of Public Service and Labour estimates indicate that the unemployment rate increased from 13% in February 2020 to 22% in May 2020, as a result of the pandemic. Textile and apparel units surveyed in the MSINGI survey reported that all their employees were on leave during the lockdown in March 2020, with two-thirds being on paid and the rest on unpaid leave. According to UNECA estimates, the textile industry suffered a reduction in output of over 4% and reduction in exports of about 7%, due to the lockdown<sup>17</sup>. The Rwandan government however, retooled its passenger aircraft to transport cargo internationally during the pandemic. In May 2019, 18% of Rwandan exports were shipped via air, a figure that increased fourfold to reach 73% of all exports in May 2020.

## TANZANIA

Most of the manufacturing units that responded to the MSINGI survey were not particularly affected by the pandemic and a majority of the workers were not sent on leave. The Gatsby study mentioned earlier notes that Tanzania's cotton marketing season opened mid-June 2020, with a delay and a 32% lower farm-gate price than last season. Key challenges faced by manufacturers, based on discussions carried out by SITA in May 2020, were lower sales volumes, difficulty accessing inputs domestically as well as from abroad and employee layoffs. In some cases labour unions were able to negotiate paid leaves. Most manufacturing units switched to producing cloth masks, however in the absence of proper standards and guidelines, these masks were not compliant with sanitary requirements and hence could not be sold.

11.– ILO Survey Covid-19 and the garment and textile sector in Ethiopia: workers' perspectives on Covid-19 response [https://www.ilo.org/wcmsp5/groups/public/—africa/—ro-abidjan/—sro-addis\\_ababa/documents/publication/wcms\\_751045.pdf](https://www.ilo.org/wcmsp5/groups/public/—africa/—ro-abidjan/—sro-addis_ababa/documents/publication/wcms_751045.pdf)

12.– [https://kam.co.ke/kam/wp-content/uploads/2020/05/KPMG-KAM-Survey-The-impact-of-Covid-19-on-the-manufacturing-sector-in-Kenya\\_FINAL\\_19May2020-1.pdf](https://kam.co.ke/kam/wp-content/uploads/2020/05/KPMG-KAM-Survey-The-impact-of-Covid-19-on-the-manufacturing-sector-in-Kenya_FINAL_19May2020-1.pdf)

13.– <https://www.gatsby.org.uk/uploads/africa/latest/covid/covid-19-impact-and-response-gatsby-africa.pdf>

14.– [https://publications.jrc.ec.europa.eu/repository/bitstream/JRC121284/jrc\\_technical\\_report\\_-\\_covid-19\\_kenya\\_final.pdf](https://publications.jrc.ec.europa.eu/repository/bitstream/JRC121284/jrc_technical_report_-_covid-19_kenya_final.pdf)

15.– <https://www.uneca.org/stories/covid-19-remains-impediment-regional-trade-kenya-pushes-ahead>

16.– <https://www.kenyamarkets.org/covid-19-impact-in-east-africa-fortnightly-briefing-week-commencing-17th-august-2020/>

17.– <https://www.undp.org/content/dam/rba/docs/COVID-19-CO-Response/UNDP-rba-COVID-assessment-Rwanda.pdf>

## UGANDA

The Uganda Business Climate Index reveals that SMEs were much harder hit than large firms in the wake of the pandemic<sup>18</sup>. A majority of the micro and small firms foresee closure in case the lockdowns persist beyond three months, which is not the case for medium or large firms. 90% of the respondents reported an increase in costs arising out of the lockdowns. Other common issues faced by respondents across industries were reduced domestic demand, heightened difficulty in accessing raw materials and the threat of unemployment or permanent job loss, especially in the service sector. At the time of the MSINGI survey in Uganda between March and May 2020, two thirds of the workers in the industry were away on paid leave. Lack of working capital and cash flows, and difficulty in negotiating with banks on loan extensions were identified by one of the manufacturing units as key challenges.

According to the Cotton Development Organization (CDO), by the time Uganda announced the lockdown, the cotton marketing had been completed, and therefore there was hardly any direct impact on cotton farmers. Farmers had just sold their seed cotton to the ginneries and had been paid prior to the lockdown. However, the 2019/20 marketing season was affected by a drop in prices compared to the previous season. Approximately 95% of Uganda's lint cotton is exported, mainly to Asia making the cotton industry highly dependent on international market demand and international cotton prices. Between 30 December 2019 and 30 March 2020, global demand and market price for cotton declined sharply. Furthermore, in 2020/21, global cotton consumption is expected to fall by 6%<sup>19</sup>. World cotton prices for April 2020 are 30% less in comparison to those exactly one year ago<sup>20</sup>. This has severely impacted Ugandan ginners and cotton exporters, who are unable to sell their stocks. About 45% of their total production valuing around USD 19 Million was still in ginneries at in June whereas by April the export season is normally over. This also has an impact on the ability of ginners and exporters to contribute towards Uganda's Cotton Production Support Program. Under this program, ginners and exporters are responsible for availing key production inputs and extension services to farmers.

There is also the possibility that some farmers will focus on production of food crops instead of cotton given the high demand for food during the lockdown which has affected food reserves.

## THE ROLE OF EAST AFRICAN GOVERNMENTS

Governments in East Africa have to seize the opportunity brought forth by the disruption in the industry and build back stronger. The pandemic related breaks in supply chains have increased the importance of having robust regional supply chains and international buyers in the textile and apparel sector would want to explore new regions to integrate into their supply chains. Countries in East Africa have to position themselves strategically to benefit from this shift, and there needs to be a comprehensive roadmap with clearly defined targets on job creation, FDI, market expansion and exports for the next decade, and periodic evaluations against the pre-set targets. East African governments need also work together in strengthening regional value chains and decreasing the reliance on import of inputs. The AfCFTA is definitely a substantial step in the right direction, promising a ripe domestic market for manufacturers in the continent as well as robust regional supply chains reducing dependence on a small set of countries for exports and import of key raw material.

To build back better and stronger post-Covid-19, it is essential to nurture domestic initiatives which support local economies. The "Buy Uganda Build Uganda" and the "Buy Kenya Build Kenya" policies intend to further this goal by enhancing the competitiveness of local firms, stimulating local production and facilitating capacity building to strengthen the manufacturing sector. In particular, the Ugandan and Kenyan governments seek to foster the consumption of locally produced goods in domestic and international markets. Underlying this strategy is the assumption that once consumers give preference to local products, it would improve the competitiveness of local industries, foster their growth and lead to job and wealth creation. In Kenya, the policy has identified goods, such as masks, that are to be procured exclusively from local sources<sup>21</sup>. Furthermore, Kenya's procurement policy requires the government to spend at least 40% of their procurement budget for locally produced goods and

18.– <https://eprcug.org/research/the-uganda-business-climate-index>

19.– **USDA, April 2020**

20.– Trading Economies; data for 28 April 2019 vs 28 April 2020.

21.– <https://www.the-star.co.ke/business/kenya/2020-10-05-building-resilience-and-sustainability-of-manufacturing-sector/>

services.<sup>22</sup> In Uganda, the initiative has sought to reserve 50% of the shelf-space in supermarkets for local products<sup>23</sup>. As part of the post-Covid recovery in the East African textiles and apparel sector, boosting consumption of locally produced items could be a viable strategy for governments to adopt.

Technology upgradation is a relevant concern and governments must facilitate access to finance and technical capacities for manufacturers to upgrade their facilities. This is also an opportunity to build more vertically integrated textile mills in the continent and reduce the reliance on import of fabric from third countries. Several international buyers and export destination countries are increasing their commitment to environmental sustainability in the post-crisis paradigm; East

African countries can use this opportunity to incorporate environmental considerations firmly in their production technology, especially in waste and chemical management. Textile and apparel is an extremely competitive industry, and to attract international buyers and investors, East African countries must be committed to reducing energy costs. Investing in renewable energy is a viable alternative as it brings down production costs while contributing to the overall sustainability of the industry. In general, in order for governments to help manufacturers ride the wave of this crisis, there needs to be heightened public private partnership in access to finance, diversifying to new products and markets and in building technical capacity among workers in the textile and apparel sector.

22.– [http://www.cuts-geneva.org/pdf/BP-2018-%20Kenya-Buy\\_Kenya\\_Build\\_Kenya\\_and\\_Regional\\_Integration.pdf](http://www.cuts-geneva.org/pdf/BP-2018-%20Kenya-Buy_Kenya_Build_Kenya_and_Regional_Integration.pdf)

23.– <https://www.kas.de/documents/280229/8800435/Opportunities+Covid-19+Presents+for+Uganda's+Manufacturing+Sector.pdf/d2e36dc5-9f8a-a6b7-192e-990260984f00?t=1591617625169>



# CHAPTER 3.

## APPETITE FOR UPGRADATION – WHAT THE DATA REVEALS FOR THE REGION

This section presents the aggregated findings for 112 textile and garment units in Ethiopia, Kenya, Rwanda and Uganda, based on the survey. Data for Tanzania, sourced from a separate survey, could not be

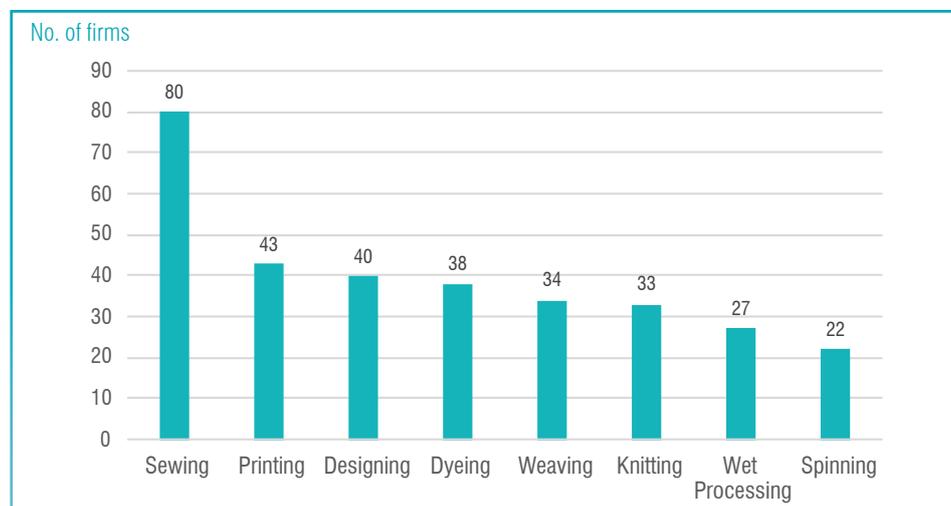
aggregated in order to preserve statistical consistency. Most of the findings have been expressed in absolute number of respondents, as not all questions were relevant for all respondents.

### Strong willingness – 84% of surveyed firms are willing to upgrade technology

Among the units surveyed, an overwhelming majority (84%) expressed a willingness to upgrade their machinery. Obsolete technology and machinery can potentially hinder efforts at developing backward linkages in a fragmented industry and make it difficult for manufacturers to comply with increasingly strict environmental

requirements from international buyers. Upgrading machinery will help ensure better quality and enhanced environmental compliance, and hence lead to higher competitiveness. The surveyed 112 units represent eight segments in the textile and apparel industry as shown in Figure 4.

**Figure 4:** Sewing was the most represented segment in the survey



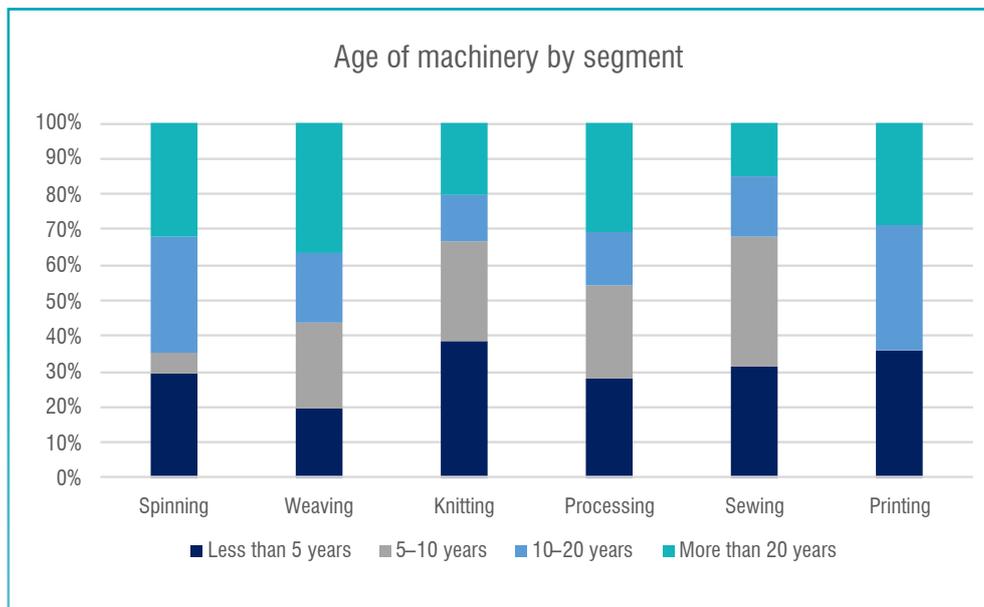
Source: SITA Survey, ITC 2019

## Ageing machines – spinning, printing and weaving segments have the oldest machinery

Age of machinery is a useful indicator in determining the need for technology upgradation and, as seen in Figure 5, in the spinning and weaving segments, more than 30% of the respondents have machinery older than 20 years. Spinning and printing segments also

have more than 60% of the respondents with machinery aged 10 years or more. On the other side of the spectrum, knitting and printing segments have more than 30% of the respondents who indicated having machinery less than five years old.

**Figure 5:** Spinning and weaving segments have large shares of machinery older than 20 years



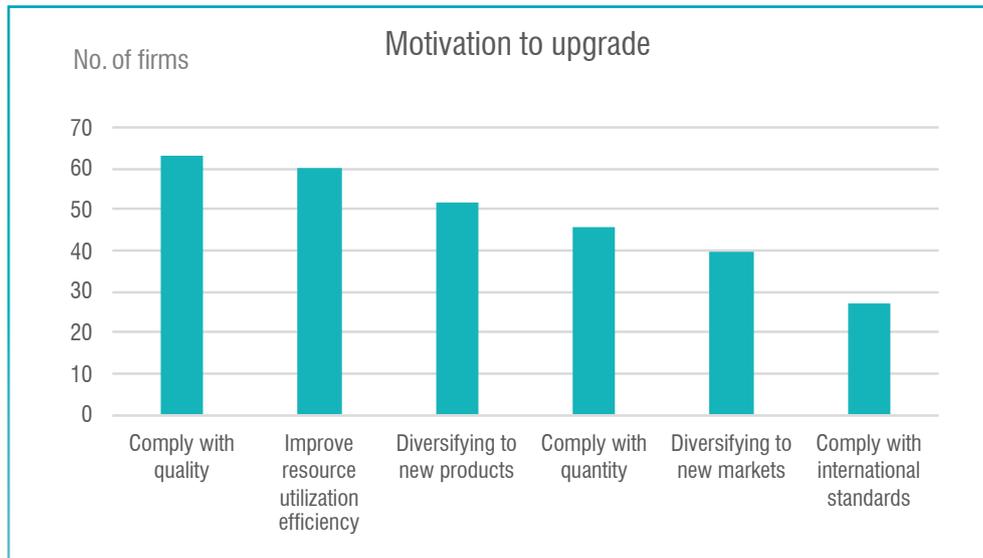
Source: SITA Survey in Ethiopia, ITC, 2019

## What motivates to upgrade – quality compliance and resource efficiency

The motivation for upgradation is varied, as demonstrated in Figure 6. Quality compliance features as the most common driver, followed by the motivation to achieve resource efficiency through technology upgradation, with more than 60 respondents indicating so. Compliance with international standards is the least common driver; nevertheless, it is significant. As discussed above, non-compliance of environmental

standards has a direct link with obsolete machinery, making it imperative to upgrade technology, keeping in mind the requisite standards. East African governments should take note of this link, sensitize manufacturers to its importance and support them to upgrade technology in order to better conform to international requirements.

**Figure 6:** Quality compliance and resource efficiency are key drivers of willingness to upgrade technology



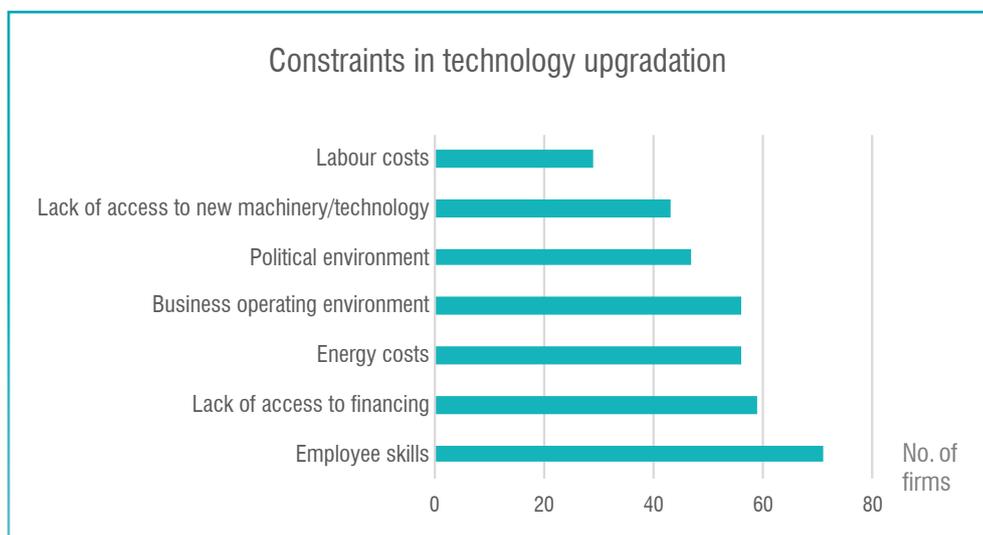
Source: SITA Survey in Ethiopia, ITC, 2019

## Key bottlenecks – lack of technical capacity and poor access to finance

However, myriad constraints thwart the efforts at technology upgradation in the region, as shown in Figure 7. Lack of appropriate skills among employees to undertake upgradation and leverage it for enhanced competitiveness features as the most common constraint in the region, among 71 respondents. Access to finance is

the next common constraint, followed by steep energy costs and the lack of an enabling business environment, all of which are faced by more than 50 respondents. Knowledge of these challenges is instrumental to designing the correct policy and incentives to catalyse technology upgradation.

**Figure 7:** Lack of employee capacity and inadequate access to finance constrain technology upgradation



Source: SITA Survey in Ethiopia, ITC, 2019

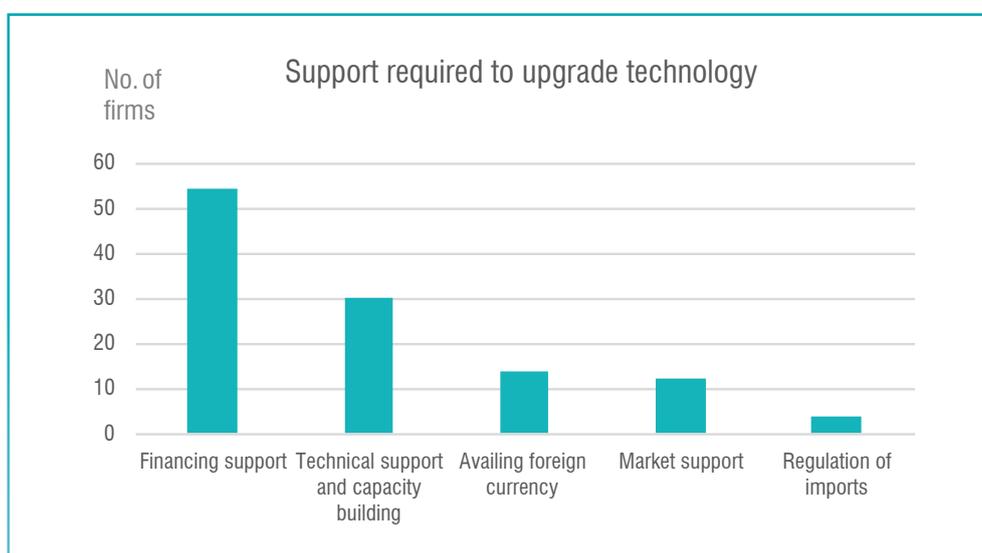
## Key areas for support – financing and capacity building

The survey also elicited responses from manufacturers in the region on the support required to undertake technology upgradation. As shown in Figure 8, more than 50 respondents expressed the need for financing support, while approximately 30 indicated the need for technical support and capacity-building exercises. This mirrors the findings of the factors that constrain

technology upgradation and provides a starting point for policy design.

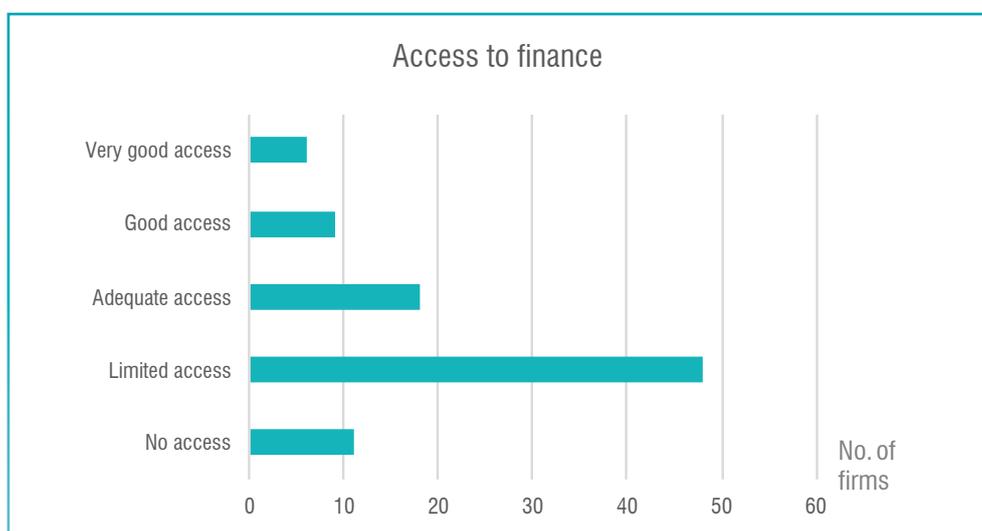
The lack of access to finance was echoed through another dimension – Figure 9 demonstrates that approximately 60 of the respondents perceive the current access to finance as limited or non-existent.

