



वस्त्र मंत्रालय  
MINISTRY OF  
**TEXTILES**

# Study on “Garment Sector to understand their requirement for Capacity building”

January 2018



technopak



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## Preface

India as a country and as an economy has achieved phenomenal distinctions since Independence and is among the fastest growing economy with GDP rate of 6.6%<sup>1</sup> for the year 2016. It has grown to be one of the largest economies in the world, and an increasingly important player in the emerging global order.

Textiles sector is one of the oldest industries in Indian economy dating back several centuries. The textile industry has two broad segments - the traditional sector, consisting of handlooms, handicrafts and sericulture, operated on a small scale and through traditional tools and methods and the modern sector consisting of spinning mills, composite mills and garment factories which apply modern technology and concepts.

The modern sector, is split further into organized (big and medium players catering to domestic organized retail and exports) and unorganized (medium and small players catering heavily to domestic unorganized retail sector comprising majorly of rural, small cities, towns, semi-urban and also the urban market).

Today, the textiles & apparel sector is one of the largest contributors to India's exports and second largest employer after Agriculture. Apparel manufacturing alone, currently provides employment to a population of 12.3 million<sup>2</sup>.

In the last couple of years the growth rate of the Indian garment exports has not been as high as other competing markets such as Bangladesh & Vietnam. With fast fashion gaining prominence and shrinking of lead times there is a need for increased efficiency across the value chain. Since, the garment sector is labor intensive, the skills of the workers play a significant role. Indian garment industry has skill gaps that need to be addressed urgently. To target these skill gaps, Ministry of Textiles - has proactively taken initiatives to implement schemes like Integrated Skill Development Scheme (ISDS) for training workers in all segments of textiles, including handicrafts, handlooms, sericulture, jute and technical textiles, to enhance competitiveness of the sector in the globalized economy.

Ministry of Textiles, wants to conduct a comparative analysis across major garment sourcing destinations in order to understand the key industry success factors, trade trends and analyze the steps that needs to be taken to build capacity in the garment export sector in India.

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<sup>1</sup> IMF World Economic Outlook - <https://www.imf.org/external/pubs/ft/weo/2017/update/01/pdf/0117.pdf>

<sup>2</sup> Textile Ministry Annual Report 2015-16 – Page 12 in clause 1.3.9 - [http://texmin.gov.in/sites/default/files/ar\\_15\\_16\\_ENG.pdf](http://texmin.gov.in/sites/default/files/ar_15_16_ENG.pdf)

## Foreword

Apparel manufacturing has moved from the developed countries to the developing ones, especially in Asia. Currently, China, Bangladesh, Vietnam, Sri Lanka, Cambodia, Indonesia and India are the key exporters of garments to the world. US, EU and Japan are the key consuming markets.

Until 2005, the garment trade was controlled by quotas. Quotas were quantitative restrictions which were imposed on the exporting countries and the countries could export only as much as the allocated quota for the particular category. In 2005, the quotas got abolished and the buyers were free to source as much from any country. The factors controlling the trade changed completely. Cost, Size and Scale became the most important criteria for sourcing countries worldwide. The developed countries also gave preferential access to specific manufacturing countries. Bangladesh for example because of the LDC (Least Developed Country) status, took advantage of GSP (Generalized System of Preferences) with EU. Sri Lanka also recently reinstated its GSP+ Status which provides for duty advantage with EU. African countries had an advantage with exports into US through AGOA (The African Growth and Opportunity Act). There are such other similar trade agreements such as NAFTA, etc.,

Such preferential agreements assured competitive landed cost for goods manufactured in certain countries resulting in faster growth of the industry in these countries. Hence, Bangladesh and Sri Lanka grew as important destinations for European customers, while US customers looked at options in Africa, Jordan among others.

India's apparel exports increased at a CAGR (Compounded Annual Growth Rate) of 9.2%<sup>3</sup> between 1990 and 2005 and at 8.1%<sup>4</sup> from 2006 to 2014. Significant boost was provided by de-reservation of Garment Industry from Small-scale Industries classification in 2000 (National Textile Policy, 2000). While, India has the complete value chain capability for cotton products and for certain synthetic products - India has traditionally been exporting low value textiles products (fiber, yarn, fabric) more than apparel. However, now India's focus is shifting towards value addition within the country and in exports of finished products rather than exporting raw material and intermediate products.

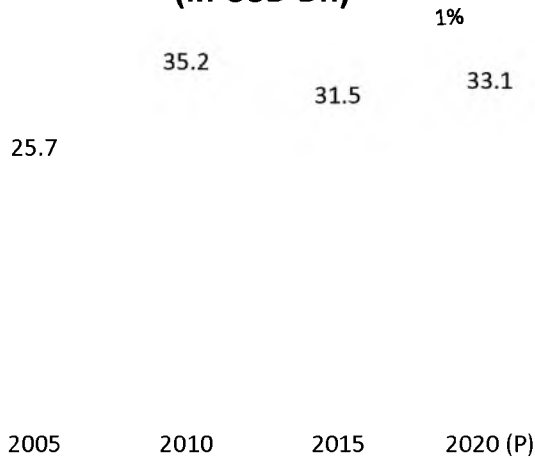
India's competitiveness in the global apparel trade is challenged by lack of scale in garment manufacturing, seasonality (manufacture only certain product categories), inadequate capability in the synthetic value chain, limited number of preferential trade agreements, etc.

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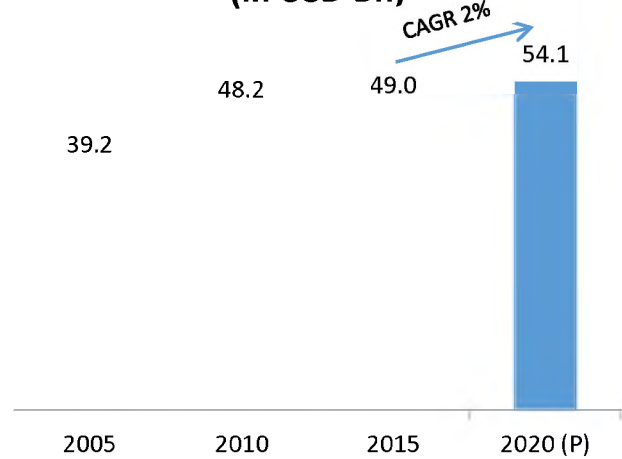
<sup>3</sup> UN Comtrade, Technopak Analysis

<sup>4</sup> UN Comtrade, Technopak Analysis

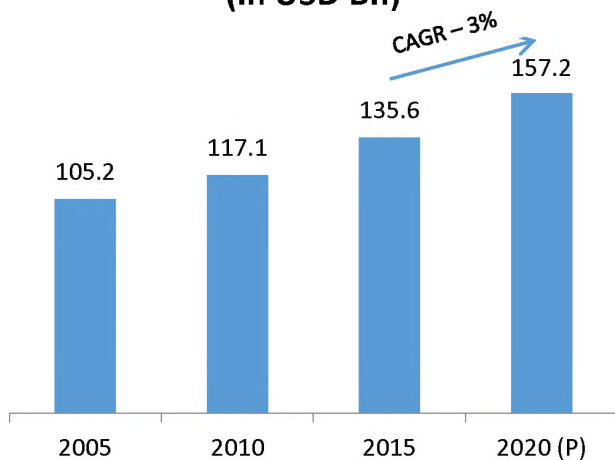
### International Fibre Trade (in USD Bn)



### International Yarn Trade (in USD Bn)



### International Fabric Trade (in USD Bn)



### International Apparel Trade (in USD Bn)

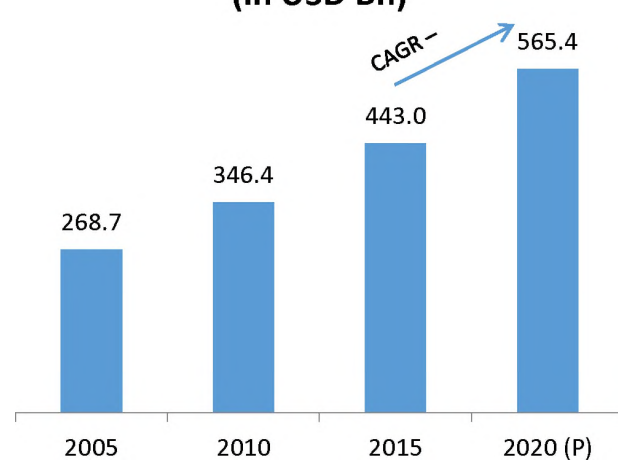


Exhibit 1: International Textile Trade - Source ITC Trademap; Technopak Analysis

As mentioned on Exhibit 1, Apparel is the fastest growing product category with a CAGR of 5% in Global Textile & Apparel (T&A) trade. Apparel is followed by Fabrics (CAGR ~3%) and Yarn (CAGR ~2%).

China, South Asia and South-East Asian countries have emerged as key competitors to India in apparel exports market.



China, has been the top player in apparel production and exports, and has the largest share in the global exports. However, with increasing labor and energy cost in China, it is expected that manufacturing will shift towards other Asian countries including India.

An overview of different products exported from the major apparel exporting countries reveals that China focuses more on finished products including apparel and made-ups. China, despite being the largest producer of textile fibers has only 8.8%<sup>5</sup> share in total fiber exports which is less than India's share of 10%<sup>6</sup>. This reflects the preference given to finished goods exports from China. Other CM (Cut-Make)<sup>7</sup> countries such as Vietnam and Sri Lanka focus primarily on apparel exports and their contribution to textiles exports is significantly low since they have partial backward integration. In Bangladesh, while there has been backward integration development in Knits and in Denim, we are now witnessing investments in other areas of value chain too, but yarn is still largely imported. They still rely on rest of the world to fulfill other requirements on fabric.

Bangladesh supplies large quantities of apparel at low costs, largely due to its low wage rates, lower cost of utilities and preferential trade agreement with EU. It mostly specializes in low-value and value for money price segment and has not penetrated the high-end segments. However, Bangladesh has had issues on compliances and on time delivery.

Vietnam has grown its Apparel exports significantly, due to high foreign investments (predominantly from China) and JVs which bring along technical know-how and expertise. These factors coupled with supportive government policies have provided added advantage for the growth of textile ecosystem and infrastructure in the country and making it globally more competitive compared to other sourcing destinations.

Despite higher living wages, Sri Lanka has emerged as a large player in global apparel market owing to its product portfolio, which largely accounts for higher-value, niche products. It has a large skilled workforce, which allows it to produce specialized products. Sri Lankan factories have been focusing on sustainability and compliance for a long time. While, these initiatives have helped create better value to the customers, it has also resulted in optimizing the costs of manufacturing.

India's status as an apparel sourcing destination owes to its strengths: an abundant supply of raw material, vertically integrated supply chain, expertise in value added apparel

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<sup>5</sup> UN Comtrade, Technopak Analysis

<sup>6</sup> UN Comtrade, Technopak Analysis

<sup>7</sup> CM Countries – These countries traditionally did not have Textile value chain capability, but had the infrastructure to manufacture Garments by importing Raw Materials. Recently, these countries have developed partial textile value chain, while still depending on imports for raw materials such as Fibre/Yarn.

manufacturing, availability of skilled manpower and well-established relationship with key global buyers. India, in contrast to most of the other Asian peers - has the advantage of a very rich heritage of Textiles. The Textile heritage of India can be used to improve the 'Make in India' 'Zero Defect, Zero Effect' and other initiatives of Government of India.

India has to create a differentiation by moving up the value chain and position itself as a sourcing destination capable of exporting specialized products and services along with the end-to-end solution and cater to products suitable for all seasons. This can include partnership with buyers on trend forecasting, demand planning, logistics management, product design, innovative and functional fabrics, etc.

Textile and apparel exports provide a significant opportunity to India to increase its exports share and address the issues of current account deficit. With the expected annual growth of 10%<sup>8</sup>, the garment industry will create additional employment opportunities for 3.3 Million<sup>9</sup> youth in industrial jobs by 2025.

Conducive policy environment and government focus will help India to tap the opportunities in the global market and position itself as a destination of choice for textiles and apparel sourcing.

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<sup>8</sup> Based on the CAGR for period of 2010-15 in India's International Apparel Trade – Data source for International trade in 2010-15 is ITC Trademap.

<sup>9</sup> Projection based on CAGR of 2.35% of Office of Textile Commissioner's Office -

[http://www.txcindia.gov.in/html/employment\\_textile%20Mar06.htm](http://www.txcindia.gov.in/html/employment_textile%20Mar06.htm) Also, please refer to Exhibit 27 in Page 53

## Executive Summary

The 'Study on Garment Sector to understand its requirement for capacity building' is a comparative study of India and its key export competitors in International Apparel trade. Based on the ToRs, Technopak has considered China, Bangladesh, Vietnam and Sri Lanka as key competitors to India. In this study Technopak has attempted an exhaustive approach covering all the key success factors of the industry and best industry practices followed by competing countries.

This study would provide the Ministry of Textiles deeper understanding of Indian Garment Industry Infrastructure and ecosystem vis-à-vis its key Asian competitors. For each Term of Reference, we have provided specific inputs/recommendations for policy formulation and policy intervention by the Ministry of Textile.

The Indian garment export industry is seasonality driven, leading to full capacities for Spring Summer production and under-utilization of factories during the Winter production. India specializes in value added products which are high on fashion, thus resulting in lower order quantities and less repeat orders.

Garment manufacturing industry is highly labor intensive and in India it is fragmented (with mostly small and mid-sized factories) driven by individual entrepreneurial spirit, leading to limited technological advancement and investment. As mentioned in *ToR#1 in sub-section 1.3.5 on Pg 31-32*, it is recommended to design a standard factory grading system based on current technology level. Based on factories' current rating and willingness to improve their rating, government may be provide for subsidies/incentives. Also, it is suggested that ERP Software is covered under TUFs to ensure efficient process management at production floor. To ensure that India stays ahead in terms of Technological advancement, it has been suggested that the curriculum for Robotics/Pneumatics be introduced for Garment Manufacturing Technology courses.

India and other competing nations have different skill regime to suit their local, cultural and commercial factors. As mentioned in *ToR # 2 in sub-section 2.2.4 on Page 38*, skill development programs at all levels of value chain is recommended. Also programs to up-skill the entry level workers based on worker grading system could be implemented. Trained workers under current programs may be incentivized to work for a fixed period of time with the manufacturers to ensure higher industry participation in existing training programs.

As mentioned in *ToR # 2 in sub-section 2.3.3 (IV) on Page 41*, the Government should ensure large-scale implementation of Night Shift/Second Shift with safety measures. This single

initiative would transform the industry without any significant capital investment and can potentially increase the capacity by additional 5.25 Bn Pcs and value of USD 18.6 Bn (Both Exports & Domestic Market).

As mentioned in ToR # 2 in sub-section 2.5.3 (II) on Page 51, to promote green factories, government should provide corporate tax concession of 3.5 to 4% to compensate for additional investments to set-up eco-friendly factories. Also, on similar lines with China, develop apparel export focused clusters with entire textile ecosystem, closer to the ports to attract Investments/FDIs.

As mentioned on *ToR # 3 in sub-section 3.5 on Page 60*, while existing skill development programs are focused on entry level skilling, up-skilling at various levels of workforce is required to increase productivity and efficiency. In addition, in *ToR # 5 in sub-section 5.1.4 on Page 72-74*, an upskilling framework is suggested. We have estimated an additional employment @ CAGR of 4%, thus leading to employment opportunities for 5.9 Mn workforce in Apparel manufacturing in India as mentioned in *ToR#3 in section 3.2, Exhibit 27 on Page 54 and based on assumptions mentioned in Page 75 of the report.*

As mentioned on *ToR#4 in sub-section 4.4 – Page 68*, on similar lines with China, the skilling trainers should undergo mandatory training at regular intervals and participate actively with industry to ensure better quality of training to suit industry requirements. In addition, the curriculum of vocational schools must include occupational content to suit the requirements of clusters where training is imparted. As in the case of Bangladesh, Ministry should partner with Brands/Retailers to provide skill training to suit the requirement and standards of these players.

A new ISDS component may be introduced for vocational training at high school level in government schools in regions close to/within existing clusters. Infrastructure of ITIs spread all over India can be utilized to impart skill training. The mandate for this initiative may be run through ATDC/Other institutes to ensure wide reach across the country.

As mentioned on *ToR#5 on 5.4 on Page 86-87*, for Indian garment manufacturing industry to evolve in year-round sourcing base, fabric infrastructure (especially on synthetics products) needs to be developed for High growth product categories mentioned in Exhibit 59 and 60 under sub-section 6.4 on Page 91-95. To develop this infrastructure Government can encourage FDIs/JVs to gain technical know-how and expertise on new fabrics especially in Synthetic value chain to suit these high growth product categories.

Import Duties on Trims/Accessories need to be revisited as currently certain trims have higher GST in comparison to Import duty (*Refer to Exhibit 55 in Pg 84-85*), thus making domestic trim manufacturing uncompetitive. In addition, it is suggested to transfer, the current duty free

entitlement of 5% provided for garment exporters for import on trims, to trim manufacturers for importing their raw material. This would have a cascading effect across the value chain and make domestic trim manufacturing more competitive.

As mentioned on *ToR # 6 in Exhibit 60 on Page 93-95*, India currently does not manufacture high growth winter product categories such as Jackets, Sweaters and Overcoats. To address the seasonality factor, government should provide incentives such as higher duty drawback for selective categories and import duty exemption for machinery and equipment, thus boosting the requisite infrastructure for these specialized product categories.

In addition, to address seasonality factor for existing garment manufacturing set-ups, the government should encourage trade with key markets in Southern Hemisphere such as Australia and Latin America, which have their summer season coinciding with winter season in traditional consuming markets of North America and EU. This initiative would ensure higher capacity utilization during lean months and increase India's share of International trade.

As mentioned in *ToR#7 on Page 99-103*, Ministry of Textiles should look at skill building under ISDS from a new perspective of not just to provide livelihood, but to ensure sustenance for the labor workforce. In addition, training initiatives at Mid-Management level is essential to implement productivity enhancement tools such as Lean Methodology, WIP Control, Engineering of work stations, etc.,

In addition, to boost new investments in Remote/Backward areas, incentivize entry level skilling for local population and provide incentives to set-up new manufacturing units closer to labor catchment area/existing clusters.

An integrative approach covering all the aspects of apparel manufacturing industry, would not only ensure sustainable growth of the industry as a whole, but also provide employment opportunities to millions of underprivileged population coming from the most backward parts of the country.

## Project Background & Methodology

### Project Background

Ministry of Textiles, Government of India awarded the Study on “Garment Sector to understand their requirement for Capacity building” via letter no. 4/5/2015-ED Dated 21st December 2015, to Technopak Advisors.

### Term of Reference (ToR)

The Terms of Reference for the study includes:

**ToR #1** – To study the technology level of machinery installed in Garment Manufacturing Industry in comparison with any two of the major garment manufacturing countries of the region like Bangladesh, China, Sri Lanka and Vietnam etc.

**ToR #2** – To study the cross-country experience of 5 garment manufacturing units/firms each of Bangladesh, Vietnam and India in terms of skill regime, labor laws, quality control and tax regime/ concessions and compile the best practices.

**ToR #3** – To study the assessment of the type and level of skill required in the domestic garment industry and possible support as visualized by the exporters to boost the exports of garments from India.

**ToR #4** – To study the possible arrangements for skill building in garmenting in Bangladesh, China, Vietnam, Sri Lanka etc.

**ToR #5** – To study the status of availability of skilled labor, raw materials (fabric) and embellishment etc. indigenously

**ToR #6** – To study the domestic market and potential of garment export line wise for different countries

**ToR #7** – Recommendation for possible forms of government intervention for skill building in garmenting

## Scope of the study

The scope of the study covers the following:

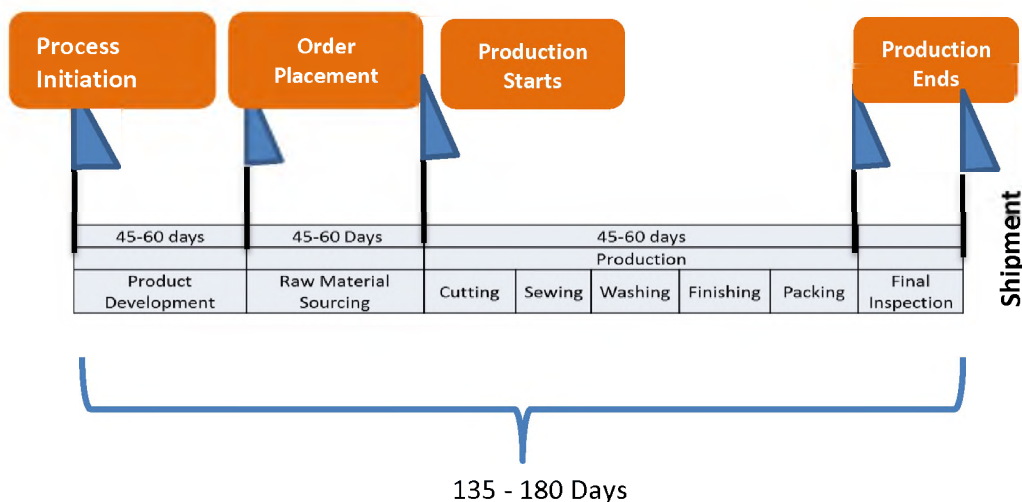
- To study the technology level of machinery installed in Garment Manufacturing Industry in comparison with Bangladesh and Vietnam.
- To study the cross-country experience of 5 garment manufacturing units each of Bangladesh, Vietnam and India (primary) and Sri Lanka and China (Secondary) in terms of:
  - »Skill regime
  - »Labor laws
  - »Quality control
  - »Tax regime/concessionsand compile the best practices.
- To study the assessment of the type and level of skill required in the domestic garment industry and possible support as visualized by the exporters to boost the exports of garments from India.
- To study the possible arrangements for skill building in garmenting in Bangladesh, China, Vietnam & Sri Lanka
- To study the status of availability of skilled labor, raw materials (fabric) and embellishment indigenously
- To study the domestic market and potential of garment export line wise for different countries
- Report on recommendation for possible forms of government intervention for skill building in garmenting

## Introduction

Apparel manufacturing has traditionally moved from high cost destinations to a lower cost destinations. Starting from Europe to the North America to Asia and now to Africa, the trade has been finding competitive destinations.

The garment manufacturing process starts from design of the product which is planned three to four seasons in advance based on the fashion trends forecasted. Once design features such as fabric, color, styling etc. are finalized and order quantities are estimated, the sampling and costing process is started with several vendors.

Each vendor showcases their capabilities in term of raw material procurement, workmanship, quality by submitting garment proto samples and costing. The buyer selects a vendor based on its price, quality and delivery offering. Once the order is placed, below mentioned production process is followed.



**Exhibit 2: Apparel buying process – Source: Technopak**

Since the phase out of the quota regime in 2005, China has been a dominant player in the global apparel trade. China has large scale capabilities to manufacture all categories of products and provides a complete service offering to brands and retailers.

Bangladesh and Vietnam have also grown significantly and will continue to grow their apparel exports in the near future. The current section gives a broad level perspective of the key competing countries including their strengths and challenges.

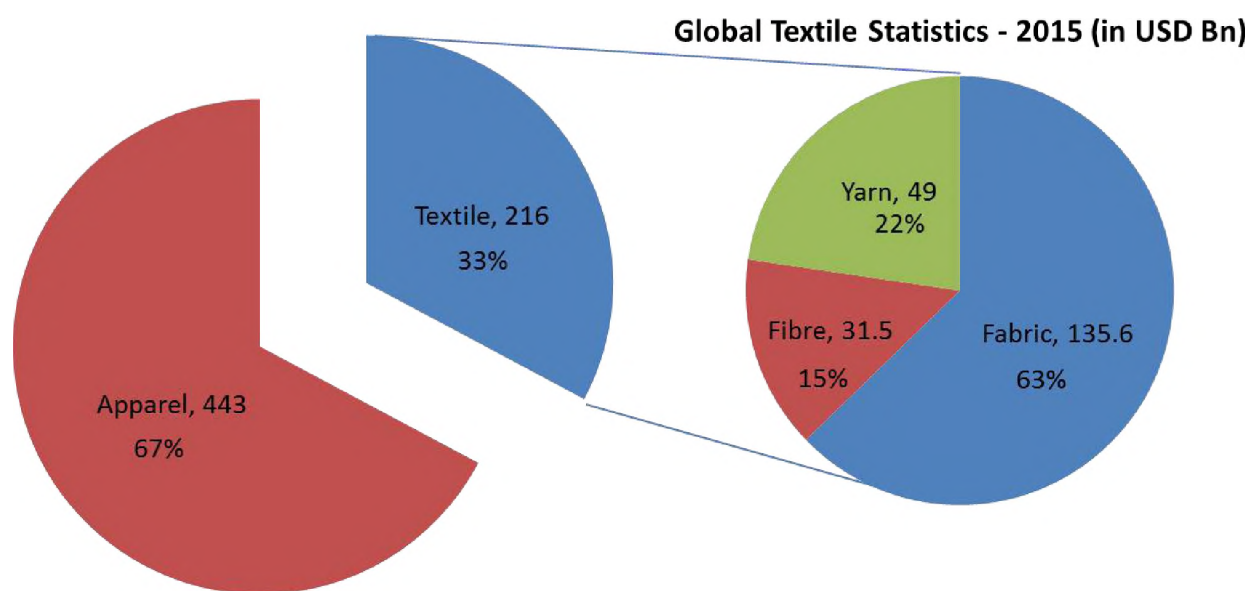


## Global Textiles & Apparel Trade

In 2015, Global Textile and Apparel trade accounted for USD 659 Bn. Apparel trade constituted 67% Share of the total T&A Global Trade accounting for USD 443 Bn in 2015. Out of this USD 443 Bn, both Woven and Knit Apparel trade are almost equal share.

The Textile trade is further constituted of Fabric, Fibre and Yarn. The global Fabric trade constituted 63% of total global textile trade accounting for USD 135.6 Bn, followed by Yarn (22%) and Fibre (15%).

### Global Apparel & Trade Statistics - 2015 (in USD Bn)



Source: ITC Trademap; Technopak Analysis

### Exhibit 3: Global Apparel & Textiles Trade – Source: ITC Trademap; Technopak

India accounts for 3.9%<sup>10</sup> of Global Apparel Trade and 9.3%<sup>10</sup> of Global Textile Trade in 2015. The Indian apparel trade has grown at a CAGR of 10%<sup>10</sup> in 2011-15, whereas global apparel trade grew at CAGR of 5%<sup>10</sup>.

<sup>10</sup> ITC Trademap, Technopak Analysis

Apparel is one of the fastest evolving segments in global trade. The developed economies such as United States, European Union and Japan among others are the major consuming countries. As apparel manufacturing involves labor intensive processes, most of the production takes place in developing and least developed countries owing to lower labor cost. This has resulted in distinct separation of the value chain into production hubs and consumption centers.

