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TECHNICAL TEXTILES VALUE CHAIN GAP ANALYSIS

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TECHNICAL TEXTILES VALUE CHAIN GAP ANALYSIS

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ACRONYMS AND ABBREVIATIONS

3D	Three dimensions
CAGR	Compound Annual Growth Rate
COMESA	Common Market for Eastern and Southern Africa
COR	Contracting Officer's Representative
EOS	Egyptian Organization for Standardization and Quality
EUROMED	Euro-Mediterranean Transport Partnership
FEI	Federation of Egyptian Industries
FIBC	Flexible Intermediate Bulk Carrier
FTA	Free Trade Agreement
GAFI	General Authority for Investment and Free Zones
GDP	Gross Domestic Product
GOEIC	General Organization for Export and Import Control
GRC	Glass Reinforced Concrete
GSM	Gram per Square Meter
HS	Harmonized System
HT	High Tenacity
HVAC	Heating, ventilation, and air conditioning
IT	Information Technology
ITC	International Trade Center
ITTC	Innovative Textiles Technology Center
ITTI	International Technical Textile Industry company
K	Thousand or 1000
MSME	Micro, Small, and Medium-sized Enterprise
NRC	National Research Center
OEMs	Original Equipment Manufacturers
PA	Polyamide
PE	Polyethylene
PET	Polyethylene terephthalate
PP	Polypropylene
PU	Polyurethane
PVC	Polyvinylchloride
QIZ	Qualified Industrial Zone
UN	United Nations

USAID's Strengthening Entrepreneurship and Enterprise Development (SEED)

R&D	Research and Development
RMG	Ready Made Garment
SMS	Spun bonding- Melt blowing- Spun bonding
SWOT	Strengths, Weaknesses, Opportunities, and Threats
TDC	Textile Development Center
TEC	Textile Export Council
UHMWPE	Ultra High Molecular Weight Polyethylene
UK	United Kingdom
USAID	United States Agency for International Development
VC	Value Chain
WTO	World Trade Organization

EXECUTIVE SUMMARY

The technical textile industry is one of the fastest growing industries in the world. It is a highly innovative and versatile industry serving a wide range of end markets with less competition and higher added value compared to the conventional textiles. These attributes have led many countries to shift their textile industry from conventional to technical textiles. The global technical textiles market was valued at US\$165.51 billion in 2017 and is projected to reach US\$193.9 billion by 2020 at a compound annual growth rate (CAGR) of 5.89%. According to the U.S. Department of Commerce International Trade Administration, the Middle East and Africa is considered the smallest technical textiles market, but there is strong growth potential in this region. The total technical textiles imports in the Middle East was US\$11.34 billion in 2017¹.

The objective of this report is to capitalize on the emerging technical textiles opportunity in Egypt. The report draws a detailed mapping and analysis of the technical textile value chain in Egypt, including locally manufactured and imported products, and identifies opportunities for localization. For the purpose of this report, the technical textiles value chain (VC) is divided into three segments: technical raw materials suppliers and producers (fibers precursors, fibers, and fabrics), converters (end-products producers), and end markets (distributors and users).

This report, "Technical Textile Value Chain Gap Analysis in Egypt," is the first report that provides a comprehensive analysis of the technical textiles VC in Egypt. It acts as a guide for strategic planning and future investments, and is a valuable resource for government agencies, international organizations, financial institutions, private companies, and investors. The report features a comprehensive list of major Egyptian producers of technical textiles classified using their VC level. The report also includes 58 market data tables and 58 figures across more than 100 pages of in-depth analysis of the technical textiles value chain in Egypt. Moreover, the report features the first published dictionary of Harmonized System (HS) codes classifying the technical textiles based on raw material and end-products, including 192 codes at the 6-digit level.

The report provides an overview of the global technical textiles industry, a detailed mapping of the technical textiles value chain in Egypt, and an in-depth trade analysis. In the trade analysis, inTEXive categorized and classified the data according to the International HS of codes. To develop these commodity codes, inTEXive analyzed imports and exports data, as well as compounded annual growth rates, over a five-year period from 2013 to 2017. The analysis revealed that Egypt's technical textiles value chain is emerging, with a total import of US\$605.4 million and total exports of US\$746 million in 2017. According to the CAGR, the exports grew 55% from 2013–2017, indicating that they are growing at a very fast rate, while the imports are slightly decreasing. Major imports included polymer laid nonwoven (US\$96.9 million), coated and laminated fabrics (US\$93.6 million), Packtech (US\$71.84 million), and Protech (US\$43 million). Major exports included Medtech (US\$283 million), glass fiber yarns and fabrics (US\$160.5 million), Sportech (US\$147.2 million), and polymer laid nonwoven (US\$66.6 million). Major import partners were Asia Pacific (US\$300 million), Europe (US\$150 million) and the Middle East (US\$102 million), while major export partners were from Europe (US\$273 million), Africa (US\$188 million), and the Middle East (US\$170 million).

The report also includes an in-depth Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis of the technical textiles value chain in Egypt. InTEXive conducted a total of 27 interviews to better understand the strengths, weaknesses, opportunities and threats pertaining to the technical textiles value

¹ U.S. Department of Commerce, International Trade Administration. (2016). "Top Markets Report Technical Textiles" Retrieved June/30, 2019, from https://www.trade.gov/topmarkets/pdf/Textiles_Top_Markets_Report.pdf

chain in Egypt. The team conducted interviews with different producers of raw materials, end-products, auxiliaries' producers, and service providers such as machine makers, testing and research institutes, development associations, and governmental entities. The report also presents the bottlenecks and constraints facing the technical textile industry in Egypt. The major bottlenecks include lack of technical expertise, difficulty in sourcing high-performance raw materials, and the need for large capital investment. The report provides recommended interventions, entities, and associations who are responsible for those interventions.

Finally, the report provides the USAID SEED project with a proposed technical assistance intervention to effectively integrate the technical textiles Micro, Small, and Medium-sized Enterprises (MSME) into the VC.

BACKGROUND AND SCOPE OF ASSIGNMENT

USAID SEED Project contracted inTEXive (technical textiles and composites consulting firm), to draw a detailed mapping and analysis of the Technical Textile Value Chain in Egypt, including locally manufactured and imported products and identifying opportunities for localization. They also provided support to draw conclusions on possible business and technical support required to grow the sector and help MSMEs integrate into the local and global VC.

The project scope consisted of the following:

- Review all secondary data, including but not limited to, available local and international reports, consulting firms' VC assessment reports, and studies funded by the donor community relevant to the Technical Textile Value Chain.
- Identify and analyze imported and exported technical textiles semi-finished and finished products using applicable HS codes.
- Conduct one-to-one interviews and/or focus groups with VC stakeholders such as the technical textile and Ready Made Garment (RMG) manufacturers, industry associations (e.g., Chamber of Apparel and Home Textiles, Chamber of Textile Industries, and Ready-Made Garments Export Council) to understand value chain strengths, weaknesses, opportunities and threats.
- Analyze data collected and draft findings in a primary report presented to USAID SEED.
- Produce five business cases in cooperation with the USAID SEED project and its partners that presents information, analysis and findings to help MSMEs become integrated into technical textiles' local / international value chains.
- Design, lead, and facilitate a final seminar in cooperation with USAID SEED's Component C team. The seminar was organized by the USAID SEED project, with representation from textile and RMG VC stakeholders, to present the technical textiles VC analysis findings, conclusions, and proposed future interventions. The purpose of the workshop was to validate the results of the study and to articulate USAID SEED development interventions approach.
- Produce a final VC analysis report that identifies key findings, recommendations, conclusions and opportunities for localization of imported technical textiles products to be manufactured in Egypt with focus on wearable technical textile applications.

RESEARCH METHODOLOGY

This was the first study conducted on the technical textile sector in Egypt, therefore, there were challenges in accurately analyzing and assessing the Egyptian technical textile VC due to the scarcity of data and secrecy of the sector. Addressing these challenges required several steps, which were carried out by inTEXive.

The first step was mapping the technical textile value chain from raw materials suppliers, producers, and converters down to the end markets. This mapping included various actors, such as service providers, services organizations, and other supporting segments. The research team collected companies and organizations to profile from industry directories, webpages, the Textile Export Council of Egypt, the Ministry of Trade and Industry, and other sources.

The second step was defining the technical textile sector itself. This was accomplished by dividing the sector based on the different stages in the value chain (e.g., upstream from technical fibers, yarns, and fabrics and downstream to technical textiles end-products). The end-products were classified using the categories used by the Frankfurt GmbH Techtexsil, the leading international trade exhibition for technical textiles.

The third step required the researchers to create a dictionary to define each stage. This dictionary was created using the International HS of Codes. This dictionary is made up of 192 codes at the 6-digit level of articles only used for technical textiles applications. The researchers then compiled the import and export data for these commodity codes over a five-year period (2013 to 2017) and also calculated the compounded annual growth rates. The data was plotted to show imports and exports trends for the given period, and the trade balance was illustrated to define the trade surplus and trade deficit in technical textile articles. Another dictionary was made for articles used for conventional textiles that could be a constituent in technical textiles applications, which was not considered for the analysis. Technical textiles end-products traded as rolled goods, such as geotextile fabrics, are included in the technical fabrics and not in the end-products. Moreover, only soft (flexible) textile composites were considered in the analysis, while rigid composites were not included.

Trade data was collected from a range of sources, including the World Trade organization (WTO), International Trade Center (ITC), Report linker, and local Egyptian organizations. The team validated the collected data through local organization such as General Organization for Export & Import Control, Chamber of Apparel and Home Textiles, Chamber of Textile Industries, and Ready-Made Garments Export Council.

Afterwards, the team identified different members of the VC and conducted a total of 27 interviews to analyze the strengths, weaknesses, opportunities and threats pertaining to the technical textiles VC in Egypt. The interviews were designed to obtain additional research around the findings from the secondary research. The interviewees sample was intended to represent different members of the VCs, including VC actors in different functional levels, supporting markets, and end markets inside Egypt. Furthermore, the team conducted interviews with major machinery and auxiliary manufacturers during Techtexsil exhibition in Frankfurt, May 2019.

After identifying the interviewees, the team designed a questionnaire specifically for the SWOT analysis of the technical textile VC. The interviews were conducted in a semi-structured manner to allow for in-depth investigation. All interviews were transcribed, and the data was organized and grouped into four categories: strengths, weaknesses, opportunities, and threats. Furthermore, the data was coded/ indexed and sub-grouped based on a central theme within each group. Finally, the data was scored, and ranked based on frequency of recurrence, and listed in order of importance. The analysis and interpretations of the results were based on investigations, interviews, and the researchers' experience.

I. OVERVIEW

I. THE TEXTILE INDUSTRY IN EGYPT

Egypt is the most populous country in the Arab World and the third-most populous on the African continent, with a population exceeding 100 million based on the latest United Nations estimates.² Egypt is home to the only fully vertically integrated textiles industry in the Middle East from fiber to end-products such as readymade garments and home furnishings. The textile and readymade garments sectors play a significant role in the Egyptian economy, as they represent 27% of Gross Domestic Product (GDP) from manufacturing, 10% of total exports, and 33% of industrial manpower according to the General Organization of Export and Import Control (GOEIC).³

The textile industry in Egypt has been thriving due to the huge local demand for textile goods. However, in 1995 Egypt joined the WTO and one of the requirements for joining was to promote free trade and substantially reduce tariffs, quotas, and trade barriers. Egypt agreed to reduce the trade barriers over a 10 year period, and by 2006 it effectively removed the protection on the textile industry. These changes have strongly impacted the local industry in Egypt, and some local producers were unable to compete with the low-cost imports coming from Southeast Asia.

The conventional textile industry is labor intensive and volume driven. Hence, the key factors for success in this industry are access to cheap labor and large economies of scale, neither of which are present in Egypt. The labor cost in Egypt is comparably higher than many countries in Africa and Asia Pacific, and the industry is dominated by small and medium-sized family-owned companies. Figure I illustrates the constant imports of textile goods in Egypt until 2007 and how the imports increased exponentially from US\$388 million in 2007 to US\$1.8 billion in 2008.⁴ Such a radical increase in imports was at the expense of the local textile production, which has witnessed a sharp decline. Many companies were severely affected by the fierce competition from the low-cost imports from Asia, which resulted in a significant reduction in the profit margins and made the industry less attractive to investors.

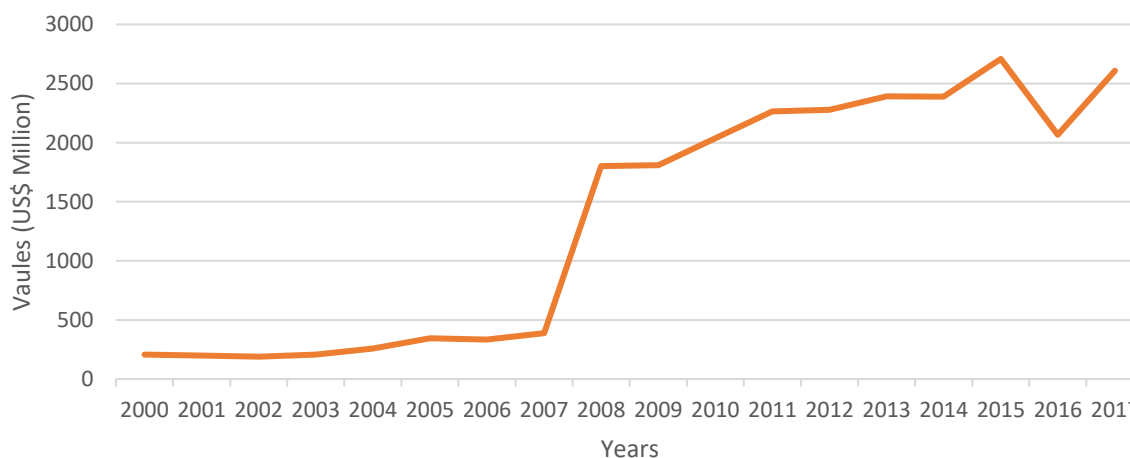


FIGURE I EGYPT TEXTILE IMPORTS⁵

² Worldometers. (2019). Egypt Population. Retrieved June/30, 2019, from <https://www.worldometers.info/world-population/egypt-population/>

³ Oxford Business Group. (2018). Egyptian textiles rebound and see new growth. Retrieved June/30, 2019, from <https://oxfordbusinessgroup.com/analysis/sewn-textiles-industry-experiencing-revival>

⁴ According to World Trade Organization statistics

⁵ Source: InTEXive calculations based on World Trade Organization statistics

This dramatic change, which was followed by the great recession in 2008, forced many industry leaders and policy makers to reconsider the sector's strategy and to adopt a new differentiation strategy more focused on Egypt's competitive advantages, such as the Egyptian cotton.

Now, with the renewed government focus on the textile sector, the industry is witnessing a revival. In January 2018, the Ministry of Trade and Industry announced plans to develop Egypt's biggest textile city in Sadat, with capital of US\$2 billion, over seven years (expected project completion date in 2026). Meanwhile, the General Authority for Investment and Free Zones (GAFI) concluded the contract for the establishment of the first textile city in the Free Zones System in Minya Governorate. The project is funded by a Chinese company which has agreed to fund the new city, which has an investment of US\$324 million.⁷

One of the possible differentiation strategies for the textile sector in Egypt is based on the technical textiles. According to the U.S. Department of Commerce International Trade Administration, the Middle East and Africa is considered the smallest technical textiles market, but there is strong growth potential in this region. According to CAGR, the market has shown a 17% growth between 2008 and 2015.⁸

⁶ Oxford Business Group. (2018). Egyptian textiles rebound and see new growth. Retrieved June/30, 2019, from <https://oxfordbusinessgroup.com/analysis/sewn-textiles-industry-experiencing-revival>

⁷ Egypt Today. (2018). Chinese Company to fund new textile city in Minya by \$324M. Retrieved June/30, 2019, from <https://www.egypttoday.com/Article/3/63560/Chinese-Company-to-fund-new-textile-city-in-Minya-by>

⁸ U.S. Department of Commerce, International Trade Administration. (2016). "Top Markets Report Technical Textiles" Retrieved June/30, 2019, from https://www.trade.gov/topmarkets/pdf/Textiles_Top_Markets_Report.pdf

2.1 THE GLOBAL TECHNICAL TEXTILES INDUSTRY

2.1 DEFINITIONS

The definition of technical textiles according to the authoritative Textile Terms and Definitions, published by the Textile Institute, is “textile materials and products manufactured primarily for their technical and performance properties rather than their aesthetic or decorative characteristics.”⁹

There are 12 main fields of application for technical textiles according to the Messe Frankfurt GmbH Techtextil, the leading international trade exhibition for technical textiles^{10,11,12}:



Agrotech

Agro-textiles, also known as Agrotech, are used in agricultural applications related to growing and harvesting of crops and animals. They are also used in forestry, horticulture, and animal and poultry rearing, including animal clothing. Agro-textiles must be strong, elongated, stiff, bio-degradable, resistant to sunlight, and nontoxic.



Buildtech

Buildtech is used in construction and architectural applications, such as for concrete reinforcement, facade foundation, interior construction, insulation, noise prevention, visual protection, protection against sun light, and building safety. The field of textile architecture is also expanding as textile membranes are increasingly being used for roof construction. Main fabrics used are high tenacity Polyester coated with PVC.



Clothtech

Clothtech includes functional textile products that are most often invisible components in clothing and footwear products e.g., interlinings, sewing thread, insulating fiberfill, and waddings.



Geotech

Geotech are textile fabrics which can be woven, nonwoven, or knitted fabric used for a variety of purposes such as support, drainage and separation at/or below ground level, coastal engineering, earth and road construction, dam engineering, soil sealing, and drainage systems. Geotech must be thick and have good strength and durability, and low moisture absorption.



Homotech

Homotech is used in manufacturing for many home furnishing fabrics including carpet backings, curtains, and wall coverings. Much of Homotech consists of fire-retardant fabrics.

⁹ Horrock A. R., Anand S. C. (2000), Handbook of Technical Textiles, WOODHEAD Publishing Limited, Cambridge England

¹⁰ Fashion to Apparel (2019). Branches and Applications of Technical Textiles. Retrieved June/30, 2019, from <http://fashion2apparel.blogspot.com/2017/04/branches-applications-technical-textiles.html>

¹¹ Scott R. A. (2005). Textiles for Protection, WOODHEAD Publishing Limited, Cambridge England

¹² Shishoo R. (2005). Textiles in Sport, WOODHEAD Publishing Limited, Cambridge England



Indutech

Indutech are the industrial textiles used in different industries for functions such as separation and filtration, transportation of materials, and serving as substrates for abrasive sheets and other coated products. They range from lightweight nonwoven filters, to knitted nets and brushes, to heavyweight coated conveyor belts.



Medtech

Medtech includes all textile structures that are designed and manufactured for a medical application. They are used in health care and hygiene applications in both consumer and medical markets. They are generally used in bandages and sutures that are used for stitching the wounds.



Mobiltech

Mobiltech is used in the transportation industry for the construction of vehicles such as automobiles, railways, and ships. Examples of Mobiltech include seat covers, seat belts, nonwovens for cabin air filtration, airbags, parachutes, inflatable boats, air balloons, truck covers and restraints which are significant textile end-uses in the transportation sector.



Oekotech

Oekotech are the environmental textiles used in environmental protection applications, such as floor sealing, erosion protection, air cleaning, prevention of water pollution, water cleaning, waste treatment/recycling, depositing area construction, product extraction, and domestic water sewerage plants.



Packtech

Packtech are the packaging textiles used for bags, packaging sacks, Flexible Intermediate Bulk Carriers (FIBC) and wrappings for textile bales and carpets, durable papers, tea bags, and other food and industrial product wrappings.



Protech

Protech are the protective textiles that are used in protection against various threats such as heat and radiation for fire fighter clothing, molten metals for welders, bulletproof jackets for army and police officers, and chemical materials for labors working in petrochemical. They also provide protection against bacterial and blood pollution in hospitals. The protective textiles are made with the help of specialty fibers such as high tenacity Polyethylene terephthalate (PET) or polypropylene (PP), Aramids, Ultra-High Molecular Weight Polyethylene (UHMWPE).



Sporttech

Sporttech are the sports textiles used mainly for making sportswear, including sports shoes and other sports accessories. Increasing interest in active sports and outdoor leisure activities such as flying and sailing sports, climbing, and cycling has led to immense growth in the consumption of textile materials related to sporting goods and equipment.



FIGURE 2 EXAMPLE OF TECHNICAL TEXTILES END-USES AND APPLICATIONS¹³

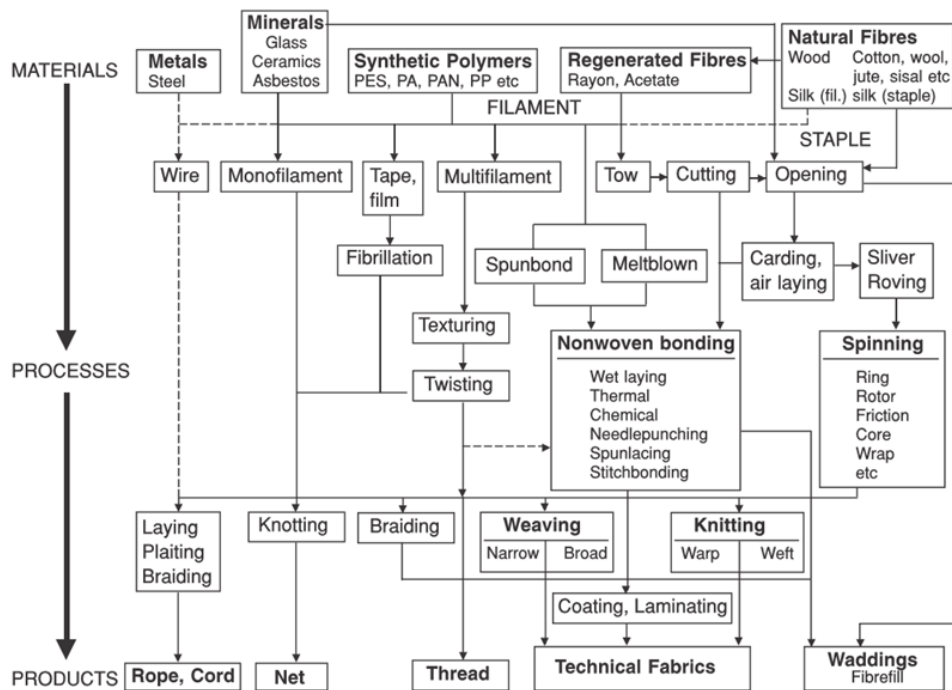


FIGURE 3 TYPICAL TECHNICAL TEXTILES VALUE CHAIN FROM RAW MATERIALS TO END-PRODUCTS¹⁴

¹³ Source: Fashion to Apparel (2019). Branches and Applications of Technical Textiles. Retrieved June/30, 2019, from <http://fashion2apparel.blogspot.com/2017/04/branches-applications-technical-textiles.html>

¹⁴ Source: Horrock A. R., Anand S. C. (2000), Handbook of Technical Textiles, WOODHEAD Publishing Limited, Cambridge England

2.2 GLOBAL TECHNICAL TEXTILE MARKET

The technical textile market is estimated at US\$165.51 billion in 2017 and is projected to reach US\$193.9 billion by 2020 and US\$220.37 billion by 2022, at a CAGR of 5.89%. In terms of volume, this market is projected to reach 42.20 Million Metric Tons by 2020, at a CAGR of around 4.68% from 2015 to 2020 as shown in Figure 4.^{15,16,17} This illustrates that the market of technical textile is increasing significantly. This can be attributed to the increasing demand for functional products in different end-use areas such as personal safety, light weight replacement materials for metals, medical and health care, and industrial applications. Factors such as technology advancement, increasing awareness on health and safety, and increasing end-use applications are expected to drive the technical textile market in the future. Increasing demand from end-use industries such as healthcare, construction, clothing, packaging, sportswear and sports equipment, automotive, environmental protection, and other areas is expected to drive the overall technical textile market growth. However, the high cost of finished products affects the pricing structure of the intermediate industry, thereby restraining the growth of the market. The forecasted share of the global technical textile market is estimated to be one fourth the global textile market sectors by 2020 as shown in Figure 5.¹⁸

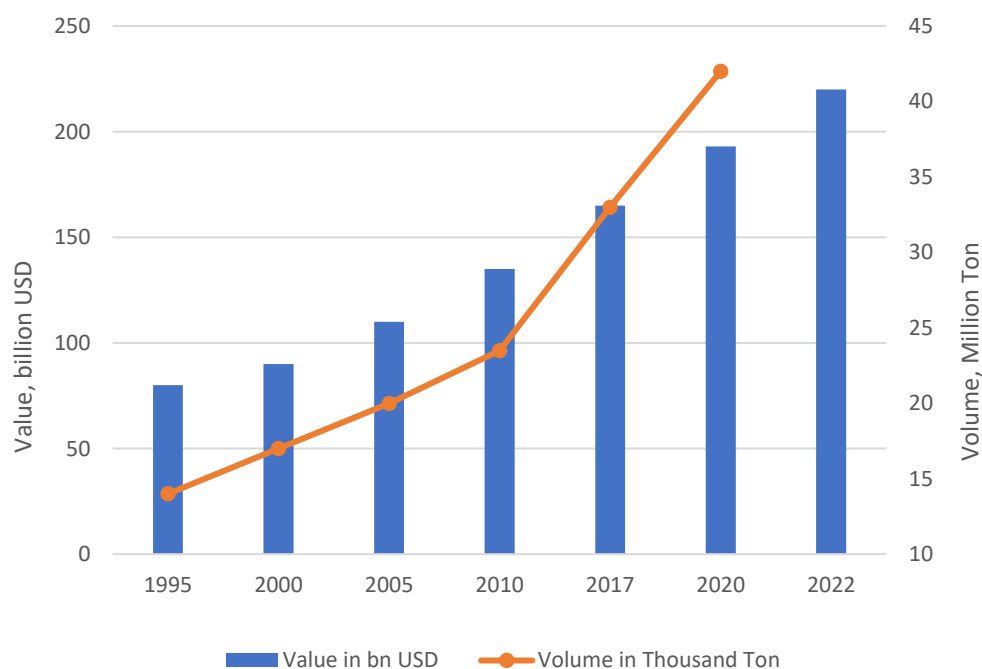


FIGURE 4 TECHNICAL TEXTILE MARKET: PAST, PRESENT AND FUTURE 16

¹⁵ Global Forecast to 2022. Retrieved June/30, 2019, from <https://www.reportlinker.com/p03327230/Technical-Textile-Market-by-Product-Technology-Fiber-Application-Colorant-Fabric-Global-Forecast-to.html>

¹⁶ STATISTA (2015). Global technical textiles market value 2014-2020. Retrieved June/30, 2019, from <https://www.statista.com/statistics/741401/technical-textiles-global-market-value/>

¹⁷ TextileToday (2016). World technical textile consumption to reach 42.2 million metric tons by 2020. Retrieved June/30, 2019, from <https://www.textiletoday.com.bd/world-technical-textile-consumption-reach-42-2-million-metric-tons-2020/>

¹⁸ Market Size of the Global Textile and Apparel Industry: 2016 to 2021/2022, FASH455 Global Apparel & Textile Trade and Sourcing, By Dr. Sheng Lu, Associate Professor, Department of Fashion & Apparel Studies, University of Delaware, USA

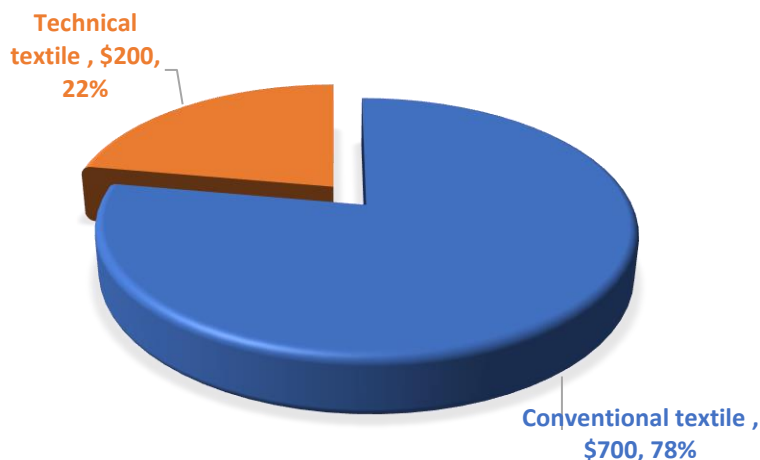


FIGURE 5 WORLD TEXTILE MARKET VALUE IN US\$ BILLION BY 2020 ^{19,20,21}

According to inTEXive's calculations, based on UN COMTRADE statistics, the total world imports of technical textiles in 2017 was US\$233 billion, with US\$51.5 billion as raw materials and US\$181.5 as end-products, as shown in Table 1. The imports have been increasing at a CAGR 3.25% from 2011 to 2017 as illustrated in Figure 6. Table 2 lists the technical textiles imports by region, the major importing regions in 2017 with Europe accounting for 42% of total imports, followed by Asia 27% and then North America 23% as shown in Figure 7.

TABLE 1 WORLD IMPORTS OF TECHNICAL TEXTILE RAW MATERIALS AND END-PRODUCTS²²

Products	Imported values (US\$ billion)						
	2011	2012	2013	2014	2015	2016	2017
End-products	145.10	156.46	165.10	174.79	169.82	170.76	181.49
Raw Materials	47.13	45.58	47.81	51.33	48.13	48.17	51.51
Total	192.23	202.04	212.91	226.12	217.95	218.93	233.00

¹⁹ Report linker (2018). Technical Textile Market by Material, by Process, by Application And Region: Global Forecast to 2022. Retrieved June/30, 2019, from <https://www.reportlinker.com/p03327230/Technical-Textile-Market-by-Product-Technology-Fiber-Application-Colorant-Fabric-Global-Forecast-to.html>

²⁰ STATISTA (2015). Global technical textiles market value 2014-2020. Retrieved June/30, 2019, from <https://www.statista.com/statistics/741401/technical-textiles-global-market-value/>

²¹ Market Size of the Global Textile and Apparel Industry: 2016 to 2021/2022, FASH455 Global Apparel & Textile Trade and Sourcing, By Dr. Sheng Lu, Associate Professor, Department of Fashion & Apparel Studies, University of Delaware, USA

²² Source: inTEXive calculations based on UN COMTRADE statistics

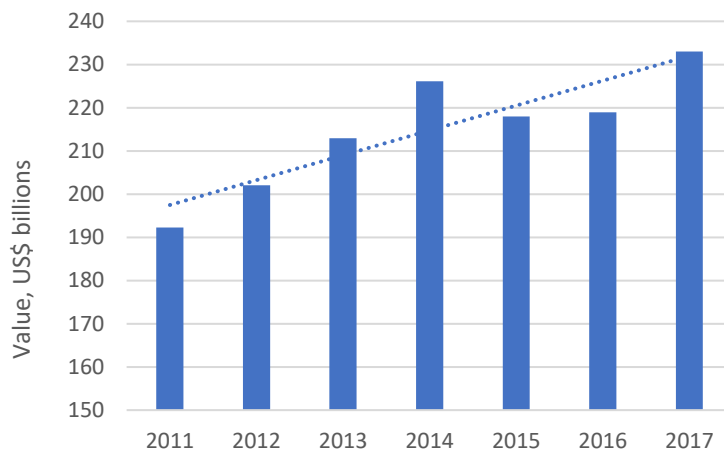


FIGURE 6 WORLD IMPORTS OF TECHNICAL TEXTILES²³

TABLE 2 WORLD IMPORTS OF TECHNICAL TEXTILES BY REGION²²

Region	Imported values (US\$ billion)						
	2011	2012	2013	2014	2015	2016	2017
Africa	4.71	5.21	5.38	5.46	5.58	5.27	6.07
Asia	47.78	53.03	56.24	59.10	58.87	59.75	63.70
Europe	84.93	85.03	90.38	96.98	88.06	90.61	97.16
North America	41.24	45.33	46.80	50.04	52.40	51.64	53.84
South America	7.27	8.33	8.50	8.59	8.05	7.02	7.59

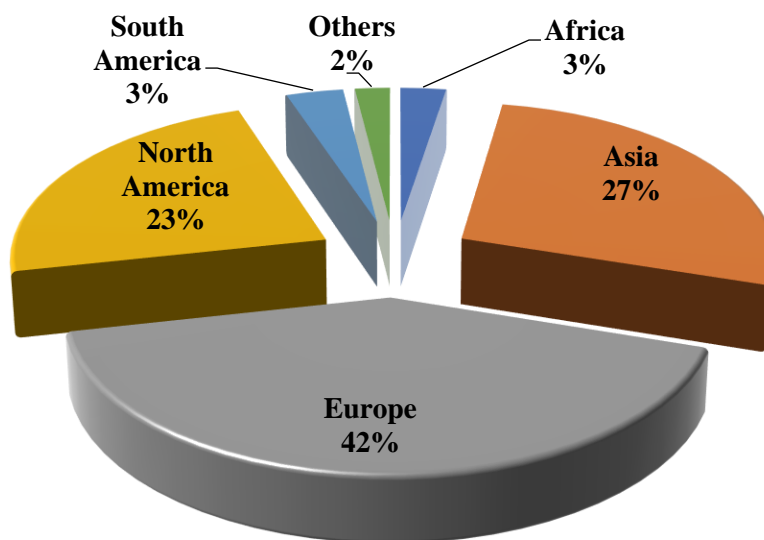


FIGURE 7 WORLD IMPORTS OF TECHNICAL TEXTILES VALUE BY REGION IN 2017²²

²³ Source: inTEXive® calculations based on UN COMTRADE statistics

2.3 MIDDLE EAST AND AFRICA TECHNICAL TEXTILE MARKETS

The technical textiles market in the Middle East and Africa are considered emerging markets. Table 3 lists the technical textiles imports of Africa, North Africa, and the Middle East. The Middle East is considered the biggest market with total imports of US\$11.34 billion in 2017 as shown in Figure 8, and it is also the fastest growing with a CAGR of 10.6% from 2011–2017. The dominating technical textiles sectors in the Middle East are Medtech, Protech, Packtech, and Sportech with share values of 23%, 22%, 19%, and 12% respectively, as shown in Figure 9. Turkey, United Arab Emirates, and Saudi Arabia are the major importers of technical textiles in the Middle East region, as indicated in Figure 10.

TABLE 3 AFRICA, NORTH AFRICA, AND MIDDLE EAST IMPORTS OF TECHNICAL TEXTILES²⁴

Region	Imported values (US\$ billion)							CAGR (%)
	2011	2012	2013	2014	2015	2016	2017	
Africa	4.71	5.21	5.38	5.46	5.58	5.27	6.07	4.3
North Africa*	1.63	2.07	2.32	2.34	2.31	2.19	2.30	5.9
Middle East**	6.21	9.01	10.53	11.99	12.00	11.29	11.34	10.6

*Egypt, Libya, Tunisia, Algeria, Morocco, Mauritania

**Turkey, United Arab Emirates, Kingdom of Saudi Arabia, Qatar, Iraq, Israel, Kuwait, Jordan, Iran, Lebanon, Egypt, Oman, Bahrain, Yemen, Syria, Palestine

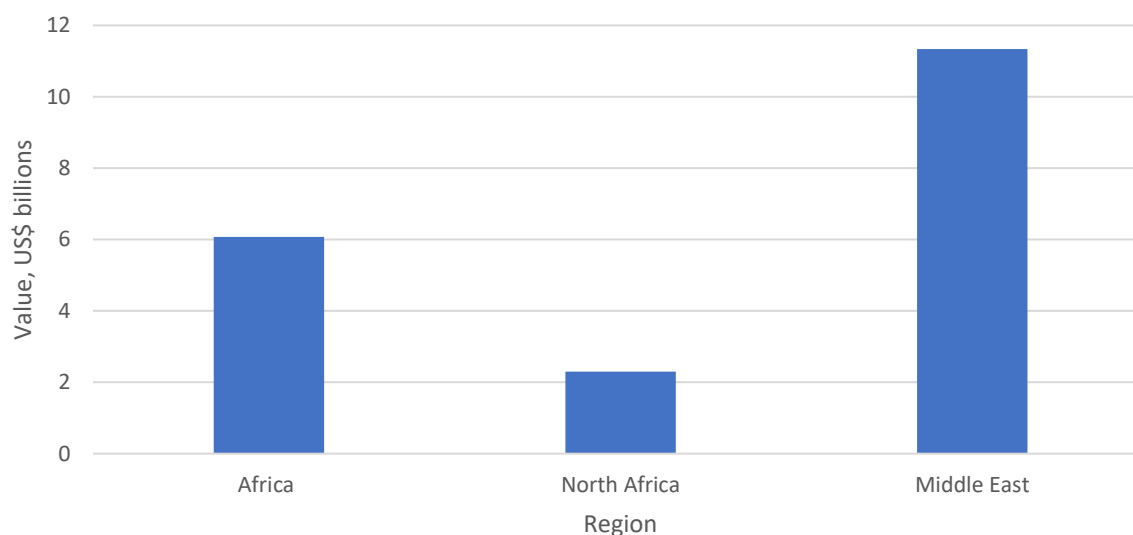


FIGURE 8 TECHNICAL TEXTILES MARKET VALUE (US\$ BILLIONS) AFRICA, NORTH AFRICA, AND MIDDLE EAST IN 2017²³

²⁴ Source: inTEXive calculations based on UN COMTRADE statistics

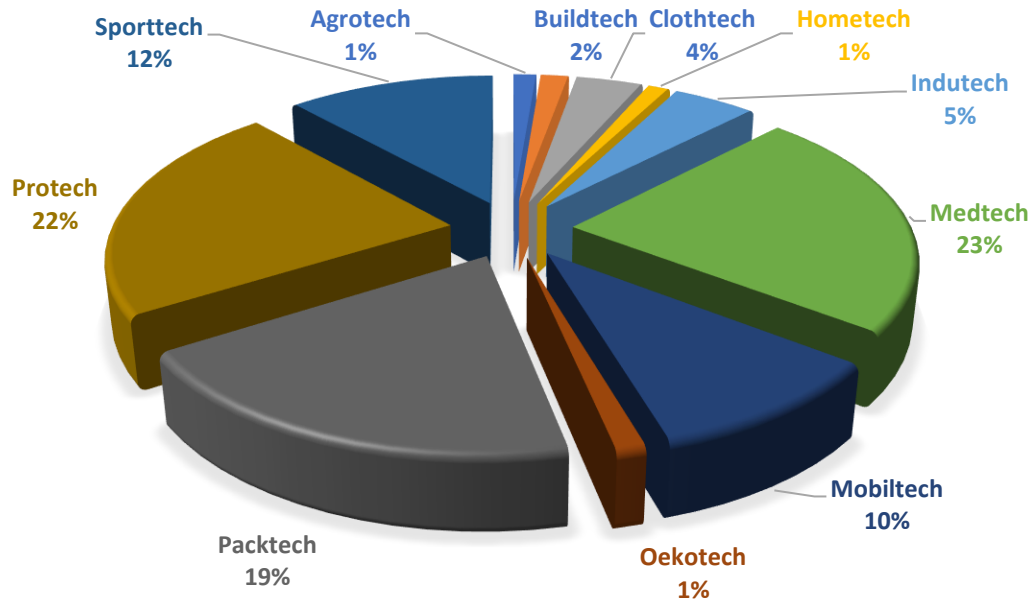


FIGURE 9 TECHNICAL TEXTILES SECTORS FOR MIDDLE EAST IN 2017²⁵

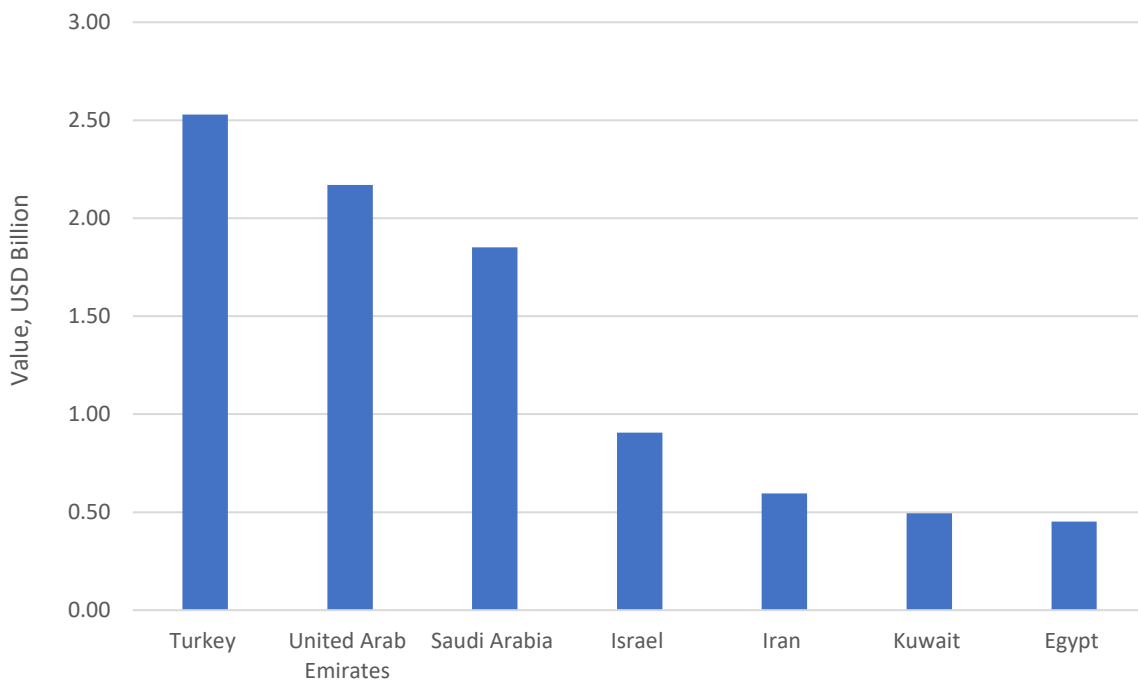


FIGURE 10 TECHNICAL TEXTILES MAJOR IMPORTERS IN MIDDLE EAST IN 2017²⁴

²⁵ Source: inTEXive calculations based on UN COMTRADE statistics

2.4 TECHNICAL TEXTILES MATERIALS, PROCESSES AND APPLICATIONS

Based on material, the synthetic polymer segment is leading the technical textile market and is projected to retain its leading position through 2022. This growth can be attributed to the superior properties of synthetic fibers such as high strength to weight ratio, high stiffness, thermal stability, and chemical and corrosion resistance.