**Figure 8:** Financing support is the most common requirement, followed by technical support, to enable technology upgradation in the textile industry



Source: SITA Survey in Ethiopia, ITC, 2019

**Figure 9:** The majority of respondents perceive access to finance to be limited or non-existent



Source: SITA Survey in Ethiopia, ITC, 2019

## Common themes across countries and stakeholders

- Most textiles and apparel sectors in this report are at a crossroads. Some countries such as Kenya have capitalized on investments since 2000 to take advantage of AGOA and have managed to become leading exporters of apparel to the USA, while others such as Ethiopia have entered the scene in recent years and become emerging sourcing locations.
- Still, all of these countries have fragmented and incomplete value chains, whereby apparel production is largely based on CMT and textiles production largely supplies local markets. This paradigm has stunted backward integration and necessary investments in the critical textiles subsector. Financial and capacity constraints have begun to place strains on the sector, while the global industry continues to rapidly evolve.
- Facing these realities, uncertainty in the operating environments has led to some hesitation by companies to undertake much needed upgradation in technology. Yet machine upgradation is recognized as essential for the sector in East Africa to survive and grow. Business as usual will not be sufficient to meet the demands of the new dynamics within the industry.
- Service provision and technology maintenance issues are critical. Currently, very few service providers are located in the region. Hence, maintenance around issues must often be handled remotely or, for more involved issues, technical expertise must be brought in from abroad.
- There is a shortage of skilled labour, especially in mechanical and electrical aspects; capacity in this area lags behind countries such as India and Bangladesh.
- That said, the textiles and apparel sector in East Africa is ripe for investment and modernization. Companies in the region largely have a positive outlook on the sector and believe that it will continue to evolve through expansion, upgradation and new entrants in the market.
- While many companies within the textiles and apparel sector believe that their access to information on available and up-to-date technologies is very good, a fair amount also feel that their access to such information is limited. Many use online resources to identify trends and latest technologies within the sector. Others use technologies that are identified by their corporate headquarters (in the case of foreign investors). Finally, some attend networking events and trade shows catering to textiles and apparel machinery and technology. These latter avenues are an important resource for factories in the region to identify the right machine suppliers –ones that are able to supply the proper mix of cost and efficiency.
- The motivation on the part of individual factories to innovate and invest in new technologies is strong. Companies are seeking technologies that will help them penetrate new markets, expand to new product offerings, achieve efficiencies, cut operating costs, meet demanding buyer specifications, and help them operate in a more sustainable and environmentally friendly way.
- Suppliers of technologies that meet the unique needs of the textiles and apparel value chain in East Africa will find good opportunities and an industry ready to use technology to grow the sector.

## Key areas for technology upgradation

- While this report has identified specific areas for technology upgradation across the value chain, it is clear that the greatest overall need is in the textile subsector. The need for greater local capacity in fabric production is apparent.
- Needs also appear greatest among apparel companies that are located outside of export processing zones, ones that are primarily targeting domestic and regional markets and that often have local ownership.
- However, there is strong demand across the value chain and in all of the countries surveyed.

## Perceptions of Indian technology and interest in sourcing from India

- It is difficult to define perceptions across a wide area of countries and companies, but, in general, India is seen as a viable and interesting sourcing option.
- Indeed, a large number of companies in this survey expressed a desire to consider importation of technology from India or are actively seeking to source machinery from India.
- Generally speaking, India is regarded as a good option for machinery that, in some cases, is perhaps less advanced than European technologies, and accordingly priced lower, but better in quality to Chinese machinery.
- Needs also vary within the value chain, with weightings more skewed towards spinning, weaving and knitting machinery, but also some areas of finishing.
- Overall, companies are interested in learning more about technologies on offer from India that might provide unique solutions.



# CHAPTER 4. DIVING DEEPER – CHALLENGES AND OPPORTUNITIES AT THE NATIONAL LEVEL

## SURVEY SCOPE AND PROCESS

This report is based on findings from face-to-face interviews with East African textile and apparel manufacturing companies. There are approximately 193 operational companies across Ethiopia (110), Kenya (70), Rwanda (2), Tanzania (9) and Uganda (2). One hundred and twelve companies in Ethiopia, Kenya, Rwanda and Uganda were interviewed and visited for this report, using a standardized questionnaire to ascertain capacity utilization, the usage and extent of upgraded technology in the production process, and main motivations and hindrances to upgradation. For Tanzania, secondary data was used (see below).

The survey focused on textiles and apparel companies that are located outside export processing zones, primarily targeting domestic and regional markets and often having local ownership – with the assumption that these companies have the highest demand for upgrading technology. The survey also covered textile and garment companies with international ownership, based in export processing zones and targeting international markets.

Other stakeholders, including governmental agencies, development partners, sector associations, textile engineering companies and buyers were interviewed to ascertain their views on challenges and opportunities in the sector in each of the countries, with a particular view to the role that technology plays in the sector's overall competitiveness.

All interviews were conducted from August to October 2019.

## SURVEY IMPLEMENTATION IN ETHIOPIA

For Ethiopia, a registry of all textile and garment manufacturing companies was compiled using different sources, and with the support from the Ethiopian Investment Commission (EIC) and the Ethiopian Textile Industry Development Institute (ETIDI). According to ETIDI, there are currently 110 active textile and garment manufacturing companies in Ethiopia, including 37 textile companies, 59 garment companies and 14 integrated mills. For this report, 66 companies were interviewed. Most of the interviewed companies have more than one production unit. Thirty-nine textile companies with main activities ranging from spinning to printing have been interviewed. Of the interviewed companies, 45 have a sewing operation unit in addition to other processing units, while 19 companies are fully dedicated to garmenting. The majority of the interviewed companies (42%) operate in the Oromia region, followed by Addis Ababa (36%). The remaining companies are based in Tigray (11%), Southern Nations, Nationalities and People's Region (8%) and Amhara (3%).

## SURVEY IMPLEMENTATION IN KENYA

For Kenya, a registry of all textile and garment manufacturing companies was prepared in collaboration with the Kenya Association of Manufacturers (KAM). KAM also supported the preparation of the sample. In total, there are approximately 70 active textile and apparel manufacturing companies in Kenya, of which 38 were interviewed in preparation of this report. Those interviewed included 15 textile companies; 14 apparel

companies producing for local and regional markets; and 6 apparel companies based in export processing zones (EPZs).

## TANZANIA – COLLABORATION WITH OTHER DEVELOPMENT PROJECTS

In Tanzania, there are currently nine operating textile and apparel manufacturing companies, while nine other companies are non-operational. Primary surveys were not conducted for Tanzania, to avoid replication of two similar surveys that were implemented in 2018 and 2019 by other development projects. The information used in this report is based on the findings and results from these two surveys. In 2018, the Annual Textile and Garment Factory Survey was conducted; and a report was prepared in 2019 by the Textile Development Unit (TDU), a specialist, independently funded programme within Tanzania's

Ministry of Industry, Trade and Investment. In 2019, the Institute of Development Studies (IDS) conducted a survey of Tanzanian cotton-to-clothing companies on behalf of the International Growth Centre (IGC), which is funded by the United Kingdom's Department for International Development (DFID). In the spirit of creating value for money, IGC, through IDS, agreed to incorporate feedback and a few additional questions into their survey structure, and to share key findings and the anonymized survey data with SITA.

## INTERVIEWS IN RWANDA AND UGANDA

In both Rwanda and Uganda, there are currently two active textile and garment manufacturing companies operating in each country. All four units have been interviewed, complemented by interviews with other value chain stakeholders. To maintain confidentiality of the companies, findings have been combined for both countries.



# Ethiopia

## CREATION OF TEXTILE INDUSTRIAL PARKS TO ATTRACT FOREIGN INVESTMENT

Ethiopia has positioned itself to become a major player in textiles and apparel production. The government has proactively courted foreign investment, established numerous industrial parks, and benefitted from the entry of several prominent investors who have set up operations to capitalize on plug and play infrastructure and low operating costs. Labour costs in Ethiopia – which average \$65 per month – are among the lowest of any apparel-producing nation, and certainly the lowest in Africa. Energy costs, too, at approximately three cents/kw, are among the lowest in Africa.

The Hawassa Industrial Park, which was established through the vision of PVH Corp. is currently fully leased and employs approximately 25,000 workers.<sup>24</sup> Hawassa and the other industrial zones are at the centre of the government's strategy to firmly establish Ethiopia as a production hub for apparel. The results can be seen in the growth trajectory of Ethiopia's apparel exports, particularly to the United States under AGOA during the past several years. In 2019, Ethiopia's apparel exports to the United States were about \$217 million – in comparison to approximately \$13 million in 2014.<sup>25</sup> If the growth trend continues, it is anticipated that Ethiopia could rank among the top apparel exporters in Sub-Saharan Africa to the United States.

The government's objective is also to attract textiles investors that set up their own mills linked to the structures of industrial parks. For instance, there is already dedicated land in Kombolcha for this. There has, however, been limited success to date.

## RECENT TRENDS

Brand-owners have established sourcing offices in Ethiopia and are increasingly sourcing apparel, footwear and fashion accessories, from Ethiopia. Brands with global footprints are also encouraging investors within their supply chains to establish operations in East Africa. Several such companies have invested in Ethiopia, mostly within the industrial parks.

As noted, Ethiopian apparel exports to the United States have experienced impressive growth rates in recent years. Just five years ago, apparel exports were negligible.

## TEXTILE TECHNOLOGY – NEED FOR UPGRADING

Most technology used within the sector is imported and has varying levels of age. Textile machinery, in particular in the spinning segment, tends to be relatively old and requires upgrading. Companies are interested in upgrading their technologies to replace older equipment unable to produce the level of quality needed for export markets. This highlights the demand and, therefore, potential for the supply of new technologies. As different buyers have come to Ethiopia in recent years seeking new products, factories are also seeking to invest in new technologies in finishing, printing and dyeing to expand their product offerings.

## GROWING NUMBER OF COMPANIES WITH PREDOMINATELY FOREIGN OWNERSHIP

The number of companies in the sector has been growing rapidly. There are currently 110 companies operating in the textiles and apparel sector in Ethiopia according to the Ethiopian Textile Industry Development Institute (ETIDI). These are broken down as follows: apparel (59 companies), textiles (37 companies) and integrated textiles mills with sewing units (14 companies).

The majority of the 66 interviewed companies are foreign owned – more than 72% of the garment companies and 54% of the textile companies are owned by foreign investors. Perhaps not surprisingly given the government's push to attract foreign investment, the trend shows that the share of foreign companies has been growing fast, with the growth of local companies declining. Indeed, a significant number of companies have entered the sector in the past few years, particularly in the industrial parks. For instance, of the 66 companies interviewed, eight companies were established since 2017. The age structure of the companies based on their year of establishment is presented in Figure 10.

24.– Ethiopian Textiles Industry Development Institute.

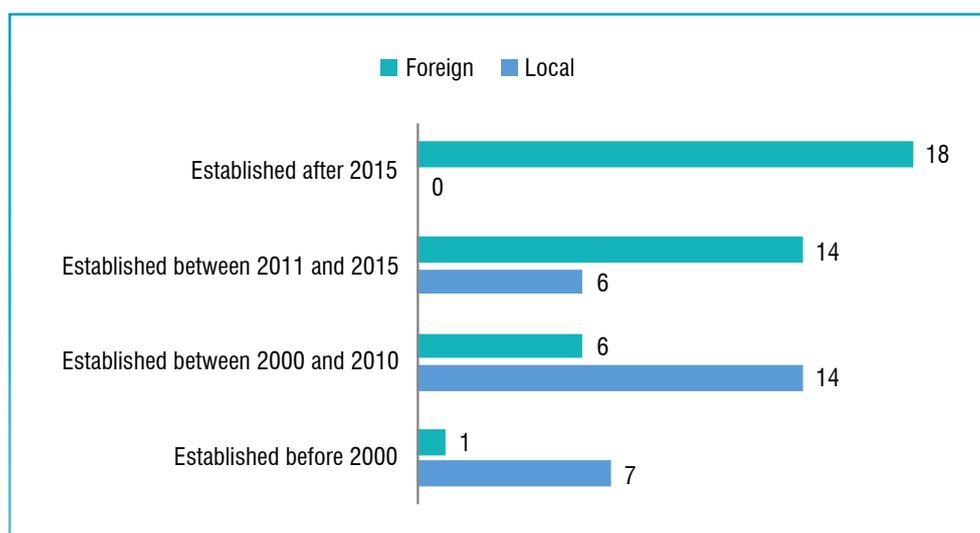
25.– Trademap, International Trade Centre, 2020.

## SIXTY-SEVEN PER CENT OF INTERVIEWED COMPANIES ARE EXPORTING, PREDOMINANTLY TO NORTH AMERICA

Sixty-seven per cent of the interviewed companies are currently exporting and a further 7% have plans to

export. Almost all garment companies are exporting, while only 56% of the textile companies are exporting. The top export destinations include: North America (United States and Canada), Europe, Africa and Asia (Table 7). Approximately 40% of the companies interviewed export to North America, while 34% export to Europe and approximately 15% trade regionally.

**Figure 10:** Distribution of companies by year of establishment and ownership



Source: SITA Survey in Ethiopia, ITC, 2019.

**Table 7:** Export destinations of interviewed companies

Export destination	Export destination by number of companies (several responses possible)	Export destination by % of companies
North America	34	39.53%
Europe	29	33.72%
Africa	13	15.12%
Asia	7	8.14%
Arab State	1	1.16%
Latin America	2	2.33%
Total	86	100%

Source: SITA Survey in Ethiopia, ITC, 2019.

## MAJORITY OF COMPANIES COVER SEVERAL MANUFACTURING SEGMENTS ACROSS THE VALUE CHAIN

Most Ethiopian companies span manufacturing segments across the textiles and apparel value chain (Table 8). Approximately 68% of interviewed companies

have a sewing operation as a unit, while approximately 42% of them are stand-alone garment manufacturing factories. Three of the interviewed companies are stand-alone spinning factories, representing 23.1% of all spinning units. The majority of weaving, knitting and finishing units exist in integrated mills. In sum, there are 39 textile companies (with their main activities covering spinning to printing) and 22 garment companies (sewing as the only activity or sewing combined with designing).

**Table 8: Distribution of production units across the value chain**

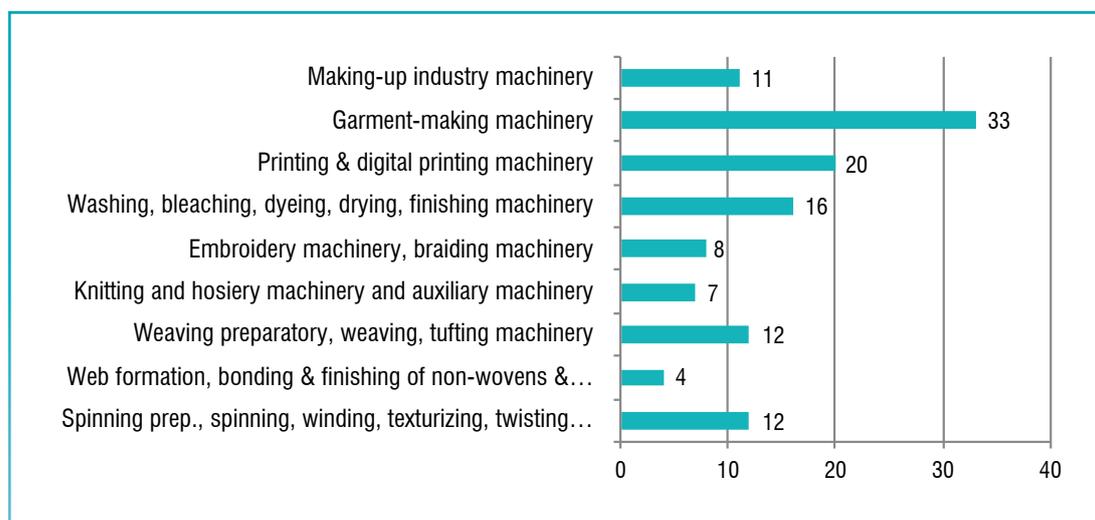
Production unit	Stand-alone factory		Unit exists in integrated mill		Total nr of units	
	Nr	%	Nr	%	Nr	% of all companies
Spinning	3	23.10%	10	76.9%	13	19.7%
Weaving	2	10%	18	90%	20	30.3%
Knitting	1	6.3%	15	93.8%	16	24.2%
Wet processing	0	0%	12	100%	12	18.2%
Dyeing	1	4.8%	20	95.2%	21	31.8%
Printing	0	0%	20	100%	20	30.3%
Sewing	19	42.2%	26	57.8%	45	68.2%
Designing	0	0%	16	100%	16	24.2%
Coating	1	100%	0	0%	1	1.5%
Labelling	0	0%	1	100%	1	1.5%
Other	4	66.7%	2	33.3%	6	9.1%

Source: SITA Survey in Ethiopia, ITC, 2019.

## EIGHTY PER CENT OF COMPANIES ARE INTERESTED IN UPGRADING TECHNOLOGY

The majority of the companies (more than 80%) have an interest for technology upgradation. Thirty-three companies (half of the companies surveyed) are

interested in upgrading their garment-making machinery and related auxiliary machines (Figure 11). Twenty companies have shown an interest to upgrade printing, while 16 companies are interested in upgrading their washing, bleaching, dyeing and finishing technologies. There is no appreciable difference between local and foreign companies in terms of their interest to upgrade their respective technologies, except in garment making.

**Figure 11: Type of machinery that companies are interested in upgrading**

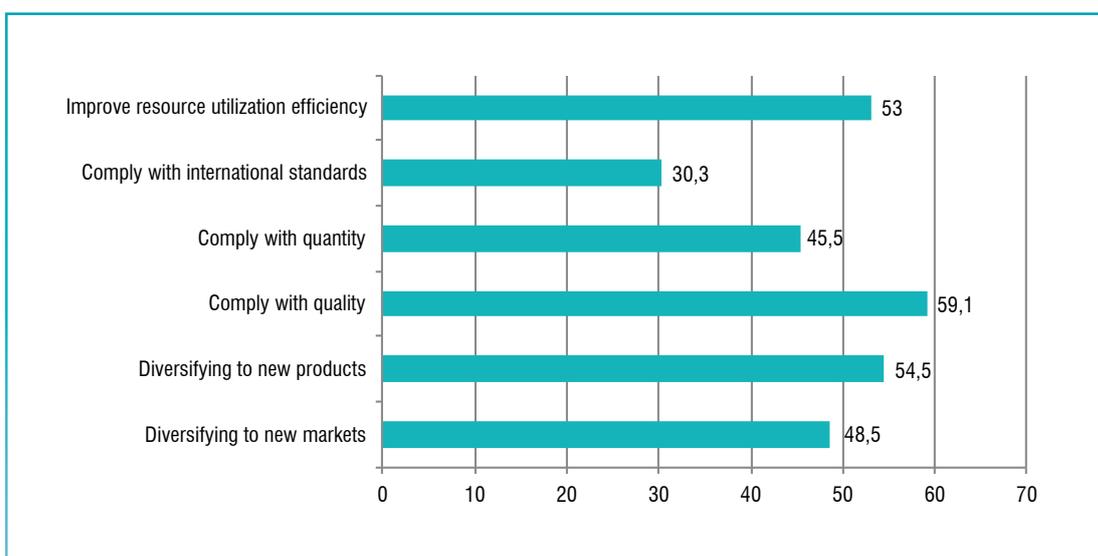
Source: SITA Survey in Ethiopia, ITC, 2019.

## COMPANIES' KEY MOTIVATIONS FOR UPGRADING THEIR TECHNOLOGY

Companies' key motivations for upgrading their technology include: to comply with quality requirements, diversify into new products, improve resource efficiency, diversify destination markets, comply with requirements

of scale, and international standards (Figure 12). Local companies' key motivations to upgrade are to comply with quality requirements, diversify products and destination markets. In the case of foreign companies, it is improving resource utilization followed by compliance with quality requirements. The key motivations foreign-owned textile companies are largely in line with those of local companies, while the motivations are similarly aligned for garmenting companies.

**Figure 12:** Key company motivation to upgrade technology (percentage)



Source: SITA Survey in Ethiopia, ITC, 2019.

## CHALLENGES WITHIN THE OPERATING ENVIRONMENT

Ethiopia's government has been successful in attracting new foreign investment in the sector. However, the country still faces numerous challenges. Indeed, there are significant challenges within the operating environment that impede capacity utilization. Chief among these are a lack or shortage of raw materials and the absence of an eco-system for inputs and consumables, power disruptions and lack of access to foreign currency to finance operations. In inquiring why companies are operating at sub-optimal capacity, technology related constraints are rarely raised. This does not mean, however, that companies have no interest in upgrading their technology.

## CHALLENGES ASSOCIATED WITH TECHNOLOGY UPGRADATION

While the majority of companies have an interest in technology upgradation, there are challenges directly associated with said interest that act as obstacles to full capacity utilization. There are two main challenges in relation to technology upgradation: the lack of access to finance and the lack of access to foreign currency. Lack of awareness of available technologies and access to technologies are also significant hurdles.

*We don't see the expected benefits from the government per the sector strategy. We are exempted from tax on imports, but first you need the foreign exchange, which is not forthcoming. The problem now is all control is with the government.*

General Manager of a locally owned and integrated textile factory

Many companies highlighted lack of access to foreign currency as a critical hindrance. In Ethiopia, retention accounts are used whereby, in one account, 30% of foreign exchange earnings can be used and is constant, while in another account, 70% of the earnings revert to Ethiopian birr after 28 days. This severely limits a company's ability to do long-term planning for investment purposes and use foreign exchange to purchase inputs.

One company noted: 'We don't see the expected benefits from the government per the sector strategy. We are exempted from tax on imports, but first you need the foreign exchange, which is not forthcoming. The problem now is all control is with the government.' The inability to retain and use export earnings is seriously restricting companies' ability to reinvest in technology upgradation. Relaxation of foreign exchange controls, many companies noted, is a critical variable to enable importation of new technology.

## OUTLOOK FOR SECTOR: DOES TECHNOLOGY PLAY A ROLE?

The textiles and apparel sector is evolving rapidly, with adaptive capacity and speed to market becoming increasingly important to satisfy customer demands. Technology can help to bridge this divide. All of the companies in this survey recognized the importance of technology in the competitiveness of their businesses. Indeed, to remain competitive means updating technology frequently.

Table 9 is a cross tabulation of the difference between what technology the firms currently use and up-to-date technology available in the global market, as well as a firm's willingness to upgrade its technology.

Approximately 20% of the companies claimed that there is a "very high" difference in the technology they already have and the technology available in the market. Importantly, all of these companies are willing to upgrade. Fifty-eight point five per cent of the companies claimed that there is "some difference" between the technologies they use and what is globally available, but only half of them are willing to upgrade. Regardless of the difference in their installed technology relative to what is available, 85% have a willingness and interest to upgrade.

Approximately 27% of garment companies claimed their technology difference is very high, while only 15% of textile companies claimed the difference is very high. All but one company claimed existence of at least some difference between the technology they currently have and what is available globally. For approximately 34% of foreign companies, there is no difference in the technology they have relative to the technology available in the global market.

These findings suggest that there is a lack of information as to what technologies are available from suppliers. The findings also demonstrate that, regardless of the knowledge of available technologies, the motivation to upgrade is high across the board.

Companies were asked about their outlook for their operations in country and how they might evolve in the next 5–10 years. The majority of the companies (approximately 88%) have a positive outlook and consequently plan to expand through new investment. Less than 8% of the companies noted that they planned to continue operating at their current capacity, while one company plans to reduce operations and another one plans to close and/or move to another market.

**Table 9: Technology difference perceived by Ethiopian companies**

Technology difference: What companies use versus available up-to-date technology		Interested to upgrade technology		Total
		Yes	No	
Very high difference	Nr of companies	13	0	13
	% of total	20%	0%	20%
Some difference	Nr of companies	33	5	38
	% of total	50.8%	7.7%	58.5%
No difference	Nr of companies	9	5	14
	% of total	13.8%	7.7%	21.5%
Total	Nr of companies	55	10	65
	% of total	84.6%	15.4%	100%

Source: SITA Survey in Ethiopia, ITC, 2019.

