“Study on Cotton Trade from Telangana State”

Project report submitted for partial fulfillment of the requirement for the award of the degree of

Master of Business Administration

Port and Shipping Management

Submitted by:

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CAMPUS

May 2022

DECLARATION

The Project work titled **"Cotton Trade from Telangana State"** has been carried out under the guidance of **Dr. Lekha Ravi** Assistant Professor, School of Maritime Management, Indian Maritime University-Chennai Campus in partial fulfilment of the requirements for the award of the degree of **Master of Business Administration in Port and Shipping Management** to be submitted to the School of Maritime Management, Indian Maritime University, Chennai Campus. This is the original work done by me and that's not a part of any other work.

Place: Chennai

Date: May 2022

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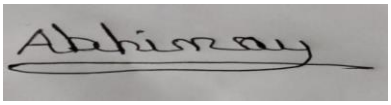

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ACKNOWLEDGEMENT

It gives me immense pleasure to express my thanks to all those who helped to successfully complete this project. First & foremost, I thank the God Almighty for his gracious guidance throughout the project work.

I express my sincere thanks to **Dr.B.Swaminathan** Head, School of Maritime Management; Indian Maritime University is a person who needs to be thanked at every stage of my project.

I wish to show my gratitude to **Dr. Lekha Ravi**, Assistant Professor, School of Maritime Management, Indian Maritime University- Chennai Campus, for her enormous encouragement, help & guidance, throughout the period of my project & led this work to its successful completion.

Certificate

School of Maritime Management
Indian Maritime University, Chennai.

This is to certify that the project report entitled **"Cotton Trade from Telangana State",** submitted to the School of Maritime Management, Indian Maritime University, Chennai Campus., in partial fulfillment for the award of the degree of Master of Business Administration in Port & Shipping Management/ International Transportation and Logistics Management, is a record of work carried out entirely by **Kotha Abhinay Reddy**, Reg. No. **2003304018**.

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Place: Chennai

Date: 25th May 2022

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Executive Summary

Telangana cotton is white gold. The high-quality Brahma (Podugu Pinja) cotton grown in the state is presently in high demand in several cloths and garment-making countries, including China, Vietnam, Bangladesh, and Pakistan. In this season's outdoor markets, farmers are obtaining fair prices for their produce. In China, high-quality raw cotton and cotton yarn from the state were in high demand. Cotton traders from Gujarat and Maharashtra were placing large orders for the Telangana-type cotton. Telangana has the advantage of black soil where the cotton can be cultivated which requires less amount of water compared to the red soil.

The cotton in Telangana is proposed to be named as premium cotton by the central government because of its staple hardness and the high length and quality of the cotton which has great demand both in domestically and internationally were the cotton traders of Maharashtra, Gujarat purchases Telangana’s cotton.

The study proposes to understand the dynamics of cotton trade and problems face by the Telangana farmers and exporters.

Telangana's cotton cultivation sector has seen a significant increase in production and a significant improvement in cotton quality. Cultivation of hybrids such as Bt cotton varieties, latest production technology, and plant protection technologies, adoption of scientific and agronomic practices by farmers, increase in area under irrigation, seed, and government policies such as giving more weight to cotton research and development, encouraging the use of quality seeds and pesticides, and price support are all contributing to the current drastic changes in Telangana cotton farming.

Chapter 1. Introduction

1.1 Industry :

Telangana is well known for its historical Textile sector operations.It is the 3rd highest cotton-producing state. The Land Area of cotton production has rapidly grown in Telangana over the past two decades. Each year cotton is cultivated on about 60 lakh acres. with a production of 48 lakh bales. The CottonTextile Export Promotion Council (TEXPROCIL) and Telangana State Trade Promotion Council take part in the national and international promotion of Telangana cotton.

The Telangana cotton cultivation sector has been increasing its productivity and has been undergoing a drastic improvement in terms of the quality of cotton. Cultivation of hybrids, Bt cotton varieties, latest production technology, and plant protection technologies, adoption of scientific and agronomic practices by farmers, increase in area under irrigation, seed, Government policies such as giving greater force to research and development in cotton, encouraging use of quality seeds and pesticides and price support, are all responsible for the presentdrastic changes in Telangana cotton farming.

Cotton produced in Telangana state is of very high quality in the country it is one of the regions in the country, where high-quality Cotton is produced. The Cotton staple grown in Telangana State is the lengthiest and its hardness is also high. It has a high global demand.

Sizes of Cotton:

Cotton fibers are mainly made up of cellulose. Cellulose does not form unless temperatures are over 70 °F (21 °C). The cotton fibers are attached to the seeds inside the boll of the plant. There are usually six or seven seeds in a boll and up to 20,000 fibers attached to each seed. The length of these fibers (also called staples) is the main determining factor in the

quality of the cotton. In general, the longer the staple grows the higher the quality of the cotton. Staple lengths are divided into short, medium, and long (and extra-long, in some cases).

1, Long Staple Cotton: It has the longest fiber whose length varies from 24 to 27 mm. The fiber is long, fine, and shining.

2, Medium Staple Cotton: The length of its fiber is between 20 mm and 24 mm.

3, Small Staple Cotton: The length of its fiber is less than 1, 20mm.

Reference: **https://www.yourarticlelibrary.com/cultivation/cotton-cultivation-in-india-conditions-types-production-and-distribution/20949**

1.2 Objectives of the Study

1, To study the problems faced by the cotton farmers in Telangana.

2, To study the demand for Telangana Cotton in international markets.

3, To study the government policies for the cotton trade.

4, To study the supply chain and warehousing of cotton.

1.3 Limitations of the study

Adequate data is unavailable on the topic of Telangana Cotton Trade the data is limited in the open source. Most of the data is merged with the Indian cotton trade. The researcher was able to get the required data from exporters, the cotton miller's association, and the Telangana State Trade Promotion Corporation.

Chapter 2. Literature Review

1, Telangana cotton is a white gold bar. The high-quality Brahma (Podugu Pinja) cotton grown in the state is presently in high demand in several cloths and garment-making countries, including China, Vietnam, Bangladesh, and Pakistan. In this season's outdoor markets, farmers are obtaining fair prices for their produce. In China, high-quality raw cotton and cotton yarn from the state were in high demand. Cotton traders from Gujarat and Maharashtra were placing large orders for the Telangana cotton.

The State also stood first in the country in the procurement of cotton by the Cotton Corporation of India (CCI) over the last two years. But the lack of procurement centers takes CCI more time for the procurement of cotton due to uneven climatic conditions which may spoil the cotton where the farmers can't get the MSP for their produce. So the increase of procurement centers is very much needed.

Title: Telangana Sitting on White Gold Mine

The Hans India

Prabhakar Reddy,

Afzal Babu

Date: 02/11/2021

Reference: https://www.thehansindia.com/telangana/telangana-sitting-on-white-gold-mine-713530

2, Telangana has traditionally been a cotton-producing state, having black soil that is ideal for cotton growth. Cotton agriculture, on the other hand, takes up 42% of the land in Telangana. Cotton is preferred by farmers because it requires less water than other cash crops such as chiles etc. Cotton needs a lot of water after it's been sown. Good rainfall is essential in the beginning, but the crop requires little water after that. Telangana planted 16.93 lakh hectares of cotton in 2014-25, and production increased to 37.33 lakh bales in 2015-16. However, due to a drop in demand in overseas markets, cultivation declined by more than 20% in 2016-17. From 202016-to-17 the government reduced export subsidies on cotton, causing a significant setback for growers.

Telangana turned out to be the leading cotton producer. As a result, the State's cotton purchase is nearly double that of Maharashtra, which came in second place with 91.98 lakh quintals. In addition to the crop purchased by private businessmen, the cotton crop was sold to the Cotton Corporation of India.

