



Volume 71 - Number 6
July-August 2018



Cotton:

Review of the World Situation

ICAC International Cotton Advisory Committee

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INTERNATIONAL COTTON ADVISORY COMMITTEE

Supply and Distribution of Cotton August 1, 2018

Seasons begin on August 1

	2013/14	2014/15	2015/16	2016/17 Est.	2017/18 Est.	2018/19 Proj.
Million Metric Tonnes						
BEGINNING STOCKS						
WORLD TOTAL	19.428	21.331	22.967	20.312	18.80	19.29
CHINA	10.811	13.280	14.118	12.650	10.63	9.22
USA	0.827	0.512	0.795	0.827	0.60	0.90
PRODUCTION						
WORLD TOTAL	26.225	26.235	21.476	23.075	26.87	25.89
INDIA	6.766	6.562	5.746	5.865	6.35	6.05
CHINA	7.000	6.600	5.200	4.900	5.89	5.72
USA	2.811	3.553	2.806	3.738	4.56	4.03
PAKISTAN	2.076	2.305	1.537	1.663	1.80	2.00
BRAZIL	1.734	1.563	1.289	1.530	1.96	2.02
UZBEKISTAN	0.910	0.885	0.832	0.789	0.80	0.80
OTHERS	4.928	4.767	4.066	4.590	5.51	5.26
CONSUMPTION						
WORLD TOTAL	24.101	24.587	24.139	24.516	26.38	27.46
CHINA	7.600	7.550	7.600	8.000	8.65	8.95
INDIA	5.087	5.377	5.296	5.148	5.20	5.25
PAKISTAN	2.470	2.467	2.147	2.147	2.35	2.46
EUROPE & TURKEY	1.611	1.692	1.687	1.612	1.63	1.85
BANGLADESH	1.129	1.197	1.316	1.409	1.66	1.81
VIETNAM	0.673	0.875	1.007	1.168	1.58	1.73
USA	0.773	0.778	0.751	0.708	0.73	0.74
BRAZIL	0.862	0.797	0.660	0.690	0.72	0.73
OTHERS	3.896	3.854	3.675	3.635	3.85	3.93
EXPORTS						
WORLD TOTAL	9.015	7.764	7.532	8.185	9.08	9.47
USA	2.293	2.449	1.993	3.248	3.53	3.27
INDIA	2.015	0.914	1.258	0.991	1.13	1.13
CFA ZONE	0.973	0.966	0.963	0.972	1.04	1.30
BRAZIL	0.485	0.851	0.939	0.607	0.93	1.12
UZBEKISTAN	0.615	0.550	0.500	0.403	0.30	0.39
AUSTRALIA	1.058	0.527	0.616	0.812	0.91	0.79
IMPORTS						
WORLD TOTAL	8.858	7.800	7.575	8.125	9.08	9.47
BANGLADESH	1.112	1.183	1.378	1.412	1.67	1.80
VIETNAM	0.687	0.934	1.001	1.198	1.57	1.72
CHINA	3.075	1.804	0.959	1.096	1.36	1.55
TURKEY	0.924	0.800	0.918	0.801	0.82	0.83
INDONESIA	0.651	0.728	0.640	0.746	0.80	0.83
TRADE IMBALANCE 1/	-0.157	0.036	0.042	-0.060	0.00	0.00
STOCKS ADJUSTMENT 2/	-0.063	-0.047	-0.034	-0.013	0.00	0.00
ENDING STOCKS						
WORLD TOTAL	21.331	22.967	20.312	18.798	19.29	17.71
CHINA	13.280	14.118	12.650	10.632	9.22	7.52
USA	0.512	0.795	0.827	0.599	0.90	0.92
ENDING STOCKS/MILL USE (%)						
WORLD-LESS-CHINA 3/	49	52	46	49	57	55
CHINA 4/	175	187	166	133	107	84
COTLOOK A INDEX 5/	91	71	70	83	88	

1/ The inclusion of linters and waste, changes in weight during transit, differences in reporting periods and measurement error account for differences between world imports and exports.

2/ Difference between calculated stocks and actual; amounts for forward seasons are anticipated.

3/ World-less-China's ending stocks divided by World-less-China's mill use, multiplied by 100.

4/ China's ending stocks divided by China's mill use, multiplied by 100.

5/ US cents per pound.

Summary of the Outlook for Cotton

Consumption Projected at a Record 27.5 Million Tonnes in 2018/19

International cotton prices have risen in 2017/18 reaching a high of 101.7 cents/pound in mid-June based on the early projections of tightening supplies in 2018/19 with strong global demand coupled with lower expected production. As global trade tensions actualised in the beginning of July, prices moved downward to 92 cents per pound, yet still above the season average of 88 cents per pound. Even with tariffs enacted on a range of goods including cotton by China, the world's leading importer, on the USA, the world's leading cotton exporter, prices recovered, moving upward to close the season at 98.7 cents per pound reflecting strong demand particularly in Asia and Southeast Asia. Although global trade relations are showing little improvement, with the possibility of escalation and the addition of tariff lines, global economic expansion is expected to continue albeit less evenly across regions, with Asia expecting the most robust growth.

While global stocks are expected to increase to 19.3 million tonnes in 2017/18 based on global production outpacing consumption, stocks in China have decreased to 9.2 million tonnes with stocks outside of China increasing to 10.1 million tonnes. Global demand in 2017/18 has increased 8% to 26.38 million tonnes. Consumption in China on three years of growth, has increased 8% from the previous season to 8.65 million tonnes with imports increasing 24% to 1.36 million tonnes. Consumption in India, the world's second largest consumer of cotton with a textile industry not dependent upon imports, is expected to remain stable at 5.2 million tonnes. Consumption in Pakistan is expected to increase 9% to 2.35 million tonnes while consumption in Bangladesh is expected to increase 18% to 1.66 million tonnes. Consumption in Vietnam is expected to increase 35% to 1.58 million tonnes.