Global apparel trade has reached USD 443 Bn<sup>11</sup> in 2015, and is expected to grow at a CAGR of ~5%<sup>12</sup> over next five years. This growth can be accounted for increase in disposable incomes and urbanization in developing economies.

Growth in knit apparel is expected to outpace the growth in woven, owing to high acceptance for casualwear and growing demand for fast fashion. Currently, EU, USA and the Japan remain the biggest markets for knit apparels, while emerging economies like Brazil, China, India, South Africa, Indonesia, Middle-east countries etc. are emerging as high growth markets for the Knit products.

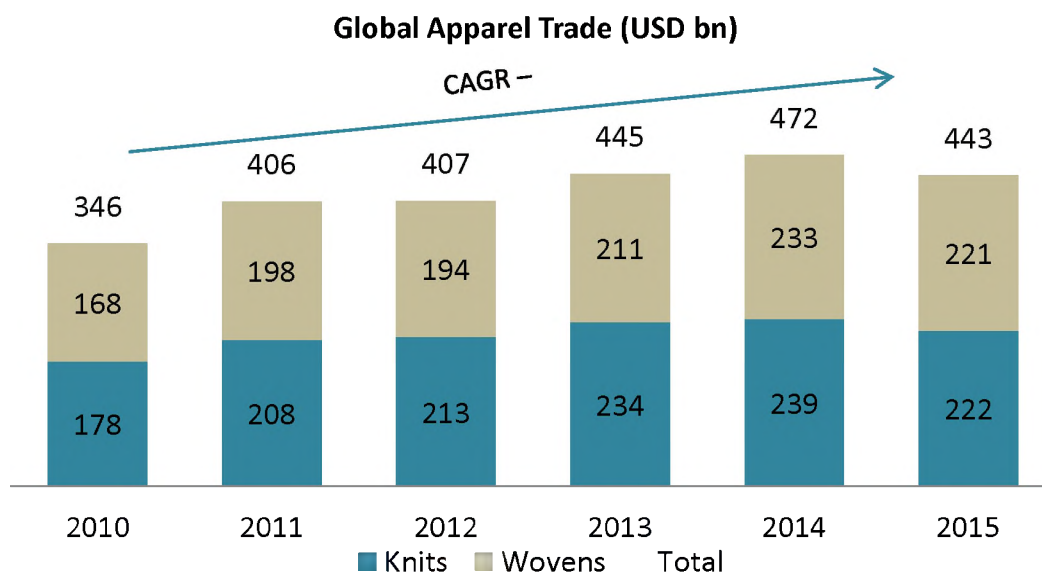


Exhibit 4: Global Apparel Trade – Source: ITC Trademap, Technopak Analysis

<sup>11</sup> ITC Trademap, Technopak Analysis

<sup>12</sup> Technopak Analysis

### Top Apparel Importers in 2015 (in US\$ Bn)

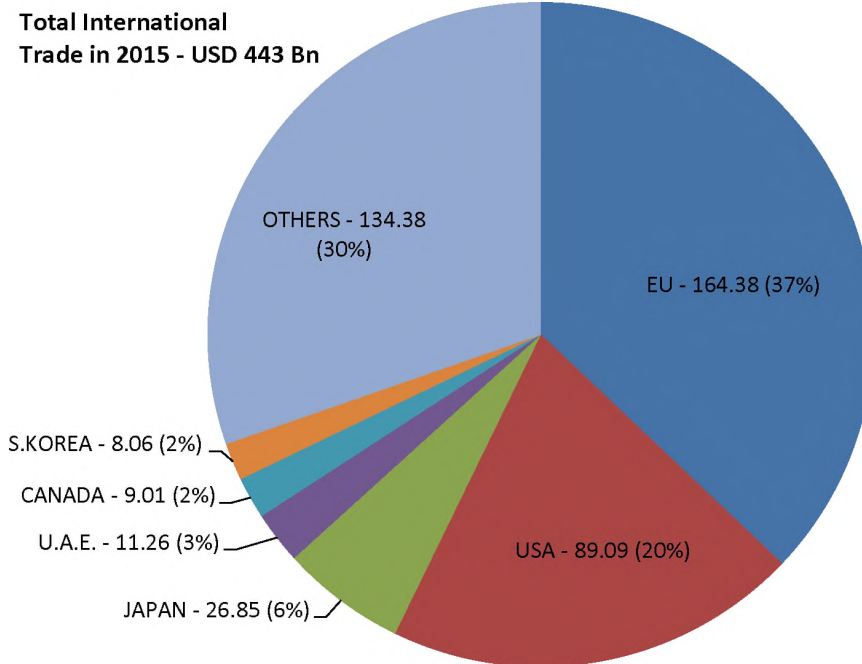


Exhibit 5: Top Apparel Importers – Source: ITC Trademap; Technopak Analysis

In 2015, USA, Europe (EU-28) and Japan accounted for 63%<sup>13</sup> of global apparel imports. Within EU-28; Germany, UK, France, Spain and Italy were the top importers of apparel. The US was the single largest apparel importing country in 2015 with total import value of US \$ 89 billion<sup>13</sup>. Apparel imports of US have increased at a CAGR of 3.3%<sup>13</sup> from 2010 to 2015.

<sup>13</sup> ITC Trade Map; Technopak Analysis

### Top Apparel Exporters in 2015 (in US\$ Bn)

Total International Trade in 2015 - USD 443 Bn

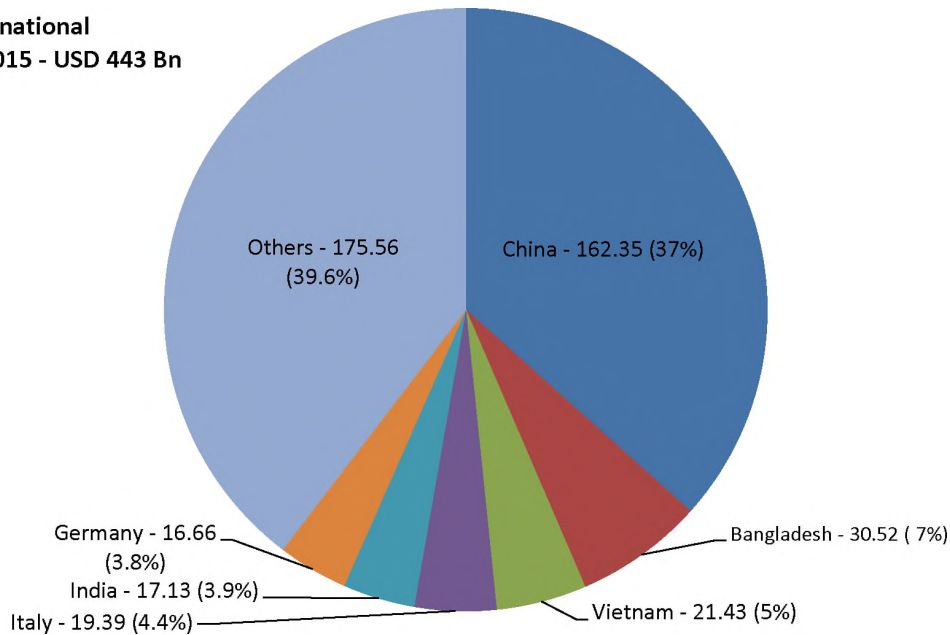


Exhibit 6: Top Apparel Exporters – Source: ITC Trademap; Technopak Analysis

South-East and South Asia are the key sourcing destinations with countries like China, Bangladesh, Vietnam, India, Sri Lanka, Indonesia and Cambodia etc., emerging as top exporters of apparels. India and China have complete textile value chain capabilities and are known as FOB countries (i.e., Fibre to Apparel stage indigenous capability). Other countries in the region such as Bangladesh, Vietnam and Sri Lanka are known as CM (Cut-Make) countries<sup>14</sup> (i.e., Partial textile value chain capability). In 2015, China, Bangladesh, Vietnam and India accounted for ~53%<sup>15</sup> of global apparel exports.

<sup>14</sup> CM Countries – These countries traditionally did not have Textile value chain capability, but had the infrastructure to manufacture Garments by importing Raw Materials. Recently, these countries have developed partial textile value chain, while still depending on imports for raw materials such as Fibre/Yarn.

<sup>15</sup> ITC Trademap, Technopak Analysis

## Leading Apparel Sourcing Destinations in Asia:

The below exhibit depicts the growth of key sourcing destinations in Asia over the last few years. China has retained its top ranking and is far ahead of its competitors with major share of international apparel trade. It is followed by Bangladesh, Vietnam, India and Turkey.

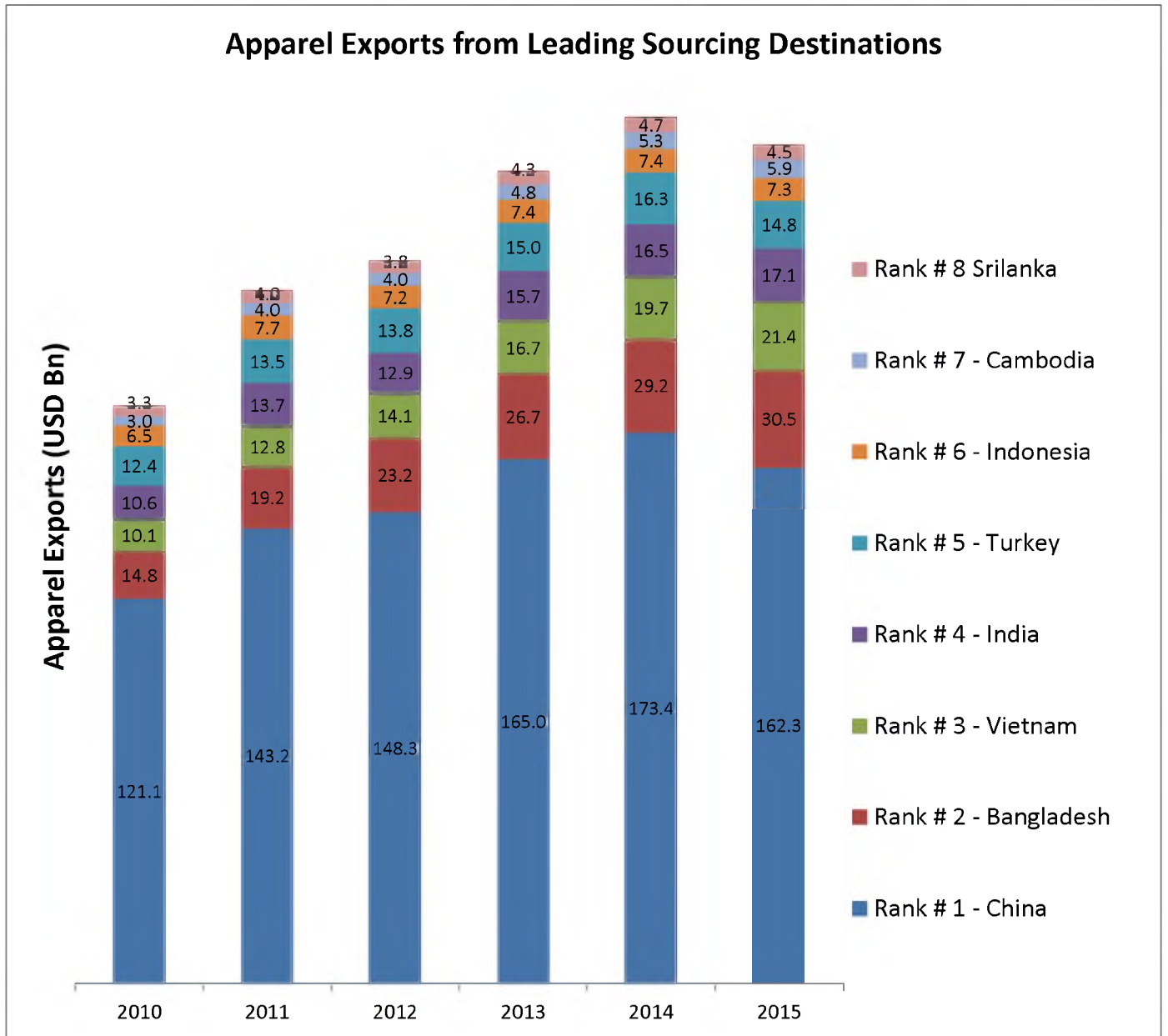


Exhibit 7: Asian Apparel Exporters – Source: ITC Trademap; Technopak Analysis

For the period, 2010-15, Bangladesh and Vietnam have grown at a CAGR of ~16%<sup>16</sup>, followed by Cambodia (~14%<sup>16</sup>) and India (~10%<sup>16</sup>). China has grown at a CAGR of ~6%<sup>16</sup>.

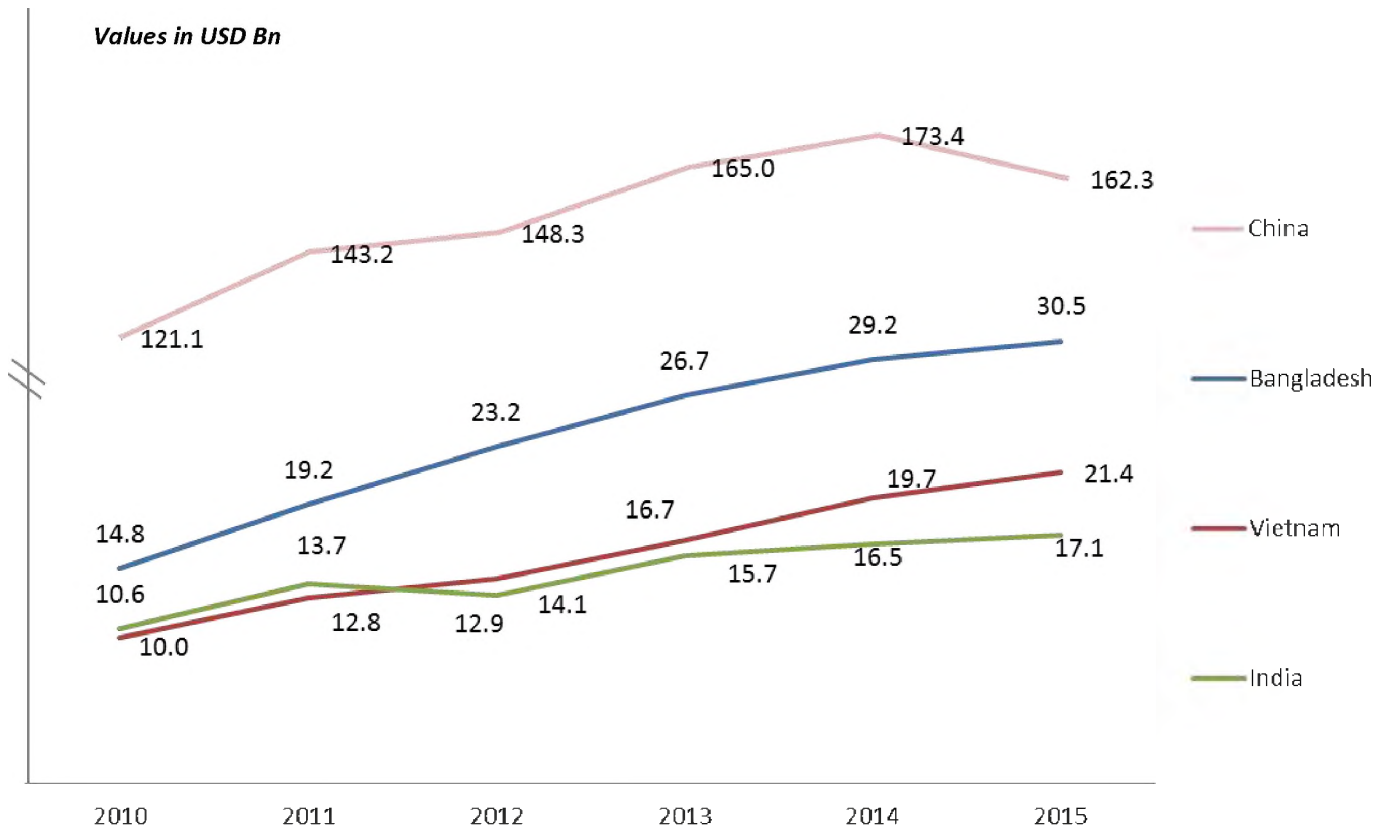


Exhibit 8: Trends in Global Share of Apparel Exports – Source: ITC Trademap; Technopak Analysis

The above exhibit depicts that, since 2014, we have witnessed decline in Chinese Apparel Exports due to increased costs and focus on domestic market. In 2015, the YoY exports decline was 6.4%. This decline has further deepened in 2016, with Exports value of USD 146 Bn (CAGR 2014-16 = -8.2%). With scale and capacities, Bangladesh and Vietnam have capitalized on this opportunity. India, despite having complete textile value chain and strong base in Textiles, has not been able to cease on this opportunity to increase higher share in International Trade.

<sup>16</sup> ITC Trademap; Technopak Analysis

## Country Profiles – Economic Indicators

### Country Profiles – Economic Indicators

Country	Economy Size - World Ranking 2015	Real GDP in USD Bn - 2015	% of World Economy (in 2015)	GDP Growth Rates			GDP Per Capita 2015 (in USD)	Household Consumption in 2015 (as % of GDP)	Key Observations
				2015	2016 (E)	2017 (P)			
India	7th	2,095	3%	7.6%	6.6%	7.2%	\$ 1,598.30	59.6%	<p>- Critical economic factors such as oil prices, foreign investments, government's intent for reforms etc. have tilted in favor of the economy. India has become the fastest growing economy in the world.</p> <p>- As per the World Bank population estimates, the emerging middle class is expected to reach about 60% of the total population of the country by 2025, thus making India the fifth largest consumer market in the world by 2025.</p>
China	2nd	11,008	15%	6.9%	6.7%	6.5%	\$ 8,027.70	37.0%	<p>- The increase in disposable income, growing middle class, rise of e-commerce and fast fashion has fuelled this growth.</p> <p>- International brands and private labels are entering tier II cities like Dalian (Liaoning province), Jinan, Qingdao, Nanjing, Wuhan, etc., apart from four fashion hubs of Shanghai, Beijing, Guangzhou and Hong Kong.</p>
Bangladesh	45th	195	0.3%	6.8%	6.9%	6.9%	\$ 1,211.70	73.1%	<p>- With highest household consumption of 73% of GDP, Bangladesh is bound to grow in the domestic market in addition to the International trade.</p>
Vietnam	47th	193	0.3%	6.7%	6.1%	6.2%	\$ 2,111.10	65.2%	<p>- Vietnam is developing a strong industrial base backed by government initiatives and heavy investments.</p> <p>- Among the sourcing destinations in Asia, Vietnam is among highest FDIs recipients in manufacturing sector from China</p>
Sri Lanka	65th	82	0.1%	4.8%	5.0%	5.0%	\$ 3,926.20	68.6%	<p>- Sri Lanka has seen a slow down in the recent past with GDP growth rates declining since 2012.</p>

GDP Rates are based on IMF - World Economic Outlook 2016

Economy Size Real GDP, % of World Economy, GDP per Capita and Household consumption - World Bank Database

#### Exhibit 9: Country Profile – Economic Indicators. Source: IMF & World Bank; Technopak Analysis

Please refer to Annexure 1 – Page 4 to 9 for detailed country profile and Apparel Exports in these countries

## Country Profiles – Apparel Exports

### Country Profiles – Apparel Exports

Country	Textile Value Chain Capability			Exports Statistics			Key Export Markets & Share for 2015	Key Observations
	CM / FOB	Natural Fibres	Synthetic Fibres	Minimum Wages (Monthly)	Apparel Exports (2015) in USD Bn	Apparel Exports CAGR 2010-15		
India	FOB	Complete Value Chain Capability	Partial Value Chain Capability	USD 137-179	17.1	10%	USA - 22% - USD 3.77 Bn UAE - 20.2% - USD 3.46 Bn UK - 10.5% - USD 1.81 Bn Germany - 6.6% - USD 1.12 Bn France: 4.8% - USD 0.8 Bn	- In 2016, Textile industry contributed to 10% of manufacturing industry, 2% of India's GDP and 13% of country's export earnings. - With rising cost in China owing to higher wages and operational cost, India is becoming a lucrative sourcing destination for consuming markets. - To capture higher export market share, India should focus on further developing its Synthetic value chain and manufacture high-growth Winter-wear product categories.
China	FOB	Complete Value Chain Capability	Complete Value Chain Capability	USD 155-321	162.3	6%	USA - 20.2% - USD 32.7 Bn Japan - 10.2% - USD 16.5 Bn UK - 6.2% - USD 10.03 Bn Germany - 4.3% - USD 7.02 Bn South Korea: 3.4% - USD 5.56 Bn	- For 2010-15, the apparel exports have grown at CAGR of 6%, However, due to higher costs, the exports has shrunk by 6% between 2014-15. - Other sourcing destinations in Asia such as Vietnam, Bangladesh, India, Cambodia and Indonesia have an opportunity with brands/retailers in migrating out of China due to cost issues.
Bangladesh	CM	Partial Backward Integration - Fabric Stage (Especially for Knits)	Negligible Value Chain capability except Garmenting	USD 68	30.5	16%	USA - 17.9% - USD 5.45 Bn Germany - 15.7% - USD 4.78 Bn UK - 10.6% - USD 3.23 Bn France - 7.1% - USD 2.16 Bn Spain - 7% - USD 2.12 Bn	- GSP+ status has provided Bangladesh advantage in EU over other sourcing destinations. - Bangladesh needs to address its compliance and quality issues and focus on product diversification to capture higher market share in Exports. - Bangladesh has shown high CAGR of 16% in Exports for 2010-15. With the government initiatives, this growth rate would be maintained in the near future. - Bangladesh is slowly working on Backward integration in Fabrics especially in Denim and Knits.
Vietnam	CM	Negligible Value Chain capability except Garmenting	Negligible Value Chain capability except Garmenting	USD 107-156	21.4	16%	USA - 50.9% - USD 10.9 Bn Japan - 12% - USD 2.56 Bn South Korea - 9.4% - USD 2.01 Bn UK - 3.2% - USD 0.69 Bn Germany - 3.2% - USD 0.68 Bn	- In the recent years, Vietnam has emerged as one of the key sourcing destinations in South East Asia. Vietnam along with Bangladesh have overtaken India in terms of volume and value in International Trade. - With heavy FDIs from China in apparel manufacturing, Vietnam stands to gain the most from retailers moving out of China. - Vietnam has show a high CAGR of 16% during 2010-15. - US is the biggest market for Vietnam with more than 50% of its exports share in 2015.
Sri Lanka	CM	Negligible Value Chain capability except Garmenting	Negligible Value Chain capability except Garmenting	USD 61-77*	4.5	7%	USA - 46.3% - USD 2.1 Bn UK - 17.9% - USD 0.81 Bn Italy - 7.8% - USD 0.36 Bn Germany - 4.3% - USD 0.20 Bn Belgium - 3.7% - USD 0.17 Bn	- Despite slowing overall economy over past two years, apparel has established itself as a promising sector. Major importers of Sri Lanka's apparels are USA and European countries.

Export Statistics - ITC Trade Map; Technopak Analysis

\*However, in real terms, Sri Lanka pays wages at par with India

Exhibit 10: Apparel Export Statistics for Key Sourcing Destination. Source: ITC Trademap; International Labor Organization; Technopak Analysis

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## Indian Market Sizing for Apparel Manufacturing:

It was observed during the course of the study that there is no formal size of apparel manufacturing industry available for India. Technopak had attempted an estimated industry sizing for Apparel manufacturing in India. As apparel manufacturing industry is highly fragmented, unorganized and spread across different clusters in India, we have arrived at the figures based on our knowledge of the industry and discussion with industry experts and industry associations. In the second table below we have matched our data with exports data of ITC Trade map and our market size estimate for India and have found the data to be very close to our calculations.

<b>Approx. number of Factories</b>	1,00,000 <sup>1</sup>		
<b>Num. of machines / Unit</b>	225	40	
<b>% Break-up</b>	<b>Larger Units (30%)</b>	<b>Smaller Units(70%)</b>	
	30,000	70,000	
<b>Total number of Machines</b>	67,50,000	28,00,000	
<b>Utilization</b>	70%	65%	
<b>Number of machines @ above utilization</b>	47,25,000	18,20,000	
<b>Pieces produced per machine per day</b>	10	6	<b>Total</b>
<b>Number of pcs per day</b>	4,72,50,000	1,09,20,000	5,81,70,000
<b>Million pcs produced Annually</b>	14,175	3,276	<b>17,451</b>
	<b>Exports</b>	<b>Domestic</b>	<b>Total</b>
<b>Total garments value (in USD)</b>	\$17,13,11,91,000	\$45,00,00,00,000	\$62,13,11,91,000
<b>Avg Value/Garment (in USD)</b>	\$4.50 <sup>2</sup>	\$3.25 <sup>2</sup>	
<b>Million pcs produced Annually</b>	3,807	13,846	<b>17,653</b>

1 – Due to unavailability of Pan India data on garment factories, we have arrived at this figure based on our experience and discussion with industry experts.

2 – As the unit price of different products highly vary based on our discussion with Industry experts, we have considered an average price of USD 4.5 for Exports and USD 3.25 for domestic consumption.

Exhibit 11: Indian Market Sizing for Apparel Manufacturing. Source: Technopak Analysis

## ToR #1

**To study the technology level of machinery installed in Garment Manufacturing Industry in comparison with any two of the major garment manufacturing countries of the region like Bangladesh, China, Sri Lanka and Vietnam etc.**

### 1.1 Abstract:

*Garment manufacturing industry has very low barrier to entry and thus has grown a lot in the last few decades. To analyse the technology levels, Technopak has divided the overall production process in four broad phases and technology usage into three broad levels*

*On the basis of the study conducted, it is concluded that each country has some technological advanced set-ups and some base level set-ups. It is intriguing to know that with investments in technological advancements, cost of production goes up initially but at the same time, higher efficiency and better quality compensates with greater profit margins, increased business opportunities and long term cost savings.*

### 1.2 Relevance of Technology in Garment Industry

Garment Industry differs from other mass production disciplines in terms of economies of scale owing to the fact that every product has a different style/design and thus the production process needs to be changed depending on the product manufactured. With technological advancements, the human centric industry is slowly moving towards automation in certain standard operations such as button stitching, fabric cutting, etc. Such automation has led to higher efficiency and better production output.

Garment industry with its very nature engages a large degree of variation in its product components. A typical garment could be made from a variety of fabrics ranging from light to heavy, and natural to synthetic, similar is the range of several other components.

Technopak conducted a primary research with manufacturers in all these countries and the summary of the same is below. In the *Annexure 2 (Page 10-12)*, we have provided the project approach and methodology.

In our analysis, we have considered machines used in Phase III as Production Machinery and other phases as non-production machinery.

Below is the detailed classification of Production Phases.