Title: Cotton Procurement

Indian Express

Singireddy Niranjan Reddy

Date: 09/10/2021

Reference: **https://www.newindianexpress.com/states/telangana/2021/oct/09/telangana-tops-in-ccis-cotton-procurementagriculture-minister-singireddy-niranjan-reddy-2369569.html**

3, During this Kharif season, cotton crops cultivated in the State fetched whopping prices, ranging from Rs 8,800 per quintal to Rs 9,100 per quintal. And, in some places, it even fetched a record Rs 10,000 per quintal. The State IT Department played a crucial role in improving cotton yield for farmers in many villages. During Kharif 2021, the department conducted an Artificial Intelligence-based pilot project for pest management in cotton in six districts, including Karimnagar, Nagarkurnool, Nalgonda, Khammam, Wanaparthy, and Mahabubabad. Under the project, the department, in partnership with the Wadhwani Institute of AI, deployed AI solutions at the field level. Cotton farmers in over 2,800 villages were identified to be included in the project. Cotton growers were able to detect pest assaults, particularly Pink Bollworm, early on and take corrective action to avoid crop damage with the help of AI.

Title: AI in cotton

Telangana Today

S. Sandeep Kumar

Date: 22/01/2022

Reference: **https://telanganatoday.com/telangana-ai-helps-yield-bumper-cotton**

4, India's exports of textiles and garments recovered quickly this fiscal from the lows of the pandemic-hit FY22, but lucrative orders may elude them in FY23 due to an inexorable rise in the prices of cotton, a key raw material, and its yawning shortage in the domestic market. While shipments continue to be strong due to orders won earlier, the specter of a slump in exports is staring at textile and garment firms as new orders are hard to come by. This is at a time when the global markets like China, European Union are poised by Indian cotton Conventionally, during the January-February period, mandi arrivals of cotton peak and remain in the range of Rs 2.5-3 lakh bales (one bale is 170 kg), but this year has been quite an exception.

Title: Rise in cotton prices

Financial Express

Sandip Das, Nanda Kasabe, Banikinkar, Pattanayak

Date: 24/02/2022

Reference: https://www.financialexpress.com/economy/relentless-rise-in-cotton-prices-a-hurdle-to-textile-exports-revival/2443136/

5, According to trade sources, cotton arrivals in markets across key producing states – Telangana, Andhra Pradesh, Karnataka, Gujarat, Maharashtra, Madhya Pradesh, Haryana, Punjab, and Rajasthan – have seldom crossed Rs 1.5 lakh bales in last the two months. And prices are skyrocketing – in many key markets, these are ruling at three times the minimum support price – given the estimate of a year-on-year decline in the production of the key natural fiber. There are also unconfirmed reports of farmers resorting to hoarding stocks, in anticipation of a further rise in prices. In fact, an up to 80% spurt in cotton prices in the past year has pressured margins of textile and garment firms.

Title: Cotton Market in India

Business Journal

Vivek

Date: 3/07/2017

Reference: **https://business-journal.in/economy/relentless-rise-in-cotton-prices-a-hurdle-to-textile-exports-revival-business-journal/**

6, The Telangana government is targeting to increase the area under cotton by 55–65 percent to about 28–30 lakh hectares (lh) from last year's 18 lakh hectares even as the cottonseed industry pegged the growth in cotton acreage at 15 percent in the upcoming Kharif season, starting July. Farmers, enthused by attractive prices and demand for the fiber crop this season, are expected to go in for higher coverage. Cotton prices have remained substantially above the minimum support price of 5,726 rupees for medium staple cotton since the beginning of the season in October 2021. In most agricultural markets across the country, prices have been hovering around 12,000 rupees per quintal in recent weeks. Telangana's cotton acreage is increasing in accordance with industry predictions. The cotton seed sector, on the other hand, expects a 15 percent increase in acreage this year compared to last year. The state government has identified 1,332 cotton clusters around the state, which are regions where a large volume of cotton has been grown.

Title: Increase in Cotton Production by 50 Percent in Telangana State

The Hindu

KV. Kurmanath

Apr 18, 2021

Reference: https://www.thehindubusinessline.com/economy/agri-business/telangana-plans-to-increase-area-under-cotton-by-over-55-per-cent/article65329192.ece

7, Cotton has been cultivated as an important commercial crop in India for many centuries now. The area under cotton increased from 76 lakh hectares (lha) in 1960-61 to about 134 lha in 2019-20. Although the crop is grown in various States, — Maharashtra, Gujarat, and Telangana account for about 40 percent of India's total area in 2019-20 for cotton production. But, the area under cotton declined sharply from 3.96 lha to 1.69 lha during the same period in Tamil Nadu, where a large section of textile companies is demanding a reduction in yarn price. Although India is the world's largest cultivator of cotton with an area of 37 percent, its yield per hectare is one of the lowest. The yield of cotton increased from 152 kg/ha in 1980-81 to only 190 kg/ha in 2000-01. So India's share in global cotton production was low till the early part of the 2000s. But, this scenario completely changed after the introduction of Bt cotton in 2002. While the area under cotton has increased significantly from 77 lha in 2002-03 to about 134 lha in 2019-20, its production increased from 86 lakh bales (one bale is 170 kg) to 352 lakh bales during the same

period. Bollgard cotton (a Trademark of Monsanto) was the first Bt cotton to be marketed in the United States. The original Bollgard cotton produces a toxin called Cry 1Ac which has excellent activity on tobacco budworm and pink bollworm.

Title: Cotton Cultivation

The Hindu

A Narayanamoorthy

Date:14/02/2021

Reference: **https://www.thehindubusinessline.com/opinion/demand-for-lower-cotton-prices-is-not-justified/article65048549.ece**

8, The State government has pulled up its socks to plan for the next Kharif season, by identifying and developing a cluster-wide action plan for the cultivation of crops like cotton, paddy, and red gram. As many as 1,332 cotton clusters, more than 1,000 paddy clusters, and 82 red gram clusters have been identified. As per the action plan for Kharif 2022, the target has been set to bring 1.42 crore acres under cultivation. The State government is planning to encourage farmers to grow cotton in a major way, with a target of 70-75 lakh acres. As per the action plan, Market and agriculture department officials have been asked to keep a buffer stock of 5 lakh tonnes of urea by the end of May, in view of the ongoing war between Russia and Ukraine which may affect urea production. To monitor and keep a check on fake seeds which may be circulated in the market, officials have been directed to form state and district-level task forces and to make inspections on the ground on a regular basis. .

Title: Telangana Cotton Promotion.

Times of India

Roushan Ali

Date: 26/04/2022

Reference:https://timesofindia.indiatimes.com/city/hyderabad/state-prepares-crop-plan-to-promote-cotton

9, There were less than 100 ginning mills before the formation of the state, after the formation of the state there were 350 new mills were formed and 30 new mills were under construction for cotton procurement. Awareness was being created among farmers to maintain Fair Average Quality (FAQ) for obtaining MSP. The research was happening on developing cotton varieties that could be cultivated during the Rabi season (summer) where it can withstand the high temperatures if the research was successful the cotton can be grown in two seasons Kharif and Rabi.

Title: Ginning Mills

The Hindu
Special Correspondent
(Hindu News Agency)
Date: 07/06/2021

Reference: https://www.thehindu.com/news/national/telangana/chief-minister-to-decide-on-more-incentives-to-ginning-mills-says-minister/article34753767.ece

10. Telangana is one of the top three cotton-producing states, next to Maharashtra and Gujarat. The area under cotton and production has been rapidly growing in Telangana over the past two decades. Cotton crop has been expanded in the state by more than three folds after the introduction of Bt cotton that reducing the biological risks of pest incidence in cotton. Thus, a large area of millets, pulses, and oilseed crops were diverted to cotton crops over the past 20 years. It is important to note that cotton production has increased in the state by about fivefold over the past 20 years, primarily due to area increase under cotton at a higher growth rate that the production growth rate over the past two decades

Title: Telangana Cotton Farmers
Economic Political Weekly
Geetha and Mahesh
Date: 4/12/202

Reference: https://www.epw.in/journal/2021/49/commentary/marketing-and-procurement-cotton.html

Chapter 3. Objectives Analysis

3.1 Supply Chain:

1, Harvesting and Post Harvesting:

(A) HARVESTING:

a) Seed cotton should be collected from fully opened bolls only.

b) The practice of collecting half open bolls, drying them and then removing the seed cotton should be discouraged; as such a practice results in lower grade and quality of fiber.

c) Picking should be avoided in hot mid-day, as there is a possibility of collecting dried leaf-bits, etc. It is advisable not to do picking when the weather condition is wet. Picking should be done early in the morning & evening.

