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GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT
& ENTREPRENEURSHIP

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Transforming the skill landscape

Human Resource and Skill Requirements in the Textiles and Clothing Sector

(2013-17, 2017-22)

cutting through complexity

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Acknowledgement

We are grateful to the Government of India and its various departments, State Governments, Industry Associations, Sector Skill Councils, Skill Training Institutions, Academia and NGOs, for their contribution towards the successful completion of the Sector Skill Gap study (2013-2017, 2017-2022).

We would like to thank all NSDC's industry and training partners for their active participation. The success of the study has been possible through their collaborative efforts.

In addition, we convey our gratitude to all those who have, in some way or other, contributed towards the successful completion of this study.

Executive Summary

Changing structure of the textile sub-sector and enabling factors would contribute to the sector's growth of more than 10 percent in the next decade

Key Growth Drivers

- **Customer Preference** - With the evolution of the lifestyle of India's urban consumers, their clothing requirements have broadened from being mere home wear, office wear to special occasion and functional wear. Households are now also looking forward to decorating homes by giving them annual makeovers by changing the furnishings of curtains and bed linen. Increase in disposable income has doubled the domestic household expenditure on clothing from INR1.08 lakh crores in 2004–05 to INR 2.06 lakh crores in 2010–11 (at current prices)
- **Domestic and Foreign Demand** - Demand from foreign markets such as the US and EU are large and continue to dominate the sector. Emerging markets with potential demand include Canada, Australia, Japan, South Africa and the Middle East.
- **Research and Development** - The Ministry of Textiles, Government of India, has appointed eight textile research institutes across various clusters. The government funds 75 percent of research projects in these institutions and the rest should be raised by implementing agencies.

India's Competitive Advantage

Growing demand

- Increase in disposable income has doubled the domestic household expenditure on clothing from INR1.08 lakh crores in 2004–05 to INR 2.06 lakh crores in 2010–11 (at current prices)
- Foreign demand or exports from India has grown by eight times in the last decade

Cost of production

- The cost of production of yarn and fabric in India is lesser than other countries such as, the US, Italy and China
- India has an advantage in raw material production costs, as it is between 50–80 percent of the total manufacturing cost for competitors such as China

Advantage India

Rising investments

- The annual total investments in textiles and clothing sector increased from INR 59500 crores in 2001–02 to INR 2 lakh crores in 2011–12, growing at an average rate of 12.8 percent per annum.
- There has been an increase in investments in apparels and garments

Policy support

- Textiles and clothing strategic plan 2011–16 to achieve manufacturing growth rate by 10 percent, exports by 15 percent in 2016
- Integrated Skill Development Scheme to spend INR 1900 crores to train 1.5 million workers in the textiles sub-sector

India is the second-largest producer and exporter of textiles and clothing in the world. As of 2012, the textiles sub-sector contributed to 4 percent of India's GDP and 11 percent of the total Indian exports, primarily driven by the availability of raw materials such as natural fibre mainly cotton, silk and jute.

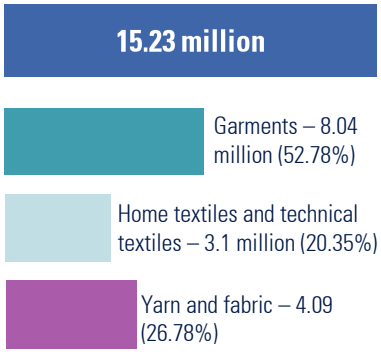
The textile sub-sector in India is characterised by small-scale, non-integrated spinning, weaving, finishing, and apparel-making enterprises. This structure arose due to policies on tax, labour and other regulations that favoured small-scale, labour-intensive enterprises, while discriminating against large-scale, capital-intensive operations. Small-scale 'unorganised' players dominate the sector which lacks stringent regulations.

Sources: KPMG in India analysis

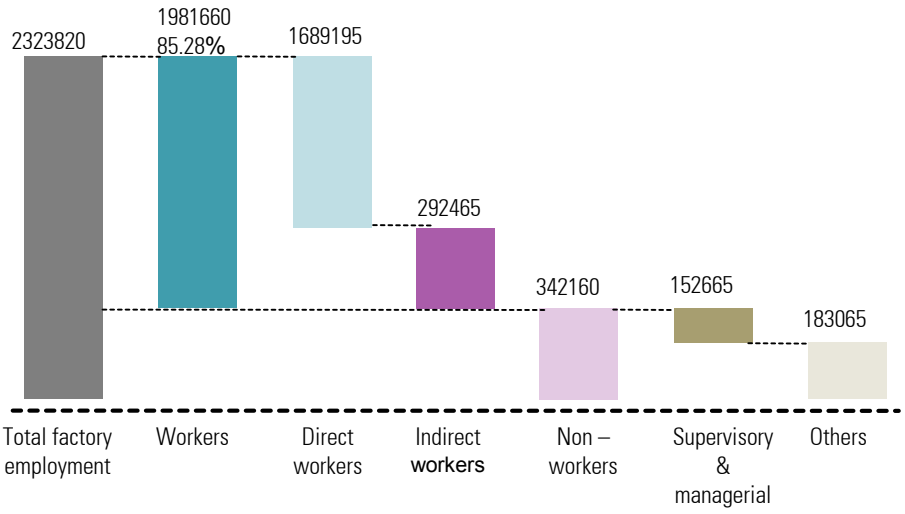
Demographic characteristics of workforce

Around 20 percent of the workers in textile factories are indirect

15.23 million persons are employed in the Textile and clothing sector, Of these, 2.3 million are employed in factories



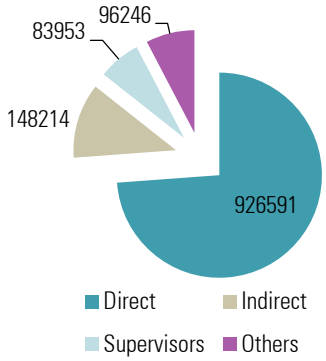
Distribution of factory workforce in textiles and clothing



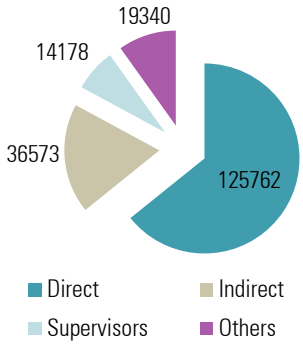
Source: "Annual Survey of Industries 2010-11", Ministry of Statistics and Planning, Government of India, as accessed on 6 February 2014

Distribution of Factory Workforce Sub Sector wise

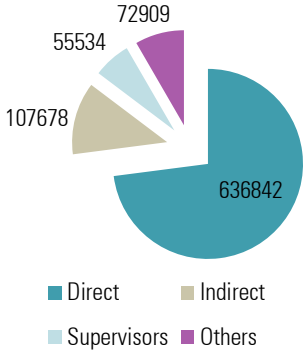
Yarn and fabric



Home textiles and technical textiles



Ready-made garments



Source: "Annual Survey of Industries 2010-11", Ministry of Statistics and Planning, Government of India, as accessed on 6 February 2014

- Factory workers comprise people that are directly employed, indirectly employed (contract-based), or in supervisory or managerial roles, among others.
- Directly and indirectly employed workers are chiefly engaged in the roles of machinists, tailors, spinners, weavers, dyers and others. Thirty-one percent of the total employees in textile factories of India are engaged in preparing fibres and spinning yarn.
- The 'other' product category that has the highest number of workers includes wearing apparels and garments (excluding articles of fur). About 10.05 percent of the workers are engaged in manufacturing knitted and crocheted apparels, 11.28 percent in finishing textile products (bleaching, dyeing and printing) and about 9 percent in weaving fabrics. Only about 6 percent of the workforce is engaged in producing other finished products such as home textiles and technical textiles.

Incremental human resource requirement (2013-17, 2017-22) and skill gaps

Fifty-one percent of the total workforce is engaged in the manufacturing of readymade garments, followed by yarn and fabrics with 26 percent

Currently, 15.23 million people are employed in the textile sub-sector across yarn and fabric, home textiles, technical textiles and readymade garments. Human resource requirement in the sector is expected to reach 21.54 million by 2022 translating into 6.31 million additional employment opportunities during the period 2013-22.

Automation of production of yarn and fabrics and new technologies such as digital printing, dobby and sateen are expected to result in increased productivity levels translating into a moderate elasticity factor of 0.38 for the period 2013-22.

Sub Sector	Employment (in Million)		
	2013	**2017**	**2022**
Spinning Weaving and Finishing of Textiles	3.1	3.14	3.18
Manufacture of Other Textiles	8.04	10.64	13.78
Manufacture of Wearing Apparel	4.09	4.28	4.58
Overall Sector	**15.23**	**18.06**	**21.54**

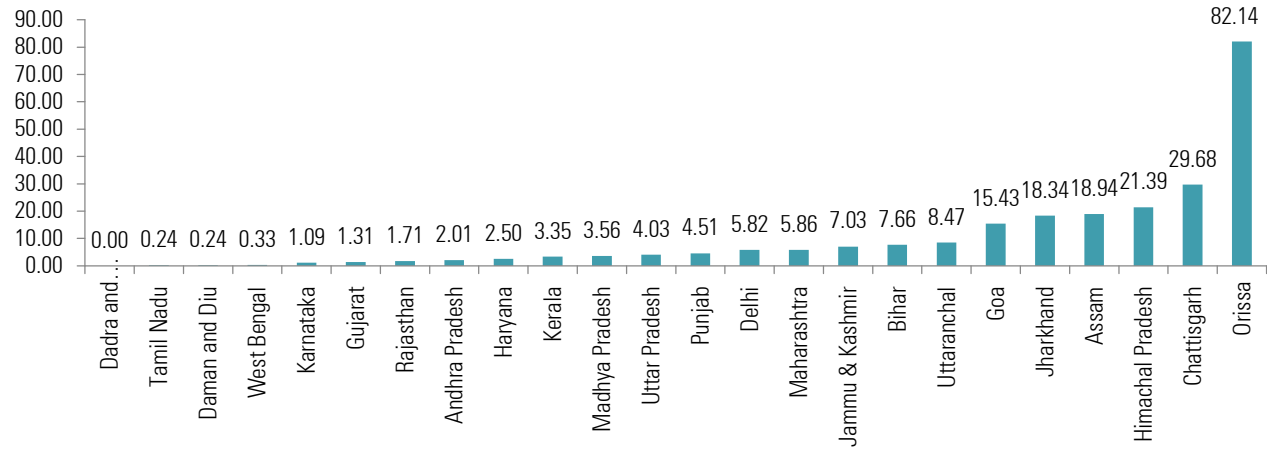
Job roles	Skill gap
Operator/tailor/weaver/helper(production)	▪ Entry-level operators have limited knowledge on machines handling and troubleshooting aspects
Supervisors	▪ Lack the ability to handle contingencies, manage people and allocate work ▪ Lack of experience in handling machines
Quality control representatives	▪ Lack the ability to undertake high-level due diligence required for quality checks
Production management	▪ There is scarcity of experienced planners and they usually lack people management skills ▪ Lack of understanding of the process
Merchandisers	▪ Poor communication skills ▪ Unable to manage contingencies and handle high-pressure situations at work
Designers / sample developers (design and development)	▪ Lack of knowledge on customer standards and new global market trends ▪ Experienced designers are scarce and switch jobs frequently ▪ Most institutes offer training in apparels. There is dearth of sector-specific designers

Source: NSSO, KPMG in India analysis

Training infrastructure

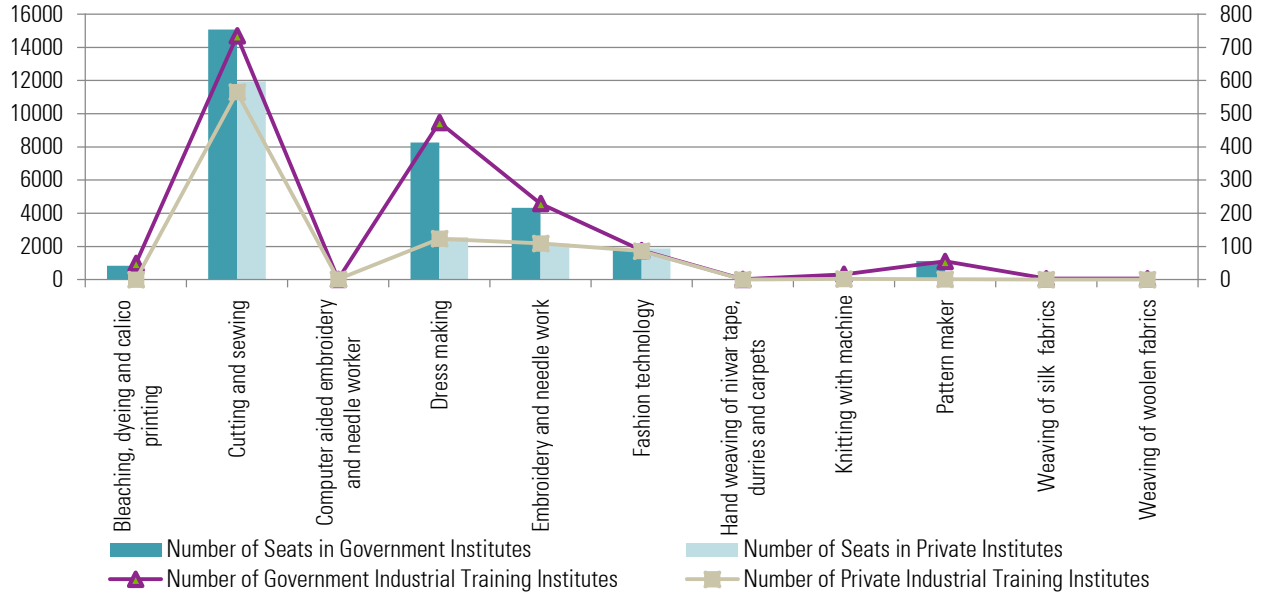
Industrial training institutes offering textile courses are restricted to cutting and sewing trades

Number of seats in industrial institutes offering textile trades per 100 factory workers



- The capacity of ITIs offering textile trade is inadequate to meet the skilling requirements of workers in most of the state, including key textile clusters of Tamil Nadu, West Bengal, Karnataka, Gujarat, Rajasthan and Andhra Pradesh.
- There are about 2,541 institutes with a total seating intake capacity of approximately 50,464 offering textile-related trades.
- Sixty-five percent of these skilling institutes are owned and managed by the government and constitute 63.09 percent of the total seating capacity available for skill development in textile.
- A majority of ITIs — private and government — offer courses on cutting and sewing (51 percent) followed by dress-making (24 percent) and embroidery and needle work (13 percent).
- Only government institutes offer courses on weaving, hand weaving of Niwar tape, durries and carpets and weaving of silk and woolen fabrics, and bleaching, dyeing and calico printing.

Number of seats and industrial institutes offering textile trades



Source: "ITIs Informational Service", Ministry of Labour & Employment, Government of India, accessed as on 16th November 2013

Select recommendations & implications

Recommendation	Implications
Provide incentives to factory workers in the form of skills premium	▪ Acknowledge and offer incentives to workers based on improvisation in skills – a few large firms offer this in the form of grades/promotions among each job role. For example, a home textile stitching unit may have three grades of sewing machine operators and tailors. Grade C may refer to tailors sewing simpler forms of products within a home textile segment (bath linen) such as napkins. Grade B may refer to those responsible for making towels and Grade A may refer to those in charge of producing bath robes. The salaries paid to workers would increase with improved grades. ▪ Competition among workers of a specific function (such as weaving machine operators) should be conducted periodically to incentivise workers who deliver high productivity and improved production quality.
Creating awareness among the youth to attract them towards the sector	▪ The government must encourage textile engineering degrees as an option in popular institutes among other engineering options ▪ Awareness needs to be created among school students at the middle school level (class V–VIII) through vocational education in textiles by courses on embroidery, needle work, fashion design and textile chemistry. A few schools also include tailoring in home science courses
Specialized industrial training institutes in textile machinery operations	▪ ITIs and ITCs located in major textile hubs must be upgraded to latest technology and converted into centres of excellence offering courses in textile machine operations, which should focus on carding, blow room, different types of weaving looms and sewing
Establishment of home textile and technical textile design centers	▪ Home textile design centres (HTDC) should be established on the lines of ATDC in hubs such as Karur, Maharashtra and Gujarat. These institutes could offer courses on home textile manufacturing, types of fabrics used, design and pattern-making and the use of CAD
Private sector participation for infrastructure provisioning to ITIs	▪ The Ministry of Textiles is encouraging public-private partnerships within their integrated Skill Development Scheme, wherein funds are being provided to private players interested in establishing institutes. This could be extended further to another model wherein training institutes that cannot procure latest technology due to poor financial condition can purchase/lease second-hand machines from private players
Revise design course content in line with global trends	▪ Fashion and home textile design institutes should include courses on the preferences of global consumers and upcoming trends in the textile sector. They should educate people on the design preferences of the US and Europe
Introduction of textile management programs	▪ Textile management programs can be provided by textile research associations that offer a combination of textile courses along with marketing and sales
Sector skill council for the entire textiles and clothing sector	▪ A sector skill council for textiles focusing on apparels, spinning and weaving is being considered ▪ It must be ensured that the trades proposed in it account for the skill gaps across all textile sub-sectors, including technical and home textiles

Table of Contents - Detailed Report

Abbreviations

ATDC	Apparel Training Design Centres
NIFT	National Institute of Fashion Technology
AICTE	All India Council for Technical Education
ATDC	Apparel Training Design Centres
NIFT	National Institute of Fashion Technology
NSDC	National Skill Development Council
SSC	Sector Skill Council
TUFS	Technology Up gradation Fund Scheme
SITP	Scheme for Integrated Textile Park
ASEAN	Association of Southeast Asian Nations
FDI	Foreign Direct Investment
COE	Center of Excellence
RMG	Readymade garments
R&D	Research and Development
TRA	Textile Research Associations
HRD	Human Resource Development
RSA	Resource Support Agencies
LMIS	Labour Market Information System
TOT	Training of Trainers
HTDC	Home Textile Design Centres
IIFT	Indian Institute of Fashion Technology

Context and approach

Brief background	NSDC had conducted sector-wise skill gap studies for 19 high priority sectors in 2008–09 . ▪ KPMG has been engaged as a consultant to help evaluate the skill gap across 25 sectors and develop actionable recommendations for its stakeholders. ▪ Mandate includes sector and sub-sector level analysis, demand-supply projection, estimation of incremental man-power requirement between 2013-2017 and 2017-2022, identification of key-employment clusters, and SWOT analysis of each sector ▪ Study also aims to take qualitative insights from stakeholders on enablers and challenges for each sector, way forward in terms of specific policy level actionable recommendations,
Inclusions over the previous study	▪ Study led by industry – Sector Skill Councils and a panel of professionals from different sub-sectors were consulted for their inputs on industry trends, key takeaways in terms of skill requirement, qualitative insights to understand specific interventions required for each sector and to validate the quantitative results and recommendations ▪ 6 sectors were added to the list of NSDC priority sectors for studying the skill gaps Updated study also includes ▪ Identification of top 20 job-roles in each sector, case studies around good training practices, sub-sector level indicators and growth factors ▪ Study also includes understanding of existing training infrastructure, work-force characteristics and employment clusters, ▪ Macro economic factors, central and state governments policies and their envisaged impact ▪ Synchronisation of the sector wise demand from the district level skill gap studies ▪ Recommendations for key stakeholders - Industry, NSDC, Training organizations and Government ▪ Environment scans every year till 2015-16 including SWOT analysis for the sector