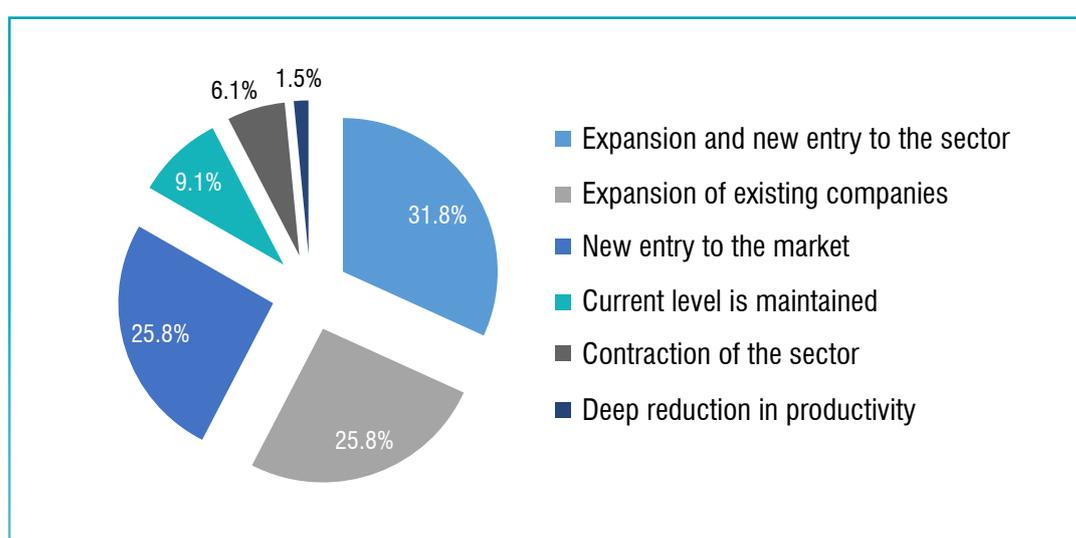
## EIGHTY-EIGHT PER CENT OF THE COMPANIES SAY NEW TECHNOLOGY IS VITAL

Companies were also asked about their outlook for the sector's potential within the country in the next 5–10 years. The majority expressed a positive outlook. Notably, the role of technology plays a significant factor in this outlook. Indeed, 88% of the companies said

that the use of new technology plays vital role in their positive outlook for the sector.

More than 80% of the companies believe that the sector will grow through new entrants into the market and expansion of existing companies (Figure 13). A small percentage have a negative outlook for the sector: less than 10% believe that the sector will remain at current levels and less than 8% believe there will be contraction and/or deep reductions in productivity.

**Figure 13:** Companies' outlook on the sector's potential in Ethiopia in the next 5–10 years



Source: SITA Survey in Ethiopia, ITC, 2019.

## TECHNOLOGY CONSIDERATIONS BY INDUSTRY SUBSECTOR

### Capacity utilization

The average capacity utilization by interviewed companies is approximately 59%. Of the 66 surveyed companies, 17 are operating below the average capacity utilization rate. There is no significant variation in capacity utilization between the garment and textile subsectors. There is similarly no observable difference in capacity utilization between local and foreign companies. Half of the companies covered in the survey operate one shift, while approximately 27% and 23% operate two and three shifts respectively.

## CHARACTERISTICS OF CURRENT MACHINERY

### Age of machines – spinning, weaving and knitting segments have comparatively older machinery

The age range of machinery currently used in Ethiopian textiles and apparel companies varies (Table 10). Thirty-six per cent of the companies report that their machinery is more than 10 years old, while 27% have acquired new machinery in the past five years.

None of the 66 interviewed companies have machinery that is older than 20 years – this might be explained by the fact that the majority of interviewed companies were established in the recent past. Only eight of the interviewed companies have been in existence for more than 20 years; the majority of these eight companies were state-owned in the past and are now privatized – it can be assumed that machinery was upgraded post-privatization.

**Table 10: Age range of machinery, by production unit**

Production unit	No. of companies	Less than 5 years	5–10 years	10–20 years
Spinning	13	23.1%	15.4%	61.5%
Weaving	19	15.8%	42.1%	42.1%
Knitting	15	20%	46.7%	33.3%
Processing	22	36.4%	40.9%	22.7%
Sewing	43	39.5%	39.5%	20.9%
Overall average	60	27%	36.9%	36.1%

**Note:** Processing includes dyeing, printing and finishing.

Source: SITA Survey in Ethiopia, ITC, 2019.

The spinning segment uses relatively old machines, certainly in comparison to other segments of the value chain. As Table 6 shows, more than 60% of the companies surveyed use spinning machines that are 10–20 years old, while less than 25% of spinning machines are less than five years old. The picture is similar in the weaving and knitting segments, where 42% and 33% of the machines are 10–20 years old.

The sewing and processing segments, on the other hand, use machinery that is comparatively newer in age. The majority (almost 80%) of the sewing equipment is less than 10 years old. A similar situation exists for dyeing, printing and finishing equipment. This overall picture matches the investment trends in Ethiopia, where new investments have been concentrated in the apparel subsector.

These findings suggest that there is a particular need and opportunity for technology upgradation in the spinning segment, but also knitting and weaving.

### Origin of machinery – China, Europe and Japan dominate

Looking at the entire value chain, China is at the forefront, supplying more than 35% of all machines in the

sector (Table 11). The next largest suppliers are Germany (18%), Japan (13%), and Italy (11%). Taking a closer look at segments, in spinning, Germany is the leader, supplying half of the machines. This is followed by China and Switzerland, which each supply 21%. In the weaving and knitting segments, the top three suppliers in rank order are China, Italy and Germany. In the sewing segment, Japan and China dominate, supplying more than 82% of the machines. In the processing segment, the situation is similar to the textile sector – the top three suppliers in rank order are China, Italy and Germany.

Major brands in use in Ethiopia include Rieter, Trützschler and Saurer Zinser in spinning, Sulzer, Somet and Toyota in weaving, Pailung, Gemsy and Orizio in knitting, and Juki and Brother in sewing.

China has managed to establish itself as a technology supplier across the value chain, with a stronger focus on knitting and processing. Germany and to a lesser extent Italy have managed to supply machines across the value chain, though a bit less balanced. Germany has a stronger focus on spinning technology, which is presumably older technology (that is, in some cases, being replaced by Chinese technology). Italy has a stronger focus on weaving, whereas Japan is strong in weaving and sewing technology.

**Table 11: Country of origin of machinery, by production unit**

	Spinning	Weaving	Knitting	Sewing	Processing	Overall average
China	21.4%	36.8%	42.1%	35.1%	43.5%	35.8%
Germany	50%	10.5%	10.5%	5.3%	13%	17.9%
Italy	7.1%	21.1%	10.5%	1.8%	13%	10.7%
Switzerland	21.4%	5.3%	5.3%			6.4%
Japan		15.8%		47.4%		12.6%
Singapore		5.3%	5.3%	5.3%		3.2%
Turkey		5.3%	5.3%		8.7%	3.8%
India			5.3%		4.4%	1.9%
Korea			5.3%	1.8%	8.7%	3.1%
Taiwan			5.3%	3.5%		1.8%
Malaysia			5.3%			1.1%
Local					8.7%	1.7%

**Note:** Processing includes dyeing, printing and finishing steps.

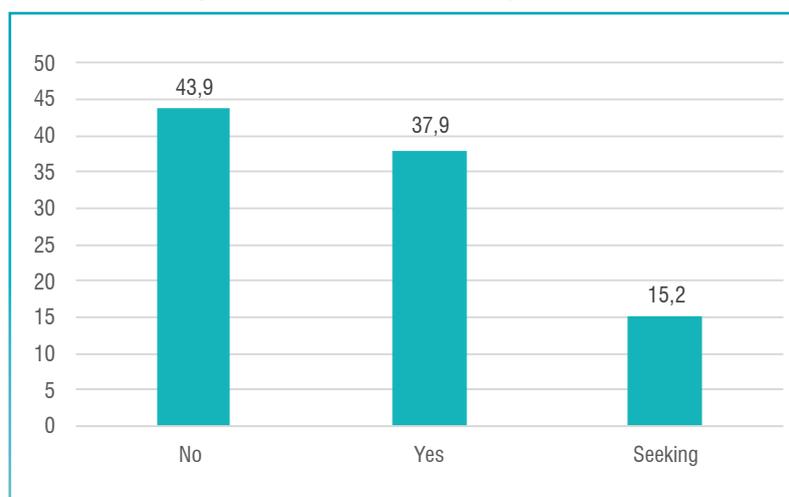
Source: SITA Survey in Ethiopia, ITC, 2019.

According to the report, an insignificant number of machines in Ethiopia (1.9%) are imported from India (Table 11). These are in the knitting and processing segments.

It is interesting to note that, while many recent investors are Indian, they seem to import their technology from elsewhere and not necessarily from India. This suggests that government schemes are perhaps needed to incentivize Indian investors to source technology from India.

In general, approximately 38% of the interviewed companies consider India as source of supply (machinery, accessories and chemicals) within the industry, while 15% are actively seeking to source from India (Figure 14). However, India is mainly considered as a source for chemicals and accessories, not for machinery.

**Figure 14: Interest in sourcing from India**



Source: SITA Survey in Ethiopia, ITC, 2019.

## YARN MANUFACTURE

As indicated previously, 13 companies are engaged in production of yarn (spinning), either as a stand-alone activity or as a production unit within the factory. Of the total, four companies use both ring and rotor spinning, while the remaining either use ring (4) or rotor (5) spinning only.

While the companies use a number of different brands of spinning machinery, Rieter, Trützschler and Saurer Zinser are among the most commonly used. The age of the machinery in most of the companies is

10–20 years. No company has machinery older than 20 years, while some companies have machinery less than 10 (and even less than five) years old.

Table 12 summarizes the installed and available spinning capacity and actual production in tons. The average spinning capacity per year is approximately 4,525 tons. The available spinning capacity is 3,270 tons per year, which accounts for only 72% of the installed capacity. The actual production, however, is far below the installed and available capacities, and accounts for approximately 48% and 66% of the installed and available capacities, respectively.

**Table 12: Spinning capacity and actual production (in tons)**

	N	Minimum	Maximum	Mean	Std. Deviation
Installed spinning capacity	12	500	12 480	4 525.33	3 479.09
Available spinning capacity	12	500	9 360	3 269.83	2 560.98
Actual production in 2018	12	295	4 423	2 167.33	1 366.45

Source: SITA Survey in Ethiopia, ITC, 2019.

The main technology related challenges to full spinning capacity in their order of relevance are:

- Lack of spare parts supply;
- Lack of skilled maintenance experts locally;
- Use of old technologies.

The low levels of capacity utilization and relative age of the spinning machinery indicate that upgrades in this segment are needed. Good opportunities exist, therefore, for machine suppliers to sell new technologies across the spinning segment. The lack of spare parts locally and lack of skilled maintenance experts suggest that future suppliers should address these items in their offers to factories.

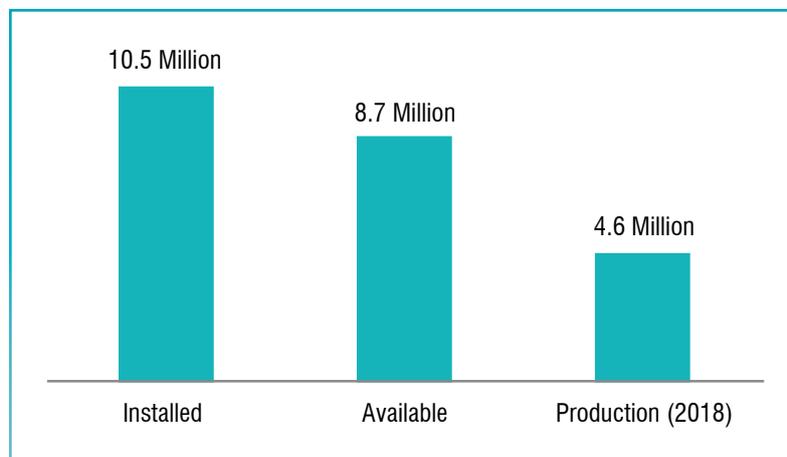
## FABRIC MANUFACTURE

### Weaving

There are 20 interviewed companies that have weaving units in their business operation. The average number of installed weaving looms is 98, with almost all running. Water jet is the most widely used weaving loom, followed by air jet and rapier. There are three companies using other types of weaving looms such as circular and tappet weaving looms.

Commonly used brands of weaving looms include Sulzer, Somet and Toyota. More than 57% of the weaving machinery is less than 10 years old.

**Figure 15: Weaving capacity and actual production (in linear metres)**



Source: SITA Survey in Ethiopia, ITC, 2019.

Figure 15 shows the weaving installed and available capacity and the actual production in the last fiscal year. The average installed weaving capacity is approximately 10.5 million linear metres, while the available weaving capacity is approximately 8.7 million, which is lower than installed capacity by approximately 17%. The actual production in 2018 was limited to 4.6 million linear metres. This accounts for approximately 44% of the installed capacity.

As with spinning, the main technology related constraints to full weaving capacity are:

- Lack of accessories and spare parts supply;
- Lack of technical experts;
- Use of outdated technology.

Capacity utilization levels are, as with spinning, quite low. The fact that less than half of the installed weaving capacity is being used highlights the lack of integration with the apparel segment. The relative age of the machinery also points to the need for upgraded technology. Suppliers wishing to sell weaving machinery will find demand for new technology.

### Knitting

There are 16 companies with knitting production units, of which one is a stand-alone. The top three types of knit fabric produced are single knit jersey, plain knit and rib. The majority of the companies produce fabric density ranging from 100 up to 300 grams per square metre (GSM), though the maximum range reaches up to 600 GSM.

The average installed knitting capacity of nine companies is approximately 200 tons, while the available capacity and actual production in 2018 is lower by about half (Table 13).

The picture of underutilized capacity mirrors that of the weaving segment, again pointing to a lack of integration with the apparel segment and lack of local and regional markets. As with the weaving segment, machines are relatively old and in need of upgrading. Given that actual knitting production is low relative to installed capacity, suppliers will find good opportunities to sell new technologies.

**Table 13: Knitting capacity and actual production (in tons)**

	N	Minimum	Maximum	Mean	Std. Deviation
Installed capacity	9	445	1 848 000	207 002.67	615 374.72
Available capacity	9	440	1 056 000	118 545.22	351 546.33
Actual production in 2018	9	110	924 000	103 698	307 614.84

Source: SITA Survey in Ethiopia, ITC, 2019.

## PROCESSING OF TEXTILES

Finishing or processing is usually performed in combination with other textile and/or garment unit productions. Twenty-two companies are engaged in dyeing and printing, which accounts for one-third of the total companies surveyed.

The most commonly used dyeing method is direct dyeing, followed by yarn dyeing. Stenter is the most commonly used dyeing machine. In printing, screen printing is most widely used, followed by roller printing. More than 40% of the finishing machines in Ethiopia are 5–10 years old, while more than one-third are less than five years old. China is the main origin of the machines. Technology related challenges to full finishing capacity utilization are similar to those experienced in other production processes above.

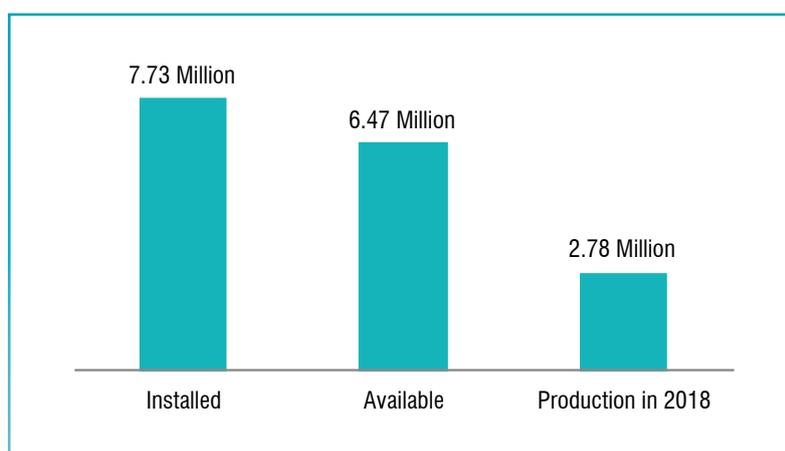
One company noted that two of their shipments were rejected recently due to poor quality of finishing. As a result, it lost that account. The company plans to invest in finishing technology to regain the buyer and obtain others. Another company that engages primarily in dyeing and bleaching noted that its machinery is obsolete. It wants to move from acrylic to jacard fabrics and, in order to do so, must expand its dyeing facility. This means procurement of new technology, but again, lack of access to foreign exchange is hindering the company's ability to import the machines.

The two examples above highlight the opportunities that exist for the sale of finishing machinery in Ethiopia as companies seek to move into new product categories and satisfy buyers' quality requirements.

## GARMENT MANUFACTURE

The majority of the companies surveyed operate in the apparel subsector. In total, 45 companies are engaged in sewing, of which 19 of them are stand-alone apparel units. Fabric is, of course, the main input for the apparel subsector. Fabrics sourced from local suppliers account for approximately 13%. The majority of fabric is imported or produced in-house. For garment companies that do not produce in-house and produce for export markets, almost all of their fabric needs are met through imports. The main reasons for importing are lack of availability and poor quality of fabric supply locally.

The main source of sewing machines for 47.4% of the companies is Japan, followed by China (35.1%). Approximately 79% of the companies are using sewing machines that are less than 10 years old. The majority of interviewed companies use Juki (Japan) sewing machines solely or in combination with other kinds of sewing machines.

**Figure 16: Sewing capacity and actual production (in pieces)**

Source: SITA Survey in Ethiopia, ITC, 2019.

Figure 16 depicts the installed and available capacity of the sewing machines and the actual production in 2018, expressed in terms of pieces. It is worth noting that the pieces produced by one company might not be directly compared with the other companies, as the nature of the garment products differs. However, simple comparison might be made between the installed capacity, available capacity and actual production in 2018. The available capacity is approximately 84% of the installed capacity. The actual production in 2018 was 36% and 43% of the installed and available capacities, respectively.

The main technology related challenges to full sewing capacity utilization include:

- Use of old and outdated machinery and technology;
- Lack of spare parts;
- Lack of other units of production for integration;
- Poor technical and innovative skills.

Sewing capacity is, perhaps surprisingly, quite low. This may partially be due to the more recent entrance of investors in this segment that are still finalizing business relationships with buyers. Machine suppliers will find opportunities for sale of sewing machines as the

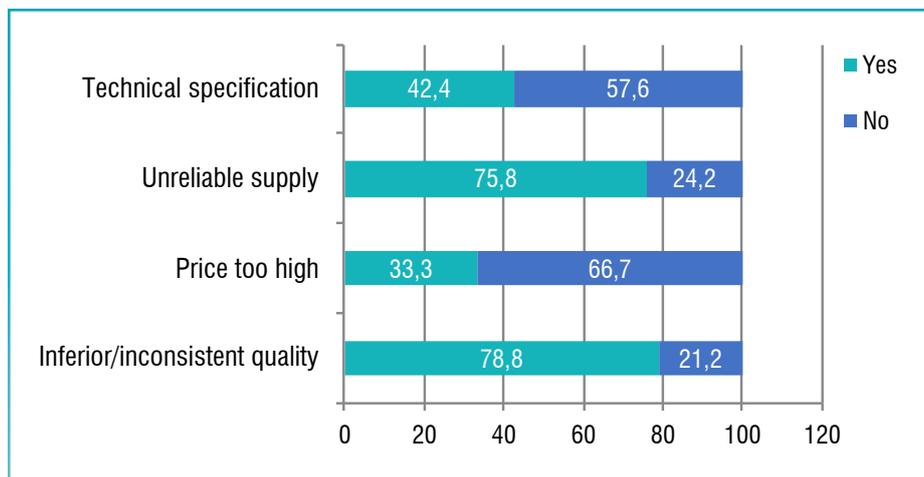
sector expands. However, the opportunities seem to be less apparent than in the textiles subsector – though interviewed companies expressed highest demand for garment machinery.

## REGIONAL SOURCING AND THE ROLE OF TECHNOLOGY

As indicated, the majority of fabrics used for garmenting are sourced from abroad. The main reasons are a lack of adequate supply and lack of quality (unavailability of fabrics produced locally that meet the demands for export markets). Indeed, more than 90% of the apparel companies surveyed say that local and regional textile companies either do not or only sometimes comply with their requirements. Only 6% of the apparel companies say that the local and regional textile companies comply with their requirements.

The main reasons why apparel companies must import their fabrics include: inferior or inconsistent quality, unreliable supply, and inability to meet technical specifications by local and regional textile companies. Notably, in comparison, price is not considered a main reason that apparel companies are bypassing local fabric producers in favour of imports (Figure 17).

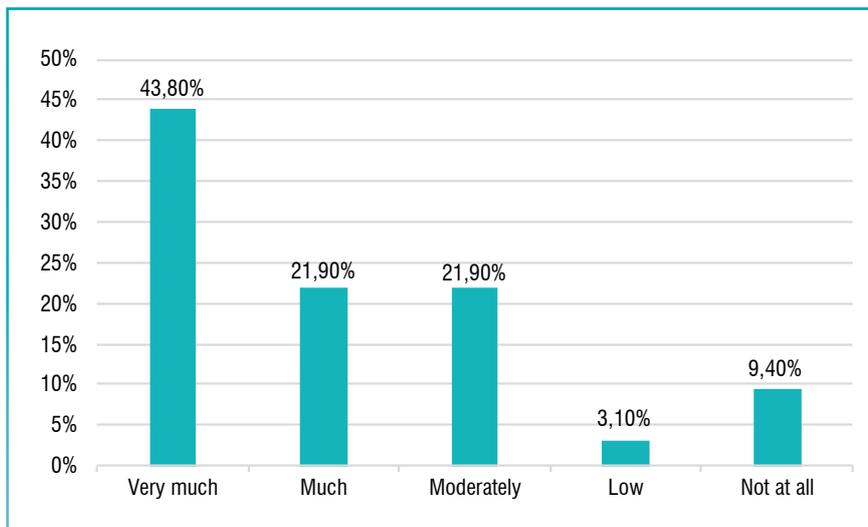
**Figure 17: Challenges apparel companies face when sourcing locally or regionally**



Source: SITA Survey in Ethiopia, ITC, 2019.

Apparel companies were also asked to rate the role of technology in affecting the extent that local and regional textile companies are complying with their requirements. As shown below, approximately two-thirds of the companies rate this extent as “much” and “very much” (Figure 18). This demonstrates that apparel companies clearly see technology upgradation on the part of textiles companies as key to their ability to meet technical

specifications and quality requirements and, therefore, would be an impetus towards future local sourcing of fabrics. Indeed, approximately 97% of the apparel companies would be more likely to purchase from local and regional textile suppliers if those factories acquire new technologies that help them to comply with their requirements.

**Figure 18:** Role of technology in capacity of local and regional suppliers

Source: SITA Survey in Ethiopia, ITC, 2019

## CONCLUSION

- There is a clear need, and desire, on the part of textiles and apparel factories in Ethiopia to upgrade their technology;
- Suppliers of these technologies will find strong demand as companies seek to improve their competitiveness and move into new products and markets;
- Key challenges are the foreign exchange controls that effectively restrict import of new technology, as well as a lack of spare parts and local technical and service expertise; and
- The demand for new technology will only increase as the sector expands and new entrants come into the market via foreign direct investment, which continues to be a strategic priority for the government.