(B) POST HARVEST:

a) It is preferable to keep seed cotton from last picking separately for marketing, as this is generally lower in quality.

b) Before transport to the market, seed cotton should be heaped on a cloth or gunny or paper spread in a corner. It is advisable that care should be taken that seed cotton should not come into direct contact with the soil to avoid an increase of trash content.

c) After picking, the seed cotton should be allowed to dry in the shade. Excessive exposure to the sun should be avoided as it lowers the grade due to yellowing.

d) The seed cotton should be fully covered to protect it from sun and rain as well as to avoid contamination by wind during transport to the market. This will also prevent loss of seed cotton either due to pilferage or due to being blown away by the wind.

2, Packaging:

Some general guidelines to follow for eliminating contaminations in order to offer high-quality cotton to end-users efficiently and affordably. Cotton bales are protected from infection, moisture, and fibre loss with proper packaging. Cotton bales are totally wrapped in cotton, jute, plastic cloth, or occasionally perforated plastic films to manage moisture content. This cotton is protected from the elements after the bag is shut on all sides.

MATERIAL USED FOR PACKING Cotton Bale Packing Materials:

A, Woven Cotton Bags
B, Warp Knitted Cotton Bags
C, Polyethylene Film Bags
D, Polypropylene Bags
E, Polyethylene Woven Bags
F, Jute Bags
G, Shrink Wrap (Not Common)

Standardized Bale Size and Packaging

Panel: Rectangular sheet of fabric; refers to top sheet in bag and panel combination of new jute, cotton, or woven polypropylene for use on gin universal or gin standard density bales.

Spiral-Sewn Bag: Sewn bag from burlap, cotton or polypropylene. Fabric is sewn on a bale resulting in a tube with the seam spiraling around the bale circumference. After application, bale ties are under packaging.

Gusseted Bag: Sewn bag from polypropylene. Fabric is seamed resulting in a tube with the seam running parallel to the edges of the tube. Opposite edges of the tube are folded inwardly to form two V-shaped sections between the front and back faces of the tube. The bottom seam of the bag is sewn through 4 layers of fabric in the gusset areas. The gussets create a rectangular-shaped mouth for filling and a rectangular bottom in the filled bag. After application, bale ties are under bagging.

Polyethylene Bags: Pre-formed Tubes., sealed at one end and supplied in rolls. The least labour

is intensive. The top of the bag is Heat-sealed.

Bag and Panel Combination: Bale cover fabrication was applied on the gin press and used in combination with a top panel. After application, bagging is under bale ties.

3, Transportation:

Transport is vital for the economic and industrial development of a country since every commodity produced requires transport from the production and distribution stages. Quick, cheap, and convenient means of transport are essential for increasing distribution and trade.

a) Head Loads:

It is an age-old method of transportation from the field. It is convenient for :

i) Places like hilly areas.
ii) Carrying a small quantity of produce.
iii) Transporting nearest market with short distance.

b) Bullock / Camel carts :

Bullock / Camel carts are the primary means of transport in rural areas. It is convenient for the following reasons.

i) Cheap and easily available conveyance for the farmers to transport 5-10 quintals of produce to nearby areas.
ii) Operational Cost is low.
iii) Easily manufactured by rural artisans from locally available materials.
iv) It is operated on muddy, katccha or sandy roads.
v) This transport system creates employment for rural artisans.

c) Tractor trollys: The use of tractor attached to a trolly is commonly used for transporting cotton in many parts in India.

It is convenient for :

i) Carrying a large quantity of produce in a lesser duration of time.

ii) Suitable in surplus producing areas than the trucks for carrying produce to the primary assembling markets in the absence of pucca roads.

d) Trucks: Bulk quantities of cotton are carried by trucks to the distant places throughout the country. It is convenient for the following:

i) Easy availability.

ii) Time-saving.

iii) Quick movement of produce.

iv) Door-to-door delivery.

v) Fewer transit losses due to least handing while loading and unloading.

e) Railway transport:

i) Suitable for carrying larger quantity of cotton over long distances.

ii) Comparatively cheaper and safer mode of transport available through a wide network of railways.

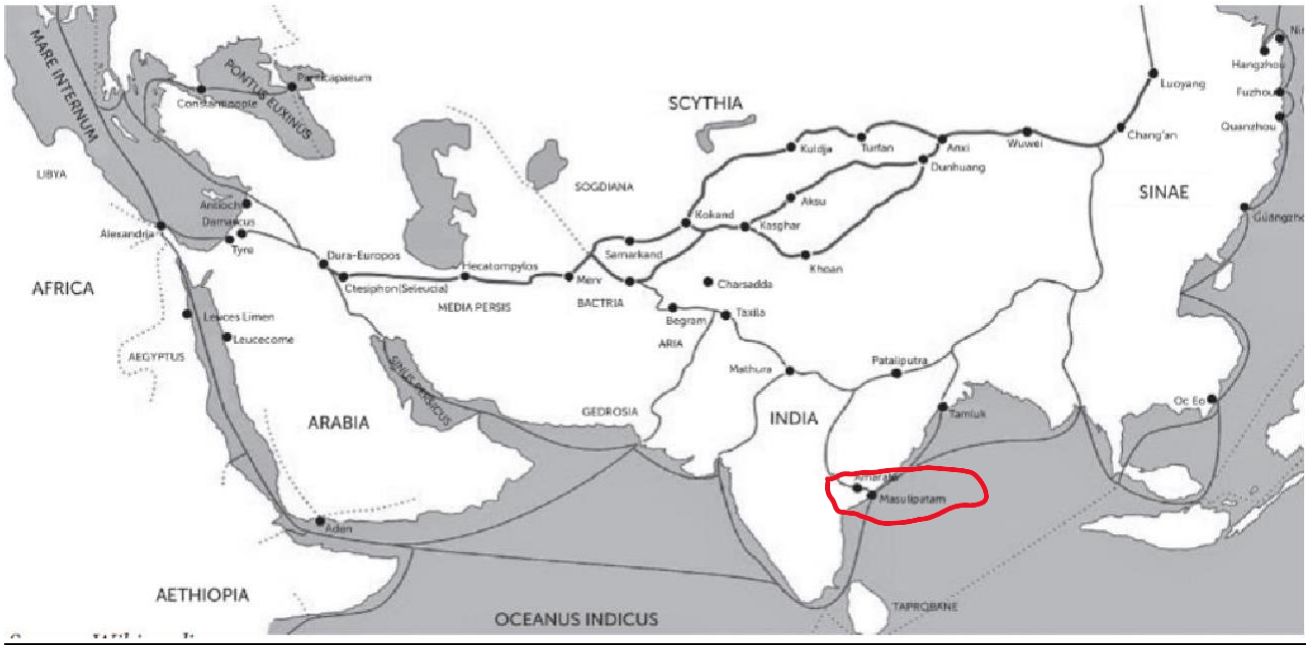
Past System of Transportation from Telangana and Transportation Law

Previously Telangana is called Hyderabad State ruled by Nizam rulers.

Transportation of Cotton from the State of Hyderabad duringthe rule of Nizam till 17 th September 1948.

There is a great demand in Europe for Indian cultivated cotton, the Hyderabad also contributed to the export of this cotton from Musulipatnam port is now called Machilipatnam port. The railway stations from Secunderabad and Ballarsha are used for transporting cotton through carts, trucks, and busses were used to take to the port.

Fig: 1



Indian Cotton Trade Route Connecting Masulipatnam

Masulipatnam is the significant hub for the cotton trade whereas the Masulipatnam port is used for the export of cotton.

The state of Hyderabad used to export cotton from Masulipatnam port which is one of the cotton trade routes of India connecting Europe and Gulf countries.

