Changing Dynamics of Global Cotton Trade

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ABSTRACT

This article discusses about the changes in the cotton production, consumption, stocks, exports and imports between countries over the years and the possible reasons leading to the observed changes. This helps researchers to have a glimpse of what have happened in the past with respect to global cotton scenario. The understanding of the changes in global cotton trade helps in making assumptions used to predict future production or price. The main factors determining the cotton trade are labour charges, adoption of technological developments in cotton processing, trade relationship between major cotton producers and consuming countries and government policies within the country.

Keywords: Global cotton trade, Area harvested, Production, Stocks, Exports, Imports

1. INTRODUCTION

Cotton is one of the internationally traded commodities. About 30% of the total global production is traded across countries before being used [1]. Cotton is grown in more than 80 countries and more than a billion people are employed in cotton growing, picking, handling, transport and ginning. The dynamics of global trade have changed from more than production oriented price movement to a trade oriented price movement on the back of mill consumption and stocks and from 2017 reason for price volatility is owed to trade wars and negotiations [2]. This study is being carried out to understand the changes that evolved over the period of years in different countries in aspects of cotton producing, consumption, exporting and importing. The study adds to the knowledge pool to understand the structure and changes that happened in the past and are happening over time. This understanding comes in a way to aid towards accuracy in making assumptions which would be employed to project future production, trade and consumption behaviour and price levels based on expert opinion and understanding.

2. LITERATURE REVIEW

Global cotton trade started as long back as 14th century. Cotton goods from India were moved between the northern, central and eastern Asian countries even in 14th century [3]. As per the projections given by OECD - FAO Agricultural Outlook 2020-29, global mill consumption is expected to grow slightly faster than the world population growth. The report states that there has been marked shift in cotton mill consumption from developed countries towards Asia, especially China and off late to other Asian countries especially Vietnam and Bangladesh. As per the report, production is expected to grow at the rate of 1.5% per annum, of which 0.5% growth is stated to come from area expansion and 1% from improved yields [4]. As per Mordor Intelligence report, compounded annual growth rate (CAGR) of cotton market is pegged at 4.1% for the forecasted period 2020-2026 [5].

3. DATA AND METHODOLOGY

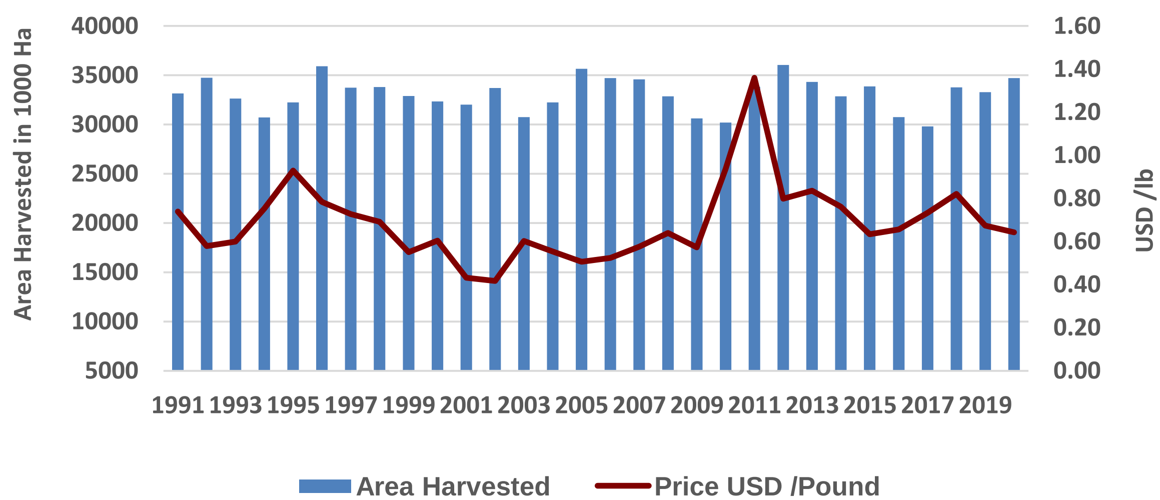
Annual data on area harvested, production, consumption, and trade are taken from authentic sources like United States Department of Agriculture (USDA) and Food and Agricultural Organization (FAO). The time period considered for the study is from 1991 to 2020 – a period of thirty years. Data used in the study pertain to marketing year starting August 1. The thirty year time period is split into six five year time blocks and the changes in production, consumption, stocks, exports and imports are analysed. Weight of one bale mentioned in this study equals to 480 pounds by weight.

4. RESULTS AND DISCUSSION

4.1 Global Cotton Area

Globally **c**otton production is concentrated in handful of countries. USA, China, India, Brazil, Pakistan, Australia, Turkey and Uzbekistan produce about 80% of the world cotton production, out of which US, China and India together produce about 50% of the global production. India and China consume major portion of cotton produced domestically whereas US exports nearly 80% of its total production [6]. World economic slow down and good crop in 2001 derived mainly by good weather condition have dragged the price down in 2001 [7].