# Kenya

## TEXTILE AND APPAREL IS A KEY SECTOR

The textiles and apparel sector is an important contributor to Kenya's overall economy. It is estimated to account for 6% of the overall manufacturing sector and to contribute 0.6% to Kenya's GDP.<sup>26</sup>

In 2018, Kenya unveiled its Big Four Agenda, which focuses on manufacturing, universal health care, affordable housing and food security. The agenda is aimed at boosting Kenya's development and creating wealth and employment for youth over the next five years. Textiles and apparel is a priority sector under the agenda's manufacturing pillar. The Agenda targets a 15% contribution of the manufacturing sector to the GDP, up from its current value of 8% and the textile sector is expected to be a major driver of this growth.

With a large and well-established apparel subsector, Kenya has become a leading exporter in Africa and top exporter to the United States under the African Growth and Opportunity Act (AGOA). Kenya's apparel exports plateaued during the past several years from a high of \$373 million in 2014. During the course of the next three years, there was a steady decline, reaching a low of \$334 million in 2017, but exports spiked again in 2019 to a high of more than \$370 million.<sup>27</sup>

Kenya produces and exports garments in all of the major textile and apparel categories under Harmonized System (HS) headings 61, 62 and 63. Its greatest exports by volume are in men's and women's trousers.

## EXPORT-ORIENTED APPAREL DOMINATES

Kenya has continued to focus largely on the cut, make and trim (CMT) production model that defines most large EPZ companies operating within the country. As a result, Kenya's value chain is fragmented and uneven. Limited downstream investment has led to capacity constraints and relatively weak productivity and quality in the spinning, weaving and fabric finishing segments.

Kenya's value chain structure is one in which the apparel sector is still heavily dependent on imports of fabrics and other inputs. Textiles are imported primarily from China, India, Pakistan and Thailand. It is estimated that local textile manufacturers supply only 45% of

the Kenyan textile market requirements. This is mainly for the factories producing for domestic and regional markets; export-oriented apparel factories import the majority of their fabrics.

The cotton subsector is underdeveloped and does not currently contribute in a substantial way to the overall value chain, despite the efforts of the Government of Kenya to revamp cotton production. Currently, there are three active ginneries, and cotton production is negligible. Indeed, the majority of cotton needs within the textiles and apparel sector are imported, including virtually all cotton for export-oriented production.

Textile mills are old and largely operate with outdated machinery. As a result, the quality of fabrics produced in Kenya is not up to the standards required for garments produced for export, and the cost of the locally produced fabrics are high relative to imported fabrics.

## HIGH LEVEL OF WORKER PRODUCTIVITY

There is generally good access to labour and retention rates are quite good within the textiles and apparel sector in Kenya. High unemployment rates and stable work and good compensation offered by factory employment create a situation where employees tend to remain in their jobs. What turnover does occur is generally in the seasonal and contract work segments. This contrasts with Ethiopia, where labour retention is an issue.

While labour costs are high (the average wage rate is \$175/month, compared to approximately \$65 in Ethiopia), worker productivity is also high. One EPZ-based company reports that one of its production lines is currently operating at 80% efficiency – more productive than Asia – and that for its plant overall, the efficiency rate is 65% (as compared to its Ethiopian-based factory, which is much lower at 50%). While productivity levels are high and generally compare favourably to most African countries, they still lag behind Bangladesh, China and other Asian competitors.

In contrast with Ethiopia, Kenya is interesting for apparel manufacturers that require higher productivity and more skilled workers to handle more advanced garment production. This is reflected in the types of companies

26.– World Bank.

27.– Trade Map, ITC, 2020.

that have invested in the EPZs. A Sri Lankan manufacturer of intimate wear recently announced an investment of nearly \$15 million in a new factory in Kenya. Based in the Athi River EPZ, the investor is expected to become the largest apparel manufacturer in the country.

## RECENT TRENDS

The government, however, in contrast with Ethiopia, has had limited success in setting up industrial parks. It has recommitted to plans that have long been in place to rejuvenate the sector through establishment of such parks. These include the Naivasha textiles park that will benefit from low energy costs (estimated at five cents/kw) due to the existence of adjacent geothermal reserves. Land has already been acquired and it is hoped that the industrial park will be operational within two years. Kenya's ability to establish industrial parks and bring foreign direct investment to them will largely determine whether it can match Ethiopia's success in this area – and, in the long run, not be overtaken by Ethiopia as the country continues to ramp up.

There has been a recent major upgrade of the Rivatex factory, a \$29 million investment using Indian technology and made possible by a line of credit from the Government of India. Work is currently ongoing in ensuring that Rivatex complies with international environmental standards, in order to be able to attract international buyers. As discussed previously, environmental compliance is a significant factor in technology upgradation, and this is only going to increase. The government is, as with Rivatex, also seeking to revive two more declining textile mills, in the Mount Kenya and Lake Victoria regions. It is estimated that \$100 million in new machinery will be needed to revamp these two factories.

Ease of doing business in Kenya is high relative to its neighbours (its World Bank Ease of Doing Business rank in 2018 is 80, versus 161 in Ethiopia). However, high and rising operating costs – especially labour and energy costs – have severely hindered the companies currently operating in the textiles and apparel sector. For apparel companies in particular, where labour costs can comprise up to 70% of overall operating costs, rising wage rates continue to be a challenge. The government sets the minimum wage annually. This rate increased by 18% in 2017 and a further 5% in 2018.

High energy costs have hurt, being a continuing hurdle. Energy costs in Kenya are at approximately 18 cents/kw (2017), as compared with three cents/kw in Ethiopia. The government is looking at ways to bring energy costs down within the sector, including through

the planned industrial parks. According to the companies interviewed in Kenya, energy costs typically represent 10%–15% of an apparel company's overall operating cost. The percentage is even higher (approximately 25%) for textiles manufacturers. Lower energy costs are, therefore, essential for the textiles subsector to survive and effectively compete.

There is a strong movement within the region for policies that mandate local content, particularly in the textiles and apparel sector. In 2018, in Kenya, a presidential directive mandated that all military uniforms are to be sourced locally, provided quality standards are met. Kenya's Build Kenya, Buy Kenya initiative to support local suppliers in government tenders has the potential to drive new technologies. Indeed, several factories have invested in new machinery to supply local government. The government is also considering a "negative list" of imported products within the sector that are competing with locally produced items. The idea is to protect inputs through some combination of taxes and restrictions on imports so that factories can invest in technologies to produce these inputs locally.

The future of AGOA is also a factor given that AGOA will expire in 2025. Kenya's over-reliance on the USA market could be a severe challenge for the sector should AGOA not be extended. A bilateral free trade agreement (FTA) between the United States and Kenya is under consideration, in line with the USA's current trade policy preference of bilateral trade agreements over multilateral, non-reciprocal agreements. As the only country in the East African Community (EAC) without least developed country (LDC) status, Kenya would indeed be a good candidate for an FTA.

There is some thinking that Kenya needs to begin to diversify to other markets. By doing so, it would become less reliant on CMT production, and to accomplish this would mean technology upgradation to allow for shifts to new products and markets.

## TECHNOLOGY UPGRADES NEEDED ACROSS VALUE CHAIN

Kenya's textiles and apparel sector is older and more established than, for instance, Ethiopia. As such, there is a need for upgradation across the board, from spinning through to sewing. The spinning and textiles segments in particular are in need of revamping, to replace machinery that, in some cases, is more than 20 years old.

## KEY FINDINGS

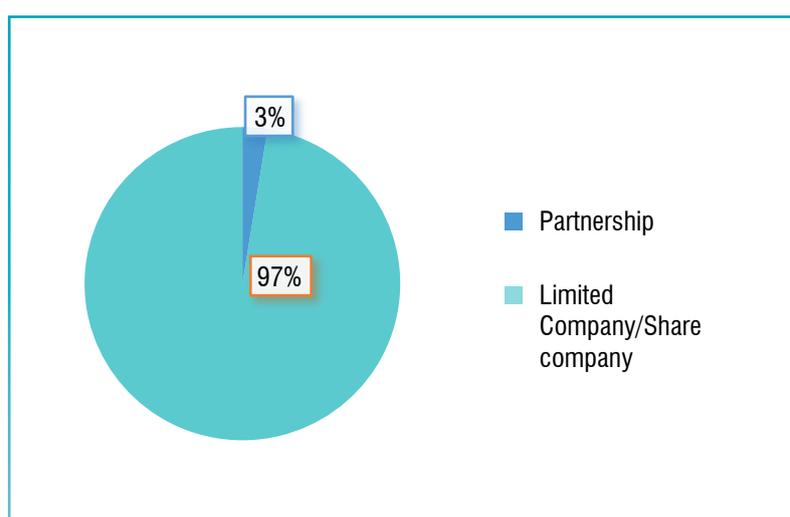
### Well-established sector, with limited new investment

While Kenya's textiles and apparel sector is large and well established, only 11 of the 38 interviewed companies have entered the sector since 2000. This finding suggests that Kenya has not been able to attract a large number of foreign investors in the sector. This contrasts

with Ethiopia, where many new investors have established operations. Survey results show that, in Ethiopia, more new companies (18) have entered the sector in just the past five years than has been the case in Kenya in the past 20 years.

The oldest company was established in 1951 while the most recently established company was created in 2018. The majority of companies in the sector are limited or share companies (Figure 19).

**Figure 19:** Ownership type of interviewed companies



Source: SITA Survey in Kenya, ITC, 2019.

### Seventy-nine per cent of the companies are exporting

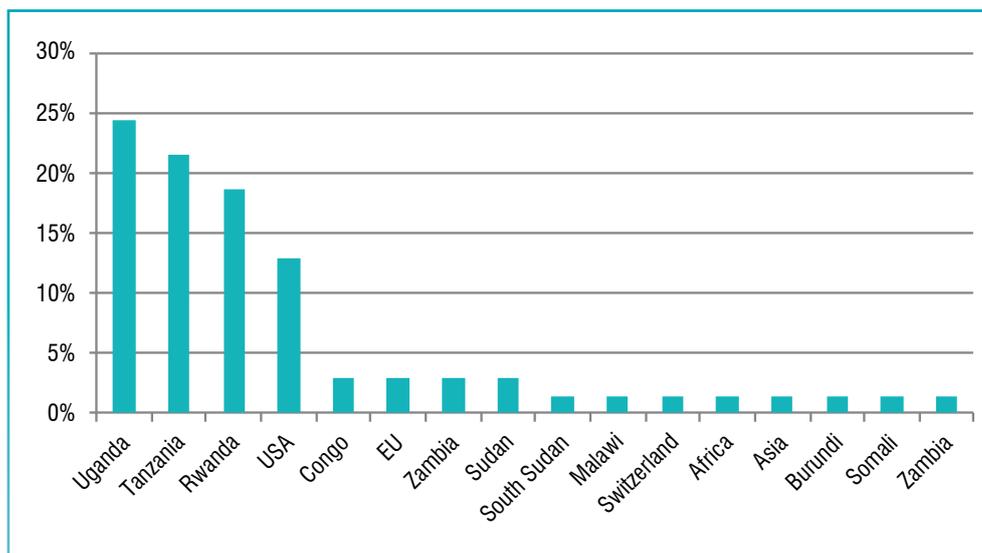
The majority of interviewed companies in Kenya are exporting (79%). This is reflective of an industry that has been largely oriented towards production for export to take advantage of duty-free opportunities in end markets. EPZ-based garment factories export mainly to the USA market under AGOA. The USA represents 90% of Kenya's worldwide apparel exports.<sup>28</sup> Other markets include Canada and Germany and, in Africa, Tanzania and Uganda. All of these markets, however, are small in comparison to the USA, representing less than 5% of Kenya's total apparel exports.

The picture is more diverse in textiles articles – the types of products made by the factories producing for the domestic and regional markets. In these product categories, the chief export markets are in East Africa (Uganda, Tanzania and the Republic of South Sudan), plus the Democratic Republic of the Congo.

Figure 20 shows the export destinations of the companies surveyed for this report, many of which are in these product categories. The top four export markets in rank order are: Uganda, Tanzania, Rwanda and the United States. It must be noted that the cross-section of companies surveyed was more heavily weighted towards non-EPZ factories; hence, the different picture presented when volume apparel exports are largely not accounted for.

28.– Trade Map, ITC, 2019.

**Figure 20:** Export markets of surveyed companies (mostly textiles)



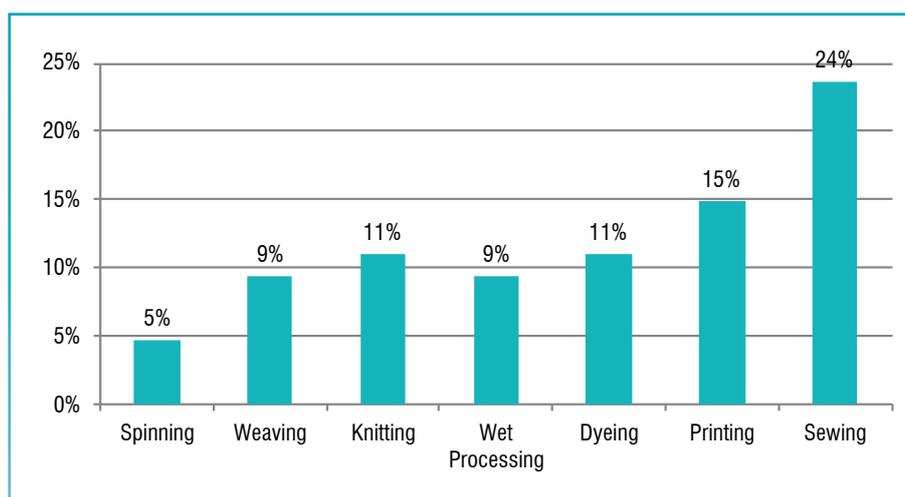
Source: SITA Survey in Kenya, ITC, 2019.

**The majority of companies have more than one production unit across the value chain**

Most companies have more than one production unit within their business (Figure 21). Sewing operations are the most common. In total, there are approximately 70 active textile and apparel manufacturing companies in

Kenya, of which 38 were interviewed in preparation of this report, including 15 major textile companies; 14 of the estimated 38 apparel companies producing for local and regional markets, and six of the 17 export-oriented apparel companies are based in export processing zones (EPZ).

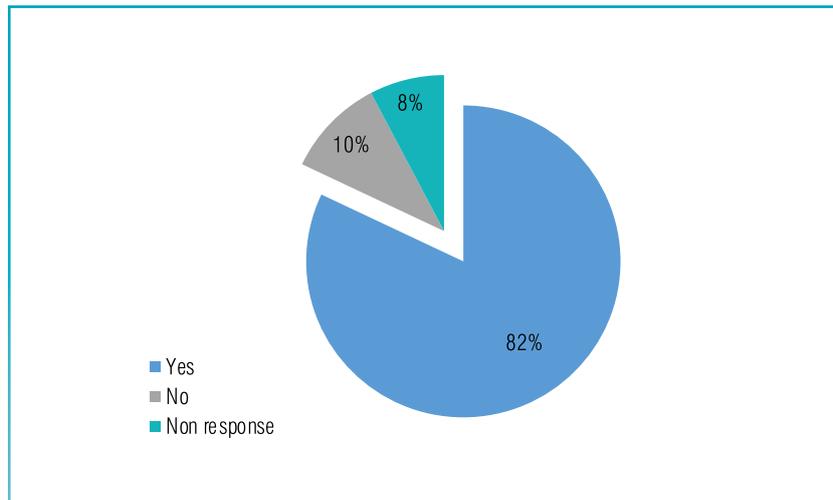
**Figure 21:** Distribution of production units across the value chain (percentage)



Source: SITA Survey in Kenya, ITC, 2019.

**Eighty-two per cent of companies are interested in upgrading their technology**

A large percentage (82%) of companies surveyed have an interest in upgrading their technology (Figure 22). Ten per cent of the interviewed companies currently have no interest in upgrading their technology.

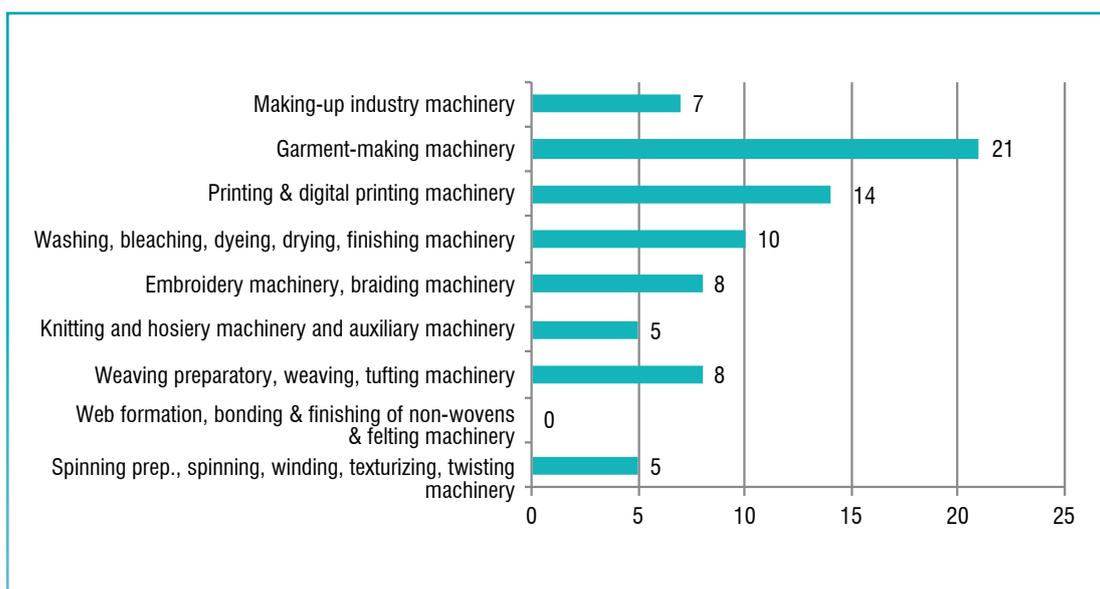
**Figure 22:** Interest by Kenyan companies to upgrade their machinery (percentage)

Source: SITA Survey in Kenya, ITC, 2019.

### Garment-making machinery highest in demand

Kenyan companies have a similar interest in the type of machinery they want to upgrade as Ethiopian companies. Garment-making machinery is in highest demand, followed by finishing machinery (printing and digital printing, washing and dyeing), spinning machinery and weaving machinery (Figure 23).

The appetite for technology upgradation seems to be greater in the textiles subsector. Companies operating in this subsector are looking to upgrade their machinery across the operating segments. The high demand for garment-making machinery appears to reflect a move on the part of companies to increase their apparel production, perhaps to capture more export markets and capitalize on the government's local sourcing mandate.

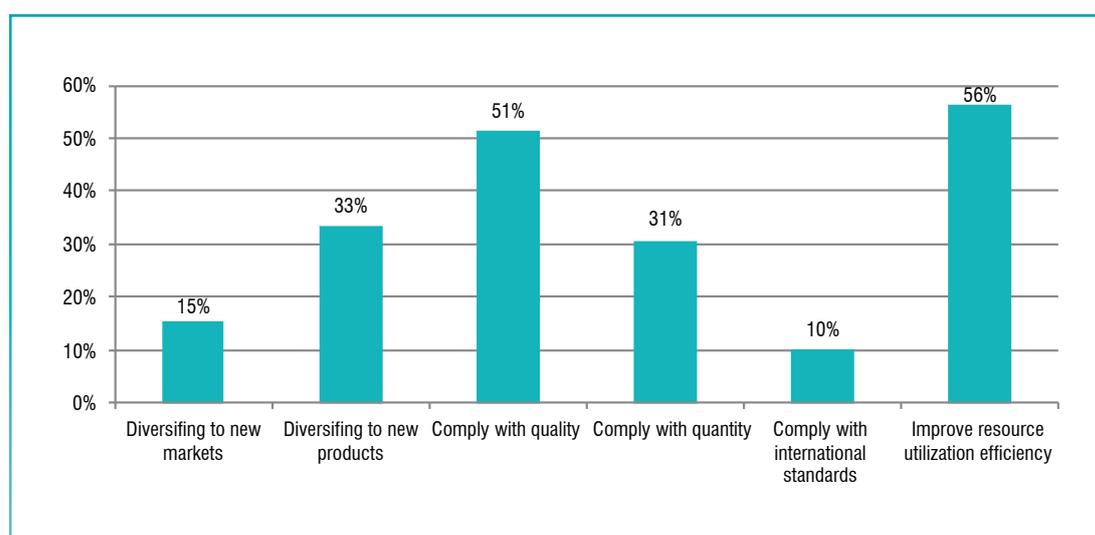
**Figure 23:** Type of machinery that companies are interested in upgrading

Source: SITA Survey in Kenya, ITC, 2019.

## Companies' key motivations for upgrading their technology

Companies' key motivations for upgrading their technology, in rank order, are: to improve resource utilization efficiency, comply with quality requirements, diversify to new products, comply with quantity requirements, and diversify to new markets (Figure 24).

**Figure 24:** Key motivations by companies to upgrade technology (per cent)



Source: SITA Survey in Kenya, ITC, 2019.

## CHALLENGES WITHIN THE OPERATING ENVIRONMENT

With high interest rates (averaging 15%), access to finance for technology upgradation is a serious hurdle. Additionally, banks in Kenya are risk averse and do not lend easily. This applies to both short-term working capital and to financing of capital expenditures. This has hindered the ability of companies to invest in new machines. Several factories noted that, while they can access capital through banks in Kenya, the loan interest rates are prohibitively high. This turns companies away from using local financing and forces them to fund priority capital investments internally.

Energy costs are a burden, particularly to the textiles companies. Energy costs average 18 cents/kw. One large textile mill and apparel producer in Kenya says that it costs \$32/day to operate one machine versus \$18–\$20/day in Ethiopia. This is largely due to the higher energy costs in Kenya and lack of government commitment to bring the costs down within the sector.

One large apparel factory stated that the efficiency of its workforce is decent and performs well in comparison with other countries in Africa, but is slower than in Asia. Based on companies surveyed, productivity rates average 70%. This is higher than the average productivity rate of 50% in Ethiopia, but lower than the 80%–85% efficiency rates achieved in, for example, Bangladesh. Training raises the productivity of workers, but more efficient machines, it was noted, would also help to bridge this gap. Several interviewed companies noted the need to strike a balance between workforce training and automatization that replaces workers in some production areas.

Illicit imports is a key problem in the sector. Many companies cite the rampant importation of products that come into the country illegally. Many products enter Kenya undeclared or mis-declared, avoiding taxes. Factories are then at a price disadvantage in the local market. This has been observed in imported products such as fabrics, accessories and inputs.

## CHALLENGES ASSOCIATED WITH TECHNOLOGY UPGRADATION

Interviewed companies referred to the high cost of finance restricting their ability to invest in machines as part of their expansion or upgradation plans. Some companies also mentioned the skills gap in Kenya whereby qualified technicians with the ability to service machinery are lacking.

A manufacturer of machines and technology for the textiles and apparel sector noted the support given to an investor in Uganda in the areas of energy costs and cotton preferences (both through subsidies), as well as machine upgradation support, resulting in marked efficiency improvements at the factory. The company stated that Kenya needs to likewise support the sector specifically in the area of technology upgradation.

## OUTLOOK FOR SECTOR: DOES TECHNOLOGY PLAY A ROLE?

All of the interviewed companies recognized and expressed the importance of technology to their businesses. Approximately 56% of the companies believe that there is a very high difference between the technologies available globally and those that they use within their factories (Table 14). A further 36% express that there is some difference, while approximately 8% (three companies) say that there is no difference. These findings suggest in part that companies do not have access to information about what is available from suppliers or technologies that could be obtained.

