RESURGENT AGRIC

Cotton Report

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2.Agricultural and Botanical details of Cotton

Cotton is a soft, fluffy staple fiber that grows in a boll, or protective capsule, around the seeds of cotton plants of the genus Gossypium. The fiber is almost pure cellulose. Under natural conditions, the cotton bolls will tend to increase the dispersion of the seeds.

Cotton is a tropical and subtropical crop. For the successful germination of its seeds, a minimum temperature of 15° C is required. The optimum temperature range for vegetative growth is 21° - 27° C. It can tolerate temperatures as high as 43 °C, but does not do well if the temperature falls below 21 °C. During the period of fruiting, warm days and cool nights with large diurnal variations are conducive to good boll and fibre development. In cotton selection on of soil is very important. Soil should be black medium to deep (90cm) having good drainage availability. Cotton does not tolerate water-logging condition. It is grown mainly as a dry crop in the black cotton and medium black soil. Irrigated cotton is taken in the alluvial soils. Successful cultivation of cotton requires a long frost-free period, plenty of sunshine, and a moderate rainfall, usually from 60 to 120 cm (24 to 47 in). Cotton is also known as a thirsty crop; on average, globally, cotton requires 8000-10000 liters of water for one kilogram of cotton, and in dry areas, it may require even more such as in some areas of India, it may need 22500 liters also. As water resources get tighter around the world, economies that rely on it face difficulties and conflict, as well as potential environmental problems. For example, improper cropping and irrigation practices have led to desertification in areas of Uzbekistan, where cotton is a major export. Cotton is sown on ridges and furrows. For irrigated cotton the land is given a deep ploughing followed by two harrowings.For irrigated cotton shallow ridges on 90cm spacing should be prepared which helps in irrigation. According to slope of land, length of ridges should be 6-9m. Seed treatment of fungicides should be given 3 gram per kg of cotton seed. Also seed treatment with biofertilizers viz. *Azobacter*, *Azospirillum*, and Phosphorous Solubilizing Bacteria (PSB) @ 25 gram per kg of seeds. The fertilizer required for irrigated cotton is 100:50:50kg nitrogen, phosphorus and potash per hectare is recommended. The application of nitrogen is given by ring method. 20% nitrogen and whole phosphorus and potash should be given at the time of sowing and 40% nitrogen at the time of square formation and final 40% nitrogen at the time of flowering. In case of rainfed cotton fertilizer dose for desi variety is 50:50:25kg nitrogen, phosphorus and potash per hectare. For hybrid varieties fertilizer dose is 80:40:40 nitrogen, phosphorus and potash per hectare. 1/4 nitrogen and whole phosphorus and potash is given at the time of sowing while 1/2 nitrogen is given 4 weeks after sowing and remaining 1/4 nitrogen is given through spraying.

There are four commercially grown species of cotton, all domesticated in antiquity:

- *Gossypium hirsutum* – upland cotton, native to Central America, Mexico, the Caribbean and southern Florida (90% of world production)
- *Gossypium barbadense* – known as extra-long staple cotton, native to tropical South America (8% of world production)
- *Gossypium arboreum* – tree cotton, native to India and Pakistan (less than 2%)
- *Gossypium herbaceum* – Levant cotton, native to southern Africa and the Arabian Peninsula (less than 2%)

While cotton fibres occur naturally in colours of white, brown, pink and green, fears of contaminating the genetics of white cotton have led many cotton-growing locations to ban the growing of coloured cotton varieties. Genetically modified (GM) cotton was developed to reduce the heavy reliance on pesticides. The bacterium *Bacillus thuringiensis* (Bt) naturally produces a chemical harmful only to a small fraction of insects, most notably the larvae of moths and butterflies, beetles, and flies, and harmless to other forms of life.The gene coding for Bt toxin has been inserted into cotton, causing cotton, called Bt cotton, to produce this natural insecticide in its tissues. In many regions, the main

pests in commercial cotton are lepidopteran larvae, which are killed by the Bt protein in the transgenic cotton they eat. This eliminates the need to use large amounts of broad-spectrum insecticides to kill lepidopteran pests (some of which have developed pyrethroid resistance). This spares natural insect predators in the farm ecology and further contributes to non insecticide pest management.

3.Uses of the Cotton

Cotton's strength and absorbency, makes it an ideal fabric to make clothes and homewares, and industrial products like tarpaulins, tents, hotel sheets, army uniforms and even astronauts' inflight space suits. Cotton is used to make a number of textile products. These include terrycloth for highly absorbent bath towels and robes; denim for blue jeans; cambric, popularly used in the manufacture of blue work shirts ,and corduroy, seersucker, and cotton twill. Socks and most T-shirts are made from cotton. Bed sheets often are made from cotton. Cotton also is used to make yarn used in crochet and knitting.

Fabric also can be made from recycled or recovered cotton that otherwise would be thrown away during the spinning, weaving, or cutting process. While many fabrics are made completely of cotton, some materials blend cotton with other fibres, including rayon and synthetic fibres such as polyester. It can either be used in knitted or woven fabrics, as it can be blended with elastine to make a stretcher thread for knitted fabrics, and apparel such as stretch jeans. Cotton can be blended also with linen producing fabrics with the benefits of both materials. Linen-cotton blends are wrinkle resistant and retain heat more effectively than only linen, and are thinner, stronger and lighter than only cotton.

In addition to the textile industry, cotton is used in fishing nets, coffee filters, tents, explosives manufacture, cotton paper, and in bookbinding. The cottonseed which remains after the cotton is ginned is used to produce cottonseed oil, which, after refining, can be consumed by humans like any other vegetable oil. The cottonseed meal that is left generally is fed to ruminant livestocks the gossypol remaining in the meal is toxic to monogastric animals.

Due to its high absorbency, elasticity, purity, and hypoallergenic properties, cotton has long been a top preference in the healthcare arena. Cotton is used in the paper sector is for the creation of high excellent paper that are sought by professionals that require a difficult copy of their document to last the test of time. Cotton is also used to make canvas for drawings and paintings. In alternative to plastic bags, which are harmful to our environment, safety bags made with cotton can prove to be safe for our environment. Bandages provide the fastest solution to hold blood flow and has saved countless lives. Cotton is the primary material in the making of dressings to soak up and keep blood flow.

Cotton is held as one of the key ingredients in producing certain beauty products. Mainly in two major ways, cotton is used in these regard-manufacturing items like sheet masks, makeup remover wipes, and by using cottonseed oil, which is extremely nourishing in nature. One of the specialty applications of cotton includes manufacturing flame resistant apparel. These sort of apparel are suitable for professional uses as they provide protection against potential risks attributed to high temperature and mainly flashover.

Mosquito curtains made with cotton helps to assure you a bite-free relaxing sleep. Shiny cotton is a processed version of the fibre that can be made into cloth resembling satin for shirts and suits.However, it is hydrophobic (does not absorb water easily), which makes it unfit for use in bath and dish towels. Now, an increasing number of many high-quality diapers and baby wipes are made from soft, breathable cotton, the perfect match for a baby's delicate skin. Even stalks and leaves from the cotton plant can be made useful; stalks are ploughed underground to enrich soil, and fiber

extracted from them is used to make pressed paper and cardboard. The auto industry uses cotton in the cord of tires.

4.Production -Geographical locations Countries in world (Top10)

1. China

China is the world leader in Cotton Production, and China is the largest populated country that makes it more farmers to cultivate that mean most of the production from small formers, it is also the largest importer and consumer of cotton. The total Cotton Production of the country is about 33 million bales. The principal China cotton farming areas of production lie between 29° to 35° north latitude in the fertile lower valleys of the Yangtze, Kiang, and Hwang-Ho, Wei Valley of Shensi, The Central Hupei Basin. North China Plain, Yangtze Delta, Kiangsu Coast, South Central Szechwan Basin. China's cotton industry employs 10 million people and in the 24 provinces that produce the plant, 300 million are involved in its production. China grows Bt cotton, a genetically modified crop that is used for commercial production. The crop was introduced in 2002 and has proved to have better pest resistance than non-GM cotton.

2. India

Cotton Industry in India is Huge and it recognized as the birthplace of cotton industry for over 3000 years, it is also named for Finest and Beautiful cotton fabrics. India has first place in cotton cultivated area and second in production in the world after China. The total cotton production is around 27.0 million bales per year. Each year, India produces an average of 5,770 thousand metric tonnes of cotton making it the world's highest producer. Cotton has been used in India for thousands of years and early origins of its use have been traced back to the Indus Valley civilization that lived in the northwestern regions of South Asia. Thanks to its favorable climate, the majority of India's cotton is produced in the zone that covers Maharashtra, Gujarat and Madhya Pradesh.