Phases of Production Phases	
Phase I	<p>Pre-Production (Order planning and maintenance)</p> <ul style="list-style-type: none"> <li>• <b>Phase I</b> is mainly concerned with the order planning and maintenance stage where costing, sample development, order booking, raw material procurement, release of internal Purchase Order (PO) and production planning &amp; control are managed.</li> </ul>
Phase II	<p>Production Preparatory (Cutting)</p> <ul style="list-style-type: none"> <li>• <b>Phase II</b> is concerned with production preparatory stage which basically means getting the raw materials ready for main production process.</li> <li>• This involves fabric receipt, inspection, shade segregation, spreading, Cutting, Fusing, Bundling etc.</li> </ul>
Phase III	<p>Production (Sewing)</p> <ul style="list-style-type: none"> <li>• <b>Phase III</b> is the part where main production takes place. It includes sewing of various garment parts (ex. collar, cuff etc.), assembly and production monitoring system.</li> <li>• This section being among the most important of the segments witnesses use of mid-level machinery in most of the operations.</li> </ul>
Phase IV	<p>Post-Production (Finishing &amp; Packaging)</p> <ul style="list-style-type: none"> <li>• <b>Phase IV</b> includes finishing and packaging where functions of garment pressing, thread cutting etc. are performed.</li> </ul>
Others	<p>Manufacturing efficiency, method, wage and time keeping etc.</p> <ul style="list-style-type: none"> <li>• This categorization involves functions such as generation of steam, MIS Systems, Time record entry of employees, wages/salary payment and production efficiency monitoring system.</li> <li>• Technology usage ranges from base to advance across these countries.</li> </ul>

Exhibit 12: Production Phases – Detailed analysis is mentioned in Annexure 3 – Page 13-17

Below is the classification of technology levels used across different operations in production.

Technology Levels	
Base Level	Uses the most basic technique with maximum human intervention
Mid-Level	Uses technique that require moderate human intervention
Advanced Level	Uses most advanced technique that require limited human intervention

**Exhibit 13: Technology Level – Detailed analysis is mentioned in Annexure 4 – Page 18-34**

Based on workmanship and skill sets required, we have classified the product categories as follows:

Garment Categories	
<b>Basic</b>	Vest, T-Shirts, Under pants, Shirts, Blouses, Dress etc.
<b>Value Added</b>	Ladies tops with Embellishments, Shawls, Stolls, Intimate Wear, etc.
<b>High End</b>	Suits, Premium shirts, Jackets, Overcoats etc.

**Exhibit 14: Garment Categories**

### Primary Research Findings conducted with factories in Key Sourcing Destinations

Function	India	China	Bangladesh	Vietnam	Sri Lanka	Share of Workforce (In %)
<b>Major Product Category</b>	<b>Basic and Value Added</b>	<b>Basic, Value Added and High-end</b>	<b>Basic (Value for Money)</b>	<b>Basic and Value Added</b>	<b>Basic and Intimate Wear</b>	
<b>Phase I</b> Pre-Production	Base to Mid	Mid to Advanced	Base to Mid	Base to Mid	Mid to Advanced	3%
<b>Phase II</b> Production Preparatory	Mid to Advanced	Mid to Advanced	Base to mid	Mid	Mid to Advanced	14%
<b>Phase III</b> Production	Base to Mid	Base to Mid	Base to Mid	Mid	Mid	64%
<b>Phase IV -</b> Post-Production	Base	Base	Base	Base	Base	16%
<b>Others</b>	Mid	Mid	Base	Mid	Mid	3%

**Exhibit 15: Technology Level Comparison in India and Competing Sourcing Destinations**

**Technology Level - Across key sourcing destinations**

S. No.	Phase	Process	India	China	Bangladesh	Vietnam*	Sri Lanka*	M/C import country
1	Phase I - Pre-Production	Costing	Mid level- using stand alone packages	Mid level- using stand alone packages	Base level- Manual / Excel based costing	Base level- Manual / Excel based costing	Mid level- using stand alone packages/ ERP	
2	Phase I - Pre-Production	Order booking	Mid level- integrated customer website	Mid level- integrated customer website	Mid level- integrated customer website	Mid level- integrated customer website	Mid level- integrated customer website	
3	Phase I - Pre-Production	Raw material procurement	Mid level- Generate PO through ERP and forward to supplier	Mid level- Generate PO through ERP and forward to supplier	Base level- send PO through excel sheet	Mid level- Generate PO through ERP and forward to supplier	Mid level- Generate PO through ERP and forward to supplier	
4	Phase I - Pre-Production	Release of internal PO	Mid level- Generate internal PO/ Work order	Advanced level- entry into ERP	Mid level- Generate internal PO/ Work order	Mid level- Generate internal PO/ Work order	Mid level- Generate internal PO/ Work order	
5	Phase I - Pre-Production	Production planning & control	Base level- excel based planning	Base level- excel based planning	Base level- excel based planning	Base level- excel based planning	Mid Level - Stand alone packages	
6	Phase I - Pre-Production	Fabric receipt	Advanced level- entry into ERP	Advanced level- entry into ERP	Mid level- excel based entries	Advanced level- entry into ERP	Advanced level- entry into ERP	
7	Phase II - Production Preparatory	Fabric inspection	Mid level- fabric inspection machine	Mid level- fabric inspection machine	Base level- manual inspection	Mid level- fabric inspection machine	Mid level- fabric inspection machine	
8	Phase II - Production Preparatory	Shade segregation	Mid level- light box	Mid level- light box	Mid level- light box	Mid level- light box	Mid level- light box	
9	Phase II - Production Preparatory	Preparing GRN	Advanced level- ERP generated GRN	Advanced level- ERP generated GRN	Mid level- excel based GRN	Advanced level- ERP generated GRN	Advanced level- ERP generated GRN	
10	Phase II - Production Preparatory	Material issue to shopfloor	Advanced level - ERP generated Challans	Advanced level - ERP generated Challans	Base level- material issue through manual material requisition slips	Advanced level - ERP generated Challans	Advanced level - ERP generated Challans	
11	Phase II - Production Preparatory	Pattern making	Mid level- using CAD	Mid level- using CAD	Base level- manual pattern/ Some reference to CAD	Mid level- using CAD	Mid level- using CAD	
12	Phase II - Production Preparatory	Cutting plan	Mid level- excel based planning & lay slips	Mid level- excel based planning & lay slips	Base level- manual planning & lay slips	Mid level- excel based planning & lay slips	Mid level- excel based planning & lay slips	
13	Phase II - Production Preparatory	Fabric spreading	Base level- manual spreading	Mid level- use of laying machines (semi-automatic & automatic)	Base level- manual spreading	Base level- manual spreading	Mid level- use of laying machines (semi-automatic & automatic)	
14	Phase II - Production Preparatory	Lay marking	Mid level- CAD markers	Mid level- CAD markers	Base level- manual marking	Mid level- CAD markers	Mid level- CAD markers	
15	Phase II - Production Preparatory	Lay cutting	Mid level- floatation table, straight knife cutters	Mid level- floatation table, straight knife cutters	Mid level- floatation table, straight knife cutters	Mid level- floatation table, straight knife cutters	Mid level- floatation table, straight knife cutters	Italy, Singapore (UK, USA)
16	Phase II - Production Preparatory	Relay of check fabrics	Mid level- pin table	Mid level- pin table	Base level- manual	Mid level- pin table	Mid level- pin table	
17	Phase III - Production	Fusing of panels	Advanced level- fusing machine with temperature, pressure & belt speed controllers	Advanced level- fusing machine with temperature, pressure & belt speed controllers	Advanced level- fusing machine with temperature, pressure & belt speed controllers	Advanced level- fusing machine with temperature, pressure & belt speed controllers	Advanced level- fusing machine with temperature, pressure & belt speed controllers	China, Germany
18	Phase III - Production	Single needle machine	Mid level- Machine with oil lubrication with UBTand stitch setter and servo motor	Mid level- Machine with oil lubrication with UBTand stitch setter and servo motor	Mid level- Machine with oil lubrication with UBTand stitch setter and servo motor	Mid level- Machine with oil lubrication with UBTand stitch setter and servo motor	Mid level- Machine with oil lubrication with UBTand stitch setter and servo motor	China, Japan, Singapore (Vietnam)
19	Phase III - Production	Double needle machine	Mid level- Double needle machine with Split bar	Mid level- Double needle machine with Split bar	Mid level- Double needle machine with Split bar	Mid level- Double needle machine with Split bar	Mid level- Double needle machine with Split bar	China, Japan, Singapore (Turkey)
20	Phase III - Production	Overlock machine	Mid level- Overlock with Pneumatic attachment for suction of excess material	Mid level- Overlock with Pneumatic attachment for suction of excess material	Mid level- Overlock with Pneumatic attachment for suction of excess material	Mid level- Overlock with Pneumatic attachment for suction of excess material	Mid level- Overlock with Pneumatic attachment for suction of excess material	China, Singapore, Switzerland, (Turkey, Vietnam)
21	Phase III - Production	Feed of arm	Mid level- Feed of Arm with puller mechanism and Servo motor	Mid level- Feed of Arm with puller mechanism and Servo motor	Mid level- Feed of Arm with puller mechanism and Servo motor	Mid level- Feed of Arm with puller mechanism and Servo motor	Mid level- Feed of Arm with puller mechanism and Servo motor	China, Japan
22	Phase III - Production	Welt Pocket Making	Mid level- marking & using double needle machine	Advanced level - Automatic Welt Pocket Machine	Mid level- marking & using double needle machine	Advanced level - Automatic Welt Pocket Machine	Advanced level - Automatic Welt Pocket Machine	China, Japan
23	Phase III - Production	Button Attach	Mid level- Programmable, Multi stich capability (No of Passes, designs, X and Y axis setting)	Mid level- Programmable, Multi stich capability (No of Passes, designs, X and Y axis setting)	Mid level- Programmable, Multi stich capability (No of Passes, designs, X and Y axis setting)	Mid level- Programmable, Multi stich capability (No of Passes, designs, X and Y axis setting)	Mid level- Programmable, Multi stich capability (No of Passes, designs, X and Y axis setting)	China, South Korea
24	Phase III - Production	Collar Run	Mid level- Manual sewing using collar template and roller presser foot	Mid level- Manual sewing using collar template and roller presser foot	Mid level- Manual sewing using collar template and roller presser foot	Mid level- Manual sewing using collar template and roller presser foot	Mid level- Manual sewing using collar template and roller presser foot	Germany
25	Phase III - Production	Collar Turn & Press	Base level- manual ironing	Base level- manual ironing	Base level- manual ironing	Base level- manual ironing	Base level- manual ironing	
26	Phase III - Production	Cuff Run	Mid level- use of template	Mid level- use of template	Mid level- use of template	Mid level- use of template	Mid level- use of template	
27	Phase III - Production	Cuff Turn & Press	Base level- manual ironing	Base level- manual ironing	Base level- manual ironing	Base level- manual ironing	Base level- manual ironing	
28	Phase III - Production	Sleeve Placket Creasing	Mid level- Creasing using Fusing machine and folder	Mid level- Creasing using Fusing machine and folder	Base level- Manual Ironing using patterns	Mid level- Creasing using Fusing machine and folder	Mid level- Creasing using Fusing machine and folder	
29	Phase III - Production	Back Pocket Creasing	Base level- Manual creasing using Iron box and pattern	Base level- Manual creasing using Iron box and pattern	Base level- Manual creasing using Iron box and pattern	Mid Level - Automatic pocket creaser	Mid Level - Automatic pocket creaser	
30	Phase III - Production	Back Pocket Attach	Base level- Manual attach using single needle machine	Base level- Manual attach using single needle machine	Base level- Manual attach using single needle machine	Base level- Manual attach using single needle machine	Base level- Manual attach using single needle machine	
31	Phase III - Production	Embroidery	Advanced level- Multi-colour multi –needle, multi-head embroidery machine	Advanced level- Multi-colour multi –needle, multi-head embroidery machine	Advanced level- Multi-colour multi –needle, multi-head embroidery machine	Advanced level- Multi-colour multi –needle, multi-head embroidery machine	Advanced level- Multi-colour multi –needle, multi-head embroidery machine	China
32	Phase III - Production	Loop Attach	Base level- manual marking & attaching	Base level- manual marking & attaching	Base level- manual marking & attaching	Base level- manual marking & attaching	Base level- manual marking & attaching	
34	Phase III - Production	Material handling	Base level- Use of center tables	Base level- Use of center tables	Base level- Use of center tables	Base level- Use of center tables	Base level- Use of center tables	
35	Phase IV - Post-Production	Garment Pressing	Base level- Manual pressing	Base level- Manual pressing	Base level- Manual pressing	Base level- Manual pressing	Base level- Manual pressing	
36	Phase IV - Post-Production	Carton packing	Base level- Manual counting, size wise segregation	Base level- Manual counting, size wise segregation	Base level- Manual counting, size wise segregation	Base level- Manual counting, size wise segregation	Base level- Manual counting, size wise segregation	
37	Phase V - Others	MIS (Management Information System)	Mid level- Excel Based MIS	Mid level- Excel Based MIS	Base level- Manual reports	Mid level- Excel Based MIS	Mid level- Excel Based MIS	
38	Phase IV - Post-Production	Thread Cutting	Mid level- Auto-trimmer	Mid level- Auto-trimmer	Base level- manual trimming	Mid level- Auto-trimmer	Mid level- Auto-trimmer	
39	Phase IV - Post-Production	Generation of steam	Mid level- Briquette	Mid level- Briquette	Advanced level - CNG	Mid level- Briquette	Mid level- Briquette	
40	Phase V - Others	Production monitoring system	Base level- Manual entry of hour wise output	Base level- Manual entry of hour wise output	Base level- Manual entry of hour wise output	Base level- Manual entry of hour wise output	Base level- Manual entry of hour wise output	
41	Phase V - Others	Time record entry of employees	Mid level- Biometric and stand-alone software	Mid level- Biometric and stand-alone software	Mid level- Biometric and stand-alone software	Mid level- Biometric and stand-alone software	Mid level- Biometric and stand-alone software	
42	Phase V - Others	Wages payment to employees	Advanced level- Bank transfer	Advanced level- Bank transfer	base level- Cash	Advanced level- Bank transfer	Advanced level- Bank transfer	
43	Phase V - Others	Manufacturing efficiency monitoring	Mid level- Efficiency based and SAM (Standard Allowed Minutes) based	Mid level- Efficiency based and SAM (Standard Allowed Minutes) based	Mid level- Efficiency based and SAM (Standard Allowed Minutes) based	Mid level- Efficiency based and SAM (Standard Allowed Minutes) based	Mid level- Efficiency based and SAM (Standard Allowed Minutes) based	
44	Phase V - Others	Manufacturing methods adopted	Base level- Push system, Target based manufacturing	Base level- Push system, Target based manufacturing	Base level- Push system, Target based manufacturing	Base level- Push system, Target based manufacturing	Base level- Push system, Target based manufacturing	

\* Vietnam & Sri Lanka data source - some primary and others through internal body of knowledge  
Exhibit 16: Detailed Analysis of Technology Level across Apparel Sourcing Destinations

## 1.3 Key Findings

### 1.3.1 Basic Machinery and Equipment used in Garment manufacturing across different countries is similar. The key differentiating factor is effective implementation of processes at production floor.

As garment manufacturing industry is labor intensive and operations for every style varies depending on the product design, one of the significant differentiation factor is effective and seamless implementation of processes at production floor.

Ineffective planning and implementation of operational processes would lead to longer lead times, mismanagement in process flow, delivery delays, quality issues and inefficiencies, thus leading to increased costs of the company.

To ensure effective implementation of processes, we have *Enterprise Resource Planning (ERP)* Software and Lean Methodologies tools used widely in Garment industry across sourcing destinations in South and South East Asia.

ERP is used for implementation of broad set of operations supported by multi-module application software that help a manufacturer to manages all the processes involved in garment manufacturing. The software aims at keeping a track of data and ensure smooth operations at every level. ERP system also helps in resource planning, resulting in better quality and higher efficiencies.

Lean methodologies tools such as Poka-Yoke, Kaizen, 5S, JIT, etc., are used at production floor to eliminate wastage across different operations at garment production floor. Lean helps in reducing inventory cost, increase productivity, higher efficiency, improved quality and reduced costs and lower lead time. Most progressive garment manufacturing companies are adopting lean methodologies.

To develop world class infrastructure in Textile industry, the Ministry of Textiles has initiated TUFs Scheme to provide capital and interest subsidy on capital investment for up-gradation of Machinery and Equipment. However, TUFs Scheme does not cover ERP Software. If ERP and similar process management software are incentivized under TUFs, it would ensure Garment Manufacturing industry in India heads towards Advanced Technology level and would ensure Indian manufacturers become more competitive in global landscape.

### **1.3.2 On Sewing floor, the key focus should be to reduce handling time and there are various technologies such as Eton and Switchtrack, available in the market.**

During our primary research, we found that advanced Material handling systems such as Eton and Switchtrack lead to lower material handling time, thus resulting in higher productivity.

State-of-art factories across all the sourcing destination use these technologies. In India, factories should invest in such technologies to reduce handling time, increase efficiency thus reducing costs as well.

### **1.3.3 Robotics and Pneumatics has potential to bring radical shift in the sewing operations.**

With advancement in Technology, automation is gradually gaining significance in Industry Sector worldwide. Similar trend has also been witnessed in the Garment manufacturing industry and it has the potential to bring paradigm shift in manufacturing. Robotics and Pneumatics are creating interest among Machine manufacturers in the developed world and prototype machines that undertake different operations at production floor are already functional (An illustration of the robotics in garment manufacturing is available on the weblink - <https://www.fastcompany.com/3067149/is-this-sewing-robot-the-future-of-fashion>).

Even otherwise, most of electronic garment machinery uses pneumatics for various functions. To capitalize on these advanced technologies, 'Robotics and Pneumatics' should be included in the curriculum for Garment Manufacturing Technology in institutions under the aegis of Ministry of Textiles.

### **1.3.4 Bangladesh and Vietnam have zero import duty on their machinery, while India levies import duty on its Machinery Imports.**

China is the biggest machinery manufacturers for machines used in Garment manufacturing. All other sourcing destinations depend partially/fully for imports of Machinery. To incentivize the industry countries such as Bangladesh and Vietnam have zero import duty for machinery and equipment imports. In India, post GST the import duties for Machines have been reduced, but not completely exempted as in the case of other sourcing destinations.

### 1.3.5 Garment factories are highly fragmented with no standard factory design.

Garment factories in India are highly fragmented and do not have adequate capacities across different divisions such as Cutting room, Sampling division, etc., This results in bottlenecks at different stages of production, higher lead time and inefficiencies.

Technopak suggests developing standard factory designs for garment factories. The individual factories may be graded on equipment/processes. There could be ratings developed for individual factories on point basis. Factories that are willing to improve the rating by investing in technological advancement may be provided capital subsidy in addition to Interest subsidy.

Below is our suggested technological requirements for standard factory with 500 machines.

- i. Fabric inspection machine and set-up for all incoming fabric inspections
- ii. Testing laboratory for basic tests on
  - a) Shrinkage
  - b) GSM testing (in case of Knits)
  - c) Color matching cabinet
  - d) Neck gauge (in case of Kids wear)
  - e) Button pull strength tester
  - f) Vernier calipers for Pinch setting (for snaps and poppers)
- iii. Cutting room must be equipped with:
  - a) CAD software including Digitizer and plotter
  - b) Spreaders for faster spreading
  - c) Conveyorized Fusing machines
  - d) Product specific equipment's like pinning tables
- iv. Sewing room must be equipped with
  - a) Stackers and feeders to reduce the work content from the operations
  - b) Engineered work stations to help ease the operatives
  - c) Performance monitoring systems – which could be as a base level Bar code based, or RFID based smart cards etc.



v. Finishing

- a) Finishing must have Needle/ Metal detection machines

vi. General

- a) Lean approach must be advocated in all factories as a step to improve the overall effectiveness. Lean advocates the reduction of wastes in all processes and looks at how value-adding processes can be increased. Lean courses should be added to base curriculums on garment manufacturing at NIFT and other relevant institutes.
- b) Enterprise Resource Planning (ERP) software is a key to improve the overall effectiveness of the manufacturing processes. Garment factories must have ERP solutions for at least basic functions which cover the majority of the cost.

*For response of factories on primary research, please refer to Annexure 5 – Page No. 35 – 52 and for other issues and opportunities in the Indian Apparel manufacturing industry due to Technological and other reasons, please refer to Annexure 6 – Page 53 to 55.*

### 1.3.6 Net Impact of Technology/Automation on employment in Garment Factories

To understand the net impact of Technology/Automation on employment in garment factories, we have derived ideal employment in 500 machines shirt manufacturing factory at Base, Medium and Advanced level of Technology. The findings are below:

<b>Man Machine Ratio – Shirt</b>				
<b>Attributes</b>	<b>Base Level</b>	<b>Mid Level</b>	<b>Advanced Level</b>	<b>Ideal</b>
Avg. Daily Output per Line	500	500	500	500
No. of Lines	12	11	18	14
No. of Machines per Line	42	45	28	36
No. of Machines (Operational)	504	495	504	504
Manpower	1091	1001	896	991
<b>MMR</b>	<b>2.2</b>	<b>2.0</b>	<b>1.8</b>	<b>2.0</b>

Exhibit 17: Net impact of Technology/Automation on employment in Garment Factories

Source: Technopak Analysis

Technological advancement in garment industry has resulted in significant increase in efficiencies and productivity, but is not poised to threaten the labor workforce of the industry. With base level which is highly labor intensive, Man Machine Ratio (MMR) is 2.2, whereas with Advanced level technology with Automation, ERP and other tools, the MMR is 1.8.

### 1.4 Recommendations

- Incentivize implementation of ERP/Production Management Tools under TUFs (Refer to sub-section 1.3.1 – Page 29).
- Robotics (including the use of Pneumatics) should be mandated as a curriculum for Garment Manufacturing Technology in Government Institutes such as NIFT, NID, IIT-Delhi, etc., (Refer sub-section 1.3.3 – Page 30).
- Devising factory grading based on standard factory design and linking it to existing government subsidies/incentives (Refer to sub-section 1.3.5 – Page 31 -32).

## ToR #2

*To study the cross-country experience of 5 garment manufacturing units/firms each of Bangladesh, Vietnam and India in terms of skill regime, labor laws, quality control and tax regime/ concessions and compile the best practices.*

### 2.1 Primary Research Background & Methodology for Skill Regime, Labour Laws, and Quality Control

To derive best industry practices followed by India, Bangladesh and Vietnam, Technopak conducted primary research with top manufacturers in these countries to determine the Skill Regime, Labor Laws, and Quality Control practices across these countries.

Technopak evaluated companies on the basis of following parameters:



**Exhibit 18 – Evaluation criteria for selecting factories for primary research**

Based on the above parameters, below is a list of companies shortlisted for primary research.

INDIA	BANGLADESH	VIETNAM
<ul style="list-style-type: none"> <li>• Mandhana Industries</li> <li>• Laguna Clothing Pvt. Ltd.</li> <li>• Vardhman Nisshinbo Garment Co. Ltd.,</li> <li>• Orient Craft</li> <li>• Malwa Apparels</li> <li>• Indian Designs Exports Pvt Ltd.</li> <li>• Akshara India</li> <li>• Cotton Blossom India Pvt. Ltd.,</li> <li>• Premier Knits</li> <li>• Fiori Creations</li> <li>• Pee Empro</li> <li>• Eveline</li> <li>• Richa Global</li> <li>• Shahi Exports</li> </ul>	<ul style="list-style-type: none"> <li>• Tarasimha</li> <li>• Generation Next</li> <li>• Eastport</li> <li>• Ibrahim Knits</li> <li>• Lenny Fashions</li> <li>• Modele de Capital</li> </ul>	<ul style="list-style-type: none"> <li>• Classic Fashion Apparels</li> <li>• Dong Hung</li> <li>• Phong Phu Quang</li> <li>• Saitex International</li> <li>• Nhabe Garment Corporation</li> </ul>

**Exhibit 19 – List of factories for primary research**

We had got in touch with a long list of other manufacturers in Bangladesh and Vietnam, but they had partially filled in questionnaire, thus not providing comprehensive findings to be added to the report. The detailed response of these respondents is mentioned in Annexure 5 – Page 35 to 52.

## 2.2 Skill Regime

### 2.2.1 Abstract:

*A sustainable and comprehensive skill regime is one of the key initiatives that the government should focus to harness immense labor pool and channel its resources in a productive and efficient manner. Owing to higher employability and diversified skill set, textile and apparel sector occupies a significant position in Indian economy.*

*Modernization of manufacturing process in the sector has created a skill gap due to mismatch of skills of the conventional labor. To reduce this gap, Government of India has taken skill development initiatives like Integrated Skills Development Scheme (ISDS) by Ministry of Textiles, Deen Dayal Upadhyay – Gramin Kaushal Vikas Yojna (DDU-GKY) and Pradhan Mantri Kaushal Vikas Yojna (PMKVY) being executed by Ministry of Skills.*

*Currently, the training is largely focused on entry level job creation and does not cover other or existing resources in the value chain. This does not necessarily improve the overall skills requirement in the factory at various skill levels.*

*The skill regime followed by competing countries have certain government initiatives with varying degrees of private/industry participation. Bangladesh and Vietnam are at the fore-front of Brands/Institutes/Industry bodies actively taking skill development initiatives.*

### 2.2.2 Skill Regime

With rising labor costs in China, buyers world over are scouting for the next destination to relocate their sourcing base. No other country has similar textile value chain capabilities such as India among sourcing destinations. India has traditionally focussed on value added products which are ordered in low to medium quantities and require high skill levels.

In this regard, Technopak conducted primary research in India, Bangladesh and Vietnam with top factories to understand the skill level and reputation with clients among other factors. The findings are mentioned on the subsequent page.




Criteria	India	Bangladesh	Vietnam
Current Skill Level			
Products Manufactured	Value added products priced at medium range in the consuming markets.	Basic products priced at value for money in the consuming markets.	Basic products priced at value for money in the consuming markets.
Order Quantity	Low to medium qty.	Huge qty.	Medium to high qty.
Product Quality	Good Quality.	Medium to Good.	Low to Medium.
Skilling and Training	Conducted mainly by Government Institutions, however, recently Industry is taking.	Conducted significantly by Brands/Industry bodies, International Development Bodies and Government Institutions.	The industry has state owned enterprises and government conducts training at regular interval. In addition German government is collaborating on training programs.
Government Policy	Key skill development programs: 1) Integrated Skill Development Scheme (ISDS), 2) Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY) / AAJEEVIKA, 3) Pradhan Mantri Kalyan Vikas Yagna (PMKVY) & 4) Other projects of NSDC.	1) National Skills Development Policy – Development of 15 Industry Skill Councils, 2) Planning to launch Integrated Employment Development Scheme with the objective to train 15 Lakh workers within 5 Years with overall Budget of Tk 2,000 Cr. (USD 250 Mn) & 3) Bangladesh Skills for Employment and Productivity (B-SEP) Project.	1) Vietnam Textile and Garment Group (SOE) human resources development program in 2014 with funding of VND 65.6bn (USD 3Mn) by government. 2) Conference on Vocational Training is co-organized by German and Vietnamese Government for training and skill development of workers on a regular basis from 2011, with the goal of developing a modernized industrial set-up in Vietnam by 2020.
Industry/Private Training	Private sector/brands are seldom taking initiatives in skill development/training for the workers and improvement of production processes in the factories.	Brands conduct their own training program in collaboration with International institutions, eg. Centre of Excellence for Bangladesh Apparel Industries (CEBAI) – Collaboration between H&M, ILO & NGOs for establishing a CoE and Skill Center of Tesco, TVET set up by Government of Singapore.	