**Table 14: Technology difference perceived by Kenyan companies**

Technology difference: What companies use versus available up-to-date technology		Interested to upgrade technology		Total
		Yes	No	
Very high difference	Nr of companies	18	2	20
	% of total	50%	5.56%	55.56%
Some difference	Nr of companies	12	1	13
	% of total	33%	3%	36.00%
No difference	Nr of companies	2	1	3
	% of total	5.56%	2.78%	8.34%
Total	Nr of companies	32	4	36
	% of total	88.56%	11.34%	100%

Source: SITA Survey in Kenya, ITC, 2019.

Significantly, of the companies that believe there is a very high or some difference between the technologies available globally and those that they use, more than 90% are interested in upgrading.

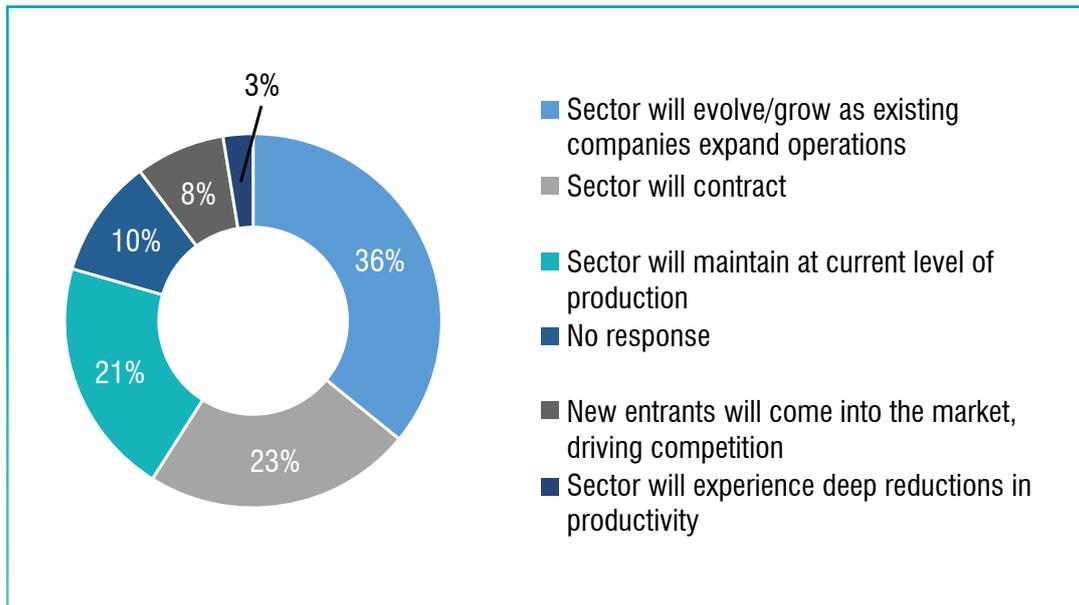
Both of these findings demonstrate the high motivation on the part of companies to upgrade their technologies.

## ONLY 36% OF KENYAN COMPANIES ARE POSITIVE ABOUT THE FUTURE OF THE SECTOR

Companies were also asked about their outlook on the sector, as well as their views on the future prospects of their businesses. Thirty-six per cent believe that the sector will evolve and grow as existing companies

expand their operations (Figure 25). Interestingly, 23% believe that the sector will contract. Another 21% believe that the sector will maintain at current levels of production, while 8% believe that new entrants will come into the market, driving competition.

Many companies are taking a “wait and see” approach to investment in new technology. While there is generally a favourable outlook on the sector, this is balanced by uncertainty about the lack of government support and political will to tackle ingrained problems such as illicit imports that are harming local producers.

**Figure 25:** Outlook on the sector's potential in the country in the next 5–10 years

Source: SITA Survey in Kenya, ITC, 2019.

## EFFICIENCY GAINS FROM TECHNOLOGY

Productivity gains can be achieved through improvement of both labour and machine efficiencies. One large buyer noted that one of the factories it sources from has been able to bring up its efficiency rate to more than 70% from 55%. This has been in large part due to greater efficiency of the machines within the factory as it has steadily invested in new technologies.

Conversely, this same buyer noted that another large factory that recently closed did so because the company failed to invest in new technology and the quality of the products suffered. This was coupled with the fact that many of the technical managers left, leaving the company ill-prepared to effectively manage the technologies.

## ENVIRONMENTAL CONCERNS ARE DRIVING NEW TECHNOLOGIES

Environmental concerns are increasingly becoming an important consideration within the sector. Many of the large companies sourcing from Africa are driving the push toward environmentally friendly practices and technologies that are better for the environment. This can be seen in such areas as:

- Use of lasers for the sanding of jeans and denim products;
- Effluent treatment plants;
- Reverse osmosis (RO) technology.

A large textiles and apparel factory can discharge as much as one million litres per day. In their push for the dual goal of better operating efficiencies and technologies that are better for the environment, many companies sourcing from Africa are demanding that they invest in these processes as prerequisites of a business relationship.

The results of this push can be observed through recent investments within the sector. Some examples include:

- An integrated factory recently brought in new machinery for water treatment.
- Another company that is currently able to treat water, but not recycle, recently brought in technology that will accomplish the latter through reverse osmosis. The RO technology is from India.

Two buyers mentioned that they will only start working with the recently modernized Rivatex factory once an effluent treatment plant has been installed for the same.

On the financing side, and in tandem with energy efficiency, there is an initiative in place under the French aid agency programme, Sustainable Use of Natural Resources and Energy Finance (SUNREF), which has had some success with its lending programmes

in Kenya. The fund seeks to boost financing for investments committed to sustainable natural resource management, with a focus on clean energy. SUNREF's primary stipulation to access the financing is that machinery purchased operates in an energy saving manner. In return, it backs loans at concessionary rates, as low as 3%. SUNREF has supported several operators in the textiles and apparel sector to upgrade their machinery, which, in turn, has improved both process and energy use efficiencies.

## IDENTIFYING THE RIGHT TECHNOLOGIES IS CRITICAL

From a product standpoint, for instance, shirting is a challenge in Kenya. One large buyer noted that a factory with which it works has old technology for shirting, so it does not deal in those products with the factory. Should it invest in new machines to upgrade its shirting capabilities, it would consider adding this product line to the other products it currently sources from the factory.

Similarly on the fabric side, a textile company noted that shirting fabric is not available locally or in the region, so it must be imported from China. Investment in new technology by textiles factories would help to capture this potentially lucrative business.

## TECHNOLOGY CAN DRIVE PRODUCT DIVERSIFICATION

This raises another issue that is frequently heard in Kenya: the prevalence of non-differentiated products. Expanding to other product categories to satisfy buyer demands is seen as critical for Kenya continue to evolve beyond basic production. This requires investment in new technology.

Companies are hearing the call. As industry trends are evolving and moving away from basic production, companies cite the need for more automation as critical to remain competitive.

Technology upgradation can be undertaken for speed and efficiency of machines as well as to automate in order to reduce workforce and, therefore, labour costs. However, some companies have an interest in not displacing employment. In these instances, companies seek out semi-automatic machinery to strike a balance between cost, efficiencies and workforce retention.

The need for technology upgradation can also be observed on the IT side. Kenya has a small, but growing fashion design community, with small and medium-sized producers catering to the direct to consumer market. This has increased the demand for technologically advanced IT solutions, including such areas as software for consumer customization and technologies to enhance connections with customers on current designs and styles.

## TECHNOLOGY CONSIDERATIONS BY INDUSTRY SUBSECTOR

### Capacity utilization

The average capacity utilization by interviewed companies is approximately 64%. Of the 38 surveyed companies, half of the companies are operating below the average capacity utilization rate, while the other half is operating above the average capacity utilization rate. Five companies claim a capacity utilization of 90% to 100%.

Capacity utilization rates vary across the value chain, with high rates in sewing (79%) and knitting (69%), and comparatively lower rates in spinning (46%) and weaving (43%) (Table 15).

While capacity utilization rates are high in processing, companies are looking to expand, particularly in printing, so good opportunities exist to sell technology in this area.

The low levels of utilization in the spinning and weaving segments suggest that significant upgrades are needed so that these segments can become more integrated with the robust apparel subsector. It bears repeating also that the spinning and weaving segments in particular have ageing machinery that need to be replaced.

**Table 15: Capacity utilization at production unit level**

Production units	Average capacity utilization
Spinning	46%
Weaving	43%
Knitting	69%
Processing (dyeing, printing and finishing)	85%
Sewing	79%

Source: SITA Survey in Kenya, ITC, 2019.

## CHARACTERISTICS OF MACHINERY

### Age of machines – spinning, weaving and processing segments have comparatively older machinery

The majority of the textiles and apparel machines currently used in Kenya are more than 20 years old (Figure 26). Weaving, spinning and finishing machinery in particular have large percentages of machines that are old and in need of either upgrading or replacement.

In the spinning segment, more than half of the machines (61%) are more than 20 years old. There have been more recent upgrades: 28% of the machines are less than five years old. This is perhaps reflective of the investments undertaken in Rivatex, which were primarily machines from India.

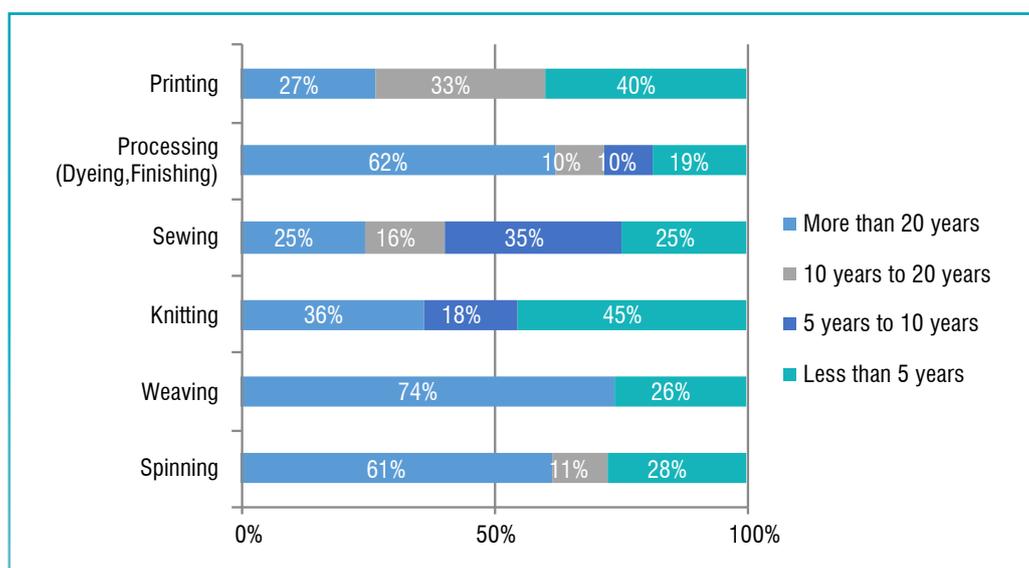
The picture is similar in the weaving segment: 74% of the machines are more than 20 years old, with the balance less than five years old. This reflects very old machinery overall, with some new investments due to recent upgrades, at Rivatex in particular.

The knitting segment has comparatively newer equipment, with 45% of the machines being less than five years old – again reflective of recent textile mill upgrades. In contrast to the spinning and weaving segments, a lesser, though still significant, percentage of the machines (36%) are more than 20 years old.

Dyeing and finishing equipment, as with spinning and weaving, is quite old: 62% of the machines are more than 20 years old. Printing machinery is comparatively newer: 40% of the machines are less than five years old.

In the sewing segment, more than half of the machines are less than 10 years old, and only about one-quarter of the machines are more than 20 years old. This picture suggests that apparel producers replace their machines more often.

**Figure 26: Age of machinery, by production segment**



Source: SITA Survey in Kenya, ITC, 2019.

These findings track with some of the more recent upgrades within the sector, but also highlight the age of machinery – indeed, some machines are probably at the upper end of their useful capacity.

There is a clear opportunity for the supply of machines and new technology to the spinning and weaving segments, but also dyeing and finishing.

### Origin of machinery – Germany and China dominate

A look at the entire value chain shows that Germany and China lead the way as suppliers of technology, followed by Japan, India and Italy. In the spinning segment, the two leading countries are Germany and India. Approximately 80% of the spinning machines are supplied by, and evenly split between, these two countries. The top two suppliers of weaving machinery are

Switzerland and Italy, which account for 65% of the machinery. Germany and China are the lead suppliers in the knitting segment, accounting for just more than half of the machines. In sewing, Japan dominates, supplying nearly half of the machines (predominately Juki). China is also a major player, as it is able to supply cheaper sewing machines. In the processing segment, Germany and China are the top suppliers, followed by Japan and India.

Germany is well established as a supplier of technology across the value chain and, to a lesser extent, China as well (though interestingly, not in spinning). Again, it is Germany and India that dominate here. Switzerland is strong in the weaving segment, as is Italy, which has also managed to supply all segments within the value chain.

While India is a key supplier of spinning machines, it also supplies the weaving and knitting segments, albeit on a smaller scale.

**Table 16: Country of origin of Kenyan textiles and apparel machinery**

	Spinning	Weaving	Knitting	Processing (dyeing, printing and finishing)	Sewing	Overall average
India	38.89%	5%	4.35%	14%		12.45%
China		10%	26.09%	20%	35.09%	18.23%
Italy	5.56%	30%	13.04%	9%	1.75%	11.87%
Japan	11.11%			17%	47.37%	15.10%
United Kingdom		5%		3%	1.75%	1.95%
Germany	38.89%	10%	26.09%	28%	5.26%	21.65%
France	5.56%	5%				10.56%
Switzerland		35%	4.35%			7.87%
Korea			8.7%		3.51%	2.44%
Taiwan			13.04%	3%	3.51%	3.91%
USA			4.35%		1.75%	1.22%
Hong Kong				6%		1.2%

Source: SITA Survey in Kenya, ITC, 2019.

Good opportunities exist for Indian suppliers to supply the weaving segment in particular, as ageing machinery from Switzerland and Italy are in need of upgrading. Indian technology within the sector in Kenya, perhaps to a greater extent than in Ethiopia, is viewed as strong and a viable option. This is reflected in the high percentage of companies that are interested in sourcing machinery from India.

### The majority of companies are interested in sourcing from India

The majority of interviewed companies are interested in sourcing from India, including technology, fabrics or chemicals. Forty-six per cent of the companies are actively seeking to source from India, while another 44% would consider India is a sourcing market.

One large CMT apparel factory noted that only 10% of its machinery currently comes from India (the rest from China and Europe). India is viewed as having good technology, but pricing is not as favourable as China. This is perhaps due to the fact that, in contrast to

India, the Chinese Government has incentive schemes in place that support its exporters.

Other companies operating in the textiles subsector see India as an attractive sourcing location, noting that India often offers good quality at prices more attractive than some of the more advanced European technologies offer.

Indian suppliers of technology perhaps have an opportunity to capitalize on the high interest on the part of companies to source from India – particularly in machinery that is more technologically advanced than what is available from China, but at more reasonable costs than what is offered by leading European suppliers.

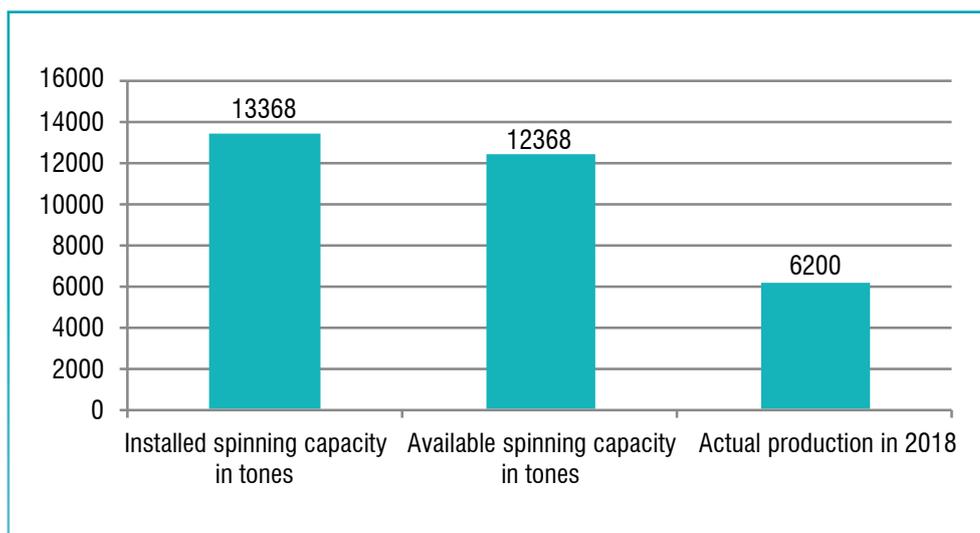
## YARN MANUFACTURE

Common spinning machines used in Kenya include: Saurer Zinser, Autocon and Saurer Schlafhorst (Germany), Lakshmi (India), Cogitex (Italy), and NSC (France). Germany and India (each at 39%) are the

top countries of origin for spinning machinery, followed by Japan (11%), and Italy and France (each at 6%). The majority of spinning machines (61%) are more than 20 years old, while 28% of the machines are less than five years old. The remainder (11%) are 10–20 years old.

Figure 27 shows the installed and available spinning capacity and actual production in tons. The installed spinning capacity per year is approximately 13,368 tons, with 12,368 tons of available capacity. Actual production in 2018 was 6,200 tons, which is approximately a 46% capacity utilization rate.

**Figure 27: Spinning capacity and actual production (in tons)**



Source: SITA Survey in Kenya, ITC, 2019.

Underutilization of capacity in spinning may suggest the idling of some older machinery in this segment.

There are opportunities for suppliers of new technologies in spinning as factories continue to modernize their machines.

## FABRIC MANUFACTURE

### Weaving

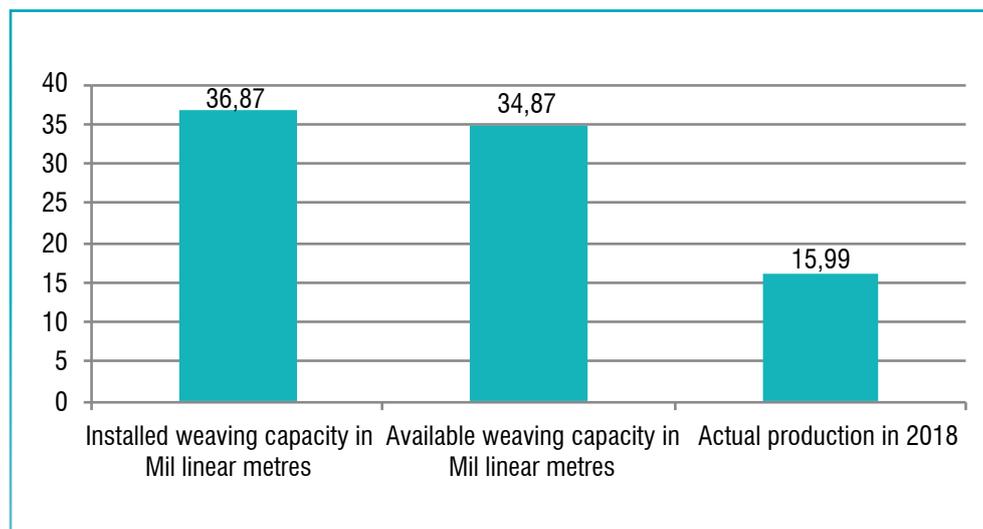
Switzerland (35%), Italy (30%), and Germany and China (10% each) are the top countries of origin for weaving machines. Common brands of weaving machinery used in Kenya include: Sulzer (Switzerland), Nuovo Pignone, Vamatex and Somet (Italy), Brandles (China), and Saurer Schlafhorst (Germany). The majority of the machines (74%) are more than 20 years old, with the balance (26%) less than five years old.

Installed weaving capacity is nearly 37 million linear metres, while actual production in 2018 was nearly 16 million linear metres. This shows a low capacity utilization rate. Only 43% of the weaving capacity is currently being used (Figure 28).

While weaving capacity and production levels are higher in Kenya than in Ethiopia, the underutilization of capacity is equally pronounced in both countries.

This points to the low levels of integration within the sector. Weaving capacity is not being absorbed by apparel manufacturers, which are instead importing fabric for their needs. Better technology is needed in this segment to bring the quality of fabrics up to the standard and requirements of these companies.

The buy local mandate has some implications here, with potential for the weaving segment to increase capacity utilization for the supply of uniforms to the government.

**Figure 28: Weaving capacity and actual production**

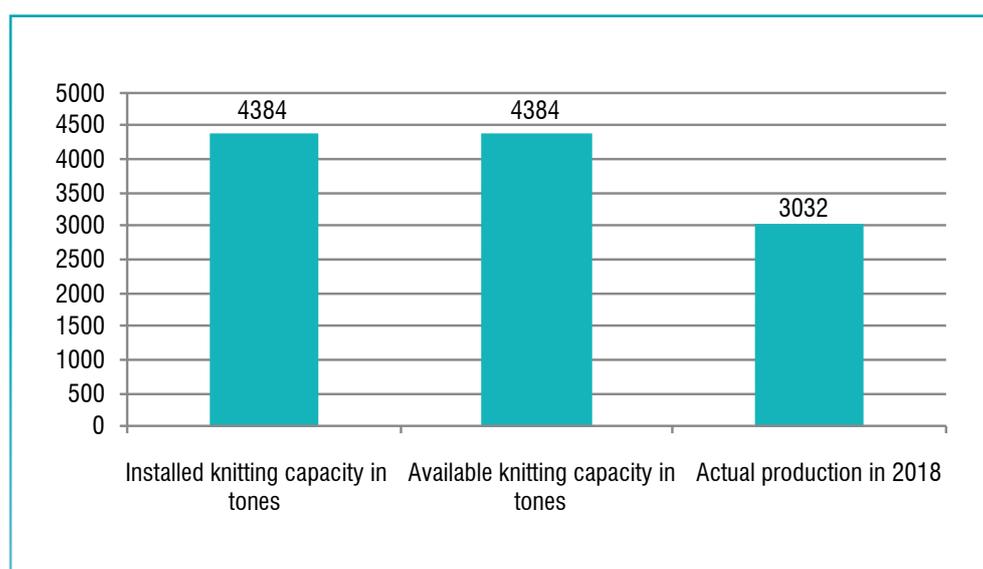
Source: SITA Survey in Kenya, ITC, 2019.

## Knitting

The top countries of origin for knitting machinery are Germany and China (26% each), followed by Italy and Taiwan (13% each). Popular knitting machines used in Kenya include: Karl Meyer, Stoll, Biuckner and Universal (Germany), Jinke, Yalond and Butterfly (China), Busi, Komet and Rimach (Italy), Pailong and Mayers (South

Korea), and Flying Tiger (Taiwan). Forty-five per cent of the machines are less than five years old, while 36% are more than 20 years old.

Installed and available knitting capacity is 4,384 tons. Production in 2018 was 3,032 tons (Figure 29). Capacity utilization in the knitting segment is relatively high – production was at 69% of installed capacity.

**Figure 29: Knitting capacity and actual production**

Note: Actual production in 2018 excludes knitted socks.

Source: SITA Survey in Kenya, ITC, 2019.