Cotton Transportation Law Hyderabad State

transportation of cotton Law related to transportation Hyderabad Cotton Cultivation and Transport Act, 1337 Fassil.

(1) To maintain the reputation and quality of cotton in the state of Hyderabad the import of cotton is prohibited unless the person is issued the license for importing in the protected cotton region.

(2) The cotton import or export is done through railways. If there is no Certified copy of the license for importing the cotton, the railway master can refuse the transportation of cotton in train.

(3) The transportation of cotton from the state of Hyderabad through railways are prohibited unless there is a certified copy from the inspection master.

4, Storage:

Cotton in India is not generally stored for more than a year. This stored cotton is apt to deteriorate in grade, colour and quality, the extent of deterioration depends upon a number of factors, chief among them being the condition and period of storage, the variety of cotton, the atmospheric conditions – especially humidity, rainfall, etc. – prevailing during this period, ventilation and incidence of pests in the godowns, etc. The godowns provided in the ginning factories are of different types as described below

Closed Type: This type of godown is closed with pacca walls on all four sides with a door on one side. The flooring in most cases is covered with a layer of sand or sometimes with stone slabs.

Open Type: This type of godown is covered only on one side and is kept open on all the other three sides. The flooring is usually left unpaved. Both kapas and lint packed in containers are stored.

Open Sheds: These are pacca sheds with galvanized iron sheet roofing and open on all four sides. The flooring is covered mostly with sand.

R.C.C. Godowns: In all the terminal markets, most of the godowns for storing cotton are pacca masonry structures with paved floors.

5, Marketing Channels:

A marketing channel is a group of interrelated intermediaries who market the produce from the farmers to the consumer. Private and institutional channels are the important marketing channels in the movement or distribution of major agricultural commodities.

It has been estimated that about 80 percent of the marketed surplus of kapas and lint is handled by the private marketing channels and the remaining 20 percent by the institutional marketing channels including co-operatives and Cotton Corporation of India. The most prevalent institutional channels are.

1. Channel-1: Producer to Village trader to the itinerant trader to Wholesaler (in regulated market) Miller Consumer.

2. Channel-II: Producer to Village trader/merchant to Commission Agent to Miller to Consumer.

3. Channel-III: Producer to Village merchant to Itinerant trader to Miller to Consumer.

4. Channel-IV: Producer to Village trader to Wholesaler (in the unregulated market) to Lint market to Commission Agent to Miller to Consumer.

5. Channel-V: Producer to Cooperative Society to Cooperative Ginning and Pressing Factory to Terminal Market to Miller to Consumer.

6. Channel-VI: Producer to Cooperative Marketing Federation to Terminal Market to Consumer.

7. Channel-VII: Producer to State Govt. Agencies to Central Govt. Procurement Agencies (CCI) to Miller to Consumer.

it is observed that the following three channels are also in existence in addition to the above.

I: Producer to Trader to CCI to Miller to Consumer.

II: Producer to CCI to Miller to Consumer.

III: Producer to Miller to Consumer. Among the above channel,

No. 7 is the most common institutional channel followed by channel No.6.

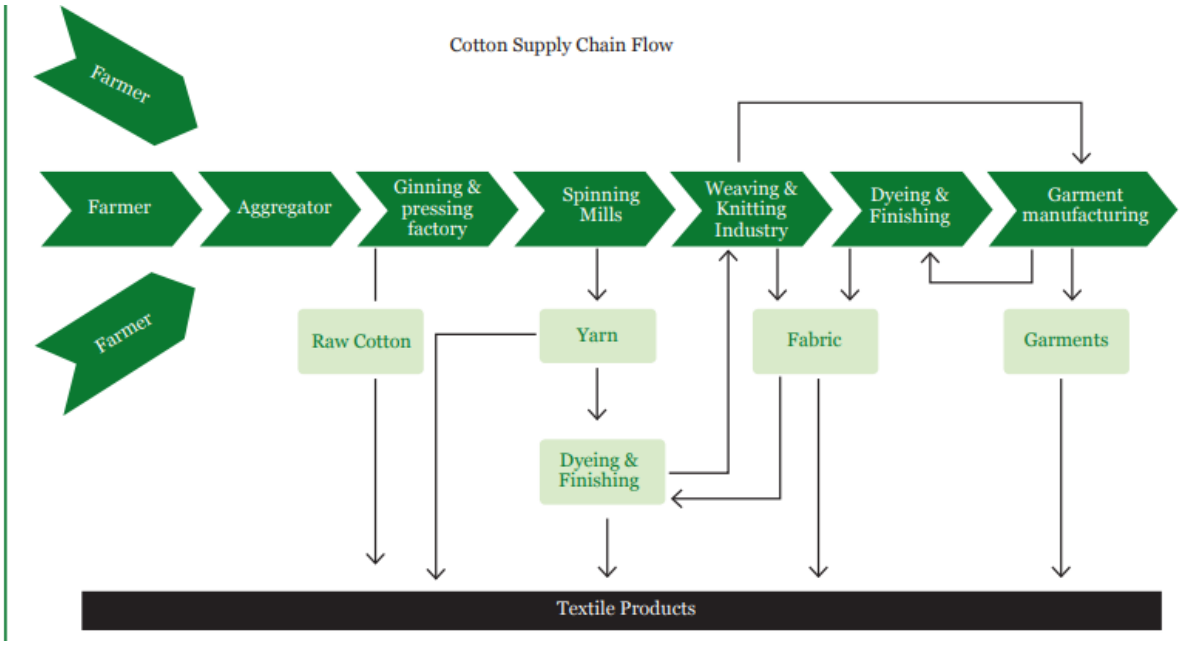


Fig: 2

The Indian cotton value chain, which begins with fibre production, post procurement of raw cotton, culminates in textile and garment products, is very complex in structure with a profusion of numerous small-scale, decentralized and fragmented units along with some large-sized integrated enterprises, also known as composite mills. The small-scale sector is largely unorganized and labor-intensive, whereas large-scale enterprises are mostly organized and capital-intensive. In the last few years, the industry has witnessed considerable expansion, integration and technological up-gradation with several integrated players in the industry, who manufacture two or more products. The Agriculture Produce Marketing Committee (APMC) is the primary market infrastructure in the country through which cotton is marketed. The main functions of these markets or mandis is to regulate market practices such as weighing, process of sale, method of grading, payment process, etc. APMCs also provide facilities for storage, boarding and lodging for buyers, sellers, etc. This committee charges 1% of the goods value as

fees from the buyers. The marketing committee, which runs the market, consists of both buyers and sellers who have the responsibility of maintaining and developing the market yard for its users.

There are now roughly 7,062 operational mandis in India. The following are the three cotton marketing agencies: 1. The private sector, includes traders, ginnery owners who operate as sole proprietors, partnership firms, and private limited companies. 2. Public sector organizations such as India's Cotton Corporation (CCI) 3. Cooperative sector, Private marketing channels handle around 80% of the marketed surplus of kapas and lint, and institutional marketing channels such as co-operatives and Cotton Corporation of India handle the remaining 20%.

Reference: http://agmarknet.gov.in/Others/ManualCotton.pdf

3.2 Cotton Warehousing:

Cotton Warehouse Operations:

The cotton warehousing industry adds value to the cotton supply chain by centralizing cotton from multiple gins, holding cotton to stabilize the rate at which it enters the market, and serving as a liaison between the bale's owner and merchants wishing to purchase the bale. Cotton warehouses use different stacking patterns.

1, Aisle Stacking Pattern:

Aisle-stacking- Shipping Forklift drivers collect bales and stage them to be loaded using forklifts equipped with bale hooks and clamps. A forklift equipped with a hook is used to maneuver bales out of an aisle one at a time. The bales are stamped with a specific order number ("mark") and the PBIs are scanned to check that the order is complete before they are shipped.

2, Block Stacking Pattern:

Block-stacking differs from aisle-stacking in that the manner of pulling the bales for an order is different. Bales are piled in groups of four bales wide, three bales high, and eight bales deep in

block stacked bales (dependent upon warehouse). The blocks are disassembled to discover the precise bales needed inside the stack while assembling an order for shipping from the warehouse.