Based on production process, the woven segment of the technical textile market is estimated to account for the largest share in the coming period. The ease in the process helps to produce a wide range of products for various applications. Woven technical textiles find application in automobile, construction, clothing, and other industries. Furthermore, advancements in weaving technology such as 3D weaving are also expected to drive the technical textile market during the forecast period. Moreover, the availability of modern healthcare facilities for the global population is driving the demand for efficient nonwoven technical textile products as they provide higher performance as compared to that of the traditional textile products.

Based on application, Mobiltech segment is projected to grow at the highest CAGR during the coming period to 2022. This growth can be attributed to the booming automobile sector in many countries such as the USA, Japan, and Germany. The increasing use of technical textiles in various areas of the automobile sector such as seat belts, seating upholstery, tire cords and liners, and others is expected to propel the demand for technical textiles.²⁶

²⁶ MARKETANDMARKETS (2017). Technical Textile Market by Material (Natural Fiber, Synthetic Polymer, Metal, Mineral, Regenerated Fiber), by Process (Woven, Knitted, Non-woven), by Application (Mobiltech, Indutech, Protech, Buildtech, Packtech), and Region - Global Forecast to 2022. Retrieved June/30, 2019, from <https://www.marketsandmarkets.com/Market-Reports/technical-textile-market-1074.html>

II. EGYPT'S TECHNICAL TEXTILES VALUE CHAIN MAPPING AND TRADE ANALYSIS

The technical textiles Value Chain (VC) map focuses on mapping and analyzing the product chain by dividing it into segments, from technical raw materials suppliers and producers (fibers precursors, fibers, and fabrics), converters (end-products producers), down to the end markets (distributors and users). The VC identifies and categorizes various actors, as well as the service providers, and other supporting segments (such as machinery manufacturers) and service organizations. This analysis will help in identifying gaps in the value chain and to identify opportunities for upgrading in and otherwise improving the VC and constraints to those opportunities. A simplified technical textiles industry VC is illustrated in Figure 11.

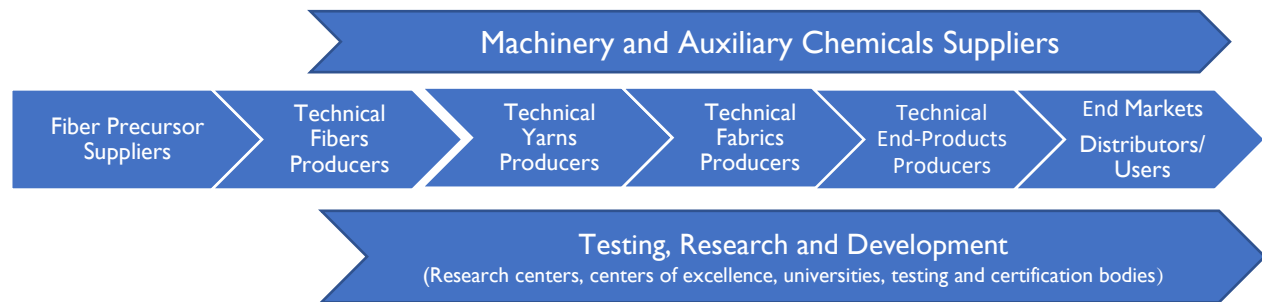


FIGURE 11 SIMPLIFIED TECHNICAL TEXTILES INDUSTRY VALUE CHAIN

I. VALUE CHAIN MAP

In this section, the authors will discuss the entire technical textiles VC in Egypt, mapping every segment and showing the roles, distribution, and interactions in place with key value segments, as well as the flow of value over the chain.

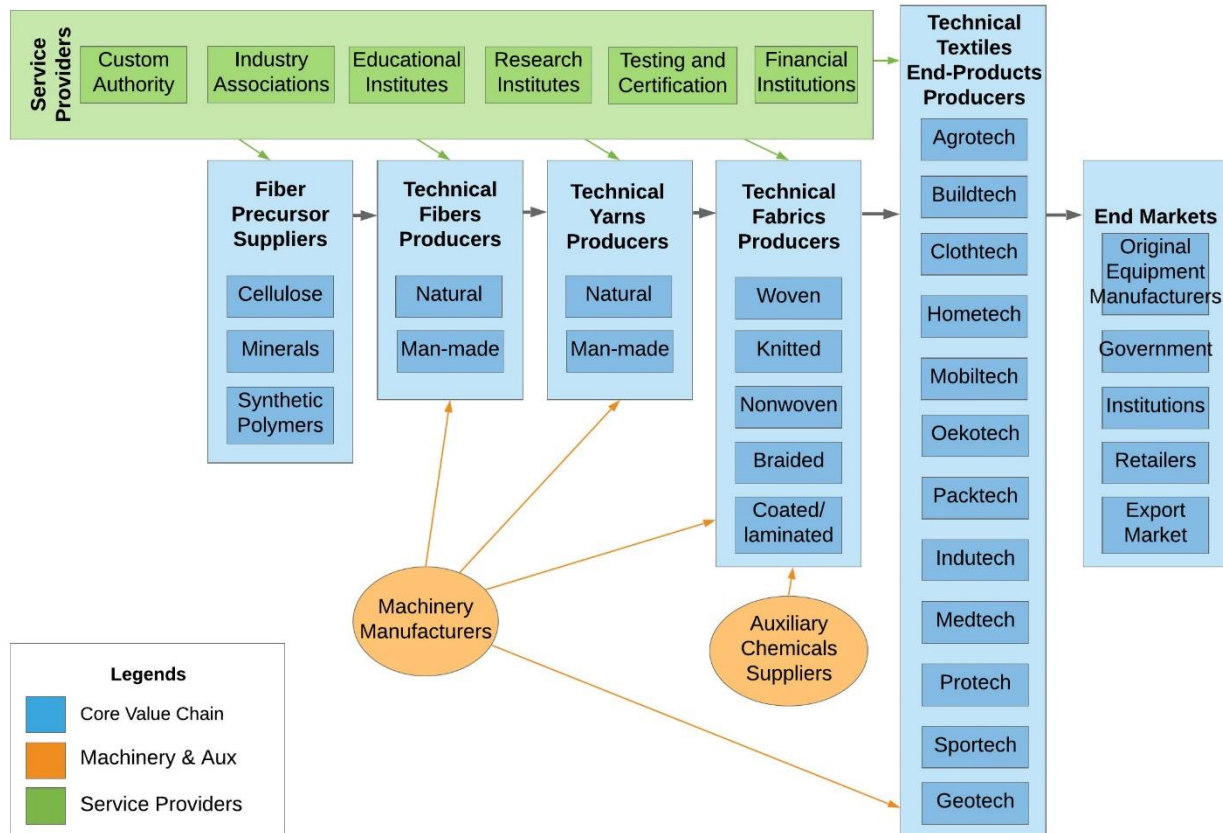


FIGURE 12 DETAILED MAP OF EGYPTIAN TECHNICAL TEXTILES VALUE CHAIN INCLUDING ALL STAKEHOLDERS

Figure 13 illustrates the technical textiles value flow in Egypt. The average unit values are reported in US\$1000 per ton based on imports in 2017. The chart shows the increase in average unit values throughout the different stages of the value chain from fibers to end-products. However, the yarns are an exception in this case, since it includes carbon fiber yarns with very high unit value US\$48.1 K/ton, which doesn't have an HS code in the fabric form. Moreover, it is clear from the chart that that end-products such as Protech, Oekotech, and Clothtech have the highest average unit values US\$61.1 K/ton, US\$18.7 K/ton, and US\$17.65 K/ton respectively.

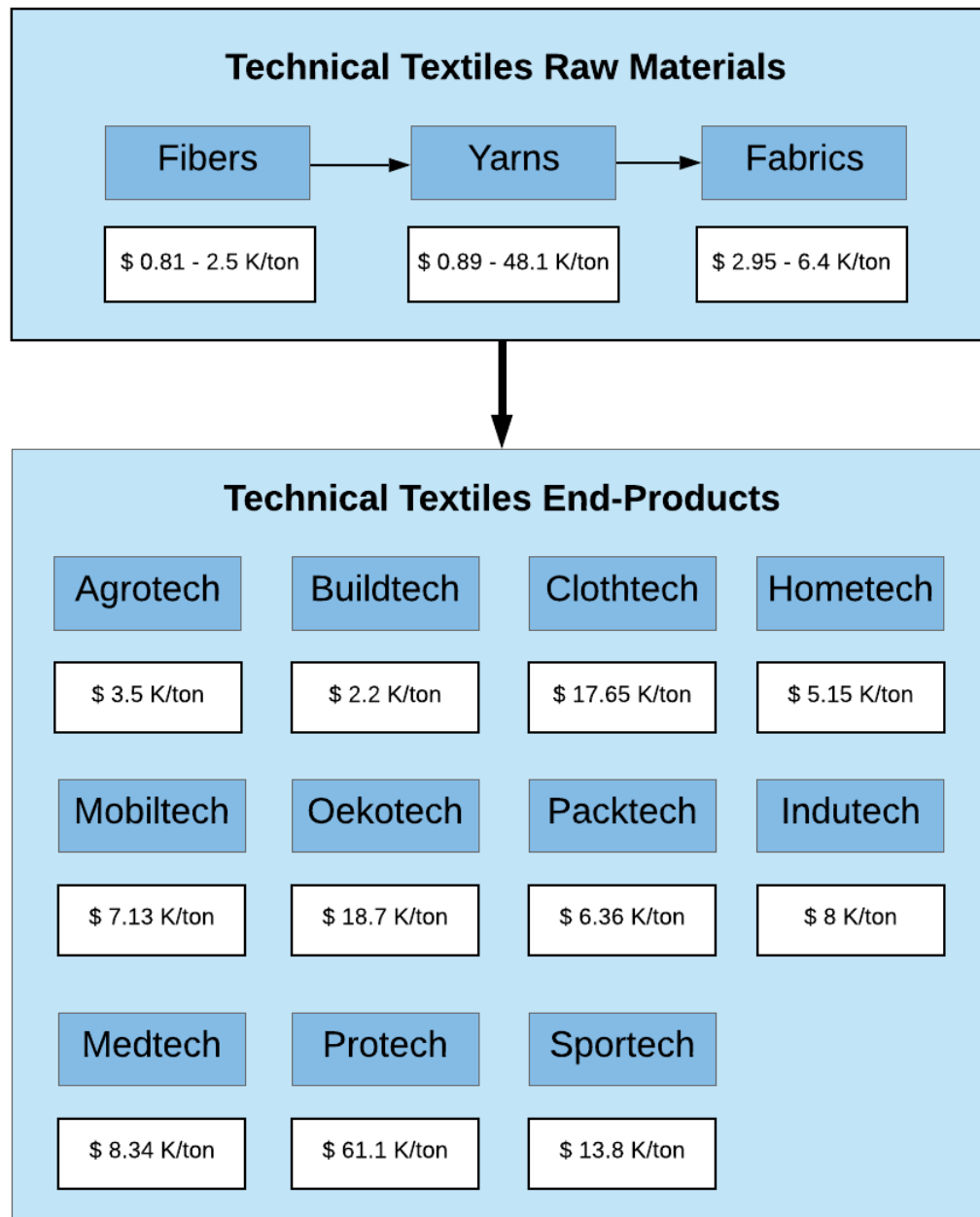


FIGURE 13 TECHNICAL TEXTILES VALUE FLOW IN EGYPT (UNIT VALUES BASED ON IMPORTS IN 2017)

1.1 MAJOR PRODUCERS

In this section a through scan of the major producing companies of technical textiles in Egypt has been performed. The complete list of technical textiles producers in Egypt is included in Annex A.

1.1.1 PRODUCERS OF RAW MATERIALS

Raw materials which producers create include fibers and yarns, such as polyethylene, polypropylene, high tenacity polyester, high tenacity nylon (Cordura), UHMWPE (Spectra), aramids (Kevlar), poly(p-phenylene-2,6-benzobisoxazole) (Zylon), glass, carbon, and high-performance natural fibers. In addition, fabric producers create fabrics types such as woven, knitted, braided, nonwoven, coated, and laminated fabrics. There are 43 major companies working in the production of technical textiles raw materials, which include fibers, yarns, and fabrics. There are 14 companies producing technical fibers and yarns 29 companies producing technical fabrics and nonwovens.

The producers of the technical fibers and yarns create both man-made and natural fibers. The man-made fibers include high and normal performance polypropylene and polyester yarns as well as glass fibers. The natural fibers included flax and sisal.

The producers of the technical fabrics create woven and nonwoven fabrics. There are 12 companies making technical woven fabrics and 17 companies making nonwovens. Further investigation in the nonwoven manufacturing in Egypt showed that there are four different production technologies being used. Needle punching and spun bond technologies are the nonwoven production technologies used in Egypt, with five companies producing needle punched nonwoven for thermal insulation and agriculture application and four companies producing spun bonded nonwoven used as a disposable fabric for packaging, disposable gowns, shoe covers, and many other applications. The other two producers of nonwoven produce SMS (spun bond-melt blown-spun bond) nonwoven, which is mainly used in hygiene applications such as baby diapers and medical applications. These two companies are based on foreign investment and located in 6th of October City. The remaining company produces a nonwoven interlining fabric that is used in the apparel industry, and the technology is based on chemical bonding technique as illustrated in Figure 14.

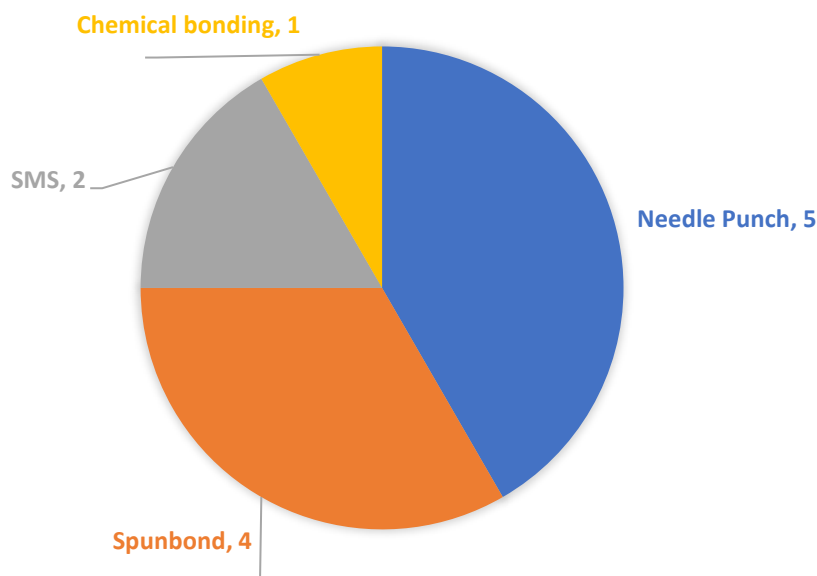


FIGURE 14 NONWOVEN COMPANIES IN EGYPT BY PRODUCTION TECHNOLOGY

I.1.2 PRODUCERS OF END-PRODUCTS

Producers of end-products include the different end-uses of the technical textiles, for instance, Agrotech, Buildtech, Clothtech, Hometech, Mobiltech, Oekotech, Packtech, Indutech, Medtech, Protech, Sportech. There are 71 major producers of technical textiles end-products in Egypt, with majority of companies working in Sportech, Protech and Packtech as shown in Figure 15. There are 22 companies working in Sportech mainly making sportswear and 20 companies working in the field of Protech making workwear, uniforms, and medical protection apparels, in addition to 11 companies working in the field of Packtech mostly making polypropylene woven sacks.

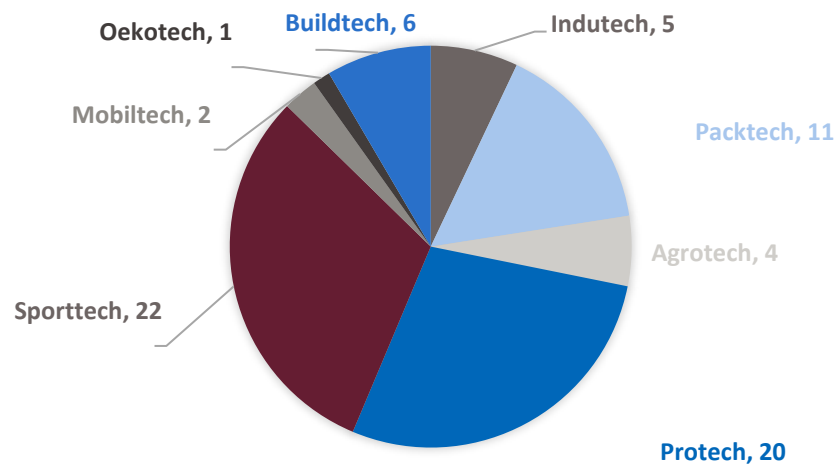


FIGURE 15 TECHNICAL TEXTILE COMPANIES IN EGYPT BY END-PRODUCTS

I.1.3 LOCATION AND SIZE OF PRODUCERS

Technical textile companies' location investigation showed that out of approximately 111 companies, 17 companies are located in 10th of Ramadan, 13 located in 6th of October, 11 located in El Obour, 8 in Nasr City, 5 in Badr, and 2 in Sadat. The remaining 55 companies are spread out in Alexandria, Menoufia, Gulf of Suez, and other locations.

The majority of the technical textiles companies in Egypt are small and medium-sized with capital investments below US\$10 million. There are a few big companies such as Jushi Fiberglass Egypt with high capital investment exceeding US\$300 million, followed by the nonwoven SMS companies with investments around US\$40 million.

I.2 SERVICE PROVIDERS AND SUPPORTING ORGANIZATIONS

The service providers and supporting organizations to the technical textiles value chain include governmental entities and ministries, quasi-government bodies, testing and certification institutes, educational organizations, industry institutions and associations, and other service providers.

I.2.1 CUSTOMS AUTHORITY

The Egyptian customs authority provides inspection of goods, classification of goods according to the harmonized system of codes, control of imports and exports based on government regulations, tariff and collection. There are 42 areas in which the Egyptian customs office is active, including seaports, airports, dry port storage facilities, and free zones.

I.2.2 INDUSTRY INSTITUTIONS AND ASSOCIATIONS

The Ministry of Trade and Industry and its affiliates support the textiles sector at-large across the VC, providing services such as training, innovation and technology transfer, and promoting exports. The most important affiliate is the Textile Development Center (TDC), which provides training, feasibility studies, quality management systems, and technical consultation. Another important subsidiary is the General Organization for Export and Import Control (GOEIC) which works closely with importers and exporters of raw textile materials and products through setting product specifications, registering importers and exporters, and issuing certificates of origin for Egyptian products.

The Federation of Egyptian Industries (FEI) is one of the country's largest employers' associations, with 19 active industrial chambers. The most relevant members are the Chamber of Textile Industries and the Chamber of Apparel and Home Textiles. The Federation is responsible for defending and supporting the Egyptian industries. The Federation provides services such as economic studies and research; legal and financial services; marketing; technical consultation and training; and other services pertaining to subsidy, dumping, and protective measures.

The Textile Export Council (TEC), established by the Ministry of Trade, is responsible for the development and promotion of textiles and ready-made garments exports. The Council provides export assistance services, marketing services, training services, and market intelligence and information services. The TEC also has relationships with international organizations to exchange trade and industry related information and to encourage partnerships and technology transfer with other countries.

I.2.3 EDUCATIONAL AND RESEARCH INSTITUTES

The Ministry of Higher Education and Scientific Research is the main entity responsible for formulating the higher education and research strategies, developing programs, launching initiatives, and implementing the strategies. The major textiles educational institutions in Egypt under the Ministry of Higher Education and Scientific Research are the Textiles Engineering Department, Alexandria University; the Textiles Engineering Department, Mansour University; and the Textile Department in the Faculty of Applied Arts, Helwan University. The three institutions provide undergraduate and post graduate degree programs with focus on textiles engineering, technology, chemistry, and design. The institutes are equipped with research facilities and labs including spinning labs, weaving labs, knitting labs, textiles identification and testing labs, and textile composites labs. Another main affiliate of the Ministry of Higher Education and Scientific Research is the National Research Center (NRC) that supports the textile sector through the textiles division and has recently established an Innovative Textiles Technology Center (ITTC). The center provides research, technical development (prototyping), technology incubation, and testing.

I.2.4 TESTING AND CERTIFICATION BODIES

The Egyptian Organization for Standardization and Quality (EOS), is responsible for developing and issuing Egyptian standards as well as conformity assessment products, testing, and industrial measurements. The EOS provides standards, specifications, and testing for textiles and apparel including technical textiles.

The National Institute of Measurement and Calibration, which is affiliated with the Ministry of Higher Education and Scientific Research provides accreditation certificates for measuring systems.

Furthermore, the Textile Consolidation Fund is one of the institutes providing testing activities through its testing and control center. The Fund conducts the necessary tests and identification of raw materials for textiles and finished products.

I.3 END MARKETS

Technical textile end-products reach end-users through different channels based on the type of product and user.

I.3.1 ORIGINAL EQUIPMENT MANUFACTURERS (OEMS)

In this channel the technical textiles end-products such as Mobiltech and Indutech are delivered to the OEMs for final assembly. This includes for instance, technical textiles components such as seat belts, airbags, conveyor belts, car seats and carpets.

I.3.2 LARGE CONSUMERS AND GOVERNMENT PROJECTS

In this channel the end-products are directly supplied to the consumer. For example, Medtech including, gauze, bandages, surgical catgut, sutures, and surgical adhesion barriers, are directly supplied to hospitals, clinical laboratories, and large clinics. Similarly, protech including, protective clothing, professional garments (uniforms), nonwoven garments, occupational prevention dress are directly delivered to firefighting departments, military, oil and gas companies, or mining companies.

As for the government sector, technical textile end-products such as Agrotech, Geotech, and Buildtech are directly supplied to big government projects such as agriculture reclamation, infrastructure and construction projects.

I.3.4 WHOLESALE AND RETAIL

Some technical textile products are considered consumer products which can be sold directly to the customers through wholesalers or retailers, such as sport-tech and home-tech. This channel includes stores such as sports shops and home accessories shops.

I.3.5 EXPORT MARKET

There is a growing demand for technical textiles in the international and regional markets. Egypt has a strategic geographic location with proximity to many trade regions, with a unique package of preferential trade agreements which makes it an ideal sourcing platform for textile products.

- Average delivery times for yarns (Textile Export Council of Egypt):
 - Arab Gulf Countries: 1 to 4 days
 - Europe and Turkey: 4 to 12 days
 - North Africa: 10 to 20 days
 - East Africa: 10 to 12 days
 - USA and Latin America: 20 to 30 days
- Preferential Trade Agreements applying in Egypt:
 - *EUROMED – EU/Egypt FTA*, since 2004 providing a zero-tariff access to 27 countries
 - *Egypt – Turkey FTA*, since 2005 with an immediate access to the large Turkish market
 - *QIZ – USA/Egypt FTA*, since 2004 providing a duty-free access to the USA market
 - *Agadir (Egypt - Jordan – Tunisia – Morocco)*, since 2006, a free trade area established with member countries
 - *COMESA – Africa/Egypt FTA*, since 200 providing a duty-free access to 18 African countries
 - *MERCOSUR – Latin America/Egypt FTA*, got into force in 2017 with a gradually tariffs reduction reaching a complete free trade within 9 years
 - *Egypt – gulf countries FTA*
 - *FTA – Egypt Free Trade Agreement*, since 2007 providing zero-tariff access to Iceland, Liechtenstein, Norway, and Switzerland

2. TRADE ANALYSIS

This section includes an in-depth analysis of Egypt's technical textiles trade upstream from technical fibers, yarns, and fabrics, as well as downstream to technical textiles end-products. The import and export data have been compiled for a five-year period starting from 2013 and ending in 2017 in addition to the compounded annual growth rates. The trade analysis is based on a dictionary created by inTEXive using the International Harmonized System of Codes to define the articles only used for technical textiles applications. Another dictionary was made for articles used for conventional textiles that could be a constituent in technical textiles applications in Annex B, which was not considered for the analysis.

2.1 TECHNICAL TEXTILES RAW MATERIALS

2.1.1 TECHNICAL FIBERS

Technical fibers HS codes used in the trade analysis are tabulated in Table 4. Those technical fibers include natural fibers such as jute, sisal, coconut and other vegetable fibers, in addition to, man-made fibers, such as, aramids and polypropylene.

TABLE 4 TECHNICAL FIBERS HS CODES USED IN THE TRADE ANALYSIS

FIBERS	HS CODE	DESCRIPTION	TARIFFS
Natural	53.03	Jute and other textile bast fibres (excluding flax, true hemp and ramie), raw or processed but not spun; tow and waste of these fibres (including yarn waste and garneted stock):	0%
	53.04	Sisal and other textile fibres of the genus Agave, processed but not spun; tow and waste of such fibres, incl. yarn waste and garneted stock	N/A
	53.05	Coconut, abaca (Manila hemp or Musa textilis Nee), ramie and other vegetable textile fibres, not elsewhere specified or included, raw or processed but not spun; tow, noils and waste of these fibres (including yarn waste and garneted stock):	0%
Man-Made	55.03	Synthetic staple fibres, not carded, combed or otherwise processed for spinning:	
		– Of nylon or other polyamides:	
	5503.11.00	– – Of aramids	0%
	5503.40.00	– Of polypropylene	0%

Egypt's technical fibers imports have increased from US\$3.62 million in 2013 to US\$5.1 million in 2017 with CAGR 8.9% as listed in Table 5 and 6. Coconut fibers represented 79% of the total imports, from main exporting countries such as Brazil and Kenya as shown in Figure 16. Coconut fibers also known as coir, are used in numerous technical applications such as twines, ropes, coco-pots, cocopeat and geomats.

TABLE 5 EGYPT'S TECHNICAL FIBERS IMPORTS BY GOODS

Imported goods	\$US million			10 ³ tons		
	2013	2017	CAGR (%)	2013	2017	CAGR (%)
Coconut	3.13	4.03	6.53	2.09	4.99	24.24
Staple PP	0.20	0.70	35.91	0.08	0.71	74.58
Jute	-	0.37	-	0.08	0.38	49.53
Staple	0.30	0.00	-68.24	0.12	0.00	-100.00
Aramids						
Total	3.62	5.10	8.90	2.29	5.69	25.62

TABLE 6 EGYPT'S TECHNICAL FIBERS IMPORTS BY COUNTRY

Exporters	\$US million			10 ³ tons		
	2013	2017	CAGR (%)	2013	2017	CAGR (%)
Brazil	1.25	2.21	15.28	1.03	2.74	27.70
Kenya	1.84	1.56	-4.07	1.02	1.93	17.44
Tanzania	0.00	0.31	-	0.00	0.37	-
China	0.04	0.19	44.87	0.03	0.12	47.71
Others	0.49	0.83	14.28	0.22	0.54	25.71
World	3.62	5.10	8.90	2.29	5.69	25.62

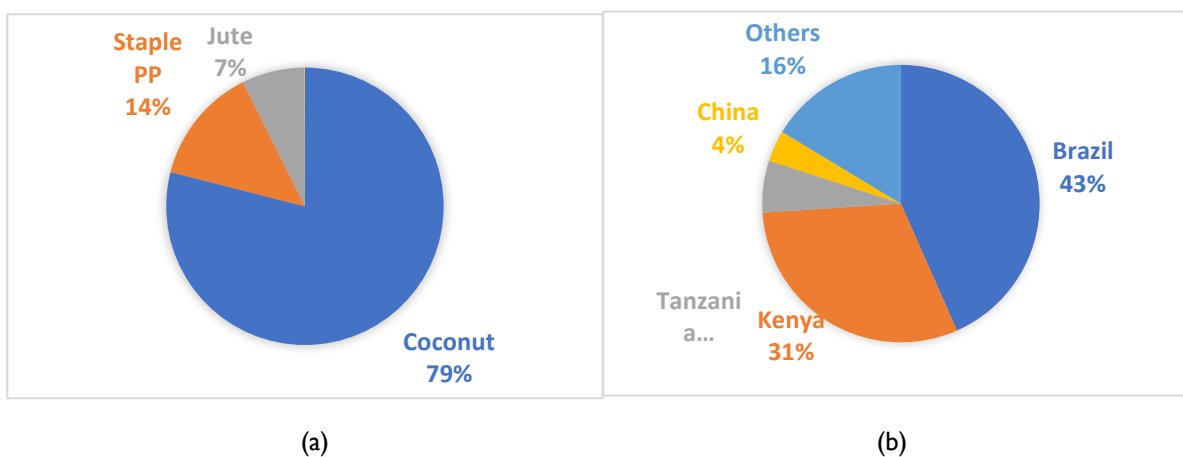


FIGURE 16 EGYPT'S TECHNICAL FIBERS IMPORTS BY (A) GOODS AND (B) COUNTRY IN VALUES 2017

Figure 17 depicts Egypt's technical fibers imports and exports from 2013 – 2017, it is clear that the fiber trade is very low, this is mainly due to the absence of upstream local fiber processing activities.

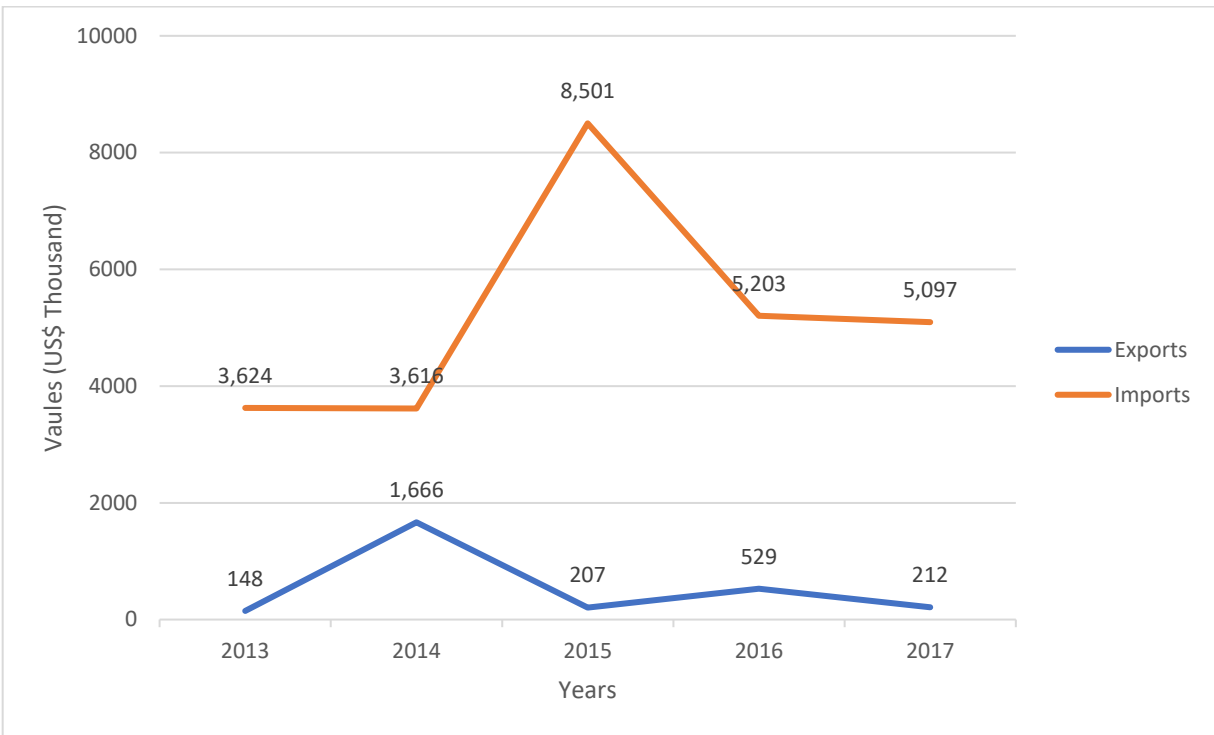


FIGURE 17 EGYPT'S TECHNICAL FIBERS TRADE STATISTICS 2013 - 2017

2.1.2 TECHNICAL YARNS

Technical yarns HS codes used in the trade analysis are tabulated in Table 7. Those technical yarns include natural yarns such as single and cabled jute, coconut and other vegetable fibers, in addition to, man-made yarns, such as, high tenacity nylon, polyester, and rayon, aramids (Kevlar), monofilament, rubberized threads and cords, carbon and glass fibers.

TABLE 7 TECHNICAL YARNS HS CODES USED IN THE TRADE ANALYSIS

YARNS	HS CODE	DESCRIPTION	TARIFFS
Natural	53.07	Yarn of jute or of other textile bast fibres of heading 53.03:	
	5307.10	– Single	5%
	5307.20	– Multiple (folded) or cabled	5%
	53.08	Yarn of other vegetable textile fibres; paper yarn:	
	5308.10	– Coir yarn	20%
	5308.90	– Other	20%
Man-Made	54.02	Synthetic filament yarn (other than sewing thread), not put up for retail sale, including synthetic monofilament of less than 67 decitex:	
		– High tenacity yarn of nylon or other polyamides:	5%
	5402.11	– – Of aramids	5%
	5402.19	– – Other	5%
	5402.20	– High tenacity yarn of polyesters	5%
	54.03	Artificial filament yarn (other than sewing thread), not put up for retail sale, including artificial monofilament of less than 67 decitex:	
	5403.10	– High tenacity yarn of viscose rayon	5%
	54.04	Synthetic monofilament of 67 decitex or more and of which no cross-sectional dimension exceeds 1 mm; strip and the like (for example, artificial straw) of synthetic textile materials of an apparent width not exceeding 5 mm:	5%
	56.04	Rubber thread and cord, textile covered; textile yarn, and strip and the like of heading 54.04 or 54.05, impregnated, coated, covered or sheathed with rubber or plastics:	
	5604.10	– Rubber thread and cord, textile covered	5%
	5604.90	– Other:	5%
		– – High tenacity yarn of polyesters, of nylon or other polyamides or of viscose rayon, impregnated or coated:	5%
	5604.90.01	– – – Imitation catgut	5%
		– – – Other:	5%
	5604.90.09	– – – – Un-vulcanized high tenacity yarn	5%
	68.15	Articles of stone or of other mineral substances (including carbon fibres, articles of carbon fibres and articles of peat), not elsewhere specified or included:	
	6815.10	– Non-electrical articles of graphite or other carbon	8-10%
	70.19	Glass fibres (including glass wool) and articles thereof (for example, yarn, woven fabrics):	
		– Slivers, roving, yarn and chopped strands:	5%
	7019.11	– – Chopped strands, of a length of not more than 50 mm	5%
7019.12	– – Roving	5%	
7019.19	– – Other	5%	

Egypt's technical yarns imports have decreased from US\$45.13 million in 2013 to US\$31.43 million in 2017 with CAGR -8.65% as listed in Tables 8 and 9. Monofilament yarn >67 dtex represented 48% of total imports, followed by glass yarn 15%, rubberized threads 9% and carbon fiber 8% in 2017 as shown in Figure 18 (a). Majority of imports came from Germany 41% and China 39% as shown in Figure 18 (b). Monofilament yarn are used in fishing line, dental floss, sports racquets, and bristles of toothbrushes; rubberized threads are used in making tire cords; and glass and carbon fibers are used as a reinforcement for polymer composites.

TABLE 8 EGYPT'S TECHNICAL YARNS IMPORTS BY GOODS

Imported goods	\$US million			10 ³ tons		
	2013	2017	CAGR (%)	2013	2017	CAGR (%)
Monofilament > 67 dtex	1.46	15.21	79.66	0.17	0.54	33.50
Glass fiber	7.59	4.75	-11.06	7.7	5.31	-8.87
Rubber thread	0.25	2.68	80.77	0.28	0.48	14.42
Carbon fiber	0.96	2.50	27.03	0.02	0.052	26.98
Strip yarn	1.33	2.24	13.92	0.3	0.78	26.98
HT Polyester	2.74	1.87	-9.11	0.84	0.64	-6.57
Jute	6.09	0.63	-43.29	7.4	0.91	-40.78
HT Nylon	19.38	0.20	-68.13	5.1	0.08	-64.83
Others	5.33	1.35	-29.05	-	-	-
Total	45.13	31.43	-8.65	21.81	8.79	-20.32

TABLE 9 EGYPT'S TECHNICAL YARNS IMPORTS BY COUNTRY

Exporters	\$US million			10 ³ tons		
	2013	2017	CAGR (%)	2013	2017	CAGR (%)
Germany	1.43	16.36	83.96	0.04	0.20	54.61
China	10.37	15.21	10.07	8.26	6.77	-4.87
Belgium	0.08	2.29	129.29	0.01	0.00	-36.11
Turkey	18.59	2.01	-42.66	4.52	0.25	-51.46
UK	0.98	0.87	-3.07	0.22	0.31	9.54
Japan	0.08	0.71	71.30	0.00	0.07	118.99
USA	2.49	0.31	-40.74	0.62	0.52	-4.15
Italy	0.31	0.31	-0.57	0.05	0.10	17.76
Others	10.80	1.43	-39.69	7.44	0.57	-47.33
World	45.13	39.50	-3.28	21.15	8.79	-19.71

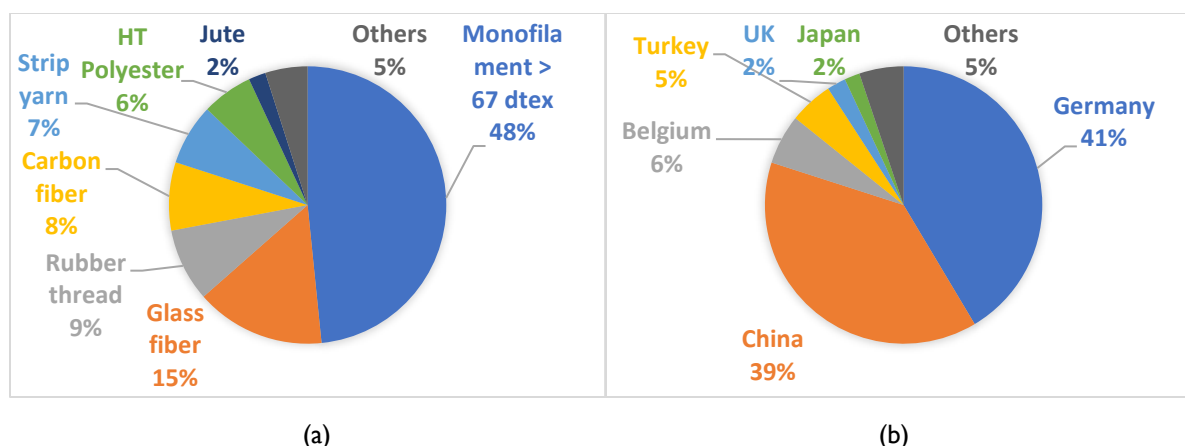


FIGURE 18 EGYPT'S TECHNICAL YARNS IMPORTS BY (A) GOODS AND (B) COUNTRY IN VALUES 2017

On the other hand, the exports of technical yarns have dramatically increased from US\$ 7 million in 2013 to US\$ 140.7 million in 2017 with a CAGR 111.5% as listed in Tables 10 and 11. Majority of exported yarns in 2017 were glass yarns in different forms: roving 63%, chopped threads 29%, and filament yarns 6% as shown in Figure 19 (a). Major importing countries were Turkey 24% and Europe as shown in Figure 18 (b). Glass fibers are used in numerous technical applications, roving is used mainly in reinforcement of advanced composites, while chopped threads are used in spray-up applications such as bathtubs, and glass reinforced concrete (GRC).