The machines are comparatively newer than is the case in the weaving segment and, therefore, perhaps less in need of upgradation. However, more than one-third of the machines are more than 20 years old – suggesting the need for new machinery.

## PROCESSING OF TEXTILES

Germany (28%), China (20%) and Japan (17%) are the largest suppliers of processing equipment, including dyeing, printing and finishing machinery. India supplies 14% of all processing machinery to Kenya, in particular printing technology – which is mainly sourced from Japan, followed by India, China and Germany. Germany, China, Italy and India are the largest suppliers of dyeing and finishing equipment.

The majority (62%) of dyeing and finishing machines are more than 20 years old; 19% of the machines have been upgraded during the past five years. For printing machinery, the picture looks different – 40% of the machinery has been acquired during the past five years, while 27 are more than 20 years old, and 33% are 10-20 years old.

These findings suggest that there are opportunities for supply of new dyeing, finishing and printing machinery to Kenyan companies.

## GARMENT MANUFACTURE

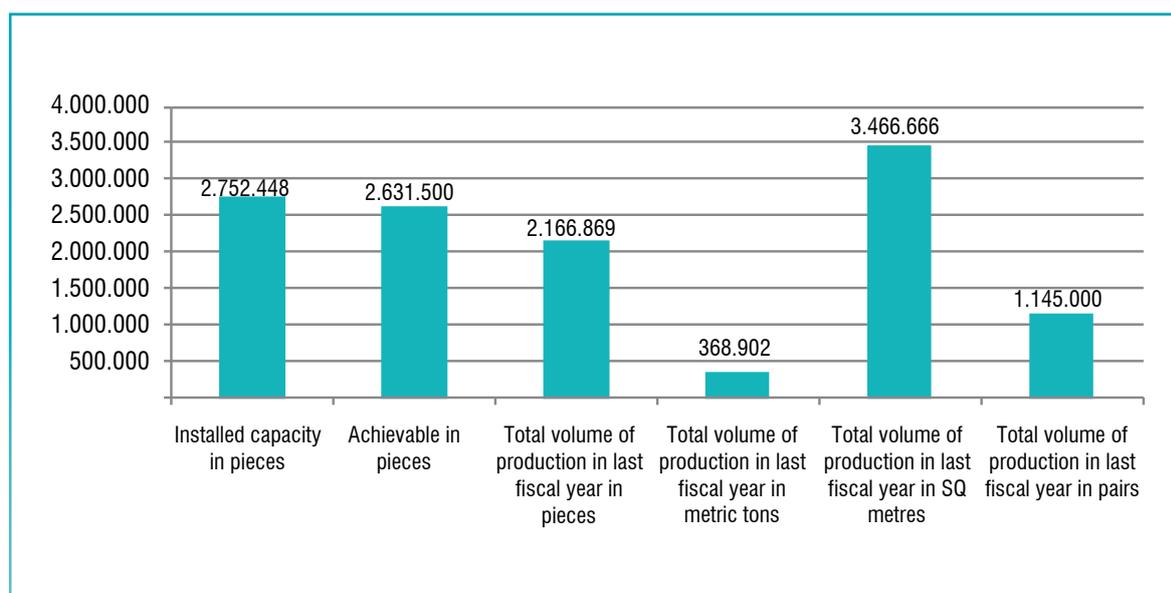
Japan supplies 47% of the sewing machines used, followed by China (35%). Juki (Japan) is by far the most widely used sewing machine in Kenya. Others include Brother and Singer. Age of the machines are relatively evenly split, with most (35%) being 5–10 years old.

According to the survey, installed sewing capacity across the interviewed companies is 2.75 million pieces, while actual production in 2018 was 2.17 million pieces (Figure 30). It bears noting that, in this survey, the volume of apparel exporters were under-represented; hence, the capacity and production levels are actually higher.

The capacity utilization rate is quite high, at 79%. This is reflective of an established garment segment where, in many cases, companies have long-standing accounts with buyers. The uniform business is a good example, where there is a consistent stream of business and, in many cases, factories are producing for one or two clients.

Unlike in Ethiopia, there have not been many significant new investments in the apparel subsector in Kenya, so perhaps the opportunity for the sale of new machines is limited. However, it is anticipated that new investors will begin to come into the new market as Kenya's strategy to attract more FDI progresses.

**Figure 30: Sewing capacity and actual production (in pieces)**



Source: SITA Survey in Kenya, ITC, 2019.

## REGIONAL SOURCING AND THE ROLE OF TECHNOLOGY

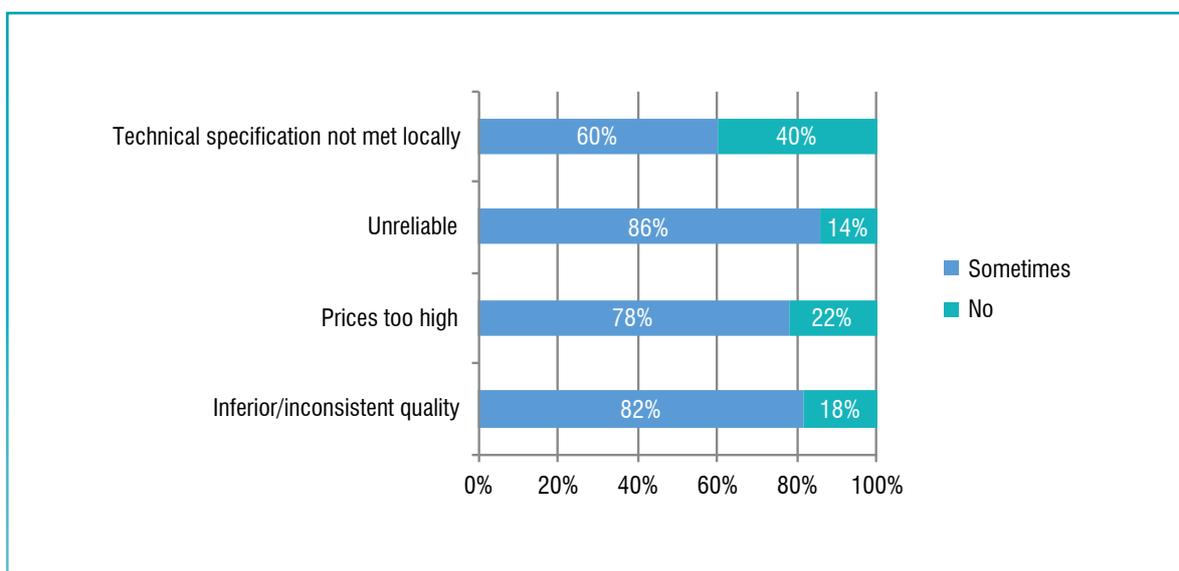
The majority of fabrics used in the export-oriented garment segment is imported. When asked if local and regional textiles companies meet their requirements, nearly half of all apparel manufacturers in Kenya said only sometimes. Main challenges Kenyan apparel companies face when sourcing inputs locally or regionally are: unreliable supply (86%) and inferior or inconsistent quality (83%). Interestingly, 78% of the interviewed

companies in Kenya say that prices of locally available inputs are too high (Figure 31).

The lack of integration whereby textiles are not supplying the apparel companies in Kenya is seen as hindering the sector's potential.

Apparel companies were also asked to rate the role of technology in affecting the extent that local and regional companies are complying with their requirements. While there was a low rate of response, for those that did respond, one-third believed that technology "very much" plays a role.

**Figure 31:** Challenges apparel companies face when sourcing locally or regionally



Source: SITA Survey in Kenya, ITC, 2019.

Indeed, most companies (nearly 60%) say that, if textiles factories were to acquire new technologies that improve the quality of the fabrics, and those fabrics ultimately meet their requirements, they would consider purchasing locally.

## CONCLUSION

- Companies in Kenya recognize that technology upgradation is necessary to remain competitive and meet the demands of an evolving sector;
- There is a clear motivation on the part of textiles and apparel factories in Kenya to invest in new technologies;
- The government is perceived, by industry, as not supporting the sector effectively;
- Key challenges are the high interest rates and lack of access to finance, as well as a lack of spare parts in-country and lack of technical expertise to service machines locally;
- The general consensus among apparel producers in Kenya is that local supply of fabrics is poor due to inconsistent quality and price. The belief is that technology can play a critical role in improvement;
- The need to evolve and grow beyond CMT production to meet the needs of large brands that are increasing their sourcing from Kenya is evident;
- New technologies to meet the needs stated above are required. This includes energy efficient and environmentally friendly technologies that are being increasingly demanded by companies sourcing from Kenya;
- Companies by and large know what their needs are, but are not always sure about what is available on the market or what technologies are best for certain production processes, pointing to a lack of actionable information; and
- Companies want to link with suppliers, including from India to bridge the gap stated above.

# Tanzania

## PRIORITY SECTOR AND A MOVE TOWARDS INDUSTRIAL PARK DEVELOPMENT

Textiles and apparel is a priority sector in Tanzania as evidenced in the country's current Five-Year Plan for Industrialization and its National Cotton-to-Clothing Strategy. Given the importance of the sector, the Ministry of Industry and Trade launched the latter, the Cotton-to-Clothing (C2C) Strategy 2016–2021. This is essentially the government's blueprint to develop the cotton, textiles and apparel industry, which targets annual exports of \$150 million and 10,000 jobs by 2021. As with other countries in the region, Tanzania is also interested in building a competitive sector to reduce its reliance on imports of second-hand clothing.

Strategic efforts within the sector have focused largely on the production and export of unprocessed cotton, while cotton productivity has been declining relative to major competitors. As there has been limited focus on developing downstream activities, the textiles and apparel segments are comparatively small, though there is some evidence of growth in the knitted segments (both fabrics and apparel).

The textiles and apparel sector faces constraints in terms of capacity, product differentiation and value chain integration. It also has a challenging business operating environment, with high energy costs relative to its competitors, comparatively low labour productivity rates and a lack of access to finance due to high borrowing costs.

Imports of textiles for use in garment production for export markets are cheaper and of better quality than those produced domestically. All of this has hampered value chain integration. Indeed, as with other countries in the region, exported apparel still uses fabrics largely sourced from outside Africa, while domestically produced fabrics feed the local and regional markets. While apparel production has increased in recent years, its capacity trails competitors in the region, including neighbours Kenya and Ethiopia.

## RECENT TRENDS

While the government has renewed its effort to attract foreign investment, it has had limited success to date. The country is keen to match Ethiopia in its ability to

bring in new investment in the sector, including to attract new textiles mills and apparel producers in designated industrial zones. Tanzania has established its first special economic zone (SEZ) for textiles and apparel manufacturing. The Tanzanian Government is finalizing plans that will pave the way for implementing the construction of the Bagamoyo SEZ and the Bagamoyo port. It is believed that the zone will potentially be ready to accommodate investors by approximately 2025.

The momentum seems to be gaining traction, with hopes that new investors will come, especially in the textiles subsector. To support the investment push, a new investment policy is being developed and is expected to be released soon.

There is however some unease about how the country will proceed after the recent election. Will the sector continue to receive priority status and is there political will to see the necessary policy changes through? These are important questions, ones that are very much on the minds of current operators, but also new investors as both consider future prospects for the sector.

The move into backwards linkages, from spinning through to weaving and knitting, of course requires major capital investments – and the political will and vision to make it happen. This means policies that ease operations and begin to address major hurdles such as high interest rates and a lack of access to finance.

There have been some early positive signs. One company in Tanzania is now fully integrated, from ginning to garmenting. The company upgraded its technology recently and modernized its factory with new machines, enabling it to secure business with a large global brand for exports to the USA, but also to the European Union. This is significant, as it is a first for Tanzania and an indication that the country is heading in the right direction if it wants to become a major player alongside Kenya and Ethiopia in East Africa.

## MAJOR COTTON PRODUCER; KNITTED FABRIC AND APPAREL PRODUCTION RISING

Like Uganda, Tanzania is a significant producer of cotton. Tanzania is Africa's fourth-largest producer of cotton after the Republic of Mali, Burkina Faso and the Arab Republic of Egypt. Tanzanian cotton production accounts for 28% of East African production and 7%

of production in Sub-Saharan Africa.<sup>29</sup> After coffee, cotton is Tanzania's largest export crop. The government plans to boost cotton exports to \$150 million by 2020, up from \$102 million exported in 2013 according to Tanzania's National Bureau of Statistics.

Tanzania produced approximately eighty one thousand tons of cotton lint in 2014, and 4,330 tons of cotton yarn in 2015.<sup>30</sup> Production, however, has remained relatively stagnant during the past several years. The sector's competitiveness has steadily been decreasing, as the productivity gap with other significant cotton-producing countries has widened.

Tanzania's value chain is incomplete and fragmented. Most cotton (approximately 70%) is exported, and a handful of textiles mills and apparel manufacturers produce for local and regional markets and for export markets – primarily to the United States under AGOA.

Notably, while cotton production has largely declined in Africa relative to the rest of the world, the Tanzanian spinning sector has actually performed quite well. Indeed, as indicated in Tanzania's Cotton-to-Clothing Strategy (2016–2020), Tanzania is only one of two countries in Africa (the other being Ethiopia) where cotton mill use increased during the period 1990–2014, from 14,000 to 34,000 tons.<sup>31</sup>

## RISING APPAREL EXPORTS

Tanzania's apparel exports, while larger than both Rwanda and Uganda, are below those of Kenya and Ethiopia. The majority of Tanzania's apparel exports are to the United States under AGOA. Tanzania's exports to the USA have been steadily rising since 2014, reaching \$53 million in 2019. Other key export destinations include: Kenya, Mozambique and South Africa, the latter two due in large part to Tanzania's Southern African Development Community (SADC) membership.

Tanzania's worldwide textile and apparel exports were nearly \$107 million in 2019 (Table 17). Over a third of the exports in the sector are of made-up textile articles and other products in HS Code 63. This includes such products as bed linens and mosquito nets, the latter of which Tanzania is a major producer. The rest is split between articles of apparel and clothing, both knitted and woven (HS Codes 61 and 62), with higher volumes in knits.

For EPZ-based factories, 100% of the apparel is exported. For factories outside of the EPZs, approximately 53% is for export sales, with the balance sold to the local market.

**Table 17: Tanzanian textiles and apparel exports**

HS code	Product	Exports worldwide (2019)
61	Articles of apparel and clothing accessories, knitted or crocheted	\$47.15 million
62	Articles of apparel and clothing accessories, not knitted or crocheted	\$27.00 million
63	Other made-up textile articles; sets; worn clothing and worn textile articles; rags	\$32.71 million
Total value		\$106.87 million

Source: Trade Map, ITC, 2020.

## KEY FINDINGS<sup>32</sup>

### There are currently nine active textile and apparel companies

There are a larger number of textiles and apparel manufacturing factories in Tanzania, but currently only nine

are active. The nine active textiles and apparel factories employ approximately 14,000 workers.<sup>33</sup>

Two factories have closed recently with the possibility of reopening, and a further five factories have shut down and are unlikely to reopen.<sup>34</sup> This is reflective of the current perceived risk within the sector in Tanzania, as well as overall consolidation within the industry. It is hoped that, through the government strategy to

29.– Tanzania Cotton-to-Clothing Strategy, 2016/17–2020/21.

30.– Tanzanian National Bureau of Statistics.

31.– Tanzania Cotton-to-Clothing Strategy, 2016/17–2020/21.

32.– Note: Companies in Tanzania were not interviewed directly. Information presented in this section was mainly gleaned from a company survey and related analysis by the Institute of Development Studies for the International Growth Centre (Saha et al, 2019), which allowed the use of its anonymized survey data and some of its findings. They interviewed 20 companies, including both larger-scale manufacturing units as well as small companies with 20 or less employees. Some of the information shared originates from the work by the Textiles Development Unit in the Ministry of Industry and Trade, based on Tanzania's 2018 Annual Survey of Industrial Production.

33.– Survey of Textiles and Apparel Factories in Tanzania (2018), Textile Development Unit (unpublished).

34.– Ibid.

revitalize the sector and bring new investment, new entrants –including foreign direct investment– will come into the market and drive competition.

### The majority of companies have more than one operation

The majority of companies have more than one operation: five of the factories have spinning units, four have weaving units, three factories have knitting units and five factories have sewing units.<sup>35</sup>

### Fifty-five per cent of companies invested in machinery in 2018–2019

The 2019 study by the Institute of Development Studies (IDS) shows that 70% of the manufacturing apparel and textile companies say that they have invested in some sort of machinery in 2018–2019 (including second-hand machinery); the majority of the machinery was imported. Fifty per cent of the interviewed companies say that they have purchased advanced machinery, equipment and software from outside the business (innovation investment).<sup>36</sup>

### Investment in technology upgrading spread across subsectors

The interest in upgrading technology appears to be strong and spread relatively evenly across the

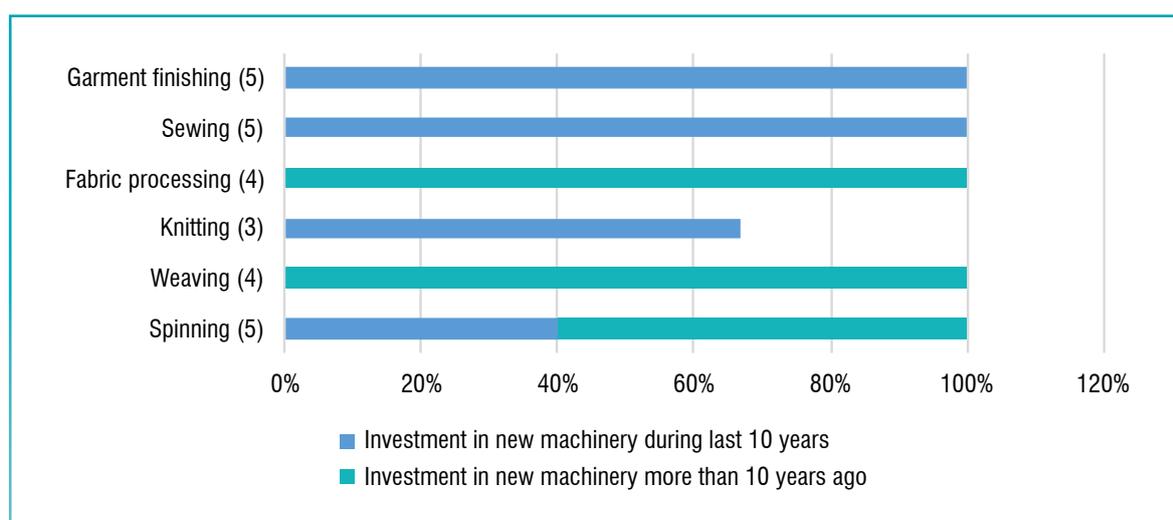
subsectors (Figure 32). As previously mentioned, 40% of the interviewed companies recently invested in advanced machinery, equipment or software; approximately 15% were done in each of the subsectors –spinning, knitting and weaving, dyeing and printing and sewing.

During the past 10 years, all of the garment units have invested in sewing and garment-finishing machinery. There have also been some investments in new technologies within the knitting and spinning segments (Figure 32). Spinning, weaving and fabric processing machinery is relatively old, and there is need for technology upgradation.

There appears to be an interesting correlation between recent investments in new technologies in the knitting segment and increased production in that subsector, as well as increased production of knitted garments. The assumption is that these new investments in machinery increased efficiencies and capacity, enabling greater production in this segment. Supply of these larger volumes of fabrics to companies exporting knitted garments is also a positive sign and a move towards greater value chain integration.

The need for upgradation clearly exists in the spinning, weaving and fabric processing segments. Similar new investments in technology in these segments could likewise bring greater efficiencies and increased output, perhaps further integrating the value chain.

**Figure 32: Investment in new technology by production segment**



**Source:** Based on Survey of Textile and Apparel Factories in Tanzania (2018, unpublished), Textile Development Unit, Tanzanian Ministry of Industry and Trade.

35.– Ibid.

36.– Own analysis based on Institute of Development Studies (IDS) data (2019), only considering companies with more than 60 employees or manufacturing units.

## Motivation for innovation

The motivation by Tanzanian textile and apparel manufacturing companies to innovate, including through technology upgradation, is driven by several factors.<sup>37</sup> Replacing outdated products or processes is among the key factors that companies identified –60% of the companies consider it of high importance. Other key factors include improving quality of goods and services, improving capacity for producing goods and services, meeting regulatory requirements and standards, reducing environmental impacts, and improving health and safety.

## Challenges associated with innovation and technology upgradation

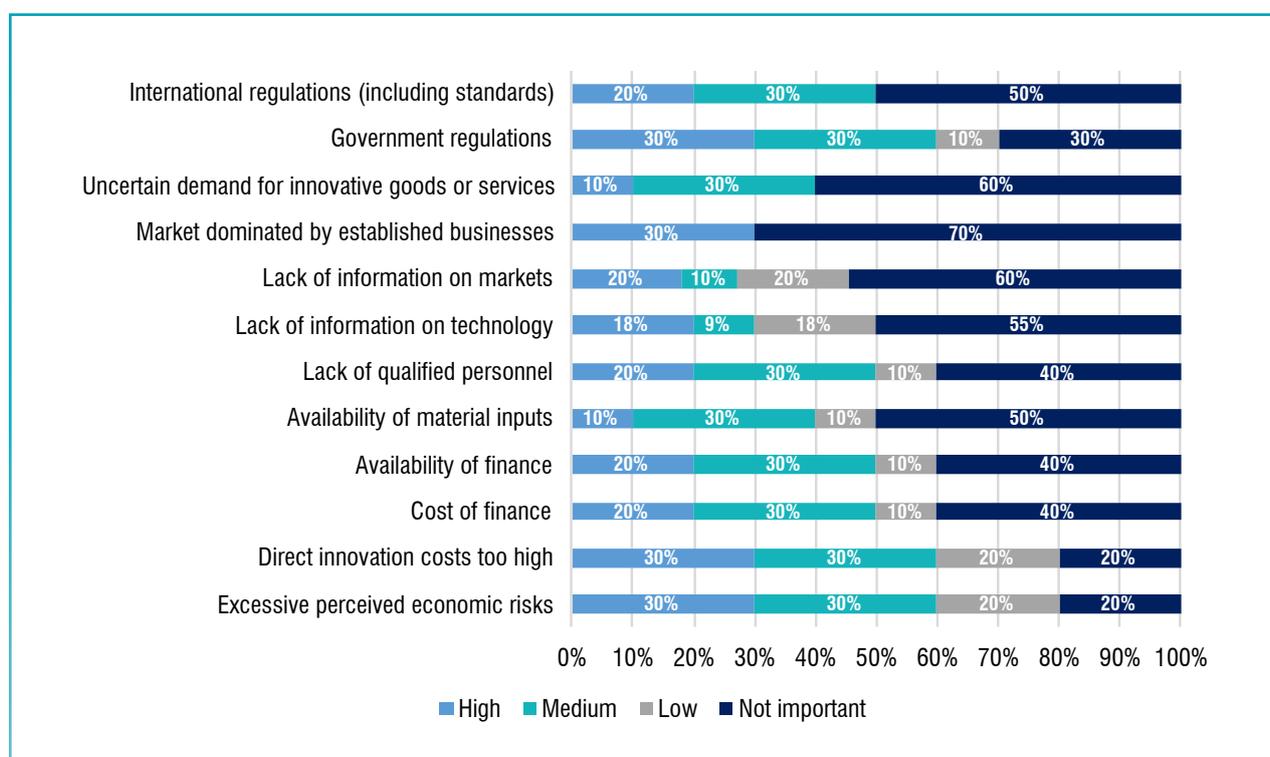
While companies have an interest to innovate and upgrade their machinery, there are factors constraining the innovation activities by Tanzanian textiles and apparel companies (Figure 33). Excessive perceived economic risks (60%), government regulations (60%) and direct innovation costs are the major challenges (high or medium) that hamper innovation and technology

upgradation. Availability of finance, cost of finance and lack of qualified personnel are also perceived as constraints to innovation and technology upgradation by half of the companies.