3. USA

USA is the largest country and using modern way of cultivation in hundreds of hectares, it is also imports cottons from major cotton producing countries. American farmers are cultivating cotton in the modern view with the machinery. The Production of cotton is about 18.0 million bales per year. The USA ranks second in Cotton Producing Countries in the world. Till 1980 its position was at the top. The U.S.A. exports about 40% of output.The southwest of Mississippi river enjoys the supremacy in cultivation. The US cotton belt stretches from northern Florida to North Carolina and westward of California. The states of Texas, Georgia, California, Mississippi, Arkansas, Louisiana, North Carolina, Alabama, Oklahoma, and the Salt River Valley in Arizona are leading cultivation states.The U.S.A. produces above 12 million metric tons seed cotton, while area harvested was 4.3 million hectares. The US accounts for 20% of global output.

4. Pakistan

Pakistan is the 4th largest producer of cotton in the world, also one of the largest exporter and consumer. The Production done by small farmers, over 1.4 million farmers depending on cotton as their income and cultivating in over 3 million hectares of land. Pakistan produces about 10.3 million bales of cotton per year. The cultivation of cotton occurs along the Indus River; it is estimated that 97% of the river's water goes towards producing crops, including cotton. Genetically modified cotton currently accounts for more than 95 percent of the area under cotton cultivation. In Pakistan, there are approximately 1.7 million people involved in the growing of cotton.

5. Brazil

Brazil is the huge exporter of Agriculture Productions and Cotton is one of the largest cultivating Crops in the Country with Production of 9.3 million bales per year. In the continent of South America, Brazil is the most important. Today, in the southeast Sao Paulo, is the most valuable cotton producing

region. Potentially, Brazil is capable of competing for first place in the world. Brazil produced 3.9 million metric tons seed cotton and area harvested was 1.1 million hectares.

6. Uzbekistan

Europe is the major buyer for Uzbekistan, also the third largest exporter in the world, Uzbekistan most of the cotton production done by the small farmers and organically. The production is about 4.6 million bales of cotton per year. Due to the continental climate, almost every field requires irrigation. Uzbekistan has developed an excellent irrigation system. Uzbekistan exports of lint is renowned in the world.

7. Australia

Australia farmers were within the world's first to see the possible bioengineering. Australia has best GDP and the farmers using modern technology to cultivate Cotton. The Production is about 4.2 million bales of cotton per year.

8. Turkey

Turkish cotton industry has made way to development of local improvements, infrastructure and founded hundreds of textile firm. It exports quality cottons and the Production is about 2.8 million bales of cotton per year. During the last two decades, Turkey has become an outstanding nation in cotton production in the world. Today, it is the 7th largest seed cotton producer in the world. Turkish cotton demand is also increasing.The Mediterranean climate is most suitable, therefore Adana, Azmir and Central Anatolian plateau regions are the main producers in Turkey.Turkey cotton production crosses 2.5+ million metric tons of cotton and area under crop 735 thousand hectares.

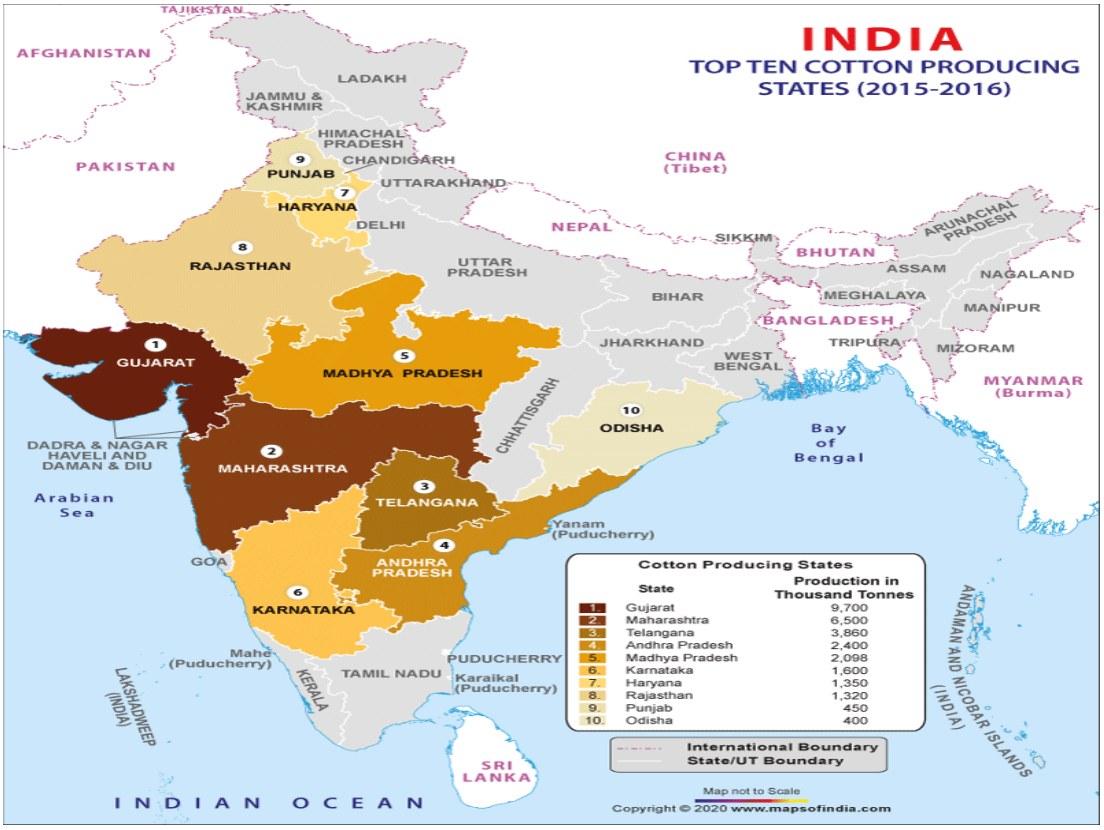
9. Turkmenstan

In the Central Asian region, after Uzbekistan, another important cotton producer is Turkmenistan. It ranks at number 10 in Cotton Producing Countries. Due to continental climatic conditions, cultivation is not possible without irrigation. But Turkmenistan has developed an excellent irrigation system.Burkina Faso, Australia, Egypt, Nigeria, Mexico, Kazakhstan, Argentina, Benin, Cameroon, Cote-d-Ivoire, Iran, Kazakhstan, Mali, Paraguay, Tajikistan, Uganda and Zimbabwe are important.Turkmenistan cotton production is more than 0.94 million metric tons, while the area under crop is 642 thousand hectares.

10. Greece

Cotton cultivation has deep tradition in Greece, it exports cotton and production of cotton to the other countries. The land in Greece is suitable for cotton cultivation, and the farmers using modern technology to cultivate cotton, the production of cotton is about 1.4 million bales per year. Greece has emerged on important cotton producer and is an outstanding cotton producing country in the continent of Europe.More than 75% land surface of Greece is occupied by Massif Mountains; therefore small river basins are available for cultivation. On the other hand, the Mediterranean dry climate is most suitable. River Axios basin is most important for cotton crop cultivation.Greece produced more than one million metric tons of seed cotton, this production was harvested from 300 thousand hectares.

5.Production - States and districts in India (Top10)



Production & Consumption: India is the country to grow all four species of cultivated cotton Gossypiumarboreum and herbaceum (Asian cotton), G.barbadense (Egyptian cotton) and G. hirsutum (American Upland cotton). Gossypiumhirsutum represents 88% of the hybrid cotton production in India and all the current Bt cotton hybrids are G.hirsutuim. In India, majority of the cotton production comes from nine major cotton growing states, which are grouped into three diverse agro-ecological zones, as under:-

i) Northern Zone - Punjab, Haryana and Rajasthan

ii) Central Zone - Gujarat, Maharashtra and Madhya Pradesh

iii) Southern Zone - Telangana, Andhra Pradesh and Karnataka.

Cotton is also grown in the States of Tamil Nadu and Odisha. Cotton cultivation has also gained momentum in small areas of non-traditional States such as Uttar Pradesh, West Bengal, Tripura, etc. India is the largest producer of cotton in the World. India is also leading consumer of cotton. The details of production and consumption of cotton during the last 10 years is given below:-(In lakh bales of 170 Kg each)

Year	Production	Consumption
2009-10	305	259.00
2010-11	339	259.61
2011-12	367	375.28

2012-13	370	283.16
2013-14	398	299.55
2014-15	386	309.44
2015-16	332	315.28
2016-17	345	310.41
2017-18	370	319.06
2018-19	337	311.50

The details of state-wise area, production and yield is given below:-

	Area (In Lakh hectare)		**Production** (In Lakh bales)		**Yield** (In Kgs/hectare)	
State	**2017-18**	**2018-19**	**2017-18**	**2018-19**	**2017-18**	**2018-19**
Punjab	2.91	2.68	11.76	11.50	687.01	729.48
Haryana	6.65	7.08	21.48	23.00	549.11	552.26
Rajasthan	5.84	6.29	23.26	25.00	677.09	675.68
Gujarat	26.24	26.59	103.84	87.00	672.74	556.22
Maharashtra	43.51	42.54	83.35	77.00	325.66	307.71
Madhya Pradesh	6.03	6.14	22.14	24.00	624.18	664.50
Telangana	18.97	18.27	54.44	47.00	487.87	437.33
Andhra Pradesh	6.46	6.21	21.26	15.00	559.47	410.63
Karnataka	5.47	6.88	17.32	15.00	538.28	370.64
Tamil Nadu	1.83	1.31	5.50	6.00	510.93	778.63
Odisha	1.45	1.58	3.65	4.50	427.93	484.18
Others	0.50	0.50	2.00	2.00	680.00	680.00
All-India	**125.86**	**126.07**	**370.00**	**337.00**	**499.76**	**454.43**

States with their major cotton producing Districts

States	**Major cotton Producing Districts**
1.Gujrat	Bharuch, Vadodara, Panchmahal, Mehsana, Ahmedabad, Surendranagar
2.Maharashtra	Yavatmal, Marathwada, Khandesh, Amravati, Akola,Wardha.