Exhibit 20 – Skill Regime comparison across sourcing destination For detailed analysis on Skill Regime, please refer to Annexure7 – Page 56-61.

We have arrived at the 'current skill level' rating on the previous page based on the below criteria:

Sl. No	Criteria	Percentage Weightage	India	Bangladesh	Vietnam
1	Value addition in products manufactured	20%	15%	10%	12%
2	Quality	30%	20%	20%	20%
3	Brand/Customer's Perception	20%	15%	12%	15%
4	Observatory (during Primary Research)	30%	24%	20%	20%
<b>Total</b>		<b>100%</b>	<b>74%</b>	<b>62%</b>	<b>67%</b>

*Exhibit 21 – Evaluation of Current Skill Level for sourcing destinations – Source: Technopak Analysis*

### 2.2.3 Key Findings

#### (I) Current skill levels of each country is driving the product categories they manufacture

During our primary research, we have found that each country has developed certain skill levels to match the product categories they manufacture. The clients place orders for certain product categories with these countries to match the existing skill levels of the workforce in these countries. India owing to its relatively higher skill levels, has catered to value added products which are low to medium quality with certain level of embellishment/value addition. In case of Bangladesh and Vietnam, the skill levels have been developed over the last 1-2 decades and these countries predominantly cater to basic products. However, with various skill programs discussed in detail in ToR 4 (Page 61), both Bangladesh and Vietnam are enhancing their skill levels and gradually moving towards value added products.

#### (II) Indian garment manufacturing industry has shortage of skilled and highly skilled workforce

During our industry interaction and based on primary research findings, the Indian garment manufacturing industry has shortage of skilled and highly skilled workforce. As skilling is covered across different ToRs, we have discussed the gaps in sewing machine operators in ToR # 3 (Refer 3.4 on Page 58) and suggested upskilling framework in ToR # 5 (Refer 5.1.4 on Page 72-74).

### **(III) Encourage participation of Garment Factories to undertake skill training under existing programs:**

Currently under ISDS, Government provides a subsidy to the extent of 75% of project cost with an upper limit of Rs. 10,000/- per trainee. The Scheme is being implemented by leveraging existing institutional strength and training experience through three components. Component I – Institutions/TRAs under MoT, Component II – Private Industry Partners in PPP mode, Component III –State Government Agencies.

In component II (PPP Mode), one of the key challenges faced by private partners is that the newly trained workers move to factory, which offer them increase in wages. Hence, the training imparted by partner factory is not useful to them, but for their competitors. This acts as a deterring factor for training partners in taking skill training programs.

We would suggest the government to introduce an ‘lock-in’ clause for 9-12 months, during which the trained worker would have to work in the partner factory. This step would ensure that the efforts of the training partner are rewarded and would attract more private industry partners to participate in skill development schemes which will provide benefit to both factories and trainees.

#### **2.2.4 Recommendations**

- Skill development initiatives by Government should focus not only on the entry level training, but also on up-skilling of workforce (*Refer to section 3.4 – Page 58 and upskilling framework mentioned in 5.1.4 on Page 72-74*).
- The trained workers under current programs may be incentivized to work for a fixed period with the manufacturers. This step would ensure assured sustained job opportunities for the trained worker and higher participation by manufacturers (*Refer to sub-section 2.2.3 (III) above*).

## 2.3 Labor Laws

### 2.3.1 Abstract:

Labor laws aim to provide a legal framework for relationship between the employer and the employee. It is based on government laws taking into account local cultures and conventions. They balance the interests of industry and the welfare of the workers.

Across these countries at varying degrees the key issues faced by labor workforce are informal employment, pre-carious short term contracts, low wages, unsafe work environment and forced overtime, etc., Every country has tried to address these issues with a legal framework and other checks and balances in place.

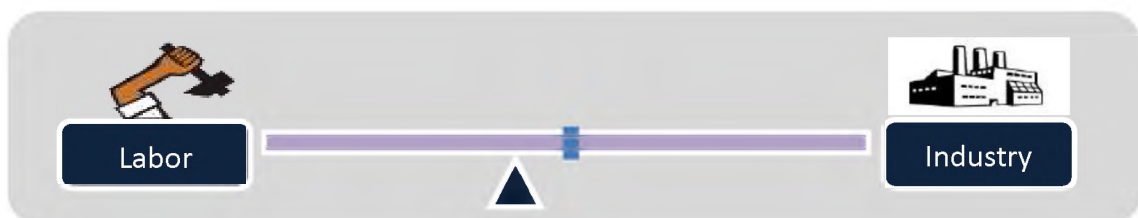
Due to the reasons mentioned above, there is gap in demand and supply of the work force, adversely affecting the industry. Government should come up with policies that make employment in garment sector more attractive by encouraging garment factories to provide health, education and other social benefits to its work force. Such measures shall go a long way in creating a favorable environment for the growth of the entire industry and well-being of the workforce.

### 2.3.2 Labor – Industry Dynamics:

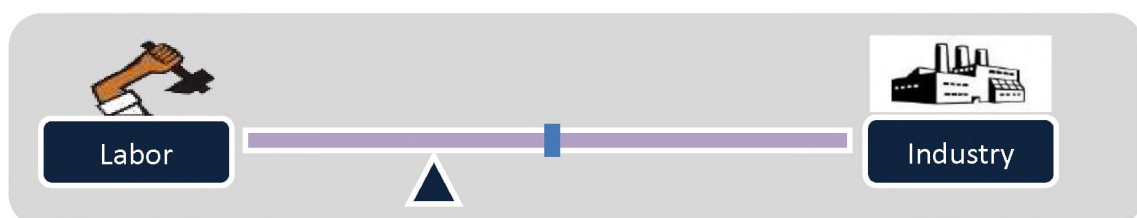
We have provided a detailed analysis of different factors that affect employment and work culture such as Wages, Compensation, Annual Leave and Holidays, Employment Security, Health & Safety, etc., in the chart below.

Based on the findings, we have arrived at the below conclusion:

**India:**

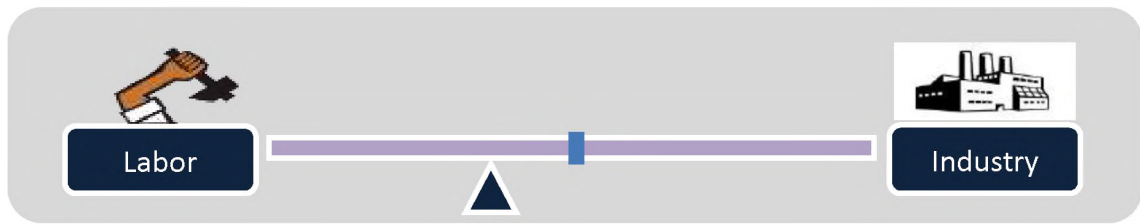


**Bangladesh:**

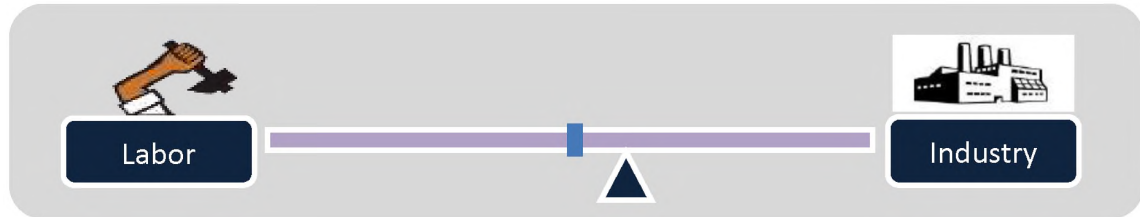




### China:



### Sri Lanka:



### Vietnam:

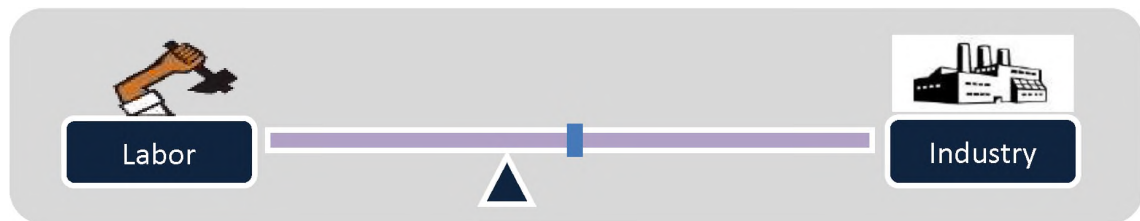


Exhibit 22 –Labor-Industry dynamics based on Labor Laws

For further information on Labor Law, please refer to *Annexure 8 – Page 62 – 126*.

### 2.3.3 Key Findings

Based on detailed analysis of labor laws across these sourcing destinations, we have concluded that Sri Lanka is the only country which is industry friendly, as it provides for 150% over time wage rate and no premium for night shift. Other countries are labor friendly, with Bangladesh being the most labor friendly. It provides for 17 paid leaves and has Badli/Temporary and Permanent work options for its workforce.

#### (I) Legally Permitted Weekly Work Hours:

Based on labor laws of each country, all of them provide for similar legally permitted work hours. India, Vietnam and Bangladesh, each have the same legally permitted work hours of 48 hours per week, whereas China permits 44 hours per week and Sri Lanka permits 45 Hours/Week.

#### (II) Overtime and Paid Leave:

India, Bangladesh and Sri Lanka provide for 2 hours overtime (200% of hourly wage for India and Bangladesh and 150% of hourly wage for Sri Lanka), whereas China provides for 1.5 Hours overtime (150% of hourly wage) and Vietnam provides for 1 Hour overtime per day

(150-300% of hourly wage depending on Workdays/Weekend/Public Holidays), over the legally permitted work hours.

India and Vietnam provide 12 paid leaves. Bangladesh provides for paid leave of 1 Day for every 18 working days, which accounts for 17 paid leaves in a year. China provides for 5/10/15 days of paid leave, depending on the Experience of the worker. Sri Lanka provides for 14 paid leaves annually.

### **(III) Contract Terms, Night Shift and Notice period:**

India and China provide for fixed term contract. Bangladesh has provision for Badli, Temporary and Permanent workforce. Vietnam has Indefinite/Temporary/Fixed contract. Sri Lanka has provision for Fixed Term and Temporary employment.

India, Bangladesh and Sri Lanka do not provide for premium on hourly wage for Night Shift. China provides for premium of 139% and Vietnam provides for premium of 130% for Night Shift on their hourly wages.

All countries analysed other than Bangladesh have a notice period of 1 Month, whereas Bangladesh has notice period of 4 Months.

### **(IV) Effective implementation of Second Shift/Night Shift:**

Indian Labor Law has provisions for Second Shift and Night Shift operations at factory floor. In 2016, the Labour and Employment Ministry has written to all state chief secretaries to make the necessary change in state laws to allow women to work night shifts with safety and security apparatus in place. With these provisions in place, if the factories start implementing second/night shift, it would result in paradigm shift in the industry with no additional capital investment. This shift would also address backlogs/overtimes and over booking of orders in certain factories. In terms of capacity, this one move has the potential to create significant impact. As per our estimate of *Indian Market Sizing of Apparel Manufacturing (Please refer to Pg 24)*, the current capacity in India is for about 17.4 to 17.6 Bn pieces annually amounting to USD 62.1 Bn. With implementation of Second/Night Shift, even 30% increase in production would lead to additional volume of 5.25 Bn pieces annually and additional revenue value of USD 18.6 Bn. Out of this revenue, exports can account for USD 5 to 6 Bn. Considering the decline in exports from China (*Please refer to Exhibit 8 and its note in Pg 21*), India is positioned to capture higher share of International Trade.

## **2.3.4 Recommendation**

- The Government should ensure effective implementation of Night Shift / Second Shift with safety and security measures in place. This initiative would transform the industry without any significant capital investment and has the potential to increase the capacity by additional 5.25 Bn pieces and additional value of USD 18.6 Bn (*Refer Section 2.3.3 sub-section IV above*).

## 2.4 Quality Control

### 2.4.1 Abstract

*For Quality Control there are several quality management principles, but in Garment Manufacturing Industry, the most accepted method is AQL(Acceptable Quality Limit). In Garment Industry, product quality is derived more from application of quality management principles than a direct outcome of the machine output. So be it functional or the aesthetic aspect of a garment, the final decision regarding acceptance or rejection is based on certain well defined norms set by the buyer and a factory's adherence to them.*

*Mid-level and large companies in Bangladesh are investing on new technologies which are efficient and thus would provide better results in terms of quality in future while mid-level manufacturers in India are still using older/obsolete machines. Thus in India, TUFS scheme should be revised to suit Mid-level manufacturers to ensure migration to new technology.*

### 2.4.2 Quality Level:

In order to gauge the depth of quality compliance across key countries, Technopak conducted a Primary research of some of the major garment producers in India, Bangladesh, Vietnam and China and compared them on below mentioned quality indicators. The detailed findings are mentioned in the next page.

Quality parameters and performance level across different countries:

Quality Parameters	Countries		
	India	Bangladesh	Vietnam
% Rework (Lower the value, better)	5-7%	4-5%	8-10%
% Rejection (Upto 5% is usually accepted by Brands)	2-3%	1-2%	2-3%
% First time pass in external inspection (Higher the value, better)	90-95%	94-96%	85-87%
Order to Shipment Ratio (Higher the value, better)	97-99%	98-100%	99-101%
Production floor Reports	In general, it is observed that the respondents across these countries follow similar reports/documents to track rejection, rework, needle breakage, quality inspection, measurement variations and defects per hundred units (DHU).		
Acceptable Quality Level (AQL) - lower the value, stricter the norm	1.5 to 2.5	2.5 to 4	2.5 to 4

Exhibit: 23 – Primary Research findings on Quality Parameters across sourcing destinations

For detailed analysis and procedure followed for AQL Quality inspection, kindly review *Annexure 9 – Page 127 – 129*

### 2.4.3 Key Findings

Quality parameter is defined based on clients requirement and as a part of the commercial terms, the factories need to adhere to the norms defined by the clients.

These competing countries cater to similar clients, offering products of different level of value addition, embellishments and functionality of raw materials. Based on all the factors that influence the end product, these clients place order for different product categories with factories in these countries. These countries are overall performing with acceptable quality to match the clients' requirements.

At delivery stage, *Acceptable Quality Level (AQL)* is an industry wide accepted standard. The lower the AQL standard followed by the client, the stricter the norms of quality. While Bangladesh and Vietnam follow a lenient AQL Level of 2.5 to 4, India follows stricter AQL of 1.5 to 2.5.

### 2.4.4 Recommendation

There are no specific recommendations around the garment quality improvement. The improvement in quality is a subset of controlled processes.

However, during our primary research, a few exporters mentioned that improvement in quality of fabric procured indigenously may be required. The CM countries (Sri Lanka and Vietnam) tend to be better on fabric quality. The FOB countries like India and China face Fabric quality issues.

## 2.5 Tax Regime

### 2.5.1 Abstract

*There are various factors that determine success and sustainable growth of Industry such as tax regime, good infrastructure, raw material availability and labor regulation among other things. As Tax Regime impacts Investment and Cost of the Product, it is among the most important factor that determines global competitiveness among different countries in International trade.*

*A good tax regime has the potential to transform the industry and vice versa. Currently the corporate tax rate in India is higher than its peers in Asia, resulting in lower FDI inflow in the country compared to other sourcing destinations.*

*Government in Vietnam and Bangladesh has offered significant support for incentivizing the industry. Bangladesh provides financial support for market expansion incentives, thus increasing the export markets for its products in addition to the traditional markets of US, Europe and Canada. In Vietnam foreign investors utilizing their profits for re-investment can avail certain percentage return on profit tax.*

*Following the footsteps of Bangladesh, India can adapt concessions based on the geography which would result in large scale industrial growth and encouraging industrialization in backward regions too.*

*Government of India has rolled out GST from 1<sup>st</sup> July 2017. This tax regime eliminates differential taxes across different states with a uniform tax rate across India.*

### 2.5.2 Tax Regime and Concessions:

Taxes Regimes and Concessions provided by each country is dependent on various factors and significance given to an industry over other industries. For Instance, Bangladesh provides a very conducive ecosystem for garment industry as Garmenting Industry is the key foreign exchange recipient.

Technopak has conducted a comparative study of 'tax structure and concessions' provided by India, Vietnam and Bangladesh. The detailed findings are mentioned in Exhibit 24 in next page:

Tax Regime	India	Bangladesh	Vietnam
<b>Corporate Taxes</b>	29% (Turnover < Rs 5 Cr.); 30% (Turnover > Rs 5 Cr.)	10% (Green Factories); 12% (Normal Factories)	20%
<b>GST / VAT</b>	GST: Fibre: Cotton - 5%, Synthetic - 12% Yarn: Cotton - 5%, Synthetic - 12% Fabric: Cotton - 5%, Synthetic - 5% Garment: 5% (Value < Rs. 1000/-) 12% (Value > Rs. 1000/-)	VAT: Fibre: Cotton - 0%, Synthetic - 4% Yarn: Cotton - 4%, Synthetic - 4% Fabric: Cotton - 4%, Synthetic - 4% Textile Dyes & Chemicals - 4% Garment: Cotton - 4%, Synthetic - 4%	VAT: Fibre: Cotton - 5%, Synthetic - 5% Yarn: Cotton - 10%, Synthetic - 10% Fabric: Cotton - 10%, Synthetic - 10% Garment: Cotton - 10% , Synthetic - 10%
<b>FDI</b>	100% equity allowed for certain sectors, sectoral caps do exist (100% FDI in single brand retail and 51 % in multi-brand retail)	100% FDI where Excise duty, Customs duty, Stamp duty, etc. are waived off. 100% equity allowed in case of Foreign Direct Investment in Export Promotion Zones (EPZ)	100% FDI allowed through JVs and full ownership of foreign entity and businesses with foreign-invested capital will not be nationalized
<b>Concessions, Subsidies &amp; Export Promotion Initiatives</b>	Advance Authorization Scheme of DGFT for Customs duty exemption of 10% for rawmaterials/inputs imports for end-product export (with minimum 15% Value Addition)		
	Export Promotion Capital Goods Scheme (EPCG) for import of Capital Goods and spares for Export Manufacturing. In this scheme Customs Duty (10%), Countervailing Duty (12.5%) and Special additional excise duty (4%) is exempted		

Merchandise Exports from India Scheme (MEIS) is DGFT Scheme wherein the Government provides 4% transferable scripts on garment exports for previous year. These scripts can be used to offset import duty and other taxes		
5% in duty-free entitlement for import of trimmings and embellishments used by the readymade textile garment sector for manufacture of garments for exports.	5% Cash incentives against repatriate value for using domestic yarns and fabrics	
Duty Drawback Scheme provides for drawback of 2%-4.8% depending on product category. This schemes helps boost Indian Exports and stay globally competitive	Export Incentive of 4% for all product categories in Apparel Exports	
Market Access Initiatives (MAI) and Market Development Assistance (MDA) as support for market expansion is an scheme for increasing exports as this scheme subsidies participation in International Fairs/Exhibitions for Exporters with less than Rs. 30 Crore Annual Turnover	In addition to the export incentive, additional market expansion incentive of additional 3% for Exports to Non-Traditional markets (Any market other than EU, USA and Canada)	



Incentives are in areas like subsidised land cost, relaxation in stamp duty exemption on sale/lease of land, power tariff incentives, concessional rates of interest on loans, investment subsidies/tax incentives, backward areas subsidies and special incentive packages for mega apparel projects.	In case of Dhaka and Chittagong, the industries would get 5 years tax rebate - 100% for first two years, 50% for the next two years and 25% for the 5th year. In case of Rajshahi, Khulna, Sylhet and Borishal, the industries would get 7 years tax rebate - 100% for first three years, 50% for the next three years and 25% for the 7th year.	New investment projects engaged in manufacturing of textile & garments are entitled to corporate income tax incentives. Common preferential rates of 10%, 15% and 20% are available depending on the region of investment. Import tax exemption for raw materials, for 5 years, with respect to projects operating in highland and remote areas.
Technology up-gradation incentive to the extent of INR 30 Cr (15% of machine investment)	Government subsidy of USD 38,000 for setting up Effluent Treatment Plants	Tax exemption for up to 9 years from the day enterprise starts making profits, depending on their export ratio or area of investment.
Rebate of State Levies Scheme (ROSL) for Garment Exports ranging between 1.48-1.7%	RMG Exporters can avail 80 per cent VAT waiver on electricity and gas bills and 60 per cent on water bills	
Export Promotion Capital Goods Scheme (PCGS); Duty Remission Scheme; Focus Product Scheme, Special Focus Product Scheme, Focus Market Scheme		
	50% Tax Concession on Export Revenue (If other rebate concession not availed).	Foreign investors utilising their profits for re-investment can enjoy a sum of profit tax return which is equal to the sum paid for the re-invested profits; the Profit tax return rates are 100%, 75% and 50% based on the type of project.

	5% Alternate cash assistance for export oriented local textile and clothing sector instead of tariff bond or duty drawback	
	10% Spare parts of Capital machineries can be imported at tariff free rate for a two years interval	Spare parts, Machinery and Equipment imported for the processing of goods for export and finished products imported for use in the processed goods are exempted from import duties
	Provide for Depreciation of 50%, 30% and 20% of plant & machinery in 1st, 2nd and 3rd year respectively.	

Exhibit: 24 – Primary Research findings of Taxes, Concessions, Incentives across sourcing destinations

### 2.5.3 Key Findings:

Among the countries we have analyzed, the tax regime of each country is designed based on the priority given to Garment Sector in the country's exports.

Apparel industry is the largest employer and it accounts for 82% of Bangladesh's exports in 2015, thus the industry has been given many benefits/incentives. In case of Vietnam, Apparel industry has large scale FDI investments in the past from China and South Korea, thus leading to increased capacities and enhanced textile infrastructure.

Corporate tax rates are the lowest in Bangladesh with 10% for Green factories and 12% for Normal factories. In case of Vietnam, the corporate tax rates are 20%, whereas in India the corporate tax rates are 20%.

In addition, Bangladesh provides other incentives/subsidies for garment sector such as Back-to-Back LCs, 15% Forex Retention for International operations, Tax holidays and incentives for investments in Remote/Backward regions, etc.,

In case of both Vietnam and Bangladesh, machinery imports are tax free, whereas in India machinery imports entail taxes and duties.

Vietnam provides incentives to boost FDIs such as 9 years of Tax Exemption from Breakeven for investments in backward/highland/remote areas. In addition, Re-investment of profits is exempted from profit tax equal to re-invested profits.

China is the global leader in almost all product categories, as it has developed dedicated industrial clusters closer to ports for Apparel exports. These clusters have the entire textile ecosystem needed for the apparel manufacturing industry, thus creating the requisite infrastructure for the industry to thrive and grow.

#### (I) Requirement of Special Economic Zones closer to ports with focus on Exports

Industrial cluster development for focus product categories has been a backbone of Chinese manufacturing infrastructure. China has developed numerous such clusters in Eastern part of the country closer to ports to focus on Exports. These clusters usually encompass the entire textile ecosystem within or in close proximity of the cluster. These big textile clusters include Shandong and Jiangsu clusters among others. These clusters have developed the requisite infrastructure and capacity to manufacture ~37%<sup>17</sup> of Global Apparel Trade.

Technopak proposes, developing special industrial zones/export clusters closer to our ports with focus on Textiles & Apparels. These clusters should have entire textile ecosystem and value chain capabilities. These clusters would ensure exponential growth of Textile and Apparel industry in India by attracting investments and FDIs resulting in job opportunities and overall growth of the industry.

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<sup>17</sup> ITC Trademap; Technopak Analysis

## (II) Corporate Tax Concession workings for Green Factory

To incentivize development of eco-sustainable green factories, provide for Corporate Tax Rate concession based on the following working for an idle 500 machine factory.

Corporate Tax Concession Workings - Green Factory		
Total Machines	500	
Area per Machine in Sq Ft. (Including Admn office, cutting, packing, finishing and other divisions)	175	
<b>Total Sq Ft area for Factory</b>	<b>87500</b>	
<b>Total Factory Area in Sq Mtr</b>	<b>8129</b>	
Particulars	Per Sq. Mtr	Total Factory Cost
Cost of setting up Normal Factory*	₹ 16,000	₹ 13,00,64,382
Cost of setting up Green Factory*	₹ 20,000	₹ 16,25,80,477
<b>Difference in Value of setting up Green Factory against Normal Factory</b>		<b>₹ 3,25,16,095</b>
<b>Life of the Factory (in Years)</b>		<b>40</b>
<b>Yearly difference in value of setting up Green Factory against Normal Factory</b>		<b>₹ 8,12,902</b>
Machine Utilization		70%
Total machine/days in a year		1,05,000
Average number of pcs per day		10
Total number of pcs per year		10,50,000
Tax concession per unit for Green Factory		₹ 0.77
Avg price per garment	@\$ 4.00	₹ 260.00
Average Net Margin (@8%)		₹ 2,18,40,000
<b>Current Corporate Tax (@30%)</b>		<b>₹ 65,52,000</b>
<b>Effective Concession in Corporate Tax Rate</b>		<b>3.7%</b>

Exhibit: 25 – Tax Concession working to incentivize green factories – Source: Technopak Analysis

\*The construction cost of building a normal factory and green factory has been derived based on discussion with industry experts who have worked on such factory construction.

### 2.5.5 Recommendations

Each country compared in the report has its own mechanisms for incentivizing the industry. However, significant support is offered by the Government in Vietnam and Bangladesh.