To put the above challenges into context, the excessive perceived economic risks can be attributed in part to the fact that Tanzania is at a crossroads as it seeks to build the sector. With a large competitor as its direct neighbour in Kenya, and another developing giant in Ethiopia in the region, Tanzania faces uncertainty. There are solid strategies in place to attract investment and grow the sector, and a generally favourable outlook on prospects for the sector moving forward.

On the other hand, the business environment is challenging and there are very real hurdles that operators face. Average interest rates according to the World Bank are 16% and have historically been quite high, making local financing very challenging. This is coupled with the fact that banks in Tanzania are risk averse in their lending practices, so access to finance is an issue. Energy costs, too, are relatively high, averaging 11 cents/kw. This is lower than in Kenya, but higher than Ethiopia's very low rates.

**Figure 33: Factors constraining innovation by companies in past three years**



**Note:** For this analysis, only responses by the 10 largest (manufacturing) companies have been considered. Companies with less than 60 employees not considered.

Source: Own analysis, based on anonymized survey data shared by the Institute of Development Studies (IDS) (2019).

37.– Own analysis, based on Institute of Development Studies (IDS) data (2019); only considering companies with plus 60 employees or manufacturing units.

A main reason for capacity underutilization is the lack of access to regional markets; chiefly the East African Community (EAC) and Southern African Development Community (SADC) were also identified as a reason for underutilization of capacity (on average 35%). Despite unrestricted access to both regional markets as well as some success in exporting to individual countries (e.g. Kenya, Mozambique and South Africa), companies feel that they have not been able to fully exploit these markets.

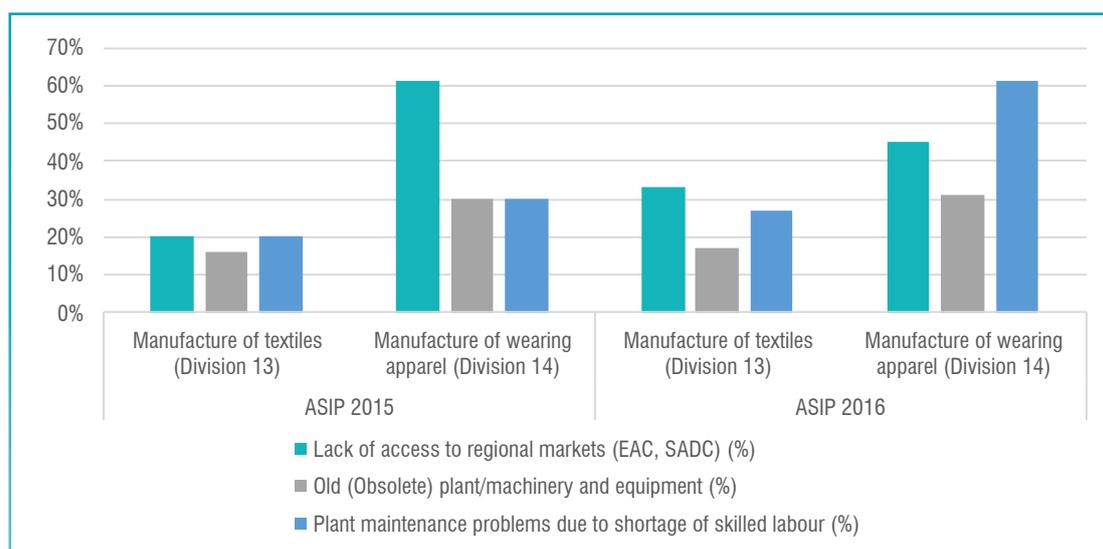
Companies also report that they face plant maintenance challenges due to a shortage of skilled labour (Figure 34). This is particularly true in the apparel sub-sector. As has been observed in other countries in this report, maintenance issues must often be handled remotely. This adds time and cost and is particularly challenging when machines become idle, effectively shutting down operations for extended periods of time. Inadequate (old) equipment and technology was also mentioned by companies as a key reason that capacity is not fully being used within the sector. The lack of spare parts locally contributes to this problem.

Some industry stakeholders refer to the challenges the sector is currently facing, such as the high levels of imports of fabric and apparel that are either undeclared at customs, or not correctly invoiced, resulting in tax evasion. According to these voices, investment in innovation and technology upgradation is discouraged by these cheap imports.

Why is this relevant? If Tanzania is successful in its drive to bring foreign direct investment and build the value chain, it has an opportunity to leapfrog older technologies, to bring in new machinery that is more efficient and environmentally friendly. This is, in fact, what has started to happen in Ethiopia. However, the technologies must be operated and maintained, and Ethiopia faces this challenge as well. A commitment to training is required to manage the next generation of technology.

There has been some positive movement in this area. Both the International Finance Corporation country office and the Ministry of Industry and Trade through the Textile Development Unit are focused on skills development within the sector.

**Figure 34: Reasons for capacity underutilization in the textiles and apparel sector**



**Source:** Saha et al, 2019, *Technology Demand and the Role of South-South Trade in Tanzania's Textiles and Apparel*.

Based on data from the Annual Surveys of Industrial Production 2015–2016.

## OUTLOOK FOR SECTOR: DOES TECHNOLOGY PLAY A ROLE?

All of the companies surveyed viewed technology as essential to remain competitive and grow. The Textile Development Unit (TDU) study reveals that, while there has been some trepidation about the future of the sector – including the perceived risks within the industry

and questions about the future of the USA market when AGOA ends in 2025 – a number of factories have expansion plans in place. In many cases, these factories have delayed their expansion and planned investments in new technology due to operating constraints within the country. Others have made investments, as we have seen, in upgraded technology for knitting.

The study conducted by the International Growth Centre (IGC) found that a firm's decision to innovate is mainly based on product quality enhancement, increased productive capacity, and concerns regarding health and safety regulations (which are related to compliance with mandatory standards). That is, companies seek to upgrade their technology to meet buyer demands in terms of product quality and volume, but also to meet required product safety standards.

Other factors cited include: reducing the cost of production, reducing environmental impacts and generally replacing outdated technology as a means to remain competitive.

The most important sources of information for such innovation include: within a company's own business group (internal), suppliers of the technology themselves, and customers (both public and private sector). In the latter instance, buyers often dictate the types of machines necessary to meet orders. Conferences and exhibitions were also identified as important sources of information on the most up-to-date technologies available globally.<sup>38</sup>

## TECHNOLOGY CONSIDERATIONS BY INDUSTRY SUBSECTOR

### Capacity utilization

The average capacity utilization of Tanzanian textiles and apparel manufacturing units is approximately

67.8%.<sup>39</sup> According to the Textile Development Unit (TDU) survey, the average capacity utilization in the knitting segment is highest (83%), while the capacity utilization in the sewing segment is 74%.<sup>40</sup> This picture differs largely from Kenya, where capacity utilization in the spinning, weaving and knitting segments is low, while it is relatively high for processing and sewing.

## CHARACTERISTICS OF MACHINERY

### Machinery is mainly manual or semi-automated

Textiles and apparel factories in Tanzania mainly use manual and semi-automatic machinery (Table 18). Only 13% of the textiles manufacturing companies and 19% of the apparel manufacturing companies use fully automated machinery. The comparison of the 2015 versus 2016 data from the Annual Surveys for Industrial Production suggests that some of the manual machinery for garment manufacturing was replaced by semi-automated machinery.

China is the main supplier of machinery – from manual to fully automated machinery, for both textile and garment manufacturing. India is also an important supplier, in particular for semi-automated and fully automated textile machinery.

**Table 18: Current plant technology status (2015–2016)**

		Manufacture of textiles	Manufacture of wearing apparel	Manufacture of textiles	Manufacture of wearing apparel
Current plant technology status (average %)	Manual	43.9%	57.1%	43.8%	50.1%
	Semi-automated	42.8%	24.5%	43%	31%
	Fully automated	13.3%	18.4%	13.2%	18.9%
Country of origin main machinery and other equipment (%)	Manual	China (46%), India (8%)	China (33.3%), India (16.7%)	China (41.7%)	China (47.1%), UK (5.9%)
	Semi-automated	China (30.8%), India (23.1%)	China (42.9%), India (14.3%)	China (42.4%)	China (25%), Japan (25%)
	Fully automated	China (28.6%), India (28.6%)	China (25%), Germany (25%)	China (38.5%), India (23.1%)	Germany (40%), USA (20%)

**Source:** Technology Demand and the Role of South-South Trade in Tanzania's Textiles and Apparel, Saha et al, 2019.

Based on Annual Surveys for Industrial Production (ASIP) 2015–2016, Tanzania National Bureau of Statistics.

38.– Saha et al, 2019, Technology Demand and the Role of South-South Trade in Tanzania's Textiles and Apparel.

39.– Own data analysis, based on 2019 interviews by the Institute of Development Studies (IDS) for the International Growth Centre (IGC); only considering companies with more than 50 employees (i.e. the large manufacturing units).

40.– Survey of Textile and Apparel Factories in Tanzania (2018, unpublished), Textile Development Unit, Tanzanian Ministry of Industry and Trade.

## China and India, top technology suppliers

According to interviews conducted in 2019, China (50%) and India (25%) are also the top two import markets for advanced machineries acquired by Tanzanian factories during the past three years.<sup>41</sup> Approximately

one-third of the machines used in spinning come from China, as do nearly all of the sewing machines (Table 19). Approximately one-third of the knitting and weaving machines are imported from India. India also supplies approximately one-third of the dyeing and printing machines.

**Table 19: Investment in segments by country of origin**

	Spinning	Knitting or weaving	Dyeing or printing	Sewing
Segment targeted by investment in advanced machineries (past 3 years)	15%	15%	15%	15%
Main country of origin	China (33.3%)	India (33.3%)	India (33.3%)	China (100%)

**Source:** Technology Demand and the Role of South-South Trade in Tanzania's Textiles and Apparel, Saha et al, 2019.

## Goods and services imported from India

Machinery accounts for nearly 20% of all goods and services imported from India by Tanzanian textiles and apparel companies (Table 20). India is also viewed

as an important source for chemicals. Nearly 55% of Tanzania's imports from India are in this product category. Yarn and fabric make up more than 18% of Tanzanian imports from India. A further 9% is comprised of technical training from India.

**Table 20: Indian goods and services imported by Tanzanian companies (2019)**

Goods and services imported from India	
Machinery	18.18%
Yarn and fabric	18.18%
Chemicals	54.55%
Training	9.09%

**Source:** Saha et al, 2019, Technology Demand and the Role of South-South Trade in Tanzania's Textiles and Apparel.

## YARN MANUFACTURE

According to National Bureau of Statistics (NBS), 4,330 tons of cotton yarn was produced in Tanzania in 2015, dropping from a peak of 11,442 tons in 2005 (Table 21). The eight-year compound annual growth rate from 2005–2013 was 11.7%.

**Table 21: Production within operating segments**

Product	Unit	2005	2009	2010	2011	2012	2013	2015
Cotton yarn	Tons	11 442	5 791	5 163	3 459	3 169	4 223	4 330
Woven fabrics	Square metres (thousands)	94 881	92 249	103 605	100 018	83 592	86 639	80 164
Knitted fabrics	Square metres (thousands)	11 320	9 554	7 616	6 315	8 993	9 003	20 332
Knitted garments	Number of pieces (thousands)	291	404	369	369	420	3 804	5 446

**Source:** United Republic of Tanzania, National Bureau of Statistics (2014 and 2015).

41.– Saha et al, 2019, Technology Demand and the Role of South-South Trade in Tanzania's Textiles and Apparel.

## FABRIC MANUFACTURE

Production of woven fabrics in Tanzania has declined over the years, while knitted fabric production has increased (Table 22). In 2013, Tanzania produced 86.6 million square metres of woven fabric, which represented a 1% decline during the previous eight-year period. Production decreased again during the next two years, dropping by 7.5% in 2015.

Similarly, knitted fabric production decreased by nearly 3% during the same eight-year period, with production totalling just more than 9 million square metres in 2013. Production increased markedly (by 125%), rising to 20.3 million square metres in 2015. Capacity utilization rates have also increased and are quite high, with an average utilization rate of 83% according to a study done by the Ministry of Industry and Trade's Textile Development Unit (TDU). This appears to reflect increased demand due to some product diversification by apparel producers.

## GARMENT MANUFACTURE

Production of apparel in Tanzania has also experienced high rates of growth. According to the National

Bureau of Statistics (NBS), in 2015, Tanzania produced 5,446,000 pieces of knitted garments, and gross output of apparel was \$16.5 million. This is a 43% increase in production levels during 2013, which follows a compound annual growth rate of 38% in 2005–2013.

There is a similar picture in the trend of exports, as exported apparel has increased steadily during the past several years, rising to \$107 million in 2019 from \$38 million in 2014.

According to the Textile Development Unit (TDU) study, installed sewing capacity in 2018 was 61.4 million pieces with an average utilization rate of 74%.

## SNAPSHOT OF GROWTH RATES WITHIN THE VALUE CHAIN

A summary of production rates in the various operating units in 2013 versus 2015 is shown below. While production of woven fabrics has decreased and cotton yarn production has increased marginally (2.5%), knitted fabrics and garments have increased substantially, by 125% and 43%, respectively.

**Table 22: Percentage increases within operating segments**

Product	2013	2015	Increase/decrease
Cotton yarn	4 223 tons	4 330 tons	3%
Woven fabrics	86 639 000 square metres	80 164 000 square metres	-8%
Knitted fabrics	9 003 000 square metres	20 332 000 square metres	125%
Knitted garments	3 804 000 pieces	5 446 000 pieces	43%

**Source:** United Republic of Tanzania, National Bureau of Statistics (2014).

A summary of production rates in the various operating units in 2013 versus 2015 is shown below. While production of woven fabrics has decreased and cotton yarn production has increased marginally (2.5%), knitted fabrics and garments have increased substantially, by 125% and 43%, respectively.

It appears that the woven segment is ripe for investment in new technology to grow that subsector and bring production levels of fabrics and garments up to the levels and growth experienced in the knitted segment.

## CONCLUSION

- Tanzania, in line with its national sector strategy, is committed to value-added cotton production and increasing investment in the textiles and apparel value chain, particularly in the textiles subsector;
- The country is committed to the development of industrial parks that will bring foreign direct investment into the sector;
- Old plant machinery has hindered the sector, particularly in textiles, compounded by lack of both spare parts and of locally based technical experts;
- As with other countries in the region, the textiles subsector has largely been unable to meet the needs of apparel producers. Investments in new technology

will begin to create the backwards linkages necessary to drive the overall sector forward;

- Availability of finance and cost of finance are perceived as constraints to innovation and technology upgradation by half of the manufacturing companies, while the other half does not perceive this as a barrier to innovation;
- Tanzania has established ties with India, with approximately 25% of advanced machinery, equipment and software currently coming from India. These are concentrated in the knitting, weaving and finishing (dyeing and printing) segments;
- There is strong motivation to upgrade machines and technology. Replacement of outdated processes (and, hence, machinery) or products is a key factor driving innovation;
- If Tanzania is able to capitalize on its investment targets through attraction of FDI, there will be increased demand for sewing machines as well as new technologies in the textiles subsector to fuel export-led growth in apparel production; and
- Good potential exists to supply machinery to certain segments of the value chain, including knitted fabrics and garments, which have shown growth in recent years.



## Uganda and Rwanda

Uganda and Rwanda are both small, landlocked, countries without direct access to a major port. Their textiles and apparel sectors are both small and underdeveloped, heavily weighted toward production for domestic and regional markets. Uganda has a long tradition in producing cotton; two of the few integrated textile mills in the region are based in Uganda. Rwanda is not a cotton-producing country; some export-oriented CMT production can be found in Rwanda solely.

Both countries view the sector as keys to their economic development and have accordingly prioritized them in their respective strategic plans. As such, both governments are seeking to expand the sectors through the attraction of foreign direct investment, including textile mills and job-creating apparel factories serving export markets. At the same time, both governments are seeking to build local capacity through greater local procurement of textiles and apparel and a domestic market that is less reliant on imported second-hand clothing.

### UGANDA

Uganda's textile and apparel value chain is small and disjointed. The country does produce large volumes of good quality cotton, but it only has a handful of fully integrated factories producing textiles and apparel. Unlike Ethiopia and Kenya, it does not have large numbers of volume apparel producers operating in exporting processing zones, though the government is moving in this direction. Uganda is the second-largest cotton producer in East Africa after Tanzania. Uganda currently produces approximately 150,000 bales of cotton

per annum. However, more than 85% of the cotton is exported without local value addition.

The government maintains a "buffer stock fund" of cotton for use by companies locally. The government buys the cotton and puts it in bonded warehouses, and companies pay for what they process. This locally processed cotton amounts to less than 15% of Uganda's total cotton production; the rest, as stated above, is exported.

There are only two operational spinning mills, but these are not standalone facilities; both are part of integrated textile plants producing yarn, fabric and garments. The majority of production is for domestic and regional markets and is concentrated in basic garments (T-shirts and uniforms). Fabrics are produced for in-house use as well as exported regionally.

Uganda's success in exporting apparel to the United States under AGOA has been limited since passage of the Act in 2000. Indeed, there's been frustration in the country over its inability to effectively take advantage of the preference programme. Uganda exported a mere \$103,000 worth of apparel to the United States in 2019. Even at its peak in 2005, Uganda exported only \$5 million.

The total value of Ugandan apparel exports was about \$5 million in 2019 (Table 23). Most exports of apparel are to Europe (60%). The two largest export markets currently are Germany (80%) and the Kingdom of Denmark (20%).

About 45% of the total (\$5.12 million) is in made-up textiles articles (HS Chapter 63). The balance is in apparel, with knitted clothing accounting for \$2.62 million and woven apparel accounting for \$0.25 million.

**Table 23: Uganda textiles and apparel exports**

HS code	Product	Exports worldwide (2019)
61	Articles of apparel and clothing accessories, knitted or crocheted	\$2.62 million
62	Articles of apparel and clothing accessories, not knitted or crocheted	\$0.25 million
63	Other made-up textile articles; sets; worn clothing and worn textile articles; rags	\$2.25 million
Total value		\$5.12 million

Source: Trade Map, ITC, 2020.

Exports of textiles and basic garments (uniforms, etc.) to the region make up approximately 15% of Uganda's sales, including the Democratic Republic of the Congo, Rwanda, South Sudan and, more recently, Kenya. The rest is for the local market (some of which become cross-border exports).

The value chain is still highly focused on local and regional markets, e.g. basic products that use locally produced fabrics. There has been some more recent success in volume exports of apparel to European Union markets by one integrated textile mill. The product range is heavily weighted towards knits, e.g. T-shirts (85%), as well as sports pants, leggings and ladies' dresses.

Uganda, through its Buy Uganda, Build Uganda (BUBU) initiative, seeks to promote consumption of locally produced products. This includes procurement by government institutions of uniforms for the police and military, etc., which is opening up opportunities for increased production and sales to the local market.

Uganda has completed the development of a strategy for its cotton, textiles and apparels sector. Produced under the National Planning Authority, the strategy proposes to revive the cotton value chain and calls for increased investment in garment production, including export-oriented apparel factories. The strategy envisions 50,000 new jobs and \$650 million in additional export revenues during the next eight years. In addition to increasing the value of Uganda's cotton output, the strategy seeks to establish five new vertically integrated textile mills.

## RWANDA

Rwanda has a relatively small and underdeveloped textile and apparel value chain, with negligible cotton production and one fully integrated factory that largely serves the domestic and regional markets for uniforms. There are no stand-alone textile mills outside of this factory, and the textiles produced there largely do not meet the demand of local apparel producers producing for export in terms of quality or price. There are several smaller companies and one large export-oriented factory. There is an industrial zone – the Kigali Special Economic Zone – where a handful of new investors across different sectors operate. One company under previous Chinese ownership had established itself with the goal of exploiting the USA market, but with the loss of AGOA eligibility in 2018, production by a new company (which recently bought the old company) now focuses on other export markets in Europe and Asia.

Rwanda's total exports of apparel in 2019 were only \$17,000 to the United States due to its current status as an AGOA-ineligible country for apparel exports. This compares to the almost \$470 million that Kenya exported to the United States alone in 2019.

Total textiles and apparel exports were nearly \$25 million in 2019 (Table 24). Made-up textiles articles make up a large percentage (80%) of this total (nearly \$20 million).

**Table 24: Rwandan textiles and apparel exports**

HS code	Product	Exports worldwide (2019)
61	Articles of apparel and clothing accessories, knitted or crocheted	\$2.25 million
62	Articles of apparel and clothing accessories, not knitted or crocheted	\$2.95 million
63	Other made-up textile articles; sets; worn clothing and worn textile articles; rags	\$19.78 million
Total value		\$24.98 million

Source: Trade Map, ITC, 2020

As part of the government's strategy to build up its textiles and apparel sector, Rwanda currently maintains a ban on the importation of second-hand clothing. The government has identified textiles and apparel as a priority sector and has provided incentives to the industry, particularly geared towards foreign investment in export-oriented apparel production, where the potential for employment is also the greatest.

In the area of technology upgradation, the government also has programmes that target small and medium-sized operations. The Ministry of Trade and Industry maintains a facility through the Business Development Fund (BDF) that assists companies with machinery upgradation. Successful applicants to the

facility receive exemption of import duty and VAT on the imported machinery.

There is also a Skills Development Fund (SDF) under the Workforce Development Authority (WDA). Successful applicants receive support to train its workers. The programme involves six months of training by company identified trainers, and the fund covers the cost of bringing the trainees to Rwanda and expenses for the duration of the training. This facility is directly tied to technology upgradation in that upgraded technology is a necessary prerequisite; an applicant must have the technology in place to access the facility, and the training specifically covers technical training on the new machines.

## KEY FINDINGS

In Uganda and Rwanda, there are currently two active textile and garment manufacturing companies each, some of them targeting international markets.

One company sees its labour force doubling by March 2020 via expansion with its new factory. This will require new technologies to meet growing demand. The company also recently acquired a major new international client, which requires production schedules and turnaround time that very much define the “fast fashion” model. To service this client, the company would need to import new automatic machines that will increase its productivity and meet efficiencies demanded for seasonal business.

Another company has plans for expansion and has identified specific technology needs, i.e. where the priorities are in the production process and which specific machines are needed.

One company noted that it is only operating at 40% capacity. The reasons for falling short of full capacity are a lack of customers beyond current clients and a move into new product ranges. New products will bring new buyers, for which new machines will need to be procured. Some of the machines can be anticipated

through planning, while in some cases the buyers themselves will dictate new technologies.

## UGANDA – INTEREST IN UPGRADING TECHNOLOGY AND OUTLOOK FOR SECTOR

Technology is unquestionably a factor for companies operating in Uganda, particularly given the size and structure of the value chain. Given that Uganda is a large cotton producer and would like to add more value in-country than is currently the case, one priority area for upgradation is in spinning. Currently, only 10% of Uganda’s produced cotton is used for value addition – there is a need to strengthen value addition.

One stakeholder referenced the need for Uganda to follow the Republic of Uzbekistan’s model of using the cotton sector to drive investment in the whole value chain.