3.AndraPradesh+Telangana	Guntur, Kurnool, Anantpur, Prakasam
4.Haryana	Hisar,Sirsa,Jind,,Rothak,Biwani
5.Rajasthan	Ganganagar, Bhilwara, Hanumangarh, Ajmer,Jhalawar
6.Karnataka	Gulbarga, Dharwad, Belgaum, and Bellary
7. Madhya Pradesh	Nimar, Ratlam, Shajapur, Bhopal ,Dewas
8. Punjab	Bhatinda, Ludhiana, Sangrur, Moga, Faridkot, Mansa
9.Tamil Nadu	Coimbatore, Vallalur, Madurai, Ramnathapuram, Salem and Tiruchirapalli
10.Orissa	Rayagada, Bolangir, Kalahandi, Nabarangpur, and Nuapara

Gujarat is the leading cotton producing state in India with a production of 125 Lakh Bales. Gujarat account for more than 31% of the total cotton production in the country and cotton is grown in more than 30 Lakh Hectares of land.The presence of Black Soil and an annual rainfall of 80-100 cm, makes Gujarat a favorable region for cotton production.

Due to the huge production of cotton, Gujarat is a centre of textile industries in the country. There are more than 100 textile companies in Gujarat and some of the major textile companies are Arvind Mills, Ashima Group and Raymond.

6.Framwork of Cotton - forward/backword /lateral linkages

Backward Linkage:'

Farmer producer organizations,Self help Groups

insecticides, fungicides, and herbicides

Ginning machine

Power looms for weaving, Knitting machine, Tufting machine, weaving mill,Electricity,Transportation

Hybrid cotton seeds

Fertilizers

Spinning mill

Chemicals(sodium hydroxide for scoring,Hydrogen peroxide purifying etc)

insecticides, fungicides, and herbicides

Forward Linkage:

clothing from jackets ,denim to normal shirts.

bedsheets and curtains.

seed oil for food and cosmetics.

coffee filters.

First aid and Pharmaceutical companies

7. Varieties of Cotton grown in India

There are four cultivated species of cotton viz. Gossypium arboreum, G.herbaceum, G.hirsutum and G.barbadense. The first two species are diploid (2n=26) and are native to old world. They are also known as Asiatic cottons because they are grown in Asia. The last two species are tetraploid (2n=52) and are also referred to as New World Cottons. G.hirsutum is also known as American cotton or upland cotton and G.barbadense as Egyptian cotton or Sea Island cotton or Peruvian Cotton or Tanguish Cotton or quality cotton.G.hirsutum is the predominant species which alone contributes about 90% to the global production. , India is the only country in the world where all the four cultivated species are grown on commercial scale. In India, 45%, 30% and 24.7% area is covered by hybrids, upland cotton and diploid species respectively. G.barbadense is grown on a very little area (0.3%) in the state of Tamil Nadu and Andhra Pradesh. G.herbaceum is limited to the states of Gujarat and Karnataka. G.hirsutum and G.arboreum are grown in all the major cotton growing states in India.**Names of Some Popular Hybrid Varieties of Cotton**:Assam Comilla, Bengal Desi, Jayadhar, Marathwada & Khandesh , Jhurar, Bunny Brahma, Brahma, Bunny, Suvin.Due to the Sweeping changes in Textile Machinery and modern processing systems with automatic controls, and increase in speed of spindles (RPM),demand cottons with the following attributes are favoured

• Highly clean, contaminant-free cotton

• Stronger and mature fibres for a given length

• Low variability in fibre attributes from bale to bale

• Lower short fibre content

• Higher fibre elongation

• Lower fibre neps and seed coat fragments

• Lower organic trash and microdust

• Higher amenability to cleaning

Three broad types of cotton are generally recognised on the basis of the length, strength and structure of its fibre. A cotton staple is a length of cotton fibre.

1. Long staple cotton:

Long staple cotton is derived from the Gossypium barbadense species of cotton, which yields cotton with unusually long, silky fibres.This species is responsible for well know cotton types such as Egyptian cotton, Pima, Supima and Giza 45.It has the longest fibre whose length varies from 24 to 27 mm. The fibre is long, fine and shining. It is used for making fine and superior quality cloth. It fetches the best price. There has been rapid progress in the production of long staple cotton since Independence. About half of the total cotton produced in India is a long staple. It is largely grown in Punjab, Haryana, Maharashtra, Tamil Nadu, Madhya Pradesh, Gujarat and Andhra Pradesh.

2. Medium staple cotton:

The length of its fibre is between 20 mm and 24 mm. About 44 per cent of the total cotton production in India is of medium staple. Rajasthan, Punjab, Tamil Nadu, Madhya Pradesh, Uttar Pradesh, Karnataka and Maharashtra are its main producers.

3. Short staple cotton:

This is inferior cotton with fibre less than 20 mm long.The most common short staple cotton is known as **Upland cotton**. Upland is primarily used to make denim jeans and flannel clothing thanks to its soft, strong, and low maintenance fibers. It's an American classic, comprising 95% of the cotton grown

in the US.In India,it is used for manufacturing inferior cloth and fetches less price. About 6 per cent of the total production is of short staple cotton. U.P., Andhra Pradesh, Rajasthan, Haryana and Punjab are its main producers.

8. Domestic Consumption-qty and Value

Cotton Consumption by Organized Sector Textile Mills (Non-SSI Mills) and Small Scale Spinning Mills (SSI) Units

Qty.in Lakh Bales

Year	Non-SSI mills		SSI mills	
	Avg Consumption			
	Cotton Consumption	Monthly Consumption	Cotton Consumption	Monthly Consumption
2000-01	149.36	12.45	10.97	0.91
2001-02	147.00	12.25	11.70	0.98
2002-03	142.42	11.87	11.63	0.97
2003-04	150.39	12.53	13.00	1.08
2004-05	163.98	13.67	16.57	1.58
2005-06	180.00	15.00	19.00	1.67
2006-07	194.89	16.24	21.26	1.32
2007-08	195.67	16.31	22.08	1.59
2008-09	190.00	15.83	20.00	1.58
2009-10	219.00	18.25	23.00	1.92
2010-11	221.77	18.48	24.46	2.04
2011-12	223.59	18.63	22.12	1.84
2012-13	251.74	20.97	23.59	1.97
2013-14	268.03	22.34	25.20	2.10
2014-15	278.06	23.17	26.38	2.20
2015-16	270.20	22.50	27.08	2.26

2016-17	262.70	22.00	26.21	2.18
2017-18	280.11	23.33	26.18	2.18
2018-19(P)*	274.50	22.88	25.00	2.08
2019-20(P)*	288.00	24.00	25.00	2.08

9. Exports- Quantity and Value

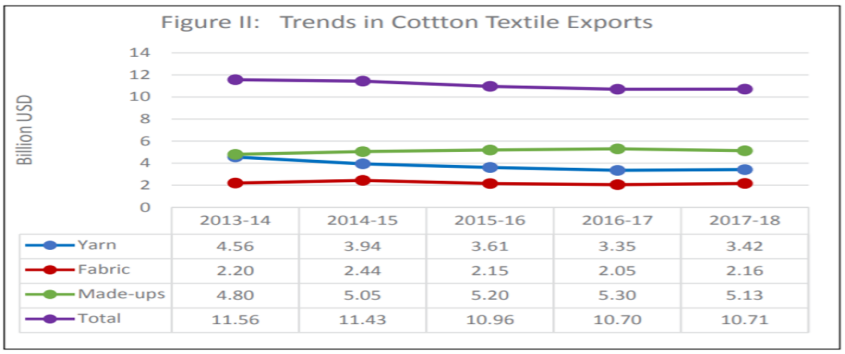
(in lakh bales of 170 Kg each)

Year	Export
2009-10	83.00
2010-11	76.50
2011-12	129.57
2012-13	101.43
2013-14	116.96
2014-15	57.72
2015-16	69.07
2016-17	58.21
2017-18	67.59
2018-19	50.00

Export Highlights

- Cotton yarn and fabrics exports accounts for about 23 per cent of India's total textiles and apparel exports.
- In 2018-19, India's cotton production was 28.70 million bales of 170 Kg each.
- During 2018-19, total textile and clothing exports stood at US$ 36.62 billion.
- During 2018-19 exports of cotton yarn, cotton fabrics and cotton made-ups reached to US$ US$ 3.90 billion and US$ 5.95 billion, respectively.
- During 2019–20, export of cotton yarn, cotton fabrics, cotton made-ups and handloom products reached US$ 10.01 billion.
- The total cotton yarn/ fabs /made-ups, handloom products and other export accounted for US$ 3,088.32 million from April to August 2020 and for August 2020 it was US$ 828.63 million**.
- Various reputed foreign retailers and brands like Carrefour, Gap, H&M, JC Penney, Levi Strauss, Macy's, Marks & Spencer, Metro Group, Nike, Reebok, Tommy Hilfiger and Walmart import Indian textile products.