TABLE 10 EGYPT'S TECHNICAL YARNS EXPORTS BY GOODS

Exported goods	\$US million			10 ³ tons		
	2013	2017	CAGR (%)	2013	2017	CAGR (%)
Glass roving	0.03	88.76	664.39	0.01	99.02	834.20
Glass threads chopped	0.01	41.64	638.50	0.01	44.89	794.86
Glass yarns	0.11	7.87	193.53	0.34	8.37	123.41
Others	6.89	2.48	-22.53	2.45	1.33	-14.10
Total	7.04	140.75	111.48	2.80	153.60	172.10

TABLE 11 EGYPT'S TECHNICAL YARNS EXPORTS BY COUNTRY

Importers	\$US million			10 ³ tons		
	2013	2017	CAGR (%)	2013	2017	CAGR (%)
Turkey	0.00	33.85	-	0.00	37.38	-
Germany	0.00	24.10	-	0.00	24.04	-
Netherlands	0.00	12.51	-	0.00	13.54	-
India	0.03	11.75	365.64	0.02	12.68	415.14
Spain	0.00	9.47	-	0.00	10.28	-
Italy	0.14	9.67	190.35	0.03	10.95	344.72
UK	0.31	4.88	98.90	0.02	4.15	289.60
France	0.00	4.50	-	0.00	4.20	-
Poland	0.00	4.63	-	0.00	4.31	-
USA	4.50	0.06	-66.02	1.38	0.02	-65.30
Others	2.06	25.34	87.20	1.36	32.07	120.44
World	7.04	140.75	111.48	2.80	153.60	172.10

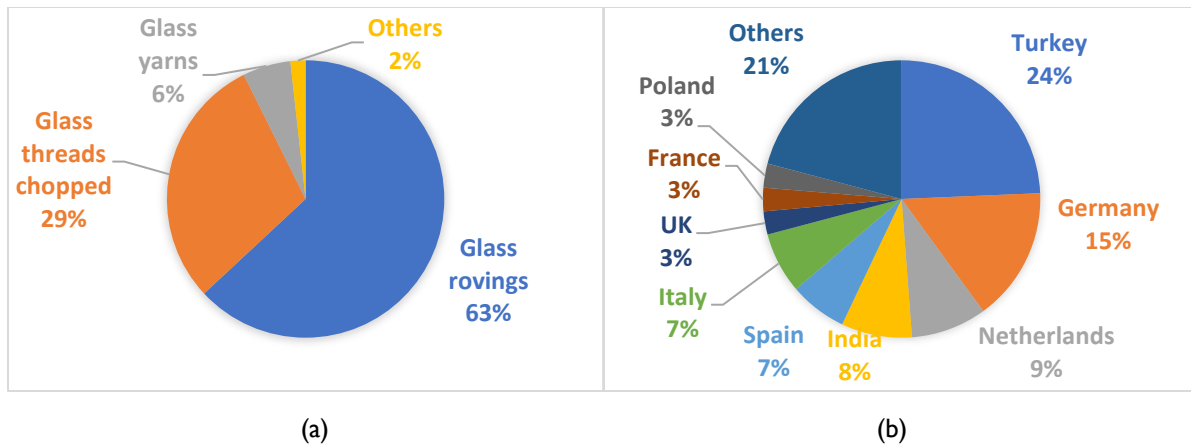


FIGURE 19 EGYPT'S TECHNICAL YARNS EXPORTS BY (A) GOODS AND (B) COUNTRY IN VALUES 2017

Figure 20 depicts Egypt's technical yarns imports and exports from 2013 – 2017, it is clear that the yarn exports have been increasing exponentially since 2013, this is due to the establishment of Jushi Egypt for Fiberglass Industry a wholly owned subsidiary of Jushi Group Co. Ltd. The company has been increasing its production capacity over the years to fulfill the increasing demand in major markets such as wind energy companies in Europe and Turkey.

It is important to note here that the data used for glass fibers exports were based on mirror data due to the erroneous assignment of HS codes in the direct data.

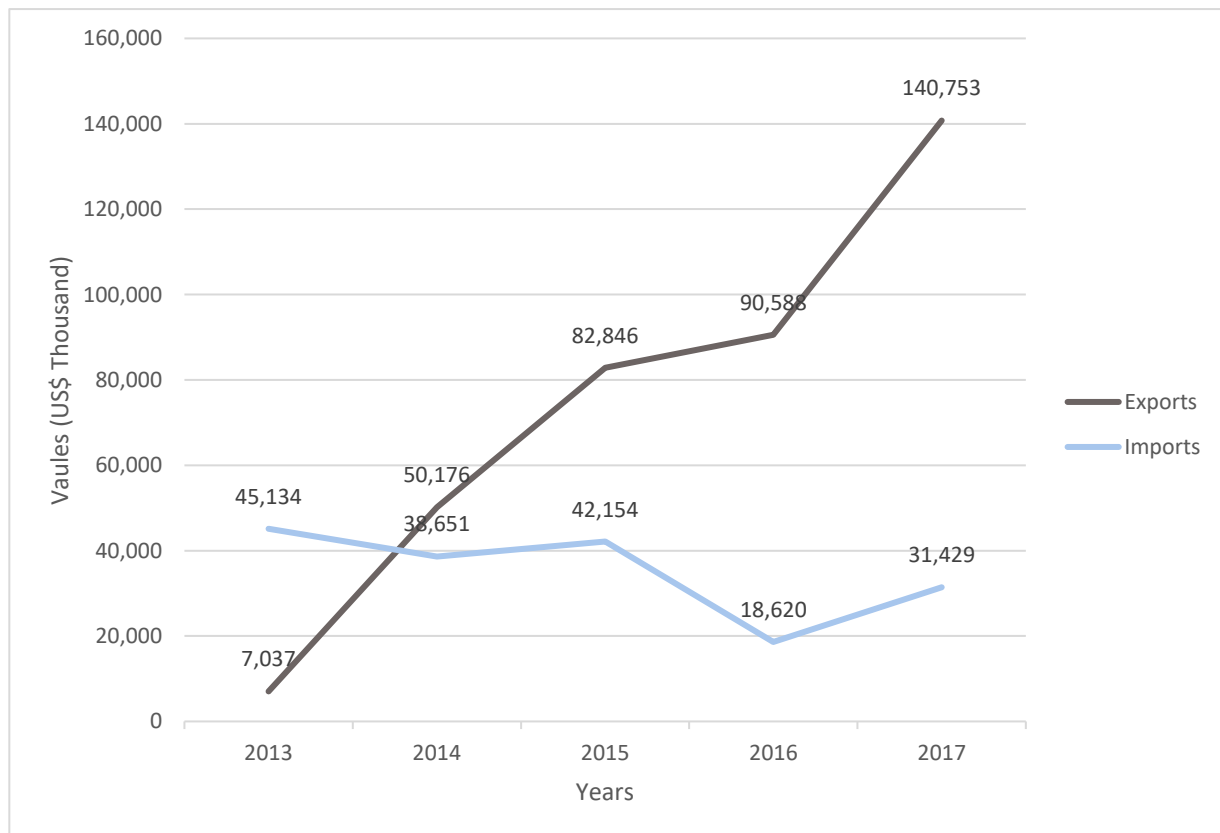


FIGURE 20 EGYPT'S TECHNICAL YARNS TRADE STATISTICS 2013 - 2017

2.1.3 TECHNICAL FABRICS

Technical fabrics HS codes used in the trade analysis are tabulated in Table 12. Those technical fabrics were classified into woven, knitted, nonwoven, braided, coated and laminated. It is important to note here that technical textiles traded as rolled goods are considered in the analysis as technical fabrics and not end-products, for example, geotextile rolls.

TABLE 12 TECHNICAL FABRICS HS CODES USED IN THE TRADE ANALYSIS

FABRICS	HS CODE	DESCRIPTION	TARIFFS
Woven	53.10	Woven fabrics of jute or of other textile bast fibres of heading 53.03:	5%
	54.07	Woven fabrics of synthetic filament yarn, incl. monofilament of ≥ 67 decitex and with a cross sectional dimension of ≤ 1 mm	
	5407.10	– Woven fabrics of high-tenacity yarn, nylon, other polyamides or polyesters, incl. monofilament of ≥ 67 decitex and with a cross sectional dimension of ≤ 1 mm	4.37-5%
	5407.20	– Woven fabrics of strip or the like, of synthetic filament, incl. monofilament of ≥ 67 decitex and with a cross sectional dimension of ≤ 1 mm polypropylene or polyethylene fibres	10%
	59.11	Textile products and articles, for technical use, specified in Note 7 to chapter 59	
	5911.20	Bolting cloth, whether or not made up	4.37-5%
	5911.40	Straining cloth of a kind used in oil-presses or for similar technical purposes, incl. that of human hair	4.37-5%
	54.08	Woven fabrics of artificial filament yarn, including woven fabrics obtained from materials of heading 54.05:	
	5408.10	– Woven fabrics obtained from high tenacity yarn of viscose rayon	8.75-10%
	70.19	Glass fibres (including glass wool) and articles thereof (for example, yarn, woven fabrics):	
	7019.40	– Woven fabrics of roving:	4.38-5%
	7019.51	Woven fabrics, incl. narrow fabrics, of glass, of a width of ≤ 30 cm (excluding roving)	3.75-5%
	7019.52	Woven fabrics, incl. narrow fabrics, of glass filaments, of width of > 30 cm, plain weave, weighing < 250 g/m ² , made of yarn of a linear density of ≤ 136 tex per single yarn (excluding fabrics made from roving)	4.38-5%
	7019.59	Woven fabrics, incl. narrow fabrics, of glass fibres, of a width of > 30 cm (excluding plain weave, weighing < 250 g/m ² , of a linear density of ≤ 136 tex per single yarn, and fabrics made from roving)	4.38-5%
	Knitted	60.05	Warp knit fabrics "incl. those made on galloon knitting machines", of a width of > 30 cm (excluding those containing by weight $\geq 5\%$ of elastomeric yarn or rubber thread, and pile fabrics, incl. "long pile", looped pile fabrics, labels, badges and similar articles, and knitted or crocheted fabrics, impregnated, coated, covered or laminated)
6005.35		Warp knit fabrics of synthetic fibres, antimalarial, of a width of > 30 cm	8.75-10%

Nonwoven	56.02	Felt, whether or not impregnated, coated, covered or laminated:	
	5602.10	– Needle loom felt and stitch-bonded fiber fabrics	4.38-5%
	56.03	Nonwovens, whether or not impregnated, coated, covered or laminated:	4.43-5%
	58.03	Gauze (excluding narrow woven fabrics of heading 5806)	8.75-10%
	59.11	Textile products and articles, for technical use, specified in Note 7 to chapter 59	
	5911.31	Textile fabrics and felts, endless or fitted with linking devices, of a kind used in papermaking or similar machines, e.g. for paper pulp or asbestos-cement, weighing < 650 g/m ²	4.43-5%
	5911.32	Textile fabrics and felts, endless or fitted with linking devices, of a kind used in papermaking or similar machines, e.g. for paper pulp or asbestos-cement, weighing ≥ 650 g/m ²	8.75-10%
	70.19	Glass fibres (including glass wool) and articles thereof (for example, yarn, woven fabrics):	
		–Thin sheets (voiles), webs, mats, mattresses, boards and similar nonwoven products:	
	7019.31	– –Mats	4.38-5%
7019.32	– –Thin sheets (voiles)	4.38-5%	
7019.39	– –Web, mattresses, boards and similar nonwoven products	4.38-5%	
Braided	58.08	Braids in the piece; ornamental trimmings in the piece, without embroidery, other than knitted or crocheted; tassels, pompons and similar articles:	
	5808.10	– – Braided surgical suture non-absorbable thread; sterile umbilical tape	6.88-8.13%
Coated/ Laminated	59.01	Textile fabrics coated with gum or amylaceous substances, of a kind used for the outer covers of books or the like; tracing cloth; prepared painting canvas; buckram and similar stiffened textile fabrics of a kind used for hat foundations:	8.75-10%
	59.03	Textile fabrics impregnated, coated, covered or laminated with plastics (excluding tire cord fabric of high-tenacity yarn of nylon or other polyamides, polyesters or viscose rayon; wallcoverings impregnated or covered with textile materials; floor coverings consisting of a textile backing and a top layer or covering of plastics)	8.75-10%
	5907	Textile fabrics otherwise impregnated, coated or covered; painted canvas being theatrical scenery, studio back-cloths or the like:	8.75-10%
	59.11	Textile products and articles, for technical use, specified in Note 7 to chapter 59	
	5911.10	Textile fabrics, felt and felt-lined woven fabrics, coated, covered or laminated with rubber, leather or other material, of a kind used for card clothing, and similar fabrics of a kind used for other technical purposes, incl. narrow fabrics made of velvet impregnated with rubber, for covering weaving spindles "weaving beams"	8.75-10%

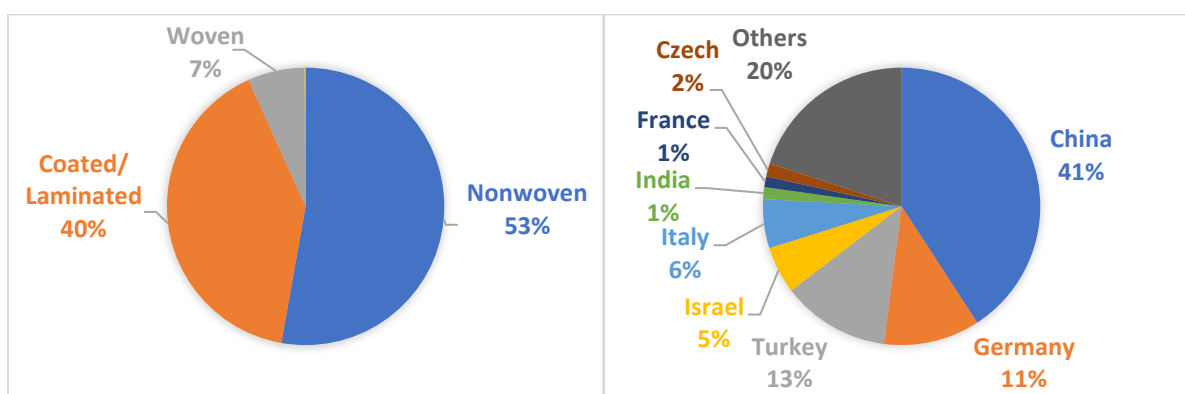
Egypt's technical fabrics imports have been almost constant at a value of ~ US\$270 million since 2013 as listed in Tables 13 and 14. Nonwoven fabrics and coated / laminated fabrics represented most of the imports in 2017 with shares 53% and 40% respectively as shown in Figure 21 (a). Majority of imports came from China 41%, Turkey 13% and Germany 13% as shown in Figure 21 (b). Nonwoven fabrics are used in many technical applications, such as, packaging, filtration, medical, hygiene and other applications, while coated and laminated fabrics are used in car seats, inflatables, blackouts, awnings and other applications.

TABLE 13 EGYPT'S TECHNICAL FABRICS IMPORTS BY GOODS

Imported goods	\$US million			10 ³ tons		
	2013	2017	CAGR (%)	2013	2017	CAGR (%)
Nonwoven	121.78	143.96	4.27	49.65	40.57	-4.92
Coated/ Laminated	114.12	110.29	-0.85	32.23	37.40	3.79
Woven	35.36	18.08	-15.44	17.52	4.44	-29.05
Braided	0.44	0.32	-7.46	0.06	0.05	-4.46
Total	271.69	272.64	0.09	99.46	82.46	-4.58

TABLE 14 EGYPT'S TECHNICAL FABRICS IMPORTS BY COUNTRY

Exporters	\$US million			10 ³ tons		
	2013	2017	CAGR (%)	2013	2017	CAGR (%)
China	118.12	111.30	-1.48	39.00	44.09	3.11
Germany	17.43	30.58	15.10	2.58	6.06	23.79
Turkey	33.47	34.31	0.61	9.43	13.56	9.52
Israel	15.03	15.02	-0.02	1.37	1.29	-1.36
Italy	16.12	15.53	-0.92	3.21	3.16	-0.40
India	4.38	3.80	-3.50	0	0.8	-
France	1.78	3.39	17.59	0.33	0.39	4.38
Czech Republic	1.36	4.23	32.90	0.32	0.89	29.51
Others	64.00	54.48	-3.95	43.24	12.23	-27.08
World	271.69	272.64	0.09	99.46	82.46	-4.58



(a)

(b)

FIGURE 21 EGYPT'S TECHNICAL FABRICS IMPORTS BY (A) GOODS AND (B) COUNTRY IN VALUES 2017

Egypt's technical fabrics exports have increased dramatically from US\$11 million in 2013 to US\$110 million in 2017 with a CAGR of 77.8% as listed in Tables 15 and 16. Nonwoven fabrics represented most of the exports in 2017 with 91% share as shown in Figure 22 (a). Main importing countries were Algeria 16%, Spain 13%, Turkey 12%, Nigeria 10% and Germany 8% as shown in Figure 22 (b).

TABLE 15 EGYPT'S TECHNICAL FABRICS EXPORTS BY GOODS

Exported goods	\$US million			10 ³ tons		
	2013	2017	CAGR (%)	2013	2017	CAGR (%)
Nonwoven	8.34	99.94	86.07	3.15	31.55	77.96
Woven	1.61	9.59	56.31	0.62	6.40	79.22
Others	1.06	0.54	-15.75	0.48	0.00	-
Total	11.01	110.07	77.83	4.24	37.85	72.83

TABLE 16 EGYPT'S TECHNICAL FABRICS EXPORTS BY REGION

Importers	\$US million			10 ³ tons		
	2013	2017	CAGR (%)	2013	2017	CAGR (%)
Algeria	0.45	18.28	152.46	0.17	7.63	160.81
Spain	0.50	14.25	131.41	0.15	8.47	176.02
Turkey	5.73	13.00	22.71	1.78	6.16	36.43
Nigeria	0.00	10.71	-	-	0.00	-
Germany	0.07	8.87	239.23	0.01	4.29	417.01
UK	0.00	8.02	-	0.00	5.08	-
Poland	0.01	5.08	344.59	0.00	3.51	-
South Africa	0.17	4.04	122.06	0.05	1.77	146.42
Saudi Arabia	0.21	3.60	102.80	0.17	1.72	79.68
Others	3.87	24.22	58.19	1.93	0.00	-
World	11.01	110.07	77.83	4.24	37.85	72.83

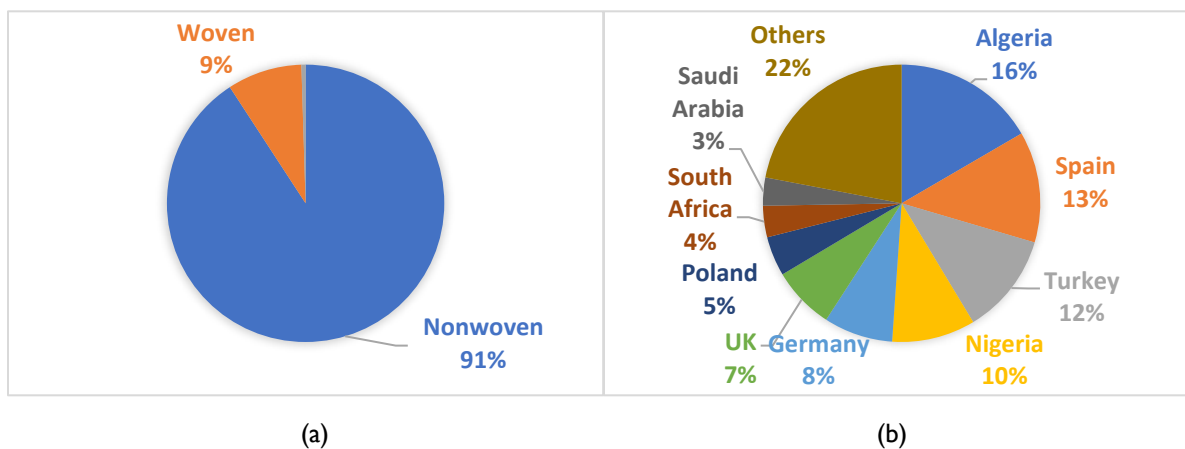


FIGURE 22 EGYPT'S TECHNICAL FABRICS EXPORTS BY (A) GOODS AND (B) COUNTRY IN VALUES 2017

Figure 23 depicts Egypt's technical fabrics imports and exports from 2013 – 2017, it is clear that there is a trade deficit due to the small number of local technical fabric producers compared to the high local demand. However, exports have been increasing significantly since 2013 and it is expected to continue to grow due to the high demand for nonwoven fabrics from neighboring countries in the Middle East and Africa.

Further insights into the technical fabrics will be included in the subsequent sections, with a deeper trade analysis of the woven, nonwoven and coated fabrics. It is important to note here, that the data used for technical fabrics were mirror data, due to the erroneous assignment of HS codes in the direct data.

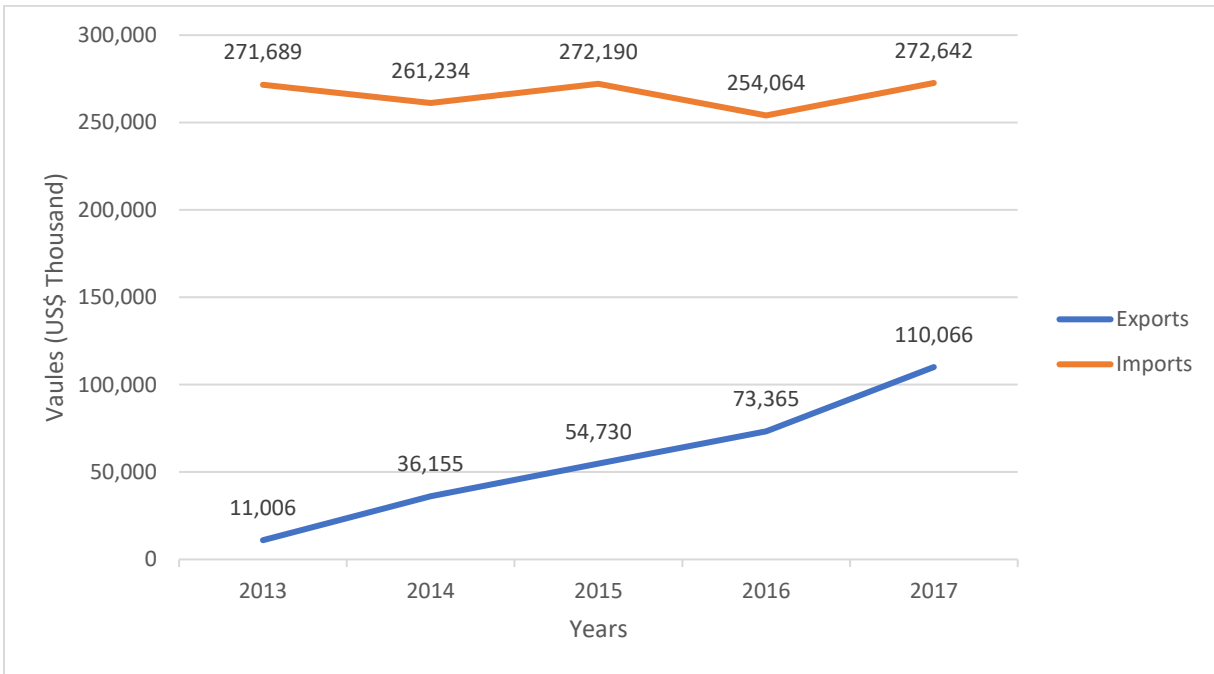


FIGURE 23 EGYPT'S TECHNICAL FABRICS TRADE STATISTICS 2013 - 2017

2.1.3.1 Technical Woven Fabrics

Egypt's technical woven fabrics imports have decreased from US\$35.4 million in 2013 to US\$18.1 million in 2017 with CAGR -15.2% as listed in Tables 17. PP/ PE woven fabrics of strips or monofilament represented 39% of total imports, followed by woven glass fiber 33%, and woven high tenacity yarn 9% in 2017 as shown in Figure 24 (a). Majority of imports came from China 36% and Saudi Arabia 39% as shown in Figure 24 (b). PP woven fabrics of strips is mostly a leno woven fabric made up of PP tape yarn which is mostly used for carpet backing, artificial turfs and awnings, major producers in Saudi Arabia such as Mattex is one of the key suppliers, whereas, woven glass fibers are used in the local industry in making yachts, piping, and other hand layup composite applications.

TABLE 17 EGYPT'S TECHNICAL WOVEN FABRICS IMPORTS

Imported goods	\$US thousands			Exporters	\$US thousands		
	2013	2017	CAGR (%)		2013	2017	CAGR (%)
Woven strip/ monofil	20,489	7,074	-23.35	China	12,688	6,556	-15.22
Woven glass	2,592	4,189	12.75	Saudi Arabia	9,226	5,499	-12.13
Woven glass roving	501	1,871	39.01	USA	287	1,782	57.85
Woven HT	7,353	1,553	-32.21	Turkey	599	1,045	14.93
Straining cloth	404	1,308	34.14	Germany	2,236	462	-32.58
Others	4,020	2,080	-15.19	Others	10,323	2,731	-28.28
Total	35,359	18,075	-15.44	World	35,359	18,075	-15.44

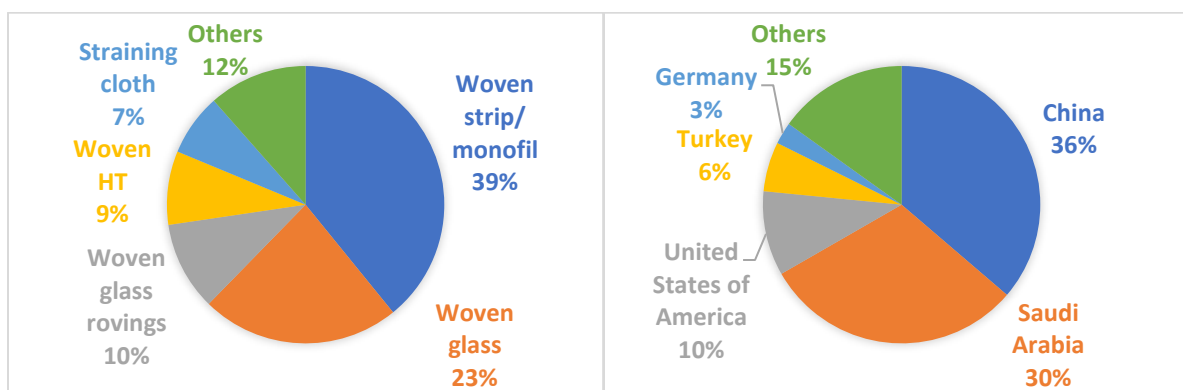


FIGURE 24 EGYPT'S TECHNICAL WOVEN FABRICS IMPORTS BY (A) GOODS AND (B) COUNTRY IN VALUES 2017

On the other hand, the exports of technical woven fabrics have increased from US\$ 1.61 million in 2013 to US\$ 9.6 million in 2017 with a CAGR of 56.3%. Majority of the exports in 2017 were woven glass roving which represented 89% of the total exports, mostly to Spain. The significant increase in woven glass roving exports is due to the recent investment by Jushi Group in Egypt in 2012, serving the global glass fiber market, especially Turkey and Europe, in applications such as wind turbine blades.

2.1.3.2 Nonwoven fabrics

Egypt's nonwoven fabrics imports have slightly increased from US\$121.8 million in 2013 to US\$144 million in 2017 with CAGR 4.27% as listed in Table 18. Nonwovens of man-made filaments <25 gsm represented 45% of total imports, followed by man-made filaments 70 – 150 gsm 11%, and man-made filaments 25-70 gsm 11% in 2017 as shown in Figure 25 (a). Majority of imports in 2017 came from Saudi Arabia 22%, Turkey 18% and Germany 18% as shown in Figure 26 (a). There is a high local demand for nonwovens of man-made filaments also known as polymer laid nonwovens made with technologies such as spun bonding (S), melt blowing (M) or a combination of both (SMS). The demand is higher especially for low areal densities below 25 gsm, which is mostly used in hygiene applications such as baby diapers and feminine care products. Whereas, the higher areal density from 70 – 150 gsm is used in medical single use garments, and higher density >150 gsm is used in packaging.

On the other hand, the exports of nonwoven fabrics have significantly increased from US\$8.33 million in 2013 to US\$99.9 million in 2017 with a CAGR 86% as listed in Table 18. Majority of exported nonwovens in 2017 were man-made filament <25 gsm 52%, glass fiber mats 21%, and man-made filament 25-70 gsm 14% as shown in Figure 25 (b). Major importing countries were Algeria 18%, Turkey 12%, Nigeria 11% and Germany 9% as shown in Figure 26 (b). The increasing exports of nonwoven man-made filament is due to the recent investments by global nonwoven SMS manufacturers such as Gulsan and PFN (formerly Pegas) in Egypt. Moreover, there is a high regional spending on health care and hygiene especially in Middle East and Africa.

It is noticeable that Egypt is still importing nonwovens even after the opening of many units in the past few years, which indicates increase in demand.

TABLE 18 EGYPT'S NONWOVEN FABRICS IMPORTS AND EXPORTS VALUE BY GOODS

Imported goods	\$US thousands			Exported goods	\$US thousands		
	2013	2017	CAGR (%)		2013	2017	CAGR (%)
Man-made filament < 25 g/m ²	44,513	65,134	9.98	Man-made filaments < 25 g/m ²	5,834	52,461	73.17
Man-made filaments > 70 - 150 g/m ²	30,662	16,011	-14.99	Glass fiber mat	62	21,486	367.04
Man-made filament 25 - 70 g/m ²	18,693	15,769	-4.16	Man-made filaments 25-70 g/m ²	66	13,701	331.46
Staple 25 - 70 g/m ²	6,700	15,112	22.55	Staple > 150 g/m ²	20	9,516	279.58
Staple < 25 g/m ²	2,467	7,633	32.63	Glass fiber web	360	2,083	55.09
Others	18,740	24,303	6.71	Others	1,995	692	-23.26
Total	121,775	143,962	4.27	Total	8,337	99,939	86.07

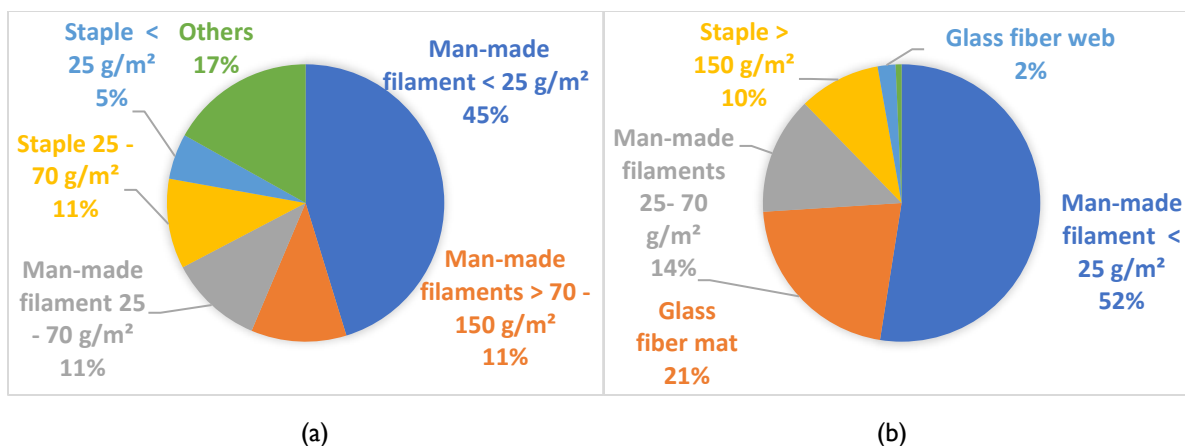


FIGURE 25 EGYPT'S NONWOVEN FABRICS (A) IMPORTS, AND (B) EXPORTS VALUES BY GOODS 2017

TABLE 19 EGYPT'S NONWOVEN FABRICS IMPORTS AND EXPORTS VALUES BY COUNTRY

Exporters	\$US thousands			Importers	\$US thousands		
	2013	2017	CAGR (%)		2013	2017	CAGR (%)
Saudi Arabia		31,454	3.25	Algeria	28	17,978	403.38
Turkey	31,030	25,599	-4.70	Turkey	5,568	12,240	21.76
Germany	12,721	25,197	18.63	Nigeria	0	10,694	-
China	13,830	16,029	3.76	Germany	52	8,696	259.61
Italy	14,320	15,102	1.34	UK	0	8,017	-
Others	22,202	30,581	8.33	Others	2,689	42,314	99.17
World	121,775	143,962	4.27	World	8,337	99,939	86.07

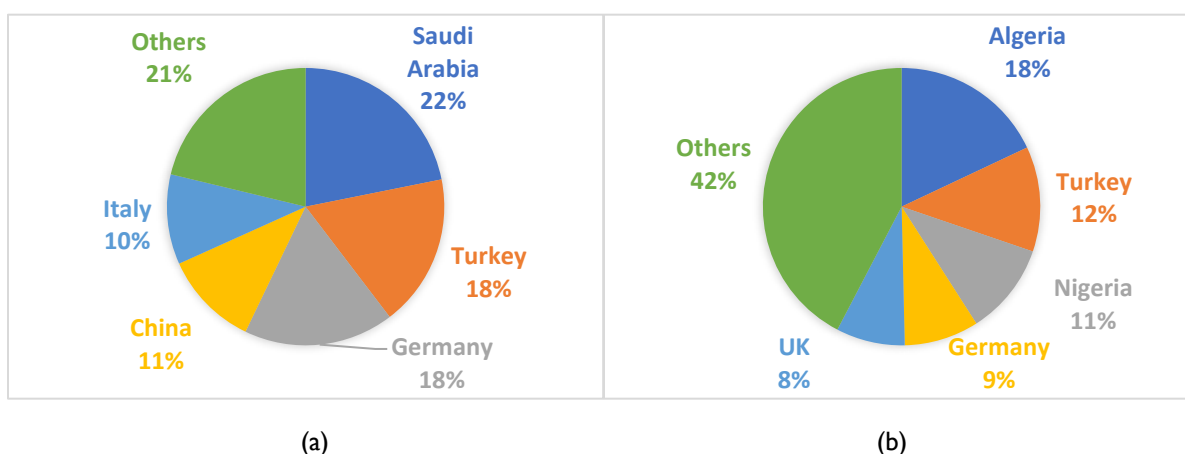


FIGURE 26 EGYPT'S NONWOVEN FABRICS (A) IMPORTS, AND (B) EXPORTS VALUES BY COUNTRY 2017

2.1.3.3 Coated/ Laminated Fabrics

Egypt's imports of coated or laminated fabrics have been almost constant since 2013 at a high level of ~ US\$ 114 million as listed in Table 20. Polyurethane (PU) laminated fabrics represented 35% of total imports, followed by polyvinylchloride (PVC) coated fabrics 28%, and fabrics coated with other plastics 22% in 2017 as shown in Figure 27 (a). Majority of imports came from China 75% and Israel 12% as shown in Figure 27 (b). Textile fabrics in this section are either impregnated, coated, covered or laminated with plastics, the fabrics coated/ laminated with PU are mostly used in automotive seat covers, headliners, and high-quality synthetic leather, while the PVC coated are used in blackout curtains, awnings and inflatables. Fabrics coated or impregnated with other plastics, could be water repellent, flame retardant, chemical resistant or other functional coatings. Imports from Israel are mostly for the readymade garment companies exporting to the United States under the Qualified Industrial Zones (QIZ) protocol.

TABLE 20 EGYPT'S COATED/ LAMINATED FABRICS IMPORTS

Imported goods	\$US thousands			Exporters	\$US thousands		
	2013	2017	CAGR (%)		2013	2017	CAGR (%)
PU coated	38,875	38,316	-0.36	China	88,564	83,037	-1.60
PVC coated	31,119	31,162	0.03	Israel	12,786	13,290	0.97
Coated other plastics	21,891	24,168	2.50	Germany	1,025	3,665	37.51
Amylaceous coated	585	8,418	94.77	India	1,958	2,375	4.95
Studio backcloth	17,398	6,355	-22.26	Turkey	3,175	1,945	-11.53
Others	4,252	1,867	-18.60	Others	6,612	5,974	-2.50
Total	114,120	110,286	-0.85	World	114,120	110,286	-0.85

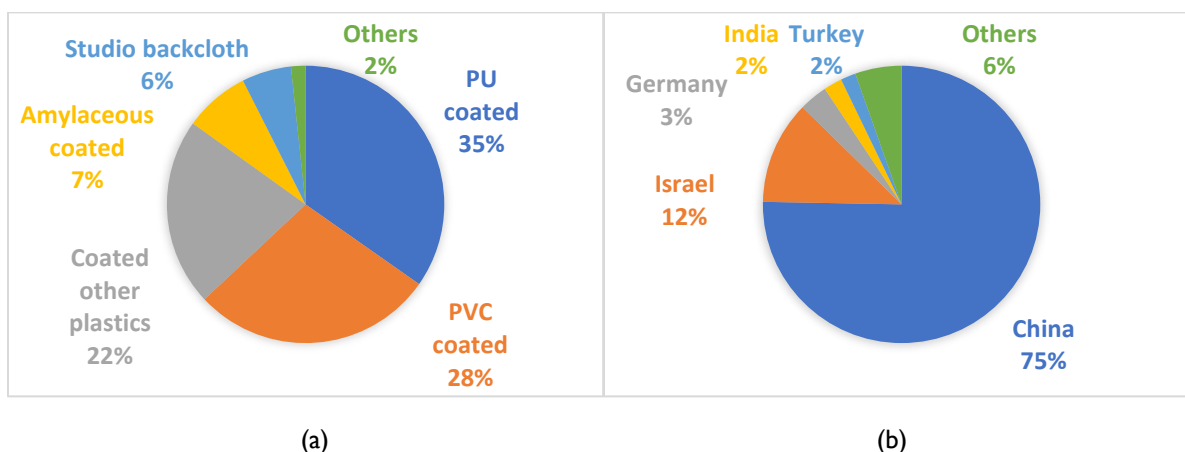
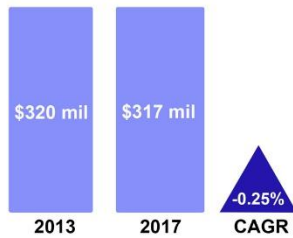


FIGURE 27 EGYPT'S COATED/ LAMINATED FABRICS IMPORTS BY (A) GOODS, AND (B) COUNTRY IN VALUES 2017

2.1.4 TOTAL RAW MATERIALS

TOTAL IMPORTS OF RAW MATERIALS

Total Imports Value

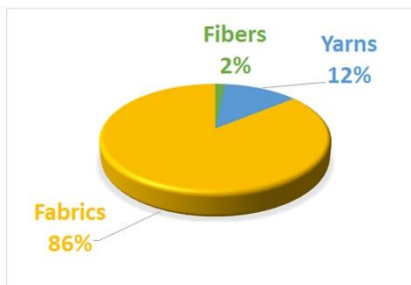
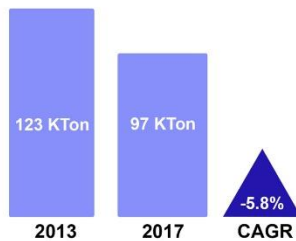


Top Imports Partners - 2017

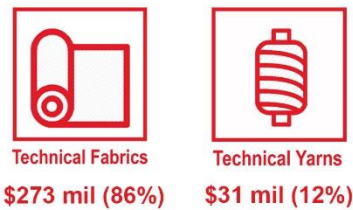


- 1) Asia Pacific = \$139 mil (44%)
- 2) Europe = \$80 mil (25%)
- 3) Middle East = \$61.9 mil (19%)

Total Imports Quantity

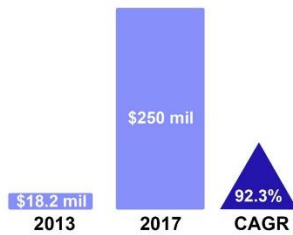


Top Imported Raw Material Groups - 2017



TOTAL EXPORTS OF RAW MATERIALS

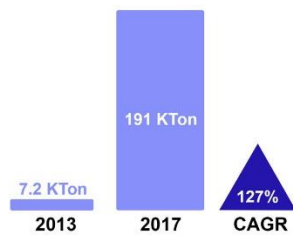
Total Exports Value



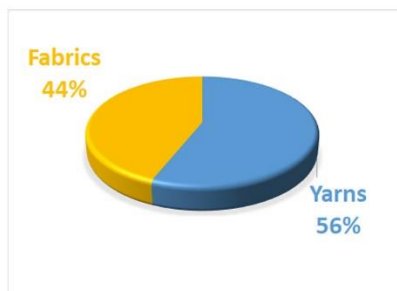
Top Exports Partners - 2017



Total Exports Quantity



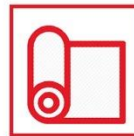
- 1) Europe = \$130.2 mil (52%)
- 2) Middle East = \$56.2 mil (23%)
- 3) Africa = \$40.9 mil (16%)



Top Exported Raw Material Groups - 2017



Technical Yarns
\$141 mil (56%)



Technical Fabrics
\$110 mil (44%)

Egypt's total technical textiles raw materials imports have been almost constant since 2013 at a high level of almost US\$320 million as listed in Tables 21 and 22. However, there have been a decrease in the import quantities from 122.9 thousand tons in 2013 to 96.9 thousand tons in 2017, which indicates increased unit values. Majority of imports were in fabric form (rolled goods) 86%, with much smaller quantity in yarn form 12% as shown in Figure 28 (a), this indicates that there is a gap in upstream operations, such as, technical fiber spinning, technical yarn weaving/ knitting and nonwoven. Main import regions were Asia Pacific 44%, Europe 25% and the Middle East 19% as shown in Figure 28 (b). Imports from Asia are mostly price sensitive raw materials, while Europe are advanced raw materials, whereas the Middle East are polymeric raw materials such as PP and PE.