Industry classification

Coverage as per NIC classification

NIC Code 13: Manufacturing of textiles	
NIC Code 131: Spinning, weaving and finishing of textile fibres	
1. Preparation and spinning of textile fibres	Cotton fiber including cotton blended*
	Silk fiber including silk blended
	Wool, other animal hair including wool, animal hair blended
	Man-made fiber including blended* man-made fiber
	Jute, mesta and other natural fiber including blended natural fiber
2. Weaving of textiles	Weaving, manufacturing of cotton and cotton mixture fabrics
	Weaving, manufacturing of wool and wool mixture fabrics
	Weaving, manufacturing of man-made and man-made mixture fabrics
	Weaving of jute, mesta and other natural fiber including blended natural fiber
3. Finishing of textiles	Finishing of cotton and blended cotton textiles
	Finishing of wool and blended wool textiles
	Finishing of man-made and blended man-made textiles
	Finishing of jute, mesta and other vegetable textiles fabrics
	Activity related to screen printing
	Other activities relating to finishing of textile
NIC Code 139: Manufacturing of other textiles	
1. Manufacturing of knitted and crocheted fabrics	Manufacturing of knitted and crocheted cotton fabrics
	Manufacturing of knitted and crocheted woollen fabrics
	Manufacturing of knitted and crocheted synthetic fabrics
	Manufacturing of other knitted and crocheted fabrics
2. Manufacturing of made-up textile articles, except apparel and textile articles for technical use	Manufacturing of curtains, bed covers and furnishings
	Manufacturing of crocheted made-up textile goods except apparel
	Manufacturing of mosquito nets
	Manufacturing of bedding, quilts pillows, sleeping bags etc.
	Manufacturing of tarpaulin
	Manufacturing of blankets

Source: NIC classification, 2008

Coverage as per NIC classification

3. Manufacturing of carpets and rugs	Manufacturing of carpets and other floor coverings made of cotton
	Manufacturing of carpets and other floor coverings made of wool
	Manufacturing of carpets made of synthetic materials
	Manufacturing of carpets, and other floor coverings made of jute, mesta and coir
	Manufacturing of other floor coverings
4. Manufacturing of cordage, rope, twine and netting	Manufacturing of thread, including thread ball making
	Manufacturing of cordage or rope made of jute
	Manufacturing of cordage or rope made of coir
	Manufacturing of rope and cordage made of synthetic material
	Manufacturing of knotted netting of twine, cordage or rope (other than mosquito net)
	Manufacturing of tapes, newar and wicks
	Manufacturing of other cordage or rope
5. Manufacturing of other textiles	Embroidery work and making of laces and fringes
	Zari work and other ornamental trimmings
	Manufacturing of linoleum and similar product
	Manufacturing of gas mantles
	Manufacturing of made-up canvas goods such as tents and sails
	Manufacturing of wadding of textile materials and articles of wadding such as sanitary napkins and tampon
	Manufacturing of metalised yarn or gimped yarn, rubber thread or cord covered with textile material, textile yarn or strip impregnated, covered or sheathed with rubber or plastic
	Manufacturing of waterproof textile excluding tarpaulin
	Manufacturing of other textiles/textile products

Source: National Industrial Classification 2008, Government of India as accessed on 6 February 2014
Note: Textile products made of silk have been excluded from the study as they are largely handloom/ hand-made items

Coverage as per NIC classification

NIC Code 14: manufacturing of wearing apparel	
1. Manufacturing of wearing apparel, except fur apparel	Manufacturing of all types of textile garments and clothing accessories
	Manufacturing of rain coats of waterproof textile fabrics or plastic sheeting
	Manufacturing of hats, caps and other clothing accessories such as gloves, belts, ties, cravats and hairnets
	Manufacturing of wearing apparel made of leather and substitutes of leather
	Manufacturing of wearing apparel
2. Manufacturing of articles of fur	Manufacturing of wearing apparel and clothing accessories made of fur
	Manufacturing of fur and skin rugs and other similar articles
	Manufacturing of other fur products
3. Manufacturing of knitted and crocheted apparel	Manufacturing of knitted or crocheted wearing apparel and other made-up articles directly into shape (pullovers, cardigans, jerseys, waistcoats and similar articles)
	Manufacturing of other knitted and crocheted apparel including hosiery

Source: National Industrial Classification 2008, Government of India as accessed on 6 February 2014
Note: Textile products made of silk have been excluded from the study as they are largely handloom/ hand-made items

Coverage as per NIC classification

Major sub-sectors

- Yarn, fabric and made-ups are three products that are manufactured by the sector
- Yarn and fabrics are intermediaries that are purchased by domestic manufacturers of made-up products. These are also exported to other countries and, hence, are accounted as separate products that also add value to the sector
- As per the final products, the three categories include garments, home textiles and technical textiles
- The report analyses the sector prospects for both intermediate products as well as final products

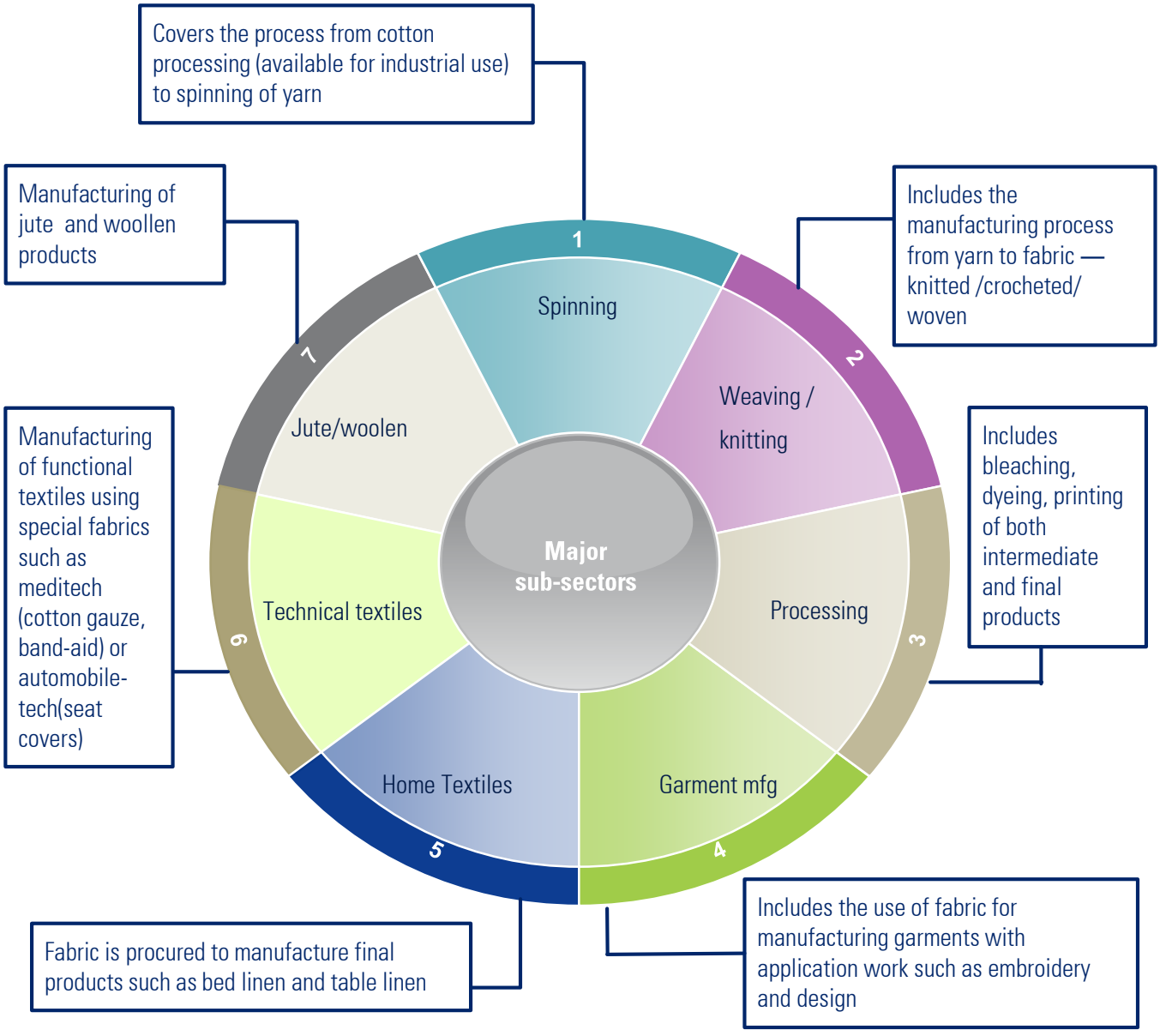
- **Ready-made garments**
  - Men's wear, women's wear, kids wear
  - includes all apparels and garments, formal and casual wear, that may be made of different raw materials or blends such as wool, cotton, polyester or silk
- **Home textiles**
  - Kitchen linen, bed linen, table/living linen, bath linen
  - Includes all home textile products for residential and commercial (hotels, restaurant usage) that may be made of cotton, cotton blends, synthetics and terry fabrics. Excludes handicrafts and handloom products
- **Technical textiles**
  - Agrotech, buildtech, clothtech, geotech, hometech, meditech packtech, sportech

Sources: National Industrial Classification 2008, Government of India, as accessed on 6 February 2014
Note: Textile products made of silk have been excluded from the study as they are largely handloom/ hand made items

Industry classification

The textiles and clothing sector can be classified into sectors based on the intermediate and final products manufactured

Major sectors of the textiles and clothing sector



Source: KPMG in India analysis

Industry classification

Each stage in the value chain of the textiles and clothing sector results in the creation of a product

	Raw material processing	Preparation and spinning	Weaving/knitting	Finishing*	Product development and design	Labelling and packaging	Warehouse and distribution
Process	Ginning	Opening	Shedding (forming warps)	Natural/chemical dyeing	Cutting		
	Sheep rearing	Blending	Picking (inserting wefts)	Direct/block/ink-jet printing	Sewing		
	Raising cocoons	Carding/ combing	Compacting and packing cloth	Embroidery	Embroidery		
		Dyeing (not always)		Heating/ steaming	Design and application		
				Softening/perforating			
Products	**Natural (plant)**	**Yarn**	**Simple woven cloth**		**Made-ups**		
	Cotton	Ring spun yarn	Twill (e.g. denim)		Garments		
	Jute	Motor spun yarn	Satin		Home textiles		
	Flax (linen)				Technical textiles		
	Coir (coconut)		**Complex/ decorative woven cloth**				
	Hemp		Dobby				
	Natural — animal		Jacquard				
	Sheep wool		Extra warps and wefts (double cloth)				
	Silk		**Knitted cloth**				
	Cashmere wool		Jersey				
	Man–made		Woollens				

Source: KPMG in India analysis

Industry overview

The last two decades witnessed significant changes in the Indian textile landscape in terms of policies, technology and export markets

Evolution of textiles and clothing

1854–1900	▪ The first cotton mill was established in Mumbai in 1818 ▪ The second mill was established by KGN Daber in 1854 and called Bombay Spinning and Weaving Company ▪ The establishment of the first cotton mill of Ahmedabad was initiated in 1861, which eventually emerged as a rival spinning center to Mumbai
1901–1950	▪ The number of mills increased from 178 in 1901 to 417 in 1945 ▪ The Cotton Association of India was established to regulate cotton trade and prices ▪ Out of the 423 textile mills in the undivided India, India received 409 after the partition and the remaining 14 went to Pakistan ▪ However, 40 percent of the cotton-producing area became a part of Pakistan
1951–1990	▪ Till 1985, the development of the textile sub-sector in India was guided by general policies. However, in 1985, a separate policy for the sub-sector introduced, which brought it to attention
1991–2000	▪ In 1993, the Government of India made sector license free for this sector through the Textile Development and Regulation Order ▪ The Meera Seth Committee recommended the establishment of the National Handloom Fund worth INR500 crores in 1997 ▪ The Ministry of Textiles introduced the Technology Upgradation Fund Scheme (TUFS) in 1999, which has continued to run throughout the Tenth and the Eleventh Five-Year Plans
2001–2010	▪ The formulation of the Scheme for Integrated Textile Park (SITP) in July 2005, was to provide superior infrastructure to meet export demand ▪ India positioned as the second-largest manufacturer and exporter of cotton products to some of the largest foreign markets, such as the US and EU ▪ The Integrated Skill Development Scheme aims to skill 1.5 million persons for textiles and clothing sector during the Twelfth Five-Year Plan
2011 onwards	▪ Technology mission on technical textiles to enhance technical textile production and research and development through establishment of centres of excellences ▪ Free-trade agreement with ASEAN nations, Japan and Korea for textiles and clothing that offers duty free imports of Indian products ▪ Strategic plan for textiles 2011–16 with specific focus on carpet exports, technical textiles and skilling

Source: "Textiles and Apparels Report ", India Brand Equity Foundation (IBEF), August 2013 accessed on 6 February 2014

Changing structure of the textile sub-sector and enabling factors would contribute to the sector's growth of more than 10 percent in the next decade

Overview

The Indian textile sub-sector has traditionally been contributing significantly to the economy and manpower as well as to the structural changes in the manufacturing sector. As of 2012, the sector contributed 4 percent of the GDP, 32 percent of the manufacturing sector and 9 percent of total exports

The sector's output is expected to grow at an annual average rate of 10 percent in the next 10 years, thereby increasing its worth to INR 10.5 lakh crores in 2022. Several factors that would contribute to the growth would include:

- Rising income levels are expected to increase the demand for home textiles and garments from domestic consumers is expected to increase
- Free trade agreements provide India a comparative advantage in the export segment as compared to its competitors – China, Bangladesh and Pakistan – as they create opportunities for manufacturers to supply to potential markets in East Asia
- Low production cost continues to be an advantage for the sector and, consequently, demand from existing foreign markets continues to increase
- Structural changes in the sector, with a shift from vertically disintegrated to integrated large firms, with automated machines for yarn and fabric production
- Increased spending on research and development to enter the specialized fabrics and technical textiles sector
- Favorable policy environment to support domestic and foreign investments and the implementation of schemes to enhance the production capacity and improve technology

Growing demand

- Increase in disposable income has doubled the domestic household expenditure on clothing from INR1.08 lakh crores in 2004–05 to INR 2.06 lakh crores in 2010–11 (at current prices)
- Foreign demand or exports from India has grown by eight times in the last decade

Cost of production

- The cost of production of yarn and fabric in India is lesser than other countries such as, the US, Italy and China
- India has an advantage in raw material production costs, as it is between 50–80 percent of the total manufacturing cost for competitors such as China

Advantage India

Rising investments

- The annual total investments in textiles and clothing sector increased from INR 59500 crores in 2001–02 to INR 2 lakh crores in 2011–12, growing at an average rate of 12.8 percent per annum.
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Policy support

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- Integrated Skill Development Scheme to spend INR 1900 crores to train 1.5 million workers in the textiles sub-sector

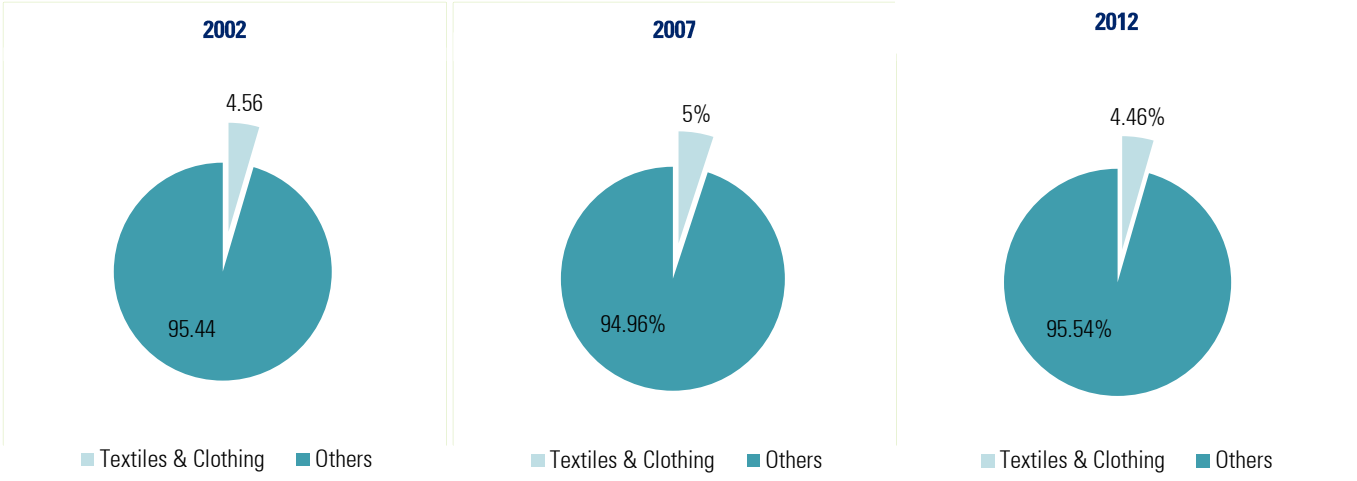
Sources: "National Accounts Statistics 2004-05 & 2010-11", Ministry of Statistics and Planning, Government of India accessed on 6 February 2014

The textiles and clothing sector is among the major sectors in terms of its contribution to the GDP and manufacturing output

India is the second-largest producer and exporter of textiles and clothing in the world. As of 2012, the textiles sub-sector contributed to 4 percent of India's GDP and 11 percent of the total Indian exports, primarily driven by the availability of raw materials such as natural fibre mainly cotton, silk and jute.

The textile sub-sector in India is characterised by small-scale, non-integrated spinning, weaving, finishing, and apparel-making enterprises. This structure arose due to policies on tax, labour and other regulations that favoured small-scale, labour-intensive enterprises, while discriminating against large-scale, capital-intensive operations. Small-scale 'unorganised' players dominate the sector which lacks stringent regulations.

Contribution of the textiles and clothing sector to India's GDP



Source: "GDP at Factor Cost 2001-02 to 2011-12" , Handbook of Indian Statistics, Reserve Bank of India as accessed on 6 February 2014

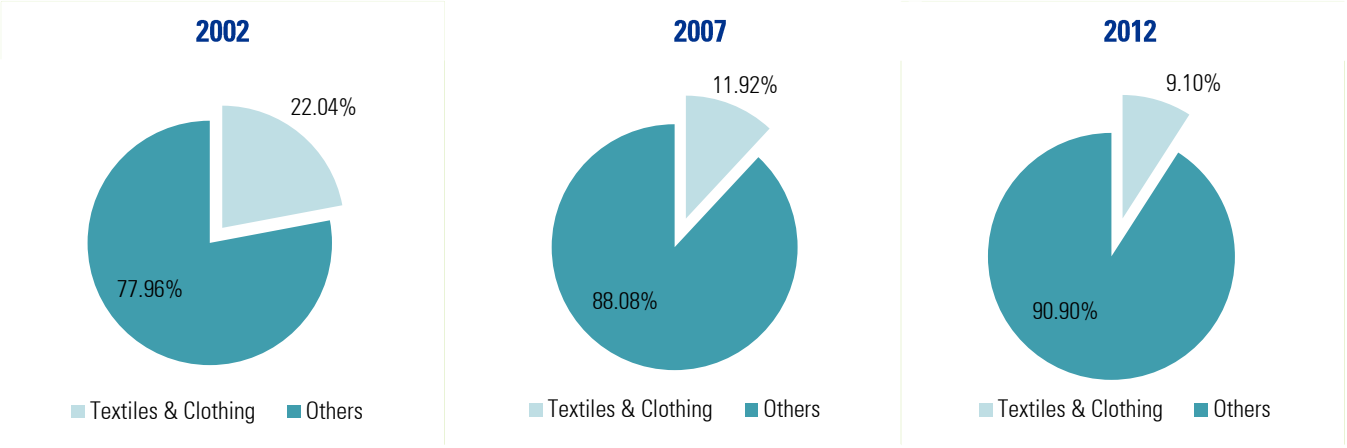
The size of the textiles and clothing sector in India in 2001–02 was INR96500 crores, which grew at an average annual rate of 13.6 percent in the last decade, thereby increasing its worth to INR 372600 crores in 2011–12. The share of the sector to the economy's total output was the highest in 2006–07 at 5.04 percent and dropped during the global meltdown in 2009–10 to 3.69 percent.

The textiles and clothing sector has also contributed significantly to the manufacturing sector and export earnings of India. The share of production from the textiles and clothing sector in the manufacturing sector has increased from 29.3 percent in 2004–05 to 32 percent in 2010–11.

The textiles and clothing sector plays a significant role in employment generation. The sector employs 15.23 million people, of which 2.3 million are factory workers. Constant growth of the sector and its contribution to the economy implies that the manpower has and would continue to play an important role in the sector. However, the changing structure of the sector with a shift in production across the value chain (i.e. increased focus on yarn and fabric to final products such as garments, home textiles and technical textiles), there would be a change in the skills and characteristics of potential candidates.