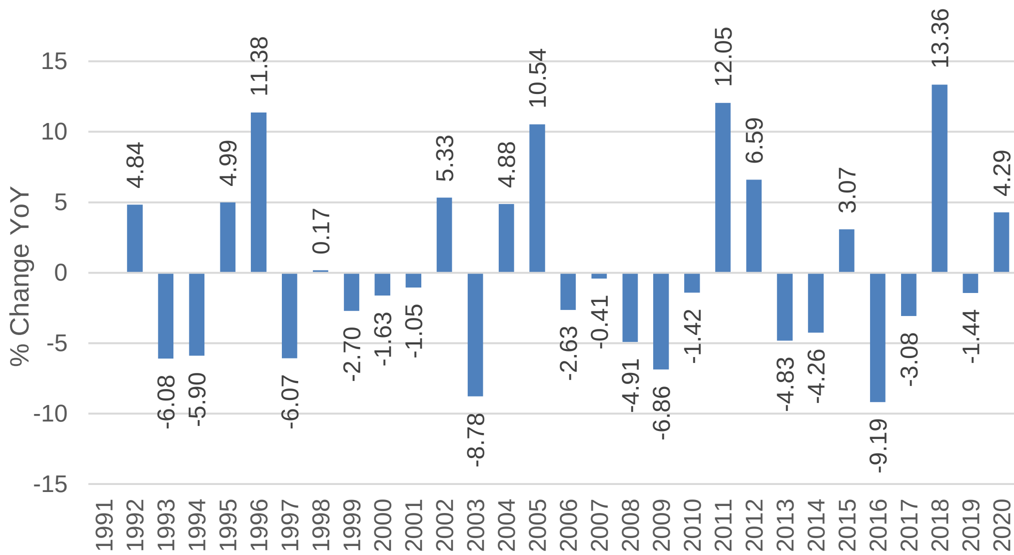
Fig 1: World - Harvested Area Under Cotton (1000 Hectares)



Source: USDA World Cotton Markets and Trade, Dec 8, 2021 report.

World total harvested area under cotton shows a cyclical pattern with troughs and peaks. The downside trend continues to 5 -6 yrs in majority of the troughs formed whereas upward increase in area reaches peak in 2-3 yrs. Over the time period studied, the harvested area under cotton varied between 30 to 35 million hectares, a small range, though cotton prices varied widely from 0.42 USD per pound in 2002 to 1.36 USD per pound in 2011. The rate of change in area under cotton year on year is illustrated in fig 2.

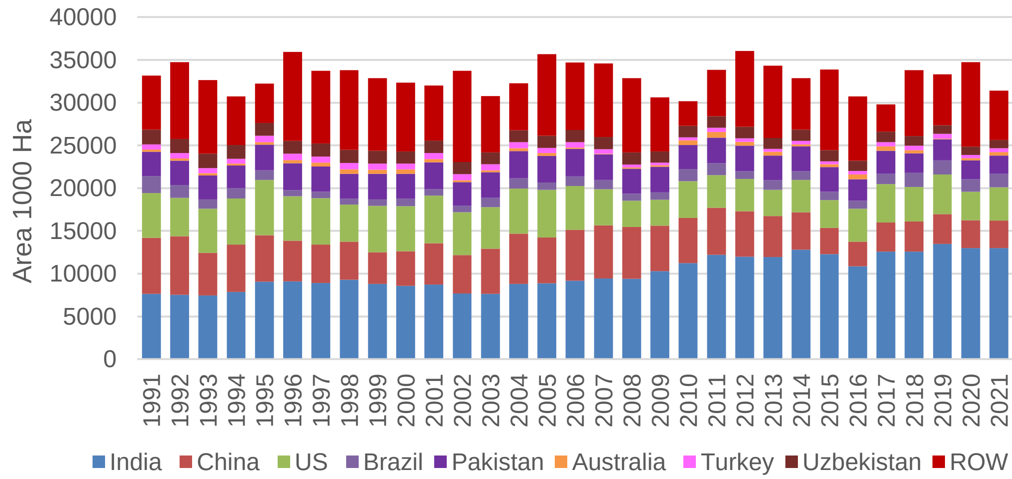
Fig 2: YoY % Change in World Area Harvested Under Cotton



Source: USDA World Cotton Markets and Trade, Dec 8, 2021 report.

Overall magnitude of change in area has been seen to be comparatively higher during increases than that during declines. The maximum yoy percent increase (13.36%) has been observed in 2018 and the deepest yoy decline in area has been observed in 2016. Area under cotton over the period of years in different countries is depicted in fig 3. In India, area under cotton has seen an increase over the years. Overall India has nearly about 37% to 40% of the total world area under cotton.