- Special Economic Zones/ export clusters with entire textile ecosystem and focus on Apparel Industry could be created closer to the port (*Refer to sub-section 2.5.3 I on Pg 50*) where the below mentioned incentives can be planned for all the textile value chain components.
  - **Fiscal Incentives:**
    - Tax Holiday (10 Years)
    - Duty Free Export & Import
    - Exemption from Dividend Tax
    - Easy Financing and low interest rates
- Provide for Corporate Tax Concession of 3.5-4% for Green Factories (*Refer to sub-section II of 2.5.3 on Page 51*)

## ToR #3

*To study the assessment of the type and level of skill required in the domestic garment industry and possible support as visualized by the exporters to boost the exports of garments from India.*

### 3.1 Abstract

*Apparel manufacturing currently provides employment opportunities to a population of 12.3 million<sup>18</sup>. The required workforce according to growth rate of Textile Commissioner's office is expected to reach 15.6 million by 2025, creating 3.3 million<sup>19</sup> additional employment opportunities by 2025. More than half of the job creation is expected to happen in the "up to secondary" education category.*

*Building domestic sector will help export sector both directly and indirectly. Directly it would support the export sector in building flexibility of capacity and labour utilisation and indirectly it would help in development of core competencies. With 73% direct employment, the skills developed by the workforce for domestic sector can be utilized in export sector as well.*

*To ensure high productivity level, it is critical to provide up-skilling of employees at production floor level. In addition, to ensure sustainable growth in the industry and higher share of exports, training of Mid-Management level employees is essential.*

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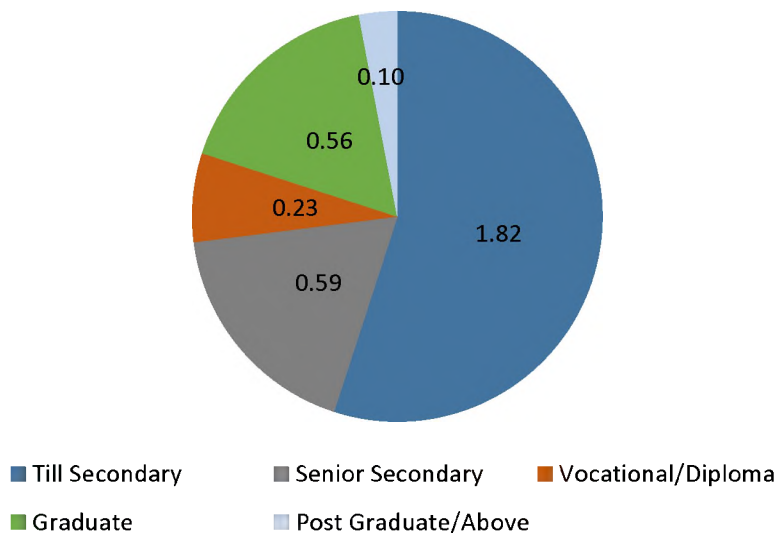
<sup>18</sup> Textile Ministry Annual Report 2015-16

<sup>19</sup> Based on CAGR of 2.35% based on Textile Commissioner's Office projections - [http://www.txcindia.gov.in/html/employment\\_textile%20Mar06.htm](http://www.txcindia.gov.in/html/employment_textile%20Mar06.htm)

### 3.2 Employment in Garmenting Sector

Of the projected 3.3 million new employment opportunities being created over next decade, the human resource requirement can be depicted from the following chart:

**Incremental Human resource requirement in Garmenting Sector by education by 2025 (In Mn)**

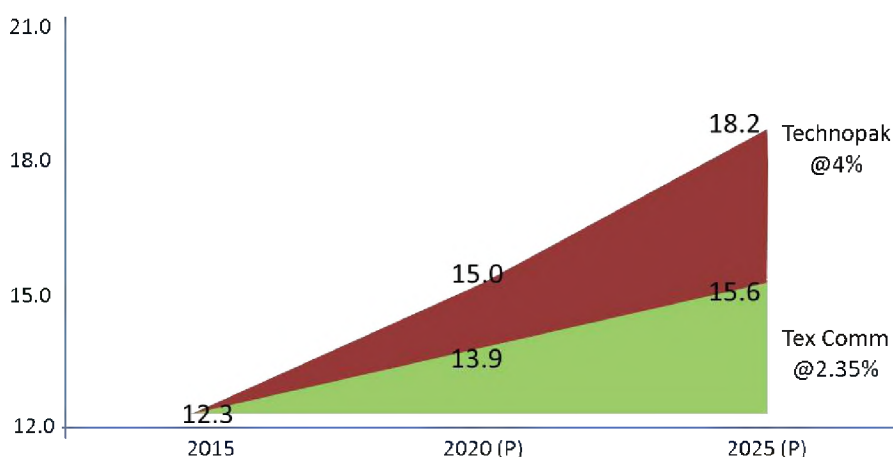


Source: NSDC Report 2013, Industry sources, Technopak Analysis

**Exhibit 26 – Incremental Human Resource Requirement in Garmenting Sector by 2025**

There are variety of job roles in the garment manufacturing industry such as sewing operators, line supervisors, designers, sampling and production merchandisers, production managers, pattern master, quality controller, helpers etc.

### Employment Potential



Source: Office of Textile Commissioner, Technopak Analysis

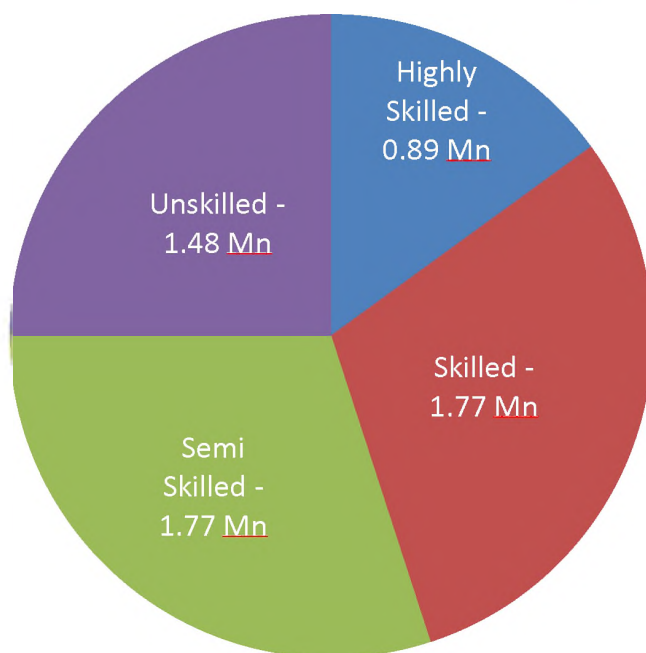
**Exhibit 27: Employment Scenarios in Garmenting Sector**

For employment generation, Technopak has considered two scenarios to show the impact of conducive environment and industry infrastructure to Indian garment manufacturing industry:

Scenario 1 – Considering a conservative growth CAGR of 2.35% as followed by Office of Textile Commissioner.

Scenario 2 – Considering a paradigm shift in the Industry backed by aggressive government support to boost garment manufacturing, we have considered a CAGR of 4%. This would lead to an additional employment generation of 5.9 Mn by 2025.

**Share of New Employment  
Generation (Scenario 2) – 2025 – 5.9 Mn**



**Exhibit 28 – Workforce requirement in Garment Sector – Optimistic Scenario Projections**

The employment generated in garment manufacturing industry is spread across different skill levels as shown in the chart above. This would result in upliftment of underprivileged parts of the society and ensure sustainable growth for unskilled and semi-skilled workers if upskilling initiatives are provided by both government and industry.



### 3.3 Investments required for Projected Employment Generation

In manufacturing, usually new employment is created by new investments.

We have analyzed the investment needed to boost employment generation for both above scenarios.

Below is the requisite investment requirement for these scenarios:

#### New Investment to facilitate employment as per Scenario 1 - Textile Commissioner Office Estimate (CAGR 2.35%)

Manpower Growth CAGR	2.35%											
Investment YoY CAGR	2.00%											
Year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Cumulative Req.
Manpower	12.3	12.6	12.9	13.2	13.5	13.8	14.1	14.5	14.8	15.2	15.5	-
MMR %	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	-
Machine Required (Mn Units)	6.5	6.6	6.8	6.9	7.1	7.3	7.4	7.6	7.8	8.0	8.2	-
Additional Machines Req. (Mn Units)	-	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.7
Investment per Machine (Rs. Crore) – <i>thumbrule</i>	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-
Total Investment Req. (Rs. Crore)	-	6,505	6,791	7,089	7,401	7,727	8,066	8,421	8,791	9,178	9,581	79,551

Exhibit 29: Investment Required for Scenario 1: CAGR 2.35% – Additional employment of 3.3 Mn by 2025 – Source: Technopak Analysis

### New Investment to facilitate employment as per Scenario 2 – India capturing higher share of International Trade (CAGR 4%)

Year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Cumulative Req.
Manpower Growth CAGR	4.00%											
Investment YoY CAGR	2.00%											
Manpower	12.3	12.8	13.3	13.8	14.4	15.0	15.6	16.2	16.8	17.5	18.2	-
MMR %	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	-
Machine Required	6.5	6.7	7.0	7.3	7.6	7.9	8.2	8.5	8.9	9.2	9.6	-
Additional Machines Req. (Mn Units)	-	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	3.1
Investment per Machine (Rs. Crore) – <i>thumbrule</i>	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-
Total Investment Req. (Rs. Crore)	-	11,072	11,745	12,459	13,217	14,021	14,873	15,777	16,737	17,754	18,834	1,46,489

Exhibit 30: Investment Required for Scenario 2: CAGR 4% - India capturing high share of International Trade – Additional employment of 5.9 Mn by 2025 – Source: Technopak Analysis

### 3.4 Skill Gaps in Sewing Machine Operators

The workers in garment industry are generally classified as unskilled, semi-skilled, skilled and highly-skilled. This classification is based on the efficiency of the worker and ability to complete certain production operations.

The graph below shows the split of workforce based on skill ranging from Unskilled to Highly Skilled. It is clear the proportion of Skilled and Semi-skilled workers constitute 25-30% and 30-35% respectively. During our primary research, we have found that across factories in India there is scarcity of Highly-skilled workers. One of the key reasons for lack of skilled and highly skilled labor is absence of upskilling initiatives in the current training programs.

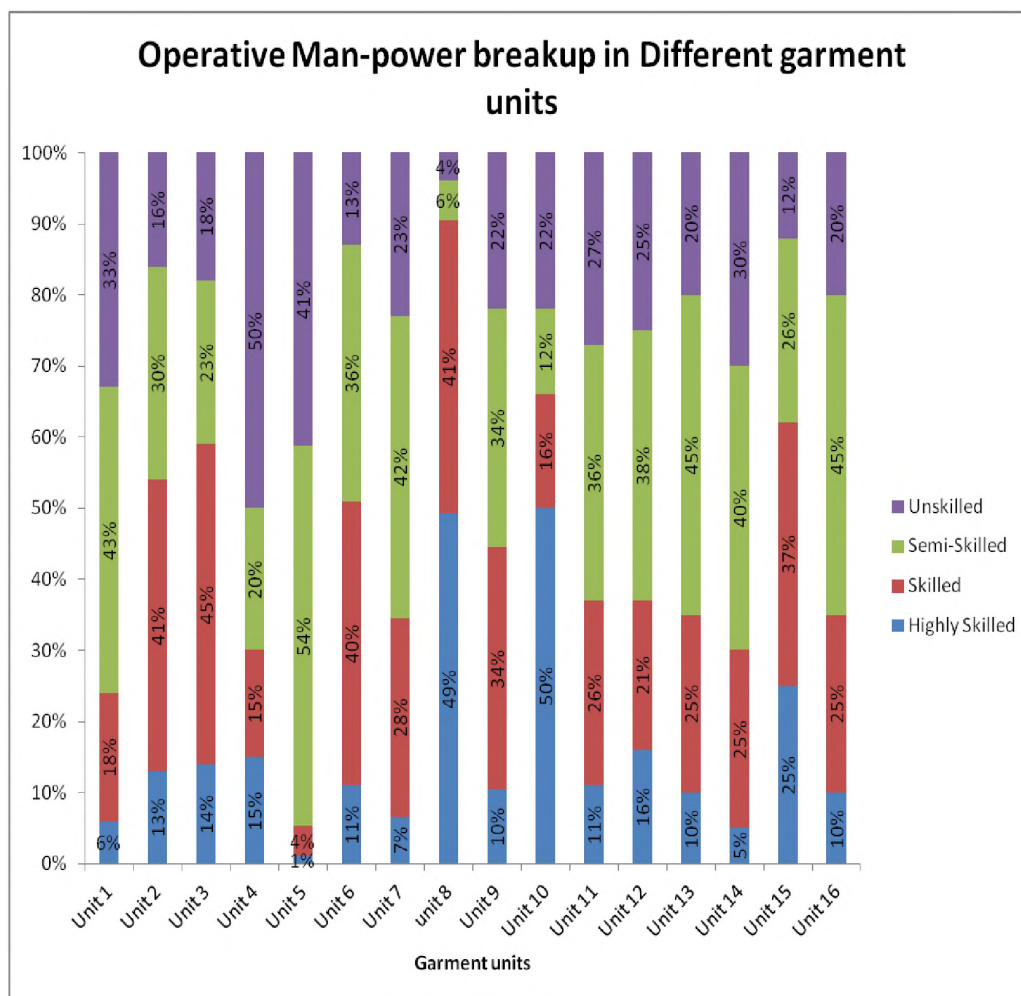


Exhibit 31 – Operator manpower break-up based on Skill level – Source: Technopak Primary Research

Usually Skilled and Highly Skilled workforce at a factory floor perform critical operations such as collar attachment, sleeve placket attachment, etc., which require certain set of expertise and know-how. Without the right set of skills, these operations cannot be performed and if performed wrongly, it would result in rejections and wastages.

Without the requisite workforce to perform these operations, factories would have face delivery delays, quality issues and bottlenecks at production floor. So it is of utmost importance for factory to have workers across different skill levels right from unskilled to highly skilled workforce to ensure smooth operations, quality and timely delivery, The current skilling initiatives by the Government such as ISDS, PMKVY and DDU-GKY focus on entry level skilling and providing employment opportunities to unskilled workforce, whereas there is no emphasis on up-skilling. Factories across different clusters in India are facing shortage of skilled and highly skilled workforce. The government should enhance the scope of current skilling initiatives to include up-skilling of the workforce across different skill levels. Technopak has suggested an upskilling framework under sub-section 5.1.4 in Page 72-74.

### 3.4.1 Sewing Machine Operators Skills Level Assessment

Based on the primary research with some of the leading garment manufacturers, it was found that factories appoint sewing operators on the basis of entry level test. Based on skill level and experience, category/grade is defined for the operator.

Below Exhibit 32 defines different skill level categories.

Type of Workers	Highly Skilled	Skilled (Grade A+ & A)	Semi-Skilled (Grade B & C)	Unskilled (Grade D)
% of Employees in Production Floor	15%	30%	30%	25%
Operations	Supervisory staff & Quality Assurance	Production Operators, Embroidery & Washer	Finishing, Ironing & Packing	Helper, Thread Cutter, Layer Maker etc.
Wages(INR)	15,000-40,000	10,000-15,000	8,000-10,000	6,000-8,000
Preferred Training	Course Training (CT)	Certified/Non Certified Training	On Job Training (OJT)	NIL
Experience	5-15 yrs.	2-5+ yrs.	2-5+ yrs.	0-3+ yr.

Source: Technopak primary research

Exhibit 32 – Operator manpower standard requirement break-up based on skill level

For detailed report on skill requirements in Garment Industry, please refer to *Annexure 10 – Page 130 - 136*

### 3.5 Recommendation

- Skill building in the garment manufacturing should be looked at with a different perspective. So far most of the Skill development programs have focused on the entry-level skills. While, entry-level skills are required, training at various levels of workforce is also needed (*Refer to Section 3.4 – Pg 58*)

## ToR #4

**To study the possible arrangements for skill building in garmenting in Bangladesh, China, Vietnam, Sri Lanka etc.**

### 4.1 Abstract

India's competing countries have taken initiatives that aim to keep steady supply of skilled workers in the garment industry. Bangladesh has significant participation of the industry in its skilling ventures. China sees vocational education as a long term strategic priority and has continued to improve training quality over a long period of time. Skill development programs in Vietnam and Sri Lanka are government driven.

### 4.2 Arrangements for skill building in garmenting sector

By the year 2025, India would have more than 860 million<sup>20</sup> people in the employable age group of 20-64 years. Keeping this challenge in view, government has launched several skill building schemes to skill the growing population.

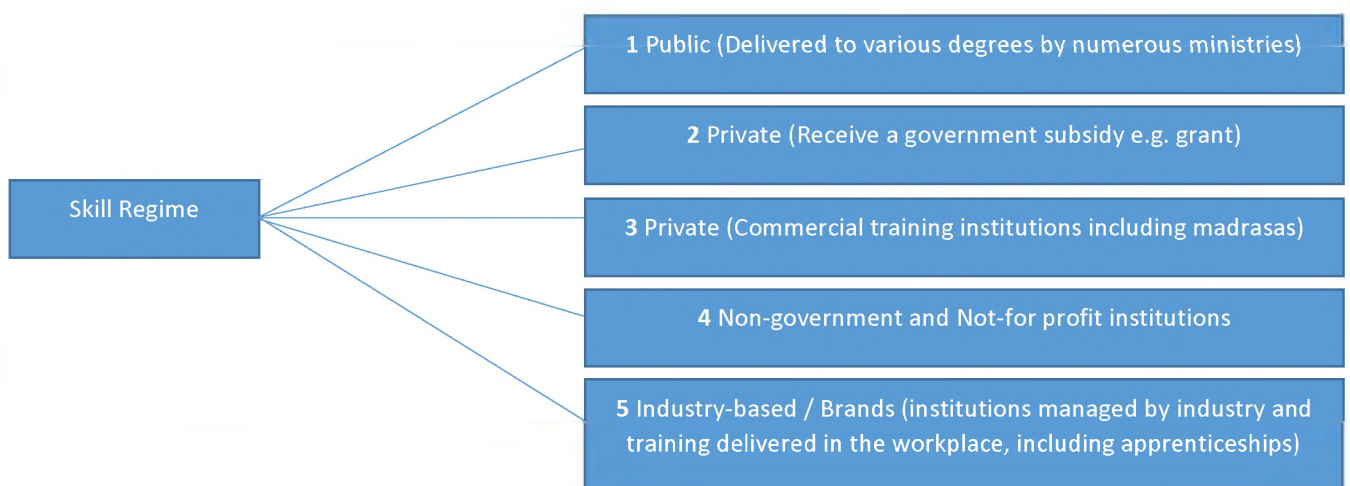
In this context Technopak studied skill regimes followed competing sourcing destinations namely Bangladesh, China, Vietnam and Sri Lanka and below are the findings:

#### 4.2.1 Bangladesh

Factories in Bangladesh are privately owned with no government entities in manufacturing sector.

Bangladesh has a multi-pronged skill building approach involving various government agencies, private institutions and industry. Some of the key initiatives are Centre of Excellence for Bangladesh Apparel Industries (CEBAI), Bangladesh Skills for Employment and Productivity (B-SEP) etc.

The skills development system in Bangladesh can be classified into five main segments:



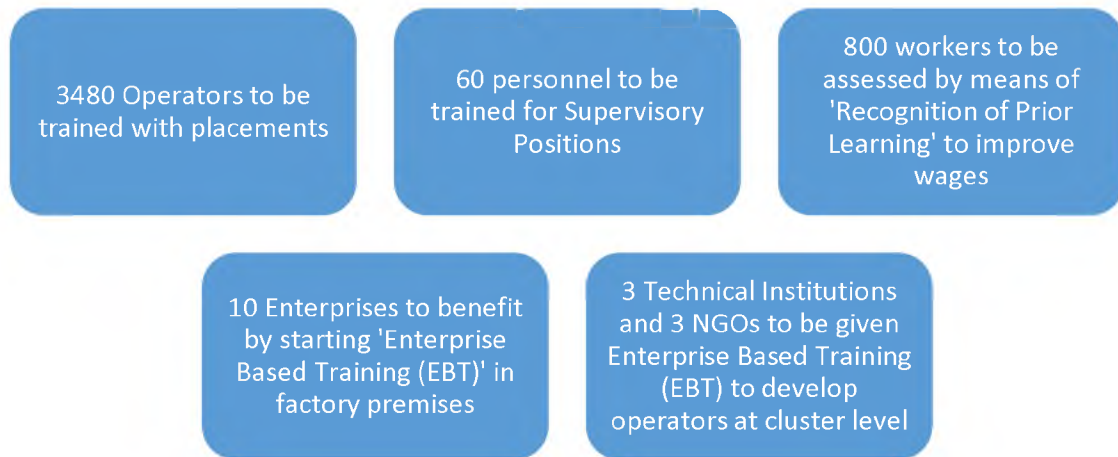
**Exhibit 33 – Bangladesh Approach to Skill Development**

<sup>20</sup> United Nations Population Division (<http://www.un.org/en/development/desa/population/>)

### *Centre of Excellence for Bangladesh Apparel Industries (CEBAI):*

CEBAI was established through a joint effort of International Labor Organization (ILO), the Bangladesh Garment Manufacturers and Exporters Association (BGMEA), Swedish retailer H&M and the Swedish government in late 2014. This initiative draws upon the H&M's considerable expertise in providing training to its workers.

The project aims to benefit almost 5,000 women and men in Bangladesh. Some of the key features of this initiative are:



**Exhibit 34 – CEBAI Training Model**

This program is an ***ideal example of covering different skill levels and developing skilling institutions*** that can provide skill training across different clusters.

### *National Skills Development Council (NSDC):*

NSDC is recognized and supported by government and industry. It aims to empower all individuals to access decent employment and ensure Bangladesh's competitiveness in the global market. The major achievements of NSDC are:



**Exhibit 35 – NSDC Role & Achievements**

### *Bangladesh Skills for Employment and Productivity (B-SEP) Project:*

B-SEP is an initiative of the Government of Bangladesh funded by the Government of Canada and executed by the International Labor Organization (ILO). The project aims to improve the enabling environment for industrial skills development and the increased employability of young and adult women and men.

B-SEP targets government agencies and their staff, employers, workers, training institutions, students & trainees with a particular focus on groups disadvantaged in the labour market. The Project enhances the market-relevance & effectiveness of the national TVET and skills development system, allowing for better quality, more access and an improved capacity to provide and sustain long term skill requirement.

B-SEP addresses the challenges in the Technical and Vocational Education and Training (TVET) Sector related to shortage of skilled workforce through:



**Exhibit 36 – B-SEP Role & Objectives**

There are other skill development initiatives taken by foreign governments and development bodies in collaboration with Bangladesh government such as ‘Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)’, IFC backed skilled development program among others.

#### 4.2.2 China

The Government of China sees education as a long term strategic priority and has continued to improve training quality.

Factories in China are privately owned and do not have any government ownership/stake.

China is world’s factory, partly due its focus on skill development. The flagship Vocational Education & Training (VET) Program covers the skilling requirements for Garment manufacturing industry.

Policy makers in China have focused on:

- a) Building a foundation of Vocational Education & Training (VET) over many years
- b) Continuously upgrade the VET system in response to China’s growing share of global exports.



China's VET system aims at strengthening the manufacturing sector of the country by relocating the workers from other sectors, primarily agricultural sector to the manufacturing sector. This VET system is applicable for Garment manufacturing clusters too

Some of the salient features of its skill regime are:

<b>Vocational Education Law, 1996</b>	20% of Annual Education budget should be allocated to Vocational Education and Training for the development of industries. Out of this budget, at cluster level budgets are allocated for Garment manufacturing.
<b>Vocational training at Senior Secondary Level closer to Textile Clusters</b>	(a) By incentivizing and providing financial benefits for participating factories (b) Students in vocational training spend full third year as interns to acquire practical training and industry exposure in Textiles and Apparel manufacturing (c) The curriculum is designed such that, 1/3 includes general academic skills, 1/3 is again nationally defined content for garmenting, and 1/3 defined with respect to the cluster/region at the school level with the help of regional garment manufacturers.
<b>Regular training for Training Staff</b>	Trainers in vocational schools are required to undergo one month training, or two months every two years for their career progression and promotion and to stay update with the skill requirements and update with technological advancements.
<b>Fiscal Decentralisation for VET to the Grassroot levels</b>	The responsibility for financing VET and academic school education in China rests with local government. The fiscal decentralisation benefits regional garmenting clusters (as the VET system is flexible and responsive to local needs) and the students are skilled based on the requirement of the factories in these clusters.
<b>Incentivising participation of Garment Manufacturers and Retribution on non-compliance</b>	(a) Local enterprises participate in practical training to avoid retribution (taxation or negative publicity) at the hands of local governments (empowered by the provisions of the 1996 VE Law) (b) The practical training at the garment manufacturing unit equips the trainers with latest technology and evolving industry needs. (c) Local governments incentivise enterprises with allotment of land at subsidized prices, or preferential treatment in government projects to encourage industry to actively participate in vocational education and training. (d) 85 % of Chinese Mid/Large sized garment manufacturers conduct inhouse training.

**Exhibit 37 – Chinese Vocational Training – Detailed Analysis**

The reforms undertaken currently focus on the following aspects:

- Establishment of school-based factories and factory-based schools has been undertaken under the VET system providing a practical exposure to the students for skill development.
- Schools' curriculum needs to be followed on a professional standard, and a National Management System tracks all the students throughout the country.
- Mandatory submission of reports on quality training on annual basis.
- PPP mode is adopted for skill development programme to a large extent.

### 4.2.3 Vietnam

Skill building initiatives (T-VET system) in Vietnam are under the state administration of MOET (Ministry of Education and Training), MOLISA (Ministry of Labor, Invalids, and Social Affairs) and other ministries. The skill development program at local level is supervised by the local authorities.

Many large-scale textile industries are State Owned Enterprises (wholly and partly). The government of Vietnam conducts training and skill development at regular intervals in these companies. Eg: Vietnam Textile and Garment Group (SOE) human resources development program in 2014 with funding of VND 65.6bn (USD 3Mn)

Bilateral Government Training: Conference on Vocational Training is co-organized by German and Vietnamese Government for training and skill development of workers on a regular basis from 2011, with the goal of developing a modernized industrial set-up in Vietnam by 2020.

There are several forms of TVET in Vietnam: formal, informal, continuous, and in-service training for garment manufacturers. Training is provided by various players including public, semi-public and private institutions.

The TVET programs being offered are summarized as follows:



Exhibit 38 – TVET Training Infrastructure and Model

#### 4.2.4 Sri Lanka

In Sri Lanka, all skill building initiatives for all post-secondary education except academic studies is addressed through Tertiary and Vocational Education (TVE). TVE is governed by the Ministry of Skills Development and Vocational Education and Tertiary and Vocational Education Commission (TVEC).

- TVE is delivered by a range of institutions under the purview of the Ministry of Skills and Development, training institutes operating under other ministries and several private institutions.
- A Skills Sector Development Program (SSDP) has been launched by the Government of Sri Lanka as part of its Public Investment Strategy for 2014-16.

#### **Skills Sector Development Program (SSDP):**

The SSDP is a comprehensive 7-year road map that articulates the skilling strategy of the government and features a series of policy reforms. It uses technology for student tracking and MIS is implemented to ensure sector-wide data availability and enable performance monitoring and reporting.