Global production in 2017/18 has increased 16% to 26.87 million tonnes with production increases expected from all major producers including India, China, USA, Brazil, Pakistan, West Africa, Turkey, Australia and Uzbekistan, accounting for 90% of global production. Broadly speaking, production increases have come from increases in harvested areas and favourable weather conditions as global yields have remained stable with a marginal increase of 1%.

While higher cotton prices have traditionally driven planting decisions, environmental conditions and water availability remain influencing factors for production in the 2018/19 season with several major producers projecting reductions in cotton area. India, leading the world with area under cotton, is projected to harvest 11.9 million hectares, a 3% decrease, with farmers planting on fewer hectares following losses from the previous seasons pest issues. While the Cotton Corporation of India increased the Minimum Support Price (MSP) for cotton, MSPs for other commodities have also been increased and thus unlikely to influence cotton area in the short term. Harvested area in the USA is expected to decrease 5% to 4.25 million hectares due to ongoing drought conditions and potential pest issues. Cotton area in China is expected to remain relatively stable with 3.3 million hectares in 2018/19.

With trade issues affecting the export market, USA cotton may be less attractive to Chinese buyers at a 25% premium. USA cotton may be more competitive in other markets, while other leading exporters may find greater demand from China. An overall global environment of strong cotton demand may indicate an opportunity for new patterns of trade for export markets. Production increases in 2018/19 are expected in Brazil where additional land is available for cotton while production is expected to decrease considerably in Australia to 630,000 tonnes based on projected water availability. With stronger investment, West Africa production is expected to increase 13% in 2018/19 to 1.3 million tonnes.

Global production in 2018/19 is currently projected at 25.9 million tonnes which would represent a 4% decrease. Global consumption is currently projected to increase 4% to 27.5 million tonnes exceeding the previous high of 26.7 million tonnes in 2007/08. With global consumption at a new high, pressure on stocks is expected to reduce the global reserve by 1.6 million tonnes to finish the 2018/19 season at 17.7 million tonnes. Stocks in China are projected to reduce to 7.5 million tonnes continuing five years of decline, while stocks outside of China are currently expected to remain stable at 10.2 million tonnes.



Cotton Price Trends in 2017/18

By Lihan Wei, ICAC

International Cotton Prices High

At the end of May 2018, the international reference price for cotton (Cotlook A index) crossed the one dollar per pound mark for the first time in over six years. The season's average of 88 cents per pound reflects a 6% increase over the previous season's average of 83 cents per pound. Following the price spike of 2011/12, this season's price movement represents a second continuous year of growth.

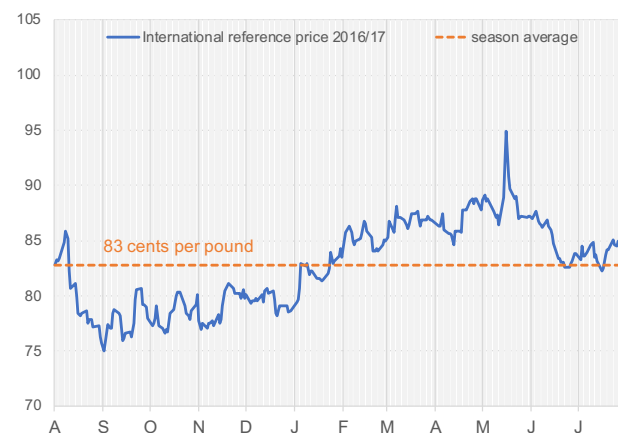
The A index followed an upward trend for most of the season. At the start of the season, the index was at 79 cents per pound, fluctuating around this mark and never falling below 77 cents per pound through mid-November. The A index then began an upward movement until January 2018, when the index reached 94 cents per pound before falling to 86.6 in February. The index then moved upward again to 94.6 cents per pound in the first week of March before entering a phase of relative stability through mid-May, fluctuating between 89 to 95 cents per pound. The 95-cent mark was breached on May 22 followed by the crossing of the one dollar mark at the start of June, then followed by the season high of 101.45 cents per pound on June 15. From mid-June to mid-July, the A index dropped to 92 cents per pound before recovering at end of the season to 98.7 cents per pound.

The trend in international cotton prices over 2017/18 reflects growing demand, particularly in Asia and Southeast Asia, that supported the rising prices, production that outpaced consumption thus increasing global stocks providing downward pressure, with added uncertainty in trade policies between the leading global exporter, the United States, and a global leading importer, China, toward the end of the season.

The season began with projected production increases based on an 8% expansion of cotton area and a reduction in global reserves both in China and the rest of the world from the previous season. The A index average for the previous 2016/17 season was 83 cents per pound with prices higher in the second half of the season (Figure 2). Planted area and prices move together (Figure 3) particularly when prices appear to move upward over the course of the season when planting decisions for the next season are being considered.

At the start of the season, India increased planted area 12 million hectares and favourable weather conditions to the crops in China, Pakistan, Turkey and USA were expected. A downward movement on prices in mid-August may have come from the news of the prolongation

Figure 2: International Cotton Reference Price 2016/17



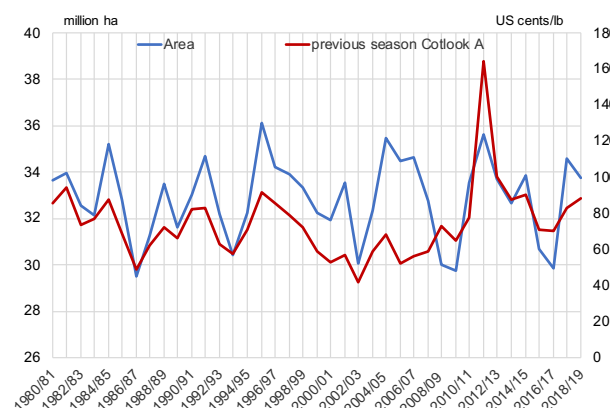
Source: Cotton Outlook, 2018.