The export segment of textiles production continues to drive the sector's manpower

Contribution of the Textiles and clothing sector to India's exports



Source: "Trade in Goods Statistics (HS)", Trade and Investment Data, International Trade Centre accessed on 6 February 2014

- Textile exports from India have increased by more than three times from INR 48700 crores in 2001 to INR 148800 crores in 2012.
- Though growth in textiles and related products has been significant in the last 10 years, their contribution to the total exports reduced from 24 percent in 2001 to 9.1 percent in 2012. However, the export segment continues to drive the sector and, hence, employment in the textiles and clothing sector.

Installed capacity of textile machinery in India (in thousands)

Spinning*			Draw texturing^		Weaving#		Knitting*	
Cotton spindles	Wool spindles	Rotors	Single heater	Double heater	Shuttle looms	Handlooms	Single heaters	Double heater
41530	1040	668	0.24	267.33	2219.54	3890	5.6	3.24

*Source: International Textile Manufacturing Federation, Note: * as of 2009, ^ as of 2006, # as of 2008*

- India has 18.06 percent of the total installed capacity of cotton spindles in the world. The country also has the largest number of handlooms (84 percent) in the world. However, the installed capacity of power loom remains low.
- Moreover, there has been an increased dependence on the imports of textile machinery, such as those used for spinning, draw texturing, weaving and knitting. China is the world leader in installed capacity of spindles, rotors and looms.

Each region in India caters to a specific sector of the textiles and clothing sector

Textiles and clothing output of each state (in INR crores)

Ludhiana and Panipat

- A few large spinning and weaving units are located here.
- The region is known for carpets and rugs manufacturing along with woollen made-ups.
- Key players include Vardhaman, Oswal and JCT Limited.

Gujarat and Maharashtra

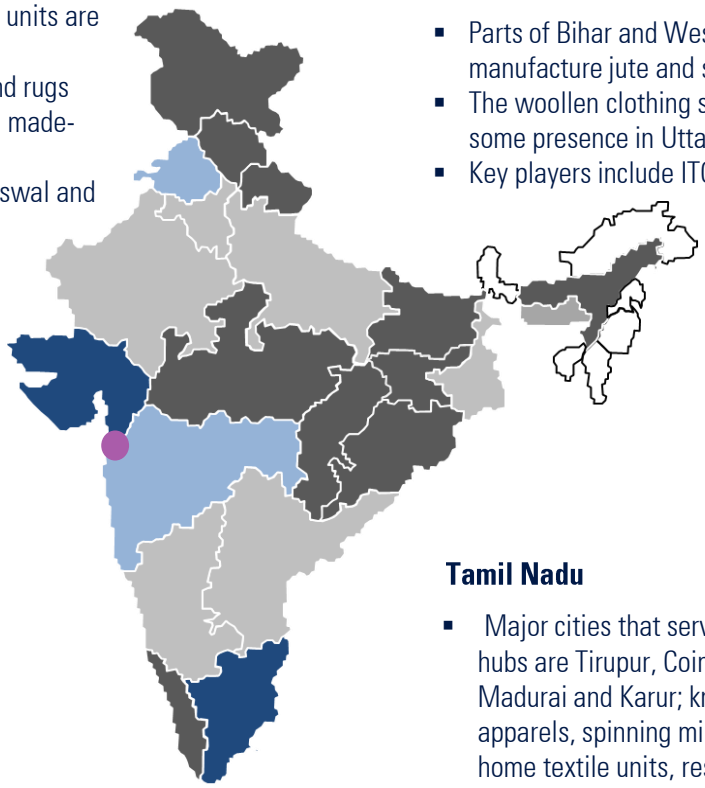
- Most large companies across all sectors of the value chain, including spinning, weaving, home textiles and garments, are located here.
- Key players include Aravind Mills, Raymond, Welspun, Bombay Dyeing, Alok, Century Textiles.

Karnataka and Kerala

- Bangalore and Mysore have a few garment firms.
- Some major garment exporters include Gokaldas Exports and Shahi Exports.
- Kerala is a hub for the jute sub-sector.

Eastern region

- Parts of Bihar and West Bengal manufacture jute and silk made-ups.
- The woollen clothing sub-sector has some presence in Uttar Pradesh.
- Key players include ITC Lifestyle.



Tamil Nadu

- Major cities that serve as textile hubs are Tirupur, Coimbatore, Madurai and Karur; known for apparels, spinning mills, silk and home textile units, respectively.
- Key players include Loyal Textiles, KG Denim, Asian Fabric.

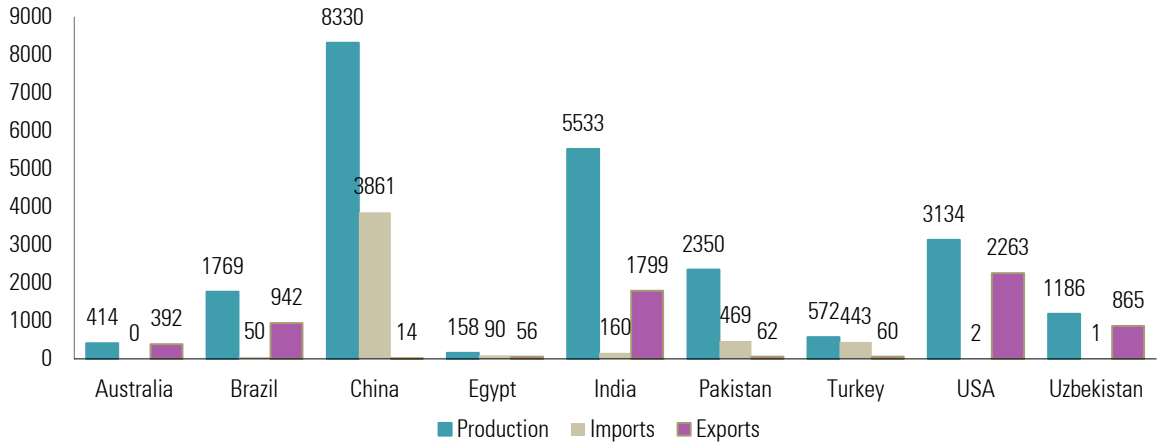
- Tamil Nadu accounts for the largest textiles and clothing production of INR 761820 crores, which also employs the largest number of workers (2.63 million) in textile factories. This state is followed by Gujarat, which has an annual textile production valued at INR 49165 crores.
- There are more than 70 textiles and clothing clusters in India accounting for about 80 percent of the total production. There are 39 power loom clusters and 13 ready-made garment clusters in India.
- Bhiwandi and Malegaon are the two largest power loom clusters. Major ready-made garments clusters are located in Delhi, Mumbai, Gurgaon, Nagpur, Madurai and Salem, with annual turnover of more than INR 1000 crores since 2003. The state of Maharashtra has 10 textile clusters. Other major states in terms of the number of clusters are Tamil Nadu, Andhra Pradesh, Karnataka, Kerala and Uttar Pradesh (seven clusters each).

Source: "Annual Survey of Industries 2010-11", Ministry of Statistics and Planning, Government of India as accessed on 6 February 2014

India enjoys international competitiveness in the textile sector due to the availability of cotton and low production cost

India is the second-largest producer of cotton in the world after China. However, two factors contribute to the low availability of cotton for domestic textile manufacturers. First, India has one of the lowest cotton productivities of 639 kg/hectare, as compared to other major cotton-producing countries such as Pakistan, the US and China. Second, a majority of the cotton produced by India is exported to other countries, including China. In 2008, 35 percent of the cotton produced was exported; this is significantly less than the exports in the past years.

Cotton production, exports and imports by major textile manufacturers in 2011 (in metric tonne)



Source: Office of Textiles & Apparels (OTEXA), Department of Commerce, Government of USA as accessed on 6 February 2014

- The cost of production of yarn and fabric in India is lower than in countries such as the US, Italy and China. The cost of raw materials in China constitutes a major component of the total production cost of the yarn or fabric. It ranges between 50–80 percent of the total cost of production.

- India enjoys advantages in labour cost and logistics as compared to China, but it is at a disadvantage when it comes to power and building cost.

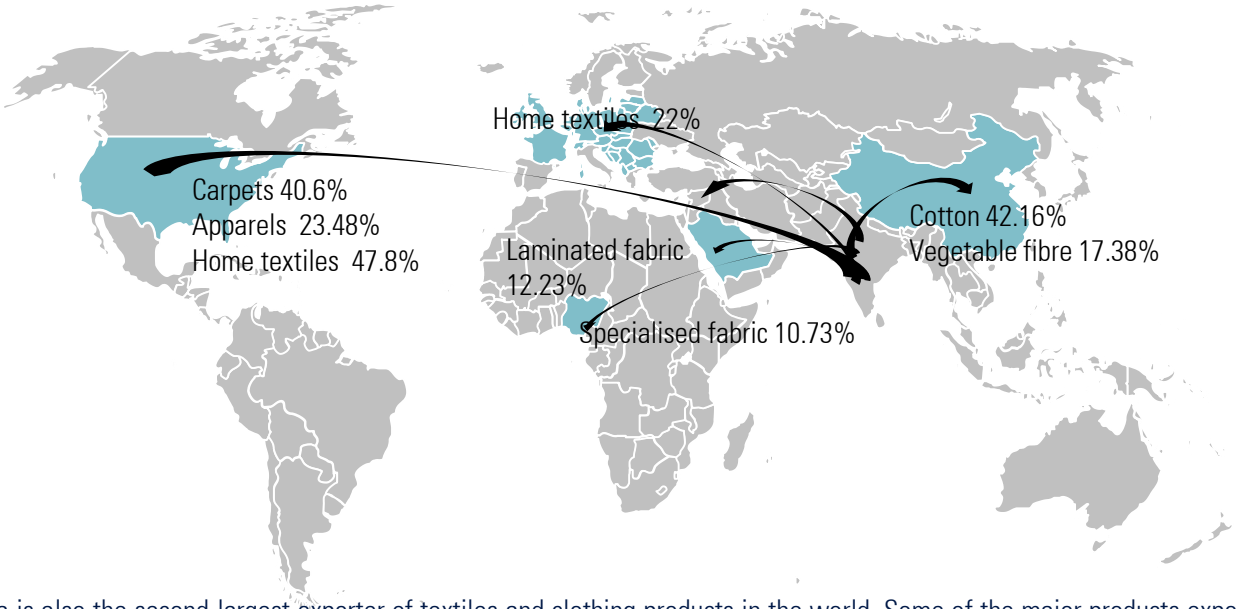
Cost of production (as of 2011)

	Bangladesh	Cambodia	India	China
Labour cost (USD/Hour)	0.32	0.53	0.83	1.44
Power cost (USD/KWH)	0.053	0.14	0.086	0.065
Logistics (USD/container)	250	600	400	470
Building Cost (USD/sq.m)	120	130	140	97

Source: "Strategic Plan of Textiles & Clothing 2011-16", Ministry of Textiles, Government of India as accessed on 6 February 2014

India is the second-largest national exporter of textiles and clothing in the world with a market share of more than 8 percent

India's major export markets for each product



India is also the second-largest exporter of textiles and clothing products in the world. Some of the major products exported by India include cotton yarn and fabric, natural yarn such as silk and jute, carpets, home textiles and cotton blended apparels. However, in the last five years, India has been facing competition from emerging markets such as Vietnam, Taiwan and Turkey

Textile exports by major countries and India (in '000 USD)

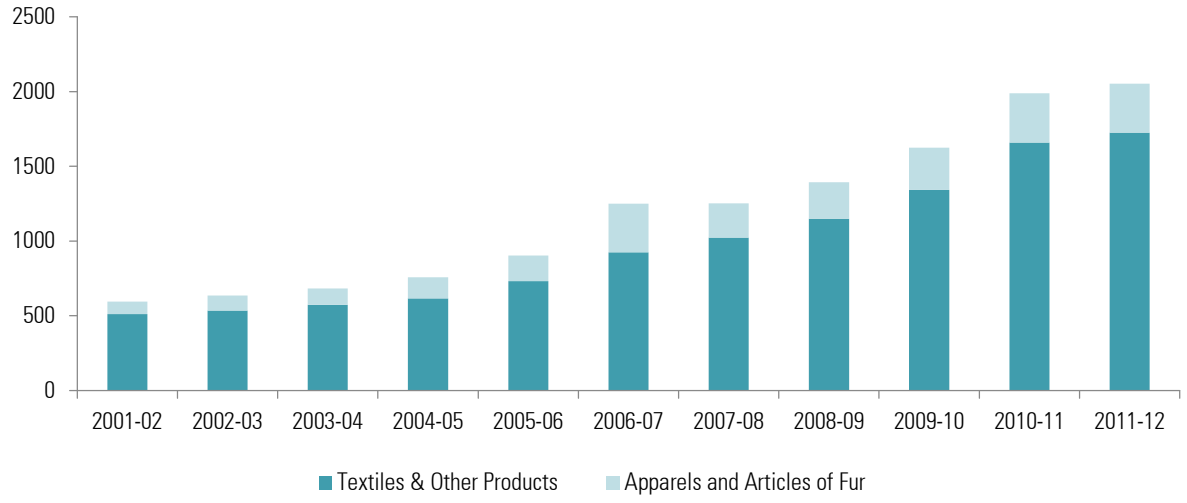
Product`	Total world export	Major contributor			India's contribution		Other competing countries
		Country	Share and Value	Rank	Share and Value	Rank	
Carpets	14549846	China	2403738 (16.52%)	1	1350669 (9.2%)	4	Turkey, Belgium
Specialised Fabric	12563462	China	4637697 (36.91%)	1	258253 (2.05%)	12	Taiwan, Germany, Turkey, South Korea, the US
Laminated fabric	24335683	China	6848801 (28.14%)	1	181430 (0.07%)	24	Germany, the US, Taiwan, Korea
Knitted or crocheted fabric	30182970	China	11219348(37.17%)	1	209374 (0.69%)	13	Korea, Taiwan, Turkey, Italy,
Apparel	193400159	China	61224360 (31.65%)	1	7429975 (3.8%)	7	Italy, Bangladesh, Germany, HK, Vietnam
Home textiles	55921991	China	24015853 (42.94%)	1	3973042 (7.10%)	2	

Source: " Trade in Goods Statistics (HS Chapter 52 to 63), International Trade Centre as accessed on 6 February 2014

Investments in the textiles and clothing sector have been growing at an average annual rate of 12 percent

The annual total investments in the Textiles and clothing sector increased from INR59506 crores in 2001–02 to INR205249 crores in 2011–12, growing at an average rate of 12.8 percent per annum. There has been an increase in investments in apparels and garments, thereby implying the shift in the production across the value chain from manufacturing just yarn and fabric to made-ups

Domestic investments in the textiles and clothing sector (in INR '00 crores at current prices)



Source: "Historical Time Series of Annual Survey of Industries (2001–02 to 2010–11) "

Deals in textiles and clothing in India from 2010–13

Acquirer	Target	Deal size (INR crores)
Grasim Industries	Terrace Bay Pulp	2160
Madura Garments	Pantaloon Retail	1999.8
BR Machine Tools Pvt. Ltd.	Bombay Rayon Fashions Ltd.	4326.6
Group of Investors	Provogue India Ltd.	3161.4

Source: "Textiles and Apparels Report ", India Brand Equity Foundation (IBEF), August 2013 accessed on 6 February 2014

Though there has been significant domestic investments in the sector, the flow of FDI remains poor

Some major investments in the Indian textile sector are as follows:

- Trident Ltd plans to invest INR1667 crores to install 176,000 spindles and 500 looms to manufacture about 40,000 TPA of additional cotton yarn of higher count.
- Exhilway, a US-based private equity firm, will fund the Kolkata-headquartered garments retail start-up firm Sconto Retail Pvt Ltd. The initial investment will only be in equity of about INR6 crores, with graded funding, both in equity and debt, likely to increase to INR 24 crores by the first 18 months.
- DyStar Group and Arvind Ltd have signed an agreement for joint development in the field of denim. Dedicated teams from DyStar and Arvind's Denim Division will work closely to implement new technologies in indigo dyeing and finishing as well as developing new products, processes and effects for denim fabrics and garments.
- Gitanjali Group has entered the apparels sector as part of the extension of its popular brands and plans to establish 300 selling points across the country in 2013.
- Swedish retailer Rusta plans to import Indian textiles and handicraft worth INR200 crores annually over the next 3-4 years.

Foreign direct investment inflow in the Textiles and clothing sector as a share of total among all sectors in India (in INR '00 crores at current prices)

Source: "Inward FDI Statistics 2000-01 to 2013-14", Department of Industrial Policy and Promotion, as accessed on 6 February 2014,

- Although the textiles and clothing sector is dominated by local private players, there has been a slight increase in foreign investments.

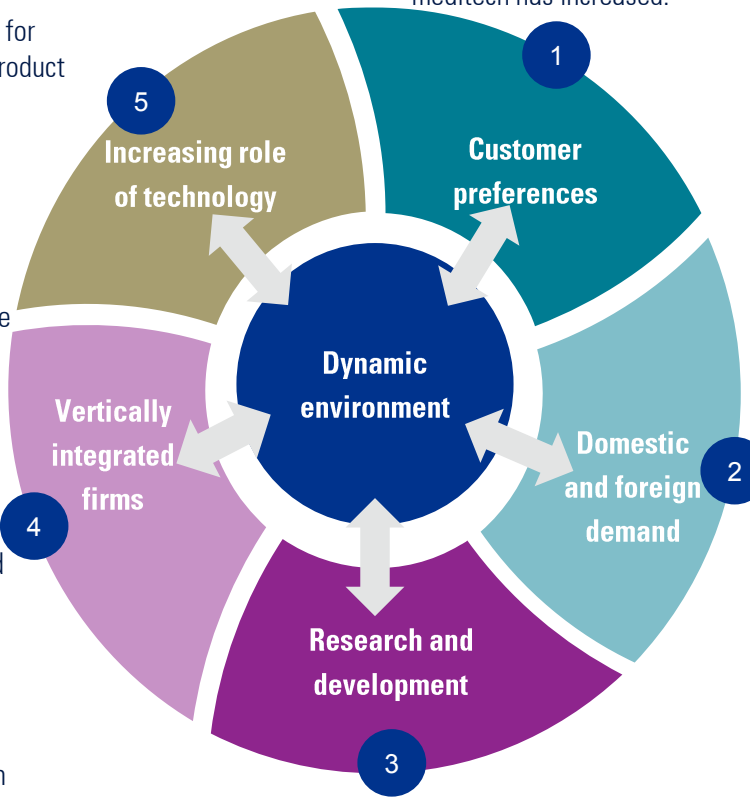
- The total FDI inflow in the textiles sector has grown from INR9 crores in 2000-01 to INR 740 crores in 2013–14 (as of November 2013). However, its share in the total FDI inflow into the country has continued to remain less than 1 percent.

Increased role of technology, integration of firms and changing customer preferences are some of the emerging trends

India's textile sector is characterised by small-scale, non-integrated spinning, weaving, finishing and apparel-making enterprises. This structure is a result of policies on tax, labour and other regulations that favoured small-scale, labour-intensive enterprises, while discriminating against large-scale, capital-intensive operations. Small-scale 'unorganised' players dominate the sector which does not have many stringent regulations.

- Use of automated machines for spinning and weaving
- Digital printing technology
- Technology for woven fabrics such as jacquard looms, other specialized fabrics
- A few large firms, which are capable of bearing huge investment risks, are considering technology for complete finishing of product including design and embroidery

- With the evolution of the lifestyle of India's urban consumers, their clothing requirements have broadened from being mere home wear, office wear to special occasion and functional wear. Households are now also looking forward to decorating homes by giving them annual makeovers by changing the furnishings of curtains and bed linen.
- With increased growth, use of technical textiles such as automobile or train seat covers, packaging material and meditech has increased.