TABLE 21 EGYPT'S TECHNICAL TEXTILES RAW MATERIALS IMPORTS BY GOODS

Imported goods	\$US million			10 ³ tons		
	2013	2017	CAGR (%)	2013	2017	CAGR (%)
Fibers	3.62	5.10	8.90	2.29	5.69	25.62
Yarns	45.13	31.43	-8.65	21.81	8.79	-20.32
Fabrics	271.69	272.64	0.09	99.46	82.46	-4.58
Total	320.44	317.24	-0.25	122.90	96.94	-5.76

TABLE 22 EGYPT'S TECHNICAL TEXTILES RAW MATERIALS IMPORTS BY REGION

Exporters	\$US million			10 ³ tons		
	2013	2017	CAGR (%)	2013	2017	CAGR (%)
Middle East	75.166	61.94	-4.72	18.18	20.86	3.49
Africa	2.356	1.91	-5.15	1.79	1.16	-10.29
Europe	53.869	80.07	10.42	9.73	13.23	7.99
North America	4.79	2.34	-16.36	1.04	0.56	-14.45
Asia Pacific	149.429	139.11	-1.77	54.99	60.87	2.57
Others	34.83	31.87	-2.20	37.17	0.27	-70.86
World	320.44	317.24	-0.25	122.90	96.94	-5.76

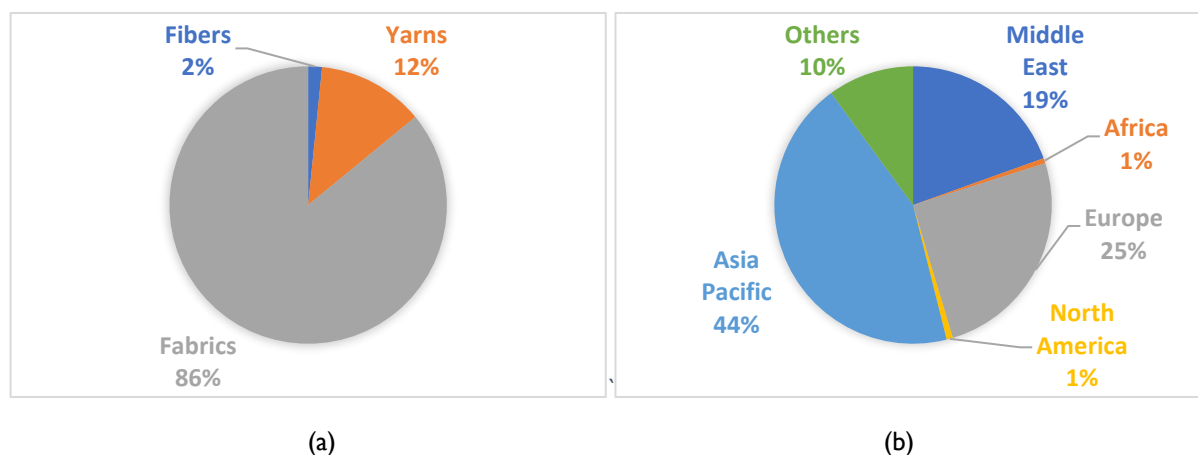


FIGURE 28 EGYPT'S TECHNICAL TEXTILES RAW MATERIALS IMPORTS BY (A) GOODS AND (B) REGION IN VALUES 2017

On the other hand, exports have been increasing significantly from US\$18.2 million in 2013 to US\$250 million in 2017 with a CAGR of 92.3% as listed in Tables 23 and 24. This has been coupled with a significant increase in raw materials export quantities which has reached 191.7 thousand tons in 2017. Exports were split 56% in yarns form and 44% in fabric form as shown in Figure 29 (a), these were mainly glass fiber roving and nonwoven of man-made filament. Main export regions were Europe 52%, Middle East 23% and Africa 16% as shown in Figure 29 (b). Exports to these regions are supported by the preferential trade agreements, geographic proximity, and cost advantage in Egypt.

TABLE 23 EGYPT'S TECHNICAL TEXTILES RAW MATERIALS EXPORTS BY GOODS

Exported goods	\$US million			10 ³ tons		
	2013	2017	CAGR (%)	2013	2017	CAGR (%)
Fibers	0.14	0.21	9.40	0.11	0.28	27.52
Yarns	7.04	140.75	111.48	2.80	153.60	172.10
Fabrics	11.01	110.07	77.83	4.24	37.85	72.83
Total	18.19	251.03	92.29	7.15	191.73	127.34

TABLE 24 EGYPT'S TECHNICAL TEXTILES RAW MATERIALS EXPORTS BY REGION

Importers	\$US million			10 ³ tons		
	2013	2017	CAGR (%)	2013	2017	CAGR (%)
Middle East	7.39	56.19	66.06	2.69	50.03	107.68
Africa	3.95	40.91	79.35	2.01	13.00	59.52
Europe	2.00	130.22	184.10	0.58	107.69	269.14
North America	4.60	0.52	-42.06	1.43	0.18	-40.39
Asia Pacific	0.39	23.05	177.61	0.46	21.13	160.63
Others	0.03	0.01	-24.02	0.02	0.00	-
World	18.19	251.03	92.29	7.15	191.73	127.34

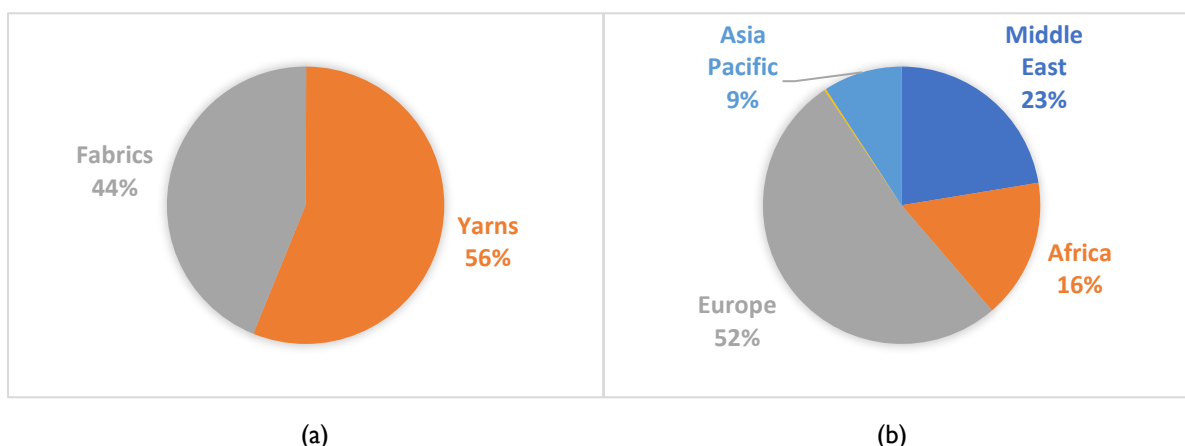


FIGURE 29 EGYPT'S TECHNICAL TEXTILES RAW MATERIALS EXPORTS BY (A) GOODS AND (B) REGION IN VALUES 2017

Figure 30 depicts Egypt's technical textiles raw materials imports and exports from 2013 – 2017, the plot shows a trade deficit during this period, however, the trade is expected to balance out in 2019 as the exports continue to grow. The main contributors to the technical textiles raw materials exports are direct

foreign investments during the period from 2012 -2014, such as Jushi Group China and Hengshi China in glass fiber, in addition to, Gulsan Turkey and Pegas Czech in SMS nonwoven.

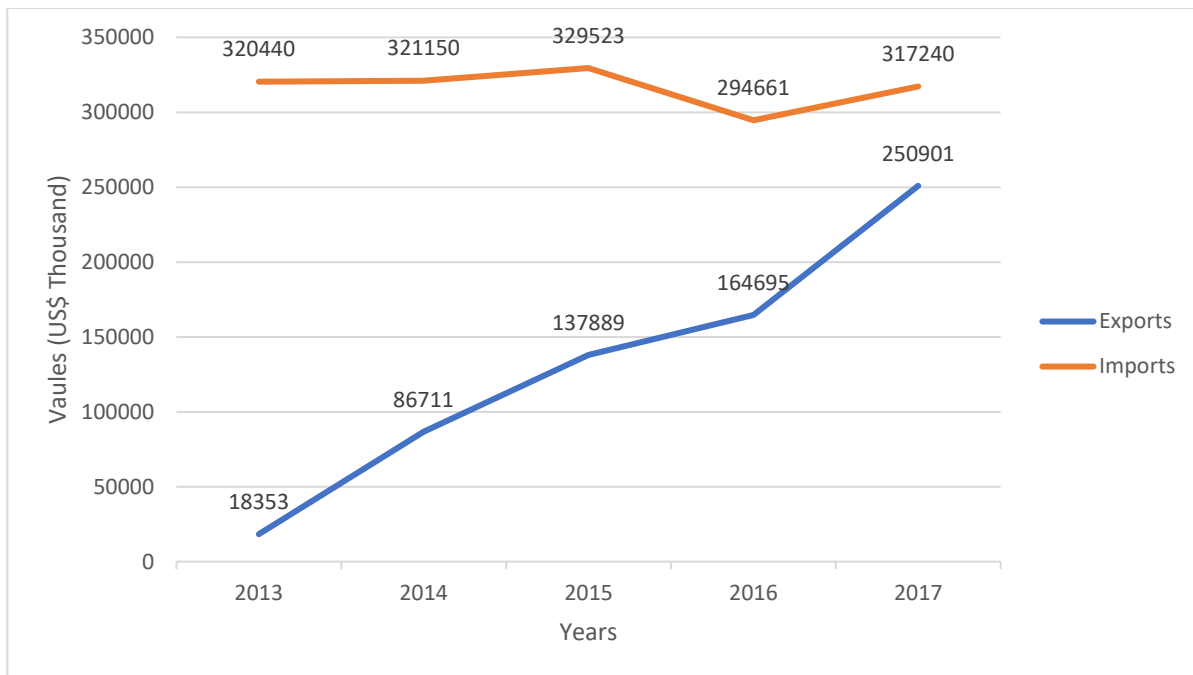


FIGURE 30 EGYPT'S TECHNICAL TEXTILES RAW MATERIALS TRADE STATISTICS 2013 - 2017

2.2 TECHNICAL TEXTILES END-PRODUCTS

2.2.1 AGROTECH

Agrotech HS code used in the trade analysis is tabulated in Table 25. Agrotech includes twine, cordage, and ropes made up of both natural and synthetic fibers.

TABLE 25 AGROTECH HS CODES USED IN THE TRADE ANALYSIS

HS CODE	DESCRIPTION	TARRIFS
56.07	Twine, cordage, ropes and cables, whether or not plaited or braided and whether or not impregnated, coated, covered or sheathed with rubber or plastics:	4.37-5%

Egypt's imports of Agrotech have increased from US\$2.2 million in 2013 to US\$4.5 million in 2017 with CAGR 19.38% as listed in Tables 26. Majority of imports in 2017 were ropes made of other natural fibers such as flax and jute 38%, sisal ropes 24%, and synthetic ropes 16% as shown in Figure 31 (a). Majority of imports came from China 49% in addition to smaller amounts from UK 8%, Korea 8% and Turkey 6% as shown in Figure 31 (b). Ropes, cordage and twines are used in numerous applications including agriculture.

TABLE 26 EGYPT'S AGROTECH IMPORTS

Imported goods	\$US thousands			Exporters	\$US thousands		
	2013	2017	CAGR (%)		2013	2017	CAGR (%)
Natural ropes others	997	1,728	14.74	China	449	2,235	49.37
Sisal ropes	151	1,077	63.42	UK	50	383	66.36
Synthetic ropes	285	745	27.15	Korea	87	340	40.60
Sisal baler twine	73	502	61.94	Turkey	24	274	83.82
PE/ PP baler twine	209	285	8.06	Belgium	184	175	-1.25
Others	523	209	-20.49	Others	1,444	1,139	-5.76
Total	2,238	4,546	19.38	World	2,238	4,546	19.38

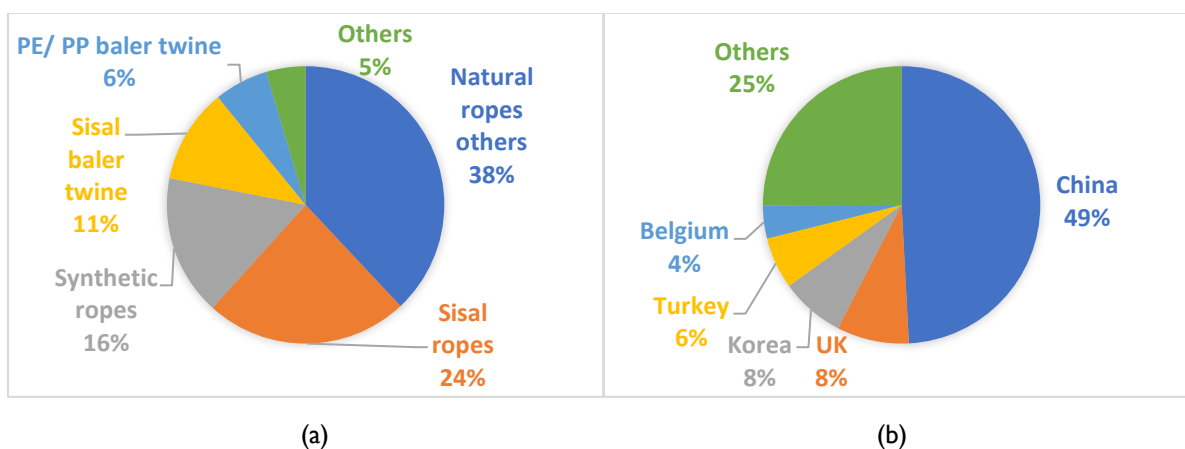


FIGURE 31 EGYPT'S AGROTECH IMPORTS BY (A) GOODS AND (B) COUNTRY IN VALUES 2017

Figure 32 depicts Egypt's technical yarns imports and exports from 2013 – 2017, the exports have been increasing steadily but the amount is still small.

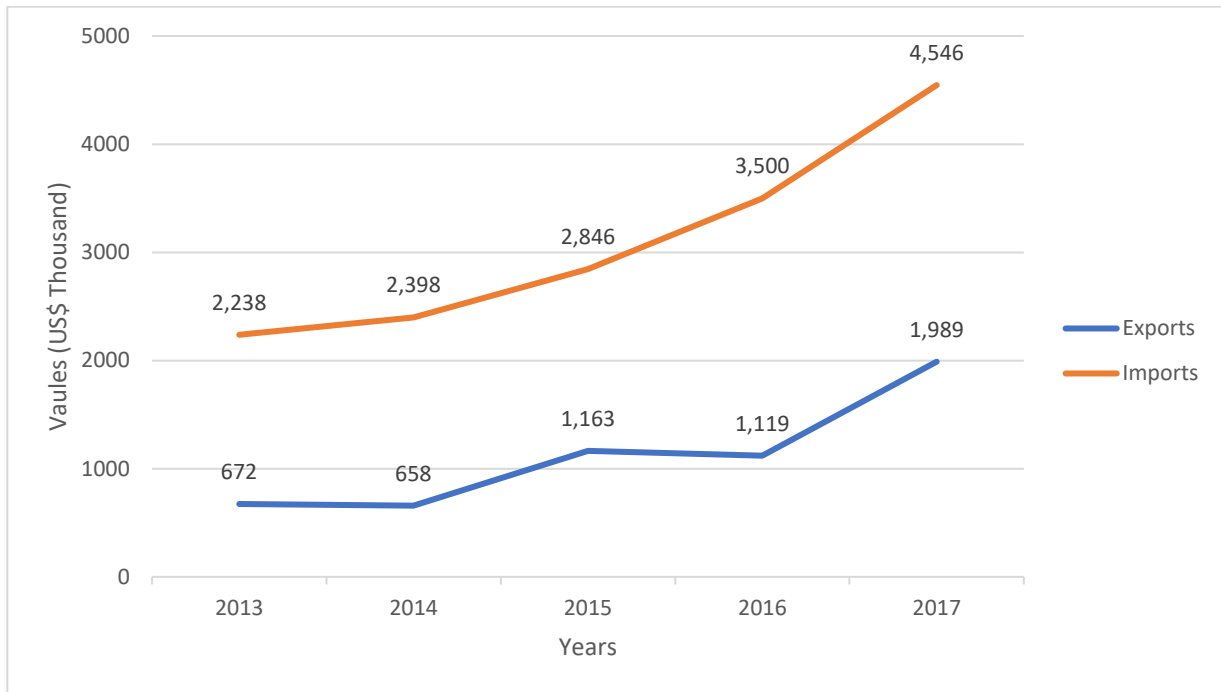


FIGURE 32 EGYPT'S AGROTECH TRADE STATISTICS 2013 - 2017

2.2.2 BUILDTECH

Buildtech HS codes used in the trade analysis are tabulated in Table 27. Buildtech includes linoleum of a textile backing, textile wall coverings, slag wool, rock wool, and other insulating materials.

TABLE 27 BUILDTECH HS CODES USED IN THE TRADE ANALYSIS

HS CODE	DESCRIPTION	TARRIFS
59.04	Linoleum, whether or not cut to shape; floor coverings consisting of a coating or covering applied on a textile backing, whether or not cut to shape:	17.5-20%
59.05	Textile wall coverings	17.5-20%
68.06	Slag wool, rock wool and similar mineral wools; exfoliated vermiculite, expanded clays, foamed slag and similar expanded mineral materials; mixtures and articles of heat-insulating, sound insulating or sound-absorbing mineral materials, other than those of heading 68.11 or 68.12 or of Chapter 69:	
6806.10.00	– Slag wool, rock wool and similar mineral wools (including intermixtures thereof), in bulk, sheets or rolls	3.75-5%

Egypt's Buildtech imports have significantly increased from US\$2.5 million in 2013 to US\$7.3 million in 2017 with CAGR 30.3% as listed in Table 28. Thermal insulations represented 95% of total imports in 2017, mostly from Indonesia 62% as shown in Figure 33. Thermal insulations are made up of rock wool with or without aluminum foil facing, those insulations are mostly used in commercial buildings with centralized air conditioning systems such as shopping malls, corporate and government buildings.

Despite the fast growth in thermal insulations, the values are still low compared to the large size of the construction and building sector in Egypt. This is because the building codes in Egypt do not mandate the thermal insulation of buildings unlike other countries in the Middle East and Europe. Yet, with the increasing interest in energy efficient buildings and possible changes in the building regulations, the demand is expected to increase much faster.

TABLE 28 EGYPT'S BUILDTECH IMPORTS

Imported goods	\$US thousands			Exporters	\$US thousands		
	2013	2017	CAGR (%)		2013	2017	CAGR (%)
Thermal insulation	2,329	6,931	31.34	Indonesia	0	4,473	-
Wallcoverings	121	158	6.90	China	281	472	13.84
Linoleum	73	129	15.30	Netherlands	574	315	-13.93
Floor coverings	0	50	-	Italy	92	294	33.70
				Spain	73	278	39.69
				Others	1503	1436	-1.13
Total	2,523	7,268	30.28	World	2,523	7,268	30.28

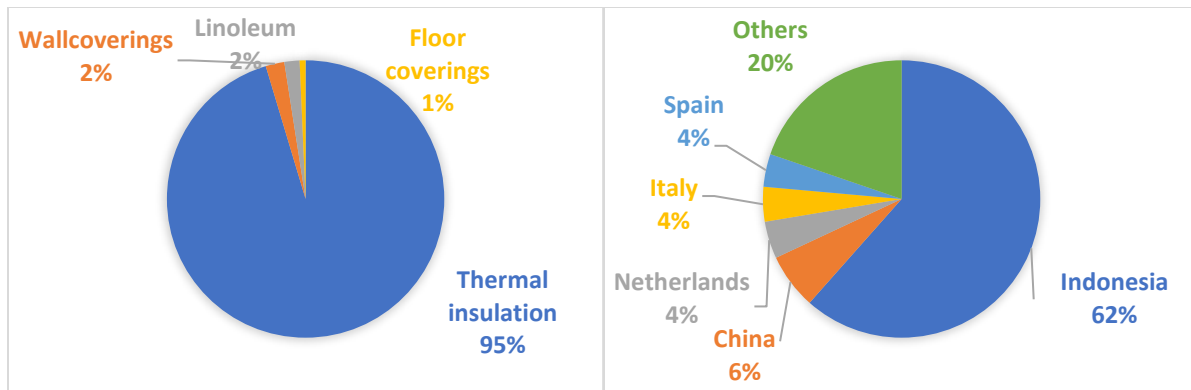


FIGURE 33 EGYPT'S BUILDTECH IMPORTS BY (A) GOODS AND (B) COUNTRY IN VALUES 2017

Figure 34 depicts Egypt's Buildtech imports and exports from 2013 – 2017, the export values reached US\$1.85 million in 2017 mostly thermal isolations to Qatar 45% and Lebanon 23%. There are two new companies in Egypt producing thermal insulations for the local and international market, Al Alamia for Rockwool (ROCKAL) and GlassRock Insulation Company S.A.E. The local demand for Buildtech will keep growing driven by the booming building and construction industry in Egypt, however, there is a need to support the local companies to increase their productivity to fulfill the increasing demand.

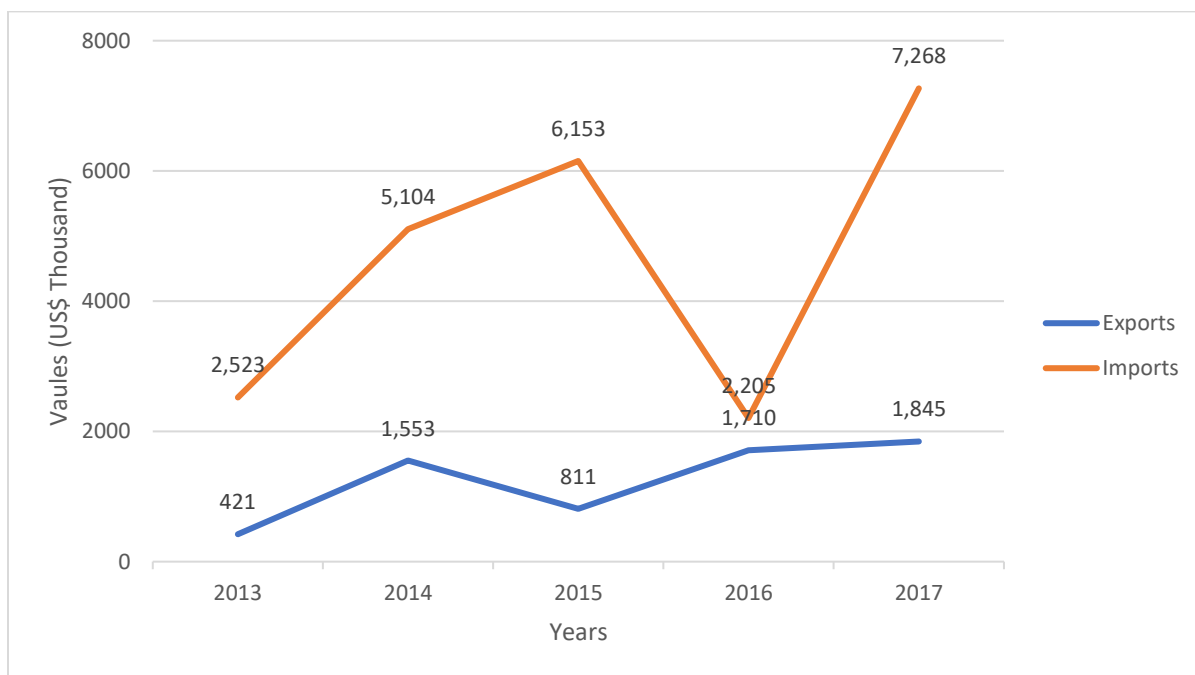


FIGURE 34 EGYPT'S BUILDTECH TRADE STATISTICS 2013 - 2017

2.2.3 CLOTHTECH

Clothtech HS codes used in the trade analysis are tabulated in Table 29. Clothtech includes narrow fabrics such as woven tapes, elastic tapes made of cotton and synthetic fibers with elastomeric or rubber yarn >5%, pile (Velcro) tapes, labels, badges, and slide fasteners.

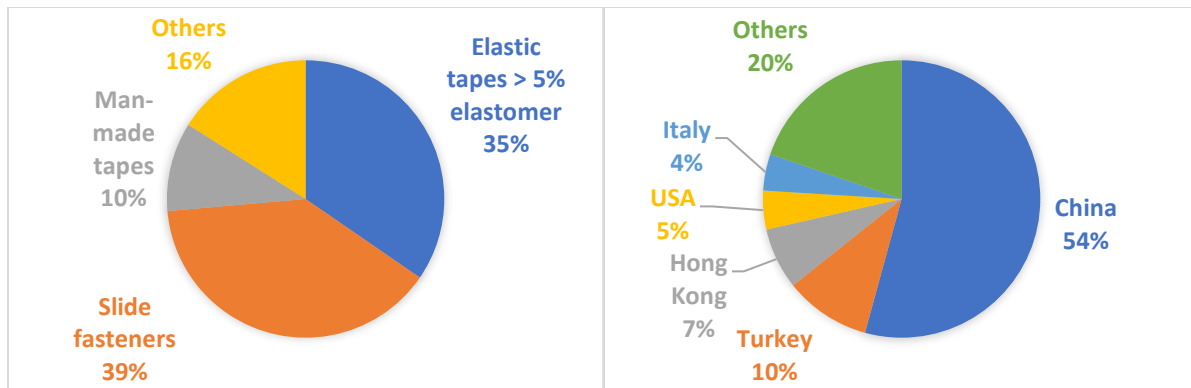
TABLE 29 CLOTHTECH HS CODES USED IN THE TRADE ANALYSIS

HS CODE	DESCRIPTION	TARRIFS
58.06	Narrow woven fabrics of textile materials, with a width of ≤ 30 cm (excluding labels, badges and similar articles); narrow fabrics consisting of warp without weft assembled by means of an adhesive "bolduc"	5-7.12%
58.07	Labels, badges and similar articles, of textile materials, in the piece, in strips or cut to shape or size, not embroidered	1.69-2%
96.07	Slide fasteners and parts thereof	3.11-5%

Egypt's Clothtech imports remained at a steady US\$35 million per year from 2013 – 2017 as listed in Table 30. The biggest proportion of the imports in 2017 was slide fasteners 39%, followed by elastic tapes 35% as shown in Figure 35 (a). Majority of imports came from China 54%, Turkey 10% and Hong Kong 7% as shown in Figure 35 (b). Elastic tapes and slide fasteners are essential clothing accessories, used in all kinds of readymade garments. Yet, some types of accessories are cheaper to import from China, while other specialized accessories are imported from Turkey for specific clothing brands.

TABLE 30 EGYPT'S CLOTHTECH IMPORTS

Imported goods	\$US thousands			Exporters	\$US thousands		
	2013	2017	CAGR (%)		2013	2017	CAGR (%)
Elastic tapes > 5% elastomer	14,504	12,635	-3.39	China	15,407	19,818	6.50
Slide fasteners	11,905	14,253	4.60	Turkey	4,653	3,667	-5.78
Man-made tapes	2,090	3,786	16.01	Hong Kong	2,615	2,615	0.00
Others	6,833	5,853	-3.80	USA	817	1,652	19.25
				Italy	2,783	1,552	-13.58
				Others	9,057	7,223	-5.50
Total	35,332	36,527	0.84	World	35,332	36,527	0.84



(a) (b)
 FIGURE 35 EGYPT'S CLOTHTECH IMPORTS BY (A) GOODS AND (B) COUNTRY IN VALUES 2017

Figure 36 depicts Egypt's Clothtech imports and exports from 2013 – 2017, there is a clear trade deficit when it comes to the clothing accessories. Egypt has a big readymade garments industry and there is high demand for clothing accessories (Clothtech) which is partly fulfilled by importing from abroad. This readymade garment industry is expected to grow due to the interest in Egypt as an outsourcing country for readymade garments. There is a decent amount of Clothtech exports US\$1.9 million in 2017 mostly slide fasteners to countries such as Jordan and Turkey, these are mainly exporting from YKK, one of the leading international brands in zippers with operations in Egypt.

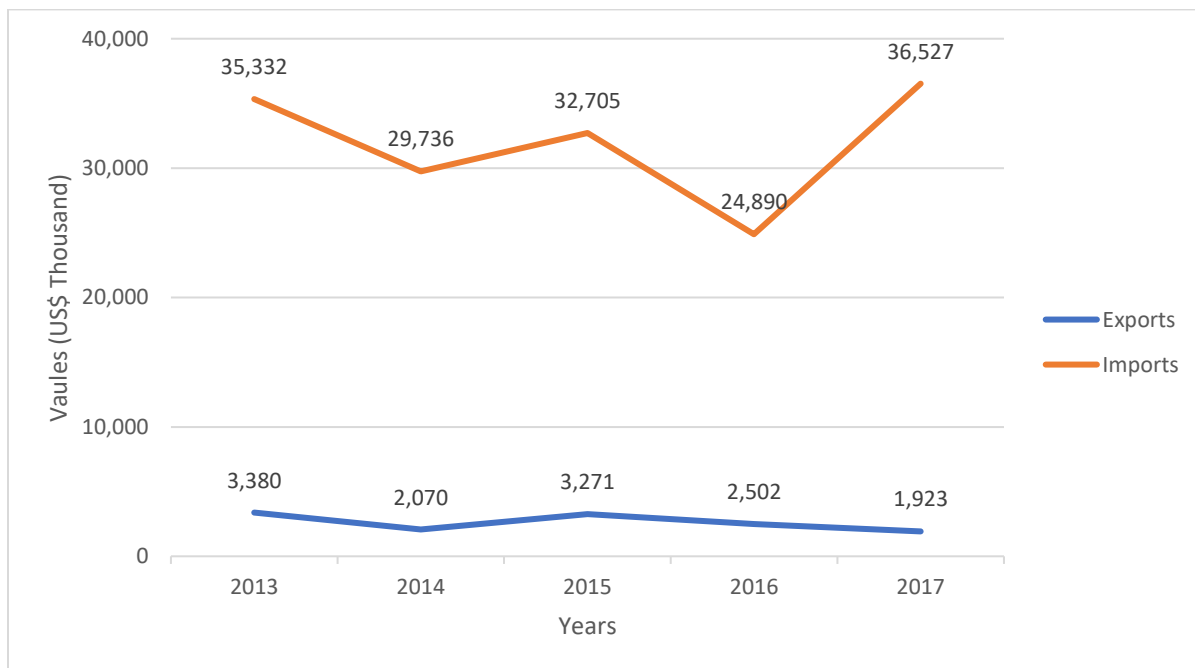


FIGURE 36 EGYPT'S CLOTHTECH TRADE STATISTICS 2013 - 2017

2.2.4 HOMETECH

Hometech HS codes used in the trade analysis are tabulated in Table 31. Hometech includes mattresses and pillows of textile fiberfill, in addition to stuffed (plush) toys in all shapes.

TABLE 31 HOMETECH HS CODES USED IN THE TRADE ANALYSIS

HS CODE	DESCRIPTION	TARIFFS
94.04	Mattress supports; articles of bedding and similar furnishing (for example, mattresses, quilts, eiderdowns, cushions, pouffes and pillows) fitted with springs or stuffed or internally fitted with any material or of cellular rubber or plastics, whether or not covered:	
	– Mattresses:	
9404.29.00	– – Of other materials	12-60%
95.03	Other toys; reduced-size ('scale') models and similar recreational models, working or not; puzzles of all kinds	
	- Toys representing animals or non-human creatures	
950341	- - Stuffed	6-30%

Egypt's Hometech trade was small with decreasing imports from US\$4 million in 2013 to US\$2.8 million in 2017 with CAGR -8.63% as listed in Table 32. Majority of imports were mattresses and pillows mainly from China. The imports of the commodity "950341 Stuffed toys representing animals or non-human creatures" has no data both using the direct and mirror data sources. Egypt does import stuffed toys but it could be either insignificant or imported under a wrong HS code.

TABLE 32 EGYPT'S HOMETECH IMPORTS

Imported goods	\$US thousands			Exporters	\$US thousands		
	2013	2017	CAGR (%)		2013	2017	CAGR (%)
Mattresses & Pillows	3,987	2,779	-8.63	China	2,553	1,718	-9.43
Stuffed toys	-	-	-	UAE	316	374	4.30
				Poland	197	355	15.86
				Germany	205	104	-15.60
				Spain	16	62	40.30
				Others	70	166	-30.22
Total	3,987	2,779	-8.63	World	3,987	2,779	-8.63

Despite the availability of many local producers of Hometech catering to the large demand in the local market, such as, Habitat, Aldora, TAKI and others, Egypt's exports of Hometech was insignificant. It was in the range of US\$954,000 in 2017 in the form of mattresses and pillows. The majority of the local production is consumed locally because Hometech products have low bulk density which significantly increase their shipping cost and limit their international trade.

2.2.5 MOBILTECH

Mobiltech HS codes used in the trade analysis are tabulated in Table 33. Mobiltech includes safety seat belts, safety airbags, tire cord fabric, seats for vehicles and aircrafts in addition to floor coverings used in the automotive.

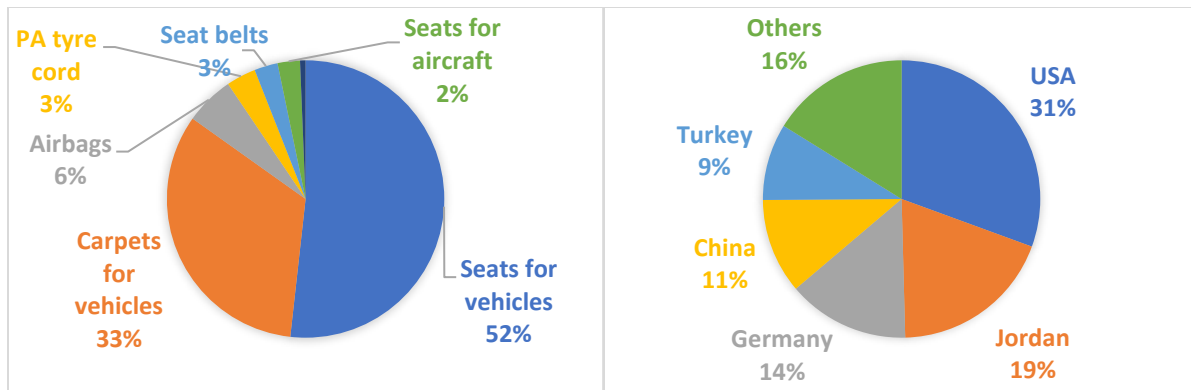
TABLE 33 MOBILTECH HS CODES USED IN THE TRADE ANALYSIS

HS CODE	DESCRIPTION	TARRIFS
87.08	Parts and accessories of the motor vehicles of headings 87.01 to 87.05:	
8708.21	-- Safety seat belts:	8.75-10%
8708.95	-- Safety airbags with inflator system; parts thereof	7.5-10%
59.02	Tire cord fabric of high tenacity yarn of nylon or other polyamides, polyesters or viscose rayon:	
5902.10.00	-- Of nylon or other polyamides	4.38-5%
5902.20.00	-- Of polyesters	4.38-5%
5902.90.00	-- Other	5%
94.01	Seats (other than those of heading 94.02), whether or not convertible into beds, and parts thereof:	
9401.10.00	-- Seats of a kind used for aircraft	4.38-5%
9401.20.00	-- Seats of a kind used for motor vehicles	8.75-10%
57.03	5703 Carpets and other textile floor coverings, tufted "needle punched", whether or not made up	12-60%

Egypt's Mobiltech imports were relatively constant at a level of US\$24 million during the period 2013-2017 as listed in Table 34. Seats for vehicles represented 52% of total imports, followed by carpets for vehicles 33% in 2017 as shown in Figure 37 (a). Majority of imports came from the United States 31%, Jordan 19% and Germany 14% as shown in Figure 37 (b). The automotive industry in Egypt is relatively small with an estimated annual production of 100,000 vehicles, by major brands like Nissan, Bavarian automotive and Mercedes Benz that have production in Egypt.

TABLE 34 EGYPT'S MOBILTECH IMPORTS

Imported goods	\$US thousands			Exporters	\$US thousands		
	2013	2017	CAGR (%)		2013	2017	CAGR (%)
Seats for vehicles	11,570	12,777	2.51	USA	2,221	7,548	35.78
Carpets for vehicles	7,235	8,165	3.07	Jordan	267	4,691	104.73
Airbags	474	1,411	31.35	Germany	4,279	3,509	-4.84
PA tire cord	1,404	854	-11.69	China	6,723	2,736	-20.13
Seat belts	1,991	674	-23.72	Turkey	2,867	2,208	-6.32
Seats for aircraft	218	643	31.05	Others	7,066	3,991	-13.31
Others	531.00	159.00	-26.03				
Total	23,423	24,683	1.32	World	23,423	24,683	1.32



(a) (b)
 FIGURE 37 EGYPT'S MOBILTECH IMPORTS BY (A) GOODS AND (B) COUNTRY IN VALUES 2017

Figure 38 depicts Egypt's Mobiltech imports and exports from 2013 – 2017. Majority of exports before 2016 were tire cord fabrics, the sudden drop in exports in 2016 is mainly due to the closure of Nile Kordsa a leading Turkish company for making tire cord fabrics with operations in Egypt. The local automotive industry can strive only because of the high import duties imposed on foreign vehicles, however, if those duties are eliminated the local production of passenger vehicles will not be capable of competing with imported vehicles.

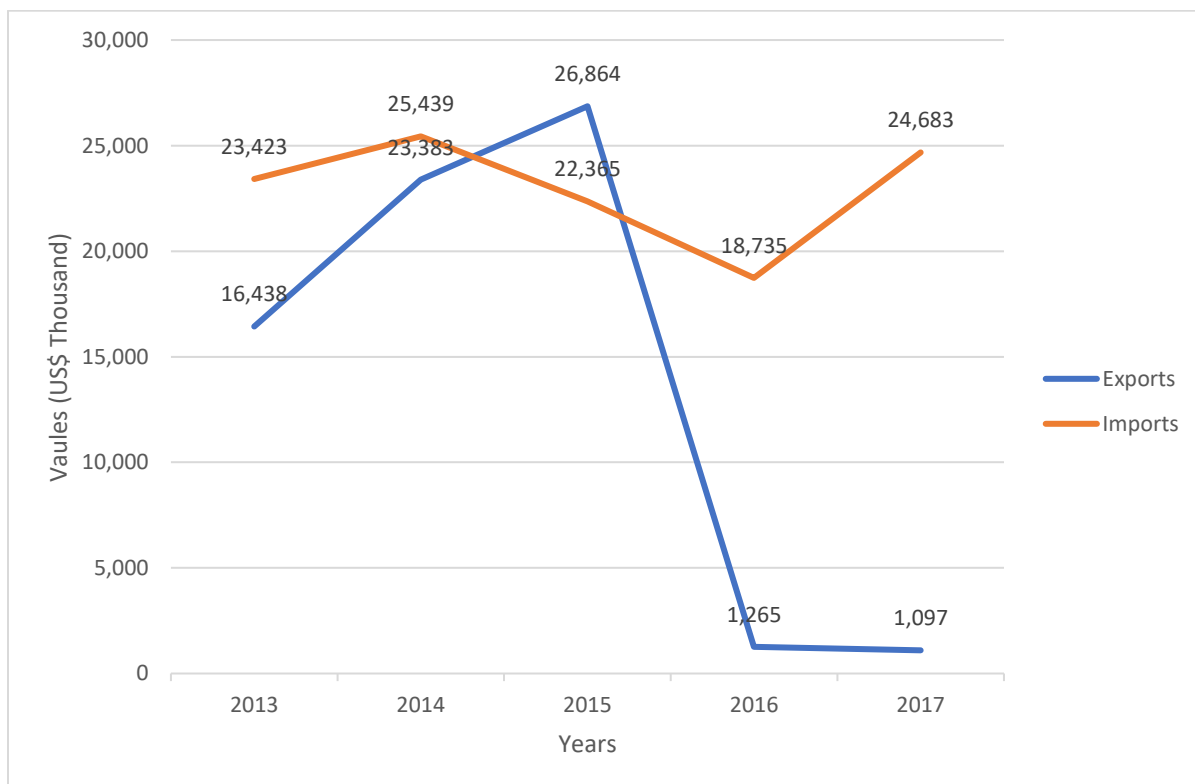


FIGURE 38 EGYPT'S MOBILTECH TRADE STATISTICS 2013 - 2017

2.2.6 OEKOTECH

Oekotech HS code used in the trade analysis is tabulated in Table 35, Oekotech includes textile filters.