Clamp machines are used to move bales in block-stacked warehouses, there is no need for the forklift with a hook. Multiple orders, as many as three or four, are sorted from one block at any given time. Once the needed bales are separated out of the block, they are set into groups by order number or mark. Unneeded bales are then stacked back into the block. Once sorted, the bales for the particular order are staged together and loaded into the truck.

3, Operational Research Logistics:

Operational Research Operational logistics research has been done for many years. Time-in-motion studies, discrete event simulations, and Monte Carlo tests are all common tools to assess the efficiency of logistical operations. Discrete event simulations (DES) can be used to model real-world systems and allow the analysis of "what-if" scenarios without interrupting normal operations. These scenarios can be "useful in the analysis of the ability to meet the production norms, which include: completion date of production orders, resource utilization, and to ensure an acceptable quality of the production system functioning" in a quantifiable manner. One of the main advantages of DES modeling is it allows for "virtual experimentation," in which experimental changes to operations can be modeled without interrupting day-to-day operations, which can result in cost savings. A Monte Carlo simulation is a statistical method that uses a large number of sample repetitions to estimate the average mean and standard deviation of the population. Monte Carlo simulations give a more accurate measurement of process operations than just one test. It also follows the central limit theorem in which the sum of a large number of independent random variables having a finite mean and variance is normally distributed, enabling easier statistical analysis of a given process. The objective of this research was to identify potential time and/or cost savings that could be realized in cotton warehouses by using novel bale selection techniques relative to "baseline" operations commonly in use today. To do this, DES models were developed to represent baseline operations in cotton warehouses using aisle-stacking and block-stacking methods were used.

Reference: https://core.ac.uk/download/pdf/1472

3.3 Problems:

1, Lack of Storage Facility:

Farmers transport their cotton crop to ginning mill where they will sell their crop directly to millers or to the CCI (Cotton Corporation of India) where CCI purchases cotton through these ginning mills, the CCI doesn't have any cotton procurement centres. In-state there are 350 ginning mills for the third-highest cotton-producing state, these mills act as warehouses for storage of the cotton the CCI had to depend on these mills for the storage of cotton and CCI had very less warehouses or godowns.

The farmers are allowed to store it after the cotton is sold they need to wait for a longer time at the mills due to that, uneven environmental situations that cause heavy rains which form water or moisture contained in it which reduces the cotton demand in the international markets due to that the income of the farmer will be low then the MSP prescribed by the Government and the farmers due to the lack of storage facility and they will sell to the middlemen for a low price. The warehousing problem is one of the biggest problems in cotton logistics.

2, Transportation Problem:

The main constraint is the transportation problem where adequate transportation facility is not provided to the farmers to bring their cotton to the mills they need to hire the private vehicles for the transportation where they will charge on a kilometre or hourly bases sometimes the farmer need to wait for a long time due to that there will be an increase in the cost of transportation and due to the unavailability of storage the cotton in the vehicles will be spoiled and reduces the demand in the international market

3, Packaging Problem:

Packaging of raw cotton should be done in gunny bags. Sometimes unavailability of gunny bags is a problem for farmers, without the packing in gunny bags the cotton can easily observe the dust while transported.

4**, Price Volatility and uncertain market:**

Cotton prices can be unpredictable due to a variety of reasons such as government regulation, stockpiling, and farmer subsidies. This, combined with other factors, creates a volatile market for farmers, making cotton a less appealing commodity to raise. Financialization is a lesser-known issue that has a substantial impact on the cotton market's stability. Despite having no real connection to supply and demand, this results in considerable price volatility and thus instability in the cotton price farmers can obtain at any given time.

5, Lack of infrastructure:

The transport infrastructure is poor in India and the cost of transporting cotton fibre from one state to another is substantial.

6, Problem of admixtures:

Because several varieties of cotton fibre with varying physical qualities are combined together, there are variations in the strength, length, micronaire, colour, and reflectivity of cotton. Cotton grading and testing are also complicated by additives. To preserve yarn quality, quality-conscious mills, particularly those focused on export, are required to engage in costly bale management operations.

7, Government Cotton Policy Interventions :

Restrictions on exports and frequent changes in the policy have hurt the cotton trade and resulted in the country being sidelined in the international market because of risks associated with vacillating policies and unsteady supplies.

8, Competition from other fibres:

Cotton fibre is increasingly facing competition from artificial fibres, notably polyester. This is attributed mainly due to rising price volatility in the cotton trade and variations in fibre characteristics, because of genetic, environmental, harvesting and ginning factors.

9, Branding initiatives:

The proposal to implement measures envisaged under the draft policy for improving the marketing and branding of cotton is extremely beneficial. Such measures should also include boosting production and promoting the consumption of cotton in the country.

10, Need for stronger Indian arbitration for imported cotton:

The Indian textile mills importing cotton have to encounter onerous problems because foreign buyers invariably stipulate arbitration by International Cotton Association (ICA), Liverpool, in the sale contracts. India has been a regular importer of cotton and imports will continue in the future.

11, Quality less seeds:

Cotton hybrids, spurious seeds, extensive use of poor quality and adulterated insecticide chemicals, and pesticide abuse are the major problems leading to reduced yields and resultant social problems in otherwise high yielding areas of Andhra Pradesh. Climate also plays havoc with heavy rains and extended wet spells during October and November, resulting in the outbreak of pests (Helicoverpa and Spodoptera) causing extensive damage to cotton production. The wet climate and continuous drizzling diluted or inactivated even the most potential pesticide chemicals. Extensive use of pesticide chemicals right from the seedling stage disturbs and annihilates the parasites and predator population, leaving cotton to serious pest damage, mainly the bollworms, aphids, jassids, thrips, and whitefly. Hence, appropriate remedies like Insecticide Resistance management strategies, Integrated Pest Management, and Integrated Nutrient Management besides scientific methods of weed control and water management have been perfected through the All India Coordinated Cotton Improvement Project of ICAR, State Agricultural University centres at Guntur, and Nandyal besides Central Institute for Cotton Research.

These measures are being followed in Telangana for better productivity of cotton and sustainability of cotton cultivation by farmers. Moreover, any incidence of newer pest/diseases or any abiotic stresses on cotton are continuously looked into by the scientists and developmental officials for immediate problem-solving approaches for effective follow-up by

the farmers. Besides, ICAR sponsored Frontline Demonstrations under Technology Mission on Cotton are conducted in farmers' fields for demonstrating newly released cotton varieties/hybrids and Bt cotton hybrids, proper fertilizer usage, micronutrient need, etc, wherein 15-20 % yield increase are reported.

Reference: http://cottonupguide.org/why-source-sustainable-cotton/challenges-for-cotton/

3.4 International Demand for Cotton :

Telangana cotton farming: At a glance

Telangana is one of the largest cotton producers in India. Modernization of Telangana's cotton production-including the adoption of BT varieties propelled Telangana to the top among cotton-producing states in India. Government policies such as giving greater thrust to Research and Development in cotton and encouraging the use of quality seeds and pesticides by providing subsidies.

Sustainable practices for cotton farming in Telangana

To turn around the prevailing scenario, it is imperative to make farmers aware of healthier cotton practices and adaptation of scientific farming techniques. Promotion of environmentally sustainable practices for the mass-produced cash crop along with the scientific and egalitarian application of water, and effective use of fertilizers and pesticides will help the Telangana farmers to achieve sustainable growth in cotton cultivation. Studies have proved that the adoption of suitable technology such as micro-irrigation in cotton farming helps in reducing input costs and increases income by increasing the number of crops they grow. Telangana cotton spinners have reported double-digit revenue growth and all-time high profits

in 2021-22, mainly driven by high demand and realizations, according to a report. While the growth is primarily being led by all-time high realizations, which have sustained for much of the year, volumes are also estimated to be better than the pre-COVID levels. Besides recovery in domestic order, robust growth in export demand has also supported volumes, Large and mid-scale spinning companies are expected to report robust double-digit growth in revenues and all-time high profits in FY22, with 400-600 bps improvement in operating margins, Icra ratings said in the report. Companies, which had higher stocks of lower-cost cotton from the previous season, benefitted more in terms of profitability in H1 FY22.exports under the Remission of Duties and Taxes on Exported Products (RoDTEP) scheme from January 2021 onwards (as notified in August 2021) have also supported margins as well as price competitiveness of domestic spinners in the international markets. Meanwhile, the report stated that the slight decline in December 2021 aside, cotton yarn prices remained on a rising trend in the current fiscal, touching all-time highs in recent months. In 9M FY22, cotton yarn prices averaged 36 months higher than FY21. Icra expects Indian cotton yarn exports to be at all-time highs in FY22. While China remained the largest export market for cotton yarn in FY2021.