Figure 1: International Cotton Reference Price 2017/18



Source: Cotton Outlook, 2018.

Figure 3: Prices and Area 1980/81 - 2018/19



Source: ICAC World Cotton Database, 2018.

of the China State Reserve Auction through September with additional quantities of Xinjiang cotton being made available for sale. Prices rose through the beginning of September with some questions on weather conditions for the India crop in Gujarat.

By mid-September, area expansion under cotton was being reported, with favourable environmental conditions and higher yields, in Argentina, Australia and Brazil, as well as a favourable crop report for the USA. However, crop updates in October began to indicate the possibility of lowered forecasts in India and Pakistan amidst a rise in the global monthly textile mill demand.

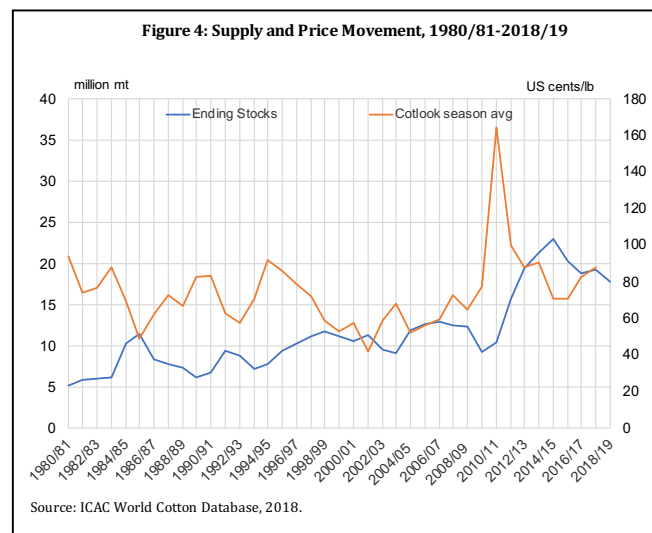
As consumption forecasts remained steady and demand was further confirmed by the steady uptake at the China State Reserve Auctions now opened through September with prices moving steadily upward from October to mid-January 2018. The market continued to indicate adequate supply at this point in the season until mid-January. At around the midpoint of the market year, ending stocks were still projected to rise and while demand forecasts for the season remained steady, monthly demand by mills turned cautious with prices lowering through mid-February before rebounding in March. Prices remained relatively stable from March to mid-May as the result of an improvement in demand for cotton and improvement in crop outlook. By June, prices rose to the season high above 100 cents per pound on optimism in the global economic expansion, growing consumer populations in emerging economies, textile growth in Asia and Southeast Asia and reduced expectations for the 2018/19 production.

In June, global trade tensions began to manifest with the possibility of tariffs by major global economies. In addition to questions on the effect on global economic growth, cotton tariffs by the leading global importer, China, on the exports of the leading global exporter, the USA, were among the products lines targeted. The Chinese State Reserve Auction, which had opened sales in March, beginning limiting sales to mills for final use, thus limiting the role of trader speculation. Sales from the reserve were announced to extend through the end of September, ensuring supply to Chinese mills. At this point in the season, trade tensions realised formally with 25% tariffs on cotton from the USA to China, with the potential of further escalation. Amidst trade issues, China increased import quotas to mills by an additional 900 thousand tonnes. As a result, from mid-June to the first week of July, prices receded to the low 90s before rebounding again and ending the season in the high 90s based on continued demand and robust economic growth projections in Asia.

Supply and Price Movement

While farm level decisions may be made based on prices, cotton is a global commodity where global demand relative to global supply available will influence price

movement. While consumption was also projected to increase in 2017/18, production was expected to outpace consumption from projections in August 2017 with ending stocks outside of China to increase by the end of the 2017/18 season, exerting a downward pressure on prices throughout the season. The stocks-to-use ratio is commonly applied to relate supply to demand in one indicator. Increasing global stocks and availability of supply tend to lead to price decreases (Figure 4) as illustrated by the divergent movement of ending stocks and price over the last 30 years.



Price Volatility

The Secretariat of the International Cotton Advisory Committee reports volatility measures in terms of the relative spread and the coefficient of variation of prices during the season. The relative spread is a measure of volatility that indicates the dispersion of prices relative to the average price over the season and is calculated as the ratio of the difference between the maximum price and the minimum price to the average price observed during a crop year. The maximum value of the A Index during the current season was 101.7 cents per pound, while the minimum value was 77.40 cents per pound. The relative spread of the A Index in 2017/18 was 27.6% (season average of 87.98 cents per pound). This represents an increase of the previous five seasons but lower than the record level of 96% observed in 2010/11.

The record level volatility observed in 2010/11 came off the 2008 global recession during which time low cotton stocks and strong demand over the first eight months of the season were followed by weak demand and oversupply. Additional uncertainties as export restrictions, actions of state-owned enterprises, contract defaults and speculation further exacerbated market conditions leading to the high volatility ("Managing the Impacts of Volatile Cotton Prices," in Cotton: Review of the World

Situation 65(1): 7-11, September-October 2011). Purchases by the China National Reserve Corporation to bolster stocks limited the decline in prices and thus limited additional volatility.