TABLE 35 OEKOTECH HS CODES USED IN THE TRADE ANALYSIS

HS CODE	DESCRIPTION	TARIFFS
59.11	Textile products and articles, for technical uses, specified in Note 7 to this Chapter:	
5911.90.01	-- Industrial textile filters	4.38-5%

Figure 39 depicts Egypt's Oekotech imports and exports from 2013 – 2017, it is clear that Egypt does not export any kind of textile filters, despite the presence of one local company making filters called the International Technical Textile Industry (ITTI). One of the partners in this company is Turkish and has extensive experience in nonwovens and filters manufacturing. On the other hand, the imports have been fluctuating but there is an increase in imports from US\$3.8 million in 2013 to US\$4.5 million in 2017 with a CAGR 4.3%. Majority of the imports came from Italy 24%, USA 17%, Korea 15%, and China 13%. Textile filters are used in many industrial applications, such as, automotive, compressors, HVAC and others.

Filters manufacturing relies heavily on patented and proprietary technologies, therefore there is very limited local production of filters due to the lack of technical know-how. There is a need for technology transfer in order to support the growth of such sectors, which could be achieved through licensing, joint ventures, or other forms of partnerships.

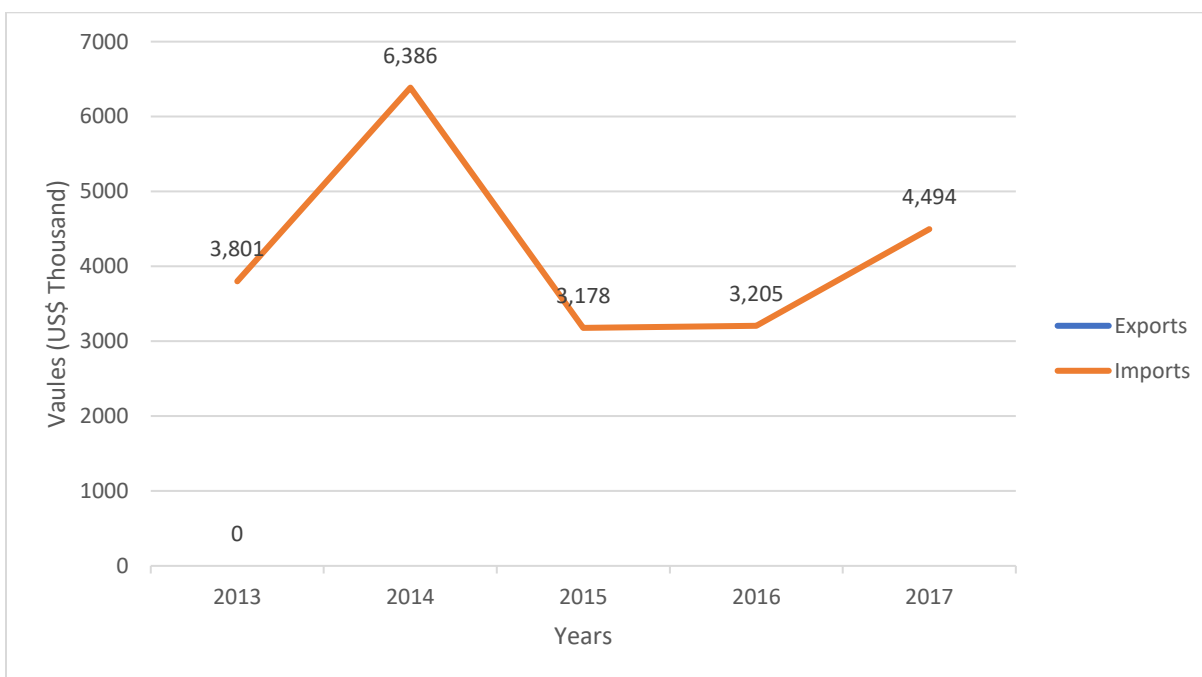


FIGURE 39 EGYPT'S OEKOTECH TRADE STATISTICS 2013 - 2017

2.2.7 PACKTECH

Packtech HS codes used in the trade analysis are tabulated in Table 36. Packtech includes textiles sacks and bags for packaging, in addition to traveling bags, sport bags, handbags, school bags, and other bags and cases of textile materials.

It is important to note here, that the data used for Packtech imports were mirror data, due to the erroneous assignment of HS codes in the direct data.

TABLE 36 PACKTECH HS CODES USED IN THE TRADE ANALYSIS

HS CODE	DESCRIPTION	TARIFFS
63.05	Sacks and bags, of a kind used for the packing of goods, of all types of textile materials	27-35%
42.02	Trunks, suit-cases, vanity-cases, executive-cases, brief-cases, school satchels, spectacle cases, binocular cases, camera cases, musical instrument cases, gun cases, holsters and similar containers; travelling-bags, insulated food or beverages bags, toilet bags, rucksacks, handbags, shopping-bags, wallets, purses, map-cases, cigarette-cases, tobacco-pouches, tool bags, sports bags, bottle-cases, jewelry boxes, powder-boxes, cutlery cases and similar containers, of leather or of composition leather, of sheeting of plastics, of textile materials, of vulcanized fiber or of paperboard, or wholly or mainly covered with such materials or with paper:	
4202.92	Travelling-bags, insulated food or beverage bags, toilet bags, rucksacks, shopping-bags, map-cases, tool bags, sports bags, jewelry boxes, cutlery cases, binocular cases, camera cases, musical instrument cases, gun cases, holsters and similar containers, with outer surface of plastic sheeting or textile materials (excluding trunks, briefcases, school satchels and similar containers, handbags and articles carried in the pocket or handbag)	60%
4202.22	Handbags, whether or not with shoulder straps, incl. those without handles, with outer surface of plastic sheeting or textile materials	60%
4202.12	Trunks, suitcases, vanity cases, executive-cases, briefcases, school satchels and similar containers, with outer surface of plastics or textile materials	60%

Egypt's imports of Packtech have decreased from US\$107.5 million in 2013 to US\$79 million in 2017 with CAGR -7.39% as listed in Tables 37 and 38. Suitcases and schoolbags represented 54% of total imports, handbags 24%, and traveling and sports bags 13% in 2017 as shown in Figure 40 (a). Majority of imports came from China 86%, in addition to minor imports from India, Turkey and Spain as shown in Figure 41 (a). The large imports of Packtech is due to the high local demand for such types of bags. There are very few local producers of travel bags, school bags, and sports bags, due to the high competition from low-cost imports from China, despite the high import tariffs of 60%.

Similarly, the exports of Packtech have slightly decreased from US\$30 million in 2013 to US\$26.2 million in 2017 with a CAGR -3.4% as listed in Tables 37 and 38. Majority of exported Packtech in 2017 were PP/PE sacks (77%), in addition to sacks from other man-made fibers (18%) as shown in Figure 40 (b). Major importing countries were Sudan 51%, Libya 17% and Lebanon 6% as shown in Figure 41 (b). The decrease in exports could be partly due to the political instability in many of the importing countries. Sacks of man-made fibers are mainly made of PP or PE tape yarns and are used mostly in packaging of agriculture crops, and other food products. There are many producers of circular woven PP/PE sacks in Egypt, such as, Misr El Hegaz for Vinyl Compound & Packing Materials, Cairo Plast Company, Egyptian International Co. for Sacks & Animal Feed - Alfa Star and others. The local production of sacks has been flourishing due to the trade protection and high tariff on imports that reaches up to 35%.

TABLE 37 EGYPT'S PACKTECH IMPORTS AND EXPORTS VALUES BY GOODS

Imported goods	\$US thousands			Exported goods	\$US thousands		
	2013	2017	CAGR (%)		2013	2017	CAGR (%)
Suitcases, school bags	67,463	42,638	-10.84	PE/PP sacks	20,259	20,163	-0.12
Handbags	14,704	18,571	6.01	Man-made sacks	8,710	4,566	-14.91
PE/PP sacks	3,709	3,147	-4.02	Other sacks	398	832	20.24
Travelling-bags, sports bags	16,947	10,632	-11.00	Jute sacks	252	453	15.79
Big-bag	3,513	3,304	-1.52	Big-bag	197	76	-21.19
Others	1,177	801	-9.17	Others	242	61	-29.14
Total	107,513	79,093	-7.39	Total	30,058	26,151	-3.42

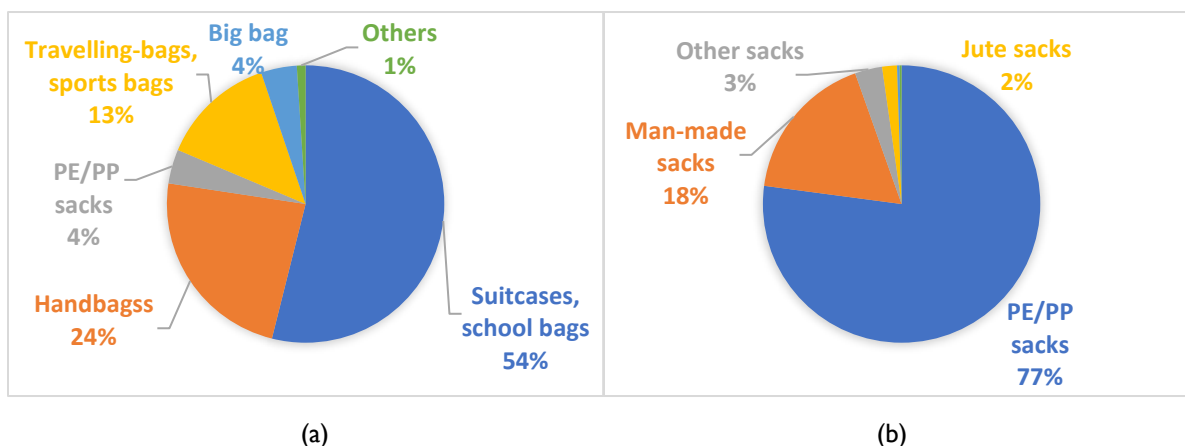


FIGURE 40 EGYPT'S PACKTECH (A) IMPORTS, AND (B) EXPORTS VALUES BY GOODS 2017

TABLE 38 EGYPT'S PACKTECH IMPORTS AND EXPORTS VALUES BY COUNTRY

Exporters	\$US thousands			Importers	\$US thousands		
	2013	2017	CAGR (%)		2013	2017	CAGR (%)
China	89,376	68,128	-6.56	Sudan	9,048	13,404	10.32
India	1,769	1,942	2.36	Libya	6,060	4,418	-7.60
Turkey	1,280	1,459	3.33	Lebanon	885	1,633	16.55
Spain	744	1,267	14.24	Tunisia	694	1,268	16.26
Italy	719	446	-11.25	Djibouti	852	817	-1.04
Others	13,625	5,851	-19.05	Others	12,519	4,611	-22.10
World	107,513	79,093	-7.39	World	30,058	26,151	-3.42

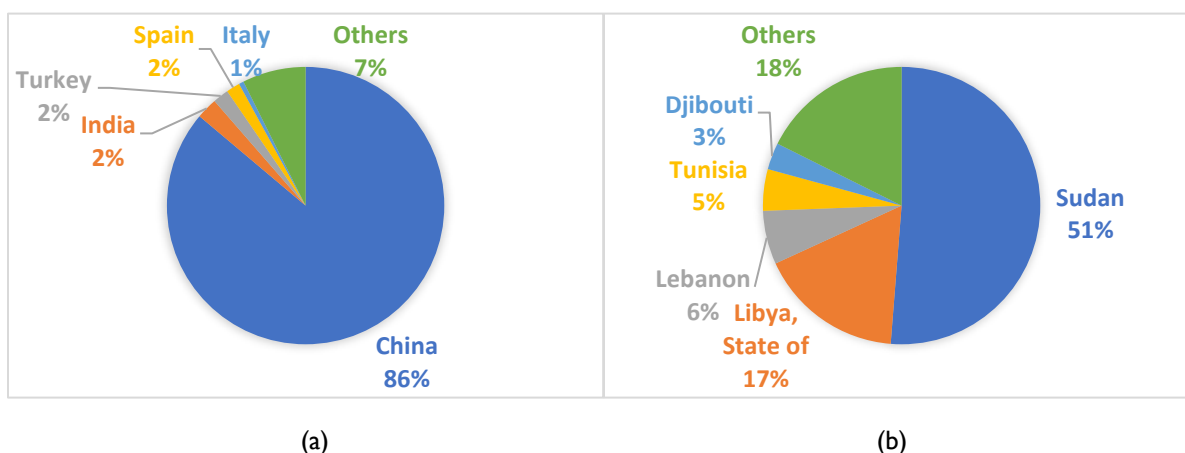


FIGURE 41 EGYPT'S PACKTECH (A) IMPORTS, AND (B) EXPORTS VALUES BY COUNTRY 2017

There is a deficit in Packtech trade as shown in Figure 42 which depicts Egypt's Packtech imports and exports from 2013 – 2017.

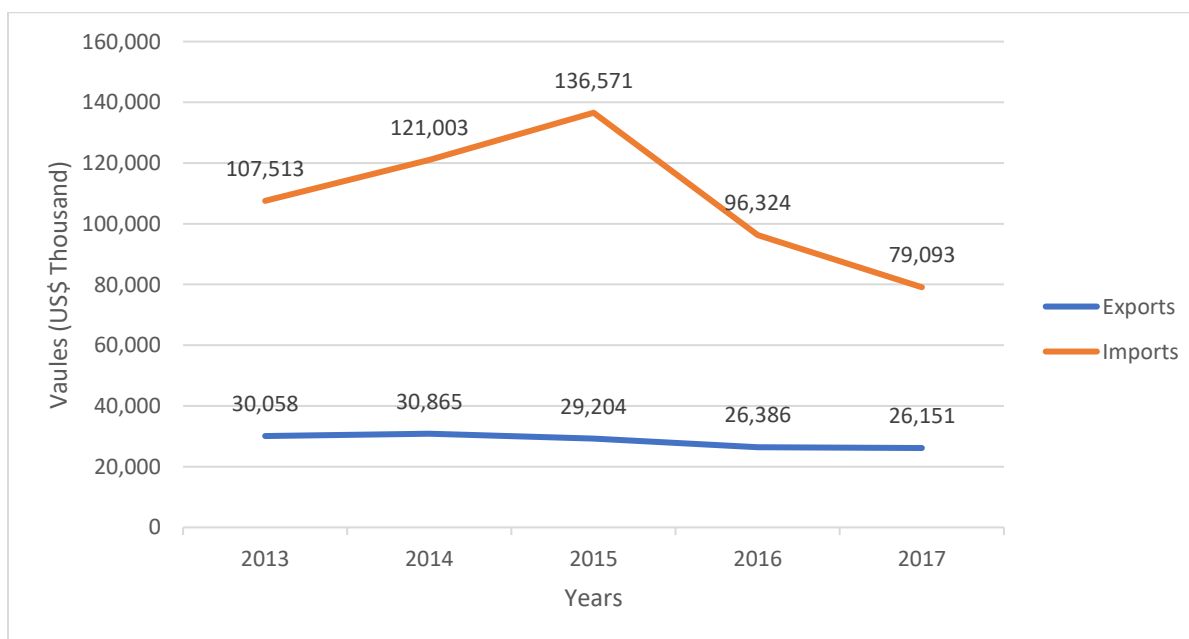


FIGURE 42 EGYPT'S PACKTECH TRADE STATISTICS 2013 - 2017

2.2.8 INDUTECH

Indutech HS codes used in the trade analysis are tabulated in Table 39. Indutech includes rubber tubes, pipes, hoses, conveyor and transmission belts of textile material or of rubber reinforced with textile material, in addition to, emery cloth and optical fibers.

TABLE 39 INDUTECH HS CODES USED IN THE TRADE ANALYSIS

HS CODE	DESCRIPTION	TARIFFS
40.09	Tubes, pipes and hoses, of vulcanized rubber other than hard rubber, with or without their fittings (for example, joints, elbows, flanges):	7.62-8.61%
	– Reinforced or otherwise combined only with textile materials:	
4009.31.00	– – Without fittings	8.75-10%
4009.32	– – With fittings:	8.75-10%
59.09	Textile hose piping and similar textile tubing, whether or not impregnated or coated, with or without lining, armor or accessories of other materials	8.75-10%
40.10	Conveyor or transmission belts or belting, of vulcanized rubber:	1.75-2%
4010.12.00	– – Reinforced only with textile materials	1.75-2%
59.10	Transmission or conveyor belts or belting, of textile material, whether or not impregnated, coated, covered or laminated with plastics, or reinforced with metal or other material	3.75-5%
68.05	Natural or artificial abrasive powder or grain, on a base of textile material, of paper, of paperboard or of other materials, whether or not cut to shape or sewn or otherwise made up:	8.75-10%
6805.10	– On a base of woven textile fabric only:	8.75-10%
90.01	Optical fibers and optical fiber bundles; optical fiber cables other than those of heading 85.44; sheets and plates of polarizing material; lenses (including contact lenses), prisms, mirrors and other optical elements, of any material, unmounted, other than such elements of glass not optically worked:	
9001.10	– Optical fibers, optical fiber bundles and cables:	4.38-5%
9001.10.01	– – Optical fiber cables	4.38-5%

Egypt's Indutech imports have slightly decreased from US\$31.8 million in 2013 to US\$24.8 million in 2017 with CAGR -5.9% as listed in Table 40. Conveyor and transmission belts represented 43% of total imports, followed by textile hoses and tubes 29% and emery cloth 20% in 2017 as shown in Figure 43 (a). Majority of imports came from China 36%, Italy 19% and Germany 16% as shown in Figure 43 (b). Conveyor and transmission belts are widely used in most industrial applications in material handling, whereas, textiles hoses and pipes are used in firefighting and many other industrial applications.

TABLE 40 EGYPT'S INDUTECH IMPORTS

Imported goods	\$US thousands			Exporters	\$US thousands		
	2013	2017	CAGR (%)		2013	2017	CAGR (%)
Conveyor belts	14,410	10,563	-7.47	China	7,190	8,922	5.54
Emery cloth	3,279	5,043	11.36	Italy	3,105	4,842	11.75
Textile hoses	11,178	7,263	-10.22	Germany	5,356	3,901	-7.62
Other	2,900	1,978	-9.12	USA	6,398	720	-42.08
Total	31,767	24,847	-5.96	Austria	653	716	2.33
				Others	9,065	5,746	-10.77
				World	31,767	24,847	-5.96

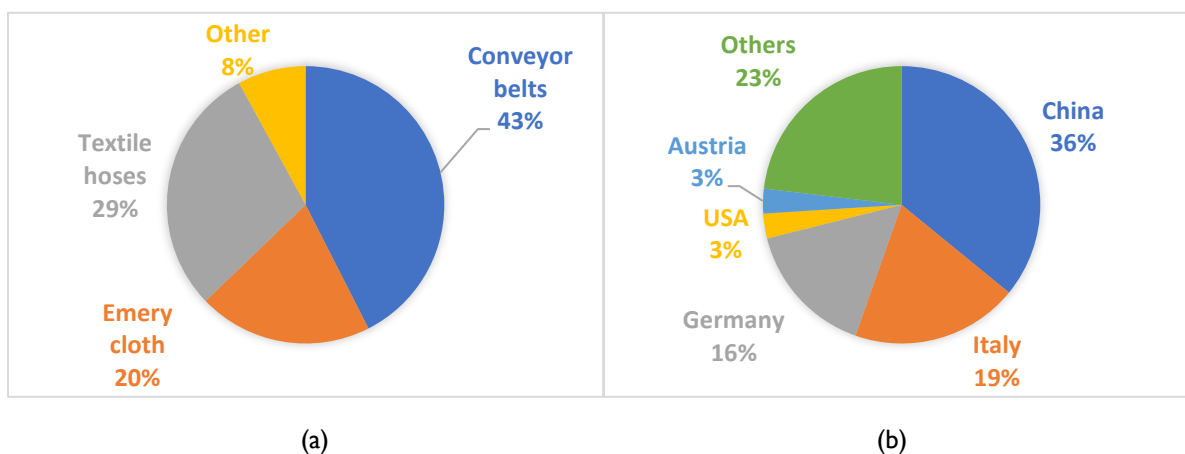


FIGURE 43 EGYPT'S INDUTECH IMPORTS BY (A) GOODS AND (B) COUNTRY IN VALUES 2017

Figure 44 depicts Egypt's Indutech imports and exports from 2013 – 2017, there is an obvious trade deficit, with negligible amount of exports.

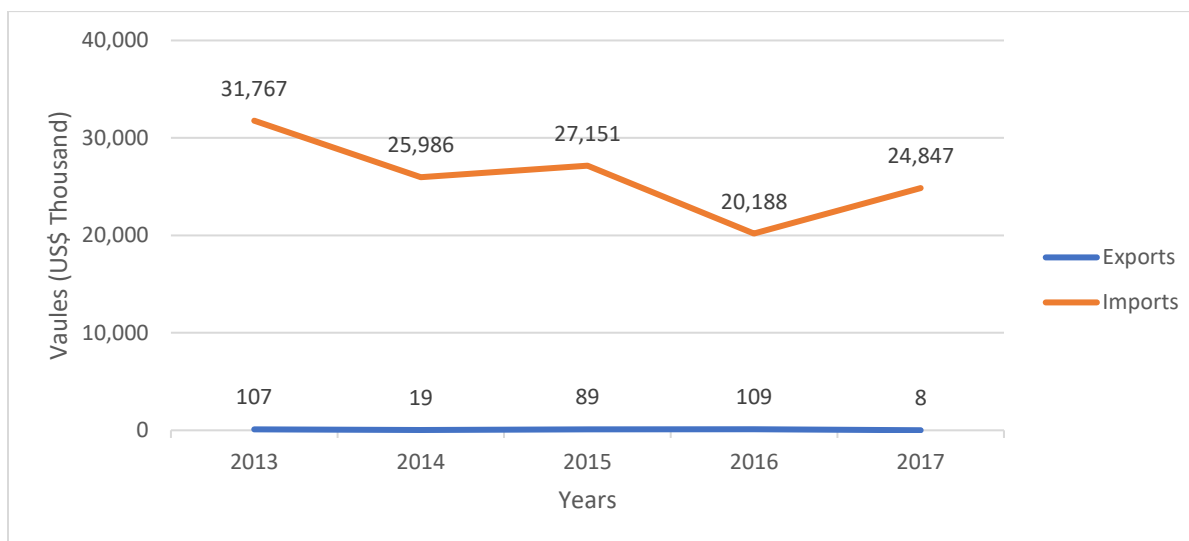


FIGURE 44 EGYPT'S INDUTECH TRADE STATISTICS 2013 - 2017

2.2.9 MEDTECH

Medtech HS codes used in the trade analysis are tabulated in Table 41. Medtech includes wadding, gauze, bandages, surgical catgut, sutures, dental floss, surgical adhesion barriers, graduated compression hosiery, face masks, knee and ankle support, textile hygiene products.

TABLE 41 MEDTECH HS CODES USED IN THE ANALYSIS

HS CODE	DESCRIPTION	TARIFFS
30.05	Wadding, gauze, bandages and similar articles (for example, dressings, adhesive plasters, poultices), impregnated or coated with pharmaceutical substances or put up in forms or packing for retail sale for medical, surgical, dental or veterinary purposes:	7.80-8.80%
30.06	Pharmaceutical goods specified in Note 4 to this Chapter:	
3006.10	– Sterile surgical catgut, similar sterile suture materials (including sterile absorbable surgical or dental yarns) and sterile tissue adhesives for surgical wound closure; sterile luminaria and sterile luminaria tents; sterile absorbable surgical or dental hemostatic; sterile surgical or dental adhesion barriers, whether or not absorbable:	4.38-5%
61.15	6115 Pantyhose, tights, stockings, socks and other hosiery, incl. graduated compression hosiery [e.g., stockings for varicose veins] and footwear without applied soles, knitted or crocheted (excluding for babies)	
6115.10	Graduated compression hosiery [e.g., stockings for varicose veins], of textile materials, knitted or crocheted (excluding hosiery for babies)	8.25-10%
63.07	Other made up articles, including dress patterns:	
6307.90.20.10	– – Made-up articles of textile materials, incl. dress patterns, n.e.s. . textile, face masks for medical professional protect	14.25-26.43%
6307.90.30.00	– – Knee supports and ankle supports	14.25-26.43%
96.19	Sanitary towels (pads) and tampons, napkins and napkin liners for babies and similar articles, of any material:	

Medtech is considered one of the most important technical textiles end-products in Egypt in terms of value and demand. Imports have increased from US\$21.3 million in 2013 to US\$47.5 million in 2017 with CAGR 22.2% as listed in Tables 42 and 43. Catgut, and sutures represented 37% of total imports, followed by textile hygiene products 35%, and made up articles, such as, medical face masks and knee supports 14% in 2017 as shown in Figure 45 (a). Majority of imports came from Germany 24%, China 11%, Saudi Arabia 10% and Jordan 9% as shown in Figure 46 (a). Catgut and sutures are used in surgical wound closures, while, textile hygiene products are used for personal hygiene including, diapers, feminine pads, tampons, adult incontinence, wipes, and nursing pads. There is potential for local manufacturing of medical face masks and knee supports which requires medium level of technical know-how, and low capital.

On the other hand, the exports of Medtech have increased significantly from US\$47.3 million in 2013 to US\$285 million in 2017 with a CAGR 56.7% as listed in Tables 45 and 46. Exported Medtech in 2017 were textiles hygiene products 85% and adhesive wound dressings 14% as shown in Figure 45 (b). Major

importing countries were Pakistan 20%, Morocco 13%, Kenya 8%, Iraq 7% and Algeria 4% as shown in Figure 46 (b).

TABLE 42 EGYPT'S MEDTECH IMPORTS AND EXPORTS VALUES BY GOODS

Imported goods	\$US thousands			Exported goods	\$US thousands		
	2013	2017	CAGR (%)		2013	2017	CAGR (%)
Catgut, sutures wound closure	11,247	17,472	11.64	Hygiene products	0	243,074	-
Hygiene products	0	16,701	-	Adhesive dressings	42,151	40,134	-1.22
Face masks, knee support	4,742	6,614	8.67	Wadding, gauze, bandages	4,969	1,570	-25.03
Wadding, gauze, bandages	3,343	4,450	7.41	Catgut, sutures wound closure	18	275	97.70
Adhesive dressings	1,313	1,531	3.91	Face masks, knee support	156	1	-71.70
Others	667	761	3.35	Others	-	-	-
Total	21,312	47,529	22.20	Total	47,294	285,054	56.69

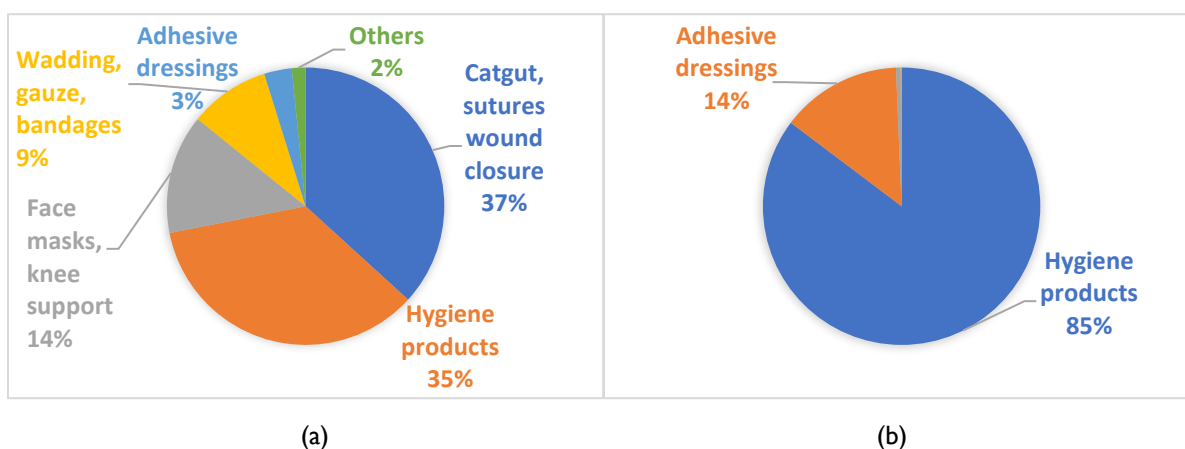
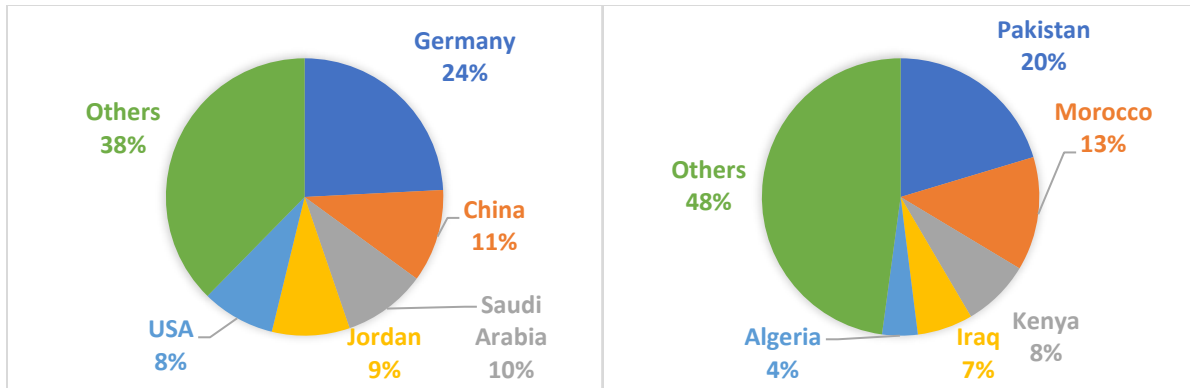


FIGURE 45 EGYPT'S MEDTECH (A) IMPORTS, AND (B) EXPORTS VALUES BY GOODS 2017

TABLE 43 EGYPT'S MEDTECH IMPORTS AND EXPORTS VALUES BY COUNTRY

Exporters	\$US thousands			Importers	\$US thousands		
	2013	2017	CAGR (%)		2013	2017	CAGR (%)
Germany	5,569	11,498	19.87	Pakistan	71	58,025	434.67
China	3,922	5,149	7.04	Morocco	196	37,779	272.60
Saudi Arabia	2,166	4,616	20.82	Kenya	56	22,590	348.16
Jordan	0	4,311	-	Iraq	3,559	18,461	50.91
USA	3,956	4,059	0.64	Algeria	889	11,802	90.88
Others	5,699	17,896	33.12	Others	42,523	136,397	33.83
World	21,312	47,529	22.20	World	47,294	285,054	56.69



(a) (b)
 FIGURE 46 EGYPT'S MEDTECH (A) IMPORTS, AND (B) EXPORTS VALUES BY COUNTRY 2017

Figure 47 depicts Egypt's Medtech imports and exports from 2013 – 2017, there is an obvious trade surplus, and the exports have been significantly increasing due to the high capacity production of textile hygiene products primarily baby diapers and feminine pads for the local and export markets. Multinational companies with subsidiaries in Egypt accounts for the biggest proportion of the exports like Procter & Gamble (P&G) producers of Pampers and Always, Unicharm producer of Baby Joy, and Hayat Kimya producers of Molfix. The local demand and regional exports of Medtech will continue to grow due to the increased spending on healthcare and increased awareness on personal hygiene.

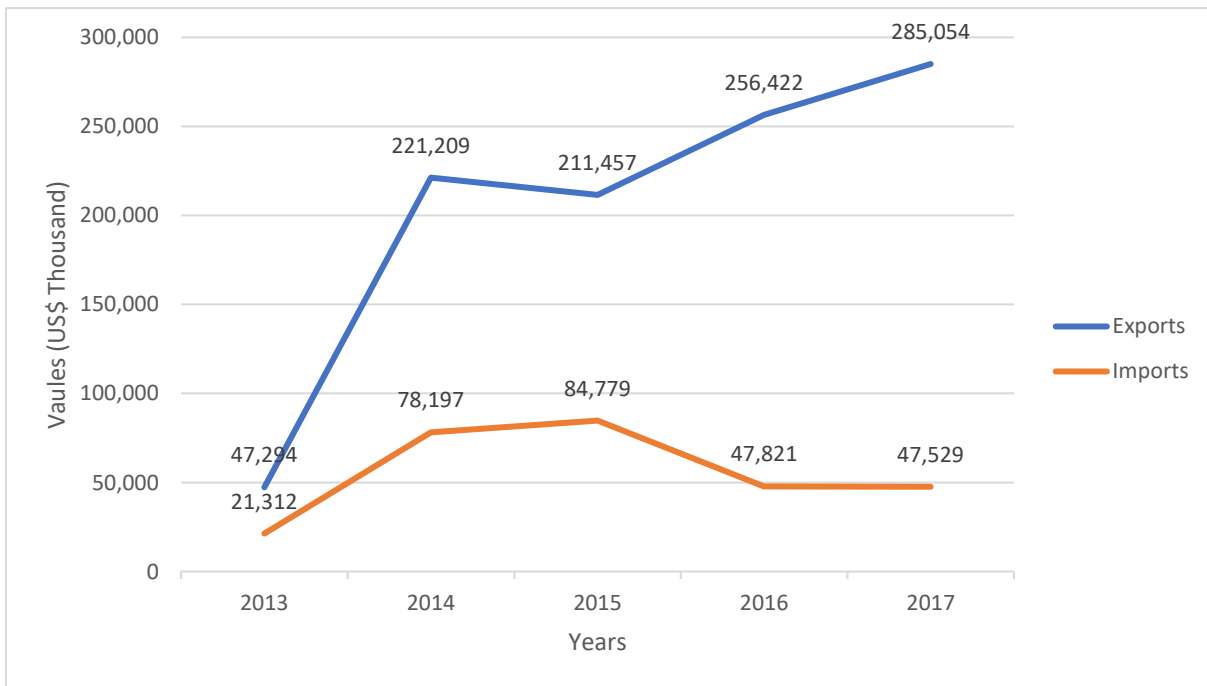


FIGURE 47 EGYPT'S MEDTECH TRADE STATISTICS 2013 - 2017

2.2.10 PROTECH

Protech HS codes used in the trade analysis are tabulated in Table 44. Protech includes textiles used for defense such as parachutes, in addition to, other protective clothing such as coated/ impregnated/ rubberized garments, professional garments (uniforms), protective textile gloves, nonwoven garments, occupational prevention dress, life jackets, and life belts (harnesses).

TABLE 44 PROTECH HS CODES USED IN THE ANALYSIS

HS CODE	DESCRIPTION	TARIFFS
88.04	Parachutes (including dirigible parachutes and paragliders) and rotochutes; parts thereof and accessories thereto	5%
61.13	Garments, knitted or crocheted, rubberized or impregnated, coated or covered with plastics or other materials (excluding babies' garments and clothing accessories)	22.25-30%
61.14	Special garments for professional, sporting or other purposes, n.e.s., knitted or crocheted	28.42-40%
61.16	Gloves, mittens and mitts, knitted or crocheted	
6116.10.10	Gloves, mittens and mitts, impregnated, coated or covered with plastics or rubber, knitted or crocheted: For professional protect	15.69-40%
62.10	Garments made up of felt or nonwovens, whether or not impregnated, coated, covered or laminated; garments of textile fabrics, rubberized or impregnated, coated, covered or laminated with plastics or other substances (excluding knitted or crocheted, and babies' garments and clothing accessories)	15.73-30%
63.07	Other made up articles, including dress patterns:	
6307.90.20.00	-- Made-up articles of textile materials, incl. dress patterns, n.e.s.: For occupational prevention	14.25-26.43%
6307.90.20.90	-- Made-up articles of textile materials, incl. dress patterns, n.e.s. . Other made up of textile articles, for other professional protection	14.25-26.43%
6307.90.90.50	-- Other textile face masks	14.25-26.43%
6307.20.00	-- Life-jackets and life-belts	

Egypt's imports of Protech have decreased from US\$119 million in 2013 to US\$48.3 million in 2017 with CAGR -20.2% as listed in Tables 45 and 46. Occupational prevention dress represented 38% of total imports, followed coated/ rubberized garments 27%, and professional garments 24% in 2017 as shown in Figure 48 (a). Majority of imports came from China 33%, Jordan 11% and Germany 10% as shown in Figure 49 (a). Occupational prevention dress is protective clothing used as part of the personal protective equipment in different industries, such as, the oil and gas, mining, welding, automotive and others. Similarly, the coated, impregnated and rubberized garments, are considered protective clothing but they have functional coating or finish, such as water repellency, flame retardation, stain resistance, chemical resistance and others. While professional garments are uniforms for non-protective purposes, such as, civil aviation pilots, nurses, chefs, waiters and others. The commodity code 61.14 "special garments for

professional, sporting, or other purposes” does not segregate between professional garments and special sporting garments. Yet, it was included under Protech provisionally.

On the other hand, the exports of Protech have increased from US\$21.5 million in 2013 to US\$28.3 million in 2017 with a CAGR 7.2% as listed in Tables 45 and 46. Exports in 2017 included coated/ rubberized garments 53%, professional garments 30%, occupational prevention dress 10%, and nonwoven garments 7% as shown in Figure 48 (b). Major importing countries were Sudan 37%, United States 14%, Spain 8%, and United Arab Emirates 6% as shown in Figure 49 (b). Nonwoven garments are used as single use protective clothing in many applications most importantly medical.

In some cases, there are imports and exports of the same category, however, there are technical differences involved. For example, imports could include advanced protective clothing for demanding applications from special brands such as 3M or DuPont, while the exports of protective clothing could be conventional workwear or less critical applications.

Moreover, the high exports of coated garments explain the high imports of coated fabrics, part of which is consumed locally after conversion and the other part is exported.