- Since the sector is characterized by many small- and medium-scale firms,; it is vertically disintegrated. Most of the firms manufacture either intermediary or final products. A few firms are concentrated only in the spinning and weaving sector.
- Most mid-sized firms procure yarn and fabric from others to manufacture made-ups.
- There has been a shift in large firms towards integration where all processes of the value chain — spinning, weaving, processing and finishing made-ups — are undertaken in-house.

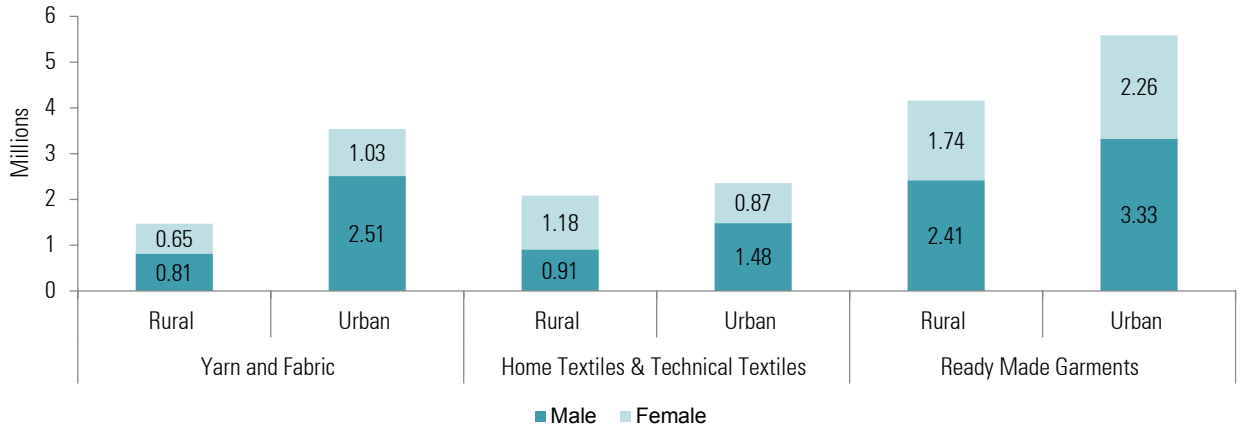
- Working women in India have requirements for casuals as well as formal wear.
- Demand from foreign markets such as the US and EU are large and continue to dominate the sector.
- Emerging markets with potential demand include Canada, Australia, Japan, South Africa and the Middle East.

- The Ministry of Textiles, Government of India, has appointed eight textile research institutes across various clusters. The government funds 75 percent of research projects in these institutions and the rest should be raised by implementing agencies.
- In 2011–12, INR 9 crores were allocated to research and development in the textiles and clothing sector. This, compared to other competitive countries such as South Korea and China, is low. There is a need for the sector players and the government to invest in manufacturing specialised and smart fabrics, functional made-up articles that are energy efficient and eco-friendly.

Source: KPMG in India Analysis

A significant proportion of women workers are employed in home textiles and technical textiles sub-sectors

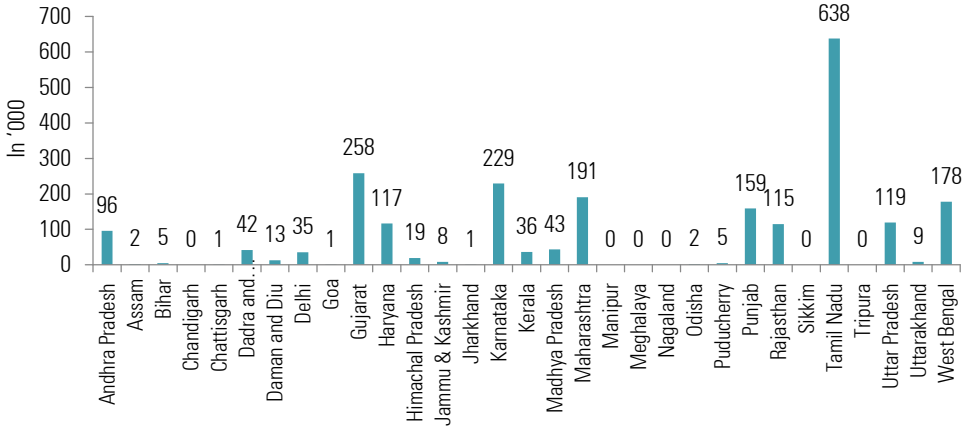
Workforce distribution in rural and urban areas



Source: "Key Employment and Unemployment Indicators 2011-12" Government of India accessed on 6 February 2014`

- Currently, 15.23 million people are employed in the textile sub-sector across yarn and fabric, home textiles, technical textiles and ready-made garments.
- Fifty-one percent of the total workforce is engaged in the manufacturing of ready-made garments, followed by yarn and fabrics with 26 percent.
- Sixty percent of the total workforce, about 9 million, are concentrated in urban areas with 49 percent engaged in the manufacturing of readymade garments.
- Women constitute 40.3 percent of the total workforce and 54 percent are concentrated in urban areas.
- A significant proportion of women in the workforce (about 46 percent) are engaged in the manufacturing of home and technical textiles.

Distribution of factory workforce (state-wise)



Factories located in Tamil Nadu are among the largest employers in the textiles and clothing sector, (the state alone employs 27 percent of the total workforce of the textile sub-sector of India) followed by Gujarat, Karnataka, Maharashtra, West Bengal and Punjab.

Source: "Annual Survey of Industries 2010-11," Ministry of Statistics and Planning, Government of India accessed on 6th February 2014

Recent textile policies have increased focus on the technical textiles sub-sector and upgrading skills to meet future export demand

Integrated Skill Development Scheme

The Integrated Skill Development Scheme for the textiles and apparel sector, including jute and handicrafts, was initiated by the Ministry of Textiles, Government of India, in July 2013 to impart skills to 1.5 million workers in the next five years (2012-17). It focuses on developing a cohesive and integrated framework 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.

Strategic Plan 2011-16

With an aim to improve the state of infrastructure and the the global position of the Indian textile sector in the manufacturing and export of divisions, including technical textiles, jute, silk and wool, the Textile Strategic Plan 2011-16 was formulated. The strategic plan seeks to increase the growth rate of textile to 10 percent annually through technological upgrade, modernization and improved productivity. The Strategic Plan also seeks to improve the availability of skilled manpower for the entire value chain of the textile sector

Salient features of the Strategic Plan include:

- Promotion of technological upgrade for all types of textiles, including technical textiles, jute and silk for planned and harmonious growth of textiles by encouraging greater investment in the sector. The estimated investment requirement in the textile sector is INR 1.99 lakh crores during 2011-17
- Promotion of skills of all textile workers, handloom weavers and handcrafts artisans; creation of new employment opportunities and development of new designs to make these sectors economically sustainable
- Strengthening the institutional framework and enhancing plan outlays for effective implementation of various plan schemes

National Technology Mission on Technical Textiles

To enhance global competitiveness and the skill base of the technical textile sector in India, a multi- pronged interventional strategy — the Technology Mission on Technical Textile — was proposed by the central government with an initial fund outlay of INR 200 crores. The key interventions proposed under the mission are:

- Establishment of centres of excellence (CoEs) to provide infrastructural support for technical textiles manufacturers. Facilities in the COEs will include
  - ✓ Common testing facilities for the testing and evaluation of products
  - ✓ Information resource centre
  - ✓ Incubators for the development of the prototype
  - ✓ Institutes for providing training of core personnel
- Business start-ups for entrepreneurship development
- Awareness on technology, international practices and market details
- Research and development

National Textile Policy

It aims to create 35 million jobs and achieve exports worth INR 18 lakh crores by 2024-25 with the help of investments. Draft proposal for the same was submitted by expert panel constituted by the government on 28th July, 2014.

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Textile policy aims to create 35 million more jobs, $300 billion exports

PTI | Jul 28, 2014, 08.21PM IST

NEW DELHI: An expert panel constituted by the government on Monday submitted the draft of the new National Textiles Policy, which aims to achieve $300 billion exports by 2024-25, and creation of additional 35 million jobs by attracting investments.

The blueprint termed as the draft 'Vision, Strategy and Action Plan' to revitalize the textiles and apparel industry envisages an additional investment of $120 billion. It was presented to textiles minister Santosh Gangwar by chairman of the Expert Committee Ajay Shankar.

Source: "Integrated Skill Development Scheme", accessed as on 6th February 2014
Note: USD to INR conversion rate at 60

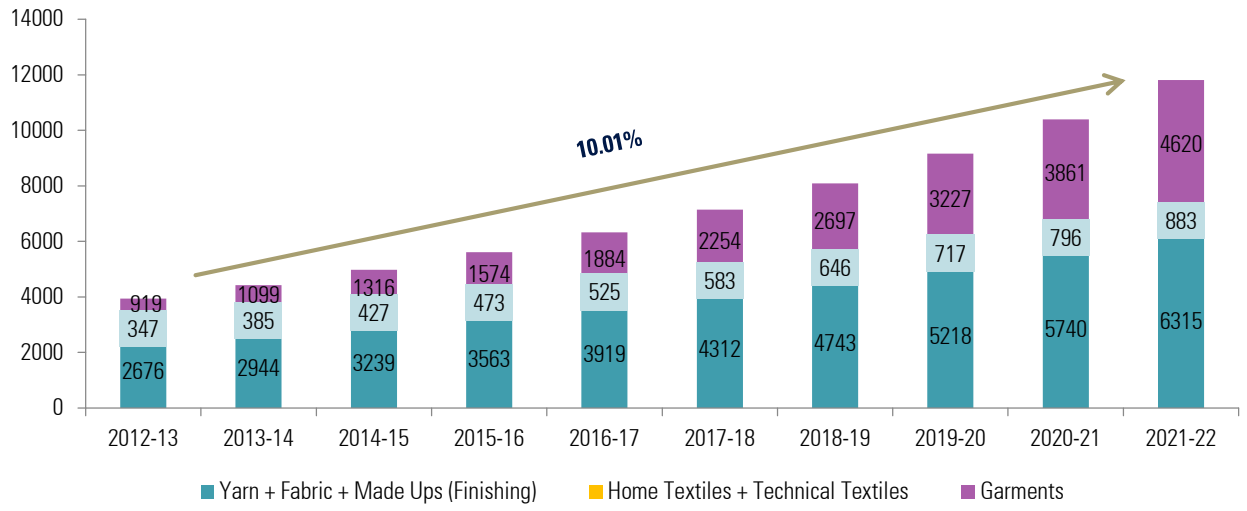
States with significant textile production presence have policies on the provision of infrastructure

State	Incentives	Policy objectives
Gujarat	Maximum interest subsidy of 5 percent for spinning and garment/made-ups units Power tariff subsidy at the rate of INR1 per unit for a period of two years for new/expanded enterprises Assistance up to 20 percent (maximum INR 20 lakhs) for environmental compliance Assistance up to 85 percent (maximum up to INR 3 crores) to apparel and design institutes	**Gujarat Textile Policy 2012** Credit-linked interest subsidy (at the rate of 6 percent p.a. in addition to other incentives provided by GoI) to promote technical textiles Technology upgrade and acquisition, including drawing and design technology development, by engaging R&D institutions Upgrading facilities in ITI/ITCs offering special courses in textiles and designs Focus on integrated value chain — fibre-fabric-fashion-foreign Establishment of textile and apparel parks
Punjab	Reduction of electricity duty by 50 percent for mega projects in the textile clusters of Patiala, Sangrur and Mansa to boost cotton production	Development of a textile cluster in Ludhiana via GoI's Industrial Infrastructure Upgradation Scheme Establishment of a Punjab Apparel Park by Punjab Small Industries and Export Corporation with the Association of Textile Industry Allowance of private sector participation to establish training institutes similar to NIIFT
Karnataka	Credit-linked capital subsidy ranging from 5–20 percent on the value of fixed assets (maximum of INR 20 lakhs) Full reimbursement in plant and machinery and capital goods for captive power generation, common effluent treatment and waste disposal facilities	**Suvarna Vastra Neethi 2008–13** Growth in integrated value chain from fiber to finished products Increase income levels of people in SMEs within the textile and garment sector and create opportunities for 0.5 million people Strengthen the power loom sector and create processing capacities Make presence into technical textiles such as camouflaged clothing Technology upgrade
West Bengal	Capital investment subsidy ranging from 15–40 percent for micro firms and 10–30 percent for small enterprises Interest subsidy of 6 percent for five years for small firms and 25 percent (ceiling of INR1.75 crores) for medium firms 10 percent additional subsidy for establishing technical textile units	**West Bengal Textile 2013–18** Establishment of the West Bengal State Spinning Mills Federation for the procurement of yarn and the revival of existing units Marketing of silk fabrics with a state brand name 'Reshamshree' by the West Bengal Silk Development Corporation Ltd A public-private partnership initiative for establishing State Design Facilitation Centre for Handlooms A mega power loom park with 200 high-tech units

Source: "Gujarat Textile Policy 2012", Industries Commissionerate, Government of Gujarat

Garments production is expected to grow at the highest rate of 15.44 percent, as compared to the total sector growth of 10 percent in the next 10 years

Projected size of the sub-sectors (in INR '00 crores)

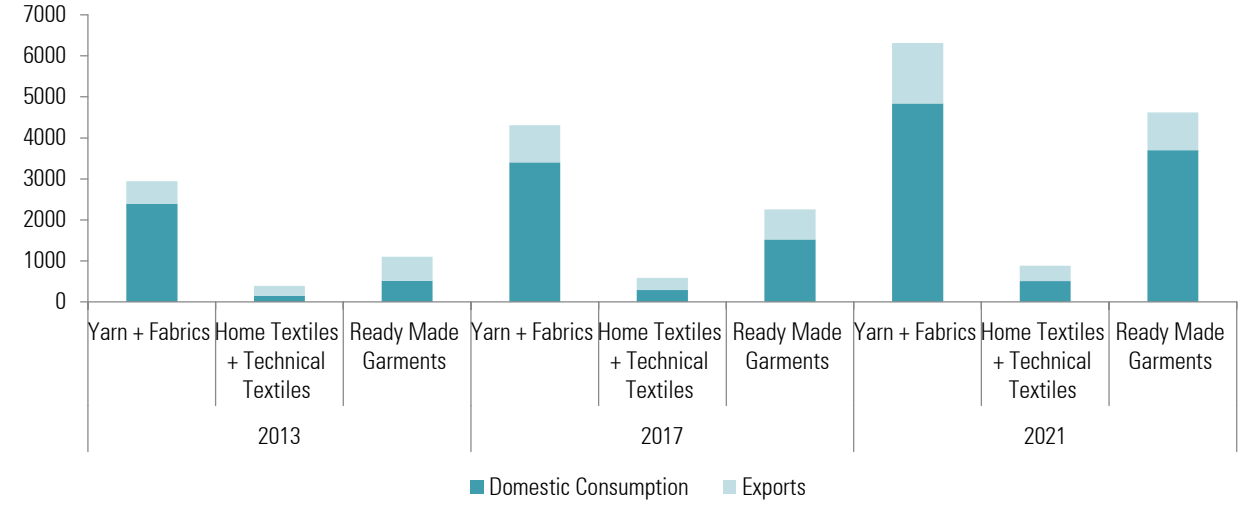


Source: KPMG in India analysis

- The Indian textiles and clothing sector is expected to grow at 10.01 percent in the next 10 years from the current value of INR3.92 lakh crores in 2012–13 to INR10.54 lakh crores in 2021–22. Of these, the garments sector is estimated to grow at an average rate of 15.44 percent over the years, thereby accounting for about 70 percent of the total production

- The demand for domestic consumption for home textiles and garments is expected to increase rapidly . In fact, the garments sub-sector alone is estimated to increase by seven times from INR 51400 crores in 2012–13 to INR3.70 lakh crores in 2021–22

Estimations of domestic consumption and imports of Indian textiles production (in INR '00 crores)



Source: KPMG in India Analysis

SWOT analysis of the sector

Strengths	▪ The textiles and sector is the second-largest employer of labour in India. With increased demand by domestic and foreign consumers, the sector is likely to generate high growth and, hence, generate more employment ▪ Enhanced government initiatives in research and development and improved technology ▪ Favourable policy environment to strengthen infrastructure and labour skills ▪ Presence of institutional support base to enhance the global competitiveness of the sector through research and skill and infrastructural development
Weaknesses	▪ Disintegrated and small-scale sector that employs a large number of labourers in the textiles and clothing sector are concentrated in the production of intermediate products rather than final articles ▪ Lack of innovative methods for improved design and the quality of products hinder domestic production and leads to increased dependence on imports (especially in the case of technical textiles) ▪ Poor technological base in weaving and shuttle-less looms and technological backwardness , especially in the weaving, processing and garmenting sectors ▪ Substantial skill deficit in the workforce and diminishing labour advantage affects the global competitiveness of the sector
Opportunities	▪ Need for skilled labour for the production of made-up articles (functional clothing and technical textiles) and finishing of textile products; due to the shift in the structure of the sector from an unorganised disintegrated system to 'mill-based' manufacturing ▪ Supportive policy regime, increasing plan expenditure and enhanced incentives for investment and modernisation of the sector would prove to be beneficial ▪ Rising demand from domestic markets due to high GDP growth and per capita income to provide an impetus for the growth of the textile sector
Threats	▪ Improved textile machinery may result in less demand for manpower ▪ Government schemes and initiatives, that provide continuous incentives to small-scale industries, may obstruct the growth of the sector and impact the international competitiveness that it enjoys ▪ Slow pace of infrastructure development and availability of power may affect the growth of the sector ▪ High cost of raw materials could affect the competitiveness of the sector

Source: KPMG in India analysis

Sub-sectoral overview

Structural changes and future trends in the Textiles and clothing sector would require varied and dynamic skill set

Changing technology	▪ Automation of production of yarn and fabrics ▪ New technology – digital printing, dobby and sateen ▪ Technology for technical textiles ▪ Requirement of machine operators with knowledge of new technologies for weaving, blow room, carding, spinning and wet processing and for specialised products. They need to be acquainted with new technology and should possess skills for effective operations. ▪ Mechanics, fitters and electricians must also be made familiar with automated machines for effective repair and maintenance. ▪ Moreover, textile technologists and engineers require knowledge on the availability of such machines, its productivity, capacity and usage.
Specialized fabrics	▪ Functional fabrics across all three sub-sectors of made-ups are likely to be the upcoming trend. Example, waterproof jackets, leather-made bed linen and seat covers for automobiles. ▪ Requirement for textile researchers and designers capable of understanding the chemistry of textile products, its physical properties, functions and applicability.
Design-oriented products	▪ Changing tastes and preferences of consumers in different markets ▪ The US prefers solid colours and basic prints in home linen as compared to the EU and eastern markets that require application. ▪ Specialised designers catering to each sector of the textiles and clothing sector, and not just garments, would be in demand.
Formal retail market and differentiated distribution channels	▪ Both domestic and export markets tend to have different retail segments which may be organised or unorganised. Merchandisers must possess knowledge on the different supply channels such that they improve their managerial skills of inventory management, execution of orders and delivery.
Focus on quality	▪ Standards for quality and testing differ from country to country. Some countries such as EU and Japan stress on quality of products. On the other hand, Indian quality controllers and inspection agents are unaware of quality standards, which may lead to the rejection of exports. ▪ Therefore, with the entry of new foreign markets, understanding of testing standards on various parameters of textiles such as durability, strength and waterproofing quality, skilled manpower for inspection would be required at each department/value chain of textile product.