EXPORTS OF COTTON TEXTILES



	2013-14	2014-15	2015-16	2016-17	2017-18
Yarn	4.56	3.94	3.61	3.35	3.42
Fabric	2.20	2.44	2.15	2.05	2.16
Made-ups	4.80	5.05	5.20	5.30	5.13
Total	11.56	11.43	10.96	10.70	10.71

10.Major production organisations-address /email/mob/.websites

Trelleborg Engineered Coated Fabrics is a manufacturer of engineered coated fabrics including cotton fabric. The coatings include acrylic, ethylene acrylic, urethane, polyethylene, chloroprene, and ethylene-propylene terpolymer. They are headquartered in Rutherfordton, North Carolina, and were founded in 1905.

Fabrico is headquartered in Rochester, New York. Founded in 1977, the company custom manufactures converted coated protective fabrics for the medical market. The materials they work with include cotton, aramid mat, and silicone-coated fabrics.

Testfabrics, Inc. was founded in 1952. The company manufacture cloths, dyes, and chemicals for the industrial and commercial sectors, including cotton, and is based in West Pittston, Pennsylvania.

Xamax Industries, Inc. is a manufacturer, convertor and distributor of non-woven fabrics, technical papers, films, and laminates. This cotton fabric manufacturer is headquartered in Seymour, Connecticut, and was founded in 1949.

Top Value Fabrics is based in Carmel, Indiana. Founded in 1974, the company manufactures and distributes cotton fabric or canvas products.

American Cord & Webbing Co., Inc. was founded in 1918. They manufacture standard and custom cotton fabrics. Headquartered in Woonsocket, Rhode Island, they serve the apparel, sporting goods, outdoor, industrial fabric and travel ware markets.

Carr Textile manufactures cotton twill fabrics, along with other types of fabrics such as polyester and nylon. The company is headquartered in Fenton, Missouri, and was founded in 1972.

Wearbest Sil-Tex Mills is based in Garfield, New Jersey. The company manufactures cotton fabrics such as mercerized cotton fabrics. They were founded in 1940.

Caroline Glove Co. was founded in 1946. Headquartered in Conover, North Carolina, they manufacture cotton knit and woven fabrics. They offer custom napping, flame retardant treatment, pad dyeing, sanitizing, softening and stiffening services.

Green Textile Associates, Inc. manufactures circular and warp knitted fabrics custom and stocked fabrics for applications such as automotive, industrial, medical, consumer products, and apparel. They were founded in 1938 and are based in Spartanburg, South Carolina.

HP cotton:HP Threads is a popular brand of products from HP Cotton Textile Mills Limited, one of largest exporters of cotton specialty yarns and cotton sewing threads from India.
https://www.hpthreads.com/

Jindal Cotex

It was year 1998, when the group forayed into Textile business under the name "J C L" for spinning Cotton and synthetic fibres, with a capacity of 7000 spindles. Today, Jindal group owns 45000 spindles, manufacturing Polyester Spun yarns for hosiery Industry, SHT (super high tenacity) sewing threads for tailoring and venturing soon into knitted - dyed - processedFabrics.

https://www.jindalcotex.com/

11. Major Domestic sales organisations in India

1. Arvind Ltd:

Arvind Limited (formerly Arvind Mills) is a textile manufacturer and the flagship company of the Lalbhai Group. Its headquarters are in Naroda, Ahmedabad, Gujarat, India, and it has units at Santej (near Kalol). The company manufactures cotton shirting, denim, knits and bottomweight (khaki) fabrics. It has also recently ventured into technical textiles when it started Advanced Materials Division in 2011.It is India's largest denim manufacturer.Sanjaybhai Lalbhai is the current Chairman and Managing Director of Arvind and Lalbhai Group. In the early 1980s, he led the 'Reno-vision' whereby the company brought denim into the domestic market, thus starting the jeans revolution in India.Today it retails its own brands like Flying Machine, Newport and Excalibur and licensed international brands like Arrow, Tommy Hilfiger, and Calvin Klein through its nationwide retail network. Arvind also runs three clothing and accessories retail chains, the Arvind Store, Unlimited and Megamart, which stocks company brands.

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+91 79 682 68000, https://www.arvind.com/

2.Vardhman Textiles

Vardhman Textiles Limited is an integrated textile manufacturer. The company is engaged in the manufacturing of cotton yarn, synthetic yarn, woven fabric, sewing thread, acrylic fibre, tow and garments. The company's segments include textiles and fibre. The company is a piece dyed fabric manufacturer, and cotton yarn manufacturer and exporter. It offers the range of specialized greige and dyed yarns in cotton, polyester, acrylic and a range of blends. The company also manufactures products, such as organic cotton, melange, core spun yarns, ultra yarns (contamination controlled), gassed mercerised, super fine yarns, slub and cellulose yarns and fancy yarns for hand knitting. The company has approximately 1.1 million spindles and a capacity to manufacture over 580 metric ton (MT) of yarn per day. The company has manufacturing facilities located in Punjab, Himachal Pradesh and Madhya Pradesh. The company markets its products in the European Union, the United States and the far East.

Chandigarh Road,Ludhiana,Punjab-141010, India.

Tel: +91-161-2228943-48 ; Email: mngt@vardhman.com, https://www.vardhman.com/

3.Welspun India Ltd

Welspun India is the third Largest Textile Companies in India in terms of sales. Part of USD 2.7 billion Welspun Group, Welspun India Ltd. is a global leader in home textiles, supplying to 17 of the top 30 global retailers. The Companies manufacturing facilities, located in India, are equipped to deliver high-quality products, benchmarked to international standards.

6th Floor, Kamala Mills Compound, Senapati Bapat Marg, Lower Parel, Mumbai 400 013, India

+91 22 6613 6000 / 24908000,+91 22 2490 8020, https://welspunindia.com/

contact@welspun.com

4.Raymond Ltd

Raymond Ltd is largest integrated manufacturer of fabric in the world based in Mumbai, Maharashtra.It has over 60% market share in suiting in India. It is also India's biggest woollen fabrics maker.Textile division of the company has a distribution network of more than 4,000 multi-brand outlets and over 637 exclusive retail shops in the domestic market itself.Suitings are available in India in over 400 towns through 30,000 retailers and an exclusive chain is present in over 150 cities across India. Its products exports to over 55 countries including US, Canada, Europe, Japan and the Middle East. It has more than 20,000 design and colours of suiting fabric which makes it one of largest collection of designs and colours by single company.It was listed as India's most trusted apparel brand by The Brand Trust Report in 2015.

Raymond Limited, New Hind House, Narottam Morarjee Marg, Ballard Estate, Mumbai – 400 001

https://www.raymond.in/

5. Trident Ltd

Trident Limited is the flagship company of the US$ 1 billion Indian business conglomerate and global player, Trident Group, headquartered in Ludhiana. Beginning humbly in the year 1990, Trident has evolved over the years into one of the world’s largest integrated home textile manufacturer under the visionary leadership of its founder and Group Chairman Mr Rajinder Gupta.

E-212, Kitchlu Nagar, Ludhiana, Punjab, 141001, India

Telephones: +91 161-5039999

Fax: +91-161-5039900, https://www.tridentindia.com/

6.Bombay Dyeing and Manufacturing Company Ltd

It is one of the Top 10 Textile Companies in India. Bombay Dyeing & Manufacturing Company Ltd was started in the year 1879 and it is headquartered in Mumbai,India. The company’s primary business is Polyster Staple Fibre and Retail- Textile. The company is known for its revolutionary designs and high quality products.

Neville House,J.N. Heredia Marg,Ballard Estate,Mumbai-400 038, India.

(91)-(022)-6662 0000, https://bombaydyeing.com/

12. Major Export Organisations in india address/email/mob/website

1) Vardhaman Textiles

It is a leading manufacturer of cotton yarn, fiber, sewing thread, and fabrics. It exports to US, Japan, South-Asian countries, Spain, Germany, UK, and some countries of Africa. As per an estimation, the company export one-third of its total yarn production to other countries.

2) International Lace Trade Center

It is an initiative of the Export Promotion Council for Handicrafts and has the support of the Ministry of Textiles, Govt. of India. It is estimated that the center will soon export a whopping 500 crore worth of lace products in the next five years.