TABLE 45 EGYPT'S PROTECH IMPORTS AND EXPORTS VALUES BY GOODS

Imported goods	\$US thousands			Exported goods	\$US thousands		
	2013	2017	CAGR%		2013	2017	CAGR (%)
Occupational prevention dress	12,172	18,140	10.49	Coated/ rubberized garments	3,186	14,996	47.29
Coated/ rubberized garments	26,612	13,178	-16.11	Professional or sporting garments	13,575	8,404	-11.30
Professional or sporting garments	74,477	11,751	-36.97	Occupational prevention dress	3,584	2,822	-5.80
Life jackets and life belts	1,009	1,337	7.29	Nonwoven garments	942	1,968	20.22
Parachutes	1,711	918	-14.41	Others	199	141	-8.25
Others	3,047	2,934	-0.94	Total	21,486	28,331	7.16
Total	119,028	48,258	-20.20				

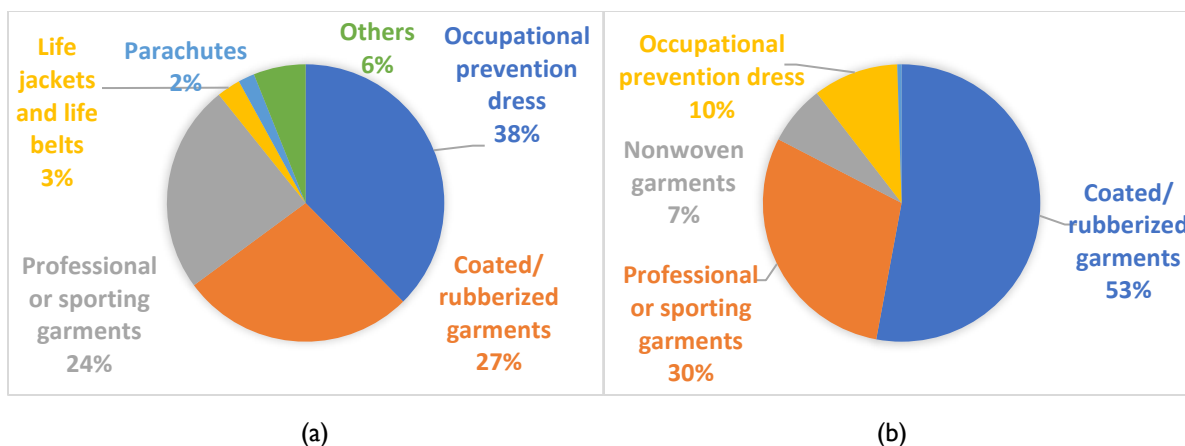


FIGURE 48 EGYPT'S PROTECH (A) IMPORTS, AND (B) EXPORTS VALUES BY GOODS 2017

TABLE 46 EGYPT'S PROTECH IMPORTS AND EXPORTS VALUES BY COUNTRY

Exporters	\$US thousands			Importers	\$US thousands		
	2013	2017	CAGR (%)		2013	2017	CAGR (%)
China	91,609	15,917	-35.44	Sudan	10,325	-	-
Jordan	239	5,541	119.43	USA	4,005	3,917	-0.55
Germany	696	4,643	60.71	Spain	60	2,345	150.03
Malaysia	0	3,236	-	UAE	818	1,715	20.33
Italy	12,125	3,877	-24.80	Jordan	1,320	1,484	2.97
Others	14,359	15,044	1.17	Others	15,283	8,545	-13.53
World	119,028	48,258	-20.20	World	21,486	28,331	7.16

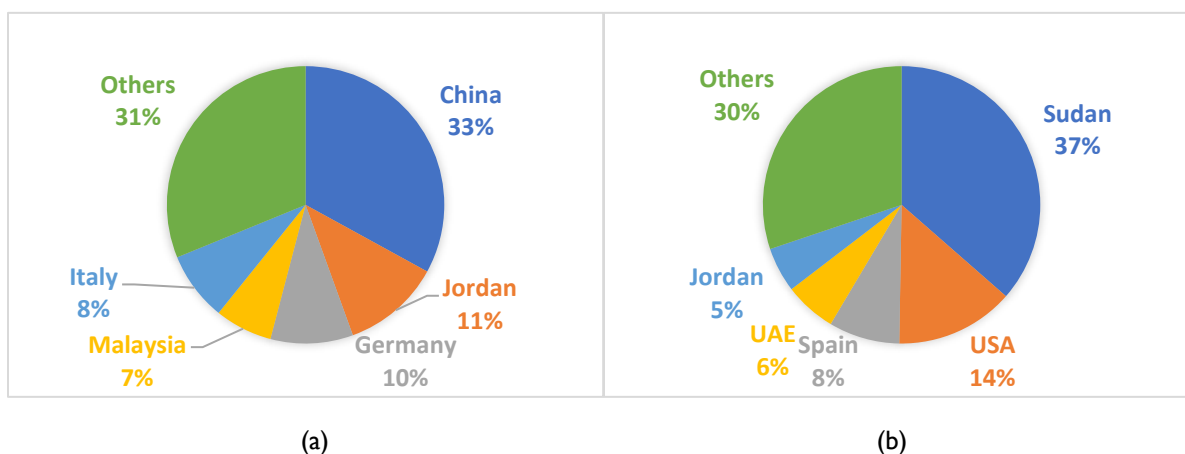


FIGURE 49 EGYPT'S PROTECH (A) IMPORTS, AND (B) EXPORTS VALUES BY COUNTRY 2017

Figure 50 depicts Egypt's Protech imports and exports from 2013 – 2017, it is expected that the trade deficit will be balanced out by 2019. This is a good indicator of a growing local industry, with reduction in imports and increase in exports. Egypt has good potential for localization of workwear and uniforms due to the availability of high local import tariffs that reaches up to 30% and the existing cut and sew operations,

yet, there is a need for technology transfer. It is important to note here, that the data used for the protech imports and exports were mirror data due to the erroneous assignment of HS codes in the direct data.

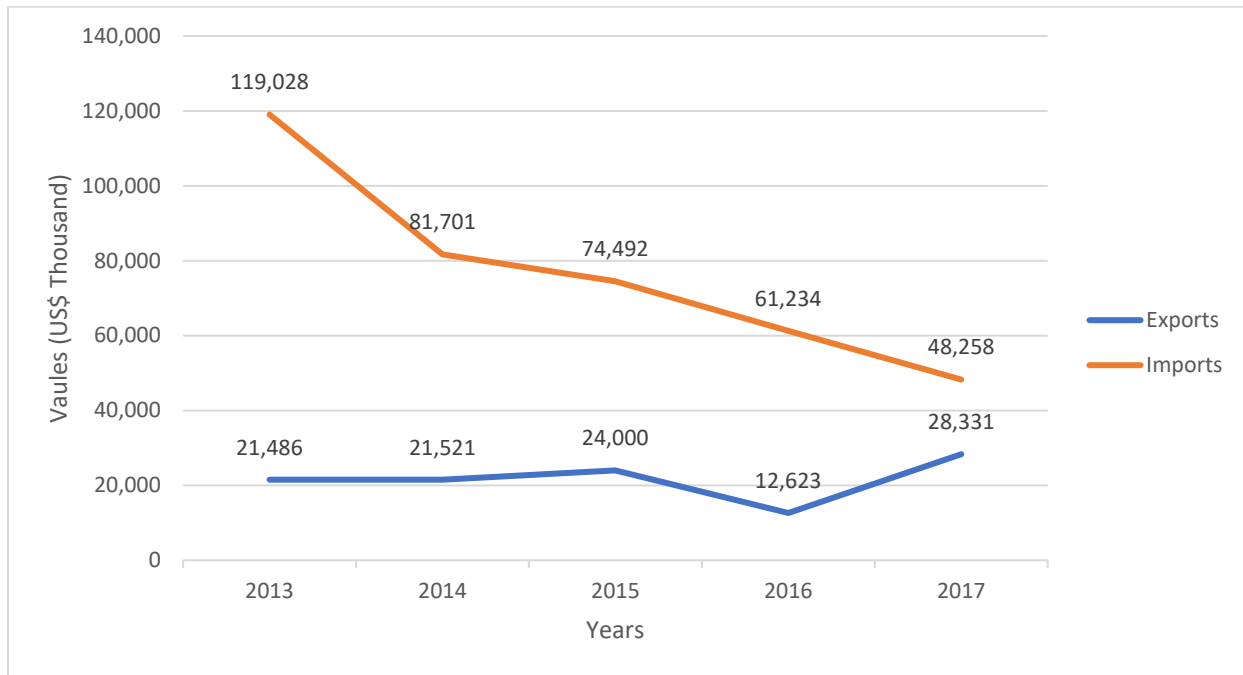


FIGURE 50 EGYPT'S PROTECH TRADE STATISTICS 2013 - 2017

2.2.11 SPORTECH

Sportech HS codes used in the trade analysis are tabulated in Table 47. Sportech includes apparel of vulcanized rubber (scuba diving wetsuit), track suits, ski suits, swimwear, hot air balloons, inflatable boats, tarpaulins, awnings, tents, sail cloth, sleeping bags, netting and fishing nets. It is important to note here that outdoor clothing with special treatment such as water repellent are included in the Protech section under “garments rubberized or impregnated, coated or covered with plastics or other materials”.

TABLE 47 SPORTECH HS CODES USED IN THE TRADE ANALYSIS

HS CODE	DESCRIPTION	TARIFFS
40.15	Articles of apparel and clothing accessories, incl. gloves, mittens and mitts, for all purposes, of vulcanized rubber (excluding hard rubber and footwear and headgear and parts thereof)	
4015.90	– Other	27-40%
61.12	Track suits, ski suits and swimwear, knitted or crocheted:	27-40%
62.11	Tracksuits, ski suits, swimwear and other garments, n.e.s. (excluding knitted or crocheted)	27.22-37.20%
88.01	Balloons and dirigibles; gliders, hang gliders and other non-powered aircraft	5%
89.03	Yachts and other vessels for pleasure or sports; rowing boats and canoes:	
8903.10	Inflatable vessels for pleasure or sports	5.43-7.23%
63.06	Tarpaulins, awnings and sun blinds; tents; sails for boats, sailboards or land craft; camping goods:	27-35%
94.04	Mattress supports; articles of bedding and similar furnishing (for example, mattresses, quilts, eiderdowns, cushions, pouffes and pillows) fitted with springs or stuffed or internally fitted with any material or of cellular rubber or plastics, whether or not covered:	
9404.30.00	– Sleeping bags	27-60%
56.08	Knotted netting of twine, cordage or rope; made up fishing nets and other made up nets, of textile materials:	8.75-10

Egypt's Sportech imports have decreased from US\$18.5 million in 2013 to US\$11.1 million in 2017 with CAGR -12.19% as listed in Tables 48 and 49. Tracksuits represented 64% of total imports, followed by fishing nets 11% and netting of cordage 14% in 2017 as shown in Figure 51 (a). Majority of imports came from China 39% Vietnam 11%, Cambodia 6% and Germany 6% as shown in Figure 52 (a). Track suits are sportswear of cotton or synthetic fibers used in any sporting activity, while fishing nets are used for professional and recreational fishing and netting of cordage are used in numerous sporting applications such as ball stopper netting, outdoor court nets, soccer net, tennis net and others. China, Vietnam and Cambodia are main outsourcing countries for leading sportswear brands such as Nike, Adidas, and Under Armor.

On the other hand, the exports of Sportech have increased from US\$5.5 million in 2013 to US\$148.8 million in 2017 with a CAGR 128.2% as listed in Tables 48 and 49. Majority of exports in 2017 was track

suits representing 99% of total exports, mainly to the United States 36%, Spain 24%, and UK 14% as shown in Figure 52 (b). Egypt is considered one of the attractive countries for outsourcing of sportswear since there is a large number of export-based companies that take advantage of Egypt's competitive position in this context. Leading companies include, Tie Egypt, Jade, Delta Galil and many other exporters. Generally, the tariffs on synthetic sportswear is higher than the cotton ones, for example in the United States, the tariffs on synthetics reaches up to 30% and cotton up to 15%. Egypt has the advantage of exporting duty free to the United States under the QIZ protocol and Europe under the Euro I FTA. This explains why the highest increase in exports was in the synthetic sportswear especially to USA and Europe.

Figure 51 (b) depicts Egypt's Sportech imports and exports from 2013 – 2017, it is clear that Sportech exports have been increasing exponentially since 2015. This is due to the renewed interest in Egypt as an attractive low-cost outsourcing country for sportswear because of the depreciation of EGP against the USD, availability of cut and sew operations, relatively low labor cost, proximity to major export markets, and attractive package of trade agreements.

TABLE 48 EGYPT'S SPORTECH IMPORTS AND EXPORTS VALUES BY GOODS

Imported goods	\$US thousands			Exported goods	\$US thousands		
	2013	2017	CAGR %		2013	2017	CAGR %
Tracksuit	11,462	7,013	-11.56	Tracksuits	2,747	147,180	170.5
Fishing nets	2,991	1,243	-19.71	Fishing nets	460	584	6.15
Netting of cordage	1,913	1,617	-4.12	Pneumatic mattresses	275	475	14.64
Balloons	95	307	34.08	Inflatable vessels	392	354	-2.52
Tarpaulins, awnings	716	290	-20.22				
Tents	18	93	50.77				
Swimwear	67	132	18.47				
Sleeping bags	322	47	-38.19				
Others	952	276	-26.62	Others	1,612	169	-63.92
Total	18,536	11,018	-12.19	Total	5,486	148,762	128.20

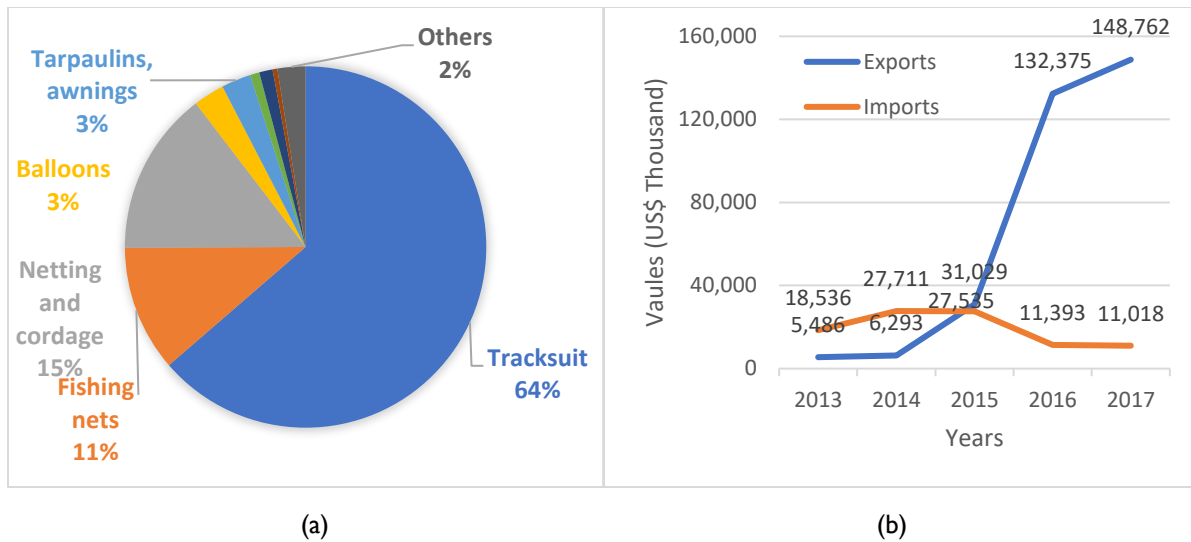


FIGURE 51 EGYPT'S SPORTECH (A) IMPORT VALUES BY GOODS 2017 AND (B) TRADE STATISTICS FROM 2013 -2017

TABLE 49 EGYPT'S SPORTECH IMPORTS AND EXPORTS VALUES BY COUNTRY

Exporters	\$US thousands			Importers	\$US thousands		
	2013	2017	CAGR (%)		2013	2017	CAGR (%)
China	7,457	4,292	-12.90	USA	888	54,100	179.38
Viet Nam	2,624	1,238	-17.12	Spain	0	35,091	-
Cambodia	502	699	8.63	UK	83	20,476	296.32
Germany	459	697	11.01	Turkey	816	11,756	94.82
Turkey	75	647	71.38	Saudi Arabia	527	5,272	77.84
Indonesia	1,087	540	-16.05	Netherlands	74	4,549	180.01
USA	171	519	31.99	Germany	74	3,452	161.34
Thailand	1,447	470	-24.51	Belgium	13	1,632	234.73
Others	4,714	1,916	-20	Others	3,011	12,434	42.55
World	18,536	11,018	-12.19	World	5,486	148,762	128.20

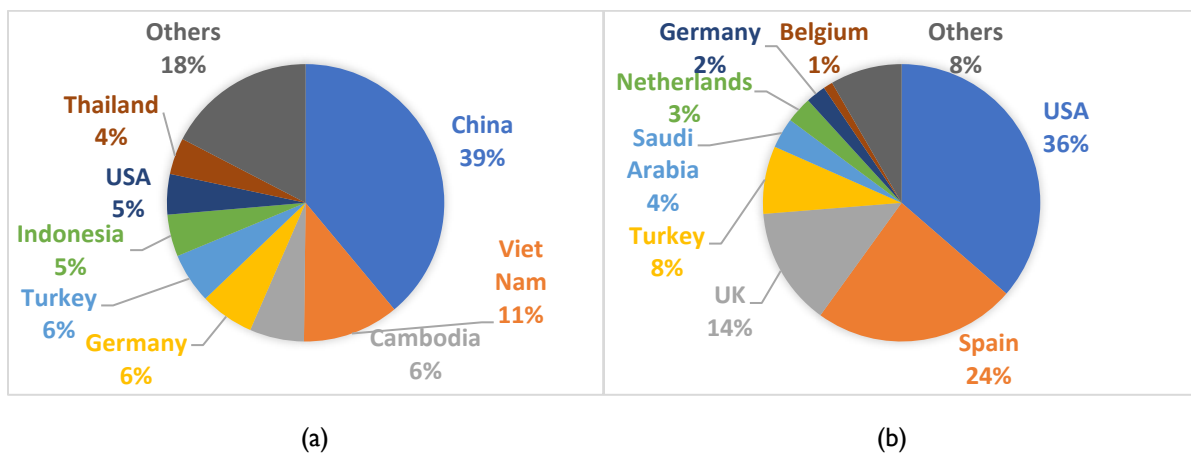


FIGURE 52 EGYPT'S SPORTECH (A) IMPORTS, AND (B) EXPORTS VALUES BY COUNTRY 2017

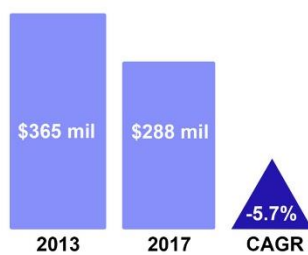
2.2.12 GEOTECH

Geotech are always traded as rolled goods in fabric form, and it is very difficult to distinguish between the commodity codes of fabrics used in geotechnical applications and other technical fabrics that will be converted to end-products. Hence, any technical textiles end-products traded as rolled goods were considered in the analysis under the technical fabrics section and not under the end-products.

2.2.13 TOTAL END-PRODUCTS

TOTAL IMPORTS OF END-PRODUCTS

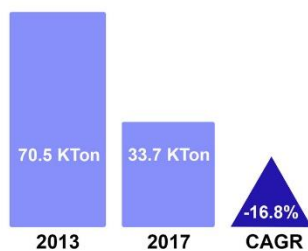
Total Imports Value



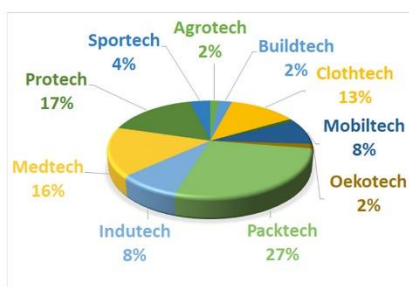
Top Import partners - 2017



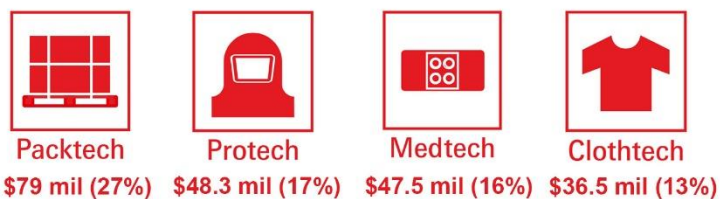
Total Imports Quantity



- 1) Asia Pacific = \$160.5 mil (56%)
- 2) Europe = \$69.7 mil (24%)
- 3) Middle East = \$40 mil (14%)

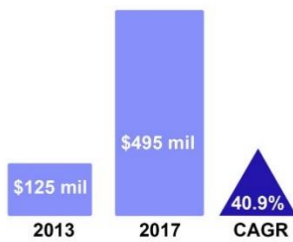


Top Imported End-Product Groups - 2017



TOTAL EXPORTS OF END-PRODUCTS

Total Exports Value

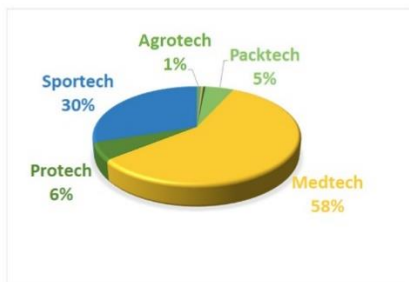
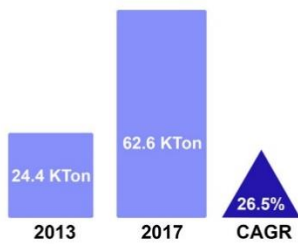


Top Exports Partners - 2017



- 1) Africa = \$147.4 mil (30%)
- 2) Middle East = \$114 mil (23%)
- 3) Europe = \$106.9 mil (22%)

Total Exports Quantity



Top Exported End-Product Groups - 2017



Medtech
\$285 mil (58%)



Sporttech
\$148 mil (30%)



Protech
\$28.3 mil (6%)

Egypt's total technical textiles end-products imports have slightly decreased from US\$365 million in 2013 to US\$288.2 million in 2017 with a CAGR -5.77%. However, there have been a significant decrease in the import quantities from 70.5 thousand tons in 2013 to 33.7 thousand tons in 2017, which indicates increased unit values as listed in Table 50. Imports were very diverse, they included: Packtech 27%, Protech 17%, Medtech 16%, Clothtech 13% as illustrated in Figure 53 (a). The fastest growing was Buildtech CAGR 30.3%, Medtech CAGR 22.2% and Agrotech CAGR 19.4%. Majority of imports came from Asia Pacific 56%, Europe 24% and the Middle East 14% as shown in Figure 54 (a). Imports from Asia are mostly lower cost and lower tech end-products, while Europe are higher tech end-products.

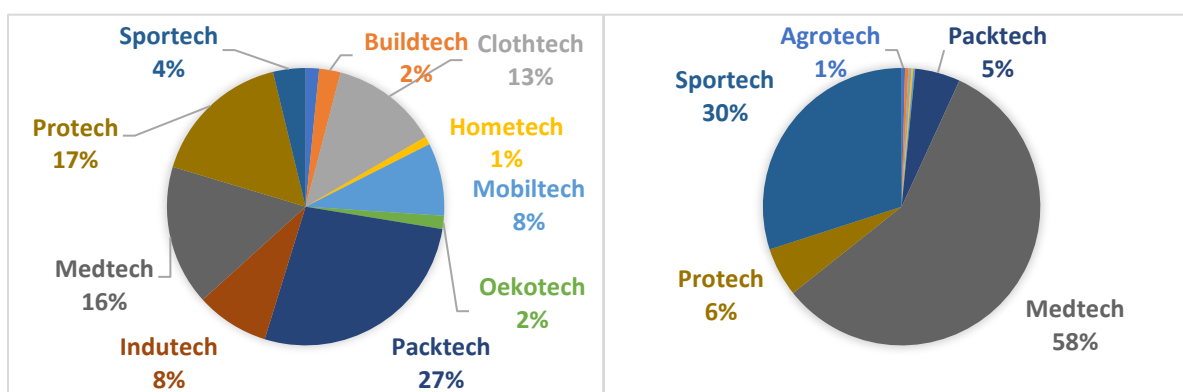
TABLE 50 EGYPT'S TECHNICAL TEXTILES END-PRODUCTS IMPORTS BY SUBSECTOR

Imported goods	\$US million			10 ³ tons		
	2013	2017	CAGR (%)	2013	2017	CAGR (%)
Agrotech	2.24	4.55	19.38	19.62	1.30	-49.26
Buildtech	2.52	7.27	30.33	1.33	3.30	25.51
Clothtech	35.33	36.53	0.84	15.30	2.07	-39.35
Homotech	3.99	2.78	-8.64	0.03	0.54	105.98
Mobiltech	23.42	24.68	1.32	0.00	3.46	-
Oekotech	3.80	4.49	4.26	0.29	0.24	-4.62
Packtech	107.51	79.09	-7.39	17.90	12.44	-8.70
Indutech	31.77	24.85	-5.96	10.11	3.10	-25.59
Medtech	21.31	47.53	22.21	1.63	5.70	36.75
Protech	119.03	48.26	-20.20	4.28	0.79	-34.45
Sportech	18.54	11.02	-12.20	0.00	0.80	-
Total	365.50	288.20	-5.77	70.49	33.74	-16.82

On the other hand, exports have been increasing significantly from US\$125.3 million in 2013 to US\$ 495 million in 2017 with a CAGR of 40.98% as listed in Table 51. This has been coupled with a significant increase in end-products export quantities which has reached 62.57 thousand tons in 2017. Exports were predominantly Medtech 58% and Sportech 30% as shown in Figure 53 (b), with Sportech growing at a CAGR of 128.2%. Main export regions were Africa 30%, Middle East 23% and Europe 22% as shown in Figure 54 (b). Exports to these regions are supported by the preferential trade agreements, geographic proximity, and cost advantage in Egypt.

TABLE 51 EGYPT'S TECHNICAL TEXTILES END-PRODUCTS EXPORTS BY GOODS

Exported goods	\$US million			10 ³ tons		
	2013	2017	CAGR (%)	2013	2017	CAGR (%)
Agrotech	0.67	1.99	31.28	0.72	0.76	1.36
Buildtech	0.42	1.85	44.87	0.60	1.27	20.62
Clothtech	3.38	1.92	-13.18	0.30	0.05	-36.11
Hometech	0.15	0.95	58.64	0.02	0.15	65.49
Mobiltech	16.44	1.10	-49.14	3.00	0.26	-45.74
Oekotech	0.00	0.00	-	0.00	0.00	-
Packtech	30.06	26.15	-3.42	14.10	0.00	-
Indutech	0.11	0.01	-45.09	0.03	0.00	-
Medtech	47.29	285.05	56.69	4.02	58.15	95.02
Protech	21.49	28.33	7.16	1.01	0.60	-12.21
Sportech	5.49	148.76	128.15	0.62	1.33	21.02
Total	125.30	495.00	40.98	24.42	62.57	26.52



(a)

(b)

FIGURE 53 EGYPT'S TECHNICAL TEXTILES END-PRODUCTS (A) IMPORTS, AND (B) EXPORTS BY GOODS IN VALUES 2017

TABLE 52 EGYPT'S TECHNICAL TEXTILES END-PRODUCTS IMPORTS AND EXPORTS BY REGION

Exporters	\$US million			Importers	\$US million		
	2013	2017	CAGR (%)		2013	2017	CAGR (%)
Middle East	31.26	39.99	6.35	Middle East	33.14	114.05	36.20
Africa	0.76	0.15	-33.21	Africa	30.58	147.44	48.18
Europe	63.31	69.70	2.43	Europe	44.24	106.86	24.67
North America	16.05	17.27	1.85	North America	6.68	61.45	74.17
Asia Pacific	254.00	160.51	-10.84	Asia Pacific	8.21	62.17	65.88
Others	0.11	0.58	50.72	Others	2.46	3.03	5.37
World	365.50	288.20	-5.77	World	125.30	495.00	40.98

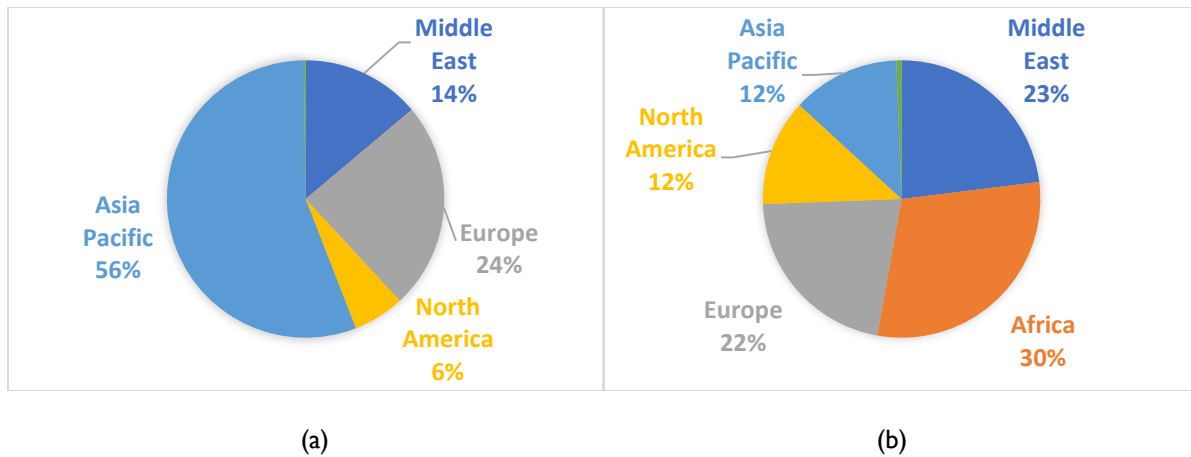


FIGURE 54 EGYPT'S TECHNICAL TEXTILES END-PRODUCTS (A) IMPORTS, AND (B) EXPORTS BY REGION IN VALUES 2017

Figure 55 depicts Egypt's technical textiles end-products imports and exports from 2013 – 2017. The plot shows an initial trade deficit, however, due to the fast growth rate of exports this deficit turned into a trade surplus by 2016. The exports will continue to grow due to the increasing global demand for hygiene products and sportswear. The main contributors to the technical textiles end-products exports are direct foreign investments by companies such as P&G USA, Unicharm Japan, and Hayat Kimya Turkey producers of textile hygiene products. Moreover, other contributors to the exports include outsourcing companies for leading sport brands such as Nike, Adidas, Decathlon, and Under Armor.

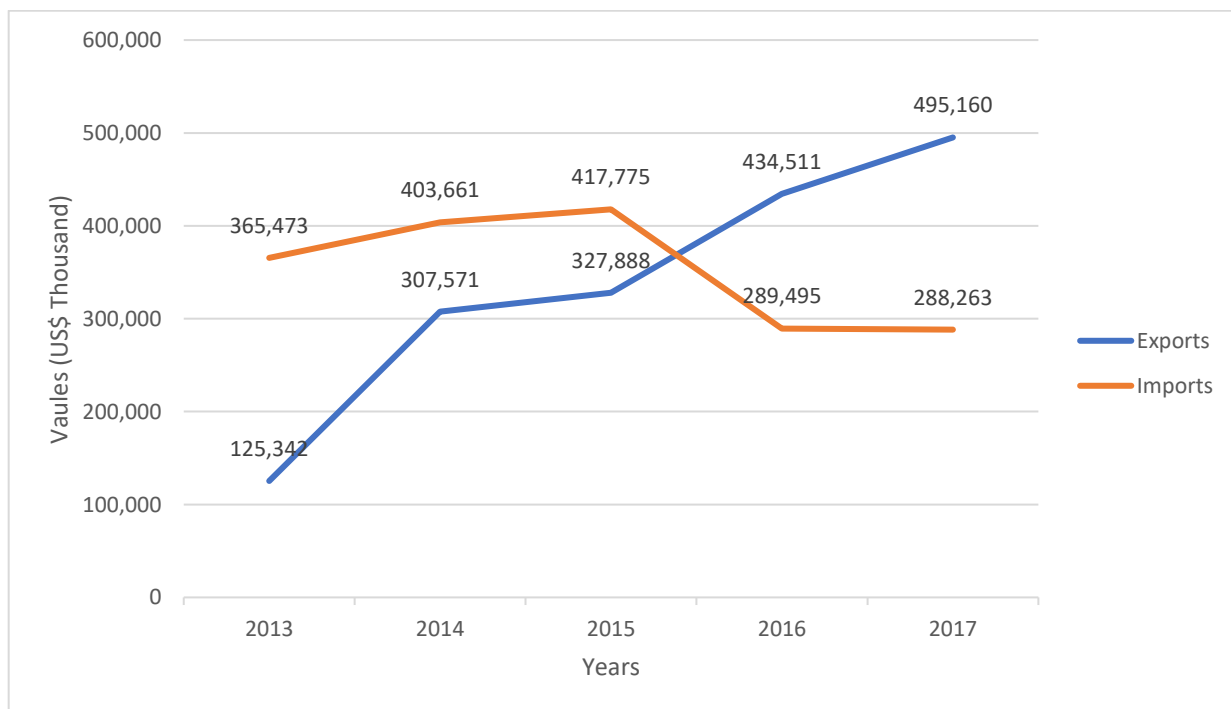


FIGURE 55 EGYPT'S TECHNICAL TEXTILES END-PRODUCTS TRADE STATISTICS 2013 – 2017

2.3 TOTAL TECHNICAL TEXTILES

Egypt's total technical textiles imports have slightly decreased from US\$685.9 million in 2013 to US\$605.4 million in 2017 with CAGR –3.07% as listed in Tables 53 and 55. The total imports quantity have reached 130.7 thousand tons in 2017. The imports in 2017 were split into raw-materials 52% and end-products 48% as shown in Figure 56 (a), which indicates that Egypt heavily relies on imports of technical textiles end-products. However, the decrease in imports was mainly due to the decreased imports of end-products, which is a positive indicator that there are downstream imports substitution by local production. The most important import partners are Asia Pacific 50%, Europe 25% and the Middle East 17% as shown in Figure 57 (a).

On the other hand, exports have been increasing significantly from US\$143.5 million in 2013 to US\$746 million in 2017 with a CAGR of 51% as listed in Tables 53 and 55. The exports of raw materials CAGR 92.3% are growing much faster than that of end-products CAGR 40.98%, due to the recent foreign investments in upstream production of glass fibers and nonwoven SMS. The total export quantity has reached 254.3 thousand tons in 2017. One third of the exports was in the form of raw materials while the other two third was end-products as shown in Figure 56 (b). This is a positive indicator that there is a deep industry with downstream capacities capable of supplying end-products to the international market. The main export regions were Europe 32%, Africa 25%, and the Middle East 23% as shown in Figure 57 (b).

TABLE 53 EGYPT'S TOTAL TECHNICAL TEXTILES IMPORTS BY GOODS

Imported goods	\$US million			10 ³ tons		
	2013	2017	CAGR (%)	2013	2017	CAGR (%)
Raw Materials	320.44	317.24	-0.25	122.90	96.94	-5.76
End-Products	365.50	288.20	-5.77	70.49	33.74	-16.82
Total	685.94	605.44	-3.07	193.39	130.68	-9.33

TABLE 54 EGYPT'S TOTAL TECHNICAL TEXTILES EXPORTS BY GOODS

Exported goods	\$US million			10 ³ tons		
	2013	2017	CAGR (%)	2013	2017	CAGR (%)
Raw Materials	18.19	251.03	92.29	7.15	191.73	127.34
End-Products	125.30	495.00	40.98	24.42	62.57	26.52
Total	143.49	746.03	51.00	31.57	254.30	68.47

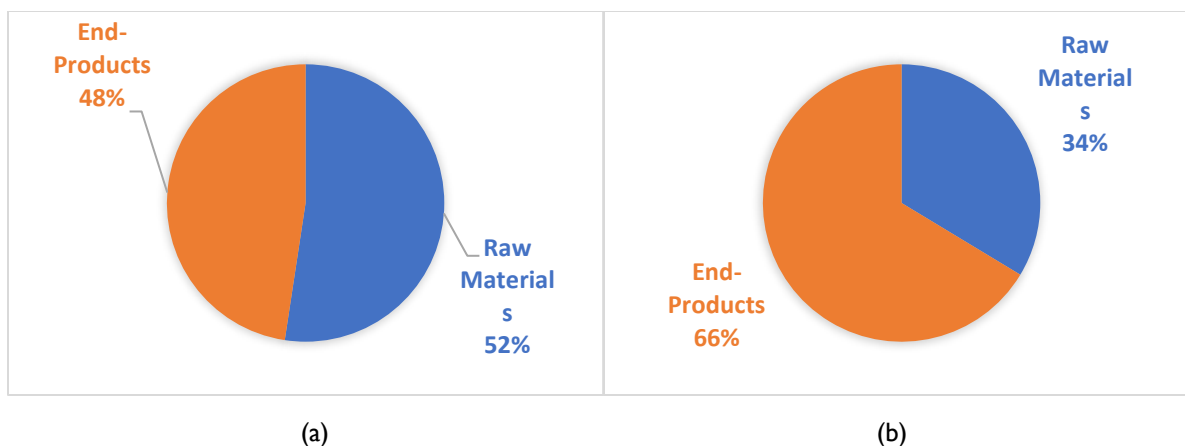


FIGURE 56 EGYPT'S TOTAL TECHNICAL TEXTILES (A) IMPORTS, AND (B) EXPORTS BY GOODS IN VALUES 2017

TABLE 55 EGYPT'S TOTAL TECHNICAL TEXTILES IMPORTS AND EXPORTS BY REGION

Exporters	\$US million			Importers	\$US million		
	2013	2017	CAGR (%)		2013	2017	CAGR (%)
Middle East	106.43	101.93	-1.07	Middle East	40.53	170.24	43.16
Africa	3.12	2.06	-9.83	Africa	34.53	188.35	52.82
Europe	117.18	149.77	6.33	Europe	46.24	237.08	50.48
North America	20.84	19.61	-1.51	North America	11.28	61.97	53.10
Asia Pacific	403.43	299.62	-7.17	Asia Pacific	8.60	85.22	77.42
Others	34.94	32.45	-1.83	Others	2.49	3.04	5.12
World	685.94	605.44	-3.07	World	143.49	746.03	51.00

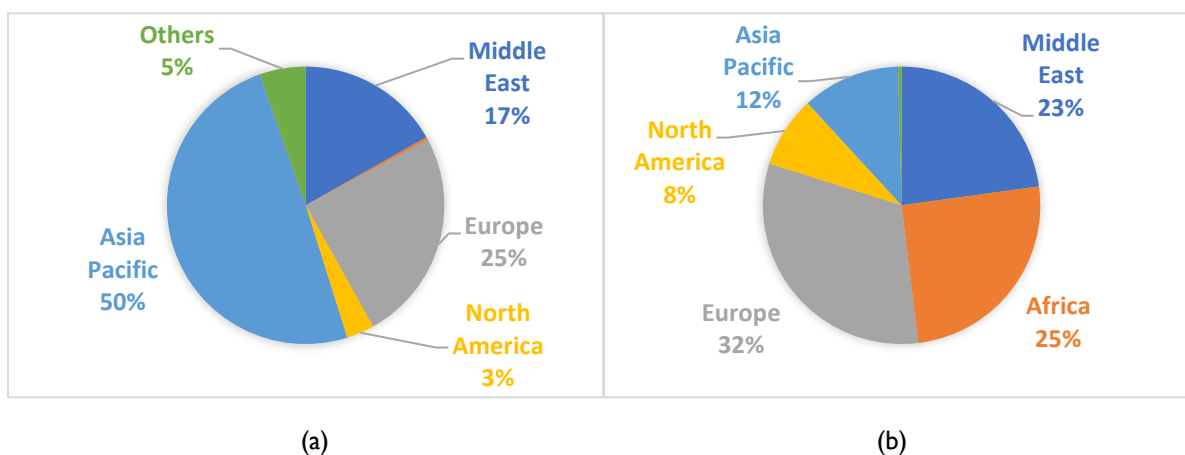


FIGURE 57 EGYPT'S TOTAL TECHNICAL TEXTILES (A) IMPORTS, AND (B) EXPORTS BY REGION IN VALUES 2017

Figure 58 depicts Egypt's total technical textiles imports and exports from 2013 – 2017, the plot clearly shows that the trade balance was initially negative, however, by 2016 the trade balance became positive due to the fast growth rate of exports. The exports will continue to grow due to the increasing global

demand for technical textiles in importing regions. As for the imports, it is expected to remain at the same level.

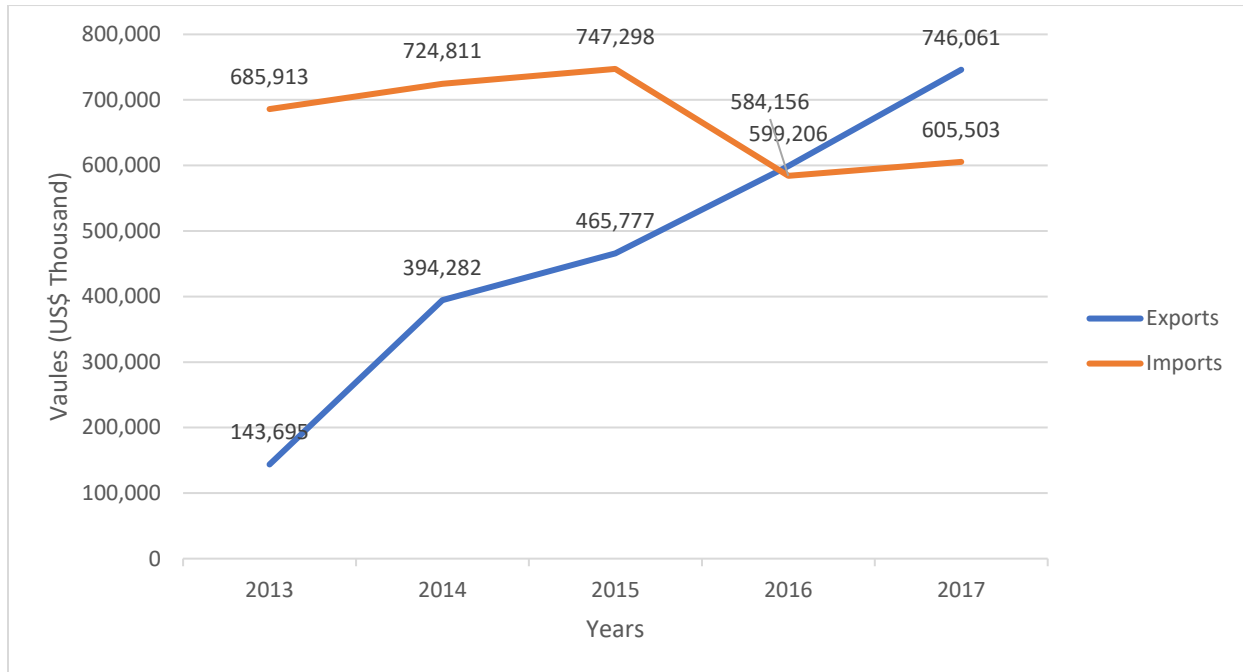


FIGURE 58 EGYPT'S TOTAL TECHNICAL TEXTILES TRADE STATISTICS 2013 – 2017

3. MAJOR FINDINGS

Egypt's technical textiles value chain is emerging, with total imports of US\$605.4 million and total exports of US\$746 million in 2017. The exports are growing at a very fast rate with CAGR showing 51% from 2013-2017, while the imports are slightly decreasing. Half of the imports were raw materials while the other half was end-products, whereas, one third of the exports was in the form of raw materials and the other two thirds were end-products. The large imports of raw materials are a positive indicator that there are downstream imports substitution by local producers. Further, the large exports of end-products confirm that there is a deep industry with downstream capacities capable of supplying end-products to the international market.