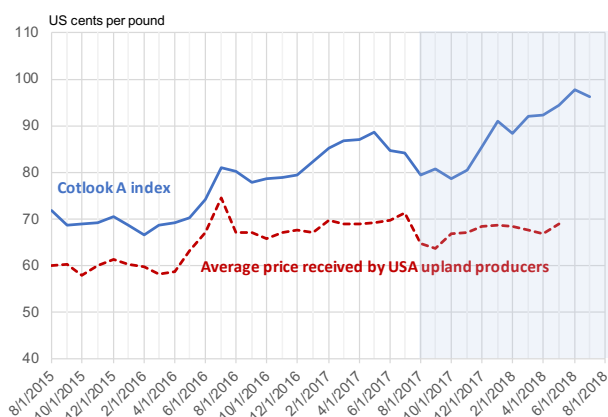
The current estimated excess production over consumption in 2017/18 of 488,700 metric tonnes would have suggested the possibility of a price decrease in 2017/18 and possibly in 2018/19, however strong forecasted demand and projected weakening production is expected to offset the price effect of any increase in stocks held outside China by the end of 2017/18. Current projections for production and consumption in 2018/19 indicate a continual decrease in global stocks.

Trends in Domestic Cotton Prices

Domestic cotton prices tend to follow the movement of the international cotton reference price unless a country insulates itself through government intervention measures such as import or export restrictions, domestic price support and systems with fixed prices to farmers. Small and medium cotton importing and exporting countries (accounting for less than 15% of global trade) tend to follow the market price as price takers as variations in their purchases and sales do not make large impacts on international prices. Most domestic prices followed a similar trend to the A Index over the course of the first half of the season.

In the USA, the domestic spot price, represented as the average price received by upland cotton producers, which has followed the movement of the A index over the course of the two previous seasons, averaged 67 cents per pound over the first 9 months of the season and remained near the previous season average of 68 cents per pound, while the A index season average increased from 83 to 89 cents per pound. The USA spot price moved down as the market year began in August and September of 2017. While the A index began to increase over the course of the season,

Figure 5: USA, Monthly Price 2015/16 – 2017/18

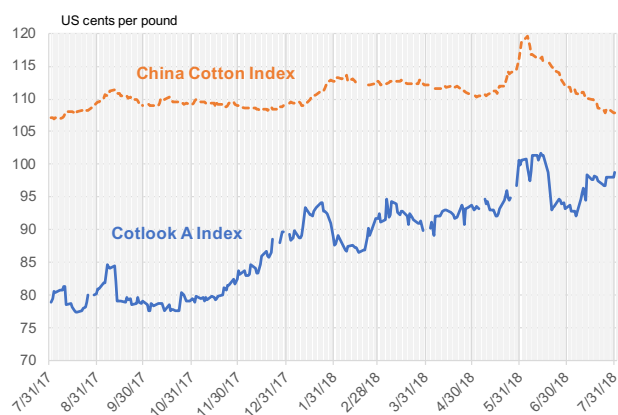


Source: Cotton Outlook, 2018; USDA ERS, 2018.

the USA domestic price remained stable near 68 cents per pound.

From 2012 to 2014, the Chinese government purchased 14 million tonnes of cotton to keep the domestic price above the minimum support price, keeping the domestic price, as represented by the China Cotton index, stable and above the international price. Chinese domestic price has continued to remain stable, averaging 111 cents per pound for the 2017/18 season, and above the A index throughout the season. The China Cotton index began at 107 cents per pound at the start of the season. While the A index fluctuated, eventually moving higher through the first 9 months of the season, the China Cotton index remained stable averaging 110 cents per pound over this period. During May, the domestic price moved up sharply, reaching a season high of 120 cents per pound on June 5 before sales in the Chinese National Reserve were limited to textile mills for final use, excluding traders from participation and ensuring cotton supply to textile mills. The China Cotton Index fell from the June 6 through the July, ending the season at 108 cents per pound. The average difference between the CC index and A index in 2017/18 was 21 cents per pound, however during the last three months of the season, as the CC index declined, and the A index increased, the gap decreased to 9 cents per pound by the close of the market year.

Figure 6: China, Cotton Daily Index 2017/18



Source: Cotton Outlook, 2018.

Brazil's cotton exports represent around 10% of total global exports. While approximately 80% of global exports come from Northern hemisphere harvest, the bulk of Brazil's harvest supplies the international market in June through August. Brazilian domestic prices began the season at R\$2.43 per pound and remained stable averaging R\$2.40 per pound for the first four months. From December 2017 to June 2018, the Brazilian domestic price rose steadily from the December month average of R\$2.57 per pound to a high of R\$3.81 per pound in June

Figure 7: Brazil, Daily Index 2017/18



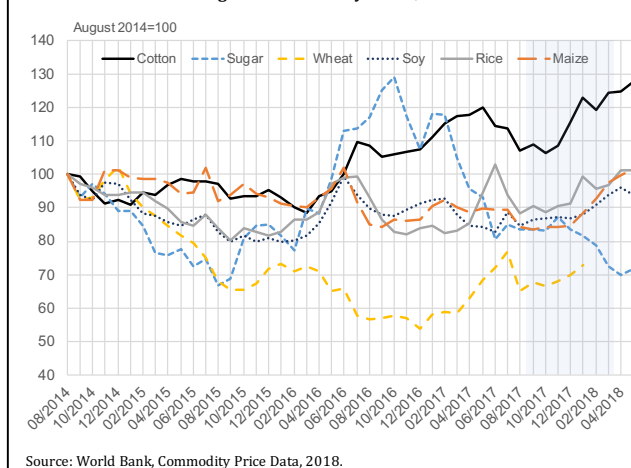
when the A index was peaking. Brazilian domestic prices fell following the season high in June to end the season at R\$3.32 per pound, above the season average of R\$2.90 per pound.