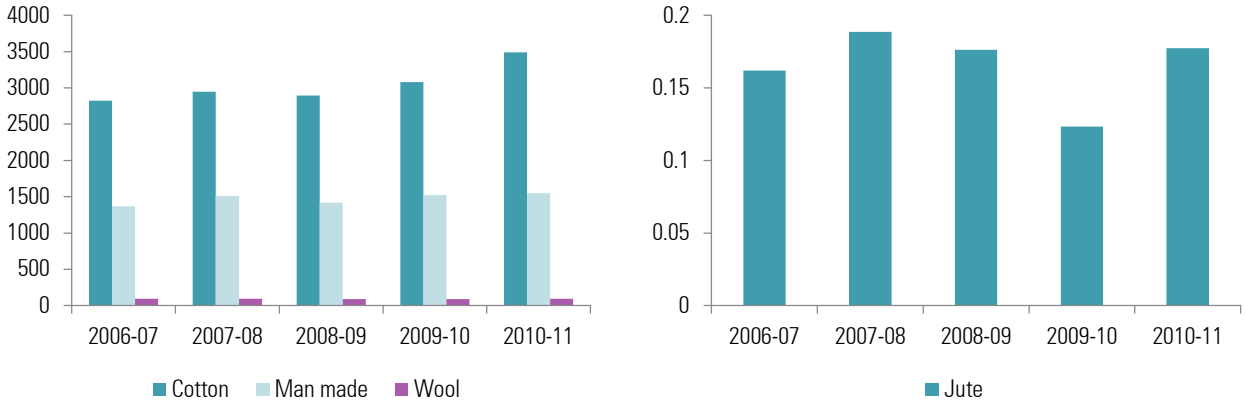
Source: KPMG in India Analysis

Yarn and fabric production account for more than 57 percent of the total textiles output

- Yarn has been one of the major products of the textiles sector in India. As of 2010–11, yarn constitutes 44 percent of the total output of textiles and employs 31 percent of the total workforce employed in the sector. India is the second-largest producer and exporter of cotton yarn in the world.

- With increased capacity of spindles and rotors and vertically integrated firms, the production of cotton yarn is increasing.

Production of different types of yarn in India (in million kg)

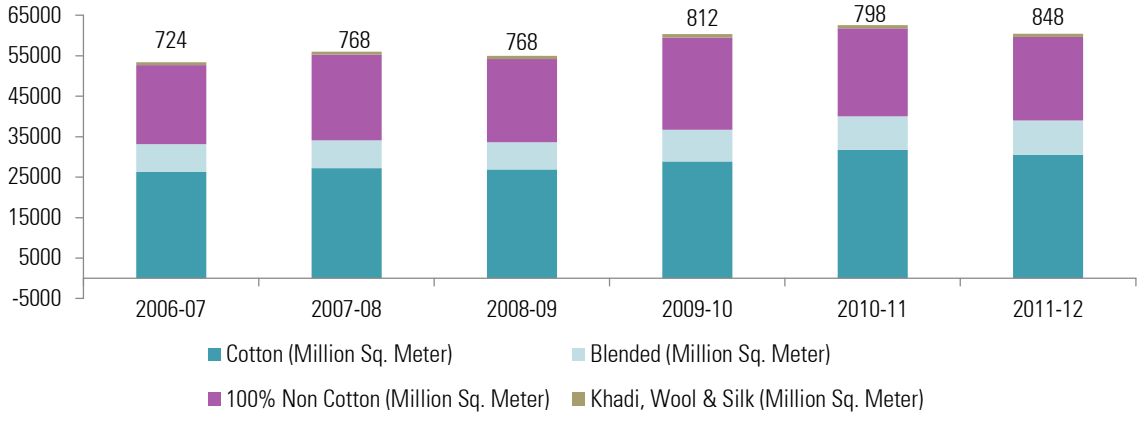


Source: "Production of Yarn", Ministry of Textiles , Government of India accessed on 6 February 2014

- Though 100 percent cotton fabric continues to be the main variety of cloth manufactured, with increased innovation in different types of yarn and processes of woven and knitted fabric, there appears to be a shift towards blended products.

- This shift is also characterised by changing demands of consumers, wherein there is a preference for polyester and other man-made fibres in various products such as functional garments (e.g. jerseys and sweatshirt).

Production of different types of fabrics in India (in million sq. meter)

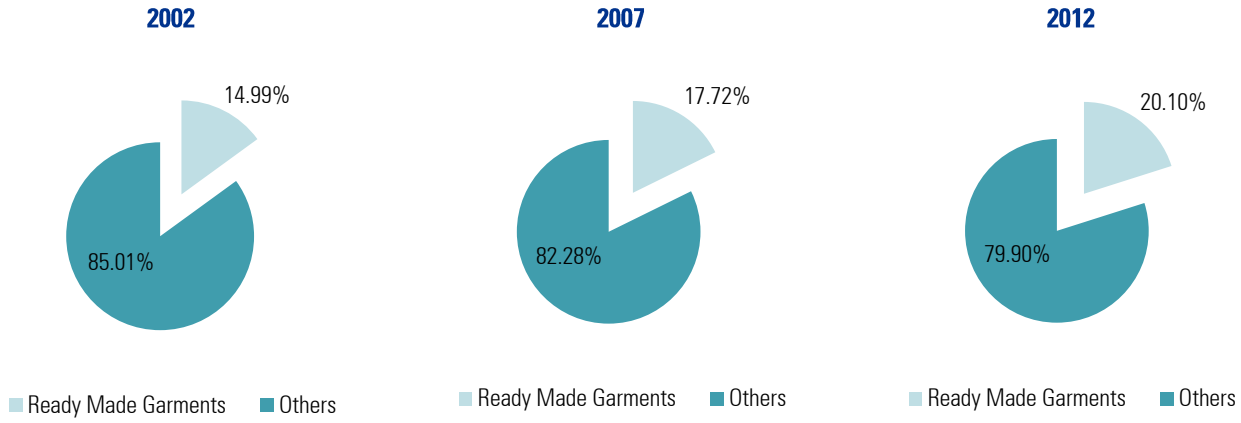


Source: "Production of Yarn", Ministry of Textiles , Government of India accessed on 6 February 2014

Sub-sectoral overview

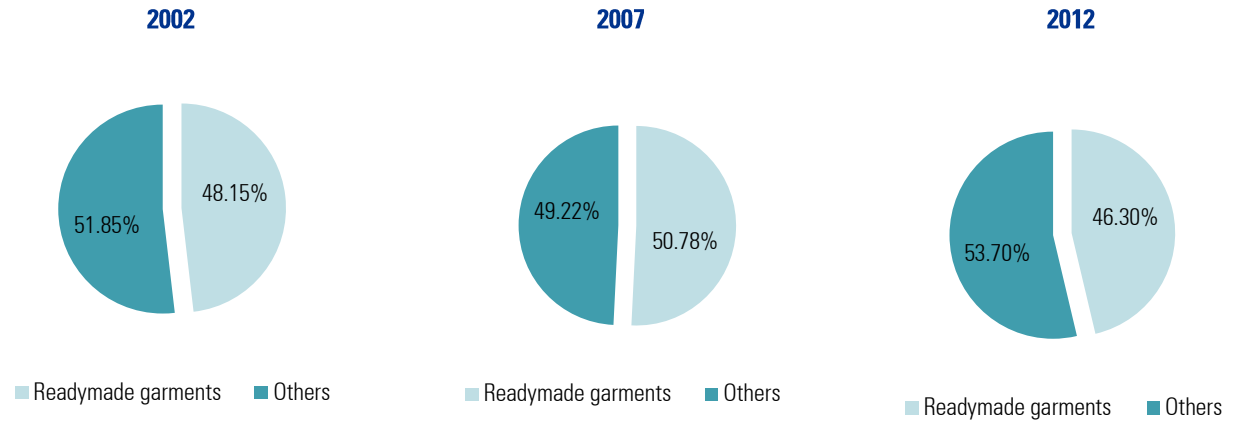
The ready-made garments sub-sector has grown rapidly in the last few years. Both exports and domestic demand shall drive sector growth in future

Contribution of ready-made garments to India's textiles and clothing output



Source: "Historical Time Series of Annual Survey of Industries (2001–02 to 2010–11)", ASI Provisional Data 2011–12, accessed on 6 February 2014

Contribution of ready-made garments to India's textiles and clothing exports



Source: "Trade in Goods Statistics (HS)", Trade and Investment Data, International Trade Centre accessed on 6 February 2014

- The ready-made garments (RMG) sector comprises men's, women's and kid's clothing, which may be used for either private (home/office wear) or commercial (uniforms for school, waiters and flight crew) purposes.

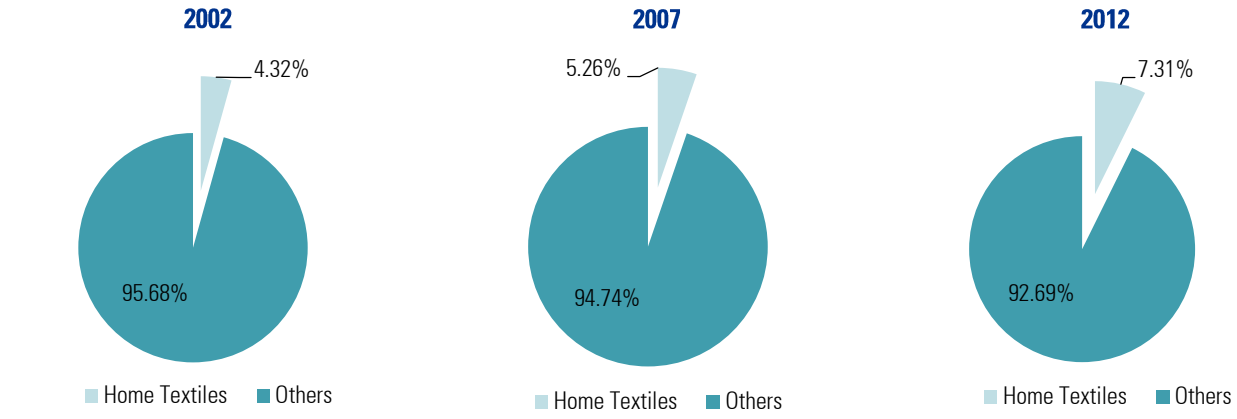
- Mens wear is the biggest segment in the RMG sector, comprising about 43 percent of its share in the total revenue generated. This is followed by womens wear, with a share of 38 percent; 10 percent share of boys wear and 9 percent for girls wear in the total revenue generated by the RMG sector.

- Changing lifestyles and consumption patterns are expected to drive the sector's supply of causal wear with an 11 percent growth, which would drive demand for workforce with specialised skills in western formals design, blended fabrics and increased application work on clothes.

Sub-sectoral overview

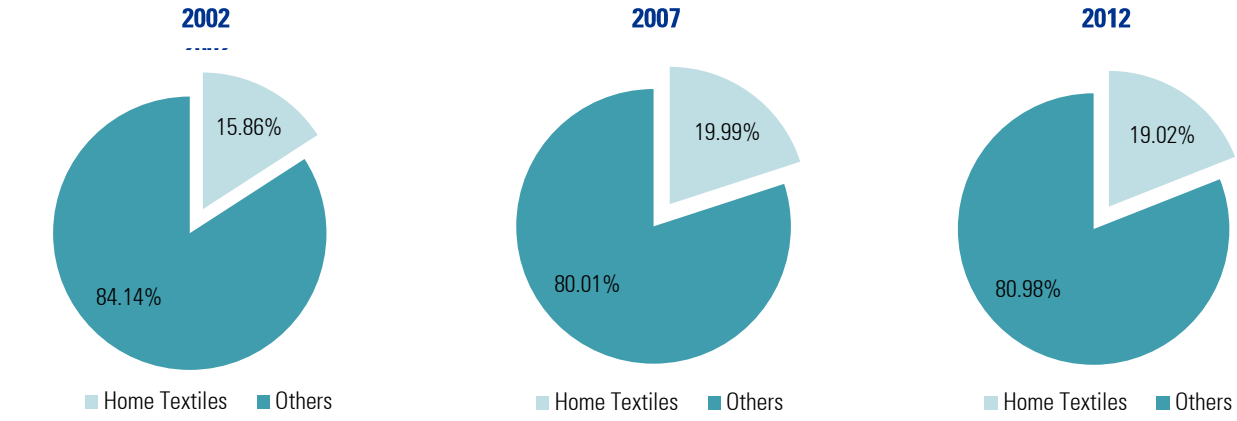
Home textiles is an emerging sector for textile exports and has demanded manpower with different set of skills

Contribution of home textiles to India's textiles and clothing output



Source: "Historical Time Series of Annual Survey of Industries (2001–02 to 2010–11)", ASI Provisional Data 2011–12, accessed on 6 February 2014

Contribution of home textiles to India's textiles and clothing exports



Source: "Trade in Goods Statistics (HS)", Trade and Investment Data, International Trade Centre accessed on 6 February 2014

- The home textiles sub-sector comprises four major sub-segments. These include bed linen (bed sheets, pillow covers and duvets), table and living linen (table cloths, curtains, cushion covers and carpets), kitchen linen (cafe curtains, gloves and mittens and aprons) and bath linen (terry towels, bath robes and rugs). The home textile sub-sector accounts for INR18245 crores — about 4.97 percent of the total textile production

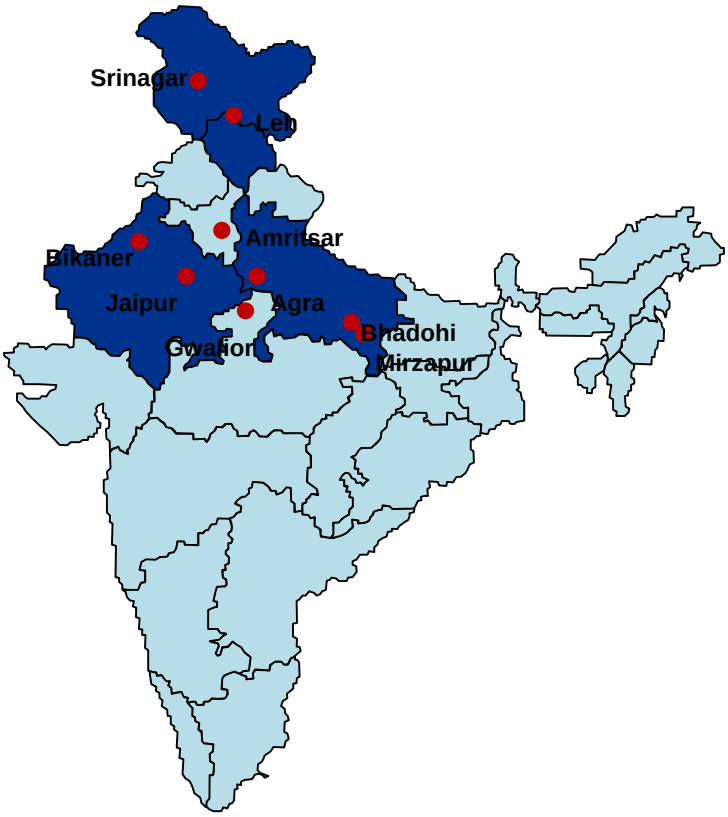
- There has been an increased demand from foreign consumers for home textile products. Home textile exports have increased from INR 9384 crores in 2001 to INR 263,34 crores in 2012

Sub-segments of home textiles	2011 (in INR crores)
Bed linen	8965
Towels	3320
Curtains	1850
Blankets	1465
Upholstery	1190
Kitchen linen	1110
Rugs and carpets	500

Source: "Textile & Apparel 2012 Compendium", Technopak

The carpets and rugs sub-sector contributes about 25 percent to the total home textile exports by India

Major productions centres of carpets and rugs



Bhadohi, Uttar Pradesh

- This belt produces the maximum number of carpets in India. The carpets from this region in various knots and counts are famous for their varied range and designs.
- It specialises in woollen, tufted and Tibetan carpets and durries.
- Carpet-producing areas are spread over 1000 sq km and comprise several villages and districts in Bhadohi .

Agra, Uttar Pradesh

- It is one of the earliest carpet-producing centres of India. The weavers produce Persian, Turkman and Aubussan varieties.

Jaipur, Rajasthan

- The city's carpet sub-sector is renowned and offers softback and hardback carpets and mats
- It is also known for cotton and artificial silk durries

Source: "Carpet Belts", Carpet Export Promotion Council of India <http://www.indiancarpets.com/carpet-belts.html>, accessed on 6 February 2014

Major carpet production clusters

- Major states contributing to carpets and rugs production and exports are located in the north. These include Uttar Pradesh, Rajasthan, Jammu and Kashmir, Haryana, Punjab and Himachal Pradesh.
- A few other locations in states such as Madhya Pradesh, Bihar and Andhra Pradesh include Gwalior, Obra, Madhubani, Danapur, Elluru and Warangal.

Challenges in the carpet sub-sector

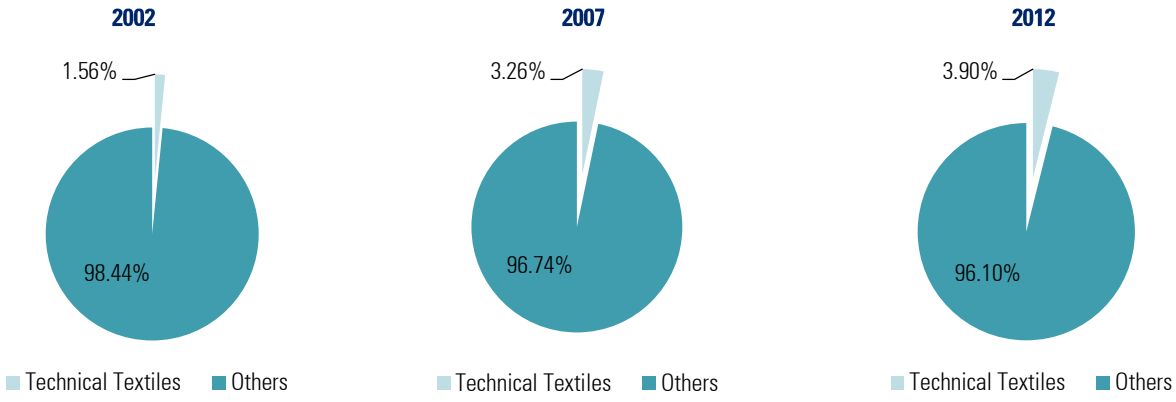
- The lack of reforms in the production system hamper productivity, organised production and supply of carpets. There is also lack of modern facilities, particularly for dyeing, washing and processing carpets.
- There is increased dependence on imports of large quantity of carpet grade wool.
- Raw material prices of wool and woollen yarn have increased by 50 percent in the last few years.
- There is dearth of skilled carpet weavers, as workers are not willing to learn new techniques and continue to practise handloom production.
- There is competition from major global players in the carpets and rugs sub-sectors, such as Pakistan, Turkey and Iran.
- Lack of innovation, research and development and investments in new improved technology pose a big challenge.

The technical textiles sub-sector currently depends on imports, but it has significant potential in future

- India currently produces and consumes products under all the 12 categories, though all of them are not produced domestically. The percentage of indigenous production varies drastically across various products. Unlike the conventional textile sector in India, which is export-intensive, the technical textile sector is import-intensive.

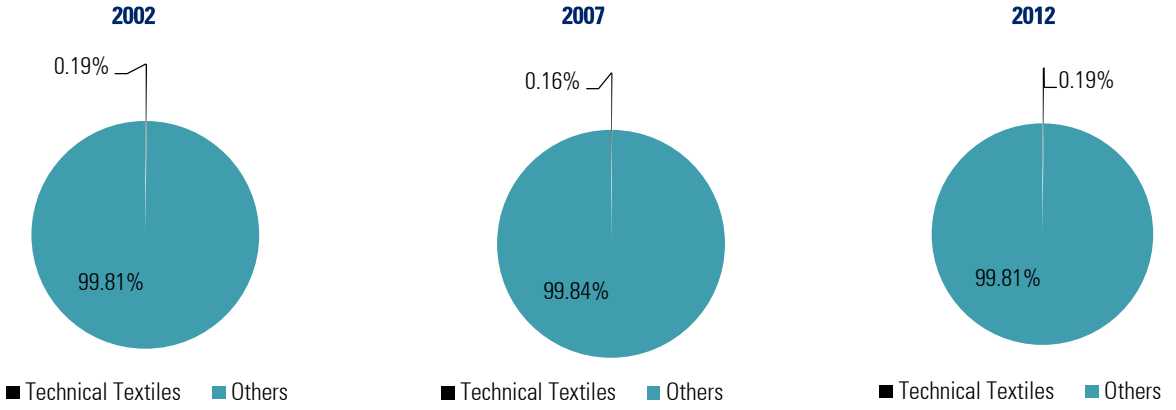
- Several products such as protective clothing, hoses and webbings for seat belts are imported significantly. Products that have high production levels in India and are exported substantially are typically commodity products and do not involve much R&D. These products include tarpaulins, jute carpet backing, hessian, fishnets, surgical dressings and crop covers.