#### **Vocational Training Authority of Sri Lanka (VTA):**

- The key intention of establishing the VTA was to reach the rural mass of the country which was 72% of the total population and make them to be skilful to be able to find employment locally and internationally.
- Approximately, 25,000 youth get trained annually 83 trades in 18 trade sectors by the VTA.
- After completing the training youth are directed for employment and provided with financial assistance to start their own small business with entrepreneurship training and vocational self-employment in the respective fields.

For additional info, please refer to *Annexure # 11 – Pg 137 to 145*

### 4.3 Key Findings on Skilling Initiatives of Other Sourcing Destinations:

The scope of the vocational training system and geographical outreach of the skill programme is of vital importance. Programmes implemented by each country aim at harnessing working age population spread across various geographies.

#### 4.3.1 Well Structured Vocational Education System to suit the Countries' Skill needs:

- Over time, China has developed well organized vocational training system and focuses on continuously upgrading its VET system in response to its growing share of global exports. Trainers for vocational training in China are given compulsory training of one month each year for career progression and promotion to fill existing and potential gaps in training system.

- Bangladesh on the other hand works on holistic skilling approach encompassing all the stakeholders of Garment industry including Government, International Development Bodies, NGOs, Industry Bodies and Factories. The Government initiatives include B-SEP, where Bangladesh government addresses the skill challenges in the Technical and Vocational Education and Training (TVET) Sector related to shortage of skilled workforce through Institutional Capacity Development, Certification, Industry Skills Development & Promoting equitable access to skills.
- Considering the significance of vocational training, Vietnam and Sri Lanka have also come up with similar initiatives i.e. TVET in Vietnam and VTA in Sri Lanka, but in considerable smaller scale in comparison to Bangladesh and China.

#### **4.3.2 Decentralization of vocational training in China:**

The fiscal de-centralization benefits local enterprises (as the VET system is flexible and responsible to local needs) as well as the students in terms of employment. China benefits from this concept by bringing vocational training conducive to the local scenarios. The curriculum of vocational schools in China include general academic skills, occupational content, and customized content with respect to the occupational field at the school level with the help of local enterprises.

#### **4.3.3 Participation of Local Enterprises in Skill Development in China:**

The Local Enterprises actively participate in Skill Development in China. The Incentives/Subsidies provided by government to these enterprises also ensures accountability from the end of Enterprises in skilling and employment generation. In case of non-compliance, Local Enterprises are penalized and they face retribution.

#### **4.3.4 Participation of Brands/Retailers in Skilling Initiatives in Bangladesh:**

Brands/Retailers actively participate in Skill Development in Bangladesh to ensure entry level and upskilling of workforce at production floor level. Such level of engagement reflects accountability and responsibilities of these Brands towards the labor workforce at the production floor level.

#### **4.3.5 Introduce new component in existing programs for training at High School level within/around Garment Clusters:**

Under the current initiatives taken by Ministry of Human Resource Development (MHRD) for 'Vocationalisation of Secondary Education', introduce new training component at High School level to provide vocational training within/around garment clusters to suit the needs of these clusters. In 2012, MHRD conducted pilot projects on similar lines in Haryana and West Bengal. Such initiatives should be re-introduced. This would ensure employment for poor sections of the society by learning the skill requirements that would suit the requirement of enterprises in these clusters.

#### 4.3.6 Participation of ITIs for greater geographic reach:

There is a scope of taking Vocational training to a higher level in India where higher participation of Government and private ITI's can be included. The mandate for the same may be run through ATDC's / other institutions to take skills training to a higher level. Existing vast infrastructure of ITI spread across India (10,750 training centres) could be utilized for effective and efficient implementation of training programs. At present ITIs provide garment manufacturing courses focused on boutique/tailoring (Training on basic sewing machines) on contrast the garment export industry requires workers to be able to work on advanced sewing machines. By developing curriculum to suit the industry needs and utilizing existing Infrastructure to train the workforce from grass-root level, the skill levels in India can be transformed, thus resulting in higher productivity and better pay for workers.

#### 4.4 Recommendation

Based on the skill building initiatives of Bangladesh, China, Vietnam and Sri Lanka, the following insights can be drawn upon:

- The practise of trainers undergoing mandatory and regular industry interactions, in case of China (*Refer sub-section 4.3.1 on Pg 66*), helps in developing skilled workforce to suit the industry needs and ensure better quality of training.
- Taking a cue from China, the curriculum of vocational schools must include general academic skills, occupational content, and customized content with respect to the local enterprises' requirements at the school level (*Refer sub-section 4.3.2 on Pg 67*).
- The level of participation of industry/brands, in case Bangladesh (*Refer sub-section 4.3.4 on Pg 67*), is significant as it engages buyer in the development of workforce. The Ministry should partner with Brands/Retailers to provide skill training across different clusters in India to suit the requirements of these players.
- Introduce a new ISDS component for vocational training at High School level (*Refer sub-section 4.3.5 on Pg 67*) in government schools in regions close to/within existing clusters (Similar to pilot project taken by Ministry of HRD to suit the requirements of these clusters).
- Vocational training can be taken to wider geography by using the Infrastructure of ITIs spread all over India. The mandate for the same may be run through ATDC's / other institutions to take skills training to a higher level (*Refer sub-section 4.3.6 above*)

## ToR #5

*To study the status of availability of skilled labour, raw materials (fabric) and embellishment etc. indigenously*

### 5.1 Skilled Manpower

#### 5.1.1 Abstract:

*Garment manufacturing industry is highly labor intensive. Although India has a large labor pool, the industry continues to face deficit in skilled manpower for large scale development. The number of persons aged 15 years and above who have received or shall be receiving skills is merely 6.8%<sup>21</sup>.*

*Lack of skilled labor leads to low productivity and higher lead-time, thus resulting in higher cost of production and loss of orders with customers moving to other sourcing destinations. Dearth of formal vocational education, high dropout rates in schools, inadequate skill training capacity and lack of industry ready skills even in professional courses are the major reasons for unskilled/low-skilled labor force in the industry.*

*In addition, attrition and absenteeism in the labor workforce also affects the garment manufacturing industry.*

*To alleviate the situation, Government has taken initiatives towards skill development through National Skill Development Councils and by implementing policies such as ISDS, DDU-GKY, PMKVY etc. Some companies also spend significant amount of monies in training, to ensure availability of manpower to meet capacity requirements.*

*The skills training provided is currently focused at entry level skills and there is lack of initiatives for upskilling. In addition, there is reluctance among operators/entry-level workers to upgrade their skills, as wage differentiation is low.*

*Technopak proposes an incentive based upskilling framework to ensure not just employment but career growth for the labor workforce, thus uplifting the efficiency and productivity of the overall industry. In addition, India should adapt practices followed by other sourcing destination such as developing dormitories and cluster development close to ports and labor-catchment area.*

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<sup>21</sup> Labor bureau 4th annual employment & unemployment survey report - [http://labourbureau.nic.in/Press\\_note\\_4th\\_EUS.pdf](http://labourbureau.nic.in/Press_note_4th_EUS.pdf)

### 5.1.2 Major Challenge: Attrition and Absenteeism

In Garment industry, labor work force is critical in determining the global competitiveness and long-term viability.

Below are key factors that impact labor retention and availability.

- a) Skill levels and productivity in the concerned industry cluster.
- b) Industry's ability to attract and retain the right quality of workers.
- c) Domestic labor laws and regulations.
- d) Workers' living conditions and costs of living

In India, traditionally the garment industry has clustered in the big cities like Delhi, Bangalore, Chennai, etc., until about 10 years back, these cities were attractive for garment manufacturing. However, with the advent of other industries, workers were able to find more lucrative jobs – both in terms of working conditions and wages. To be able to attract talent, the garment industry got increasingly dependent on comparatively higher cost, low skilled migrant labor. The workers relocate from within the state or across the states to such cities for work. Once relocated, they would change jobs for (even) small increments in salary.

The attrition rate in India is high (~4-7% Monthly<sup>22</sup>) in comparison to other sourcing destinations in South Asia. However, 96-98%<sup>22</sup> of the workforce in India is retained within the industry by switching to other factories for better pay and work culture. Based on our discussion with Industry experts, the retention in other competing countries are ~98%, ~96% and 97% in China, Sri Lanka and Vietnam respectively.

This attrition and absenteeism in India is due to various cultural and other reasons as mentioned below:

#### **(a) Migrant Workforce:**

Most of the labor in India is migrant workers, and once a year, they tend to return to their native places and usually take a long break (1-2 months) during festival/ agricultural seasons. Some of them stay back in the native places. The others on returning, would join same /other factories. This leads to both attrition and absenteeism. Such trend is not seen in other sourcing destinations.

#### **(b) Holidays/Festivals:**

India is a confluence of different cultures and there are many festivals, thus leading to many holidays and high absenteeism. In case of China and Bangladesh, the festivals are limited (*and hence the related holidays*) thus their work calendar is more structured. While planning production, the factories in China and Bangladesh

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<sup>22</sup> Technopak Primary Research Findings (Refer to Annexure 5 – Response from Indian Factories – Question 10 & 34)

consider these holidays and according plan their capacities and deliveries thus leading to better on-time delivery.

**(c) Low Career growth:**

The growth prospective for a factory floor level worker with mere entry level training is very less. To move up the semi-skilled, skilled and highly skilled level, the workforce switch between factories and thus it is recorded as Attrition.

**(d) Other Reasons:**

During our research Technopak found out that other reasons for attrition include unsatisfactory wages, excessive workload, marriage (*mainly in case of women workers*), poor working conditions and work culture. Overtime is sometimes misused by the manufacturers to achieve excessive production targets leading to undue stress among workers.

*For details on skilled manpower, please refer to Annexure 12.1 – Page 146*

**5.1.3 Key Findings:**

Current skill levels, Skill regime, Skilling initiatives and Requirement for upskilling have already been covered exhaustively in ToR # 2 and ToR # 3. So in this ToR, we would cover the findings on high percentage of Attrition and Absenteeism and suggested upskilling framework. Below are a few initiatives to be taken by the Government Institutions and Industry to address the issue of Attrition and Absenteeism.

**Initiatives needed to be taken by Private Enterprises to address Higher Attrition/Absenteeism:**

To counter the problem of higher attrition in the industry, following measures could be undertaken:

- Overtime must be well planned to avoid unrealistic deadlines. The Company management should plan production schedules with sufficient buffer, so that the labor workforce is not over-burdened.
- Workers should be given annual leave and sick leave entitlements to suit their needs and necessity. Occupational safety and health concerns should be addressed by employers and regular inspection conducted by labor inspectors.
- Statutory minimum wages in the sector should be reviewed regularly in line with the cost of living, and to provide adequate income for a decent living standard for workers and their families.
- Investment should be made in the proper training of supervisors, and also in encouraging women to enter supervisory roles. Supervisors and workers should be taught about sexual harassment and broader issues of non-discrimination.



### 5.1.4 Recommendations - Suggested Framework for Up-Skilling

Other aspects of Skill Level, Regime and Initiatives have been covered in ToR # 2, 3 & 4, so we are covering need of Up-skilling in recommendations for this ToR.

#### Current Framework:

Currently, two models are followed in the industry for entry and career growth of the workforce as mentioned below:

#### Model A



Exhibit 39 – Model followed when there is no skilling at training centers

#### Model B



Exhibit 40 – Model followed when there is entry level skilling at training centers

Currently to provide sustenance, a 'Post Placement Support' (PPS) has been initiated in some skill development programs. Under the current PPS scheme certain amount of stipend is provided to candidates apart from salary in order to sustain them with a minimum wage.

For example: In-case of the sewing machine operator a PPS of Rs. 1,000 is being provided to candidates for 2,3,6 months in inter district, Interstate and out of state placement respectively under DDU-GKY project.

The current structure is based more on sustenance rather than on career growth, which is also essential for creating a lucrative environment for young skilled workers entering the sector.

#### Proposed Framework for Up-Skilling and Career Progression:

Technopak suggests a PPS model based program for entry level and framework for up-skilling and career growth as detailed below.

Our model is based on skill training model already followed.

Every factory can choose set of basic and critical operations to suit its products. The salary of Grade D level mentioned in the subsequent page is an indicative of minimum salary. This is bound to vary across different states/cities. The salary criteria needs to be assessed considering the cost of living in the factory location.

**Classification of Operators:**

Grade wise payment & eligibility				
Grade	A	B	C	D
Pay Scale (Indicative) in Rs.	9,000-12,000	7,500-9,500	7,000-9,000	6,000-8,000
Eligibility (No of operations)	Basic & Critical Operations	All basic operations & 2 Critical Operations	All basic operations	Trainee - Any basic operation
Timeframe	12 to 15 Months	6 to 9 Months	3 Months	1-2 Months

Exhibit 41 – Suggested grading of sewing operators based on operational expertise

Average time for manufacturing a style on production floor:

Style Running Times		
Small orders quantity (2,000-2,500 pcs)	Average order quantity (8,000 – 10,000 pcs)	Large order quantity (13,000 – 15,000 pcs)
3-5 days	10-15 days	20-25 days

Exhibit 42 – Indicative production running time for different order quantities

The average style production time is 15 - 20 days and entry level operators work on one function for the whole style production time. As a result, a low level operator can learn other operations only when new style is introduced in the line.

**Proposed framework:**

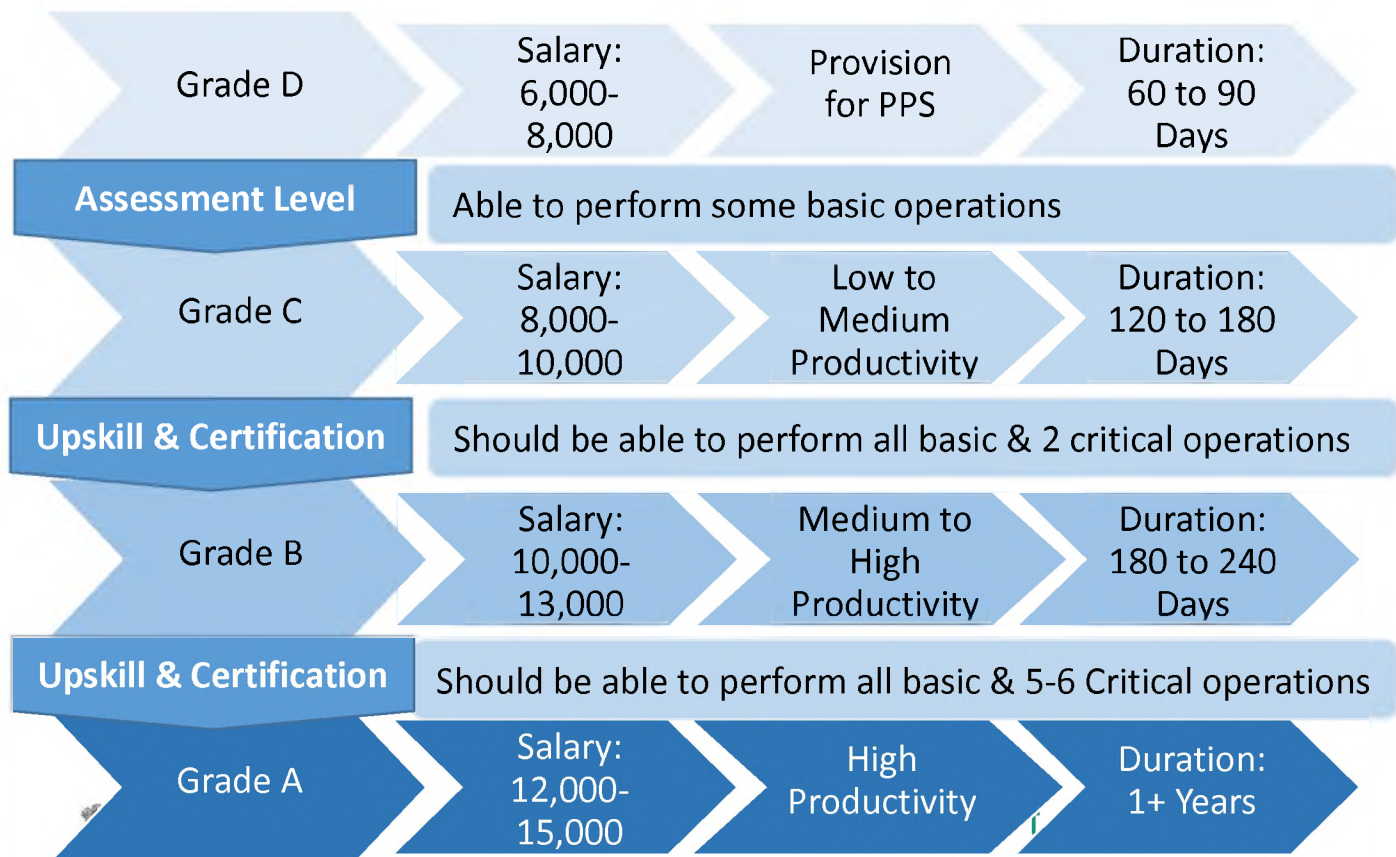


Exhibit 43: Suggested Up-skilling framework

As growth on production floor depends on the set of basic and critical operations, we have based the up-skilling framework on this criterion.

Considering Grade C wages as standard living wage, initial training focus should be on boosting the entry level worker to reach this level in order to have required skilled level for long term growth in the industry.

In this case, the factories should advise the names of the workers, they would wish to up-skill in a given quarter. Since generally (*except in case of more structured clothing like suits, Jackets etc.*) the percentage of workers required in the high skilled category is fewer than the Skilled and semi-skilled categories, factory may decide the up-skilling percentage required and plan based on the same.

#### Incentives for up-skilling and career growth for labor workforce:

For unskilled labor, to reach standard living wage (Grade C), it would take 90 days. During this period of 90 days, Technopak suggest PPS (*on similar lines of DDU-GKY Project*). At the end of the 90 days, assessment should be made to ensure some key basic operations as decided by the factory are performed.

A similar process should be in place for the worker to move from Grade C and to Grade B with ability in all basic operations and 2 critical operations and from Grade B to Grade A with high productivity level of employee.

This model favors the development of the workforce in line with skills required on production floor to be globally competitive in skill sets, creating a win-win situation for the employee and the employer resulting in a long term benefit to both of them.

To motivate the manufacturers to take up such up-skilling training, government should provide incentives such as tax concessions, subsidy on interest, etc.,

According to *Skill Gap Study* conducted by Ministry of Textiles, 67% of the workforce requires skill training and 10% of the workforce requires upskilling training. There is a difference in new employment estimation across these two studies owing to the underlying assumption and scope of the studies. Below is a brief comparison between the findings of these two studies:

Description	Our Study	Skill Gap Study
<b>Additional Employment Generation in Apparel Manufacturing</b>		
<b>Employment Generation by the year 2025</b>	5.9 Mn (As per exhibit 27 on Page 54)	4.6 Mn (Refer Table 82 on Page 91 of the Report)
<b>Underlying Assumption</b>	Based on Investment (Exhibit 30 on Page 57 of this study)	Based on production market value including Domestic and Export Market (Page 22 of Skill Gap Study)
<b>Explanation</b>	Our estimate is based on a Employment growth of CAGR 4% <sup>δ</sup> and Additional Investment of Rs. 1,46,489 Crores <sup>γ</sup> by 2025	The above figure is arrived based on sum of additional employment in Domestic Market and Exports as follows:
		Household Consumption Employment for Apparel - 52% <sup>^</sup> of 7.56 Mn* + 84% <sup>^</sup> of 0.816 Mn* of Apparel Exports
	<sup>δ</sup> - Please refer to Exhibit 27 on Page 54 of this report	<sup>^</sup> - Please refer to Table 77 of Page 88 in the Skill Gap Study
	<sup>γ</sup> - Please refer to Exhibit 30 on Page 57 of this report	* - Please refer to Table 82 on Page 91 in the Skill Gap Study
<b>Conclusion</b>	Due to different sets of assumptions and methodology to calculate additional employment generation in Apparel manufacturing, there is a difference in these reports. It is worth noting the scope of our study only covers Apparel Industry, whereas the Skill Gap study covers the entire Textile & Apparel value chain.	

**Exhibit 44: New Employment Generation in Apparel Manufacturing for year 2025 – Comparative Analysis between our study and Skill Gap Study**

<sup>δ</sup> - The employment growth of 4% CAGR for the period of 2015-25 has been arrived at considered the following assumptions:

- India would capture about 10-12% of China’s International trade. In the recent past, significant order migration has been witnessed from China to other sourcing destinations. So far, Bangladesh and Vietnam have capitalized on this order migration. With entire textile value chain capability, Indian Apparel industry is well positioned to capture significant share of order migration from China (*Please refer to Exhibit 8 in Page 21*)
- Post GST, India’s domestic apparel market would move towards organized sector, thus driving demand for apparel manufacturing industry and boosting the industry.
- The above boost to the industry by China’s order migration and domestic consumption would be possible with influx of fresh investments in Apparel manufacturing based on additional Investments mentioned on Exhibit 30 on Page 57.

## 5.2 Fabric & Embellishments Availability

### 5.2.1 Abstract:

*India has complete textile value chain capabilities ranging from yarn to garment and home textiles. Approximately 94% of the fabric manufactured in India is used for domestic consumption for apparel and home textiles (including for domestic market and for exports).*

*In 2015, India exported fabric worth USD 4.4 Bn<sup>23</sup> while importing fabric worth USD 1.3 Bn<sup>24</sup>. It may seem that India is self-sufficient in all fabric categories. However, these statistics might mislead as the Indian apparel manufacturers have traditionally focused only on products for which resources are available domestically.*

*Indian garment exports are seasonal with regular large volume exports of summer clothing and relatively smaller volumes exports of winter clothing. India currently does not have sufficient fabric capacity for high growth product categories such as Sweaters, Overcoats, etc.. India also does not have a complete synthetic value chain.*

*Despite having manufacturing base of trims and accessories in India, India is still dependent on imports for Man-Made Thread, Plastic and other Non-metal buttons, Snap Fasteners, Labels, Badges and Zippers. This duty regime currently followed is not conducive for development of trims and accessories industry in India, as for some of the import-dependent trims, the import duty is lower than the central excise duty thus making indigenous products uncompetitive compared to imports.*

*In addition, the raw materials used by trims and accessories manufacturers in India, entail import duty, thus making the domestic manufacturing uncompetitive. Duty for raw materials and higher central excise duty has affected indigenous trim manufacturing capabilities.*

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<sup>23</sup> UN Comtrade; Technopak Analysis

<sup>24</sup> UN Comtrade; Technopak Analysis

## 5.2.2 Fabrics:

India has a rich heritage in Textile industry and has complete indigenous textile value chain capability right from yarn stage to garment and made-up stage. Traditionally, India has been strong in natural fibres especially Cotton. The synthetic value chain in India has developed over the last few decades and there are gaps across the synthetic value chain.

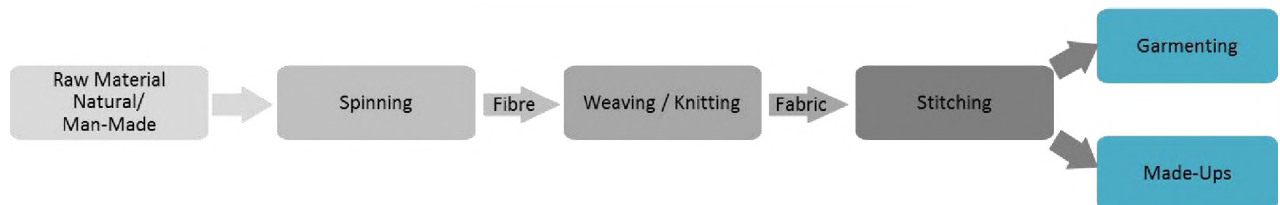
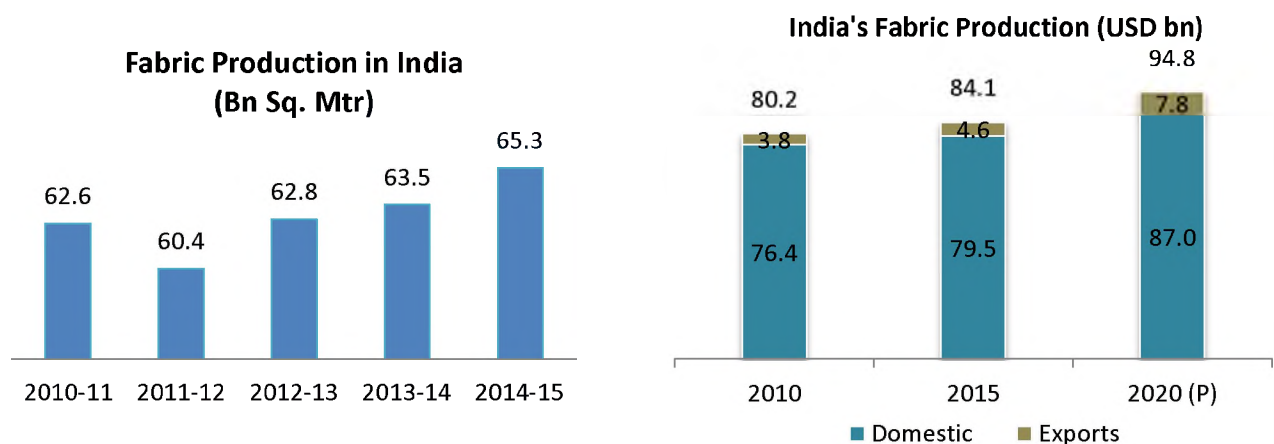


Exhibit 45 A: Textile Value Chain in India – Source: Technopak Analysis



Source: Office of Textile Commissioner

Source: UN Comtrade, Technopak Analysis

Exhibit 45 B: Domestic Fabric Production – Volume & Value

*For detailed working on domestic fabric production in value, please refer to Annexure 13 – Pg 152*

India's production of Fabric for the year 2014-15 is 65.3 Bn<sup>25</sup> Sq. Mtrs. India fabric industry is estimated to be worth USD 84.4 bn<sup>26</sup> in 2015, of which only USD 4.9 bn<sup>27</sup> (~6%) was exported and rest 94%, consumed in domestic industry. This clearly reflects that Indian fabric production predominantly focuses on the domestic manufacturing and exports of value added textile products.