Cotton More Attractive than Most Competing Crops at Planting

Given a choice of crops to plant for a given season, planting decisions often are based on expected net revenue on a range of possible crops. Crops that compete with cotton include: sugarcane, wheat, soybean, rice and maize. Season-average prices for cotton and competing commodities fell in 2014/15 and 2015/16, with wheat prices falling 23% and 24% each season. In 2016/17, maize and wheat prices continued to fall, decreasing by 6% and 9% respectively, while soy, sugar and cotton all increased. Prices for soy, maize, rice, wheat and cotton rose from August 2017 through March 2018, while sugar fell 13% from \$0.32 per kilogram to \$0.28 per kilogram. Wheat prices increased by the largest margin of 25% from August to March, moving from \$1.71 per tonne to \$2.14 per tonne. However, gains in wheat prices follow continual decreases from the three previous seasons. Soybean prices rose 11% over this period from \$3.90 per tonne to \$4.32 per tonne. Maize prices rose 16% from \$1.49 per tonne to \$1.72 per tonne. Rice prices rose 9.4% from \$3.93 per tonne to \$4.30 per tonne. Similarly, cotton prices rose 16% over this period. Except for sugar, this group of commodities saw relative price stability or growth, with competitive prices for cotton.

Given attractive cotton prices and strong demand for the fibre in textile manufacturing, increases in planted area would be expected, yet cotton competes amongst food agricultural commodities where environmental issues and water availability are also factors limiting or influencing decision making.

Figure 8: Commodity Prices, 2013-2018

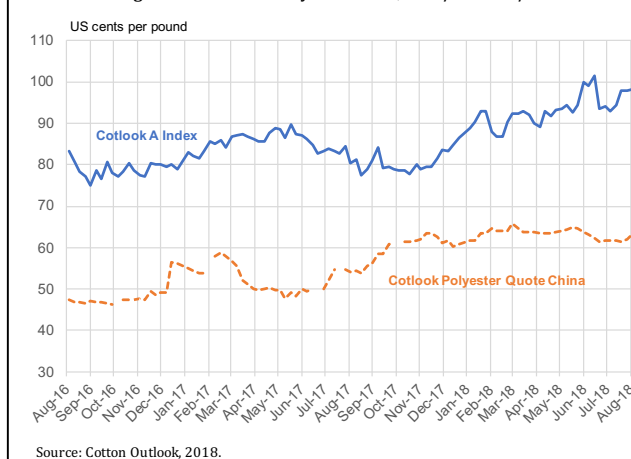


Cotton Price Remains Uncompetitive vis-à-vis Polyester

Polyester fibre remains the main supply side competition to cotton lint in textile manufacturing. With innovation in textile development and growing use of chemical fibres, the share of cotton in textile end-use has decreased from 68% in 1960 to 26.5% in 2017 although a slight increase to 27% is currently estimated for 2018.

In July 2017, the price for cotton averaged 84 cents per pound, while the price for polyester (as measured by the Chinese polyester quote price) was 54 cents per pound, reflecting a 30-cent difference. This gap narrowed in October through November 2017 to 17 cents but widened to 35 cents at the end of the season with the average monthly price for cotton at 96 cents per pound and polyester over the course of the season to 62 cents per pound.

Figure 9: Cotton and Polyester Prices, 2016/17-2017/18



Current Outlook

While global stocks were projected to increase by the end of the 2017/18 season, the increase was expected to come from stocks held outside of China. The implication of ending stocks in China reflected the strong and growing demand in China and the probability of further importing increases, given the structural deficit, by China to meet textile consumption, stock turnover and stock replenishment.

Over the course of the 2017/18 season with production

outpacing consumption and the projection of increased ending stocks, uncertainty in trade policy due to rising tariffs, pricing competitiveness of synthetics demonstrated the overriding strength of demand for cotton, particularly demand driven by Asia and Southeast Asia.

Global demand in 2018/19 despite trade tensions coupled with an expected decrease in global production may indicate an increase in price as demand for textile manufacturing in Asia and Southeast Asia, import needs for Chinese stock turnover and increasing environmental pressures limit production increases.



Global Shifts: Governing Cotton in Historical Perspective

Amy A. Quark, Associate Professor, William & Mary, Williamsburg, VA, USA

Recent forecasts suggest that China will again become a dominant player in the global cotton trade in the coming years. This forecast comes on the heels of a range of indications across the economy that the Chinese government and Chinese firms increasingly intend to take a leadership role not just in economic growth but also in the *governance* of the global economy—from the Chinese presence at the World Economic Forum to the BRICS' New Development Bank and the Belt and Road Initiative. In this context, I focus on this question: what does the rise of China mean for the governance of the cotton trade, or who controls the 'rules of the game'?

Cotton, apparel and textiles are interesting sectors to consider as they have historically undergone economic transformations first and can be harbingers of things to come in the global economy more broadly. My research has focused on cotton quality standards and rules for dispute settlement as crucial examples of contested governance. Standards are sometimes seen as simply technical rules that facilitate trade. However, as many in the cotton trade are well aware, standards have important effects on the distribution of the benefits of trade. Indeed, in the words of U.S. Congressman James Barcia: "New [international] standards can be the source of enormous wealth or the death of corporate empires. With so much at stake, standards arouse violent passions."¹ China also understands the important role of standards in shaping who wins and loses in the global economy. Chinese businesses and government officials have repeatedly

enunciated a strategy that views standards as trade weapons. As a Chinese business consultant put it, China's huge market "is ours, but we've been passive, not proactive. To negotiate with the other side, we need our own cards to play. Standards are China's cards."²

Today we must consider the possibility of a shift in coming decades from the US-led governance of the global cotton trade that we have today to Chinese-led governance of the cotton trade. In considering that possibility, what can we learn from considering a similar shift that occurred almost 100 years ago from British to US governance of the global cotton trade?