3.5 Government Trade Promotion Policies :

1, The central government established ICAR research centers in Adilabad and Warangal districts for cotton project research in the state; the project's name is All India Coordinated Research Project on Cotton. Under these projects, the ICAR will test the quality of the cotton to promote Telangana cotton as premium cotton to promote it more in the international market, while Indian cotton will be known as Kasturi cotton.

2, TEXPROCIL council which deals with the promotion of exports of raw cotton, and cotton yarns (Blended yarns with 50 % or more cotton in them).

External Activities of TEXPROCIL

- Organizing fairs, Buyer Seller Meets, and Overseas Trade Delegations.
- Market information, trends, and forecasting.

- Identification of potential new markets and seeding the export activity through Delegations.
- Defending Indian exporters from nontariff barriers, anti-subsidy investigations, etc.

Internal Activities of TEXPROCIL

- Working with the Indian Government on export promotion policies
- Assisting the Government in bilateral negotiations bringing to the table Of domestic perspective.
- Provide data and trends in Export/Import.

3, The Central government has taken a decision to waive the customs duty on cotton Import trade of. Currently, cotton imports had a 5 percent Basic Customs Duty 5 percent Agriculture Infrastructure Development Cess. The domestic production of cotton is not sufficient for the export of raw cotton the waive-off in the import duty of cotton will be till September 30, 2022, and the government had taken the decision to import raw cotton and value it by transforming it into yarn. So that it can be exported.

4, To provide institutional support for Telangana exporters, a state-of-the-art trade facilitation center (Vaniya Bhavan) is being proposed, which could house offices or satellite branches of export promotion councils like APEDA (Agriculture and Processed Food Products Export Development Authority), The Cotton Textile Export Promotion Council, and others. The Telangana State Vanijya Bhavan would include a board room, conference hall, and other amenities.

5, The Government of India issued the National Textile Policy - 2000 in 2000, replacing the previous Textile Policy from 1985. One of the key goals of the new policy is to help the textile industry achieve and maintain a global leadership position in garment manufacturing and export.

The policy aimed to improve the cotton industry by:

A, Increase cotton productivity and quality to worldwide standards by implementing the Technology Mission on Cotton effectively.

B, In keeping with international trends, reduce the ratio of cotton to non-cotton fibres.

C, Promote full-fibre flexibility between cotton and synthetic fibres.

Technology Mission of Cotton 2000

Mission	Focus	Output
Mini Mission I	Research	Development of new genotypes to improve quality of cotton and cotton yarn in the country
Mini Mission II	Technology dissemination programs for farmers	Extension services and distribution of improved seed varieties
Mini Mission III	Improvements in market infrastructure	161 Market yards (out of sanctioned 250 market yards) were modernised to avoid cotton contamination
Mini Mission IV	Modernisation of the ginning and pressing sector	829 ginning and pressing factories (out of targeted 993 projects) were modernised

Table: 1

6, The Merchandise Exports Incentive Scheme which is introduced in the Foreign Trade policy of 2015-20 were the cotton yarn listed in Merchandised export incentive. Export Incentive Scheme incentive schemes are calculated as a percentage of 2%, 3%, or 5% of the realized FOB (Free on Board) or FOB value of exports as per shipping bills in free foreign exchange of the exporters. The free foreign exchange will include foreign exchange through international credit and other instruments allowed by the RBI.

7, Creation of a cotton export grievance cell, coordination with the TEXPROCIL (The Cotton Textiles Export Promotion Council) for exporting raw cotton, or cotton yarn from the Telangana state and to solve the problems of Telangana cotton exporters.

8, The State government has launched an Expression of Interest (EoI) for the selection of Project Implementation Partners (PIPs) who would construct consortia and deploy a bouquet of solutions from multiple startups and tech-focused organizations to establish evidence of

value and accelerate acceptance and use of agritech solutions, taking another step towards the launch of the 'Saagu-Baagu' project that will revolutionize agriculture in Telangana. The Saagu-Baagu project is India's first public-private aggrotech effort, designed to make it easier for innovation in agriculture and horticulture. Its goal is to provide value to agriculture through the use of cutting-edge new technology. The goal is to boost farmer income while also conserving the environment and improving trust and openness.

The Telangana government and the World Economic Forum (WEF) have shortlisted a list of 30 priority solutions that use emerging technologies such as AI, IoT, remote sensing, and blockchain, among others, to solve unique problems and have an impact on farmers' lives, in collaboration with a multi-stakeholder working group that includes over 70 organizations, including more than 40 Indian start-ups. The initial scope of the EoI would be two years, with a concentration on chosen crops like cotton, chilli, and turmeric for Kharif season and groundnut, bengal gram for Rabi season, starting with one lakh farmers in 1,000 villages and 100 farmers' collectives. Any EoI proposal must include at least 5 separate use-cases from various sectors of the agricultural value chain.

Reference:

https://texprocil.org/

http://telangana.gov.in/Library/EXPORTSTRATEGY.pdf

https://www.cicr.org.in/pdf/technonoly_transfer.pdf

Chapter. 4: Data Analysis

4.1 Cotton Balance Sheet of India from 2016-17 to 2020-2021

Here the data has been taken in lakh bales of cotton which one bale will be 170 kg

Lakh Bales

Particulers	2016-17	2017-18	2019-20	2019-20 (p)	2020-2021 (P)
Supply					
Opening Stock	36.44	43.76	42.91	56.52	120.95
Production	345	370	333	365	371
Import	309.94	15.8	35.37	15.5	11
Total Supply	412.38	429.56	411.28	437.02	502.95
Demand					
Mill Consumption	262.7	280.11	270.78	233.7	286
Consumption By SSI	26.21	26.18	22.43	20.33	26
Non - Mill Consumption	21.5	12.77	18	15	18
Exports	58.21	67.59	43.55	47.04	75
Total Demand	368.62	386.65	354.76	316.07	405
Closing Stock	43.76	42.91	56.52	120.95	97.95

Table: 2

Cotton Balance sheet which shows the supply and demand for the cotton bales from 2016-17 where the total exports were 58.21 lakh bales compared to 2020-21 which is 75 lakhs which is provisional.