Fig 3: Area Under Cotton

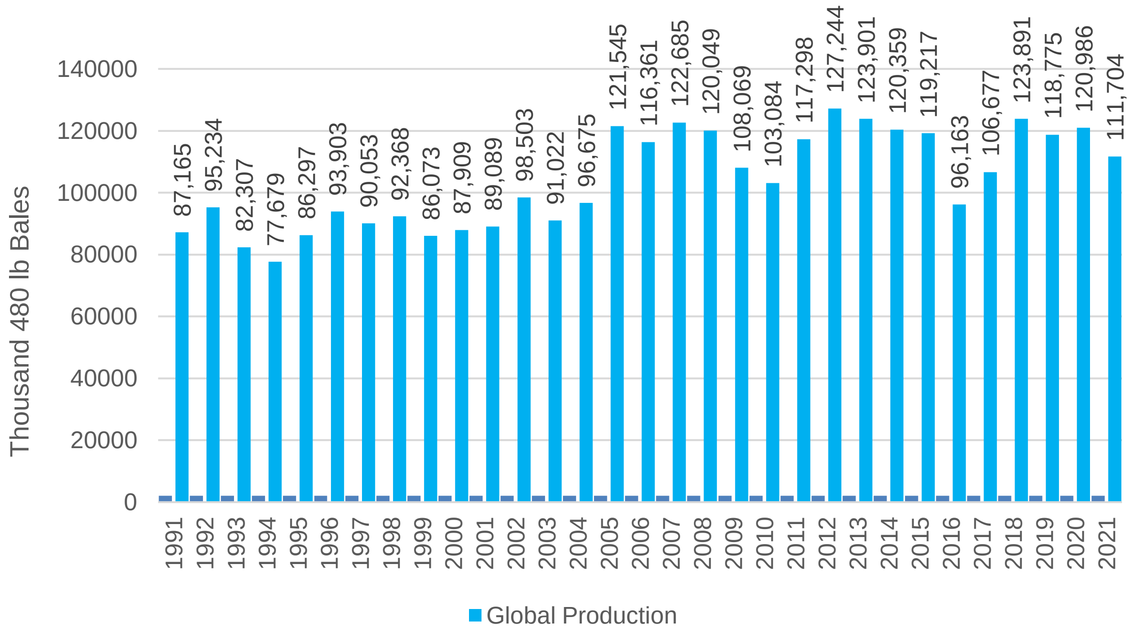


Source: USDA World Cotton Markets and Trade, Dec 8, 2021 report.

4.2 Production

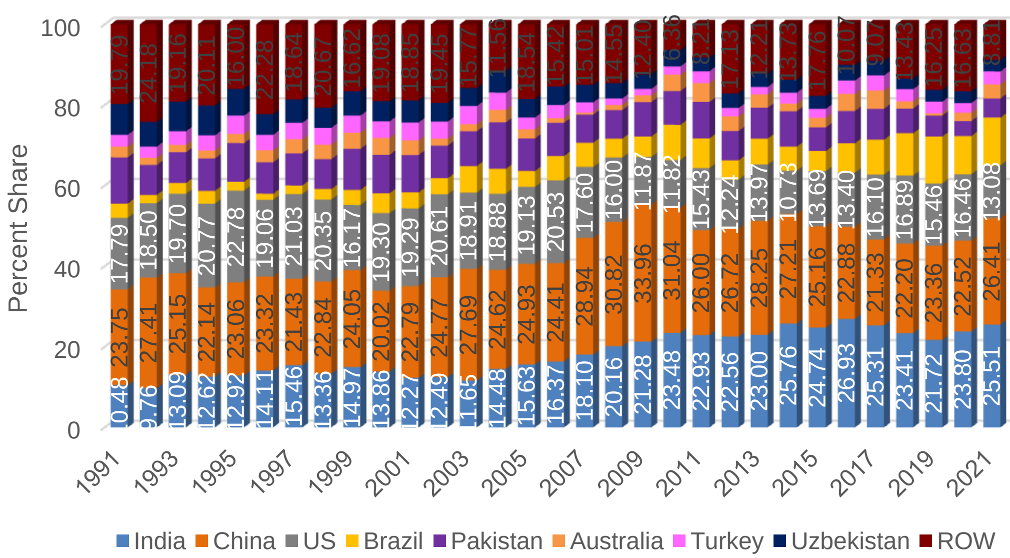
Cotton is grown in both northern and southern hemispheres. World annual cotton production over the years is presented in fig 4. World cotton production crossed 100 million 480 pound bales in 2005 and remains above this level except for a tad decline in 2016 to 96.16 million 480 pound bales. Since 1999, more than 80% of the world production is contributed by eight countries namely - India, China, US, Brazil, Pakistan, Australia, Turkey and Uzbekistan. India and China together contribute about 50% of world cotton production. The percent share of production for the countries over the years is depicted in fig 5. Contribution of India, China, and Brazil has seen an increase whereas percent production share of US, Pakistan and Uzbekistan has seen significant decline. During the span of the study period of thirty years, India registered a significant production share increase of 15.03 points from 10.48% in 1991 to 25.51% in 2020 followed by Brazil with 8.34 points during the same period. The major production share losers are Pakistan which has lost 8.34 points followed by US with a loss of 4.71 points and Uzbekistan with 4.75 points.