From British to US Control of Quality Standards and Dispute Settlement

Let's go back in time. It is 1875. The cotton trade looks significantly different than it does today. While US domestic cotton consumption was increasing, much of the cotton grown in the US was exported to Britain and other countries in Europe. US cotton producers were part of a supply chain that linked them to Europe through a network of US and British merchants. Liverpool merchants in particular held a dominant position in the trade given their ability to extend credit both down the supply chain to spinners and up the supply chain to US merchants, who in turn extended credit to cotton producers.

With the dominant position of Liverpool merchants as suppliers of credit came their ability to make the rules

1) U.S. House of Representatives (2001:19), as cited in Büthe, Timothy and Walter Mattli. 2011. *The New Global Rulers*. Princeton: Princeton University Press, pg. 12.

2) Fang Xingdong, Chinese business consultant, April 2, 2004, as cited in Kennedy, Scott. 2006. "The Political Economy of Standards Coalitions: Explaining China's Involvement in High-Tech Standards Wars." *Asia Policy* 2(July):46.

governing the trade. To facilitate trade on the cotton futures markets that were developing at this time, Liverpool merchants, organized in the Liverpool Cotton Association, developed the first formal system of grades to evaluate cotton quality. With this elaboration of formal grades, the Liverpool Cotton Association claimed the authority to define cotton quality, to create the benchmark standards, or the official physical representations of the different grades, and to establish a private arbitral body to settle disputes over cotton quality, as well as the technical terms of the contract (e.g. payment terms, storage, insurance, transportation, etc.). The legitimacy of their classing expertise derived from merchants' strategic position and experience operating across multiple markets. By 1875, these Liverpool Standards operated as the de facto standards for the Atlantic cotton trade.

By 1875, however, merchants in the Liverpool Cotton Association also began to face a range of challenges from other stakeholders in the cotton trade that were subject to its rules but had little influence over them. First, for U.S. merchants, the Liverpool standards were seen as an unfair form of governance that gave them no influence over the terms of trade. US merchants at the time talked about the Liverpool standards as rules that had been "forced upon" them and as "shackles" to be thrown off.³ A U.S. government official described the situation in this way: "when American cotton reaches the other side, it is arbitrated against an unknown standard before a board of men who represent the buyer and on which no American shipper has any American representative."⁴ U.S. merchants repeatedly called on the Liverpool Cotton Association—in 1875 and again in 1900—to give them a seat at the table in the creation of the quality standards and to create an International Board of Appeals to settle disputes, but to no avail. In addition to US merchants, US cotton producers experienced these problems even more sharply. Cotton producer organizations claimed that cotton growers lost millions of dollars every year due to their lack of knowledge of the cotton grades. From the 1870s onwards, these organizations called for government intervention to ensure fair quality standards. There were also important challenges to British control of quality standards from colonized peoples in this period. While I focus on the US here to understand the shift from British to US power, for an important example in India, see Shambu Prasad's 1999 article, "Suicide Deaths and Quality of Indian Cotton: Perspectives from History of Technology and Khadi Movement," in *Economic and Political Weekly* (vol. 34, issue 5, pg. PE12-PE21).

There are four factors that both allowed a shift in

power from Britain to the US and shaped the form it took.

- The first is *political will*. These tensions were building as early as the 1870s. However, it wasn't until 1906 that the political will emerged in the US government to address the issue. In 1906, a hurricane hit U.S. cotton fields, and cotton futures and spot prices became severely misaligned. These events spurred a government investigation into the functioning of futures markets and heightened calls for government intervention in ensuring fair quality standards from cotton producers, small and medium-sized merchants and even European spinners and textile manufacturers. Paired with the continued importance of cotton export earnings to the US economy, this was a key turning point in establishing the political will for the US state to act.
- The second factor is *expertise*. With the political will to act, the USDA made the first effort to challenge the Liverpool standards by establishing public cotton quality standards in 1909. The problem, however, was that the USDA did not yet have the expertise to back up their claim as legitimate standard-setters. These 1909 standards were quickly rebuffed by US merchants in the New York Cotton Exchange who conducted their own evaluations of the standards and deemed them inaccurate.
- The third factor is the available *pathway to power*. With the threat of government intervention, in 1913, the largest US merchants convinced the Liverpool Cotton Association to hold a conference to consider making changes to its standards and to integrate other stakeholders into their decision-making processes in order to avoid US government intervention. However, the Liverpool Cotton Association refused to make any meaningful changes. In the meantime, the USDA began to develop what essentially became a new field of scientific study—fiber science—in order to provide a scientific basis for grade differentiations (see Prasad's work mentioned above on parallel development of fiber science in India at this time). Using these scientific studies and working with US merchants, by 1914, the USDA produced a new set of cotton quality standards that were made mandatory for use in futures exchanges within the U.S. through the United States Cotton Futures Act. This meant the domestic trade would be conducted based on USDA standards. To extend their reach to the trans-Atlantic trade, the USDA sent its experts to the cotton exchanges in Liverpool, Bremen, and Havre to persuade them to adopt the USDA standards. However, Liverpool refused

3) House of Representatives. 1908. "Report of the Commissioner of Corporations on Cotton Exchanges." Document No. 949. 60th Congress, 1st Session. May 4. Part II:135.

4) *International Cotton Bulletin*. 1923. "The United States Cotton Standards Act." Vol. 1(June):421.

to compromise and reasserted its exclusive right to determine quality standards for US cotton in Europe, betting on its economic might to maintain control. This narrowed the available pathways to power for the US – various US groups had tried to compromise and find a pathway to shared power within the Liverpool Cotton Association but, with Liverpool merchants' refusal to integrate other stakeholders, the US was left with few options but to unilaterally assert its power.