Reference:

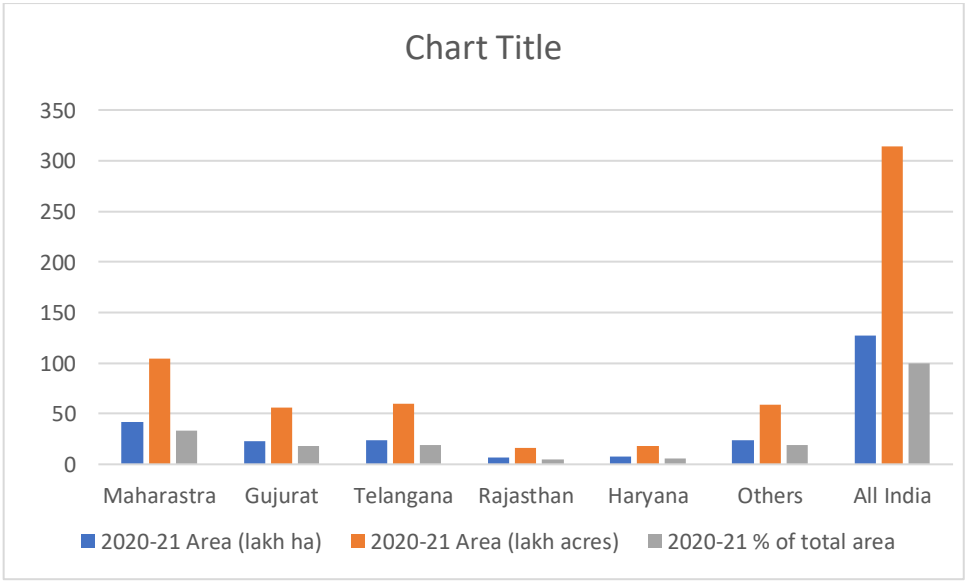
https://angrau.ac.in/downloads/AMIC/COTTON%20OUTLOOK%20REPORT%20-%20January%20to%20May%202021.pdf

4.2 Cotton Production:

Cotton Production in India 20220-21

State	2020-21		
	Area (lakh ha)	Area (lakh acres)	% of total area
Maharastra	42.25	104.4	33.28
Gujurat	22.79	56.32	17.95
Telangana	24.13	59.63	19
Rajasthan	6.68	16.51	5.26
Haryana	7.37	18.21	5.8
Others	23.75	58.69	18.71
All India	126.97	313.75	100

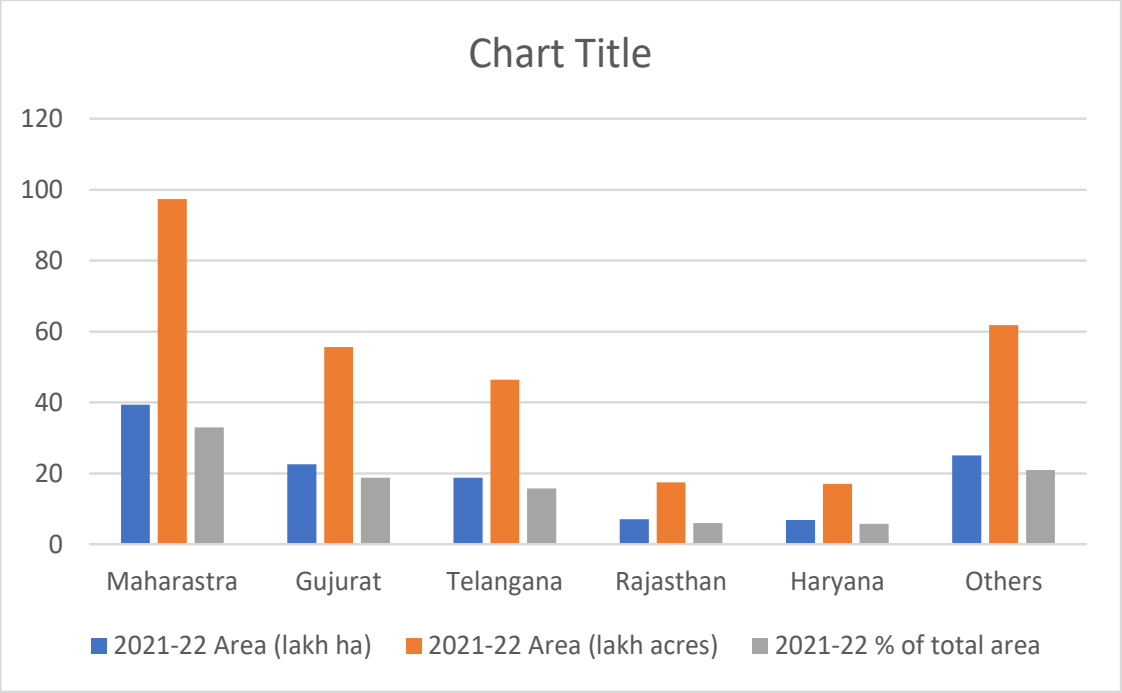
Table: 3



Cotton Production in India 2021-22

State	2021-22		
	Area (lakh ha)	Area (lakh acres)	% of total area
Maharastra	39.41	97.38	32.93
Gujurat	22.51	55.62	18.81
Telangana	18.78	46.42	15.69
Rajasthan	7.08	17.5	592
Haryana	6.88	17	5.75
Others	25	61.78	20.89

Table: 4



Reference:

https://angrau.ac.in/downloads/AMIC/COTTON%20OUTLOOK%20REPORT%20-%20January%20to%20May%202021.pdf

4.3 Exports:

Cotton bales exported from India in 2020-2021 in Lakhs.

Export of Cotton (in lakh bales)	
Country	**OCT 2020-APR 2021**
BANGLADESH PR	22.09
CHINA P RP	21.97
VIETNAM SOC REP	6.40
INDONESIA	2.70
THAILAND	0.39
OMAN	0.31
TURKEY	0.27
ITALY	0.14
MAURITIUS	0.12
Others	0.44
Grand Total	**54.83**

Table: 5

Reference: https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1740344

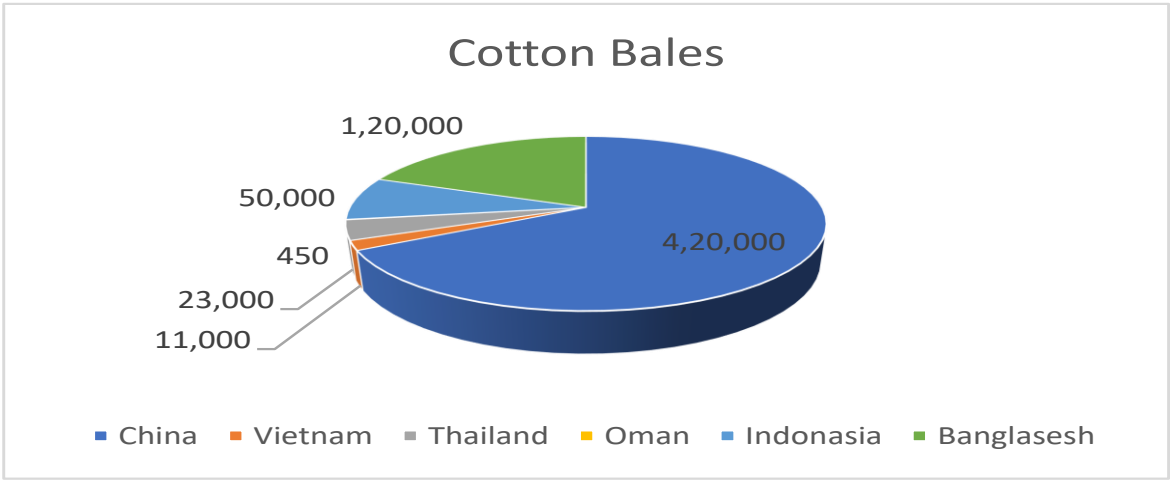
Telangana Cotton Export in Bales
One bale is 170 kgs

2017		2018		2019		2020	
Country	Bales	Country	Bales	Country	Bales	Country	Bales
China	2,50,000	China	1,90,000	China	3,00,000	China	2,65,000
Indonasia	20,000	Thailand	33,000	UAE	800	Thailand	14,000
Vietnam	5,000	Oman	2,900	Qtar	2,000	Indonasia	45,000
Bangladesh	1,80,000	Bangladesh	2,00,000	Indonasia	11,000	USA	3,500
Oman	1,700	Indonasia	500	Vietnam	14,000	Oman	250