Fig 4: World Cotton Production



Source: USDA World Cotton Markets and Trade, Dec 8, 2021 report

Fig 5: Percent Share of Countries in World Cotton Production



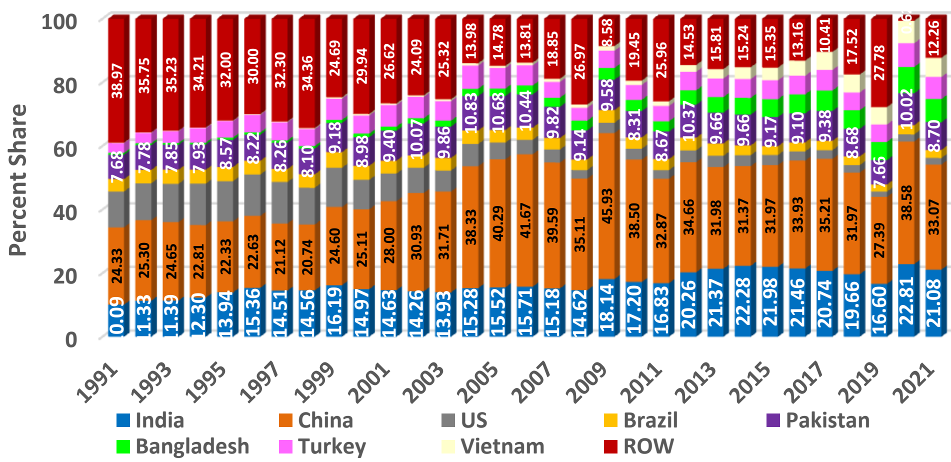
Source: USDA World Cotton Markets and Trade, Dec 8, 2021 report

4.3 Consumption

India, China and Pakistan have been the major cotton consumers and in the recent years, Bangladesh and Vietnam are gaining share in total world cotton consumption. The percent share of these countries in world cotton consumption over the years is represented in fig 6.

In 1991, the share of US in world total consumption was 11.23 percent which dwindled to a meagre 2.24 percent in 2020. Brazil also has lost its consumption share from above 4 percent during 1990s to less than 3 percent since 2015.

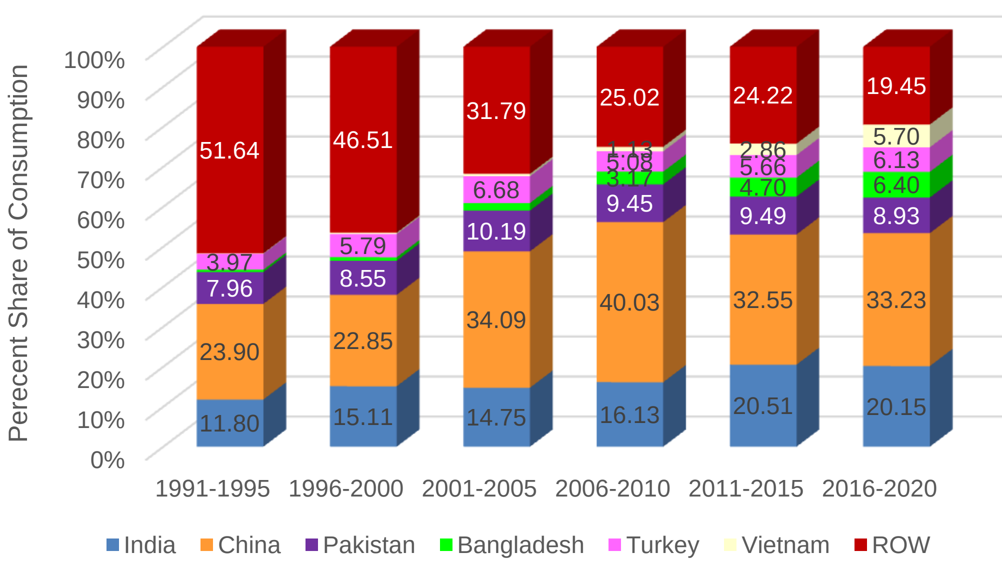
Fig 6: Percent Share of Countries in World Cotton Consumption



Source: USDA World Cotton Markets and Trade, Dec 8, 2021 report

Cotton consumption in China from its peak of 45.93% in 2009 has shown a declining trend and has been hovering below 40% since 2010. The 5 year average trend depicted in Fig 7 indicate a significant decrease in consumption by China whereas countries like Vietnam, Bangladesh and Turkey have increased their consumption significantly during the last decade. Higher labour costs and more stringent environmental and labour laws in China have initiated movement of cotton processing towards other Asian countries like Vietnam and Bangladesh.