- This more unilateral path to power became more feasible with the onset of WWI, which reshaped the final factor affecting this challenge: *economic power*. WWI put the US economy in general on more equal footing relative to Britain and also marked the beginning of the long decline of the British textile industry. In the cotton trade, the US' improved financial position allowed the most competitive U.S. merchants to access credit independently of Liverpool merchants and became their competitors rather than their suppliers, selling cotton directly to all the major European and Asian markets.

As a result, after WWI, Liverpool merchants found themselves in a significantly weakened bargaining position and the US government decided to take unilateral action. In 1923, the U.S. Congress passed the Cotton Standards Act. This Act revolutionized governance of the cotton trade. It established government control over quality classification, replacing the private system that had long been in the hands of cotton merchants in Liverpool. The Act prohibited U.S. citizens from entering into transactions for the shipment of cotton based on foreign standards and gave US citizens the right to claim the authority of the US government in the arbitration of quality disputes if subject to foreign arbitration. In doing so, the Act sought to unilaterally shift the geographic site of governance in the cotton trade from Britain to the U.S.

This Act received a scathing response from Liverpool merchants who warned that “the results of this Act are far-reaching and serious for buyers of cotton in Europe.”⁵ However, the balance of power had already turned against them. Liverpool merchants were no longer in a position to reject the US standards. The smaller and medium-sized merchants in the U.S. who supplied the Liverpool merchants would have no choice but to use the USDA standards or face fines or imprisonment. In contrast, the largest U.S. merchants, who had become the direct competitors of Liverpool merchants, were in a position to circumvent the law completely. They could export cotton on U.S. standards to their foreign subsidiaries

and then sell to spinners using “whatever standards they wished.”⁶ Ironically, the Liverpool merchants found themselves in a position of having a shared interest with the US government in making sure the Cotton Standards Act would be enforceable for all players in order to avoid effectively surrendering the cotton trade to the largest US merchants.

To this end, the USDA and the Liverpool merchants agreed to two concessions. The USDA would formally define the quality standards and play the key coordinating function of preparing the benchmark standards, but would give Liverpool merchants and the other European trade associations an advisory role in the creation and revision of the standards into the future. At the same time, the basis for the legitimacy of the quality standards would increasingly come from scientific experts rather than from the experience of merchants. The USDA further agreed that the foreign trade associations would maintain their authority to arbitrate disputes over the technical terms of the contract. This resulted in the signing of the Universal Cotton Standards Agreement, which largely remains the form of quality governance that operates today.

From US to Chinese Control of Quality Standards and Dispute Settlement?

Now let's fast-forward to the contemporary period. The major shift in the governance of cotton quality standards between 1925 and 1996 was USDA's shift from manual to mechanized classification using the High Volume Instrument or HVI system. The USDA standards for HVI calibration cottons and related practices were added to the Universal Cotton Standards Agreement in 1996. As first mover in this realm, the US effectively set the de facto international standards for mechanized classification. If other cotton producing countries were going to adopt mechanized classification, they were effectively adopting the US definition of quality and calibration cottons. The settlement of disputes remained largely the same. The Liverpool Cotton Association's position as a key forum for private arbitration expanded in its geographic reach as US and European merchants expanded their production and distribution networks to Latin America, Africa, and Asia, particularly with the privatization of state trading enterprises in many countries through structural adjustment programs. Indeed, about ten companies came to handle more than two-thirds of the annual transnational cotton trade during the 2000s, and by 2009 four firms controlled over half of the trade.

5) Ibid, 418.

6) United States Department of Agriculture. 1923. “Report of Conference called at Washington, D.C. for the consideration of Tentative Regulations of the Secretary of Agriculture under the U.S. Cotton Standards Act, April 9-10, 1923.” Bureau of Agricultural Economics, Washington, D.C., pg. 9.

However, just as the Liverpool standards faced challenges as the de facto international standards, so too did the US standards and LCA arbitration begin to face challenges. The first turning point in this struggle was the establishment of the World Trade Organization (WTO) in 1995, which shifted power dynamics in the sector in two ways. First, as the WTO Agreement on Agriculture committed governments to reduce price-distorting government support, many cotton-producing countries became critical of the US for not pursuing these commitments aggressively enough. This was evidenced most clearly in Brazil's challenge to U.S. cotton subsidies through the WTO and the highly publicized campaign led by the West African cotton-producing countries. These heightened tensions among cotton-producing countries spilled over into debates about quality standards.

Other cotton-producing countries realized that they would need to adopt standards based on mechanized classification to meet the demands of textile manufacturers. However, countries that hand-picked their cotton, such as those in the West African bloc, challenged the US standards. From their view, the US standards had been developed in relation to the US industry and therefore were biased toward US cotton. These standards did not measure fiber characteristics, such as neps or short fiber content, that demonstrated the superior qualities of hand-picked cotton. Others, such as CIRCOT in India, challenged the US government's monopoly over the production of calibration cottons and developed their own alternatives. Moreover, some national and regional trade associations representing textile manufacturers and local/regional merchants began to question what they saw as the imposition of private arbitration by the LCA, which they saw as biased toward merchants and reflective of Anglo-American cultural and legal norms. Similar to US merchants' calls for Liverpool to create a more international governance system from a century earlier, many developing countries were hoping to use the ICAC as a forum to develop a more 'international' system that would be representative of diverse interests in the global cotton industry.

The second tension emerged out of the WTO Agreement on Textiles and Clothing and China's accession to the WTO in 2001. Together, these made China the largest producer of textiles and apparel—and thus the largest importer of cotton—in the world. Like cotton-producing countries, Chinese textile manufacturers and the Chinese state saw the US quality standards as reflecting the historical needs and priorities of US textile manufacturers rather than their own, and saw LCA arbitration as representing Anglo-American vs. Chinese legal and cultural norms.