3) Arvind Mills

The company based in Ahmedabad is the largest manufacturer of denim and one of the leading exporters of the same. It exports shirts and denim jeans. Countless international brands like Arrow, Lee, Tommy Hilfiger, and much more use export products of Arvind Mills because of superior quality and competitive pricing.

4) **Nagreeka Export**

Nagreeka embarked on its journey in 1953 with modest trading operations under Mr. I. L. Patwari and his family. Following nearly six decades of experience; the company built a reputation in over 40 countries and emerged as a leading manufacturer and exporter of yarns, textiles, cotton and aluminium products.

https://nagreeka.com/

5) **Amit cotton Industries**

Amit Cotton Industries is the manufacturer of raw cotton since 1997. They are exporter, stockiest and distributors of raw cotton and cotton yarn from various growths like USA, West Africa, CIS, Greece, Syria, India & Brazil. We have achieved new dimensions in the Global market of Cotton within a short span of time.

https://www.amitcotton.com/

6) Gp Group India

https://www.gpgroupindia.com/products.html

7) Sri Bhagirath Textiles Ltd.

Sri Bhagirath Textiles is an ISO 9001:2008 company, engaged in the manufacturing and supply of synthetic and cotton yarn. The company was established in the year 1996 with the setting up of a spinning unit of 12,768 spindles at Mohali village in Nagpur. The same was expanded by the setting up of an open end unit with 220 rotors in 2006. The diverse manufacturing set up of the company allows it to have both open end and ring spun yarns, making it a one-stop-shop for textile products. State-of-the-art manufacturing facility, diligent team of professionals, commitment to cost-efficiency and timely delivery have helped the company create a niche for itself and develop a wide client base in a highly competitive market. https://www.yarnexporter.in/

8) Fazthree

Faze Three Limited est. 1982 is today a well known Home Textile manufacturer and Automotive fabric manufacturers in India . In the last 38 years it has built clientele of over 50 major retailers globally

spread over 15 countries. They are also India's leading automotive seat fabric manufacturer & supplier.

https://www.fazethree.com/

13. Major importing countries of Indian produce of the Cotton

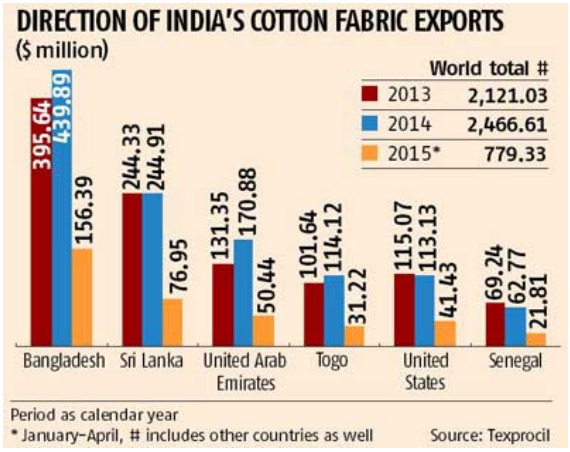
Textile Industry is providing one of the most basic needs of people and the holds importance; maintaining sustained growth for improving quality of life. It has a unique position as a self-reliant industry, from the production of raw materials to the delivery of finished products, with substantial value-addition at each stage of processing; it is a major contribution to the country's economy.Its vast potential for creation of employment opportunities in the agricultural, industrial, organized and decentralized sectors & rural and urban areas, particularly for women and the disadvantaged is noteworthy.The main markets for Indian textiles and apparels are USA, UAE, UK, Germany, France, Italy, Russia, Canada, Bangladesh and Japan.Presently, Cotton is a freely exportable commodity from India. India exports Cotton to Bangladesh, China, Vietnam, Pakistan, Indonesia, Taiwan, Thailand etc.

Even though China was the largest importer of Indian cotton fibre till 2013-14, it became the third largest importer of Indian Cotton fibre in 2015-16 after Pakistan and Bangladesh.

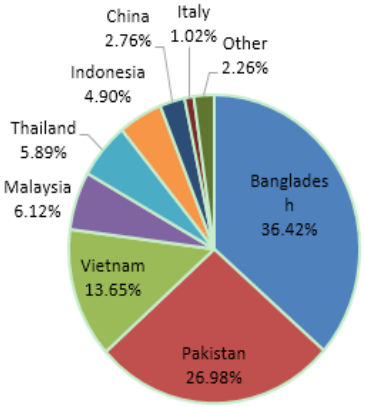
Cotton plays an important role in the Indian economy as the country's textile industry is predominantly cotton based.

India is one of the largest producers as well as exporters of cotton yarn. The Indian textile industry contributes around 5 per cent to country's gross domestic product (GDP), 14 per cent to industrial production and 11 per cent to total exports earnings. The industry is also the second-largest employer in the country after agriculture, providing employment to over 51 million people directly and 68 million people indirectly, including unskilled women. The textile industry is also expected to reach US$ 223 billion by the year 2021.

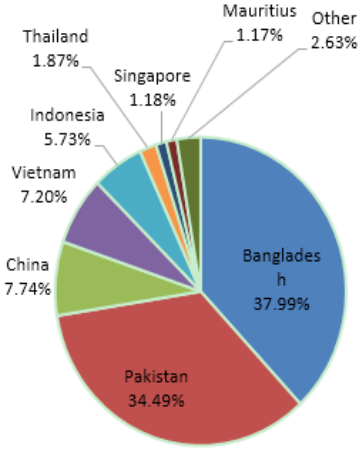
Exports in the textiles and apparel industry are expected to reach $300 bn by 2024-25 resulting in a tripling of Indian market share from 5% to 15%



Export destinations in Feb, 2018



Feb, 2017



Source: CCFGroup

14.Network of origin countries and importing countries other than India of Cotton

Global purchases of imported cotton in 2019 totalled US$49.5 billion. Overall, the value of cotton imported into all importing countries dropped by an average -1.4% since 2015 when cotton purchases were valued at $50.2 billion. In contrast, global cotton imports decelerated by -6.8% from 2018 to 2019.

From a continental perspective, Asian countries bought over two-thirds (67.7%) of worldwide cotton imports. Smaller percentages of the global total were imported into Europe (14.3%), Africa (7.9%), Latin America (6.2%) excluding Mexico but including the Caribbean, North America (3.7%) and Oceania (0.2%) mainly Australia and New Zealand.Below are the 15 countries that purchased the highest dollar value worth of imported cotton during 2019.

1. China: US$9.2 billion (18.6% of total imported cotton)
2. Bangladesh: $5.4 billion (10.9%)
3. Vietnam: $4.7 billion (9.4%)
4. Turkey: $2.6 billion (5.3%)
5. Indonesia: $1.8 billion (3.5%)
6. Pakistan: $1.7 billion (3.3%)
7. India: $1.3 billion (2.6%)
8. Italy: $1.1 billion (2.1%)
9. Hong Kong: $1 billion (2.1%)
10. South Korea: $1 billion (2%)
11. Germany: $866.6 million (1.7%)
12. United States: $863.3 million (1.7%)
13. Mexico: $855.4 million (1.7%)
14. Honduras: $835 million (1.7%)
15. Thailand: $726.2 million (1.5%)

Among the above countries, the fastest-growing markets for cotton since 2015 were: Honduras (up 12,484%), Pakistan (up 150%), India (up 113.7%) and Vietnam (up 37.6%).Those countries that posted declines in their imported cotton purchases were led by: Hong Kong (down -52.3%), South Korea (down -25.5%), Bangladesh (down -24.2%) and United States (down -21.8%).

Between 2017 and 2018, the fastest growing importers of Raw Cotton were Pakistan ($531M), Vietnam ($471M), China ($443M), Bangladesh ($315M), and Singapore ($188M).

In 2018, the top importers of Raw Cotton were China ($2.49B), Vietnam ($2.46B), Bangladesh ($1.93B), Pakistan ($1.35B), and Turkey ($1.28B).

Tariffs are used to restrict imports by increasing the price of goods and services purchased from another country, making them less attractive to domestic consumers. There are two types of tariffs: A specific tariff is levied as a fixed fee based on the type of item, such as a $1,000 tariff on a car. An ad-valorem tariff is levied based on the item's value, such as 10% of the value of the

vehicle.Governments impose tariffs to raise revenue, protect domestic industries, or exert political leverage over another country.Tariffs often result in unwanted side effects, such as higher consumer prices.Tariffs have a long and contentious history, and the debate over whether they represent good or bad policy rages on to this day.

In 2018, the average tariff for importing Raw Cotton was 2.01%. The countries with the highest tariffs for importing Raw Cotton were Bahamas (40.2%), Yemen (23%), Haiti (15%), Maldives (14.6%), and Zambia (13.6%).