Fig 7: Percent Share of Countries in World Cotton Consumption (5 Yr Average)



Source: USDA World Cotton Markets and Trade, Dec 8, 2021 report

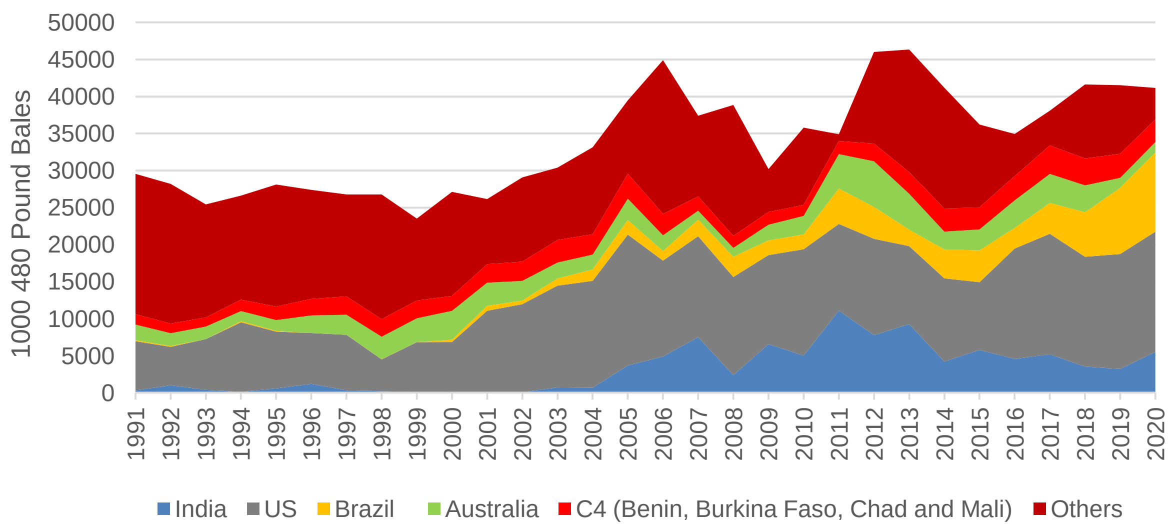
India has almost doubled its share of global cotton consumption in recent years, from the level seen during 1991-1995. Indian government policies support in house consumption of cotton with schemes like Technology Mission on Cotton (TMC) to improve cotton production, yield, marketing and ginning facilities and Technology Upgradation Fund Scheme TUFS, Amended TUFS. The government of India supports in house consumption of raw cotton for apparel or textile manufacturing and exports which in turn would be generating additional employment.

4.4 Exports and Imports

4.4.1 Exports

Cotton exports from US and Brazil have been on the rise whereas exports from India has plummeted after 2013 levels. During the recent years, US and Brazil are the major exporters which together account to about 50% of the world total exports. Based on five year average data, world cotton exports are to the tune of 40.612 million bales (one bale equals 480 pounds). World cotton exports are presented in fig 8. After 1996-97, strong world economic growth and new investment in spinning capacity has increased world cotton exports [8]. The countries which increased their exports are US and Brazil. As per the fig 9, percent share of Indian cotton exports has dwindled from 31.74% in 2011 to 13.36% in 2020 which is mainly due to preference to domestic consumption for additional employment generation within the country. US share of world cotton exports have gained over the years because of increasing labour cost for domestic processing of cotton to textiles in US.