Contribution of technical textiles to India's textiles and clothing output



Source: "Historical Time Series of Annual Survey of Industries (2001–02 to 2010–11)", ASI Provisional Data 2011–12, accessed on 6 February 2014

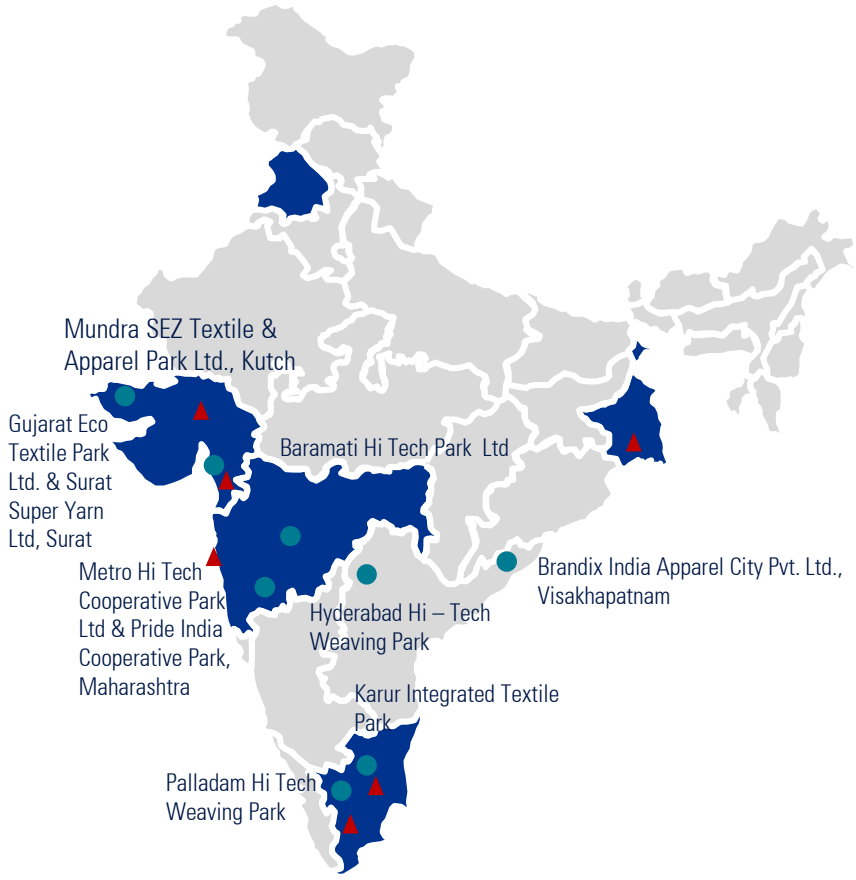
Contribution of technical textiles to India's textiles and clothing exports



Source: "Trade in Goods Statistics (HS)", Trade and Investment Data, International Trade Centre as accessed on 6 February 2014

Geographical clusters

Geographical mapping of the job roles and the employers in various sub-sectors of the textiles sector



Key employers sub-sector-wise

Yarn

Loyal Textiles, Bannari Amman, Nahar, Reliance

Fabrics (weaving/knitting)

Kewalram, Vardhaman, Arvind, Alok, Trident

Garments

Raymond, Shahi Exports, Gokaldas Exports, Creative Portico

Home textiles

Alok, Bombay Dyeing, Indo Count, Welspun

Technical textiles

SRF, Garware, Reliance, Alok

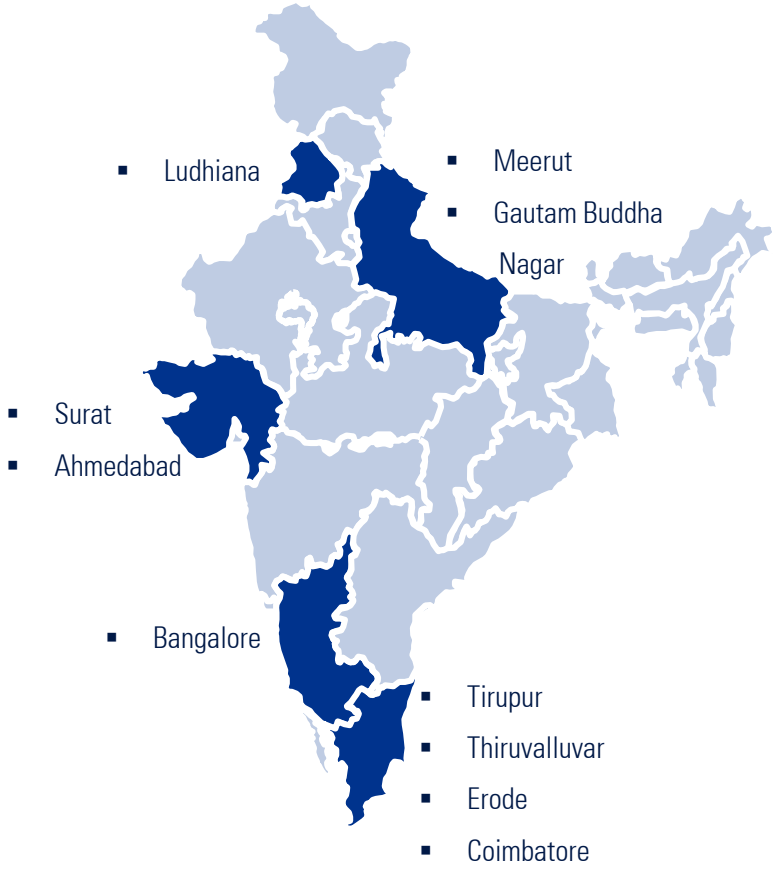
Employment in the existing and emerging textile production clusters

District	Total employment	Percent of employment	Sub-sector focus	Unorganised cluster
Kolkata	1,224,664	8%	Zari work and other ornamental trimmings, manufacturing of wearing apparels	✓
Coimbatore	638,977	4%	Weaving, manufacturing of cotton and blended fabrics	✓
Mumbai	684,077	5%		
Surat	594,511	4%	Spinning, weaving and finishing of textile fibers	✓
Salem/Erode	551,952	4%	Weaving, manufacturing of cotton and blended fabrics	✓
South 24 Parganas	461,295	3%	Home textiles and apparels	
Ahmedabad	328,763	2%		✓
Varanasi	314,385	2%		
Ludhiana	293,803	2%	Manufacturing of fur apparel and spinning of yarn	

Source: NSSO Round 67 for employment clusters; ET Bureau Sept 25; KPMG in India analysis

Geographical clusters

Incremental skill gap across states/districts



Locations	Incremental employment in textiles and clothing (both organised and unorganised)
Surat	188,807
Tirupur	132,000
Gautam Budha Nagar	100,392
Bangalore urban	75,102
Coimbatore	73,000
Thiruvallur	68,000
Ludhiana	58,388
Meerut	54,182
Ahmedabad	53,483
Erode	85,000

Source: NSDC Incremental Skill Gap Studies

Demographic characteristics of workforce

Varying sub-segments within the technical textiles sub-sector would require workers with skills in technology and research

- The size of the units manufacturing products also varies to a large extent. There are several small-scale units manufacturing technical textile products and this segment is highly unorganised.
- Though several major players are present, the production of certain goods is still concentrated in small-scale segments, such as canvas tarpaulin, carpet backing, woven sacks, shoe laces, soft luggage, zip fasteners, stuffed toys, fabrication of awnings and canopies and blinds.
- There are a few multinational companies such as Johnson & Johnson, Du Pont, Procter & Gamble and Kimberly Clark, which are major players in technical textiles and have established their units in India.
- Technical textiles are products that are not meant for aesthetic purposes but for functional use such as producing mosquito nets, cricket gloves and umbrellas.

The various sub-segments of technical textile and their respective sub-components have been provided below:

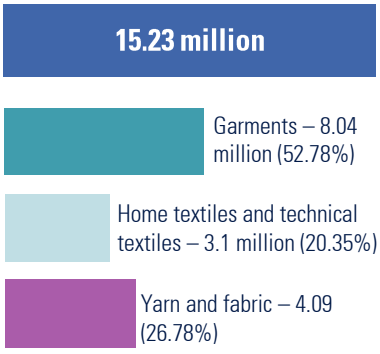
Segment	Components	Production in 2007–08 (in INR crores)
Agrotech	Shade nets, crop covers, fishing nets	487
Meditech	Diapers, sanitary napkins	1514
Mobiltech	Aircraft upholstery, automobile and railway train seat covers	3161
Packtech	Sacks, tea bags	14067
Sporttech	Parachute fabric, sleeping bags, tents	2632
Buildtech	Architectural membranes, scaffolding nets, cotton canvas tarpaulins	1726
Clothtech	Shoe laces, velcro, umbrella cloth, elastic tapes	6570
Hometech	Mosquito nets, mattress fillings, blinds, carpet back cloth	3191
Protech	Bulletproof jackets, chemical protection clothing	1259
Geotech	Used for landfill, rail track bed covering such as geo grids and geo nets	185
Oekotech	Eco tech	68
Indutech	Conveyer belts, ropes	2326

Source: "Domestic Technical Textiles Industry", Ministry of Textiles , Government of India as accessed on 6 February 2014

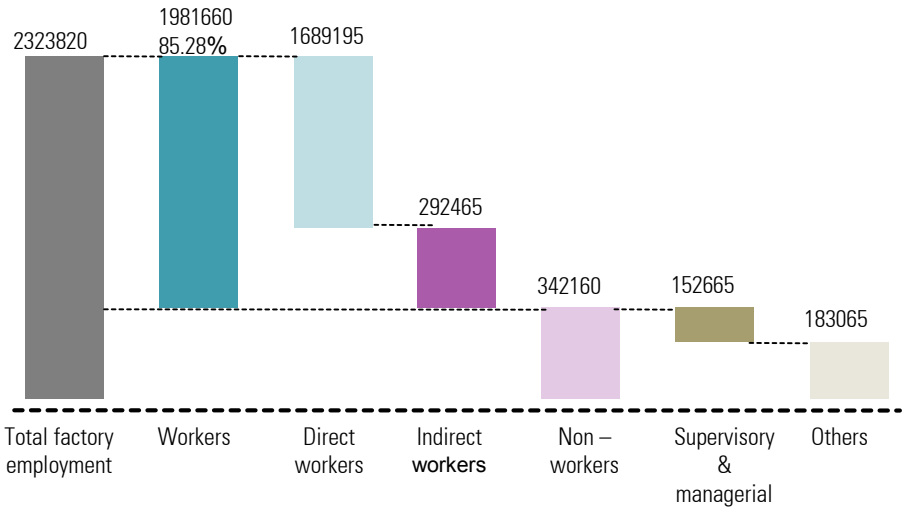
Demographic characteristics of workforce

Around 20 percent of the workers in textile factories are indirect

15.23 million persons are employed in the Textile and clothing sector, Of these, 2.3 million are employed in factories



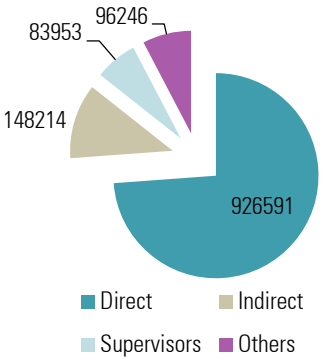
Distribution of factory workforce in textiles and clothing



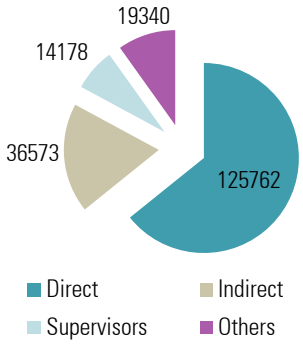
Source: "Annual Survey of Industries 2010-11", Ministry of Statistics and Planning, Government of India, as accessed on 6 February 2014

Distribution of Factory Workforce Sub Sector wise

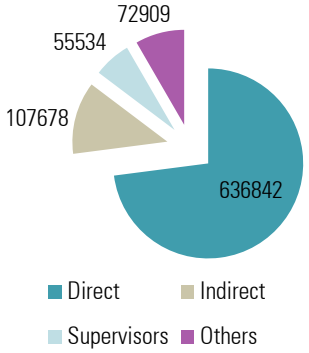
Yarn and fabric



Home textiles and technical textiles



Ready-made garments



Source: "Annual Survey of Industries 2010-11", Ministry of Statistics and Planning, Government of India, as accessed on 6 February 2014

- Factory workers comprise people that are directly employed, indirectly employed (contract-based), or in supervisory or managerial roles, among others.
- Directly and indirectly employed workers are chiefly engaged in the roles of machinists, tailors, spinners, weavers, dyers and others. Thirty-one percent of the total employees in textile factories of India are engaged in preparing fibres and spinning yarn.
- The 'other' product category that has the highest number of workers includes wearing apparels and garments (excluding articles of fur). About 10.05 percent of the workers are engaged in manufacturing knitted and crocheted apparels, 11.28 percent in finishing textile products (bleaching, dyeing and printing) and about 9 percent in weaving fabrics. Only about 6 percent of the workforce is engaged in producing other finished products such as home textiles and technical textiles.

Incremental human resource requirement (2013-17, 2017-22) and skill gaps

Incremental Human Resource Requirements

Currently, 15.23 million people are employed in the textile sub-sector across yarn and fabric, home textiles, technical textiles and readymade garments. Fifty-one percent of the total workforce is engaged in the manufacturing of readymade garments, followed by yarn and fabrics with 26 percent. Human resource requirement in the sector is expected to reach 21.54 million by 2022 translating into 6.31 million additional employment opportunities during the period 2013-22.

Automation of production of yarn and fabrics and new technologies such as digital printing, dobby and sateen are expected to result in increased productivity levels translating into a moderate elasticity factor of 0.38 for the period 2013-22.

Sub Sector	Employment (in Million)		
	2013	**2017**	**2022**
Spinning Weaving and Finishing of Textiles	3.1	3.14	3.18
Manufacture of Other Textiles	8.04	10.64	13.78
Manufacture of Wearing Apparel	4.09	4.28	4.58
Overall Sector	**15.23**	**18.06**	**21.54**

Sub Sector	Employment Growth 2013-17	Employment Growth 2017-22	Employment Growth 2013-22
	(In millions)	(In millions)	(In millions)
Spinning Weaving and Finishing of Textiles	0.04	0.04	0.08
Manufacture of Other Textiles	2.6	3.14	5.74
Manufacture of Wearing Apparel	0.19	0.3	0.49
Overall Sector	**2.83**	**3.48**	**6.31**

Source: NSSO, KPMG in India analysis

Key qualitative insights from industry interactions

Issues	Description
Key problem faced by the textiles and clothing sector in India	▪ Productivity across the value chain has been a concern. Though increased automation has been observed in the sector, it is not in value-added segments ▪ Fragmented production across the value chain and the presence of several disintegrated firms have impacted the quality of production ▪ Access to working capital by micro/small units leads to a lack of upgraded infrastructure ▪ Inability of the sector to attract manpower due to non-competitiveness in salary/wage levels as compared to other service sectors
Key factors that would affect demand for labour in the textiles and clothing sector	▪ Significant domestic and export demand are driving substantial requirement of manpower in the sector. ▪ Pricing are quality of products lend India a competitive edge and this is likely to attract new customers/brands. ▪ Adapting new products, imparting lessons on product development and delivering complicated designs would create demand for textile technologists, designers and quality controllers. ▪ Upcoming trends in the use of various types of new fabrics and technologies is expected to increase the requirement of skilled workforce. This includes temperature control fabrics and iced fabric, which are in vogue. ▪ Increasing demand and significant productivity requirements are likely to drive innovation in technology and automation across the value chain. ▪ The requirement of product managers is expected to continue to rise due to the introduction of new fabrics and innovative products such as various types of product categories in technical textiles.
Sub-sector/segment — where growth and skill are not in line	▪ Demand for operational-level workforce or machinists is increasing across the sector. ▪ For workers other than operators, firms identify talent and encourage them to grow internally by grooming them for higher positions within the firm. ▪ New entrants do not seem to find the sector lucrative. Locations of textile mills in small cities have not been able to attract the youth.
Poor correlation between skills premium and wages	▪ Skills premium with respect to increasing wages exists only at higher levels of the value chain, among designers, merchandisers and managers. ▪ High attrition of employees leads to increased training cost. ▪ Instead, firms are willing to bridge the skill gaps by providing internal training after recruitment rather than collaborating with external trainers.

Source: KPMG Primary Interactions as on 10 March 2014

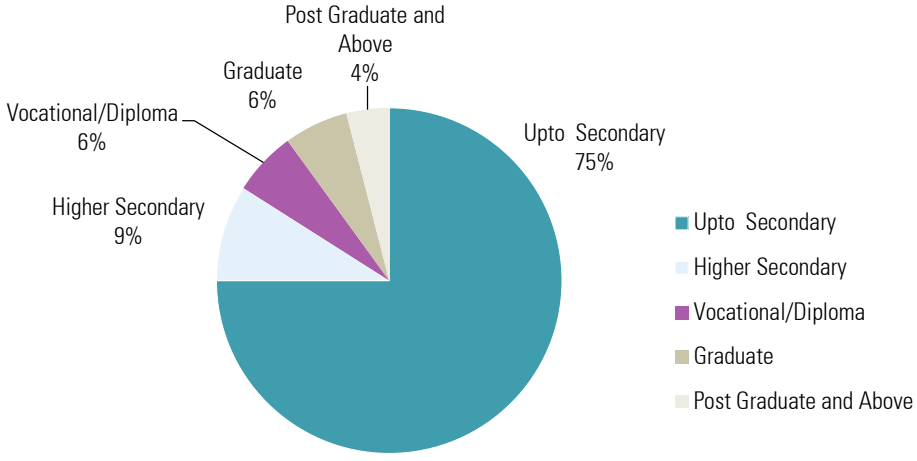
Key qualitative insights from industry interactions

Issues	Description
Level in the organisation where skill deficit is acute	**Spinning, weaving, finishing of fabric:** operators, machine maintenance workers and weavers **Technical and home textiles:** confection operators, marketing staffs, specialised stitching operators, machine maintenance people, merchandisers, product developers, compliance and quality control officers **Wearing apparel:** tailors, cutting machine operators, textile technologists ▪ Skill gaps are prominent at the entry level — operators, designers, merchandisers ▪ The current training curriculum for the entry-level roles is more theoretical and doesn't address practical issues sufficiently
Critical job roles with greater impact on output/ productivity	**Spinning, weaving and finishing of fabric:** operators and supervisors **Other textiles:** stitchers, designers and merchandisers **Wearing apparel:** tailors, pattern makers, designers and merchandisers ▪ Training centres lack adequate infrastructure (latest textile technology) , certification/accreditation to train employees
Formal channels of recruitment/ staffing	▪ Some formal channels are: ▪ Campaigns in villages ▪ ITI ▪ Referrals ▪ Agents ▪ NIFT — designers ▪ Colleges — merchandisers ▪ The existing recruitment channels are often unable to provide the required number or quality of manpower ▪ There are several textile engineering-related courses/certification available
Critical factors affecting manpower supply	▪ Attitude of workers' to continue with the job ▪ Movement of workers from brown-collar/blue-collar jobs to white-collar jobs or to other industries in the same cluster (mostly when they are unskilled/ semi-skilled) ▪ Some governmental policies push workers to quit their jobs such as NREGA

Source: KPMG Primary Interactions as on 10th March 2014

Spinning weaving and finishing of textiles

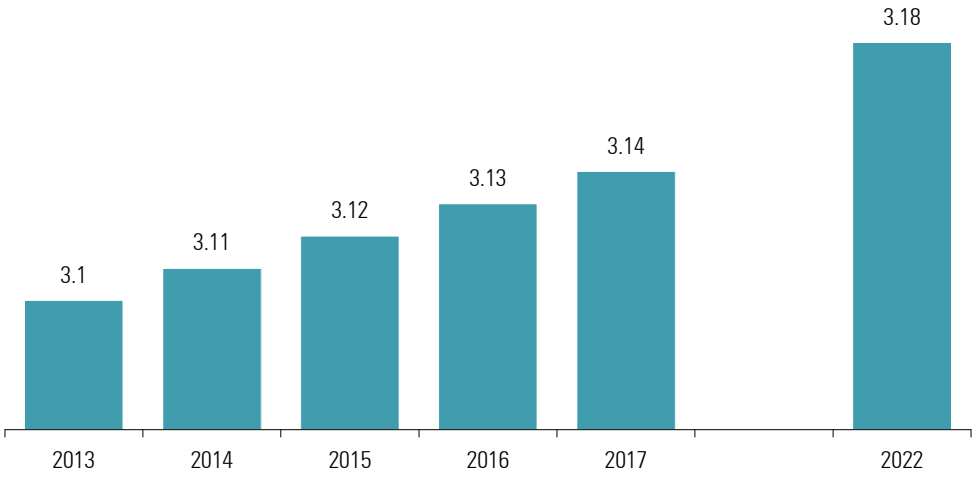
Split of the incremental HR requirement by education (2013-22)



Within the spinning weaving and finishing of textiles sub-sector, nearly three fourths of the workforce requirement is expected to happen in up to secondary category.