As the full value chain develops and Uganda increases its base of textiles and apparel production through new investment, new technologies will be needed. A sampling of some of the priority needs identified by stakeholders follows.

**Table 25: Technology in demand (Uganda)**

Current demand for new technology in Uganda	Specific requirements
Knitting and hosiery machinery and auxiliary machinery	
Washing, bleaching, dyeing, drying, finishing machinery, and related auxiliary machinery	Dyeing
Printing and digital printing machinery, and related auxiliary machinery	
Machinery of spinning preparatory, spinning machinery, winding, texturizing and twisting	Preparatory; winding; ring frame
Garment-making machinery and related auxiliary machinery	

**Source:** SITA stakeholder consultations in Uganda, ITC, 2019.

The outlook for the sector is mixed. Stakeholders in Uganda are cognizant of the fact that apparel exports have been limited and, while there is some level of integration within the value chain via vertically integrated factories, the companies are few and the base of production remains small in comparison to, for instance, Kenya. Attracting foreign investment, which is dependent on a conducive business environment, is critical.

*There are good prospects for the sector. Uganda is a pleasant and safe place, so if the government can bring new investment, the industry should grow.*

General Manager of a textiles and apparel company, Uganda

There have been some new investment commitments recently in both textiles and garmenting, including a Chinese textiles investor in the Kampala Industrial Zone and an Indian textiles investor in the Jinja Industrial Park. The latter has been ginning for many years, but has plans to expand to spinning, textiles and garments. The new investors coming are mainly from India and China.

In terms of expansion by current factories, there have been investments made during the last five years in both the textiles and apparel subsectors. All of these investments were made to upgrade the technology and increase capacity. Other new investments have been made in order to expand into new product categories, for example medical uniforms, which have brought new technologies to Uganda. These have included the printing and dyeing machines.

## RWANDA – INTEREST IN UPGRADING TECHNOLOGY AND OUTLOOK FOR SECTOR

All of the respondents to this survey noted a strong interest in upgrading their technology and indicated that the acquisition of new technology will enhance their global competitiveness. Upgraded machinery and new technology will improve two fundamental areas: capacity and price.

Finishing equipment was identified as a priority. These machines provide the critical “hand feel” to

cotton-based apparel. Dyeing equipment for textiles is seen as equally important. These technologies will allow local fabric production (and lesser reliance on imports) of a wider range of fabrics both for local production and, ideally, for use in exported garments.

Apparel producers, on the other hand, are generally content with their machinery and have access to the most current technology on the market through their foreign headquarters. In order for the value chain to develop and for backward linkages to take place, the critical need is within the textiles subsector.

Below is a snapshot of the current technology needs of textile and apparel companies in Rwanda.

**Table 26: Technology in demand (Rwanda)**

Current demand for new technology in Rwanda	Specific requirements
Embroidery machinery, braiding machinery and auxiliary machinery	Need to upgrade
Printing and digital printing machinery, and related auxiliary machinery	Need to upgrade; looking for printing machines for grey fabrics
Garment-making machinery and related auxiliary machinery	Need to upgrade
Machinery of spinning preparatory, spinning machinery, winding, texturizing and twisting	
Knitting and hosiery machinery and auxiliary machinery	
Making-up industry machinery and related auxiliary machinery	

**Source:** SITA stakeholder consultations in Rwanda, ITC, 2019.

The outlook for the sector among stakeholders is mixed. On the apparel side, views are generally favourable. Companies noted the initiatives being undertaken by the government, which views textiles and apparel as a priority sector and key driver of economic development. It is generally believed that garment production will continue to expand due to incentives, both for current operators and new investors. Respondents believe that new entrants will come into the market, driving competition.

A new investor in the country has a strong outlook for its own operations, as well. It believes that, through continued investments in machinery and new technology, it will become one of the premier apparel producers on the continent.

Conversely, stakeholders have a more measured view of the prospects for textiles. It was noted that there have been no table new textile investments, and any new entrants in this capital-intensive subsector would struggle to survive and compete against the installed capacity in the region.

## UGANDA – CHALLENGES WITHIN THE OPERATING ENVIRONMENT AND RELATED TO TECHNOLOGY UPGRADATION

**Low labour productivity:** While labour costs are low relative to other countries in the region, labour productivity is also seen as comparatively low. A minimum of three months (and ideally 4½ months) of training is required at the front end in a typical factory, supplemented by ongoing trainings. One company explained the steps towards workforce development in its factory: after the first month, 80% of the trainees will demonstrate their competencies and advance; after the second month, their productivity level will be 30%; finally, after 4½ months, workers will achieve efficiency levels of 50%. This is still below the 70% efficiency levels achieved in Kenya.

**Lack of skilled technicians:** It was noted that there are no training programmes available through government or other facilities in Uganda. Consequently, factories do all training in-house. The lack of skilled technicians to service machinery was identified as a major constraint.

**Cost of finance** is a major constraint. At interest rates of 21%–24%, many companies simply do not have the means to borrow locally to support investments. Lack of access to finance is, in fact, the major hurdle to technology upgradation in Uganda.

Energy costs are not an appreciable challenge, as the government subsidizes energy costs within the sector (3 cents/kw, compared with 11 cent/kw in other industries).

## RWANDA – CHALLENGES WITHIN THE OPERATING ENVIRONMENT AND RELATED TO TECHNOLOGY UPGRADATION

**Time and cost of transport:** The time and cost of transport has historically been a challenge for operators in Rwanda given its landlocked status, but stakeholders noted that these challenges have been reduced markedly with government subsidization of transport costs in recent years. This is particularly true for companies that operate in the industrial zone and produce for export markets. With the subsidies, these companies – which use both the ports of Mombasa, Kenya, and Dar es Salaam, Tanzania, for its export (and importation of inputs) – are able to mitigate their otherwise daunting transport costs. It is important to note, however, that these same incentives are not extended to local producers, so inland transport costs continue to be a hurdle for these companies.

**Labour skills gap:** Labour is not seen as a major challenge from a cost perspective. However, most

stakeholders noted a skills gap and the need for training as a critical variable. One company noted that the efficiency of its workforce was 45% when it started operations (as compared to an average of 75% in Kenya). However, through intensive in-house training of its operators, it was able to bring this efficiency variable up to 80%. The company noted that workers are trainable and it requires a 6-12-month period to achieve satisfactory operating efficiencies.

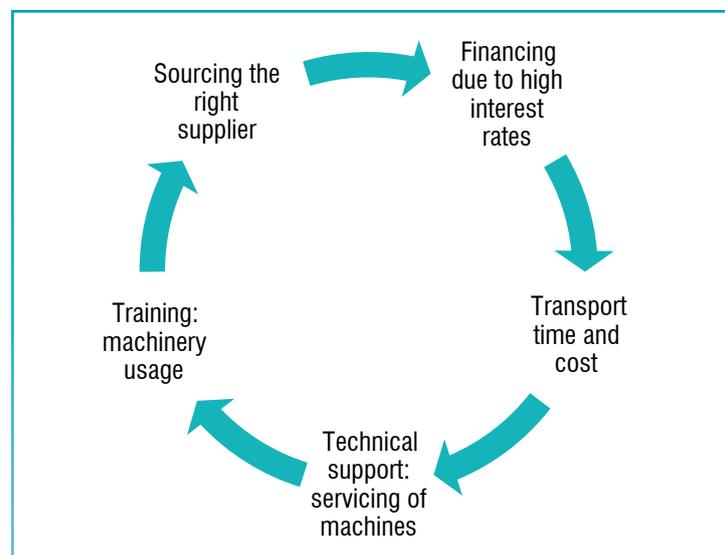
**Lack of technical expertise locally to service machines:** Several companies cited productive days lost due to idle machines and time required to obtain the necessary servicing from overseas.

**Lack of local supply of spare parts:** The lack of spare parts in Rwanda creates time delays when parts must be imported, contributing to factory downtime.

**Government incentives unevenly applied, causing pricing distortions:** One textiles manufacturer noted that it is being priced out of the market by government incentives (tax exemptions on imports) extended to garment exporters operating in Rwanda, which are able to import cheaper fabrics than what the company can produce.

Challenges specifically related to technology upgradation can be found in five areas, starting with identifying and sourcing from the right supplier. Then there is the issue of lack of access to finance and the high cost of borrowing, which can hinder companies' ability to finance such investments. There are time and cost issues to bring in the technologies and, once obtained, the available technical support to service the machines can often be lacking. Finally, there is very little local technical capacity regarding machine usage, presenting challenges in terms of training.

**Figure 35:** Challenges in upgrading technology



Source: Authors' illustration

## TECHNOLOGY CONSIDERATIONS BY INDUSTRY SUBSECTOR

### Capacity utilization

Capacity utilization in Ugandan and Rwandan factories varies from 40%–100%. Capacity utilization is highest for the sewing segment.

One company noted that it is only operating at 40% capacity. The reasons for falling short of full capacity are a lack of customers beyond current clients and a move into new product ranges. New products will bring new buyers, for which new machines will need to be procured. Some of the machines can be anticipated through planning, while, in some cases, the buyers themselves will dictate new technologies.

## CHARACTERISTICS OF MACHINERY

### Main sources of machinery are Germany, India, Japan and China

Factories in both countries use similar technology within the textiles and apparel sector.

The main sources of technology across the value chain are:

- Europe (Germany; Italy): 50%
- India: 20%
- Japan: 15%
- China: 15%

On the apparel side, the current installed machinery is primarily from Japan and China. In other areas of the value chain, from spinning through to finishing, the machinery comes primarily from the European Union and Japan (70%), China (15%) and India (15%).

One of the interviewed companies noted that its main investments have been in machinery for efficiency gains (e.g. semi-automatic machines) and that it plans additional investments during the next two years.

## YARN MANUFACTURE

Approximately 75% of the spinning capacity in both countries is currently being used. Spinning technology comes primarily from India, Germany and Japan and machines are generally 10–20 years old, with some less than 10 years old. The main constraint to full capacity utilization in spinning is the age of the machines. Indeed, several companies interviewed in both

countries believe that they need to upgrade their spinning machinery to achieve higher utilization levels.

## FABRIC MANUFACTURE

In both countries, approximately 40% of the inputs in weaving are sourced in-house, while 60% is imported due to unavailability in-country. Between the two countries, looms are currently operating at approximately 75% capacity. The machines – rapier, air jet and water jet looms – are 2–10 years old and primarily come from Japan and Italy, while others from Switzerland are more than 20 years old. The main constraint to greater weaving capacity is access to spare parts and time lags (including idle time when machines are down due to lack of spare parts). As with spinning, companies in both countries noted that they need to upgrade their technologies to approach higher levels of utilization. In both countries, 100% of the inputs in knitting are sourced in-house and knitting production is operating at approximately 80% capacity utilization.

## PROCESSING OF TEXTILES

Dyeing and printing are done in both Uganda and Rwanda. Printing machines include Stenters from Germany and have an average age of six years. Dyeing machines come primarily from Italy, and are mostly new and not more than five years old. Capacity utilization is quite high at 80% on average, though it is only approximately 30% at one factory interviewed. The company reports that technology constraints – chiefly old machines (more than 30 years old) that need upgrading – are a major reason for low capacity utilization.

## GARMENT MANUFACTURE

Garments produced for local and regional markets in Uganda and Rwanda are largely T-shirts and uniforms. Both countries are ramping up production for export markets and expect exports to rise significantly as expansion plans are completed. Average capacity utilization is 85%. Most machines are from Japan (Juki) and the majority of the machines are less than 10 years old.

## SUMMARY OF CHALLENGES AND OPPORTUNITIES

### Uganda

In Uganda, the main constraints to full capacity utilization are:

- Rampant illicit and undeclared imports;
- Under-invoicing;
- Inferior products coming into market;
- Hyper price sensitivity of products produced in-country;
- Need for new markets;
- Recent expansion into new products.

Specific technology related constraints to full capacity utilization include:

- Ageing machinery, which also brings higher energy costs than newer, more energy efficient technologies; and
- Poor access to spares and long lead times to obtain spare parts.

### Rwanda

In Rwanda, the main constraints to full capacity utilization are:

- Availability of raw materials – entirely imported;
- High energy costs (12 cents/kw);
- Labour costs; and
- Lack of skills.

## REGIONAL SOURCING AND THE ROLE OF TECHNOLOGY

Apparel companies producing for exports markets mostly import their fabric needs, most of which come from China. Fabrics must be imported not so much due to cost, but rather there is a lack of availability due to an inability of local producers to meet both volume and quality requirements. There are also integrated textile mills that produce their own fabrics.

One factory noted that it does not need to buy textiles locally, as it already meets its needs through in-house capacity; a full 80% of which is used for its apparel produced for export markets. The rest (20%) is imported and used for local market production. This company has plans for expansion and has identified specific technology needs; i.e. where the priorities are in the production process and which specific machines are needed.

The primary challenge for both countries' textile producers has been lack of markets. One company is only producing less than half its installed capacity. While fully integrated, it imports fabrics (mainly polyesters) from India, the Republic of Indonesia and South Africa.

While companies are interested in using fabrics from local or regional suppliers, currently these suppliers simply are not able to comply with their requirements. Companies cite as the main factors: inferior or inconsistent quality, unreliability, and inability to meet technical specifications.

When asked to what extent it believes lack of technology is a factor, several companies stated "very much". The belief is that local and regional textile producers are woefully behind the curve in terms of technologies that would produce the kinds of fabrics needed for use in garments made for export markets. When asked whether it would be more likely to buy from local suppliers if they acquire the necessary technologies that would allow them to meet its specifications, respondents overwhelmingly said yes, as long as the price is comparable to imported products.

## CONCLUSION

- Both countries are small players in the sector globally. But both have clear plans to build and expand their textiles and apparel sectors. This requires more machines and the latest technologies for operating efficiencies;
- Both countries' base of production and value chain is small relative to bigger players in the region. While the textiles and apparel sector is dominated by just a handful of large companies, both countries have renewed their effort to bring more investment;
- The push by the government in both countries to buy locally has implications for local producers supplying the domestic market – particularly the uniform market (police and military uniforms, and school uniforms), as well as textiles producers supplying the local market;
- The established companies are in expansion mode, which is indicative of a favourable outlook within the sector;
- There are good prospects for supply of machines and new technologies to support this growth; and
- Further, if increased production of garments for export markets continues – in particular, capture of the lucrative USA market – this will act to "pull" the rest of the value chain, effectively to energize and reorient the value chain, from cotton to textiles, to service production for export markets beyond the current base of local and regional markets.



# CHAPTER 5 – POLICY RECOMMENDATIONS

## Policy recommendations for technology upgradation

The following recommendations discuss major areas in which policy makers and investors can intervene to catalyse technology upgradation in the textile and apparel industry in East Africa. It is important to note that this industry is vital for employment generation, which is central to the discourse on technology upgradation. Depending on the policy priorities, policy makers need to find the right balance between job creation and upgradation (automatization), so as to avert the trappings of a jobless growth and unemployment, with grave socioeconomic implications in a continent with a fast-growing labour force.

### ACCESS TO FINANCE – EXPLORING DEVELOPMENT FINANCE OPTIONS

Lack of access to affordable finance remains a key hurdle in technology upgradation. Governments in East Africa could consider development finance such as loans and grants from multilateral and bilateral development finance institutions to fund upgradation. They could also explore applying for lines of credit from foreign governments, to secure the funds necessary to finance technology upgradation, especially in SMEs. As mentioned above, the Exim Bank of India undertook the financing for Rift Valley Textiles Factory (Rivatex East Africa Ltd.), under a \$30 million line of credit to the Government of Kenya, which included the upgradation of the entire facility, equipment and machinery. More such arrangements could be explored.

#### Box 1: Access to development finance: The Development Bank of Ethiopia (DBE)

*Getachew Wakie, VP, Project Appraisal and Portfolio Management*

- The Development Bank of Ethiopia, is a state owned institution that finances projects in various sectors such as manufacturing, agriculture, energy and mining. Manufacturing receives the lion's share of DBE financing, at around 70% of our portfolio, wherein the textile sector is the largest recipient. We provide companies in the textile sector both financing as well as technical advice. We also provide expansion loans for projects that entail an upgradation of the production system, by investing in modern production lines or technology that enables the firm to produce good quality products competitively and profitably. Textile is a key sector in Ethiopia, in terms of employment generation and in instituting backward and forward linkages.
- To address the severe economic ramifications of the Covid-19 pandemic, the DBE reduced the interest rates on projects it is currently financing by 3 percentage points, for three months, and allowed the postponement of the payment of one instalment of both the principal and the interest amounts due.
- DBE also finances projects in syndication with regional and global financiers, for instance, DBE financed Kanoria Africa Textile in collaboration with the Exim Bank of India. In November 2019, DBE launched discussions with KfW, the German state owned development bank with the objective of partnering together to finance big projects and to learn from KfW's expertise and experience in global markets.

## FINANCIAL INCENTIVES ARE COMPLEMENTARY TO ACCESS TO FINANCE

Access to finance is a natural starting point. However, a further nudge is required to move the needle in technology upgradation. East African governments could design financial incentives like tax breaks, soft loans and 100% depreciation claims on new machinery to

incentivize firms (especially SMEs) to upgrade existing machinery. The Technology Upgradation Fund Scheme (TUFS) and its successive waves in India (see Box 2) is an important case in point, illustrating the effect of incentives in fuelling technology upgradation. The correct incentive package should be effective and binding, a function of the prevailing set-up of the industry, existing support schemes from the government and specific challenges in financing experienced by the industry.

### Box 2: Technology Upgradation Fund Scheme (TUFS), India

The Technology Upgradation Fund Scheme (TUFS) was introduced by the Ministry of Textiles, Government of India in 1999. Its principal objective was to enhance the global competitiveness of the Indian textile sector through the facilitation of new and improved technologies. The scheme supported all textile segments through a 5% interest subsidy. Additionally, processing segments were eligible for a subsidy of 10% on capital investment. The small-scale sector and the power loom sector were eligible for the interest subsidy or capital investment subsidy of 15% and 20% respectively.

Initially rolled out for five years, TUFS has since been modified and extended as per the exigent needs and concerns of the industry. A major revision occurred in 2011, with the intent to direct funds towards segments with low investment. This was aimed at balancing growth across the textile value chain and supporting SMEs in their technology investments. It also fixed the overall size of the fund to \$270 million aimed to leverage an investment of \$6.4 billion, with segment investment shares of 26% for spinning, 13% for weaving, 21% for processing, 8% for garmenting and 32% for others.

Overall, in 1999–2015, the scheme provided \$3 billion in subsidies. It propelled investments worth approximately \$37 billion and created job opportunities for nearly 5 million people. It also supported investments for a sustainable future. For example, in Tamil Nadu, textile units were supported in their investment in wind energy through captive power plants and wind farms, which led to a significant fall in production costs.

In 2016, the Amended TUFS (ATUFS) was launched for a seven-year period. It differed from the previous scheme in terms of benefits, as well as the ease of application and reimbursement, and could be combined with other government schemes. A web-based platform called iTUFS made it easier to avail. The ATUFS provides a one-time credit-linked capital investment subsidy of up to 15%, amounting to \$4.1 million for specified textile segments. Higher subsidies are given to garment and technical textile subsectors. While the old scheme supported investments in second-hand machinery, ATUFS is only applicable to new machinery and attachments.

## PROMOTING A LOCAL MARKET FOR TEXTILE MACHINERY AND TECHNOLOGY UPGRADATION

While access to finance and financial incentives help spur demand for machinery upgradation, policy makers in the region can also consider several options to create a supportive environment for suppliers of textile machinery. The creation of textile clusters or parks help reap productivity gains and the presence of textile research institutes and testing labs can lead to increased research and development (R&D) activities in the sector being carried out locally. The government can also

directly subsidize R&D activities in the sector, to catalyse improvement in technology, product quality and productivity in a sustainable manner.

## TECHNOLOGY UPGRADATION FOR RESOURCE EFFICIENCY AND ENVIRONMENTAL COMPLIANCE

Power costs in Africa are steep in several countries, owing to a dependence on conventional sources. Investment in renewables as part of general technology

upgradation is a promising alternative. The fall in production costs due to cheap and reliable power from renewable sources entails enhanced competitiveness, particularly beneficial for the textile and apparel industry, which is extremely competitive. In addition, this will ensure a more sustainable production process with a lower carbon footprint. Policy makers should examine the potential for developing renewable energy for industrial use and design appropriate financing and incentive mechanisms to encourage its growth. The case of the Indian state of Tamil Nadu discussed previously serves as a good example. Over the last few years, renewable energy has been a priority of several African countries and East African countries like Ethiopia and Kenya have already made great strides in leading the transition to green energy.

Furthermore, international sustainability guidelines are getting increasingly strict and non-compliance with these standards risks leaving East African manufacturers out of the global supply matrices. Technology upgradation is directly linked to sustainability standards, as outdated machinery pollutes more and makes it difficult or impossible to comply. To attract investors to the textile and apparel sector and to enable East African manufacturers to enter the supply chains of international buyers, policy makers need to put sustainability concerns at the crux of the discourse on technology upgradation. The most common guidelines involve better waste and chemical management and resource efficiency. Infrastructure projects like industrial parks and common effluent treatment plants (CETPs) form a significant part of empowering the textile industry in East Africa to comply with these international standards.

## EXTENDING TECHNICAL ASSISTANCE TO MANUFACTURERS, ESPECIALLY SMES

Lack of adequate technical expertise at the firm level to lead technology upgradation efforts is another substantial hurdle. Government agencies should enable the provision of technical assistance to manufacturers on new technology, appropriate upgradation required to comply with environmental standards, enhancing competitiveness, and on obtaining the requisite certification. The development of an adequate curriculum at the university or vocational level, in consultation with regional and international experts, will facilitate the creation of a local pool of experts in textile technology and even spur research and innovation at the local level. Lack of information about government schemes around technology upgradation could also be a major

hurdle, and can be addressed by targeted awareness drives, especially for SMEs, who are more prone to lack the required capacity and information. This is an area ripe for South-South or North-South co-operation between industry associations and business support organizations between countries, to enable advisory support on key issues of common relevance and peer-to-peer learning on best practices and exposure to new technology.

## PROMOTING E-COMMERCE: UPGADATION IN DISTRIBUTION CHANNELS

The Covid-19 crisis has brought the importance of e-commerce to the fore as virtual marketplaces catered to the needs of millions across the world in the face of lockdowns. There is an opportunity for the textile and apparel sector in East Africa to support growth and expand markets by means of e-commerce, which can be translated to an upgradation in distribution channels. Experience so far has shown that manufacturers opting for virtual distribution channels should focus on reducing the delivery time, allowing for cash on delivery options and in-store pick-up to gradually build customer trust. In order to further strengthen this growing sector, business support organisations and industry associations can extend capacity building exercises to sellers on search engine optimization, social media and digital marketing, harnessing web statistics and data to improve sales, and on web-designing. Local governments can use e-commerce as well to help promote products from micro entrepreneurs. With AfCFTA negotiations integrating e-commerce considerations within further rounds of negotiations, there is potential for e-commerce firms to build a regional or even continental presence.

## INVESTMENT IN TECHNOLOGY: HAVING A LONGER-TERM OUTLOOK

Investors and manufacturers in the region should operate with a longer-term outlook on technology upgradation and perform the required due diligence prior to investment decisions so as to minimize associated risks. The lack of a long-term vision prevents many in the region appraising the benefits of technology upgradation, in terms of increased business and enhanced environmental compliance.

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