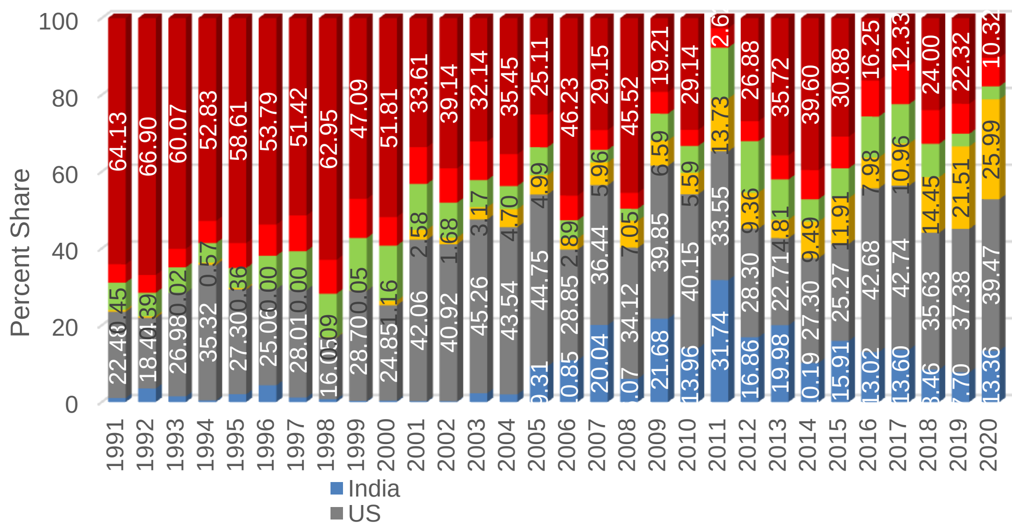
Fig 8: World Cotton Exports



Source: USDA World Cotton Markets and Trade, Dec 8, 2021 report.

As per USDA - Foreign Agricultural Service (FAS), main export destinations of US raw cotton during the period 2015 - 2019 were Vietnam, China, Turkey, Pakistan, India, Indonesia, Bangladesh, Mexico, Thailand, South Korea etc. The change in trend in US export destinations over the period from 2015-2019 is shown in Fig 10.

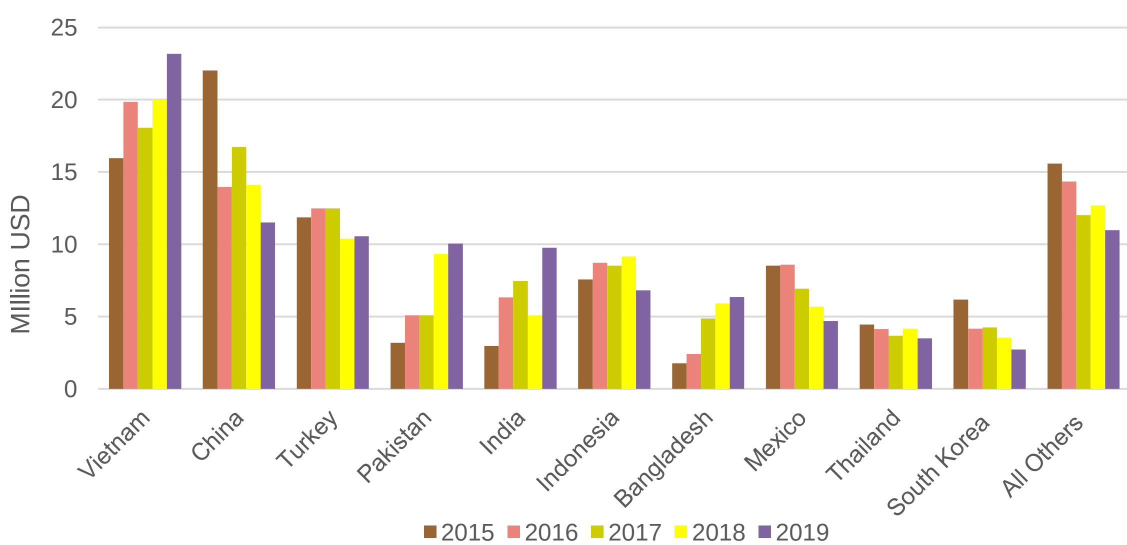
Fig 9: Percent Share of Countries in World Cotton Exports



Source: USDA World Cotton Markets and Trade, Dec 8, 2021 report.

Major exporters are US and Brazil. Export destinations of US over the years are analysed and presented in fig 10.

Fig 10: US Export Destinations - Value Terms (Million USD)