<sup>25</sup> Office of Textile Commissioner

<sup>26</sup> Technopak Analysis

<sup>27</sup> UN Comtrade

### India Fabric Production - Categories (2015 - 16)

Fabric Production (in Bn Sq Mtr)			
Fabric Categories	2009-10	2012-13	2015-16
Cotton	28.9	33.9	38.4
Blended	7.8	9.3	10.8
Man-Made Fibre Fabrics	22.8	18.8	15.3
Khadi, Wool & Silk	0.8	0.8	0.9
<b>Total</b>	<b>60.33</b>	<b>62.79</b>	<b>65.51</b>

Source: Office of Textile Commissioner

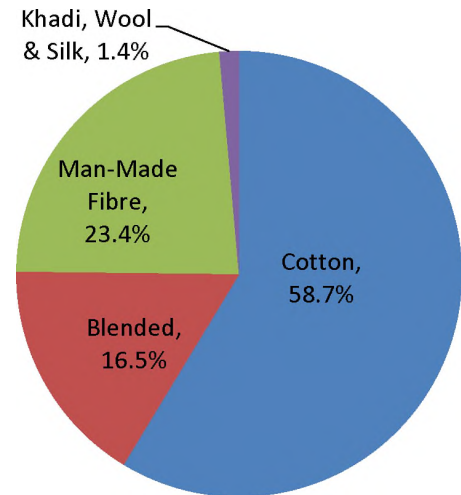
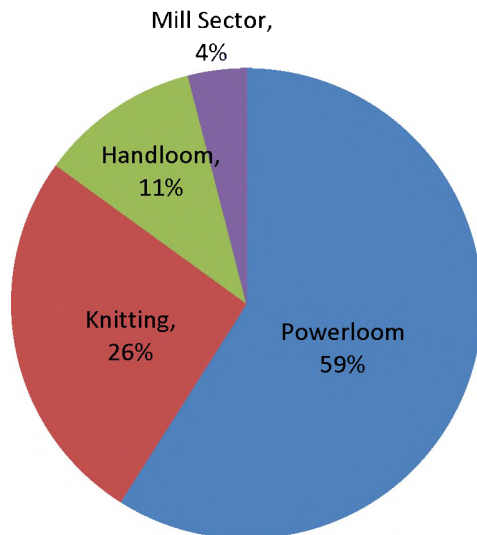


Exhibit 46: India Fabric Production by Composition - Source: Office of Textile Commissioner

For year 2015-16, Cotton leads the fabric category in India with ~59%, followed by Man-Made Fibre (~23%) and Blended Fabric (16.5%).

### Production - Sectorwise (2014-15)



Poweloom sector leads the fabric production in India with 59% share, followed by Knitted fabric (26%) and Handloom fabric (11%).

These sectors are predominantly dominated by small scale factories with very less share of Integrated textile units.

The fabric production in India is spread across different clusters in various parts of the country.

Exhibit 47: Fabric Production – Sectorwise – Source – Office of Textile Commissioner

Detailed information on domestic fabric production in Annexure 13 – Page 152 & Annexure 14 – Page 153

Below is the statistics of Indian Fabric Imports and Exports in terms of Value (SITC Codes provided in *Annexure 15 – Page 153*):

Fabric Category	Imports (in USD Mn)			Exports (in USD Mn)		
	2011	2013	2015	2011	2013	2015
Woven Cotton Fabric	259	294	168	1,524	1,835	1,769
Woven Man-Made Fabric	921	990	1,038	2,444	2,380	2,330
Other Woven Textile Fabric	183	140	134	463	321	286
Knitted Fabrics	343	380	475	256	256	238
<b>Total Amount</b>	<b>1,707</b>	<b>1,805</b>	<b>1,816</b>	<b>4,688</b>	<b>4,792</b>	<b>4,623</b>

**Exhibit 48: India - Fabric Imports & Exports Source: UN comtrade; Technopak Analysis**

In 2015, India has exported fabric worth USD 4.4 Bn while importing fabric worth USD 1.3 Bn. It may seem that India is self-sufficient in all fabric categories except Knits. However, these statistics might mislead as the Indian apparel manufacturers have traditionally focused only on those products for which they have domestic resources. In addition, the Indian garment exports are season driven with regular orders for summer and very less orders for winters.

India currently does not have sufficient fabric infrastructure for high growth product categories such as Jackets, Overcoats, etc., The Indian exports in these categories can only grow if backward value chain is developed in fabric processing and manufacturing within the country.

Also, Sweater which is among the top product category globally has the requisite raw material of Yarn in India, but does not have the machines and infrastructure. Steps need to be taken to make investments in this product category attractive, thus resulting in new employment generation and higher share of International trade.

Indian fabric manufacturers should collaborate with foreign partners to gain expertise and technical know-how on the textile value chain. This would help the industry modernize and fill the current gaps in synthetic value chain.

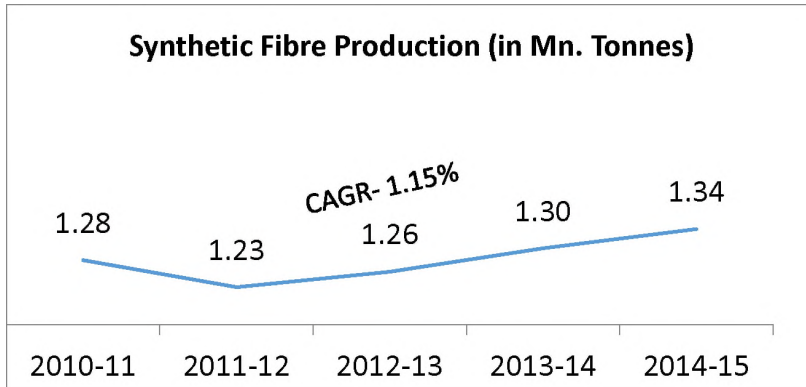
### 5.2.3 Key Findings:

Based on Secondary Research and Industry interactions, we have found that the Synthetic value chain in India has significant gaps and these gaps need to be addressed to ensure sustainable long term growth of Apparel manufacturing in India.



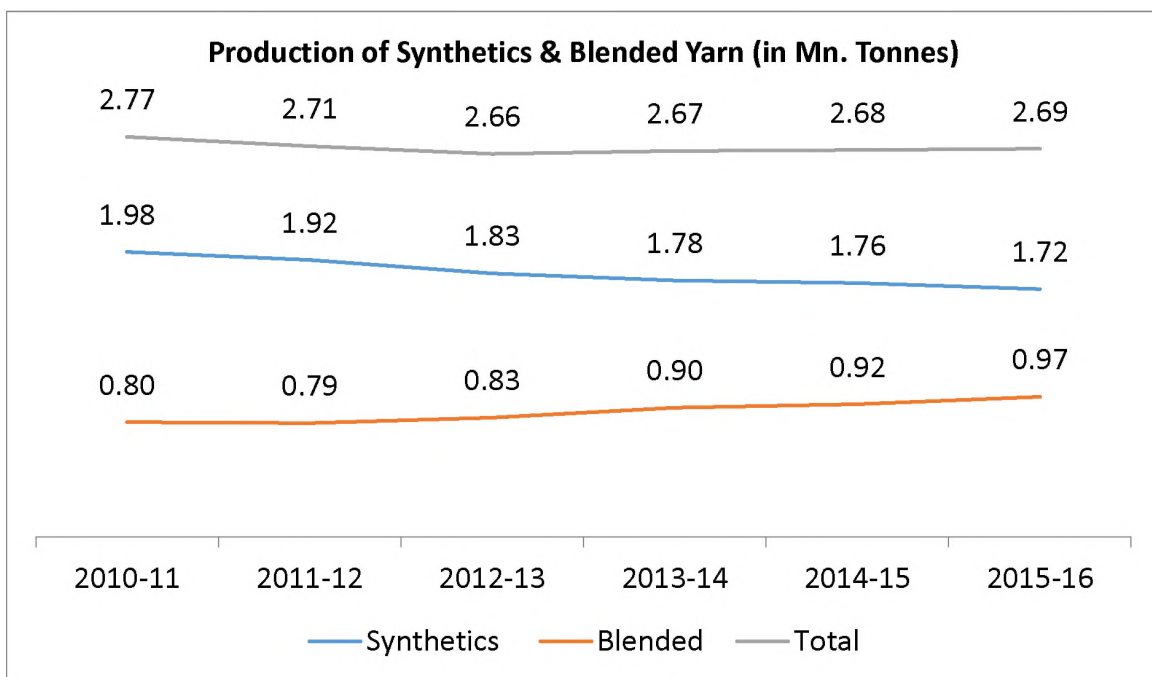
The right ecosystem in place, would ensure India attract FDIs and captures higher share of global trade.

**(I) Detailed Analysis of Synthetic Fibre, Yarn & Fabric Production in India:**



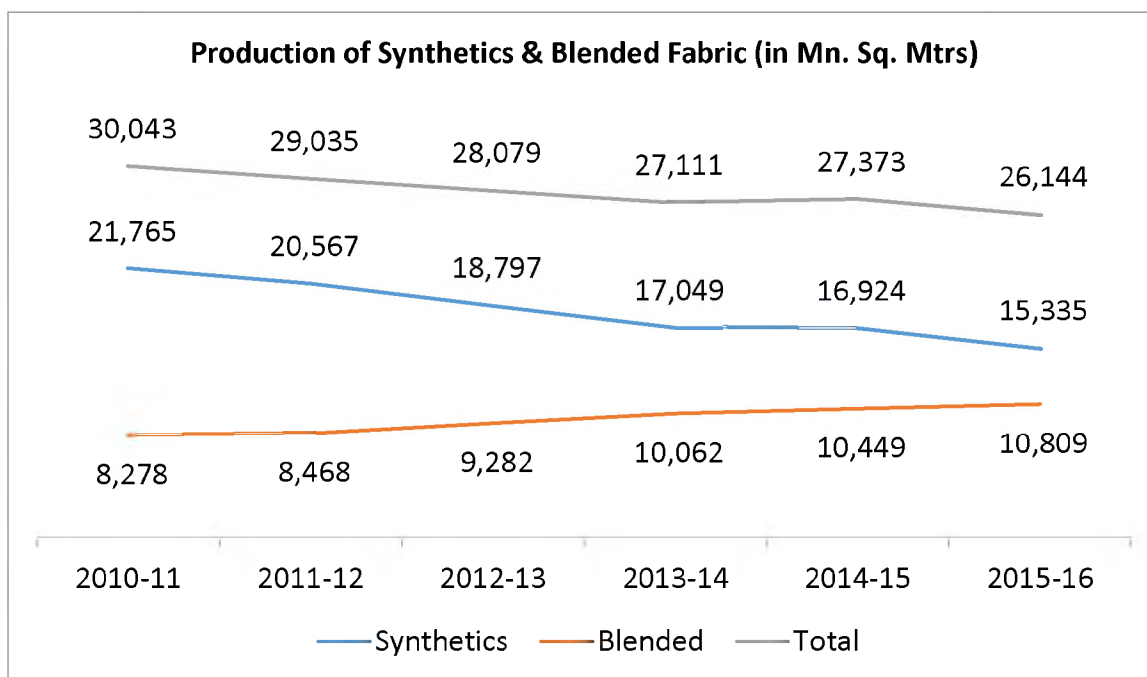
**Exhibit 49: Synthetic Fibre Production in India - Source: Textile Commissioner’s Office**

Synthetic Fibre production in India had stagnated with a CAGR of 1.15% during the period of 2010-15.



**Exhibit 50: Synthetic & Blended Yarn Production in India ;Source: Textile Commissioner’s Office;**

During the period 2010-16, Synthetic Yarn production has declined at CAGR of -2.8%, however the production of blended yarn has grown at a CAGR of 3.9%.



**Exhibit 51: Synthetic & Blended Fabric Production in India ; Source: Textile Commissioner's Office**

During the period 2010-16, Synthetic Fabric production has declined at CAGR of -6.8%, however the production of blended fabric has grown at a CAGR of 5.5%.

Synthetic fabric production has declined due to the following reasons:

- a) Synthetic Fibre production in India has shown stagnation during the period of 2010 – 2015, with a meagre CAGR of 1.15%.
- b) At Yarn stage, the production of synthetic yarn has shown a decline during the period of 2010 – 16, with a CAGR of -2.8%. However, the production of blended yarn has grown at CAGR of 3.9% during the same period. Thus, synthetic fibre consumption in blended yarns has increased while the synthetic fibre consumption in 100% synthetic yarn has diminished.
- c) At Fabric stage, trend similar to yarn stage is witnessed. Synthetic fabric production has declined at CAGR of -6.8%, while the Blended Fabric production has increased at CAGR of 5.5%.
- d) India's domestic fabric production, is predominantly consumed in the domestic market. In 2015, 95% of the Fabric production in India was consumed in domestic market, while about 5% of the fabric production was exported.

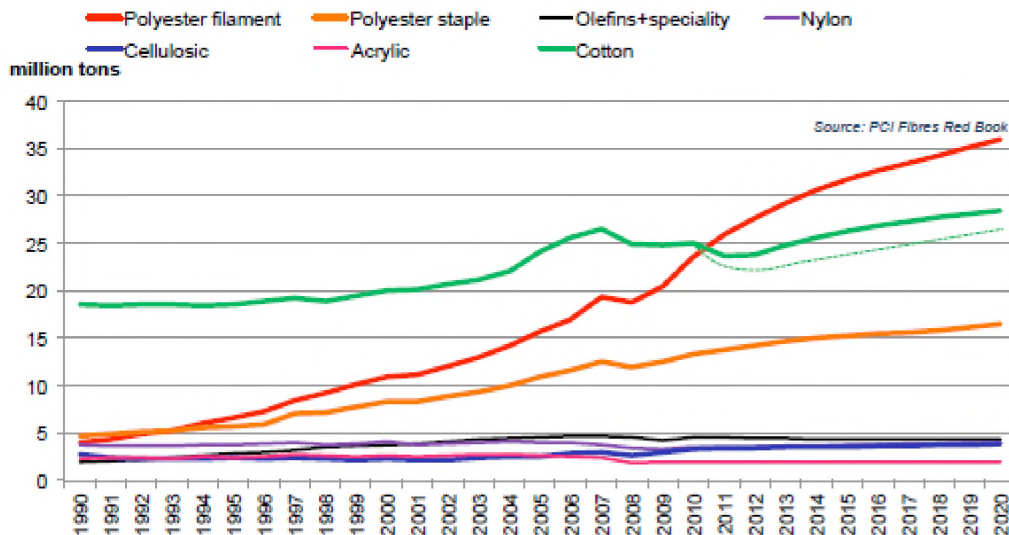


Exhibit 52: World mill consumption – Synthetic Vs Cotton; Source: PCI

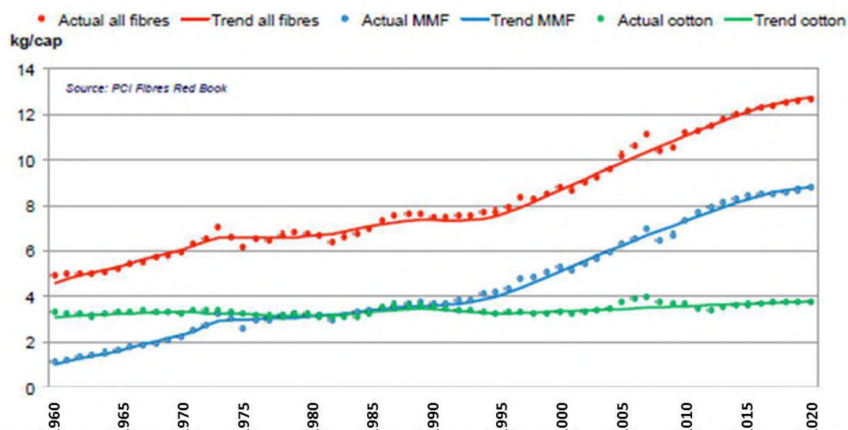


Exhibit 53: World Fibre consumption – Synthetic Vs Cotton; Source: PCI

- e) Globally, the consumption of Polyester filament yarn has outpaced the consumption of Cotton in 2010 due to lower prices of Synthetic yarn. This gap would further widen by 2020.
- f) Globally, the consumption of Synthetic fibre per capita (in Kg) has outpaced the consumption of Natural Fabrics. Thus, the demand for Synthetic Fibre has been growing worldwide, whereas Fibre production in India has grown at a meagre 1.15% during 2010-15. This is also due to the fact that traditionally India with its roots in Agriculture has been strong in Cotton Fibre. The Regulatory framework and policies have been Natural Fibre friendly. Tax slabs for Natural fibres have been lower than the tax slabs for Synthetic fibre. These factors have resulted in stronger base for Cotton across the value chain when compared to Synthetics.

## (II) Garment Trade - Synthetic Vs Cotton:

Global Trade of Apparel accounted for USD 356 Bn in 2015. Cotton Apparel Trade constituted for 53.37% of the total apparel trade and Synthetic Apparel Trade constituted for 46.6% of the global trade.

However, Synthetic apparel trade is gradually increasing its share over the years and growing at a 3.5X CAGR of Cotton Apparel Trade at a CAGR of 9.8% over period of 2010-2015.

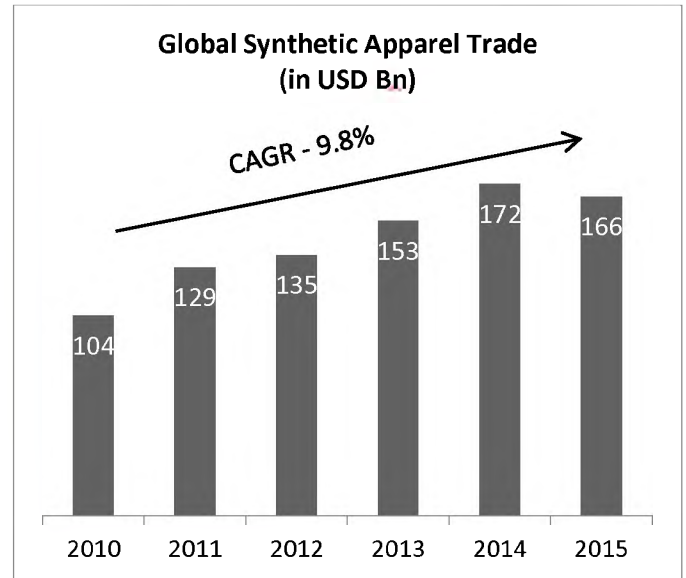
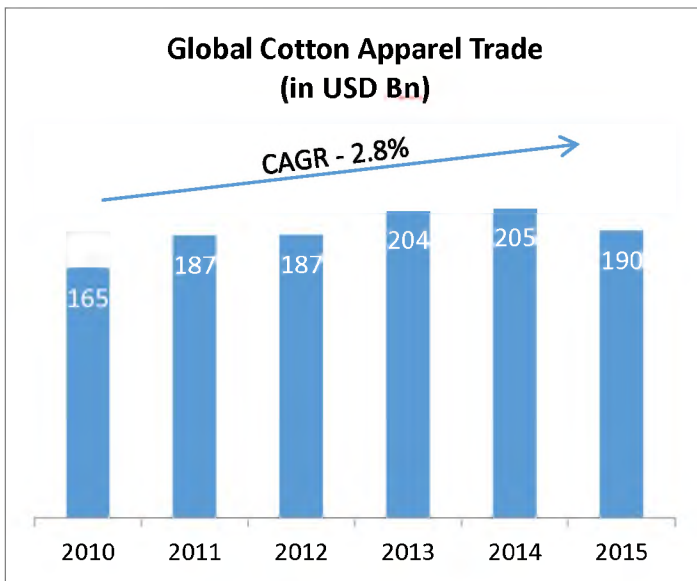


Exhibit 54: Cotton Apparel Vs Synthetic Apparel Trade for 2010-15; Source: ITC Trademap; Technopak Analysis

### 5.3 Trims & Embellishments:

By definition, trims and embellishments include functional, design/styling accessories used for manufacturing garments.

Although India has indigenous manufacturing set up for Trims and Embellishments, we are relying on imports for most of the trims.

Below is a detailed analysis of different trims used in garments. Detailed HS Codes for these accessories is provided in *Annexure 16 – Page 154*.

Embellishment Description	Sub-Categories	Indian Imports (in USD Mn)		Indian Exports (in USD Mn)		Net Imports* (in USD Mn)		Observation	Import Duty	GST	Comments
		2010	2015	2010	2015	2010	2015				
Sewing & Embroidery Threads	Cotton	1.32	0.45	10.29	17.19	-8.97	-16.74	Self sufficient	12.5%	5%	India has improved its capacity for Man-Made sewing thread.
	Man-Made	62.33	15.19	9.32	10.06	53.01	5.13	Depends on Imports	12.5%	18%	
Buttons	Plastic	10.06	9.90	3.22	4.12	6.84	5.78	Depends on Imports	6%	18%	India still depends on Imports for plastic and other buttons. In Press/Snaps Fasteners India hardly has any manufacturing in the country.
	Metal	6.69	9.93	0.30	16.66	6.39	-6.74	Self sufficient	6%	18%	
	Others	9.62	8.64	0.99	3.68	8.64	4.95	Depends on Imports	6%	18%	
	Moulds & parts	4.60	4.98	7.37	10.85	-2.77	-5.87	Self sufficient	6-12.5%	18%	

	Press-fasteners, Snaps & Studs	29.96	33.37	0.47	0.45	29.49	32.91	Depends on Imports	12.5%	18%	
<b>Label &amp; Badges</b>	-	19.66	28.48	7.39	8.95	12.27	19.53	Depends on Imports	6%	12%	India still heavily import dependant
<b>Zippers</b>	Non-Metallic Slide Fasteners	14.71	11.86	3.68	9.36	11.04	2.50	Depends on Imports	12.5%	18%	India has improved its capacity for Non-Metallic Zips, but heavily depends on Imports for Metallic Zips.
	Metallic Slide Fasteners	11.62	17.01	6.23	2.40	5.39	14.61	Depends on Imports	12.5%	18%	
	Slide Parts	17.64	22.34	7.86	22.93	9.78	-0.59	Heading towards self sufficiency	12.5%	18%	

\* Net Imports = Imports-Exports

Exhibit 55: India - Net Import Statistics of Trims and Embellishment; Source: ITC Trademap; CBEC; Technopak Analysis

For detailed analysis of ToR # 5, please refer to Annexure 12 – Page 146 – 151

### 5.3.1 Key Findings:

#### (I) Review Import Duty of Trims/Accessories:

The current Import duty which is in addition to GST, results in working capital being locked in for a longer period, as a manufacturer who imports trims would have to pay the import duty and GST and then get the same taxes and duties are refunded at a later stage, thus locking in more working capital for a certain period of time.

The government should review import duties for Trims and Accessories mentioned in Exhibit 55 on Page 84-85, to ensure the working capital burden for Garment Manufacturers is reduced, thus increasing the global competitiveness of Indian products in terms of costing and lower financing and interest burden.

#### (II) Duty Free Entitlement for Import of Trims – Special Focus Initiative:

Under the Special Focus Initiative of Ministry of Commerce & Industry, duty free import entitlement of 5% is provided for certain trimmings and embellishments at 5% of FOB value of exports during the previous financial year.

This special focus initiative scheme incentivizes import of Trims and Accessories, whereas making domestic trims/embellishment manufacturing uncompetitive. Considering India's dependence on imports for most trims, this initiative is counter-productive to building capacities for Trims and Accessories industry in India.

If this benefit is passed on to raw material of domestic Trims & Accessories manufacturers, it would led to cascading effect across the entire value chain. As a result, it would make domestic Trims and Accessories more competitive compared to exports.

### 5.4 Recommendation

- For inclusive growth of garment industry, Government should support Fabric Manufacturing, Fabric Processing (*With special focus on Synthetic Value Chain – Refer sub-section (I) of section 5.2.3 on Page 80-82*)
- The duty regime for trims needs to be reviewed to ensure the Apparel Manufacturers do not have their working capital locked for a long duration of time, thus avoiding higher financing cost. (*Refer Exhibit 55 on Page 84-85 and sub-section I of section 5.3.1 on Page 86 for details of Import Duty and GST*).
- For entire value chain capability in garment clusters, the trims/ embellishment industry need to be developed in/around key garment manufacturing clusters to improve the raw material availability.

- For Indian garment manufacturing industry to evolve into year-round sourcing base (against the current seasonal nature), fabric infrastructure needs to be developed for high growth products such as Jackets, Overcoats, etc., (*Refer to Exhibit 59 in Section 6.4 for complete list of High Growth Categories in International Trade on Pg 92*)
- Technopak recommends that FDIs and JVs in fabric processing industry should be encouraged so that the Indian companies gain technical know-how and develop new fabrics, especially in the Synthetic value chain (*Refer to sub-section (I) of section 5.2.3 on Pg 80-82*) - thus boosting the complete textile value chain.
- Provide for transfer of current 5% Duty free entitlement for import of trims provided to Garment exporters to domestic Trims/Accessories manufacturers, so that domestic trims/accessories industry becomes more competitive and would lead to cascading effect of lower trims cost across the value chain (*Refer to sub-section II of section 5.3.1 on Page 86*).



## ToR #6

***To study the domestic market and potential of garment export line wise for different countries***

### 6.1 Abstract

*Considering the demographics, size of the country, growing middle class in India, etc., it is essential for India to have its own sizing chart for garments. Currently the brands in India use American and British body size measurements which lead to bad fitting and dissatisfaction for the customers.*

*India accounted for approximately 5% of global textile and apparel trade in 2015. India has the potential to grow in both woven and knitted categories as it has complete textile value chain for some categories. India should focus on increasing its share of exports in key consuming markets such as USA, EU, Japan, Australia etc.*

*In woven category, Cotton, Man-Made Staple Fibre (MMSF) Fabric, Special woven fabric and terry towels category have outperformed global growth rates during 2010-15. In knit category, all the subcategories have outperformed global growth rates except wool, which has declined by 39%, bringing the overall knit fabric CAGR to 11%.*

*India has emerged as a key exporter of apparel in past decade. However, there are many product categories with high growth potential in the global trade where India is not strong. Owing to limited capabilities of the textile value chain, the Exports of India have been seasonal. India has not been able to capture key high growth product categories such as overcoat, jackets and dresses.*

*Indian manufacturers have focused mostly on North America, Europe and Middle East markets and have not focused enough on Japan, which is among the top consuming markets. Also, other markets such as Australia and Latin America have growth potential.*

*With China losing its competitive edge due to high costs, no other country has as much potential as India in terms of the availability of the Textile value chain. However, due to lack of size and scale in fabric processing and garment manufacturing, low technical know-how for some high growth product categories, India has not been able to capture larger market share.*

## 6.2 Sizing for India

India is the second most populated country in the world with a population of 1.25 Billion in 2013. India as a Retail market is evolving and is expected to become among the top consuming markets by 2025.

Many countries—like Thailand, the UK, US, Mexico, Italy, Sweden, Japan, China and Korea to among others have standardized sizing charts. Currently there is no standard sizing followed for Indian populace.

The Indian apparel industry is still dictated by American and British body size measurements, but as a large country with diverse ethnic groups and different body shapes this often translates into badly-fitting clothes. The development of basic size charts specific to India's population profile should also increase the appeal of fashion garments amongst the country's increasingly affluent consumers.

*For detailed report on the India's sizing requirements, please refer to Annexure 17 – Pg 155 - 159.*

### 6.3 Fabric Trade

India has complete textile value chain and as mentioned under ToR # 5 (please refer page numbers 60), 94% of the fabric manufactured in India is used for domestic consumption. In the year 2015, India exported total fabric worth 4.6 Bn<sup>28</sup>

Below are the charts showing Global and Indian Scenario in terms of woven and knitted Fabric category for the year 2010 and 2015.