The total imports of technical raw materials were almost US\$320 million in 2017, with majority of imports being in fabric form (rolled goods) which indicates that there is a gap in upstream operations in yarn spinning and fabric formation. On the other hand, the exports of raw materials have been growing very fast with a CAGR 92.3% and reached US\$250 million in 2017, half of which was in yarn form, and the other half was in fabric form. The main contributors to the technical textiles raw materials exports are direct foreign investments during the period from 2012 -2014, such as Jushi Group China and Hengshi China in glass fiber, in addition to, Gulsan Turkey and Pegas Czech in SMS nonwoven.

The technical yarn imports were US\$31.43 million in 2017, mostly monofilament yarn >67 dtex from Germany. While the exports have been increasing dramatically at a CAGR 111.5% and reached US\$140.7 million in 2017, most exported yarns were glass yarns in different forms, mostly to Europe and Turkey. The exports of glass have been increasing over the years to fulfill the increasing demand by wind energy companies.

The technical fabrics imports were very large and valued at US\$270 million in 2017, with majority of the imports being nonwoven fabrics and coated/ laminated fabrics. Nonwoven imports were US\$144 million mostly nonwovens of man-made filaments (polymer laid) with higher demand for low areal densities below 25 gsm. Whereas, coated and laminated fabrics imports were US\$114 million, mainly PU coated/ laminated fabrics, and PVC coated fabrics. On the other hand, the technical fabrics exports have dramatically increased to US\$110 million in 2017 with a CAGR 77.8%, mostly nonwoven fabrics. Due to the high demand for nonwoven fabrics from neighboring countries in the Middle East and Africa. The exports of nonwoven fabrics were US\$99.9 million, with majority of exports man-made filament <25 gsm and glass fiber mats.

The technical textiles end-products imports US\$288.2 million in 2017, imports were very diverse, main end-products imports were, Packtech, Protech, Medtech, and Clothtech, of which Medtech was the fastest growing CAGR at 22.2%. Majority of imports came from Asia Pacific, Europe and the Middle East. Imports from Asia are mostly lower cost and lower tech end-products, while Europe are higher tech end-products. On the other hand, exports have significantly increased to US\$495 million in 2017 with a CAGR of 40.98%, exports were predominantly Medtech and Sportech with the latter growing at a CAGR of 128.2%. Main export regions were Africa, Middle East and Europe. Exports to these regions are supported by the preferential trade agreements, geographic proximity, and cost advantage in Egypt. The increasing exports are due to the increasing global demand for hygiene products and sportswear, the main contributors to the technical textiles end-products exports are direct foreign investments by companies such as P&G USA, Unicharm Japan, and Hayat Kimya Turkey producers of textile hygiene products. Moreover, other contributors to the exports include outsourcing companies for leading sportswear brands such as Nike, Adidas, Decathlon, and Under Armor.

Clothtech imports were US\$ 35 million since 2017, with the biggest proportion of imports being slide fasteners, followed by elastic tapes. Elastic tapes and slide fasteners are essential clothing accessories, used in all kinds of readymade garments. Yet, some types of accessories are cheaper to import from China,

while other specialized accessories are imported from Turkey for specific clothing brands. There is a clear trade deficit when it comes to the clothing accessories, Egypt has a big readymade garments industry and there is high demand for clothing accessories which is expected to grow due to the interest in Egypt as an outsourcing country for readymade garments.

Packtech imports have reached US\$79 million in 2017, with majority of imports being suitcases, schoolbags, handbags, travel bags and sports bags. The large imports of Packtech is due to the high local demand for such types of bags. There are very few local producers of travel bags, school bags, and sports bags, due to the high competition from low-cost imports from China, despite the high import tariffs of 60%.

Medtech is considered the most important technical textiles end-product in Egypt. Imports have increased to US\$47.5 million in 2017 with CAGR of 22.2%, The main imported goods were catgut, sutures, textile hygiene products, and made up articles, such as, face masks and knee support. Exports of Medtech have increased significantly to US\$285 million in 2017 with a CAGR of 56.7%. Most of the textiles consisted of hygiene products and smaller proportion of adhesive wound dressings. There is an obvious trade surplus due to the high capacity production of textile hygiene products that consist primarily of baby diapers and feminine pads for the local and export markets. Multinational companies with subsidiaries in Egypt accounts for the biggest proportion of the exports like Procter & Gamble (P&G) producers of Pampers and Always, Unicharm producer of Baby Joy, and Hayat Kimya producers of Molfix. The local demand and regional exports of Medtech will continue to grow due to the increased spending on healthcare and increased awareness on personal hygiene.

Protech imports have decreased to US\$48.3 million in 2017 with a CAGR of -20.2%, imports were mostly occupational prevention dress, coated/ rubberized garments, and professional garments. While the exports have slightly increased to US\$28.3 million in 2017, mostly coated/ rubberized garments and professional garments. The trade deficit in Protech is expected to balance out by 2019. This is a good indicator of a growing local industry, with reduction in imports and increase in exports, especially with the high local import tariffs that reaches up to 30% and the large existing cut and sew operations.

Exports of Sportech have dramatically increased to US\$148.8 million in 2017 with a CAGR of 128.2%, with majority of exports being tracksuits mainly to the United States, Spain, and the UK. Egypt is considered one of the attractive countries for outsourcing of sportswear, there are many export-based companies making use of Egypt's competitive position in this context.

4. OPPORTUNITIES FOR LOCALIZATION

4.1 IMPORTS SUBSTITUTION

A summary of the main imported technical textiles is listed in Table 56. The table lists the imports starting by the highest in value. High import values indicate high local demand and absence of competitive local suppliers, which in turn, indicate a good potential for imports substitution.

TABLE 56 SUMMARY OF EGYPT'S MAIN IMPORTED TECHNICAL TEXTILES IN 2017

Category	Imported item	Value in 2017 US\$ million	CAGR 2013- 2017 (%)	Share of total imports (%)
Polymer laid nonwoven	Man-made filament < 25 g/m ²	65.13	9.98	10.76
	Man-made filaments > 70 - 150 g/m ²	16.00	-14.99	2.64
	Man-made filament 25 - 70 g/m ²	15.77	-4.16	2.60
Coated/ Laminated/ Impregnated	PU coated	38.32	-0.36	6.33
	PVC coated	31.16	0.03	5.15
	Coated other plastics	24.17	2.50	3.99
Packtech	Suitcases, school bags	42.64	-10.84	7.04
	Handbags	18.57	6.01	3.07
	Travelling-bags, sports bags	10.63	-11.00	1.76
Protech	Occupational prevention dress	18.14	10.49	3.00
	Coated/ rubberized garments	13.18	-16.11	2.18
	Professional or sporting garments	11.75	-36.97	1.94
Medtech	Catgut, sutures wound closure	17.47	11.64	2.89
	Hygiene products	16.70	-	2.76
Clothtech	Slide fasteners	14.25	4.60	2.35
	Elastic tapes > 5% elastomer	12.64	-3.39	2.09
Technical yarns	Monofilament > 67 dtex	15.21	79.66	2.51

4.1.1 POLYMER LAID NONWOVENS

There is very good opportunity for substituting imported polymer laid nonwovens, with imports worth US\$96.9 million in 2017, especially SMS with areal density below 25 gsm which represents 10.8% of total technical textiles imports in Egypt. The SMS opportunity is suitable for large scale companies, due to the high capital investment in machinery which could reach up to US\$40 million, in addition to, the large production volumes which is in the range of 60 KTA.

The technical know-how of operation and production is usually part of the contract with the machinery suppliers which is enough for producing commodity type SMS nonwovens. However, for specialty type SMS nonwovens it requires further investment in research and development and/ or technology transfer.

Majority of polymer laid nonwovens use polypropylene thermoplastic polymer as the main raw material. Polypropylene can be sourced from Egypt from Orientals Petrochemicals Co. in Suez and SIDPEC in Sidi Krer, besides the TAHRIR Petrochemicals Complex which will include two polypropylene production facilities.

The main competitive advantages of producing polymer laid nonwoven in Egypt is the large local demand, in addition to the comparably low energy cost which is a critical cost element in polymer laid nonwoven production. Polymer laid nonwoven require high energy in melting and extruding the polypropylene polymer and laying it down into a web or sheet.

4.1.2 COATED, LAMINATED OR IMPREGNATED FABRICS

The second imports substitution opportunity is related to the coated, laminated or impregnated fabrics, with imports worth US\$93.65 million in 2017. The main imported coated fabrics are PU coated, PVC coated, and fabrics coated with other plastics representing 6.3%, 5.2% and 4% of Egypt's total technical textiles imports respectively. This opportunity is suitable for medium sized companies, due to the intermediate capital investment in machinery and equipment which could be in the range of ~ US\$1 million, in addition to, intermediate production volumes that can reach up to 4.5 million meter/annum.

The technical know-how for operation and production can be acquired from the machine manufacturers and some of the coating materials are available locally such as the PVC while others are available through global suppliers. However, 75% of coated fabrics are imported from China which indicates that China has a cost leadership in such commodity and in some cases, it might be cheaper to import from China vs locally manufacturing it. This is due to the low cost of substrate fabrics in China compared to Egypt, whether the fabrics are woven, knitted, or nonwoven.

The main competitive advantages for producing coated/ laminated fabrics in Egypt is the high local demand and the less strict environmental regulations, since some coating/ laminating processes generate toxic dioxins.

4.1.3 PACKTECH

The third opportunity is related to the Packtech, with imports worth US\$71.84 million in 2017. The main imported Packtech products were suitcases/ school bags, handbags, and travel/ sport bags representing 7%, 3.1% and 1.8% of Egypt's total technical textiles imports respectively. This opportunity is very suitable for MSMEs, as it is mainly cut and sew operations with minor moldings.

This opportunity does not require any complex technical know-how, yet it requires deep experience in design, fashion, branding and sourcing of fabrics and accessories which could be achieved through licensing or through the support of local centers of excellence. However, it is important to note here that 86% of Packtech is imported from China which could indicate that China has an advantageous cost position in producing such commodities.

Apart from the high local demand, other competitive advantages for producing Packtech and bags in Egypt include low labor cost since it is a labor-intensive industry, in addition to, the high tariffs reaching 60%. However, there is suspicion of manipulations in the imports invoices to overcome this high tariff rate since there is a large unjustified discrepancy in the imported values of Packtech between the mirror (US\$79.13 million) data and the direct (US\$ 24.12 million) data.

4.1.4 PROTECH

The fourth opportunity is substituting imports of Protech with imports worth US\$43.1 million in 2017. The main imported Protech products were protective wear such as, occupational prevention dress, coated/ rubberized garments, and professional/ sporting garments representing 3%, 2.2% and 1.9% of Egypt's total technical textiles imports respectively. The most attractive is the occupational prevention dress since its growing at a high rate (CAGR 10.5%). This opportunity is also well suited for SMEs because it is mainly cut and sew operations with small capital requirement and high labor intensity.

However, the technical know-how is important in this product group and it is not easy to acquire such know-how because it is protected by intellectual property rights especially for the high-tech protective wear such as, military, fire fighter suites, clean room suits and others. Moreover, protective wears are different from regular apparel and clothing since they are governed by very precise technical standards, which require technical experts who can translate those standards into product specifications, validation and certification.

Egypt's imports of Protech comes from different partner countries, such as China, Germany and Italy, which indicates that there is a diverse demand for high-tech and low-tech protective wear. The raw material for low-tech protective wear is available in Egypt such as cotton woven fabrics and poly-cotton fabrics used in regular work wear, however, the raw materials for the high-tech wear are not available locally and come from international suppliers such as DuPont, 3M, and Teijin.

The main competitive advantages of producing protective wear in Egypt is the high local demand, low labor cost, and the protection by high import tariffs that reaches up to 30%.

4.1.5 MEDTECH

The fifth opportunity is related to Medtech, with imports worth US\$34.17 million in 2017. The main imported Medtech products were catgut/ sutures and textiles hygiene products representing 2.9%, and 2.8% of Egypt's total technical textiles imports respectively. The imports of wound closure such as catgut and surgical sutures have been growing at a high rate (CAGR 11.6%). This opportunity is suitable for medium sized medical engineering companies due to the medium capital requirement and production capacity.

However, the technical know-how is very critical in this product group and it is usually acquired through years of experience, R&D, or through licensing. Moreover, product certification is mandatory, and products should be approved by the Ministry of Health and Population.

Egypt's imports of wound closure comes primarily from Germany, which reflects the level of technical complexity of the products, while, textile hygiene comes primarily from Saudi Arabia which has a strong industry based on polymer laid nonwoven fabrics and end-products (hygiene). The raw materials in both cases are very diverse and some of them can be sourced from Egypt while others are sold by few international companies.

The only competitive advantage for producing the medical textiles in Egypt is the high local demand.

4.1.6 CLOTHTECH

The sixth opportunity is substituting the imports of Clothtech, with imports worth US\$26.89 million. The main imported Clothtech products are slide fasteners, elastic tapes >5%, and elastomer representing 2.4%, and 2.1% of Egypt's total technical textiles imports respectively. This slide fastener opportunity is suitable for medium sized companies, especially for nylon zippers, whereas, the metal zippers require higher technical know-how in metal alloys which is proprietary. On the other hand, the elastic tapes opportunity is very well suited for MSMEs provided they receive appropriate technical and business assistance.

The most important competitive advantages for producing clothing accessories in Egypt are low labor cost and high local demand which is expected to radically increase in the coming years. There is also renewed interest in Egypt as an outsourcing country for readymade garments, in addition, to the large investments by Chinese companies in the readymade garments sector in Egypt.

4.2 EXPORTS EXPANSION

A summary of the main exported technical textiles is listed in Table 57. The table lists the exports starting by the highest in value. The high exports values may indicate advantageous exporting position with potential for expansion. Moreover, exports of raw materials may indicate absence of downstream operations, which is an opportunity for deepening the industry and increasing the added value.

TABLE 57 SUMMARY OF EGYPT'S MAIN EXPORTED TECHNICAL TEXTILES IN 2017

Category	Exported item	Value in 2017 US\$ million	CAGR 2013- 2017 (%)	Share of total exports (%)
Medtech	Hygiene products	243.07	-	32.58
	Adhesive dressings	40.13	-1.22	5.38
Glass fiber yarns and fabrics	Glass roving	88.76	664.39	11.90
	Glass threads chopped	41.64	638.50	5.58
	Glass fiber mat	21.49	367.04	2.88
	woven glass roving	8.64	56.30	1.16
Sportech	Tracksuits	147.18	170.50	19.73
Polymer laid nonwoven	Man-made filaments < 25 g/m ²	52.46	73.17	7.03
	Man-made filaments 25- 70 g/m ²	13.70	331.46	1.84
Protech	Coated/ rubberized garments	15.00	47.29	2.01
	Professional or sporting garments	8.40	-11.30	1.13

4.2.1 MEDTECH

There is a very large export market for Egyptian Medtech, with exports worth US\$283.1 million in 2017, especially among textiles hygiene products representing 32.6% of Egypt's total technical textiles exports. This indicates a very good opportunity for exports expansion, which is mainly suited for large and medium sized companies. Textile hygiene products include, disposable diapers, feminine care products, wipes, nursing pads and others. The capital requirement for hygiene production depends on the production capacity and throughput, which is a very important factor for competing in this market. Majority of diapers and feminine care producers in Egypt are big international companies with large economies of scale.

The technical know-how for this opportunity is usually transferred by the machinery suppliers. Majority of textiles hygiene products use polypropylene nonwoven SMS as the main raw material which can be sourced locally from companies such as Gulsan Egypt and Pegas Egypt. The main export markets are the Middle East and Africa.

The main competitive advantages for exporting the textile hygiene product from Egypt is its strategic position and proximity to growing markets in Africa and the Middle East, in addition to, the preferential trade agreements with those regions. This is supported by the increased expenditure and reform of the health care systems in those regions and increased awareness on personal hygiene.

4.2.2 GLASS FIBER YARNS AND FABRICS

There is a large production of glass fiber yarns and fabrics, with exports worth US\$160.53 million in 2017, representing 21.5% of Egypt's total export of technical textiles. This indicates a surplus of local raw materials and absence of downstream processing of glass fibers into end-products. The production of glass fibers is a very good opportunity that is suited for large companies due to the large capital requirement that can reach up to US\$300 million and production capacity up that can reach up to 150 KTA. However, downstream conversion of glass fibers into end-products is very well suited for SMEs because it is labor intensive and in most cases doesn't require large capital investments, yet it requires technology transfer and training.

The main competitive advantage of producing glass fiber yarns and fabrics in Egypt is the abundance of the silica sand in high degree of purity which is considered the main precursor for glass fiber formation. Moreover, the low energy cost is an important advantage, because the production process requires huge amounts of energy to melt down the silica sand at a temperature that reaches up to 1400°C. Another

important advantage is the proximity of Egypt to major international markets in Europe and Turkey and the Euro I trade agreement which grants duty-free access.

Currently, Egypt exports glass fibers as raw materials due to the lack of downstream converters to end-products. There are very few manufacturers of glass fiber pipes which is used in limited production of yachts and boats in addition to some use in reinforcement of cement for construction. However, there is a wider spectrum of opportunities for converting glass fibers into numerous end-products especially in manufacturing of wind turbine blades for wind energy production which is a fast-growing market in Egypt and in the neighboring countries. According to a report published by WindEurope, wind energy now provides 14% of Europe's electricity.

4.2.3 SPORTECH

Another opportunity is related to the large exports of Sportech, with exports worth US\$147.18 million in 2017. The primary exports were sportswear to the United States, and Europe representing 19.7% of Egypt's total technical textiles exports. These exports are growing very fast (CAGR 170.5%), which indicates high potential for exports expansion, which is a suitable opportunity for MSMEs with low capital requirement and high labor intensity.

Egypt is an attractive outsourcing country for sportswear to Europe and USA and many readymade garments companies were able to integrate into this value chain. The fabrics used for sportswear production are mainly knitted fabrics that can be sourced from local producers such as El-Kotb Textiles, Salamtex, Cloverbrook Textiles Egypt and other local manufacturers.

The Textile and Apparel Export Councils have been supporting the companies interested in outsourcing through organizing a specialized exhibition for this purpose called Destination Africa, and organizing an industry conference for educating the companies on how to comply with the trade regulations of the EU and USA.

The main competitive advantage for exporting sportswear from Egypt include low labor cost, availability of free zones, proximity to international markets, and preferential trade agreements (QIZ and Euro I).

4.2.4 POLYMER LAID NONWOVEN

Egypt also exported US\$66.6 million of polymer laid nonwovens in 2017, mainly in low gsm representing 8.9% of Egypt's total exports of technical textiles. This indicate that there is not only opportunity for imports substitution but also opportunity to expand to the export market. This opportunity is mainly suited for large companies with access to capital as mentioned earlier in section 4.1.1 and big export markets. such as Africa and Turkey. It is important to note here that there is a difference in quality and type between the imported and exported polymer laid nonwovens.

4.2.5 PROTECH

Another opportunity is related to the export of Protech, with exports worth US\$23.4 million in 2017. The main exported products in this group is coated/ rubberized garments and professional/ sporting garments representing 2% and 1.1% of Egypt's total exports of technical textiles respectively. The high growth in exports (CAGR 47.3%) indicates a high potential for exports expansion, yet there is a need for more investigation to confirm this conclusion. Such opportunity is very well suited for MSMEs as discussed earlier in section 4.1.4.

The main export markets were Sudan, United States, and Spain. The main competitive advantages for exporting Protech from Egypt include, low labor cost, proximity to growing markets and preferential trade agreements.

III. EGYPT'S TECHNICAL TEXTILES VALUE CHAIN SWOT ANALYSIS

In this section different members of the value chain are identified and a total of 27 interviews were conducted to analyze the strengths, weaknesses, opportunities and threats pertaining to the technical textiles value chain in Egypt. The interviews were driven by the findings from the secondary research in order to get more insights. The data from the interviews were scored and ranked based on frequency of recurrence and listed in order of importance.

3.1 STRENGTHS

From the previous analysis, it is well conceivable that the Egyptian technical textile value chain enjoys some unique points of strength that can support the growth of such industry. More importantly is the low cost of doing business as Egypt is considered one of the countries with the lowest cost of labor despite the recent increase in wages. The labor cost is an important factor that governs the cost of production especially in technical textiles industries with high labor intensity such as weaving, knitting, and cut & sew operations. Similarly, the cost of utilities in Egypt is considerably low at 0.03 US\$/kWh²⁷. This is an important cost factor, especially in industries that consume a lot of energy, such as melt spinning of polymeric and glass fibers and polymer laid nonwovens, and industries that consume a lot of water, such as, functional chemical treatment and finishing of technical fabrics. While the industry in Egypt is dominated by small and medium sized companies, there are few large companies with economies of scale that can compete with the global rivals.

Another competitive advantage is the availability of reliable suppliers of commodity raw materials and auxiliaries. Egypt has local production of polypropylene and polyethylene polymers from Orientals Petrochemicals Co. in Suez and SIDPEC in Sidi Krer, and TAHRIR Petrochemicals Complex which will include two polypropylene production facilities²⁸. However, Egypt lacks converters that transfer the polymers into fibers and some polymer companies only manufacture for their own business or lack the quality and capacity. In addition, there is several local producers of various types of nonwovens, such as Gulsan and Pegas in 6th of October City. There is also local production of glass fibers by Jushi Egypt for Fiberglass Industry in Suez, in addition to, a long tradition of cultivation and processing of flax fibers. Those raw material are used in a wide range of technical textiles end-products.

Moreover, the industry in Egypt is very diverse, with a wide range of product offerings which can cater to the diverse local demand of technical textiles. There is large local demand for technical textiles in Egypt, including, Medtech, Clothtech and Buildtech, which is an important point of strength that can support the growth of such industry. The imports of technical textiles in Egypt in 2017 was US\$456 million.

Egypt has promising potential for exporting technical textiles. It has a strategic geographic location with proximity to main markets consuming technical textiles such as EU, and Turkey, in addition to emerging markets such as Arab Gulf countries and Africa. The country enjoys a unique package of preferential trade agreements which makes it an ideal sourcing platform for technical textiles, semi processed and end-products. Moreover, it has several industrial free-zones for export-based companies that are spread all over the country. Egypt also has a special export subsidy program and draw back system to support local manufacturers in accessing international markets.

²⁷ GlobalPetrolPrices. (2019). Egypt Electricity prices. Retrieved June/30, 2019, from https://www.globalpetrolprices.com/Egypt/electricity_prices/

²⁸ Egypt Oil and Gas Newspaper. (2018). TAHRIR Petrochemicals Complex. Retrieved June/30, 2019, from <https://egyptoil-gas.com/features/tahrir-petrochemicals-complex/>

Egypt also has competitive advantage in the ability to acquire the technical know-how independently. In most cases, Egyptian firms rely on acquiring the know-how from machinery manufacturers as part of the supply contract, while companies that are affiliated with or a subsidiary of an international group of companies rely on their headquarters for the transfer of the technology. Similarly, the ability of providing technical training to build the capacity and technical expertise of employees is important for industry success. This type of technical training is also provided by machinery manufacturers and for affiliated companies by their headquarters. Egypt has local representatives and agents of major technical textiles machinery and chemical auxiliary manufacturers. Those local agents often provide technical support during installation, startup and trial runs, and they also help in training and providing after sales services.

Egypt also had good infrastructure in terms of power, utilities, IT, roads, and ports. In recent years the government has been working to improve this infrastructure to support modern industries such as the technical textiles and to attract direct foreign investments such as the Chinese and Russian textile cities. Moreover, Egypt's banking system has improved significantly and they now offer a wide range of modern services such as the internet banking. There are also different banking programs that finance the upgrading of machineries and export development.

Finally, the country has several research institutes and testing bodies that can perform basic tests on technical textiles, such as the textile export consolidation fund, the Egyptian Organization for Standardization, and National Research Center. Further there are some local representatives of certification bodies that can help with product certification such as OETI Laboratory (Oekotex).

3.2 WEAKNESSES

Despite the competitive advantages, Egypt suffers from prevailing points of weakness that are preventing the technical textiles industry from reaching its full potential. Most significant is the low technical expertise and lack of proprietary technology. Most of the companies in Egypt rely on the machinery manufacturers in providing the technical know-how, this model puts them in strong competition with other companies who use the same machinery with no competitive advantages. One of the key competitive advantages in the technical textile business is having a unique product that is based on a proprietary technology, which comes from extensive investment in R&D and product development activities. This is not the case in Egypt. There is a lack of specialized education in technical textiles and nonwovens and a lack of experts who can provide technical support to the companies. Moreover, there is a general lack of awareness on technical textile materials, applications, and benefits and a high rate of turnover in employees.

Another weakness is the lack of suppliers of high-performance and specialized fibers, yarns, and fabrics. Advances fibers such as, carbon fiber and aramid (Kevlar® and Nomex®) fiber, are key components in a wide range of technical textiles applications, especially protech. There may be cases that local suppliers would have access to these types of raw materials but they might have inconsistent quality and delayed deliveries.

In most cases the capital investment in technical textiles in Egypt is high, due to the high capital cost of machinery especially in upstream processes. The severity of this problem has increased with the devaluation of the EGP against the USD since most machinery is imported in USD. Moreover, the banks' high interest rates are making this problem even more complicated. Further, most of the technical textiles companies in Egypt are small and medium sized with low economies of scale.

Despite the availability of testing and certification centers for basic textile tests, there is lack of testing facilities that can perform advanced testing and validation for technical textiles such as anti-microbial activity, flame retardant, porosity, filtration efficiency and others. This is coupled with the lack of local standards for technical textiles, which results in a high degree of uncertainty in the market.

Textile care is an important factor when dealing with textile goods, however, when it comes to their care, it requires specialized industrial laundries to be able to maintain the durability of the functional treatments and coatings. The lack of industrial laundering in Egypt is one of the key points that is limiting the potential of wearable technical textiles in Egypt.

Finally, the low local demand in specialized sectors makes it very difficult to do business in such sectors such as the, the automotive sector. Egypt produce less than 100,000 vehicles per year, hence, the local demand for automotive textiles (Mobiltech) is very low.

3.3 OPPORTUNITIES

By looking at the technical textiles value chain in Egypt and globally, one can identify plenty of opportunities that can support the upgrade of such value chain in Egypt. There is a very high potential for growth in the local markets driven by the increasing demand for technical textiles locally. This increasing demand is mainly due to heavy government investments in infrastructure projects that consume geotextiles in roads, bridges, and canals. There is also high demand from the booming construction and building industry that consumes thermal insulation, moisture insulation membranes, safety mesh and many others. Further, the demand in the healthcare sector is increasing with high potential for growth in medical textiles and nonwovens. The issuance of mandatory standards or legislations could increase the local demand even higher, especially in the healthcare, construction, and protective clothing department. The increasing local demand is not accompanied by a growth in the local industry, hence why Egypt relies on imports to fulfill this demand. The size of the local industry is still very small, and the competition is low, hence there is very good potential for the local industry to grow and substitute the imported goods.

Not only is there potential in the local market, but there is also high potential in the export markets. There is increasing demand in the neighboring regions such as the Arab Gulf countries and African countries and there are government incentives to increase exports. Furthermore, there is a lack of regional competition which gives Egypt a strong position in the regional market.

This high potential for growth of the local industry is also supported by the numerous government programs designed to support and qualify small investors. The technical textiles industry is characterized by its high profit margins when compared to conventional textiles, and there is a very good cost advantage for local manufacturers. Furthermore, some of the technical textiles sectors have very high tariff rates, which provides protection against the low-cost competition from Asia where tariffs can reach up to 60% for textiles such as Packtech, and in most of the wearable technical textiles up to 30%. It is expected that success stories coming from this industry will encourage more companies to invest in this industry.

Finally, there is potential to attract direct foreign investments in this industry. The government has been building new textile cities, such as the Chinese and the Russian cities for this purpose. The General Authority for Investment and Free Zones (GAFI) concluded the contract for the establishment of the first textile city in the Free Zones System in Minya Governorate. The project is funded by a Chinese company which has agreed to fund the new city, which has an investment of US\$324 million²⁹.

Moreover, the low exchange rate and the low manufacturing cost in Egypt makes it a very attractive destination for offshoring. In addition, the trade war between the United States and China will force many Chinese companies to move their companies to Egypt to benefit from the QIZ and rule of origin.

²⁹ Egypt Today. (2018). Chinese Company to fund new textile city in Minya by \$324M. Retrieved June/30, 2019, from <https://www.egypttoday.com/Article/3/63560/Chinese-Company-to-fund-new-textile-city-in-Minya-by>

3.4 THREATS

There are some emerging issues that are threatening the technical textiles value chain in Egypt, one of which is the increasing competition in the local and export markets. The competition in the local market is mainly from low-cost imports of technical textiles from countries in South East Asia, such as China and India. In addition to, the competition from the foreign investments in the technical textiles sectors in Egypt in areas such as, nonwoven and technical fabric production. Moreover, the increase in number of small local companies may lead to overcapacity. There is an increase in competition in the export markets from other attractive outsourcing countries especially in wearable technical textiles such as Ethiopia, Jordan, Vietnam, Bangladesh and others. Turkey is a key player in the global technical textiles market and it occupies a strategic position in terms of its proximity to Europe, familiarity with the market, and strong connections. The North African countries, such as Tunisia and Morocco have similar positions and are considered strong competitors in the export markets. There is also competition that comes from the conventional textile materials in terms of price. This can be seen in disposable diapers vs. washable diapers, and single use medical textiles vs. washable medical textiles.

Another threat is the ongoing changes in the business environment, such as the political instability in the region that is affecting the exporting companies to Sudan, Libya, Turkey, Qatar and Algeria. The increasing prices of utilities and energy could dilute the advantage of the low cost of doing business in Egypt and can significantly harm the companies with high energy consumption such as the nonwoven and glass fiber industries. There is also instability in the investment laws. There are also restrictions on exporting and importing specific high-performance materials to Egypt. This control is imposed on fibers and fabrics made of carbon, aramids, and others. Such restrictions are due to Egypt's refusal to sign Chemical Weapons Convention (CWC) treaty³⁰. It is important to also note that the banks interest rates have been changing and this might create uncertainty in future investments. Other threats pertaining to exporting companies include, appreciation of the EGP against the USD which might erode the cost advantage of local exporting companies. In addition, any changes in the Egypt's free trade agreements, such as QIZ, or removal of export subsidy will significantly affect the exporting companies especially those making wearable technical textiles. Furthermore, removing the trade barriers and import tariffs will significantly harm local producers of technical textiles end-products.

Finally, the fast-technological changes, an increasing protection on know-how and proprietary technologies and the difficulty in the ability to acquire the technical know-how, is making local companies more reluctant to investing in this sector.

³⁰ The Jerusalem Post. (2009). Egypt Refusing to Sign WMD Treaties. Retrieved June/30, 2019, from <https://www.jpost.com/Middle-East/Egypt-refusing-to-sign-WMD-treaties>

3.5 FINDINGS OF THE SWOT ANALYSIS

TABLE 58 SUMMARY OF SWOT

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> ● Low cost of doing business <ul style="list-style-type: none"> ○ Low labor and utility cost ○ Economy of scale ● Reliable suppliers of commodity raw materials <ul style="list-style-type: none"> ○ Availability of raw materials and auxiliaries ● High local demand of diverse products ● Strong exporting environment <ul style="list-style-type: none"> ○ Preferential free-trade agreement ○ Strategic geographic location for export ○ Availability of free zones ○ Export subsidy program ○ Draw back system ● Possibility to acquire technical know-how <ul style="list-style-type: none"> ○ Technical know-how and technology can be transferred ○ Availability of technical training ○ Availability of machinery agents and representatives ● Good Infrastructure <ul style="list-style-type: none"> ○ Roads, IT, ports, industrial zones, etc. ○ Good banking systems and financing programs ○ Part of the government strategy ● Availability of Basic Testing and certification <ul style="list-style-type: none"> ○ Availability of international standards ○ Availability of testing bodies for basic tests ○ Availability of certification bodies 	<ul style="list-style-type: none"> ● Low technical expertise <ul style="list-style-type: none"> ○ Lack of technical know-how ○ No proprietary technology (R&D) ○ No technical or specialized educational programs ○ Lack of technical experts ○ Lack of awareness and resistance to change ○ Lack of trained and skilled labor ○ Limited design or development capabilities ○ High turnover in employees ○ Negative work attitude and culture ● Lack of suppliers of high-performance raw materials <ul style="list-style-type: none"> ○ Unavailability of high-performance and specialized raw materials ○ Local suppliers lack consistent quality and deliveries ● Large capital investment <ul style="list-style-type: none"> ○ Expensive machinery and equipment ○ Small scale companies with high cost structure ○ High bank interest rates ● Lack of advanced testing and certification <ul style="list-style-type: none"> ○ Lack of local standards and testing facilities ● Lack of industrial laundering and care ● Bureaucracy
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> ● Growing local market demand <ul style="list-style-type: none"> ○ Low local competition ○ Legislations and standards will increase consumption ○ Opportunity for import substitution ● High export potential <ul style="list-style-type: none"> ○ High demand in neighboring regions ○ Government strategy to increase export ○ Lack of regional competition ● High potentials for industry growth <ul style="list-style-type: none"> ○ High profit margins ○ Protected local industry ○ Qualifying programs for small investors ○ Success stories will encourage investors ○ Cost advantage ● Potential foreign investment <ul style="list-style-type: none"> ○ New industrial areas ○ USA-China trade war ○ New Chinese investments ○ Low exchange rate 	<ul style="list-style-type: none"> ● Increasing competition <ul style="list-style-type: none"> ○ From other outsourcing countries ○ From China and India in local market ○ From local small companies ○ From foreign investments ○ From conventional textile materials ○ From Turkey in export to EU ● Changes in the business environment <ul style="list-style-type: none"> ○ Political instability in the region ○ Increase in utilities and energy prices ○ Instability in investment laws ○ Export and import control on high-performance materials ○ Unstable bank interest rate ○ Appreciation of EGP against USD for exporters ○ Removal of local import tariffs ○ Removal of local export subsidy ○ Changes in the trade agreements ● Technological changes <ul style="list-style-type: none"> ○ Fast technological changes ○ Increase in proprietary technology

3.6 REQUIRED INTERVENTIONS

#	CONSTRAINTS AND BOTTLENECKS	REQUIRED INTERVENTION	RESPONSIBLE ENTITY/ ASSOCIATION
LOW TECHNICAL EXPERTISE AND LACK OF PROPRIETARY TECHNOLOGY			
1.1	Lack of technical know-how	<ul style="list-style-type: none"> Establishment of specialized centers of excellence and competitiveness centers, which can support in technical training, technical consultation and technology transfer. 	<ul style="list-style-type: none"> Ministry of Trade and Industry
1.2	No proprietary technology, since most of the companies in Egypt rely on the machinery manufacturers in providing the technical know-how	<ul style="list-style-type: none"> Establishment of specialized research center and technology incubator, which can support all research and development activities as well as technology commercialization. 	<ul style="list-style-type: none"> Ministry of Trade and Industry Academy of Scientific Research and Technology National Research Center
1.3	There is a lack of specialized education in technical textiles and nonwovens and accordingly lack of experts who can provide technical support to the companies.	<ul style="list-style-type: none"> Update the curriculum of the textiles engineering departments to include a major or concentration on technical textiles. Add special topics on technical textiles in the curriculum of other engineering majors. 	<ul style="list-style-type: none"> College of Engineering, Alexandria University College of Engineering, Mansoura University College of Applied Arts, Helwan University
1.4	There is a general lack of awareness on technical textile materials, applications and benefits	<ul style="list-style-type: none"> Providing awareness and training programs to the textiles' companies in Egypt on the fundamentals, applications and market potential of technical textiles. 	<ul style="list-style-type: none"> Chamber of Textile Industries and the Chamber of Apparel and Home textiles The Federation of Egyptian Industries USAID SEED
1.5	There is a lack of technical labor with the desired expertise and skills set	<ul style="list-style-type: none"> Establishment of vocational training programs, as well as professional educational programs to industry professional in major technical textiles sectors in Egypt, for instance, nonwoven. 	<ul style="list-style-type: none"> Workers University Textile Development Center
1.6	Limited design or development capabilities	<ul style="list-style-type: none"> Establishment of pilot plants and prototyping facilities, to support scaling up of new technical textile developments 	<ul style="list-style-type: none"> Textile Development Center
LACK OF SUPPLIERS OF HIGH-PERFORMANCE AND SPECIALIZED FIBERS, YARNS, AND FABRICS			
2.1	Unavailability of high-performance and specialized raw materials such as, carbon fiber, and aramid fiber, which are key components in a wide range of technical textiles applications, especially protech	<ul style="list-style-type: none"> Create a supply chain training with an emphasis on technical textiles and major global suppliers. Facilitate the importation of high-performance and specialized fibers, yarns and fabrics. Reduce the import tariffs that reaches up to 10% on technical textiles raw materials. 	<ul style="list-style-type: none"> Industrial Modernization Center Textile Export Council Egyptian Customs Authority General Organization for Export and Import Control

#	CONSTRAINTS AND BOTTLENECKS	REQUIRED INTERVENTION	RESPONSIBLE ENTITY/ ASSOCIATION
2.2	Local suppliers might have inconsistent quality and delayed deliveries	<ul style="list-style-type: none"> Provide training programs to local technical textile suppliers on operational excellence, such as, total quality management, lean manufacturing and six sigma. 	<ul style="list-style-type: none"> Industrial Modernization Center Textile Development Center
LARGE CAPITAL INVESTMENT			
3.1	Very high capital cost of machinery especially in upstream processes	<ul style="list-style-type: none"> Encourage direct foreign investment in upstream processes requiring high capital investments. 	<ul style="list-style-type: none"> Ministry of Investment and International Cooperation
3.2	Most of the technical textiles companies in Egypt are small and medium sized with low economy of scale	<ul style="list-style-type: none"> Support the small companies in competing based on a proprietary know-how rather than scale. 	<ul style="list-style-type: none"> Academy of Scientific Research and Technology National Research Center
3.3	High bank interest rates	<ul style="list-style-type: none"> Reconsider the interest rates and make special programs for financing machinery especially for small and medium sized industries. 	<ul style="list-style-type: none"> Central Bank of Egypt Ministry of Finance
LACK OF ADVANCED TESTING AND CERTIFICATION			
4.1	There is a lack of testing facilities that can perform advanced testing and validation for technical textiles, for instance, anti-microbial activity, flame retardant, porosity, filtration efficiency and others. This is coupled with the lack of local standards for technical textiles, which results in a high degree of uncertainty in the market.	<ul style="list-style-type: none"> Develop local standards for technical textiles raw materials and end-products. Upgrade the testing capabilities of local testing institutions. Support the local testing institutes in their accreditation. 	<ul style="list-style-type: none"> Egyptian Organization for Standardization and Quality (EOS). National Institute of Measurement and Calibration Textiles Consolidation Fund.
LACK OF INDUSTRIAL LAUNDERING AND CARE			
5.1	The lack of industrial laundering in Egypt is one of the key points that is limiting the potential of wearable technical textiles in Egypt.	<ul style="list-style-type: none"> Establish centralized industrial laundering centers in proximity to major users of protective clothing and medical apparel. 	<ul style="list-style-type: none"> Ministry of Trade and Industry
INCREASING COMPETITION			
6.1	Competition in the export markets from other attractive outsourcing countries especially in wearable technical textiles, such as, Ethiopia, Jordan, Vietnam, Bangladesh and others.	<ul style="list-style-type: none"> One of the strategic goals of the Textiles and Ready-made Garments Export Council is to encourage outsourcing from Egypt through Destination Africa exhibition and conference. 	<ul style="list-style-type: none"> Textiles and Ready-made Garments Export Council

#	CONSTRAINTS AND BOTTLENECKS	REQUIRED INTERVENTION	RESPONSIBLE ENTITY/ ASSOCIATION
6.2	Competition in the local market mainly from low-cost imports of technical textiles from countries in South East Asia, such as, China and India.	<ul style="list-style-type: none"> Unlike the well-established and mature textiles industry in Egypt, the technical textiles industry is still in its early development stages, and it requires certain level of protection from foreign competitors to be able to grow locally. This could be achieved by increasing the import tariffs on imported end-products, especially on those products that are already being produced locally. 	<ul style="list-style-type: none"> Ministry of Trade and Industry Egyptian Customs Authority General Organization for Export and Import Control
6.3	The increase in number of small local companies might lead to overcapacity	<ul style="list-style-type: none"> Prepare an investment plan for MSMEs in the technical textiles sector to avoid over capacity in a certain stage or product. 	<ul style="list-style-type: none"> Ministry of Investment and International Cooperation
6.4	Competition in the local market from foreign investments in the technical textiles sectors in Egypt	<ul style="list-style-type: none"> Provide subsidy to local producers to be able to compete with foreign investments in technical textiles in Egypt 	<ul style="list-style-type: none"> Ministry of Trade and Industry
6.5	Turkey is a key player in the global technical textiles market, and it occupies a superior position, in terms of its proximity to Europe, familiarity with the market, and strong connections.	<ul style="list-style-type: none"> Focus the Egyptian technical textiles exports on Egypt's complete advantages in this context, for example glass fibers which is made from locally abundant silica sand. 	<ul style="list-style-type: none"> Textiles and Ready-made Garments Export Council
CHANGES IN THE BUSINESS ENVIRONMENT			
7.1	The increasing prices of utilities and energy will significantly harm the companies with high energy consumption such as the nonwoven and glass fiber industries.	<ul style="list-style-type: none"> Focus the technical textiles investments in operations that are less reliant on utilities and energy, such as, wearable technical textiles. 	<ul style="list-style-type: none"> Ministry of Investment and International Cooperation
7.2	Restrictions on exporting and importing specific high-performance materials to Egypt, such as, fibers and fabrics made of carbon, aramids, and others.	<ul style="list-style-type: none"> For a long time, there was control on the trade of high-performance fibers and fabrics due to their possible applications in military and defense. This needs to be reconsidered since nowadays high-performance fibers and fabrics are being used in so many technical applications even more than what is being used by the military or defense. 	<ul style="list-style-type: none"> Egyptian Customs Authority General Organization for Export and Import Control
7.3	The banks interest rates have been changing, and this might create uncertainty in future investments.	<ul style="list-style-type: none"> Bank rates must be stable to help companies in planning their investments. 	<ul style="list-style-type: none"> Central Bank of Egypt Ministry of Finance

#	CONSTRAINTS AND BOTTLENECKS	REQUIRED INTERVENTION	RESPONSIBLE ENTITY/ ASSOCIATION
7.4	Removing the trade barriers and import tariffs will significantly harm the local producers of technical textiles end-products.	<ul style="list-style-type: none"> Since the technical textiles industry in Egypt is still in its early development stages it should remain protected by import tariffs and those tariffs need to be increased and not eliminated. 	<ul style="list-style-type: none"> Ministry of Trade and Industry
7.5	Any changes in Egypt's free trade agreements, such as, QIZ, or removal of export subsidy will significantly affect the exporting companies especially making wearable technical textiles.	<ul style="list-style-type: none"> Support exporters in diversifying their export countries and the associated trade agreements. 	<ul style="list-style-type: none"> Textiles and Ready-made Garments Export Council
TECHNOLOGICAL CHANGES			
8.1	Fast technological changes	<ul style="list-style-type: none"> Regularly educate industry professionals on recent technological changes and innovations in the technical textiles industry, which could be done by technical experts and consultants. Encourage agents/ representative of machinery producers to prepare seminars and workshops on recent technologies. 	<ul style="list-style-type: none"> Textile Development Center
8.2	Increasing protection on know-how and proprietary technologies and difficulty to acquire the technical know-how are making local companies more reluctant to investing in this sector.	<ul style="list-style-type: none"> Encourage technology transfer and licensing through the specialized competitiveness centers and centers of excellence. 	<ul style="list-style-type: none"> Ministry of Trade and Industry

3.7 SUCCESS MODEL: INDIAN TECHNICAL TEXTILES

Transformation from traditional textiles to technical textiles has been the goal of many economies around the world. India is considered one of the main actors in the global textile value chain, the Government of India has launched in 2008 the Scheme for Growth and Development of Technical Textiles (SGDTT)³¹ with a fund of US\$6.41 million. The scheme was composed of three main components: Baseline Survey, Awareness Campaigns and Creation of Centers of Excellence (CoE).