2021	
Country	Bales
China	4,20,000
Vietnam	11,000
Thailand	23,000
Oman	450
Indonasia	50,000
Banglasesh	1,20,000

Table: 6

2021 Cotton Bales Exports

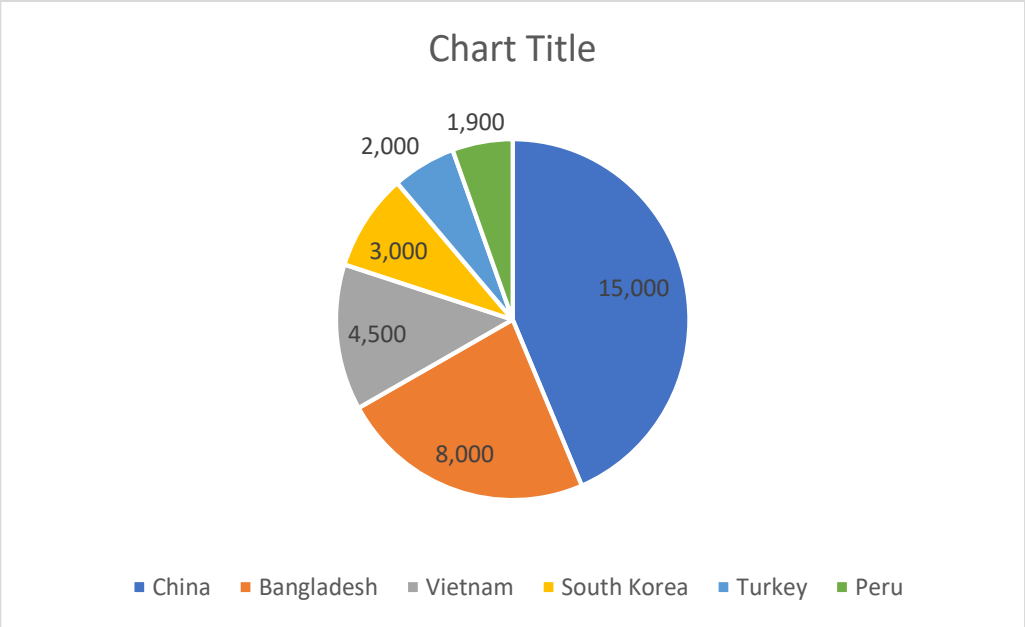


Ref: Hari Hara Cotton Exporters, Kaveri cotton Exporters, Sunwatt International.

Cotton Yarn Exports from Telangana in Kgs in 2021.

Country	Yarn (kgs)
China	15,000
Bangladesh	8,000
Vietnam	4,500
South Korea	3,000
Turkey	2,000
Peru	1,900

Table: 7



China has imported the highest number of cotton yarn followed by Bangladesh from the State of Telangana in the year 2021.

Ref: Kaveri Cotton Exporters, JV Exports, VR Exports, BPK Traders.

4.4 Conversion Rates

When assessing the total annual cotton consumption, production process losses are considered as part of three important parameters:

1, Conversion Rates: The percentage of a manufacturing input that is converted to useful output.

2, Fibre Loss Rates: The percentage of a manufacturing input that is lost as waste in the manufacturing process.

3, Multipliers: A mathematical factor used to convert the weight of manufacturing outputs into the weight of manufacturing inputs. These are calculated from conversion rates. The difference between these can be best explained by a short example as follows.

Example 1

Conversion Rate Example

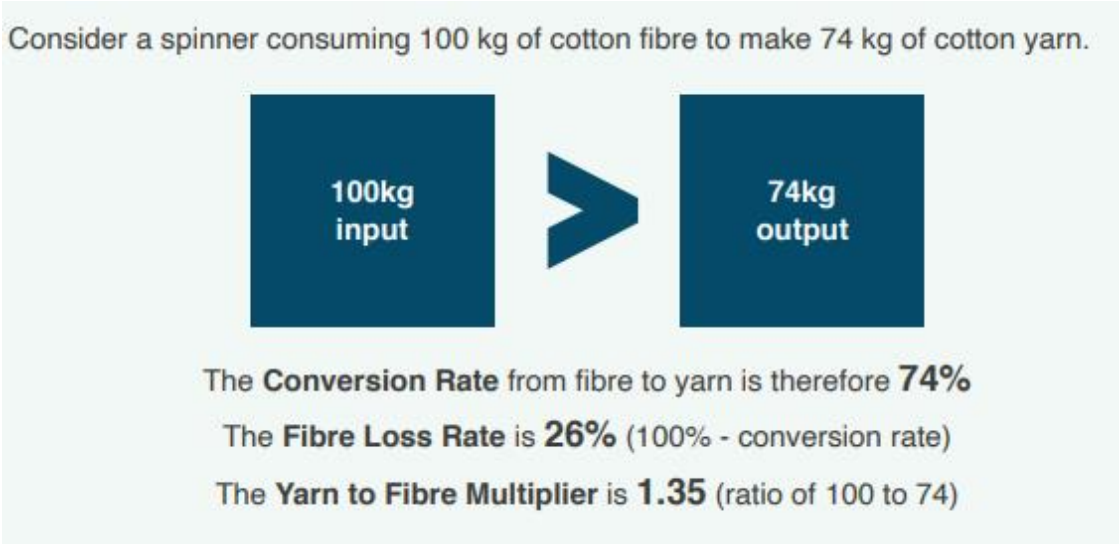


Fig: 3

Calculating the total cotton consumption given the weight of yarn involves multiplying the yarn weight by 1.35. This “yarn-to-fiber multiplier” is calculated by dividing the input weight (100 kg) by the output weight (74 kg).

Example 2

How much cotton fibre in kg is consumed in a Retailer and Brand order of denim jeans?

A Retailer & Brand places an order of:

1, 1,000 units of pairs of jeans
2, Each pair of jeans weighs 0.5kg
3, The jeans have a fabric composition of 75% cotton, 25% polyester.

The Net weight of the order is therefore 500kg (1,000 units X 0.5kg).

The below equation is to be used to calculate the Total Cotton Fibre Consumption of this order.

Total Cotton Fibre Consumption = Net Weight * Percentage of cotton in the fabric Composition * End Product to fibre multiplier

Total Cotton Fibre Consumption = 500kg * 75% * 1.43 = 536 kg

This equation of cotton fibre consumption shows how much percentage of cotton fibre is used and wasted. Through this we can analyze how much fibre is used in the clothes.

Reference: https://www.fibre2fashion.com/news/textile-news/trade-pact-soon-to-expand-cotton-export-from-india-to-bangladesh-275226-newsdetails.htm

Chapter.5 Findings and Conclusion

5.1 Findings:

If cotton prices continue to rise, the Union government may put a temporary restriction on exports. At a time when the Indian textile industry is grappling with a surge in cotton and yarn prices, which is affecting production and exports. Cotton costs have risen to above 90,000 rupees per candy in less than a year. Cotton prices have even topped 100,000 rupees per confection in some cases. A prohibition could help soften prices by freeing up cotton for the domestic market. High cotton prices have a disproportionate impact on the Indian textile industry, which is primarily reliant on cotton, unlike other markets where man-made fibre has a higher role. Cotton prices are unlikely to fall before October. Cotton imports were formerly effectively taxed at 11%. "Cotton prices haven't dipped as much as anticipated. It is increasing, a temporary prohibition on export or quantitative limits to evaluate prices is an option for evaluating the next course of action.

Memorandum Agreement Between India and Bangladesh.

- The Indian Government will soon sign a Memorandum of understanding with Bangladesh to expand the cotton exports.

- The CCI to canalize export of at least 10 Lakh bales of cotton.

The MoU is going to facilitate a Government-to-Government transaction. This Memorandum will be signed soon and will be handled by Cotton Corporation of India Limited. Bangladesh forms a good market for Indian cotton; imports 20 to 30 lakh (each weighing around 120 kgs) bales per year. This is the first time that CCI is trying to enter the export market directly. The contract is in the final stages with both the governments actively negotiating the deals. Bangladesh is worried about the government export guarantee, arguing the hat government of India takes a lot of time with the supplies, whereas the private exporters are quite prompt.

Reference: https://www.fibre2fashion.com/news/textile-news/trade-pact-soon-to-expand-cotton-export-from-india-to-bangladesh-275226-newsdetails.htm

5.2 Conclusion:

Telangana has good demand in the countries like China, Vietnam, Indonesia, Bangladesh, Oman, and Thailand. Not only internationally but Telangana cotton has high demand in the domestic markets where the states like Gujrat and Maharashtra had cotton trade with Telangana due to the hardness of the cotton staple. Telangana cotton is proposed to be named premium cotton by the Central Government.