Woven Categories	2010(US Dollar Mn)		India's Share	2015(US Dollar Mn)		India's Share	CAGR 2010-15	
	Global	India		Global	India		Global	India
Woollen Fabric	3,698.4	45.4	1.23%	3,412.1	42.4	1.24%	-2%	-1%
Fabric from Vegetable Fiber	1,584.4	136.5	8.62%	2,071.3	150.9	7.29%	6%	2%
Terry Towel	261.3	3.2	1.23%	103.0	5.2	5.03%	-17%	10%
Special Woven	21,951.0	190.6	0.87%	23,137.9	268.0	1.16%	1%	7%
Silk	2,298.1	319.3	13.90%	1,483.7	92.5	6.23%	-8%	-22%
MMSF Fabric	12,379.5	522.8	4.22%	16,605.3	970.8	5.85%	6%	13%
MMFY Fabric	21,205.8	1,448.0	6.83%	25,503.2	1,091.4	4.28%	4%	-5%
Cotton	27,434.1	1,046.0	3.81%	28,983.2	1,763.5	6.08%	1%	11%
<b>Total Trade</b>	<b>90,812.5</b>	<b>3,711.8</b>	<b>4.09%</b>	<b>1,01,299.9</b>	<b>4,384.6</b>	<b>4.33%</b>	<b>2%</b>	<b>3%</b>

Exhibit 56: Woven Fabrics comparison of Global and Indian trade - Source: ITC Trademap, Technopak Analysis

In woven fabric during 2010-15, India's share of global fabric trade was 4.3%. India has grown in Terry Towel, Man-Made Staple Fibre (MMSF) Fabric and Cotton fabric. India has a negative CAGR for Man-Made Filament Yarn (MMFY) and Silk fabric.

Knitted Categories	2010(US Dollar Mn)		India's Share	2015(US Dollar Mn)		India's Share	CAGR 2010-15	
	Global	India		Global	India		Global	India
Woolen Fabric	329.6	2.5	0.8%	316.0	0.2	0.1%	-1%	-39%
Spandex Mix Knitted Fabric	6,236.6	9.7	0.2%	7,458.9	40.0	0.5%	4%	33%
MMF Fabric	9,346.0	5.6	0.1%	14,923.3	11.6	0.1%	10%	16%
Cotton Fabric	7,854.5	105.6	1.3%	7,439.8	148.0	2.0%	-1%	7%
Artificial Fibers Fabric	1,470.9	0.4	0.0%	1,477.4	1.5	0.1%	0%	27%
Others	1,010.2	19.9	2.0%	1,257.0	36.8	2.9%	4%	13%
<b>Total International Trade</b>	<b>26,247.7</b>	<b>143.8</b>	<b>0.5%</b>	<b>32,872.3</b>	<b>238.0</b>	<b>0.7%</b>	<b>5%</b>	<b>11%</b>

Exhibit 57: Knit Fabrics comparison of Global and Indian trade - Source: ITC Trademap, Technopak Analysis

In knitted fabric during 2010-15, India's share of global fabric trade was 0.7%. India has grown at a faster rate compared to all fabric categories except Woolen fabric, where we had a CAGR of -39%.

<sup>28</sup> ITC Trade Map; Technopak Analysis

## 6.4 Apparel Trade

The world's apparel trade was USD 439 Bn<sup>29</sup> in 2015 and is expected to grow at CAGR of 5%<sup>30</sup> over the next decade. The key categories being traded are Outerwear, Women's Bottom wear, Men's Bottom wear, T-Shirts, Lingerie, Active wear etc.,

India exported apparel worth USD 16 Bn<sup>31</sup> in 2015, which is expected to grow at CAGR of 10%<sup>32</sup> over next five years. The key categories being exported are Active wear, Women blouses, T-shirts, innerwear, nightwear, outerwear, etc.

Below is the chart depicting apparel categories and their growth from Global and Indian Perspective for the year 2010 and 2015.

Categories	2010(US Dollar Mn)		India's Share	2015(US Dollar Mn)		India's Share	CAGR 2010-15	
	Global	India		Global	India		Global	India
Outerwear	103,052	2,098	2.0%	131,394	3,271	2.5%	5.0%	9.3%
Women's Bottomwear	38,897	746	1.9%	53,386	1,018	1.9%	6.5%	6.4%
Men's Bottomwear	32,963	587	1.8%	44,477	1,053	2.4%	6.2%	12.4%
T-Shirts	34,902	1,698	4.9%	42,764	2,858	6.7%	4.1%	11.0%
Lingerie	19,512	182	0.9%	22,938	355	1.5%	3.3%	14.3%
Activewear	12,419	165	1.3%	16,848	1,096	6.5%	6.3%	46.1%
Woven Shirts	12,409	794	6.4%	15,705	1,167	7.4%	4.8%	8.0%
Accessories	11,665	726	6.2%	15,542	1,008	6.5%	5.9%	6.8%
Woven Blouses	9,975	1,416	14.2%	12,800	1,604	12.5%	5.1%	2.5%
Knitted Shirts	7,449	540	7.2%	8,512	752	8.8%	2.7%	6.8%
Men's Innerwear	4,462	169	3.8%	6,344	322	5.1%	7.3%	13.7%
Nightwear	5,137	340	6.6%	6,143	624	10.2%	3.6%	12.9%
Knitted Blouses	5,765	349	6.0%	5,257	186	3.5%	-1.8%	-11.8%
Others	41,006	406	1.0%	57,263	1,061	1.9%	6.9%	21.2%
<b>Total International Trade</b>	<b>339,612</b>	<b>10,214</b>	<b>3.0%</b>	<b>439,374</b>	<b>16,374</b>	<b>3.7%</b>	<b>5%</b>	<b>10%</b>

*Exhibit 58: Apparel categories comparison of Global & Indian trade - Source: ITC Trademap, Technopak Analysis*

<sup>29</sup> ITC Trade Map

<sup>30</sup> Technopak Analysis

<sup>31</sup> ITC Trade Map

<sup>32</sup> Technopak Analysis

Technopak analyzed the imports of different product categories in key consuming markets and covered North America, Europe, Australia, Japan, Latin America, Middle East and Africa. Below are the findings:

Consuming Markets	Jeans	Overcoat	Trousers	T-shirts	Jackets	Sweaters	Blouses
USA	✓		✓	✓		✓	
EU	✓	✓	✓	✓		✓	
Japan	✓	✓	✓	✓		✓	✓
Canada	✓	✓	✓	✓		✓	
Australia	✓		✓	✓		✓	
Latin America	✓		✓	✓		✓	
Middle East	✓		✓	✓		✓	
Africa	✓		✓	✓	✓	✓	

✓ *Potential Apparel categories*

Exhibit 59: High Growth Apparel Product Categories - Source: ITC Trademap, Technopak Analysis

Across different markets, products such as Jeans, Overcoat, Trousers, T-Shirts and Sweaters have emerged as high growth categories.

There is need to strengthen synthetic value chain to enhance India's competitiveness in existing key exports product categories such as trousers, shirts, bottom wear, etc. and to tap into new product categories like active wear and sportswear.

For detailed country-wise analysis of the above regions, please refer to *Annexure 18 – Page 160 – 188*.

We have further dwelled deeper and analyzed the sub-categories of apparel products and have arrived at the below Global and Indian ranking of top 10 product sub-categories:

Global Rank	Product	Global Trade			Indian Trade			RCA	Comments
		Global Trade 2015 (in USD Bn)	Share of Total Global Trade 2015	CAGR (%) 2010-15	India Trade 2015 (in USD Bn)	India's Rank (2015)	India's share (2015)		
1	Sweaters	50.4	11.4%	3.0%	0.3	20	0.60%	0.36	With strong value chain capability, India has the raw material for Sweaters, but does not have infrastructure in terms of Knitting and Linking Machines.
2	Jeans & Others	48.4	10.9%	4.6%	0.7	14	1.40%	0.87	India's is leading denim fabric manufacturer. India has limited processing/washing capabilities to match International standards. In addition, India is not competitive compared to other sourcing destinations for Jeans owing to wages.
3	T-shirts	43.3	9.8%	4.4%	2.9	4	6.60%	4.02	With order migration from China, India is in a position to capture higher share in T-Shirt exports.
4	Trousers	41.9	9.4%	8.3%	1.1	7	2.60%	1.58	India has the requisite capacities and raw materials to capitalize on this product category and capture higher market share. However, the textile value chain needs to be strengthened

5	Inner & Comfort wear	36.1	8.1%	3.9%	1.2	5	3.40%	1.99	With limited synthetic value chain capability and lack of specialized machinery, India has captured less share of Global trade. China and Sri Lanka are world leaders in this category. Bangladesh has shown high growth in this category in the recent years. Synthetic value chain needs to be improved to increase India's share in Inner Wear/Comfort Wear category
6	Jackets	23.33	5.3%	9.5%	0.3	11	1.30%	0.77	With CAGR of 9.5%, this is among the most lucrative product category. India lacks the value chain capability in specialized and functional fabrics used for Jackets. Government initiatives should incentivize investments in synthetic value chain especially in fabric processing industry for specialized/functional fabrics to capture higher market share of Global trade.
7	Blouses & Dress	22.84	5.1%	6.4%	1.9	2	8.20%	4.99	With order migration from China, India is in a position to capture higher share in Blouse & Dresses category.
8	Sports & Swimwear	16.94	3.8%	6.4%	1.1	4	6.50%	3.9	India lacks the value chain capability in specialized and functional fabrics used for Jackets. Government initiatives should incentivize investments in synthetic value chain especially in fabric processing industry for specialized/functional fabrics to capture

									higher market share of Global trade.
9	Woven Shirts	15.57	3.5%	4.6%	1.2	3	7.50%	4.62	With order migration from China, India is in a position to capture higher share in Blouse & Dresses category.
10	Overcoat	14.59	3.3%	6.4%	0.08	23	0.50%	0.33	India lacks value chain capability in specialized and functional fabrics and capacities for Overcoats. In addition, has limited manufacturing capacities for Overcoats. Government initiatives should incentivize investments in synthetic value chain and developing manufacturing capacities to capture higher market share of Global trade.

Exhibit 60: India global ranking and share in key product categories - Source: ITC Trademap, Technopak Analysis



## 6.5 Key Findings:

### (I) Need of Infrastructure and Expertise in Key High Growth Product Categories

Based on Exhibit 59 and Exhibit 60 above, India accounts for meagre share in 6 out of Top 10 high growth product categories. These categories are Sweaters, Jeans, Trousers, Jackets, Sportswear and Overcoat.

Apparel manufacturing in India is seasonal with strong capabilities in Summerwear products in Natural fibres such as T-Shirts, Blouses, Dresses, Woven Shirts etc.,

India has significant gaps in value chain for Winterwear products and lacks value chain requisite capability for synthetic products. Both these product categories are among the top consumed categories worldwide. Despite being the only country, other than China, to have strong textile value chain among Asian sourcing destinations, India has not been capitalize on these high growth categories due to lack of Infrastructure, Know-How and Expertise to manufacture specialized products.

Other sourcing destinations such as Bangladesh and Vietnam are gradually developing the infrastructure and expertise to manufacture specialized products. In the last decade both these countries have surpassed India in Apparel exports despite have partial textile value chain capabilities.

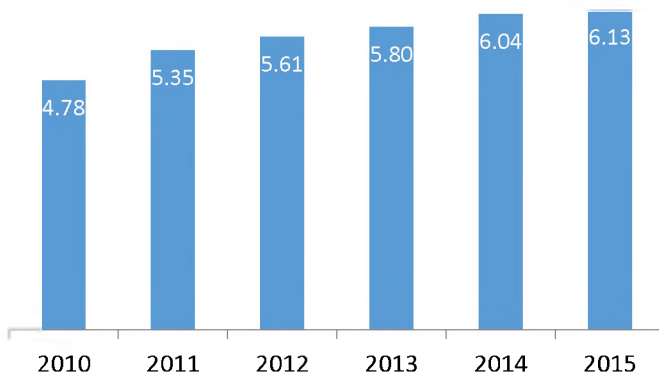
Both Bangladesh and Vietnam have been able to develop the infrastructure with the help of Joint Ventures, Partnerships and FDIs to build the required ecosystem to support garment manufacturing. The Government in India should encourage FDIs and JVs to develop the apt ecosystem for these high growth product categories and synthetic value chain in India. This initiative would ensure that India regains its position in International trade.

### (II) Address Seasonality for Existing Garment Manufacturing Set-ups by focusing on Key Markets in Southern Hemisphere

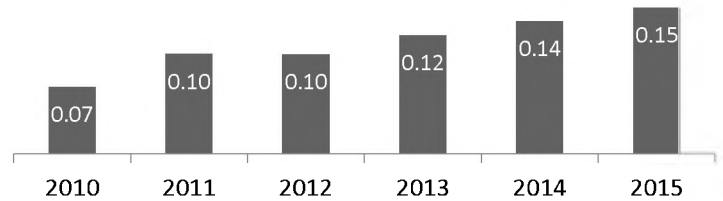
To address the seasonality factor for existing garment manufacturing units in India which usually have lean season during Winter production, key consuming markets in Southern Hemisphere can be explored.

In the Southern Hemisphere, the summer coincides with Winter season of key traditional consuming markets of North America and Europe. Factories in India which manufacture product categories suitable for Summer such as T-Shirts, Shirts, Dresses, Blouses, etc., can focus on these markets to ensure their capacity utilization and year around orders. This in turn would also improve the employability of labor workforce during the lean seasons.

### Australia - Apparel Imports (in USD Bn)



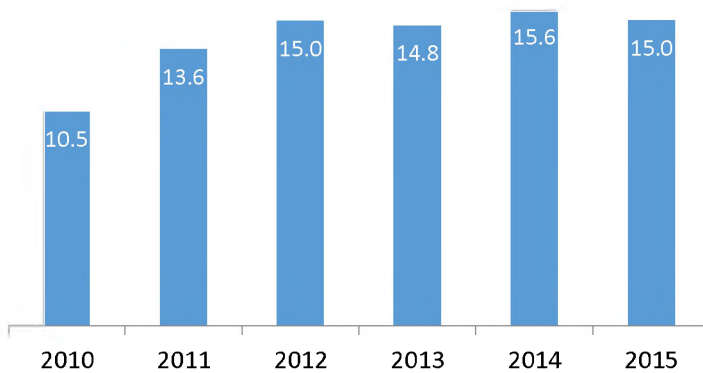
### India - Apparel Exports to Australia (in USD Bn)



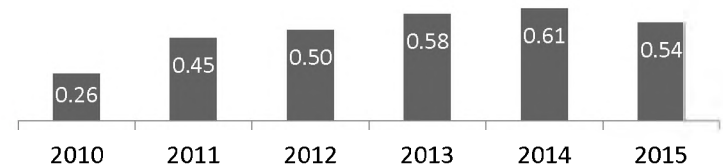
**Exhibit 61: Australia's Apparel Imports and India's Apparel exports to Australia**  
Source: ITC Trademap, Technopak Analysis

India accounts for 2.4% of Australia's Apparel imports in 2015. Australian apparel imports have grown at CAGR of 5.1% during the period of 2010-15 and is positioned to grow in the near future.

### Lat-Am - Apparel Imports (in USD Bn)



### India - Apparel Exports to Lat-Am (in USD Bn)



**Exhibit 62: Latin America's Apparel Imports and India's Apparel exports to Latin America**  
Source: ITC Trademap, Technopak Analysis

India accounts for 3.6% of Latin-American Apparel imports in 2015. Latin-American apparel imports have grown at CAGR of 7.3% during the period of 2010-15 and is positioned to grow at similar rate the near future.

India is well-positioned to explore these markets to address the seasonality issue faced by the industry and increase its capacity utilization in lean seasons, thus increasing share of its International Trade.

## 6.6 Recommendation

- India lacks infrastructure and expertise in key global high growth categories such as Sweaters, Overcoats, Jackets etc. Even though India has capacity to manufacture denim in large quantities, it lacks in capacities (including washing) for Denim Jeans. Technopak recommends government should support FDIs and JVs to gain expertise in some of these product categories (*Refer sub-section (I) of Section 6.5 in Pg 96*).
- Following incentives can be provided for private enterprises to focus on high growth product categories such as Sweaters, Outerwear, Jackets and others (*Refer to Exhibit 59 & Exhibit 60 on Pg 92-95*):
  - Higher Duty Drawback to boost exports in certain categories
  - Import duty exemption for machinery and equipment
- To address seasonality factor for existing garment manufacturing set-ups, government should encourage trade with key markets in Southern Hemisphere such as Australia and Latin America (*Refer sub-section II in Section 6.5 on Pg 96*).

## ToR #7

### **Recommendation for possible forms of government intervention for skill building in garmenting**

India has predominantly focussed on entry level skilling, which has provided employment opportunities for sizeable part of unskilled workforce across rural regions in labor catchment areas and in vicinity to clusters spread across the country. Entry level skilling only ensures basic skill sets for unskilled worker to get employment. Post getting employment, without additional training, these workers are unable to perform critical operations that are essential in garment manufacturing.

This focus in entirety on entry skill training has led to shortage in skilled and highly skilled labor workforce. This shortage has resulted in low productivity, low efficiency, delay in shipments and quality issues among others. Garment manufacturing industry in India is in urgent need for skilled and highly skilled workers. To address this issue, Technopak has suggested the below initiatives from Ministry of Textiles.

#### **7.1 Ministry should look at Skill Building under ISDS from a new perspective:**

Going forward, skill building in the garment manufacturing should be looked at differently. Currently, the existing skills development programs focus largely on employment generation by imparting entry level skills. Limited measures on up-skilling workers and staff have been taken.

The Skills development areas should focus on various levels of skills, as mentioned below:

##### **1. Entry-level skills:**

These should continue in the current form of existing guidelines of Integrated Skills Development Scheme. However, preference should be given for the factories to set up the training infrastructure within the premise rather than training people at some other infrastructure and then shifting them to a factory.

This will help the worker develop an understanding of the company and gets acclimatized easily to the skill requirements for the product categories and factory infrastructure.

Entry level training should be provided to all the divisions of production floor and not restricted to only sewing operators and helpers.

## 2. Up-skilling:

Up-skilling is extremely important to drive productivity. Only entry-level training is not sufficient to build productivity and efficiency. Existing workforce need to work at a better skill level with operational capability across different operations at production floor to contribute to overall productivity in the factories. These can be various areas of operations like sewing, quality, finishing etc. This kind of training includes:

- A combination of on-Job training and some classroom training that may be mostly based on visual aids, which can give a perspective to the operator to see on how a certain operation can be performed better.
- Redefining the workstation that can come in the form of work aid; work handling equipment, use of automation and pneumatics, and use of additional equipment as stackers, side extensions, front extensions etc.

The up-skilling program should be implemented at a higher rate because the level of engagement will be far higher than the entry-level training. Training agencies should develop curriculum to suit the requirements of industry and ensure the engagement model is different for upskilling when compared to entry training skills.

## 3. To boost new investments in remote areas / backward areas, incentivize Entry-level skilling for local population.

- This will help the garment manufacturers to plan new facilities in remote areas, closer to the labor catchment area thus ensuring less attrition/absenteeism.
- To ensure that the operators reach a certain level of skill rather than just entry-level skill, training for new facilities, should be mandated for a longer tenure – typically 6 months.
- The job roles which should be looked at can be: Fabric inspectors, Fabric handlers, Stores keepers, accessories inspectors, Fabric Spreaders, Cutters, Cutting handlers, Sewing operators, sewing helpers, quality checkers, pressing (ironing), garment inspectors, tagging and packing helpers, warehouse resources etc.
- This training initiative may also be applicable for factories being set up 100-150 kms away from existing clusters where the garment industry is currently prevalent. E.g 100-150 kms each from Bangalore, Chennai, Gurgaon, Panipat, Ludhiana, Noida, Tirupur, Karur, Kanchipuram, Mumbai, etc.

#### 4. Training of Middle Management:

- Middle management i.e Supervisors, section in-charges, Quality controllers, industrial engineers etc. are the backbone of any garment factory and need to be trained on manufacturing best practices, by allocating 2 hours on a daily basis.
- The training for Mid-Management could include concepts of Lean manufacturing, WIP control, engineering of the workstations, use of Pneumatics leading to reduction in work content, specific projects to improve productivity etc.

#### 5. Vocational Education

- Vocational training should be given a high priority and should be accepted as a university degree/diploma for apparel manufacturing.
  - This could be executed through available ITI's, ATDC's and other private colleges.
  - The course contents can be widely circulated so that all companies are aware of the contents and understand the capability of the resources being trained.
  - Graduates from any discipline can seek an admission to the Middle management vocation courses and undergo a 6 months to 1 year of training.
  - Such training may be provided on highly subsidized rates by the ITI's/ ATDC's. The institutes would award a certificate of completion and the test results.
  - These can also be published on the Job exchange App mentioned earlier. The courses planned could be in:
    - Supervisor – Cutting
    - Supervisor – Sewing
    - Supervisor - Finishing
    - Industrial Engineer
    - Merchandising coordinator
    - Garments Quality controller including Lab technician
    - Fabric & Accessories Quality controller
    - Washing Technicians
    - Production controllers including MIS
    - Maintenance Technicians including use of pneumatics

## 6. Management interventions

The industry also needs to understand and practice better tools of manufacturing.

### Lean Manufacturing:

Lean advocates the elimination or reduction of various kinds of waste prevalent in the manufacturing organization to improve overall effectiveness. Automobile industry has used Lean manufacturing very effectively and has been the forerunner in setting up manufacturing best practices. Key interventions could be planned around the tools of Lean manufacturing for Garment Industry in India.

- Garment manufacturing infrastructure could be looked at with the following perspectives:
  1. Large apparel clusters/manufacturing parks can be developed near ports, with emphasis on exports. The workers could come to work in these clusters from all over the country. They will get trained and then allocated to various garment manufacturing units within the cluster. Dormitories to be planned to house almost 100% of the workers, working in such parks. In addition, to encourage Investments/FDIs, provide incentives such as Tax Holidays, Dividend Tax Exemption, Duty Free Import of Machinery, etc.,
  2. Smaller clusters can be developed closer to the worker catchment areas. Backward areas in each state may be encouraged to participate with such development. Government could look at a subsidizing/incentivizing such manufacturing set-ups that employ more than 500 people at single location.

### 7.2 Impact of proposed Minimum Wage Revision:

The central government is considering a minimum wage revision from current level to a minimum wage of Rs. 18,000 across India for labor workforce in manufacturing sector.

Currently, minimum wage is state subject, with each state having a separate minimum wage slab for its labor workforce. The minimum wage in India currently ranges between Rs. 4,744<sup>33</sup> to Rs. 13,350<sup>33</sup> in different states for different skill levels as mentioned in Exhibit 63. With a unified minimum wage of Rs. 18,000 across India, the wage bill for garment manufacturers would range between 1.35 to 3.8 times the current wage levels.

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<sup>33</sup> Paycheck.in

State & UTs	Sub Divisions	Current Minimum Monthly Wages	Proposed Minimum Monthly Wages	Wage Bill Impact (Proposed Min. Wages / Current Min. Wages)
Andaman & Nicobar*	Andaman	7,722	18,000	2.33
	Nicobar	8,008	18,000	2.25
Andhra Pradesh	Zone I	8,237	18,000	2.19
	Zone II	7,850	18,000	2.29
Arunachal Pradesh*	Zone I	5,200	18,000	3.46
	Zone II	5,720	18,000	3.15
Assam*		6,500	18,000	2.77
Bihar*		6,422	18,000	2.80
Chandigarh*		9,100	18,000	1.98
Chattisgarh*	Zone A	8,450	18,000	2.13
	Zone B	8,190	18,000	2.20
	Zone C	7,930	18,000	2.27
Dadar & Nagar Haveli*		7,475	18,000	2.41
Daman & Diu*		7,475	18,000	2.41
Delhi		13,350	18,000	1.35
Goa*		8,164	18,000	2.20
Gujarat*		7,946	18,000	2.27
Haryana*		8,280	18,000	2.17
Himachal Pradesh*		5,460	18,000	3.30
Jammu & Kashmir*		5,850	18,000	3.08
Jharkhand		5,978	18,000	3.01
Karnataka		7,027	18,000	2.56
Kerala		8,280	18,000	2.17
Lakshwadeep*		10,426	18,000	1.73
Madhya Pradesh		7,125	18,000	2.53
Maharashtra		6,860	18,000	2.62
Odisha*		5,538	18,000	3.25
Punjab*		7,634	18,000	2.36
Rajasthan		5,382	18,000	3.34
Tamilnadu*		4,744	18,000	3.79
Uttar Pradesh		7,400	18,000	2.43
West Bengal	Zone A	7,489	18,000	2.40
	Zone B	6,774	18,000	2.66

\* These states have daily wages. We have considered 26 days while calculating monthly minimum wages.

**Exhibit 63: Minimum wages across different states in India**



In addition, if the minimum wage is increased to Rs. 18,000, the industry average wage would be about ~Rs. 21,000, as the minimum wage is paid to unskilled and semi-skilled workers. Skilled workers, Supervisors, etc., would demand for a higher wages in the range of ~Rs. 22,000 to Rs. 26,000.

This would have a negative impact on existing and new businesses, thus impacting new employment generation and increase the wage bills at factory levels at small, medium and large scale factories, thus making their products highly uncompetitive for both domestic and export markets.

Particulars	Minimum Wage	Comparison of India's Proposed Minimum Wage
Current Minimum Wage in India (in USD)	USD 75 - USD 211	26% - 74%
<b>Proposed Minimum Wage in India</b>	<b>USD 285</b>	
Minimum Wage in China	USD 155 - USD 297	54% - 104%
Minimum Wage in Bangladesh	USD 68 - USD 167	23% - 58%
Minimum Wage in Vietnam	USD 100 - USD 145	35% - 50%

Currency conversion @ 1 USD = Rs. 63/-  
Source: Technopak Analysis; ILO Report

**Exhibit 64: Comparison of India's Proposed Minimum wages with other sourcing destinations**

In comparison, other apparel manufacturing countries such as Vietnam and Bangladesh are currently paying lower wages compared to India. If the proposed minimum wage would be Rs. 18,000 in India, these countries would further gain competitive advantage over India. With this proposed minimum wage, Bangladesh would have a minimum wage of 23% to 58% of India's minimum wage and Vietnam would have 35% to 50% of India's minimum wages. With such cost differentiation, these countries would gain competitive advantage over India leading to order migration to these countries thus significantly reducing India's Apparel exports.

China is a case in point for increasing labor cost and global un-competitiveness resulting in huge order migration and irreversible consequences. In the recent years, China's orders have been moved to Bangladesh and Vietnam (*Please refer to Exhibit 8 in Page 21*).

At current wage levels, labor cost accounts for 7-8% (Industry Thumb rule) of total cost of Garment factory. If the minimum wage is increased to Rs. 18,000, it might result in higher labor cost of about 18-22% of the total garment costs.

This would result in large scale disruption of the Apparel manufacturing industry in India with significant negative impact across different clusters in India with many small and medium scale factories becoming uncompetitive at both domestic and export markets.