Analysis of cotton export and import

https://oec.world/en/profile/country/uzb

Imports (Quantity in Million Metric Tonnes)

	2015-16	2016-17	2017-18 (Estimate)	2018-19 (Estimate)	2019-20 (Proj)
World Total	**7.58**	**8.08**	**9.01**	**9.40**	**9.56**
Bangladesh	1.38	1.41	1.67	1.65	1.82
Vietnam	1.00	1.20	1.57	1.58	1.69
China	0.96	1.10	1.32	1.94	2.07
Turkey	0.92	0.80	0.88	0.68	0.58
Indonesia	0.64	0.74	0.76	0.81	0.88

15.Apex bodies /Associationsof this Agric commodity in the world and in India

1.Committee for International Co-operation between Cotton Associations (CICCA) (www.cicca.info).

Seventeen of the largest cotton associations with similar objectives comprise the Committee for International Co-operation between Cotton Associations, which was established in 1976. Each of the CICCA member associations acts independently, but uses CICCA as a forum for discussion and collective action when appropriate. CICCA promotes trading rules and arbitration practices of its member associations and stands for the concept of sanctity of contracts and good trading practices. CICCA objectives include assistance in ensuring that dispute resolution procedures are adhered to and any consequential awards upheld. It also publishes a directory of all firms affiliated with its member associations. Membership in the 17 CICCA member associations accounts for more than 1,000 firms associated with the cotton industry. Members of these associations handle the bulk of world cotton trade.

2. Australia: Australian Cotton Shippers Association (www.austcottonshippers.com.au)

The Australian Cotton Shippers Association was established in 1984. It comprises the 12 major merchants in Australia. The association trading rules serve to achieve the major objectives of the association, including preserving the sanctity of contracts, the integrity of the Australian trading industry, and facilitating compliance with contractual obligations and adherence to arbitration awards. The association promotes the interests of its members in overseas markets.

3.China: China Cotton Association (CCA), Beijing (www.china-cotton.org)

The China Cotton Association was established by cotton farmers, cotton farmers cooperative organizations, enterprises engaged in cotton production, purchase, processing, cotton textile enterprises, cotton research institutes and other organs. It is a non-profit organization under the supervision of the Ministry of Civil Affairs and receives the professional guidance of the All-China Federation of Supply and Marketing Cooperatives. CCA aims at protecting the fundamental interests of its members and the cotton industry and at making contributions to the sound development of the Chinese cotton industry. The main functions of CCA are to provide services to its members including information and statistics, to organize personal training, technical exchanges and international cooperation, and to formulate and supervise the implementation of the rules, regulations and standards of the cotton sector.

4.India: Cotton Association of India, Mumbai (www.eica.in)

The East India Cotton Association (EICA), now known as the Cotton Association of India, was established in 1921 and has about 400 members including buyers, sellers, brokers, exporters, importers and other participants in the cotton market. EICA bylaws provide trading rules for spot and forward sales of cotton. EICA is managed by the Board of Directors through various subcommittees. There are 18 regional associations and 10 marketing societies registered under it. The Rules of EICA provide mechanisms for arbitration and settlement of disputes. EICA has a panel of sworn surveyors, an umpire and a provision for appeal. One of the major functions of the association is to prepare and maintain grade and staple standards of all varieties grown in India. The association has a laboratory for fibre quality evaluation and conducts HVI cotton fibre testing. The Daily Rates Committee fixes and releases daily prices for various descriptions and staples and grades. EICA publishes other market data in its weekly bulletin. The bulk of cotton traded in India is regulated by the rules of the EICA Non-Transferable Specific Delivery Contract.

5.United Kingdom: The International Cotton Association Limited (ICA), Liverpool (www.ica-ltd.org)

The origins of the International Cotton Association date back to 1841 when cotton brokers in Liverpool formed an association and drew up a set of trading rules. In 1882, merchants joined brokers and formed a new association named the Liverpool Cotton Association. To reflect the membership base and the mature of the association's business activities, the association was renamed the International Cotton Association on 9 December 2004. The membership of ICA includes buyers and sellers of cotton, international merchants, government marketing organizations, spinners, banks, cotton controllers and others involved in the cotton business.ICA Bylaws and Rules are widely accepted and cover all aspects of international trade. Membership in ICA is in excess of 300 registered firms in over 60 countries worldwide. It is estimated that over 60% of the world's cotton trade is bought and sold under ICA Bylaws and Rules. ICA provides a well-established two-tier arbitration system for both quality and technical (non-quality) disputes. Contracts written under ICA Rules are subject to the laws of England, but arbitration awards can be legally enforced in most cotton trading countries. If a firm refuses to abide by arbitration or appeals a decision, that firm is included on a default list, which is distributed worldwide. The ICA provides training on international trade in cotton at an annual marketing seminar in Liverpool and seminars in other countries. The ICA annual dinner is one of the major world cotton events and is usually attended by hundreds of members and guests of the Association.

6.United States: American Cotton Shippers Association (ACSA), Memphis, Tennessee (www.acsa-cotton.org)

Established in 1924, the American Cotton Shippers Association is the national trade association in the United States of cotton merchants, cotton shippers and exporters of raw cotton, primary buyers, mill service agents, and of firms allied with these services. Its membership comprises four federated associations: Atlantic Cotton Association; Southern Cotton Association; Texas Cotton Association; and Western Cotton Shippers Association. ACSA has about 150 member firms, which handle an estimated 80% of the cotton sold to domestic mills in the United States and overseas. The association takes an active part in promoting the increased use of United States cotton in the United States and throughout the world, establishing with other cotton trade organizations national and international standards for trade, collaboration with producer organizations throughout the cotton belt in formulation farm programmes and cooperating with government agencies in the administration of such programmes. The ACSA International Cotton Institute is an eight-week residential programme designed to provide a basic education in all aspects of the cotton industry.

7.Japan: Japan Cotton Traders Association (JCTA), Osaka

The Japan Cotton Traders Association was founded during the 1950s. It is composed of about 80 Japanese cotton importers, domestic raw cotton traders and firms engaged in related businesses, such as shipping agents, transportation and warehousing, banks and insurance. Members of the association handle the bulk of cotton imports in Japan and imports by Japanese-owned spinning mills in other Asian countries. The major objective of the association is to strive for the sound development of cotton imports and domestic trade, trying to improve the basic terms and conditions for trade. The association is entitled to settle any claim or dispute that may arise in connection with the import and domestic trade of cotton. JCTA makes recommendations to the Government and its agencies, and cooperates with other international associations and organizations on issues related to cotton trade. JCTA conducts research and collects statistics related to cotton and issues a number of publications, including a statistical yearbook.

Other such associations of other countries can be found on:

http://www.cottonguide.org/cotton-guide/international-cotton-associations/

16. Commodity Exchanges of Cotton in the world and India

1) **New York Board of Trade (NYBOT) – New York** now known as the **Intercontinental Exchange (ICE).** (https://www.theice.com/futures-us)

2) **Zhengzhou Commodity Exchange – ZCE(China)** (http://english.czce.com.cn/):ZCE specializes in agricultural and chemical product futures, including hard white wheat, strong gluten wheat, sugar, cotton, rapeseed oil and PTA, a petroleum-based chemical product.

3) **Bolsa de Mercadorias e Futuros – BM&F(Brazil) :**The B3 S.A. - Brasil, Bolsa, Balcão (in English, B3 - Brazil Stock Exchange and Over-the-Counter Market), formerly BM&FBOVESPA, is a stock exchange located in São Paulo, Brazil, and the second oldest of the country. (https://www.cmegroup.com/international/partnership-resources/bmfbovespa-resources.html)

4) **National Commodity & Derivatives Exchange(India)** (www.ncdex.com)

5) **Multi Commodity Exchange (MCX) (India)** (https://www.mcxindia.com/)

Cotton Trading centres in India are:

Akola (Maharashtra),Parbhani (Maharashtra),Nagpur (Maharashtra),Yeotmal (Maharashtra),Adilabad (Andhra Pradesh),Karimnagar (Andhra Pradesh),Dhule (Maharashtra),Surendranagar (Gujrat), Bhavnagar (Gujarat), Sriganganagar (Rajasthan),Bhatinda (Punjab),Hisar (Haryana),Sirsa (Haryana),Guntur (Andhra Pradesh),Kurnool (Andhra Pradesh),Coimbatore (Tamil Nadu),Gulbarga (Karnataka),Ahmednagar (Maharashtra),Sangli (Maharashtra),Kota (Rajasthan),Mumbai (Maharashtra),Ludhiana (Punjab),Delhi,Kanpur (Uttar Pradesh),Bhilwara (Rajasthan),Ahmedabad (Gujarat),Surat (Gujarat),Indore (Madhya Pradesh),Kolkata (West Bengal),Tirupur (Tamil Nadu),Madurai (Tamil Nadu).

17. Major challenges in the Domestic trade of Cotton

India's cotton textile sector is at an important stage, given the trade situation between other major cotton producing and trading countries.

The unsettling trade situation between the United States, the world's leading cotton exporter, and China, one of the world's leading users, should place India's cotton and textile sector in a better situation. Indian currency has been weakening against the dollar, which should also benefit textile exports.

However, this positive sense is not felt by the textile industry in India.