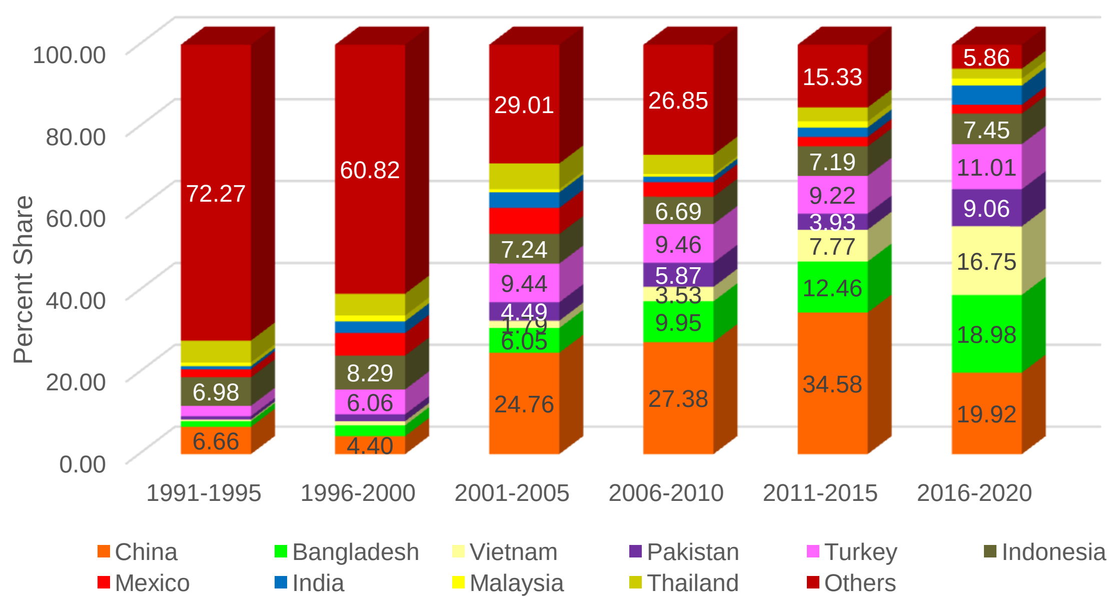
Source: USDA World Cotton Markets and Trade, Dec 8, 2021 report.

From fig 10, it is observable that over the five year period, US cotton exports to Vietnam, Pakistan, India and Bangladesh has increased whereas exports to China, Mexico and South Korea has declined significantly over the years. US exports to Vietnam has been on continuous increase and China has been the second largest US export destination especially for US Pima (Extra Long Staple Cotton) cotton [9].

4.4.2 Imports

Major importers are China, Bangladesh, Vietnam, Pakistan, Turkey, Indonesia, Mexico and others. The five year average percent share of major importing countries for the study duration is presented in fig 11.

Fig 11: Percent Share of Global Cotton Imports – 5 Year Average



Source: USDA World Cotton Markets and Trade, Dec 8, 2021 report.

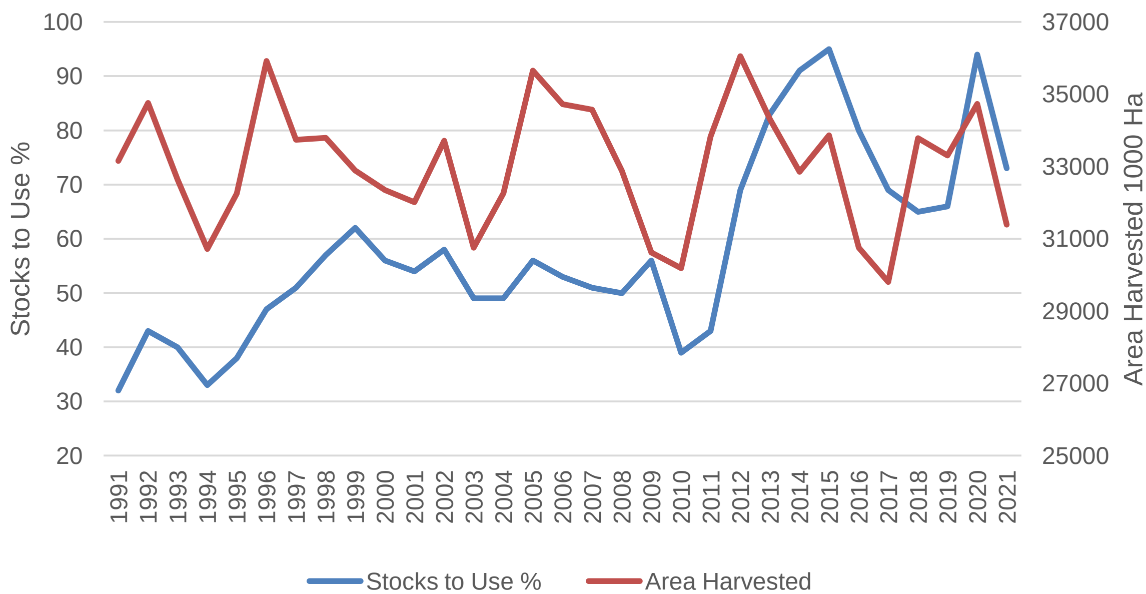
From year 2000 onwards, countries like Bangladesh, Vietnam, Pakistan, Turkey and India have gained significant share of global cotton imports. India has been a growing import market for high quality extra long staple cotton [10]. China has lost share in the latest 5 year period 2016 -2020. Reduced share of Chinese imports might be due to increased usage of stock piles, price difference between domestic price of raw cotton and imported cotton. As per OECD – FAO agricultural outlook, cotton imports after 2014 has declined as China's new support policy brought down the price gap between domestic and imported cotton. Along with China, Thailand also has lost share of global cotton imports over the years.