Source: Primary Interactions, KPMG analysis

Workforce projection during 2013-22

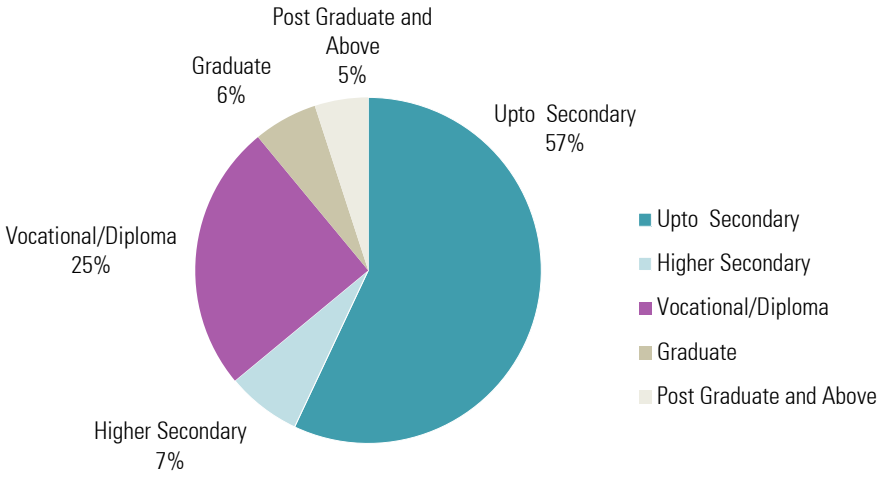


The spinning weaving and finishing of textiles sub-sector currently employs ~3.1 million employees and the employment base is expected to reach to 3.2 million by 2022.

Source: NSSO, KPMG in India analysis

Manufacture of other textiles

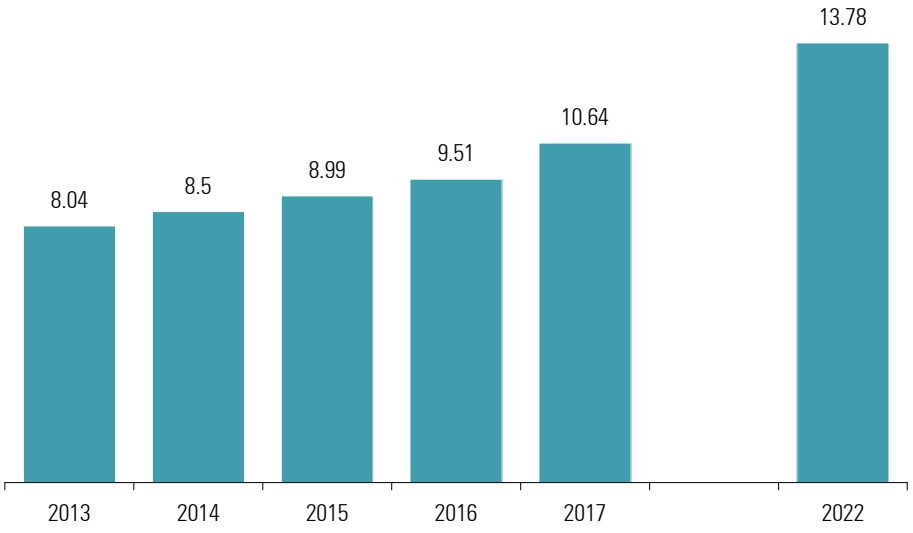
Split of the incremental HR requirement by education (2013-22)



Within the manufacture of other textiles sub-sector, nearly half of the workforce requirement is expected to happen in the up to secondary category.

Source: Primary Interactions, KPMG analysis

Workforce projection during 2013-22

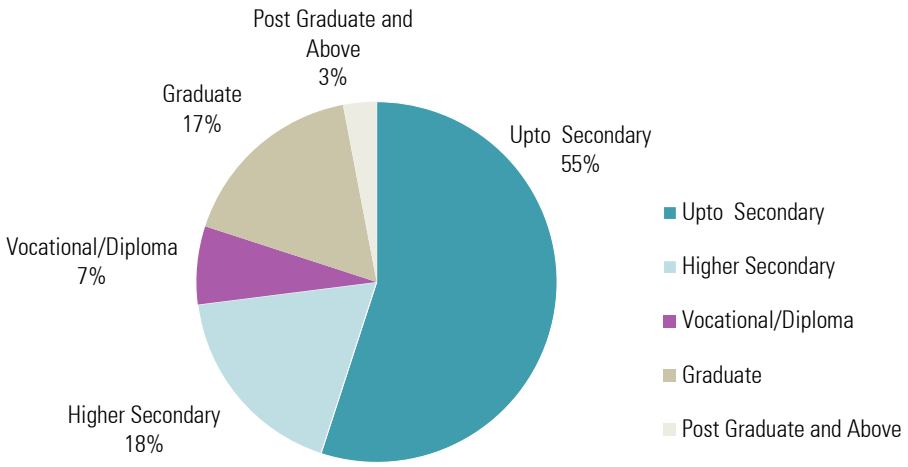


The Manufacture of other textiles sub-sector currently employs ~8 million employees and the employment base is expected to reach to 13.8 million by 2022

Source: NSSO, KPMG in India analysis

Manufacture of wearing apparel

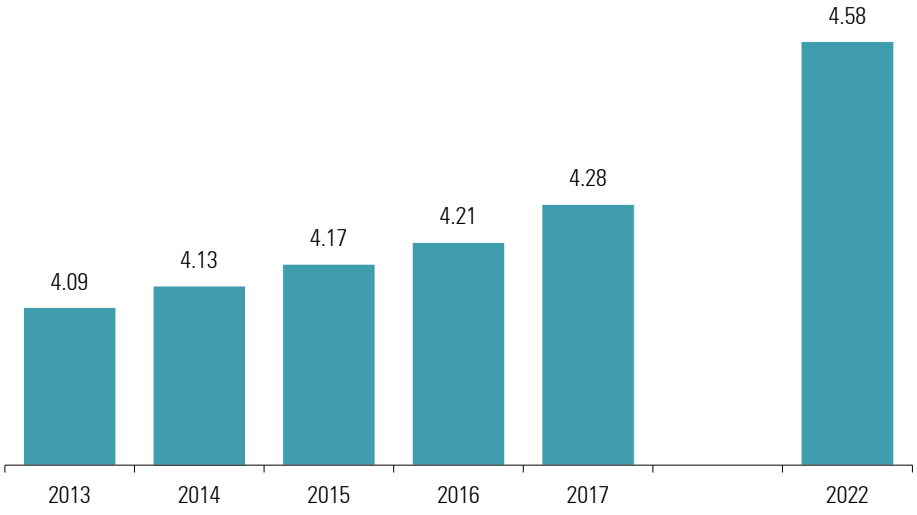
Split of the incremental HR requirement by education (2013-22)



Within the manufacture of wearing apparel sub-sector, nearly half of the workforce requirement is expected to happen in the "up to secondary" category.

Source: Primary Interactions, KPMG analysis

Workforce projection during 2013-22



Manufacture of wearing apparel sub-sector currently employs ~4.1 million employees and the employment base is expected to reach to 4.58 million by 2022

Source: NSSO, KPMG in India analysis

Skill gaps

Job roles	Skills required	Skill gap
Operator/tailor/weaver/helper(production)	▪ Ability to understand variations and take corrective actions ▪ An extensive understanding and knowledge on how to handle machines and troubleshoot ▪ Ability to understand and adapt to new productions processes and technologies **Weavers/knitters:** ▪ Features and operations of automatic looms (shuttle and shuttle-less) for each type of fabric ▪ Processes of weaving and knitting — warps/wefts, dyed and grey fabrics ▪ Different types of woven and knitted fabrics ▪ Knowledge of various movements of looms such as primary, secondary and auxiliary ▪ Fabric defects — reasons and remedies ▪ Woven/knitted fabric measurement and calculations **Dyeing/printing and processing workers:** ▪ Chemical and physical properties of textile intermediaries, both yarn and fabric ▪ Wet processing procedures for different types of fabrics — cotton, viscose nylon and polyester ▪ Dyeing and printing technology before and after intermediary product utilisation **Sewing machine operators:** ▪ Terminology of sewing and tailoring — fabric laying, cutting, alteration, hemming and piping ▪ Tools used for sewing and machine parts ▪ Operations of sewing for various products and its components such as types of collars, sleeves, pockets, cuffs and application work (zip, buttons and patches)	▪ Entry-level operators have limited knowledge on machines handling and troubleshooting aspects

Source: KPMG in India Analysis

Skill gaps

Job roles	Skills required	Skill gap
Supervisors	**I. Knowledge and experience:** ▪ Knowledge of the production process of textile product in their respective department (yarn, knitted/crocheted/woven fabric, garments and home textiles) ▪ Awareness on the textile technology being used, its capacity and productivity ▪ Ability to understand and adapt new production processes and technologies ▪ Experience in identifying defects in products and rectifying them **II. Leadership capabilities and team management:** ▪ Ability to plan work, manage people and handle contingencies ▪ Ability to understand variations and take corrective actions ▪ Ability to meet production requirements as per orders ▪ Coordinate with workers and production managers	▪ Lack the ability to handle contingencies, manage people and allocate work ▪ Lack of experience in handling machines
Quality control representatives	▪ Understanding quality assurance processes and the ability to follow the inspection manual ▪ Ability to identify deviations from the company-prescribed quality levels and report to quality inspector ▪ Ability to conduct quality audits at various levels of the production process and test products on various specifications **Quality controllers:** ▪ Knowledge of quality control processes, inspection systems, defects and remedies in products ▪ Managerial capabilities to maintain work ethics and social compliance **laboratory technicians:** ▪ In-depth information on the physical and chemical properties of fabrics and final made-ups ▪ Testing of durability, heat resistance and washing techniques to meet clients requirements	▪ Lack the ability to undertake high-level due diligence required for quality checks

Source: KPMG in India Analysis

Skill gaps

Job roles	Skills required	Skill gap
Production management	▪ Ability to plan work and manage people ▪ A strong knowledge of the organisation's production process ▪ Ability to handle and manage contingencies ▪ Knowledge and experience requirements: ▪ Raw material management — purchase, utilisation and inventory to ensure availability ▪ Financial management ▪ Cost control ▪ Production and productivity ▪ Quality control ▪ Energy management ▪ Personnel management	▪ There is scarcity of experienced planners and they usually lack people management skills ▪ Lack of understanding of the process
Merchandisers	▪ Strong verbal communication skills ▪ Ability to handle customers and appropriately answer their queries ▪ Deep understanding of the organisation's production process and the ability to control its execution ▪ Thorough knowledge on market trends and new technologies in the sector ▪ Knowledge of quality standards, pricing, distribution channels and trade models ▪ Knowledge about the product on specifications, properties of fabric, labeling and packaging ▪ Ability to handle logistics, export marketing, retail management, supply chain systems and inventories ▪ Ability to plan and execute orders as per clients' requirements ▪ Negotiation skills ▪ Management of database of buyers and clients	▪ Poor communication skills ▪ There is dearth of experienced merchandisers and the existing ones switch jobs frequently ▪ Unable to manage contingencies and handle high-pressure situations at work

Source: KPMG in India Analysis

Skill gaps

Job roles	Skills required	Skill gap
Designers / sample developers (design and development)	▪ Thorough understanding of the organisation's production processes ▪ Strong knowledge of market trends and new technologies in the sector ▪ Ability to design products based on customers' core and secondary requirements ▪ Strong knowledge and understanding of various national and international standards ▪ Fashion designers must possess knowledge of fashion illustration, styling, global design trends (as per seasons) and consumer types, garment construction, application of computer-aided designs in patterns and different types of fabrics and their usage ▪ Pattern makers/computer-aided designers require skills in preparing advanced industrial flat patterns and cutting techniques ▪ Efficient in using computer-aided design software	▪ Lack of knowledge on customer standards and new global market trends ▪ Experienced designers are scarce and switch jobs frequently ▪ Most institutes offer training in apparels. There is dearth of sector-specific designers
Textile engineer/ textile technologist	▪ A deep understanding of the organisation's production processes ▪ Thorough knowledge of market trends and new technologies in the sector for spinning, different types of woven fabrics such as jacquard and dobby, machinery for specialised products such as carpets and rugs, curtains as well as technology for printing, dyeing and processing ▪ Strong knowledge and understanding of various national and international standards related to the process and its time	▪ Lack of sector-specific knowledge ▪ Lack of knowledge on new technologies and their application

Source: KPMG in India Analysis

Skill gaps

	Factory workers	Non-factory workers
Spinning (Yarn)	▪ Machine operators: beamer/blender/carder/spinner ▪ Spinning technician ▪ Fitter ▪ Electrician ▪ Quality control inspector ▪ Supervisor ▪ Production manager	▪ Textile technologist ▪ Marketing manager ▪ Chief innovation officer (for specialised yarn) ▪ Production engineer ▪ Production manager (quantity)
Weaving and knitting	▪ Machine operators: knitter/ weaver ▪ Weaving technician ▪ Knitting technician ▪ Fitter ▪ Electrician ▪ Quality control inspector ▪ Supervisor ▪ Production manager	▪ Knitwear designer ▪ Fabric designer (woven) ▪ Textile technologist ▪ Marketing Manager ▪ Chief innovation officer (for specialised yarn) ▪ Production engineer ▪ Production manager (quantity)
Dyeing	▪ Textile wet processing technician ▪ Block printing specialist ▪ Tie and dye specialist ▪ Quality control inspector ▪ Supervisor ▪ Production manager	▪ Digital print specialist ▪ Textile colour technologist ▪ Production engineer ▪ Production manager (quantity)
Finishing	▪ Cloth presser ▪ Dry cleaners ▪ Clothing alteration ▪ Cutting room manager ▪ laboratory technician ▪ Quality control inspector ▪ Supervisor	▪ Textile colour technologist ▪ Textile specialist (physical and chemical properties) ▪ Production engineer ▪ Production manager (quantity)
Product Design	▪ Sewing machine operators ▪ Pattern cutter ▪ Pattern grader ▪ Embroidery specialist ▪ Dress maker ▪ Quality control inspector ▪ Supervisor ▪ Production manager	▪ Fashion designer (for each sub-sector of apparels) ▪ Home textiles/carpet designer ▪ Marketing manager (for each product) ▪ Production manager
Labelling	▪ Trimmer/ checker ▪ Clothing packer/folder ▪ Label applier ▪ Inventory watch keeper ▪ Sample displayer	▪ Brand manager ▪ Export manager (region and product-wise) ▪ Sales and distribution Manager

Source: KPMG in India Analysis

Skill gaps

Understanding the top critical job roles in various sub-sectors of the Textiles and clothing sector

Sub-sectors	Top critical job roles	Description
Yarn	**Entry level** (machine operators)	**Spinning machine operator:** ▪ Ability to distinguish between different textile fibers and textile products on the basis of their properties and intended purposes ▪ Operate and monitor plant and machinery for spinning preparation using various methods for preparing material for the spinning frame ▪ Maintain automated and computer-controlled spinning machines and installations and conduct associated tasks involved in yarn production ▪ Operators must have about six months of training in latest technologies for spinning yarn along with knowledge of the types of yarn and their properties
Fabric	**Entry level** (machine operator)	**Weaving/knitting machine operator** ▪ Operate and monitor knitting machines (computer-aided) and use different methods to manufacture knitted goods ▪ Check knitted/crocheted and woven fabrics for faults and rectify them ▪ Plot designs, draw and use design specifications to manufacture desired fabrics **Supervisors/floor managers/quality controllers:** ▪ They play an important role as they are in charge of managing quality requirements by different customers and must possess strong knowledge of yarn and fabric properties ▪ Must have 6–10 years of experience as a machine operator and must be able to manage a team of five–eight operators
	Middle level (supervisors/ inspectors/ quality controllers)	
Processing and finishing	**Middle level** (textile product finisher)	**Textile product finisher** ▪ Able to use textile finishing processes and consider physical and chemical influences ▪ Select testing procedures and devices and conduct quality tests ▪ Modify product properties by controlling and regulating machines and systems ▪ Must hold a diploma in textile chemistry/textile manufacturing

Source: KPMG in India analysis

Skill gaps

Understanding the top critical job roles in various sub-sectors of the Textiles and clothing sector

Sub-sectors	Top critical job roles	Description
Garments and home textiles	**Entry level** (sewing machine operators, tailors, patter makers) **Middle level** (supervisors/ quality controllers) **Higher/managerial level** (designers/ merchandisers)	**Sewing machine operators** ▪ Must have skills in different types of stitching, use of needles and work on various types of fabrics ▪ Ability to alter garments, stitch applications as per the patterns marked on cloths ▪ Must progress over time with respect to the difficulty level of products being stitched **Supervisors** ▪The role of supervisors is crucial since they handle several field personnel ▪Candidates must have passed higher secondary or completed graduation for this role and possess good communication and team management skills **Designers** ▪ Skills to plan and produce visual drawings using 3D/CAD software ▪ Ability to differentiate between raw materials and types of yarn and fabrics used for varied products ▪ Assist in informing, advising and supporting customers ▪ Work in teams and appropriately guide production managers to produce required products as per specifications ▪ Must have a degree in design (product-specific. such as in formal apparels, traditional garments, carpets and interior designing) **Merchandisers/sales and marketing representatives**: ▪ Strong communication skills and the ability to negotiate with clients ▪ Achieve sales target periodically and possess knowledge of new and existing markets (retail and distribution channels) ▪ Basic knowledge of textile products along with a management degree
Technical textiles	**Managerial level** (textile technologist/ innovation officer)	**Textile technologists/researchers/innovators:** ▪ Perform research to find new ways of using yarns; develop chemicals that may be added to fabrics to make them more waterproof, flame-resistant or shrink-resistant; experiment with textiles to improve their look, feel, texture and durability ▪ Highly qualified with an engineering degree in textiles

Source: KPMG in India analysis

Training Infrastructure

Training in textiles and clothing is offered by a range of institutes offering vocational education, design-related degrees and textile engineering degrees