In the year 2018, the Indian government announced a 28% increase in the minimum support price (MSP) for important crops such as cotton and paddy to help support farmers. While the farm sector support is welcomed by the agriculture, textile and allied sectors, there is some feeling within the textile sector that the farm level support should not have come through market programs. The MSP increase will likely increase the price of domestic cotton and make the raw material relatively expensive, which will impact the textile sector.

Mr. S. Velmurugan, general manager of a large cotton spinning mill in Aruppukottai, India, questions whether spinners will be in a position to absorb higher prices. His mill has about 70,000 ring spindles and produces fine count yarns catering to the home textiles sector. While the industry benefited due to its established presence as a leading yarn exporter and relatively less expensive skilled labor force, Velmurugan stated that those advantages have been slowly eroding due to countries like Vietnam, Indonesia, and others.

These current situations make it clear that the Indian cotton sector should focus on increasing its productivity, improving its quality, working on its contamination levels and diversifying its strength. Economically feasible and suitable projects that can attract both domestic and export markets are needed.

Enhancing its product offerings, strengthening its downstream processing and developing value-added textile sectors such as technical textiles could offer near- to long-term benefits for India's textile industry.

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Challenges faced by Buying Houses:

i.Stability in prices: The most significant problem faced by buying houses of yarn and fabric is the fluctuations in prices of raw cotton. It is often found that the business is controlled by a few trading houses and due to rumours of crop quality and size there are large swings in the prices. Buying houses rely on their long standing relationships with suppliers to help ease out the uncertainties with respect 87 to prices. Thus, making it difficult for new entrants to enter the market. With regard to fabric, buyers have a specific buying season and order booking happens only at specific times, but the costing exercise begins much earlier, however, mill owners are not willing to take a long term view when quoting prices to buyers and thus don't hold on to their prices for long.

ii. **Absence of versatility** in Indian Fabrics Indian producers are not versatile in creating variations in fabrics or blending of fabrics that can suit the taste and trends of the global buyers. Producers prefer to stick to producing only certain specific types of product rather than view the need to be versatile as a development strategy and an investment in the future. While the unorganised sector is prepared to comply with demands of versatile fabrics, buying houses feel that they are not dependable.

iii. **Sourcing of Traditional Fabrics** :Fabrics like Ikat, Khadi have limited number of suppliers in the organised sector. Suppliers in the unorganised sector are difficult to work with and unreliable

iv. **Sampling and Development** :Indian mills have not invested enough in sampling and those who can have a very time consuming process in bulk development and therefore, buying houses cannot match up with the lead time of buyers and as a result lose out on orders

v. **Awareness of quality issue compliances:** Sourcing of fabric from the unorganised sector comes with a risk as the producers are unaware of quality compliance issues for exports. Due to the fear of rejection of goods, buying houses avoid the unorganised sector. Therefore, there is an urgent need to impart training to production hubs in these sectors about adhering to quality compliances.

vi. **Innovation :**Indian Mill owners lack the ability to innovate unlike producers in China, Taiwan and Turkey. Indian mill owners only resort to imitating existing designs rather than bring in new innovations in design and fabrics.

vii. . **Low incentives**:The incentives offered in India are far below that offered in China, thereby making Indian products lose out on being price competitive in the global markets.

18.Major Challenges in the export trade of this commodity

List the challenges of the Indian Textile Sector –

1.The Indian Textile Sector is losing to competition because of lack of FTAs (Free Trade Agreements) with the EU and the USA.

2.The small scale of business is making it difficult for textile manufacturers to compete on cost with players from outside.

3.India is facing huge competition from other countries in Ready-made Garment (RMG) Exports, particularly cotton .And while the world of fashion is moving towards “Blends”, India is not making many blended apparel items. So on the one side our traditional items are facing competition, and on the other side we are behind in Product Diversification.

4.Textile imports from Vietnam and Bangladesh are cheaper for buyers across the world

Challenges faced by Supplier/Exporter:

i. Scale of Operations: The scale of operations is the most significant difference between China and India in virtually all segments of textiles but when it comes to cotton yarn and fabric the schism is very striking. The export data in 2016 reveals India in the leading position of global cotton yarn exports with 23% share while Vietnam (15%) and China (11%) placed at the next two positions. The top two destinations of Indian cotton yarn exports are China (31%) and Bangladesh (18%). Nevertheless, when it comes to global exports of cotton fabric, China commands a 51% share whereas India in third position has marginal share of barely 6%. This huge difference between the leading player and the second best player in cotton fabric is a massive gap of 45%. This comparison suggests that India is not able to scale up the value chain significantly enough to meet the global demand despite being the largest producer and exporter of cotton yarn. The ability to scale up requires an 89 ecosystem with good infrastructure, upgraded and updated technology, skilled manpower, and efficiency in ease of doing business.

ii. Meeting the fashion needs of global brands: Catering to the contemporary fashion needs of global brands demands the ability to blend a variety of fibres such as cotton, viscose, rayon that matches the taste and changing fashion trends in various apparels. India lacks the technology required to blend fabric as per the requirements of the buyers, and as a result the speed of innovation in designs and blended fabric is missing. Indian suppliers are thus forced to export different types of fabric separately thus making competing nations better players in developing garments that meet the global fashion needs. The need to introduce superior technology is riddled with various obstacles such as procedural hurdles during imports, taxation policies and lack of resources to invest in new technology.

iii. Logistic issues related to international trade: A textile is an ever evolving and dynamic segment that incorporates changing trends in fashion and fusion of styles in a short span of time. Supply of Indian fabric to garment producing countries is to be done rapidly due to the shrinkage in lead time of buyers coming down from 60 to 22 days. Adherence to the shrinkage in lead time demands the existence of a very seamless and supportive logistic environment. However, some of the issues faced by fabric exporters with respect to transit time is astonishing. Transit time to China is 12 days whereas it takes 21 days to reach Vietnam and Cambodia due to the absence of direct services despite the close proximity to India. Another classic example is the case of India–Dhaka and Shanghai-Dhaka shipment time. India’s transit time to Dhaka by road takes 18 days while transit time from Shanghai to Dhaka takes only 9 days by ship. Shanghai enjoys a dedicated berth facility at the Dhaka port. This is despite the fact that Bangladesh is the leading importer from India for cotton fabric (21.1%) and MMF (10.5%). The delays in shipment to countries with close proximity are due to border control issues and lack of interest in developing port related services that can enable India ship goods

to South East Asia swiftly. Thereby in turn causing delays in meeting delivery schedules of buyers in time.

Fibre producers have often found that India possess major challenges in the area of weaving and processing stage. These two stages lag behind in innovations and scalability. Government needs to ensure support services in the form of infrastructure and technology for the players in the weaving and processing stage to scale up fast and adapt to the changing trends in blending fibres to create world class fabric that is acceptable for the garment industry. Some fibre producers have overcome this challenge by researching the value chain backwards. They first approach the players in the garmenting stage to understand the changing trends in fashion that are presently being met by innovative blends in fibre to create the right kind of fabric which is required by the fashion industry. Fibre producers in turn approach the players in the weaving and processing stage to describe how innovations that result from blending a variety of fibre can result in the desired fabrics needed in the garmenting stage. Thus resulting in all players in the value chain working in a cohesive manner to meet the fashion needs of global brands.

iv. Lack of an ecosystem that promotes a domestic quality environment: The credibility of Indian testing labs providing world class quality testing and certification seems to be diminishing in the eyes of global buyers. Notwithstanding the fact that Indian agencies have proven to be on par or sometimes superior to international quality testing agencies. A primary reason for circumventing Indian testing and certification agencies is the lack of visibility and presence in global markets. Buyers prefer to use agencies that are known globally rather than a domestic agency despite the cost advantage. Another contributing factor has been an absence of promoting a domestic quality conscious environment. India needs a national level agency that can enforce regulation in quality standards, testing and certification with respect to textiles. Today complying with requirements related to quality and testing is voluntary and adherence is only at the behest of the buyer. To overcome this challenge it is important to have the last mile connect 91 with production hubs that ensure compliances with quality so that India becomes recognised for producing world class products that are demanded in world class markets.

vi. Systemic failures in transmitting of information for availing government incentives and uncertainties related to continuation/reversal of government incentive: Exporters have often faced various problems in release of government incentives like duty drawback due to the lack of transmission of information between various government agencies. As a result the hurdles encountered in availing the incentives override the benefits derived from them. Due to the untimely release of funds exporters lose interest in government schemes. The systemic failure in transmission of information about an exporter's trade within government agencies is an urgent problem to be addressed so that the purpose of government schemes are not defeated. Certain exporters have succumb to various problems due to the withdrawal of certain incentives related to focus market and focus product schemes in the textile segment. This has resulted in loss in margins and losing out on becoming price competitive. The assurance of continuation of government schemes acts as a relief to business entities whose attention can then be focused towards doing business.

vi. Stumbling blocks in archaic labour laws Outdated labour laws within the textile sector hampers India from becoming labour competitive. India is not perceived to be a low cost labour destination. Thereby, resulting in foreign buyers shifting to neighbouring destinations like Sri Lanka, Ethiopia, and Bangladesh. In certain cases manufacturers have had to put up with unproductive manpower due to the inability to combat archaic labour laws. It is strongly recommended that there should be amendment in such laws that are crucial to a labour intensive industry by making it more relevant to current market and business conditions.