4.5 Stocks

The parameters, harvested area under cotton and the stocks to use ratio moved in tandem with each other during few of the years under study. Difference is seen during the periods – 2005 to 2009 wherein though area harvested under cotton has increased, stocks to use ratio has decreased. Again from 2010 onwards, the area harvested under cotton and stocks to use % has moved in tandem but with a time lag of approximately two to three years. But in 2020, the movement of both the parameters aligned with each other. During the years, 2014, 2015 and 2020, stocks to use ratio has crossed 90% and has been seen at 91%, 95% and 94% respectively.

Stock to use ratio of major cotton consuming countries are shown in fig 12. Chinese stocks reached 106% in 1998-99 and accounted for about 47% of world ending stocks [11]. During the years 2013, 2014 the stock to use ratio of china has crossed 180% and reached back to around 100% levels during 2017, 2018.

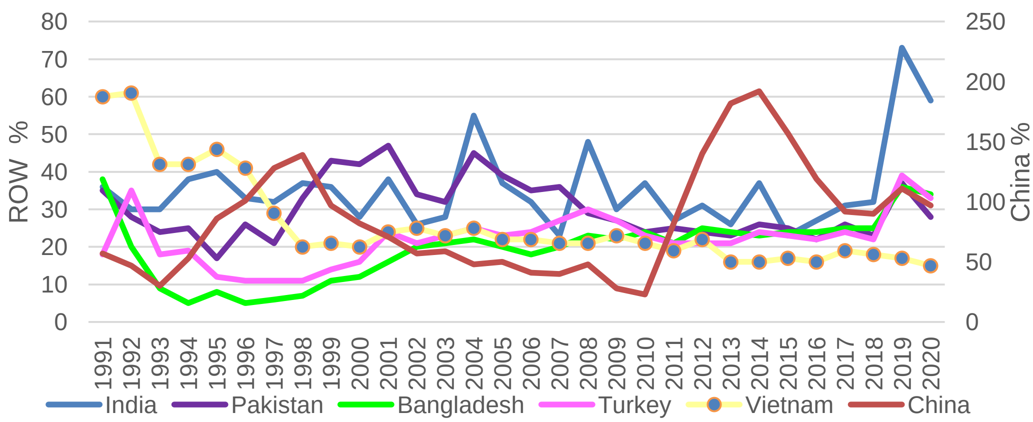
Fig 12: World Cotton Area Harvested and Stocks to Use %



Source: USDA World Cotton Markets and Trade, Dec 8, 2021 report.

Chinese government started offering its cotton state reserves from 2015 onwards which also has dented the cotton imports in the subsequent years. After the stock piles having reached a stock to use ratio of less than 100%, China is expected to refill its state reserve in the coming year and hence Chinese cotton import is expected to pick up pace. The stock to use ratio of India has been 73% in 2019 which is due to COVID 19 pandemic lock down situations which hampered the industrial production. Other major consumers Bangladesh and Vietnam have a stock to use ratio of below 40%.

Fig 13: Stock to Use Ratio



Source: USDA World Cotton Markets and Trade, Dec 8, 2021 report.

5. CONCLUSION

The world area under cotton has more or less varied only by a meagre percentage over the years. However, area under cotton in India has shown a gradual increase over the study period and has reached to nearly 40% of the total world cotton area.

World cotton production crossed 100 million 480 pound bales in 2005.

The major cotton consuming countries are India, China, Pakistan, Vietnam and Bangladesh. Cotton consumption by these countries in 2020 are as follows - India (23.50 million bales), China (39.75 million bales), Pakistan (10.33 million bales), Bangladesh (8.51 million bales), Turkey (7.7 million bales), and Vietnam (7.3 million bales).

The major cotton exporters are US and Brazil followed by India and their cotton exports in 2020 are 16.2 million bales, 10.7 million bales and 5.5 million bales respectively.

The major cotton importers and their imports in 2020 are China (12.00 million bales), Bangladesh (8.75 million bales), Vietnam (7.31 million bales), Pakistan (5.30 million bales), Turkey (5.32 million bales) and others.

With regard to stock to use ratio, China used to maintain the highest stocks to use ratio and replenishes its stock mainly from procurement from Chinese farms and by imports. Chinese government policy support to its cotton growers in terms of procurement at support prices has resulted in a heavy stock pile during the years 2012 – 2014 which forced the government to auction its stocks. Chinese stock status and its policy decision related to this has become the single major factor influencing global cotton price.

Next to China, India has the next highest stock to use ratio when compared with other major cotton consuming countries.

Government policies like support for cotton production, labour and environmental laws etc, cost of electric power, modernization in spinning mills, slowdown in global economy, price competition from synthetic fibres, trade negotiations between countries are the major factors to be watched for in case of world cotton price fluctuations and trade.

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