Major textile training institutes

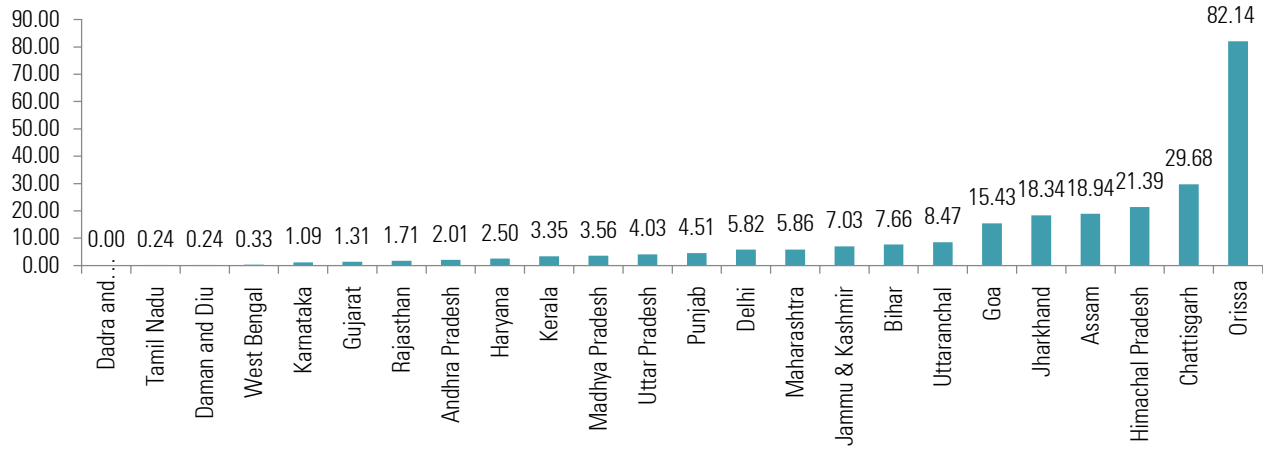
	Institute	No	Intake capacity	Courses offered
Institutional Training	Industrial training institute	1654	31840	Short courses/trades offered bleaching, dyeing, computer-aided embroidery, dress making, cutting and sewing, embroidery and needle work, knitting with machines, weaving of silk and woollen fabrics
	Industrial training centres	887	18624	
	Apparel training design centres (SMART, apparel vocational institutes)	14		Short courses on basic and advanced operation of textile machinery, finishers and packers, quality checkers and machine technician
	AICTE-approved textile engineering colleges	39	1816	Degree programs in textile engineering, fashion technology, textile chemistry, carpet/jute/silk technology
	NIFT	15		Undergraduate degree programs in fashion design, accessory design, textile, knitwear design and fashion communication
Textile Research Associations	Ahmadabad Textile Industries' Research Association Northern India Textile Research Association Southern India Textile Research Association Bombay Textile Research Association Jute TRA Wool Industries TRA	8		There are eight textile research associations in India located in Mumbai, Surat, Ahmedabad, Coimbatore, Ghaziabad and Kolkata. Though engaged in R&D, testing and consultancy, each of them provide training programs to the industrial workforce depending on the requirement of the sector
Others	Powerloom service centres	44		Regular training courses on pre-weaving and weaving technology, fabric design, machine maintenance and other local requirements to weavers and loom owners to acquire, improve and update their HRD skills in line with the latest and appropriate technology in the sector
	Weavers services centres	24		

Source: "National Institute of Fashion technology (NIFT) Campuses" , NIFT < http://www.nift.ac.in/contactus.html> accessed on 10 March 2014

Training infrastructure

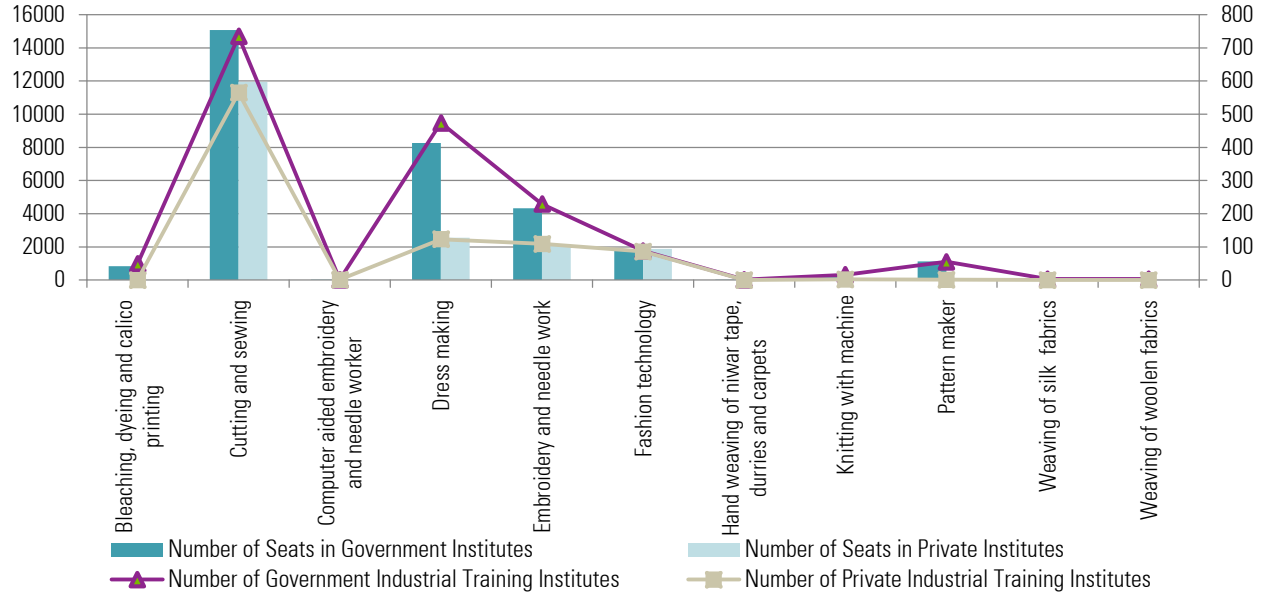
Industrial training institutes offering textile courses are restricted to cutting and sewing trades

Number of seats in industrial institutes offering textile trades per 100 factory workers



- The capacity of ITIs offering textile trade is inadequate to meet the skilling requirements of workers in most of the state, including key textile clusters of Tamil Nadu, West Bengal, Karnataka, Gujarat, Rajasthan and Andhra Pradesh.
- There are about 2,541 institutes with a total seating intake capacity of approximately 50,464 offering textile-related trades.
- Sixty-five percent of these skilling institutes are owned and managed by the government and constitute 63.09 percent of the total seating capacity available for skill development in textile.
- A majority of ITIs — private and government — offer courses on cutting and sewing (51 percent) followed by dress-making (24 percent) and embroidery and needle work (13 percent).
- Only government institutes offer courses on weaving, hand weaving of Niwar tape, durries and carpets and weaving of silk and woolen fabrics, and bleaching, dyeing and calico printing.

Number of seats and industrial institutes offering textile trades



Source: "ITIs Informational Service", Ministry of Labour & Employment, Government of India, accessed as on 16th November 2013

The recently launched Integrated Skill Development Scheme aims to train 1.5 million people during 2012-17

Objective

- Address trained manpower requirement of textiles and related sectors, including handicrafts, handlooms, sericulture, jute and technical textiles by developing an integrated framework of training based on sector needs
- Focus on enhancing the capacity of the existing institutes providing skill development and training in the textile sector

Strategy

- The proposed twelfth FYP outlay of INR1900 crores with a physical target of 1.5 million people during 2012–17
- Establishment of Sector Skill Councils (SSC) for apparels, textiles (including handlooms) and handicrafts (including carpets) under the aegis of NSDC
- Leverage on the capacity and strengths of the existing training institutes under the aegis of the ministry
- Encourage private sector participation on a PPP model
- Focus on the three components to build the required supply infrastructure:
  - ✓ Institutions/textile research associations under the Ministry of Textiles
  - ✓ Private institutes (by leveraging PPPs)
  - ✓ State government textile agencies
- Proposes the establishment of Resource Support Agencies (RSA) for effective implementation of ISDS through:
  - ✓ Identification of skill requirements and creation of skill inventory database
  - ✓ Standardisation of course content and content development
  - ✓ Standardisation of admission, assessment and certification procedures
  - ✓ Quality control
- Increased transparency through the creation of a project management unit, under the ministry, which would be responsible for
  - ✓ Monitoring of ISDS
  - ✓ Managing the skills and labour market information system (LMIS)
  - ✓ Mandatory placement and tracking to assess the impact of training imparted

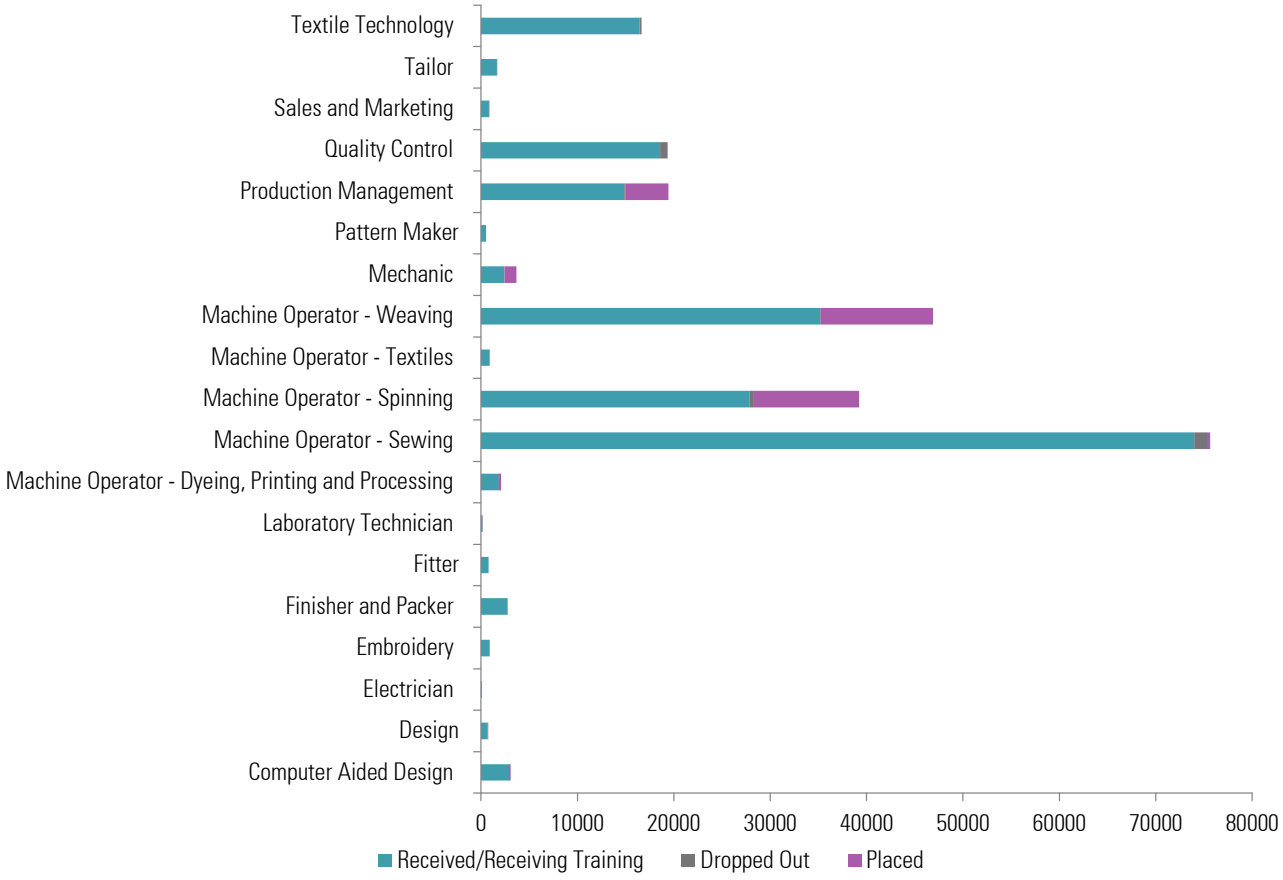
Training of teachers

- Recognises trainers' capacity and training the trainers (TOT) as key priority for skill development
- Provide advanced training programmes at the cluster level to improve the availability of trainers
- Propose a comprehensive training of the trainers (TOT) program to strengthen trainers' capacity

Source: "Integrated Skill Development Scheme", Ministry of Textiles, Government of India, accessed as on 10th March 2014

Placement ratio among the institutes offering textile courses under the scheme is 15 percent

Status of the Integrated Skill Development Scheme: Number of students enrolled in the institutes (as of 2014)



- Since the inception of the programme, 0.2 million people have enrolled in various institutes to receive training for over 20 specialised courses in the textile sector
- Machine operator (sewing) witnessed the maximum enrolment of 75,319 people and constituted 37 percent of the total trainees while the least number of students (98) were enrolled in the electrician course
- The overall dropout rate is 1.52 percent with courses on quality control and computer-aided design recording the maximum dropout (3.98 percent and 3.82 percent, respectively)
- The overall placement ratio is only 15.2 percent, indicating poor sector linkages of institutes
- Machine operators (spinning) witnessed wider range of placement opportunities with over 42 percent of the total trainees getting placed
- Eight out of the 20 specialised courses — electricians, embroidery, finishers and packers, fitters, machine operator (textiles), pattern-maker, tailor and textile technology — lacked placement opportunities for trainees

Source: Trainee Status Till Date, Integrated Skill Development Scheme, < http://www.isds-mot.com/node/192>, accessed as on 10th March 2014

Recommendations for stakeholders

High attrition in the textile sector needs to addressed through performance-linked incentives

- High attrition levels across the sector, especially for entry-level workers. Attrition among small and middle-level workers is more than 75 percent annually, which implies that more or less all the workers in the textile units would change every year.
- Schemes such as MNREGA encourage high levels of absenteeism within textile factories.
- Unwillingness of workers to be recruited as contractual labours contributes to significant informal employment in the sector and, therefore, encourages frequent job switch.
- Unwillingness of operators/entry-level workers to upgrade their skills as wages are low compared to other service sectors is also prominent.
- There are several small and medium-sized units where lack of innovation and changes in technology deter workers from continuing with the same job role.

Recommendation 1: Provide incentives to factory workers in the form of skills premium

- Acknowledge and offer incentives to workers based on improvisation in skills – a few large firms offer this in the form of grades/promotions among each job role. For example, a home textile stitching unit may have three grades of sewing machine operators and tailors. Grade C may refer to tailors sewing simpler forms of products within a home textile segment (bath linen) such as napkins. Grade B may refer to those responsible for making towels and Grade A may refer to those in charge of producing bath robes. The salaries paid to workers would increase with improved grades.
- Competition among workers of a specific function (such as weaving machine operators) should be conducted periodically to incentivise workers who deliver high productivity and improved production quality. Awards and recognitions should be offered to support such incentives. This may also be linked to quarterly performance of workers.
- There should be development of credibility and enhancing perception of the utility of training through the implementation of innovative training practices such as apprenticeship.
- Introduction of monetary and progression incentives for trained vis-à-vis untrained personnel by companies.

Poor perceptions among the youth regarding career prospects in the textile sector leads to low seat utilisation in a few institutes

- Increased number of jobs and preferences among entry-level workers in the service sector such as retail, banking and IT
- Level III (L3) workers with high education requirements express growing interest in MBA and other engineering degree courses

Recommendation 2: creating awareness among the youth to attract them towards the sector

- The government must encourage textile engineering degrees as an option in popular institutes among other engineering options

- Textile hubs in small towns have firms that recruit women who are studying in class X and XII. They pursue textile jobs such as stitching and trimming on a part-time basis to fund their education.
- The sector does not attract the youth to pursue careers at the shop-floor level. Moreover, if the units are in small cities/regions, relocating becomes an issue since the salaries are believed to be low.

- Awareness needs to be created among school students at the middle school level (class V–VIII) through vocational education in textiles by courses on embroidery, needle work, fashion design and textile chemistry. A few schools also include tailoring in home science courses.
- Many parts of northern India have been observed by trainers and firms to be a source of manpower, which could be trained and skilled. SSC, as part of its labour market information system, could identify typical demographic profile of people who are likely to enter the sector and support development training programmes suited to these profiles.

Lack of supply of training courses offered for textile machinery operations and segment-specific designers

- Training for machine operators in textile mills is restricted predominantly to industrial training institutes. These institutes have limited classes for spinning and weaving operations and offer more programmes for cutting and sewing.
- Lack of design institutes for each sector of the textile sector, such as home textiles and technical textiles. At present, there are Apparel Training Design Centres, NIFTs and IIFTs that offer programmes in apparel design. Therefore, many fashion or garment designers interested in home textiles require on-the-job training to understand design trends, patterns and colours for such products.
- Textile research associations, which offer courses on the manufacturing of technical textiles, do not offer programs on the designing of products. These courses are restricted to the manufacturing process, technology and use of specialised fabrics. The design aspect would be required for certain products such as sports technology and allergy-free bedding.

Recommendation 3: specialized industrial training institutes in textile machinery operations

- ITIs and ITCs located in major textile hubs must be upgraded to latest technology and converted into centres of excellence offering courses in textile machine operations, which should focus on carding, blow room, different types of weaving looms and sewing machine.

Recommendation 4: establishment of home textile and technical textile design centres

- Home textile design centres (HTDC) should be established on the lines of ATDC in hubs such as Karur, Maharashtra and Gujarat. These institutes could offer courses on home textile manufacturing, types of fabrics used, design and pattern-making and the use of CAD.
- Each textile research association considered as a centre of excellence for a technical textile sub-sector must also introduce design technology courses.

Content development and training quality has remained dismal in a majority of industrial training institutes and training institute linkages with the sector

- Infrastructure and textile machinery in ITIs and ITCs offering courses on spinning, weaving, dyeing, printing and processing operations do not use latest technology. With increased automation and changing technology, there is a need to regularly upgrade skills of operators, fitters, electricians and textile technologists.
- Latest technology and textile machinery, as per sector requirements, are being used only by a few textile research associations such as NITRA and SASMIRA however, there are less seats for textile technology.
- The Strategic Plan for Textiles and Clothing sector for 2011–16, as laid out by the Ministry of Textiles, emphasises on research and development in each textile sub-sector, including technical textiles, jute and woollen industries. It has proposed collaborative research with global R&D textile institutes. This could be further extended to programs in advanced textile technology and quality control.
- Designers trained in NIFTs, IIFTs and other major fashion design institutes lack awareness on global trends. Every country has different preferences for garments and home textiles. Indian designers are usually unable to predict future seasonal trends, lack awareness on global designs and require constant guidance through trend workshops.
- Management (MBA) graduates from reputed business schools who join textile firms as marketing executive or merchandiser lack knowledge of textiles, such as the type of fabric, physical and chemical properties of the textile products and varieties of weaving techniques.

Recommendation 5: private sector participation for infrastructure provisioning to ITIs

- The Ministry of Textiles is encouraging public-private partnerships within their integrated Skill Development Scheme, wherein funds are being provided to private players interested in establishing institutes. This could be extended further to another model wherein training institutes that cannot procure latest technology due to poor financial condition can purchase/lease second-hand machines from private players.

Recommendation 6: foreign collaborations for quality control

- SGS is a global firm in-charge of quality testing and certifying products. It conducts workshops in India for inspectors, supervisors and quality control managers in various consumer goods so that India's manufacturing quality is in line with international standards. This can be extended to the textiles and clothing sector wherein the firm operates as an inspection agent for various foreign import agents.

Recommendation 7: revise design course content in line with global trends

- Fashion and home textile design institutes should include courses on the preferences of global consumers and upcoming trends in the textile sector. They should educate people on the design preferences of the US and Europe.

Recommendation 8: introduction of textile management programs

- Textile management programs can be provided by textile research associations that offer a combination of textile courses along with marketing and sales.

Improvement in training quality, content and infrastructure should be supported by assessment and certification

- The trades offered by textile training institutes are not standardised. Moreover, they are restricted to old technology operations and/or sewing and cutting.
- There is a need to expand the existing list of trades offered by industrial training institutes in line with the textile sector's skill demand.
- Standardisation of trades and occupation standards in skills should be complemented with a nodal body in charge for certification.

Recommendation 9 : sector skill council for the entire textiles and clothing sector

- A sector skill council for textiles focusing on apparels, spinning and weaving is being considered.
- It must be ensured that the trades proposed in it account for the skill gaps across all textile sub-sectors, including technical and home textiles.
- SSC can leverage support from textile research association and export promotion councils to design occupation standards.

Establishment of appropriate channels for placements

- A majority of recruitment by textile firms within their mills and units is undertaken through job fairs in textile clusters or through references from existing employees.
- At times, there is increased supply of women workers interested in stitching and tailoring roles however, they are unaware of the firms located in textile hubs.

Recommendation 10: state/central placement portal for each textile hub via electronic media

- An IT application for updates on vacancies in textile firms in each textile cluster would assist workers in searching jobs. Enrolment of job seekers as well as employers can be managed by those industrial institutes that serve as centres of excellence for the textiles sector.

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GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT
& ENTREPRENEURSHIP

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