19. Government incentives and policies to promote the production and exports of Cotton

i.Minimum Support Price (MSP) Operation:

Every year before the commencement of the Cotton Season (Oct. to Sept.), the Ministry of Agriculture based on the recommendations of Advisory Board viz., Commission for Agricultural Costs and Prices (CACP) fixes the MSP with a view to give incentives to the Cotton farmers of the country. Accordingly, taking into consideration of the recommendation of CACP the Ministry of Agriculture is being fixed MSP for two basic varieties of cotton viz. Medium Staple length cotton having staple length of 24.5 mm to 25.5 mm with micronaire value of 4.3 to 5.1 and long staple length having staple length of 29.5 to 30.5 mm with micronaire of 3.5 to 4.3 of new crop of seed cotton (kapas) of Fair Average Quality (FAQ). The MSP fixed by Ministry of Agriculture for the last few years is given below:-

(Rs. Per quintal)

Cotton Season	Medium Staple	Long Staple
2010-11	2500	3000
2011-12	2800	3300
2012-13	3600	3900
2013-14	3700	4000
2014-15	3750	4050
2015-16	3800	4100
2016-17	3860	4160
2017-18	4020	4320
2018-19	5150	5450
2019-20	5255	5550

ii.Use of Space Technology based tools for Cotton Crop Information System

In order to strengthen the cotton crop information system in the country, the Government has advised Indian Space Research Organisation (ISRO) to use the space technology based tool for cotton crop information system for better estimation of cotton crop both qualitatively and quantitatively. Indian Space Research Organization (ISRO) through its technology centres i.e. National Remote Sensing Centre (NRSC), Regional Remote Sensing Centre-Central along with Mahalanobis National Crop Forecasting Centre (MNCFC) and Cotton Corporation of India (CCI) under Ministry of Textile has developed a Cotton Crop Information System based on Space and Ground based information of all the cotton growing States randomly captured by CCI officials at its 300 procurement centres through mobile app developed by NRSC (ISRO). After various inputs and meetings, NRSC (ISRO) is completely prepared to assess entire cotton belt through their Cotton Crop Information System. The real time data and scientific assessment through satellite based cotton crop assessment system of ISRO will be beneficial to give impetus to present system to arrive at realistic crop conditions and assessment of cotton availability in the Country.

iii. Government's Policy on Cotton Distribution:

Ministry of Textiles endeavours to ensure adequate availability of cotton for the consumption of domestic spinning industry keeping in view accelerated investment which has gone into this sector, while the imports and exports of cotton remain free. In order to monitor this, availability and requirement of cotton for domestic consumption is assessed by the Ministry of Textiles on regular basis. The Cotton Advisory Board (CAB) assesses the production, consumption, imports and exports of cotton at regular intervals. It estimates the supply and demand of cotton in a cotton season (1st October to 30th September) and draws up the Annual Cotton Balance Sheet on the basis on the inputs received from Ministry of Agriculture, DGFT, industry association etc. This Balance Sheet defines the estimated production, consumption and carryover to the next cotton season.

iv. Scheme to promote cotton cultivation in the country

Department of Agriculture, Cooperation and Farmers Welfare is implementing Cotton Development Programme with a focus on cropping system approach under National Food Security Mission (NFSM) in 15 major cotton growing states including Maharashtra from 2014-15 with an aim for enhancing production and productivity. Under the scheme, thrust is given for transfer of latest technology to cotton growers through Front Line Demonstration (FLD) on Integrated Crop Management (ICM), Intercropping & Desi/Extra Long Staple Cotton and trials on High Density Planting System. The scheme is being implemented through State Department of Agriculture (SDA), Indian Council of Agricultural Research (ICAR) etc., From 2015-16, NFSM is being implemented on sharing basis between Government of India and States on 60:40 basis for general category states & 90:10 basis for North East & Hilly states. However, the Central Agencies are funded 100% by Government of India. Besides, States can support cotton development programme under Rashtriya Krishi VikasYojana (RKVY) with the approval of State Level Sanctioning Committee (SLSC) under the Chairmanship of Chief Secretary of the State.

To promote exports of textile products including cotton, Government announced a Special Package for garments and made-ups sectors. The package offers **Rebate of State Levies (RoSL),** labour law reforms, additional incentives under **Amended Technology Upgradation Fund Scheme (ATUFS)** and relaxation of Section 80JJAA of Income Tax Act. The RoSL scheme has been replaced by the new **RoSCTL (Rebate of State and Central Taxes and Levies)** scheme from 7th March 2019. Assistance is also provided to exporters under **Market Access Initiative (MAI) scheme**. Government has enhanced interest equalization rate for pre and post shipment credit for exports done by MSMEs of textile sector from 3% to 5% from 02.11.2018. Benefits of Interest Equalization Scheme has been extended to merchant exporters from 02.01.2019 which was earlier limited to only manufacturer exporters.

20.Conclusion

Cotton is an immensely important crop for the sustainable economy of India and livelihood of the Indian cotton farming community. It is cultivated in about 312 lakh hectares across the world and in around 117 lakh hectares in the country. Thus, India accounts for around 37.5% of the global cotton area and contributes to 26% (i.e 6.20 Million MT) of the global cotton produce of 23.92 Million MT. Cotton continues to enjoy a pre-eminent and the most favoured fibre status among the Indian textile mills, as the major raw material for the textile industry**.**

Presently, nearly 60 million people depend on cotton cultivation, marketing, processing and exports for their livelihood. India is also the only country in the world that grows not only the four cultivated species of cotton but also their intra-and-inter-specific hybrids on a commercial scale. The textile industry, which consumes the cotton, as its principal raw material, contributes about 4% to the GDP and is the major exchange earner for the country. Hence, growth and development of cotton and cotton based textile industry has a vital bearing on the overall development of the Indian economy.Cotton is generating employment for millions of farmers and others engaged in activities relating to cotton, cotton processing, transportation etc. India occupies first place in the world in terms of acreage under cotton and cotton production.

Development of improved varieties and hybrids in the different staple length groups, generation of improved production and plant protection technologies, their dissemination by extension functionaries and adoption by farmers are responsible for bringing about the distinct improvement in the domestic cotton scenario to its present state. Government policies such as giving greater thrusts to Research and Development in cotton encouraging use of quality seeds and pesticides by providing subsidies for such inputs and price support measures have also contributed in changing the cotton scenario in India.

Since launch of Technology Mission on Cotton by Government of India in February 2000 significant achievements have been made in increasing yield and production through development of high yielding varieties, appropriate transfer of technology, better farm management practices, increased area under cultivation of Bt cotton hybrids etc. All these developments have resulted into a turnaround in cotton production in the country since last 6/7 years. The yield per hectare which was stagnant at about 300 kg/ha for so many years, jumped to 506 kgs in the year 2017-18 and had reached to the level of 566 kgs per hectare in the year 2013-14. Though the per hectare yield is still lower against the world average of about 762 kgs per hectare, the fundamental changes that are taking place in the realm of cotton cultivation in the country, are having the potential to take the current productivity level near to the world average in the near future.Cotton alone uses more than half the chemical pesticides used in the entire agricultural production in India. Rising demand compels cotton growers to adopt unsustainable methods which may pose serious challenges to the environment through the excessive use of inputs like water, fertilizers and pesticides, need for alternative ways of cultivating cotton is must. Cotton exports are likely to jump 40% in 2020-21 ,Yarn exports, however, are declining Cotton yarn spinning sector is completely dependent on production and prices of cotton. Over the past few years, not only production of cotton decreased in India, but also its prices have increased. Cotton production in India has reduced from 398 lakh bales in 2013-14 to 357 lakh bales in 2019-20. Prices of raw cotton increased by over 10% during the period. This has put considerable burden on the spinning industry. Price increase in cotton yarn has not been sufficient enough to match the increasing cost of raw materials and highly fluctuating cotton prices.

India’s domestic consumption of cotton yarn is well below its production and its exports are also declining (from 1,313.43 million kg in 2013-14 to 959.79 million kg 2019-20 at a CAGR of about (-) 3%). Both low domestic consumption and decline in exports are leading to surplus production of cotton yarn in the country, which is harming the spinning industry. India also faces duty challenges in export markets vis-à-vis competing countries. Pakistan and Bangladesh levy higher rates of duty on Indian yarn, while they enjoy duty free or concessional duty access in India. India is lagging in cotton

exports to major markets due to a duty disadvantage vis-a-vis Bangladesh, Vietnam and Pakistan. Countries like Bangladesh and Vietnam enjoy duty-free access in world's largest cotton yarn markets such as China while Indian exporters have to pay duties.

21.Resources

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