The Baseline Survey was conducted to create a precise and detailed data base of statistics and information of the technical textile sector in India. The Awareness Campaigns included more than 60 awareness programs, seminars and workshops across India. In addition to establishing four Centers of Excellence in four subsectors; BTRA (Geotech), SASMIRA (Agrotech), NITRA (Protech), and SITRA (Medtech). Those centers of excellence provide the necessary support to the industry in terms of testing, training, information, and other services all under one roof.

Apart from the three main components of the scheme, the country has also arranged two Technology Missions on Technical Textiles (TMTT) between the period from 2010 – 2015 which were further extended for two more years from 2015-2017, with a budget of US\$2.77 million. The focus of the first mission was on standardization, establishing common testing facilities with national/ international accreditation, establishing local prototyping facility, and training facility. Based on the first mission four additional Centers of Excellence were established in the areas of Nonwovens, Composites, Indutech and Sportech. Whereas, the focus of the second mission was on providing support to the domestic and export markets of technical textiles, including, support for business start-up, funding for organizing workshops, social compliance, market development support, contract R&D, and establishing Focus Incubation Centers.

Moreover, the country has been promoting the usage of Agrotech and Geotech through creating awareness, setting-up demonstration centers and developing capacities. Furthermore, India has included all the technical textiles machinery under the Technology Upgrade Funds Scheme (TUFS), which provide 10% capital subsidy and 5% interest reimbursement, in addition to, a specified 5% concessional customs duty on machinery.

In terms of infrastructure, the country has established the scheme for Integrated Textile Parks (SITP), which provides the industry with a world-class infrastructure facility for setting up textiles units. Under this scheme the Government of India support the companies in the creation of their company infrastructure in the parks up to 40% limited to US\$8.82 million.

Moreover, India has initiated a project for strengthening database and standards for technical textiles, to support decision making by the government and other industry stakeholders. This project included conducting a base line Survey for Strengthening of Database of Technical Textiles Industry³². In addition to, identification and classification of technical textiles HS codes.

India's model in growing the technical textiles sector has been very successful. The technical textiles sector in India became one of the fastest growing segments of the Indian economy and it is forecasted to witness double digit growth in the coming years. The sector is projected to reach a market size of US\$27.7 billion in 2021³³. Moreover, the Indian industry has now grown into 2,100 producers of technical textiles, with a 5% share of the global technical textiles market. India's success has attracted many international technical textiles player to invest in India, such as Johnson and Johnson, P&G, 3M, DuPont, Freudenberg, Teijin, Ahlstrom, Owens Corning among others.

³¹ Ministry of Textiles Government of India. (2016). Materials on Technical Textiles. Retrieved June/30, 2019, from http://www.texmin.nic.in/sites/default/files/scheme_technical_textile_070116.pdf

³² Office of The Textile Commissioner. (2016). India Technical Textiles Baseline Survey. Retrieved June/30, 2019, from http://www.technotex.gov.in/BSTT_Rev_Final_report%2018042016.pdf

³³ Ministry of Textiles Government of India. (2019). Government of India's Initiatives in Technical Textiles. Retrieved June/30, 2019, from <https://bit.ly/2ZGKrV3>

IV. USAID SEED'S PROPOSED TECHNICAL ASSISTANCE INTERVENTIONS

The USAID SEED Project focuses on strengthening the development of micro, small, and medium-sized enterprises (MSMEs) as well as entrepreneurship. More specifically, the purpose of the project is to increase the employment and income of MSMEs and entrepreneurs, especially those owned by women and youth. One of the tools of the project is to integrate MSMEs and entrepreneurs in progressive VCs.

USAID SEED provides technical assistance, capacity building, and training to business development services and financial service providers to support the growth and expansion of MSMEs in Egypt. The project also offers technical support to help business associations and other groups that help to establish MSME linkages into VCs and to support improved access to the following: essential financing, information, and technology; reducing bureaucratic procedures; creating commercially viable business linkages with MSMEs; addressing policies that impact the ease of establishing and running a business; and expanding and improving public one-stop shops (OSSs) responsible for business registration and licensing.

Within USAID SEED's scope and methodology, a set of interventions are proposed in alignment with key stakeholders that will support MSMEs' integration into the technical textiles value chain. These interventions are recommended for USAID SEED's design and effective implementation in the coming period and are detailed as follows:

- Train and raise the awareness of customs' employees on identification and classification of technical textiles raw materials and end-products according to HS codes to increase the accuracy of foreign trade data.
- Perform feasibility studies for the suggested opportunities for imports substitution, especially those opportunities suitable for MSMEs.
- Support the national incubator specializing in the textile industry at the Delta Research Center of the Scientific Research Academy in Tanta.
- Support the Textile Development Center with expert(s) for capacity building and knowledge transfer for cluster design, new manufacturing technologies, and new material applications to ensure a sustainable, low-cost knowledge transfer, continuous improvement, and growth of MSMEs through their collaboration with the TDC.
- Provide training and awareness programs to the textiles' companies and MSMEs in Egypt on the fundamentals, applications and market potential of technical textiles.

The next steps should be the design and implementation of these interventions with the coordination of USAID SEED partners to effectively integrate the technical textiles MSMEs into the value chain.

ANNEXES

ANNEX A: LIST OF MAJOR TECHNICAL TEXTILES PRODUCERS IN EGYPT

A.1 LIST OF MAJOR TECHNICAL FIBERS AND YARNS PRODUCERS IN EGYPT

COMPANY NAME	ADDRESS	WEB ADDRESS	SPECIALIZATION
Middle East for Spinning and Weaving (star yarn)	Block 12007, from 500 Street, from 90 Street. El Obour	Staregypt.com	Sewing yarn
Chich Yarn	Unit 14, Block 12010, Industrial Zone, Al Obour City	N/A	Sewing thread
Al-Tawfik	Unit 3, Block 20028, First Industrial Zone, Al Obour City	eltawfikyarns.com	Polypropylene Yarn
Al Sonbolah	45 El Nasr Street, Shobra El Khema		Polypropylene Yarn
Coats Egypt	Industrial Area Zone B3, Plot 78, 10th of Ramadan City	Coats.com	Technical Sewing thread
Leena Yarn	Industrial Area Zone A1, 10th of Ramadan City	leena.com.eg	Polypropylene Yarn
Banna Linen	Tanta City, end of El Galaa St., Farouk Bridge, Cairo- Alexandria Agricultural Road	bannalinen.com	Flax yarn
El Sisi For Spinning, Manufacture, Import & Export El-Sissi Tex	Ezbet Dawood, Shabora Mills, Zefta Center, Gharbia - Egypt	N/A	Flax Fibers: Flax Spools, Silver
Linen Egypt Company for Spinning & Textile	Free Zone Shebin El Kom-Menoufia	linenegypt.com	Flax Yarns & Twines: Hemp - Synthetic - Stockinet - Cordage
Egyptian Co. for Flax & its Products	Meet-Hebash El- Baharia. Tanta	egyflax.com	Scutched, Hackled Flax and Flax Yarns
Egyptian Industrial Centre	Mubarak Industrial Area, Zone 2 - 97,98,106, Quesna , Menoufia	eicflax.com	Flax yarns
Misr El Nour Co. For Plastic Industries	10th of Ramadan City the Industrial Area B3.	misrnour.com	Polypropylene Yarns
El Nawawy Seeds & Oils	204/1/A 3rd industrial zone – 6th of October Giza	elnawawycompany.com	Flax Fibers: Raw, Spools& Balls Polypropylene: Tape, Yarns
Jushi Fiberglass Egypt	Third sector of north -west Gulf of Suez economic zone Ain Sokhna	Jushi.com	Glass fibers, roving, strand mats, and woven

A.2 LIST OF MAJOR TECHNICAL FABRICS AND NONWOVENS PRODUCERS IN EGYPT

COMPANY NAME	ADDRESS	WEB ADDRESS	SPECIALIZATION
Hengshi Egypt	Factory No. F8, the third sector, North-West Gulf of Suez. Economic Zone, Ain Sokhna, Suez	egypthengshi.com	Multi Axial Glass fiber cloth
El Shawa Fishing	36 Saad Zaghloul street, Mansoura, Plot 16, Block N, Industrial Zone, El Qantara - Ismailia	N/A	Fishing net and Plastic bags
El Kotb Textiles	Quarter no.9/2, 3rd Industrial Zone. 10th of Ramadan Sharkia	elkotb-tex.com/	Warp Knitting
Salam Tex	Block 13024, Piece 10 - 14 (Intersection roads 100 and 53) Industrial Zone (A) El Obour City 11828	salamtex.com	Warp Knitting
Nile for plastic	Plot 71, Belbeis – 10th Rd, Industrial Zone, Belbeis, Sharkia	nileplasticegypt.com	Shade Net
Al Amir	1st Of Zefta Rd, Ezbet El Nady, off Abou Khalou Automotive Showroom, Gharbia	alamirshade.com	Shade Net
El Tahrir for Plastic	Head Office: 55 Omar Lotfy, Nasr City, Cairo-Egypt Factory: Zefta El-Swaaf Street, Gharbia	eltahrirplastic.com	Shade Net
Al-Shorok for Synthetic Fibers	90 Anabeeb Al-Betrol Street, Industrial Zone, Gesr El Suez, Cairo	al-shorok.com	Shade Net & plastic bags
Haama	140 Sameh Gado St. the 6th Touristic Village, 6th of October City, Giza	haama.com	Nonwoven for thermal and acoustic insulation
Misr Nour	10th of Ramadan City the Industrial Area B3	misrnour.com	Woven Bags
Megapak For Woven Plastic Bags	Sadat City 1St Industrial Zone No. 20	gaberzayed.com	Woven Bags
Lasheen Group	10th Of Ramadan City, 1st Industrial Zone A1	Lasheen.com	PP Woven Bags
Tool Asian Poly-sacks	N/A	egypt.woven-fabric.com/	Woven Bags
Al-Ahram Group	49 A – 6 Industrial Area, 6 of October	alahram-egy.com	Woven Bags
Woven Bags	Egypt P.O. Box 1639, 10th of Ramadan City – 44637	apws.com.eg/	Woven Bags
Arabian Milling & Food Industries Co.	New Borg El Arab 3rd Zone Block 21 – Alexandria	arabian-milling.com	Polypropylene woven Bags
M.C.I Egypt (Fayek Abu Helika & Co.)	Belbeis Desert Road, Cairo - Belbeis Kilo 12	mci-egypt-canvas-tents.com	Overlay Fabrics - Decks - Tents

COMPANY NAME	ADDRESS	WEB ADDRESS	SPECIALIZATION
Makarem Tex	Abo Rawash, Industrial Zone, Smart Village Entrance, km 29 Cairo / Alex Desert Road	Makaremtex.com	Needle punching Nonwoven
Egypt Tex	Madinet Al Badrashein, Al Badrashein, Giza Governorate	egyptex.com	Needle punching Nonwoven
Pegas Nonwovens Egypt LLC.	Plot No.O6,O8 in Zone No. 3 at the Northern Expansions Area and its Extension 6th of October City, Giza	pegas.cz	Nonwoven personal hygiene products
El Eman For Synthetic Fibers	El Obour City – 1st Industrial Zone Block no. 13022 / 5	bagourygroup.com	Polyester Fibers – Thermo-Bonding Products - Nonwoven Textiles
Gulsan Egypt For Nonwovens Industry	6 Of October City 11th Neighborhood	www.gulsaneypt.com	Nonwoven Textile For: Hygienic Applications
Egypt CTMC Nonwovens Co., Ltd.	Free Zone Third Area 27/1 North West of Suez Gulf, Egypt Suez	nonwovenegypt.com	PP spun-bonded nonwovens fabric
Egyptian Fibers Company - EFCO	Industrial Zone A 1, 10th Of Ramadan City - Tenth of Ramadan	N/A	Nonwoven carpet
Syrian Company for nonwoven fabrics	6 of October industrial zone, Unit 108	N/A	Spun bond nonwoven
Aptex Group for Industries	Nasr City Free Zone	N/A	Nonwoven lining
Captex Synthetic Turf	4 Talaat Harb Street, Tahrir Square - Cairo	captexst.com	Synthetic Turf
SPUNTEX Company for Engineering Textiles	11 Dahabi St., Roxy Cairo, Cairo 11341 Egypt	spuntex.com	spun bond nonwoven mats
Aqua Misr Co.	1st Industrial Zone, Area 238, St. 40 from St. 3, October City	aquamisr.com	Nonwoven Geotextile

A.3 LIST OF MAJOR TECHNICAL TEXTILES END-PRODUCTS PRODUCERS IN EGYPT

COMPANY NAME	ADDRESS	WEB ADDRESS	SPECIALIZATION
Indutech			
EI-Etehad Co.	6 Harah Al Mezayen, Al-Mousky	Eletheadco.com	Tapes
Hamdy for tapes	15 Port Said Street, Ghamra, Cairo	N/A	Tapes & elastomers
Al-Amanah	43 Sayed Al-Farhaty St., Shobra El Khema, Cairo	N/A	Tapes
Dawleyah Group	Industrial Zone, Al-Robaky, unit 16A, 10th of Ramadan	N/A	Tapes
ALTAWFIK	Unit 3, Block 20028, First Industrial Zone, Al Obour City	eltawfikyarns.com	Polypropylene Tapes
Packtech			
Cairo Plast Company	Industrial Area - Ataka - Suez - Egypt Second Industrial Zone - Badr City - Cairo	cpcplast.com	Heavy Duty Bags - Agricultural Tunnels
Egyptian International Co. for Sacks & Animal Feed - Alfa Star	Badr City, 4th Industrial Zone, Block 14-16-18 Cairo	alfa-bgroup.com	Packaging Textiles: PP Woven Bags
El Nilein for Rafia Bags Co.	Industrial Zone B 4, 10th Of Ramadan City - Tenth of Ramadan	N/A	PP Woven Bags
El-Araby Farghaly for Plastic Refills	3rd Industrial region A2-10th of Ramadan City	elaraby-af.com	Plastic Refill Bags
Kalyoub Factory for Woven Plastic Packing - Kalypack	El-Aagam Estate - Marine Railway – Qalioub	N/A	PP Woven Bags
Misr El Hegaz For Vinyl Compound & Packing Materials	10th of Ramadan City, Industrial Zone no. A1	misrelhegaz.com	PP Woven Bags, Jumbo bags, PP Woven Fabrics, PP Yarns
Sealed Bag for Sacks	10th Of Ramadan-Industrial zone A6-Al-Sharkia	sealedbag.com	Woven PP Bags
Sotir Industry - Fanous Jute	Industrial Zone 6A - Piece 40 - 10th of Ramadan City	N/A	Plastic & Jute Bags
United Engineers Co. For Plastic Industries. UniPlast	Badr Industrial City, Fourth Area, Khofo St., Land 3 & 4 & 5 & 6	uniplast-eg.com	PP Woven Sacks
City Nile Plast	4th Industrial Zone -Area I 3, Block D, 6th of October City	N/A	PP Woven Bags
M.S for Plastic Industry & Trade	El-Obour City - Piece no.3-Block 27012 - Industrial Zone "B-C"- Qalyubia	msgroupeg.com	PP Woven Bags
Agrotech			
Canal Company for Ropes Natural & Synthetic Fiber Products	Port Said, Custom's Zone	canalrope.com	Sisal, Manila, PP, PE, PA Yarns & Twines – Ropes and woven bags

COMPANY NAME	ADDRESS	WEB ADDRESS	SPECIALIZATION
Al-Hegaz Company for Twines and Ropes - Hassan Ads	Nahya Al-balad Entrance, Saft Al-Laban Road	al-hegaz.com	Twines, ropes and threads (plastic, linen, sisal, cotton, and silk)
Al Amir Shade Net & Protection	1st Zefta Rd, Ezbet El Nady, Gharbia	alamirshade.com	All types and colors of shade and protection nets
El Tahrir for Plastic	Zefta El-Swaaf Street, Gharbia	eltahrirplastic.com	All types and colors of shade and protection nets
Protech			
Alamal	7 El Sayed El Beblawy Street. and Sheriff, Abdeen, Cairo	alamaluniform.com	Uniform
Apex	29 Hegaz Street, Merryland, Cairo	apexscrubs.com	Medical Wear
Medic Egypt for Medical Clothes LP	4 Mazloun St., Bab El Louk, 11511 Cairo	medic.com.eg	Medical Disposable Wear
Green star	80 El Daher, Zehni Street, Cairo	N/A	Uniform
Zawam Trade & Export	2 Ben El-Seirag St., Bab El-Sheiria El-Azhar, Cairo	N/A	governmental authorities Uniform
Style Group	8 Youssef El-Zeini St. Abbasia Cairo 1535	stylegroup-uniform.com	Uniform
HM Uniform	17 Terad El-Nil, Nile Cornish	Hmtrade.com	Uniform
TM Uniform	King Faisal St., El Kom El-Akhdar Station, End of Aly Shiha St.	tmuniform.com	Medical and industrial uniform
Energy Serve Uniforms	11 El Obour Building, Salah Salem St., Cairo	energyserve.net	Uniform , PPE & First Aid
Collection	8883 Al Forqan Street from No.9 Street, facing Al-Mokatam Al Takhassossi Hospital behind Mokhtar Pharmacy, Al-Mokatam, Cairo	collection-eg.com	
Level Collection	1.2 First Industrial Zone, Badr City	Levelcollection.com	Uniform
New Orex	12 Mohamed Shelbeyah, Ramsis, Cairo		Uniform
Waleed Uniform	27 Kasr El-Nile, Cairo	Waleeduniform.com	Uniform
UniTex	7 El Raseedi St., Off Kasr El-Eini St. - Cairo	Unitexegypt.com	Medical wear
ElWafa	Block 52, Second Industrial Zone, 6th October City, Giza	Elwafa.com	Socks
Bimbo for readymade garment	12 El Karamah St., Terat El Zomor, Haram, Giza	Bimbo-clothing.com	Uniform
Coquette for Clothes & Uniforms	11 Khatem Al Morsaleen, Meatemdeyah, Ard-El-Lewa, Giza	N/A	Uniform
El-Dawlia Clothes	First Industrial Zone, El-Obour, Block 20025, Unit 9, Cairo	N/A	Uniform
Canary Uniform	Unit 10, 900 Street, Qalyubia, Giza	N/A	Uniform
Gabr for Socks	6 Kenesah El Debanah Street, Raml Station, Alexandria	N/A	Socks

COMPANY NAME	ADDRESS	WEB ADDRESS	SPECIALIZATION
Nouh Junior	Km 31, Sherbini St., Amiria, Alexandria	nouhjunior.com	Uniform
Sportech			
Stitches International	4 Road 11, Nasr City, Free Zone Cairo	N/A	Sportswear
T.I.E for sportswear	7 5th street Block G Free Zone, Nasr City	N/A	Sports wear
Delta Galil	Free Industrial Zone, Nasr City	deltagalil.com	Sportswear
Embee International Industries	Public Free zone - Ismailia	embeegroup.com	Sportswear
Cloverbrook	Free Industrial Zone, Nasr city	Cloverbrook.com	Sportswear
International Textiles Nounou	Industrial Zone A1, 10th of Ramadan	nounoubros.com	Sportswear
Comet	4 Dr. Mahmoud St., Gamal Abdel Nasser, Alexandria	N/A	Swimwear
Alriadi Sports	64 Al Bustan Street- Abdeen, Cairo	Alriadisports.com	Sports and Swimwear
Nahdet Misr factory	25 El Masreen St., El-Gamaleya, Qism El-Gamaleya, Cairo	N/A	Sportswear
Jade Textiles Egypt	Industrial Zone 3rd Borg El Arab New - Piece 4 - Plot 9	jadeapparel.com	Training Suits - T-Shirts
Venecia Sport Wear	Al Basatein 1st Industrial City Zone 1206 Cairo	N/A	Sportswear
Genedi Company for Garments	3rd Industry Zone – 6 October City pcs. N. 48	genedi-eg.com	Training Suits Sportswear
Dice Sports and Casual Wear Factory	5 Anabib El Petrol St - Industrial zone-end of Gesr El Suez - Cairo	dicesfactory.net	Training Suits - Sportswear
Stitches International Clothing. Co Factory	11 St. - Public Free Zone for Investment - Nasr City - Cairo	stitches.cc	Training Suits
Al-Naseer Textile	Unit 6, Block 20027, Obour City, Cairo	N/A	Sportswear
Divers Fashions	km21- Alex-Cairo Desert Road- Alexandria	diversfashions.com	Sportswear
El - Tahrir Industry	Street No. 10 next to El Matafy - Alexandria Free Zone	Rugbyofegypt.com	Sportswear
Velocity Jeans Egypt	Public Free Zone, Ismailia	voguevelocity.com	Sportswear
CM Sport	28 El Ekhllass Street, Ezbet Hegazi, Semouha, Alexandria	cmsport.net	Sportswear
Future Fashion For Ready Made Garments	1st Industrial Zone, 6th Of October City, Block 92, Giza	futurefashion-eg.com	Sportswear
Egyptian Garments – JET	14 Shortet El-Zeitoun St. Zaytoun - Cairo	N/A	Sportswear
El Hennawy Tex	El Ghareb - Ashmon – Menoufia	N/A	Sportswear

Mobiltech			
Mondial Co. For Fiber & Carpet Industries	Ramleya Village, Tanta	N/A	Polyester Staple Fibers - Automotive Carpets
EGYPTEX (Mahmoud El-Tallawi)	Jazeeret El-Badrashein, El-Badrashein, Giza	Egyptex.com	Geotextile - Automotive Nonwovens - Endless Belt Expansion Joints - Air Filters - Air Slide Cloth Fluidized Cloth - Industrial felt
Oekotech			
International Technical Textile Industry	6th of October City – Zone 4th. street 57 no:40	itti.site/en/	Filter Bags for dust collector, Air Slide Bands, Woven filter cloths
Buildtech			
GlassRock Insulation Company S.A.E	7TH District, Area 7057 7059, Sadat city, Menoufia, Egypt.	glassrock.com.eg	Glass and rock wool for thermal and acoustical insulation
Al-Alamia for Rockwool (ROCKAL)	Km 17.5 Belbeis Desert Road, El-Obour	rockal.org	Glass and rock wool for thermal and acoustical insulation
BITUNIL	Merghem - Al Max, Alexandria	bitunil.com	Bitumen Membranes for roofing and waterproofing
Inumat	Tamouh - Giza - Km 14 - Upper Egypt Road	inumat.osman.net	Bitumen Membranes for roofing and waterproofing
Modern Waterproofing Group- Modern Bitumode	Plot 59, 6th Industrial Zone, Badr City	bitumode.com	Bitumen Membranes for roofing and waterproofing
International Company for Insulation Technology- Insutech	A6 East 31 & 32, 10th of Ramadan City	insutech-eg.com	Bitumen Membranes for roofing and waterproofing
Medtech			
Taisier Med	1st Industrial Zone, Block I3023 St. 100, Building 8, I I828 Obour City	taisiermed.com	Manufacturer of absorbable and non-absorbable surgical suture & non-absorbable and partially absorbable hernia mesh
P&G	6th October Industrial City	pg.com	Disposable diapers and feminine hygiene pads
Unicharm	10th Of Ramadan, El Sharkia	unicharm.com.eg	Disposable diapers and feminine hygiene pads
Hayat Kimya	Ataqah, Suez Governorate	hayat.com.tr	Disposable diapers and feminine hygiene pads

ANNEX B: HS CODES OF ARTICLES USED FOR CONVENTIONAL TEXTILES BUT COULD BE A CONSTITUENT IN TECHNICAL TEXTILES APPLICATIONS

The following list includes HS codes for textile articles that can be used as raw materials in making both conventional textiles and technical textiles. However, due to the uncertainty associated with these codes they were not considered in the trade analysis of the technical textiles.

B.1 FIBER PRECURSORS

HS CODE	DESCRIPTION
39.01	Polymers of ethylene, in primary forms:
3901.10.00	– Polyethylene having a specific gravity of less than 0.94
3901.20.00	– Polyethylene having a specific gravity of 0.94 or more
39.02	Polymers of propylene or of other olefins, in primary forms:
3902.10.00	– Polypropylene
39.06	Acrylic polymers in primary forms:
3906.10	– Poly (methyl methacrylate):
39.07	Polyacetals, other polyether and epoxide resins, in primary forms; polycarbonates, alkyd resins, polyallyl esters and other polyesters, in primary forms:
3907.60	– Poly (ethylene terephthalate):
39.08	Polyamides in primary forms:
25.05	Natural sands of all kinds, whether or not colored, other than metal-bearing sands of Chapter 26:
2505.10.00	– Silica sands and quartz sands

B.2 FIBERS

HS CODE	DESCRIPTION
52.01	Cotton, not carded or combed
52.03	Cotton, carded or combed
53.01	Flax, raw or processed but not spun; flax tow and waste (including yarn waste and garneted stock):
53.02	True hemp (<i>Cannabis sativa</i> L.), raw or processed but not spun; tow and waste of true hemp (including yarn waste and garneted stock):
55.01	Synthetic filament tow:
5501.10.00	– Of nylon or other polyamides
5501.20.00	– Of polyesters
5501.30.00	– Acrylic or mod acrylic
55.02	Artificial filament tow
55.03	Synthetic staple fibers, not carded, combed or otherwise processed for spinning:
5503.20.00	– Of polyesters
55.04	Artificial staple fibers, not carded, combed or otherwise processed for spinning:
55.06	Synthetic staple fibers, carded, combed or otherwise processed for spinning:
5506.10.00	– Of nylon or other polyamides
5506.20.00	– Of polyesters

B.3 YARNS

HS CODE	DESCRIPTION
52.06	Cotton yarn (other than sewing thread), containing less than 85% by weight of cotton, not put up for retail sale:
	– Single yarn, of uncombed fibers:
5206.11.00	– – Measuring 714.29 decitex or more (not exceeding 14 metric number)
5206.12.00	– – Measuring less than 714.29 decitex but not less than 232.56 decitex (exceeding 14 metric number but not exceeding 43 metric number)
	– Single yarn, of combed fibers:
5206.21.00	– – Measuring 714.29 decitex or more (not exceeding 14 metric number)
5206.22.00	– – Measuring less than 714.29 decitex but not less than 232.56 decitex (exceeding 14 metric number but not exceeding 43 metric number)
	– Multiple (folded) or cabled yarn, of uncombed fibers:
5206.31.00	– – Measuring per single yarn 714.29 decitex or more (not exceeding 14 metric number per single yarn)
5206.32.00	– – Measuring per single yarn less than 714.29 decitex but not less than 232.56 decitex (exceeding 14 metric number but not exceeding 43 metric number per single yarn)
	– Multiple (folded) or cabled yarn, of combed fibers:
5206.41.00	– – Measuring per single yarn 714.29 decitex or more (not exceeding 14 metric number per single yarn)
5206.42.00	– – Measuring per single yarn less than 714.29 dtex but not less than 232.56 dtex (exceeding 14 metric number but not exceeding 43 metric number per single yarn)
53.06	Flax yarn:
5306.10.00	– Single
5306.20.00	– Multiple (folded) or cabled
53.08	Yarn of other vegetable textile fibres; paper yarn:
5308.20.00	– True hemp yarn
54.01	Sewing thread of man-made filaments, whether or not put up for retail sale
54.02	Synthetic filament yarn (other than sewing thread), not put up for retail sale, including synthetic monofilament of less than 67 decitex:
	– Textured yarn:
5402.31.00	– – Of nylon or other polyamides, measuring per single yarn not more than 50 tex
5402.32.00	– – Of nylon or other polyamides, measuring per single yarn more than 50 tex
5402.33.00	– – Of polyesters
5402.34.00	– – Of polypropylene
	– Other yarn, single, untwisted or with a twist not exceeding 50 turns per meter:
5402.44.00	– – Elastomeric
5402.45.00	– – Other, of nylon or other polyamides
5402.47.00	– – Other, of polyesters
5402.48.00	– – Other, of polypropylene
	– Other yarn, single, with a twist exceeding 50 turns per meter:
5402.51.00	– – Of nylon or other polyamides
5402.52.00	– – Of polyesters
	– Other yarn, multiple (folded) or cabled:
5402.61.00	– – Of nylon or other polyamides
5402.62.00	– – Of polyesters
55.08	Sewing thread of man-made staple fibres, whether or not put up for retail sale:

HS CODE	DESCRIPTION
5508.10.00	– Of synthetic staple fibres
55.09	Yarn (other than sewing thread) of synthetic staple fibres, not put up for retail sale:
	– Containing 85% or more by weight of staple fibres of nylon or other polyamides:
5509.11.00	– – Single yarn
5509.12.00	– – Multiple (folded) or cabled yarn
	– Containing 85% or more by weight of polyester staple fibres:
5509.21.00	– – Single yarn
5509.22.00	– – Multiple (folded) or cabled yarn

B.4 FABRICS

HS CODE	DESCRIPTION
52.08	Woven fabrics of cotton, containing 85% or more by weight of cotton, weighing not more than 200 g/m2:
52.10	Woven fabrics of cotton, containing less than 85% by weight of cotton, mixed mainly or solely with man-made fibers, weighing not more than 200 g/m2:
52.11	Woven fabrics of cotton, containing less than 85% by weight of cotton, mixed mainly or solely with man-made fibers, weighing more than 200 g/m2:
53.09	Woven fabrics of flax
54.07	Woven fabrics of synthetic filament yarn, incl. monofilament of ≥ 67 decitex and with a cross sectional dimension of ≤ 1 mm
5407.30	– Woven fabrics of synthetic filament yarn, incl. monofilament of ≥ 67 decitex and with a cross sectional dimension of ≤ 1 mm, consisting of layers of parallel textile yarns superimposed on each other at acute or right angles, the layers being bonded at the intersections of the yarns by an adhesive or by thermal bonding
5407.41	– Woven fabrics of yarn containing $\geq 85\%$ by weight of filaments of nylon or other polyamides, incl. monofilament of ≥ 67 decitex and a maximum diameter of ≤ 1 mm, unbleached or bleached:
5407.42	Woven fabrics of filament yarn containing $\geq 85\%$ nylon or other polyamides by weight, incl. monofilament of ≥ 67 decitex and a maximum diameter of ≤ 1 mm, dyed
5407.43	Woven fabrics of yarn containing $\geq 85\%$ by weight of filaments of nylon or other polyamides by weight, incl. monofilament of ≥ 67 decitex and a maximum diameter of ≤ 1 mm, made of yarn of different colors
5407.44	Woven fabrics of yarn containing $\geq 85\%$ by weight of filaments of nylon or other polyamides by weight, incl. monofilament of ≥ 67 decitex and a maximum diameter of ≤ 1 mm, printed
5407.51	– Woven fabrics of yarn containing $\geq 85\%$ by weight of textured polyester filaments, incl. monofilament of ≥ 67 decitex and a maximum diameter of ≤ 1 mm, unbleached or bleached
5407.61	– Woven fabrics of yarn containing $\geq 85\%$ by weight of non-textured polyester filaments, incl. monofilament of ≥ 67 decitex and a maximum diameter of ≤ 1 mm
5407.71	Woven fabrics of yarn containing $\geq 85\%$ synthetic filament by weight, incl. monofilament of ≥ 67 decitex and a maximum diameter of ≤ 1 mm, untreated or not further treated than bleached (excluding those of polyester, nylon or other polyamide filaments or monofilaments, and of mixtures of textured and non-textured polyester filaments): polypropylene or polyethylene fibres
5407.81	– Woven fabrics of yarn containing predominantly, but $< 85\%$ synthetic filament by weight, incl. monofilament of ≥ 67 decitex and a maximum diameter of ≤ 1 mm, mixed principally or solely with cotton, unbleached or bleached: polypropylene or polyethylene fibres
5407.91	Woven fabrics of yarn containing predominantly, but $< 85\%$ synthetic filament by weight, incl. monofilament of ≥ 67 decitex and a maximum diameter of ≤ 1 mm, unbleached or bleached, other than those mixed principally or solely with cotton: polypropylene or polyethylene fibres

HS CODE	DESCRIPTION
55.12	Woven fabrics of synthetic staple fibres, containing 85 % or more by weight of synthetic staple fibres: Containing 85 % or more by weight of polyester staple fibres
55.14	Woven fabrics of synthetic staple fibres, containing less than 85 % by weight of such fibres, mixed mainly or solely with cotton, of a weight exceeding 170 g/m2:
55.15	Woven fabrics containing predominantly, but < 85% synthetic staple fibres by weight, other than those mixed principally or solely with cotton
	– Of polyester staple fibres:
5515.12.00	– – Woven fabrics containing predominantly, but < 85% polyester staple fibres by weight, mixed principally or solely with man-made filament
5515.91.00	– – Woven fabrics containing predominantly, but < 85% synthetic staple fibres, mixed principally or solely with man-made filament (excluding those of acrylic, mod acrylic or polyester staple fibres)
5515.99	– – Woven fabrics containing predominantly, but < 85% synthetic staple fibres, other than those mixed principally or solely with man-made filament or cotton (excluding those of acrylic, mod acrylic or polyester staple fibres)
55.16	Woven fabrics of artificial staple fibres:
5516.41.00	– Containing less than 85% by weight of artificial staple fibres, mixed mainly or solely with man-made filaments:
5516.41.00	– Containing less than 85 % by weight of artificial staple fibres, mixed mainly or solely with cotton:
5516.91.00	Woven fabrics containing predominantly, but < 85% artificial staple fibres by weight, other than those mixed principally or solely with cotton, wool, fine animal hair or man-made filament:
60.05	Warp knit fabrics "incl. those made on galloon knitting machines", of a width of > 30 cm (excluding those containing by weight >= 5% of elastomeric yarn or rubber thread, and pile fabrics, incl. "long pile", looped pile fabrics, labels, badges and similar articles, and knitted or crocheted fabrics, impregnated, coated, covered or laminated) other than those of headings 60.01 to 60.04:

ANNEX C: LIST OF INTERVIEWS

FUNCTIONAL LEVEL	COMPANY/ FIRM	SPECIALIZATION
Group 1: Value Chain Actors		
Fibers/ Yarns	Nile Kordsa For Industrial Fabrics	Tire cords
	Egyptian Industrial Center	Flax yarns
Fabrics	Makarem Tex Co.	Needle punch nonwoven
	Undisclosed nonwoven company	SMS nonwoven
	Salamtex	Warp knit
	Clover Brook Textiles Egypt	Knitting and weaving
End-use	Future Pipes Industries/ Lokma Pipes Division	Glass fiber pipes
	Centra-Egypt	Medical apparel
	P&G	Hygiene products
	El Hennawy Tex	Sportswear
	Tie Egypt	Sportswear
	Canal Company for Ropes	Cordage, twines and ropes
	Al-Shimaa Group	Workwear
	TM Uniform	Workwear
	MAX Zippers	Slide zippers
Machinery	FARE S.p.A	Melt blown/ Spun bond Nonwoven machinery
	Trützschler Nonwovens & Man-Made Fibers GmbH	Staple nonwoven machinery
	Mohsen El Shafei	Warp knitting agent
	Fabtex Kamal Abbas	Weaving looms agent
Auxiliary	Rudolf Group	Chemical auxiliaries and coatings
Group 2: End Markets		
Construction	Consolidated Contractors	Construction
Automotive	Bavarian Auto	Passenger vehicles
Automotive	Nissan Egypt	Passenger vehicles
Automotive	Hashim Bus	Buses
Group 3: Service Providers and Supporting Organizations		
Center of Excellence	Textile Development Center	Competitiveness center
Standardization and Certification	Egyptian Organization for Standardization	Standardization and testing
Trade councils	Textiles and Ready-Made Garments Export Councils	Export support

ANNEX D: SWOT QUESTIONNAIRE

Strengths (internal, positive attributes of the value chain)

What are the points of strength of the technical textile value chain in Egypt?

1. Suppliers of raw materials, machinery and auxiliaries?
2. Distributors of technical products and distribution network?
3. Potential for strong brand?
4. Employees skills and expertise?
5. State of the art machinery?
6. Proprietary technology, or technical know-how?
7. Location advantage?
8. Access to capital?

Weaknesses (internal, negative attributes of the value chain)

What are the points of weaknesses of the technical textile value chain in Egypt?

1. Limited distribution?
2. Technical issues?
3. Location weakness?
4. Outdated machinery?
5. Employees skills and expertise?
6. Cash flow problems?
7. Difficulty accessing capital?

Opportunities (external, positive factors that could help the value chain)

What are the opportunities in the technical textiles value chain in Egypt?

1. Weak competition from other countries?
2. Favorable market changes?
3. Potential niche markets?
4. Unfulfilled local demand?
5. Opportunities for geographic expansion?
6. Opportunities in the economic/ technological/industry changes?
7. Potential new sources for financing?
8. Opportunities in new government mandates?

Threats (external, negative factors that could hurt the value chain)

What are the threats in the technical textiles value chain in Egypt?

1. Competition from other countries?
2. Expected increased competition?
3. Negative impact of economic/ technological/ industry trends?
4. Negative impact of changing financial factors?
5. Increase in cost of doing business?

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