The rise of China as the dominant importer in the sector appears to have generated at least the initial *political will* within China to challenge the US standards and LCA arbitration more formally. In the early 2000s and

still today, the cotton textile and apparel sectors remain strategic to the Chinese state in its efforts to maintain economic growth with jobs, to rebalance the significant urban-rural inequalities that have emerged with its rapid growth, and to maintain security and stability given the importance of the Xinjiang region in cotton production. Indeed, in 2002, shortly after joining the WTO, the Chinese government introduced new quality standards that required all cotton imported to China to be tested for short fiber content and neps based on Chinese standards and Chinese measurement instruments as these were the type of quality parameters of interest to Chinese spinners. These standards, however, failed due to lack of *expertise*. The USDA tested the instruments and discredited the Chinese standards on scientific terms, which were then rescinded by the Chinese government. In turn, the Chinese government established in 2003 a new trade association, the China Cotton Association (CCA), which attempted to negotiate their preferred contract terms with the LCA. However, when the CCA released its official contract in 2006, it faced pushback from the Western merchant community and, as a private trade association, did not have the authority to mandate its use.

Thus, like the Liverpool Cotton Association before them, the US-LCA governance of cotton quality and dispute settlement has increasingly faced an array of challenges in the context of global economic shifts and the rise of new economic rivals. However, unlike the Liverpool Cotton Association in the earlier period that largely rebuffed calls to integrate diverse stakeholders into the governance of cotton quality, the USDA, the US cotton industry, and the transnational merchants in the LCA have taken a somewhat different tack.

The USDA has taken a number of steps to integrate other stakeholders into the governance of quality standards. First, the USDA has worked closely with the Chinese government to facilitate their adoption of the HVI system using USDA calibration cottons. The USDA has further worked closely with the ICAC to create the CSITC Round trials to verify the commercial reliability of mechanized classification systems transnationally. The US agency has also intensified research on short fiber content, particularly given concerns that China is developing new instrumentation for this parameter. Finally, USDA has made efforts to have two sets of technical standards approved by ASTM International—one to ensure the validity of measurement instruments and one to ensure the validity of calibration cottons. These aim to create validation mechanisms if a country like China decided to introduce new instruments or new calibration cottons. Similarly, the Liverpool Cotton Association has taken a number of steps to address challenges to their governance of dispute settlement and to integrate other stakeholders into their arbitral body. The organization rebranded itself

the *International Cotton Association*. It also switched from an adversarial to a tribunal arbitration system, made a number of other rule changes, and diversified its directorships and network of arbitrators to better represent different geographic regions and positions in the supply chain. Compared to the historical case, the US-LCA strategies have potentially created a different *pathway to power* for the Chinese government. On one hand, these steps, particularly those taken by the USDA, could actually facilitate Chinese control of standards, particularly by providing them with necessary technical expertise. On the other hand, it creates the possibility of a path to Chinese power that remains more clearly within existing governance institutions.

Finally, this leads us to the question of *economic power*. The 2008 financial crisis may be an important turning point in this regard as it increasingly put the Chinese economy on par with that of the US. Within the cotton sector, the US' bargaining power continues to rest on its government-supported export dominance which faces pressure under the WTO regime, while China continues to diversify its imports. At the same time, we are also seeing a geographic shift in control of cotton trading. While traditional US and European firms like Louis Dreyfus and Cargill remain major players, new players in Asia have become increasingly dominant, including Olam and COFCO with its acquisition of Noble Agri and Chinatex.

Predicting the Future of Governance in the Cotton Trade?

Based on this summary of the contemporary debate over cotton quality standards and dispute arbitration, we can map some potential future trajectories for the governance of cotton quality and their relative likelihood given the historical lessons of the earlier period.

Continued US governance without further challenges from China

This is possible but unlikely. Whether the Chinese government has the *political will* to challenge US governance of cotton quality standards into the future remains an open question. In historical perspective, we would expect that, if China's economic power in the cotton textile industry continues to grow relative to that of the US, we would also expect China to resume its challenge to US control of quality standards. China is also ostensibly in a more powerful position than the US was when challenging British control. When the US government wrested control of cotton quality standards from Liverpool merchants, it also was able to establish the rather unlikely principle that a cotton producing and exporting country should control the definition of quality (if in collaboration with buyers) rather than the buyers themselves. This was in part due to the USDA's development of fiber science. China, on the other hand, is in a more powerful position to claim that it

is the buyers of cotton who should define quality based on their processing needs.

More broadly, China's political role in the global economy has arguably been transforming. Until very recently, China has been engaged in a "delicate dance" as it seeks to fuel its continued economic and political rise without creating hostilities that could jeopardize its export opportunities and economic growth by reducing access to foreign markets. China has often sought to appear as non-threatening as possible and fly below the radar, as it has largely done in major forums such as the WTO. However, recent initiatives, such as the BRICS New Development Bank, suggest that China may be willing to take a greater leadership role in international political governance. An issue like cotton quality standards could also represent a politically expedient step towards greater leadership for China. That is, China could frame an attempt to control cotton quality standards and to introduce new measurements for parameters like short fiber content as a David vs. Goliath effort to overcome US standards that favored US producers over both Chinese textile manufacturers and producers in developing countries that hand-pick their cotton. This would evoke the same imagery as challenges to US subsidies by Brazil and the West African bloc that played a role in stalling Doha Round negotiations at the WTO. This would mirror the strategies of China, as well as Brazil and India, in forums like the WTO. They have largely avoided targeting other developing countries for market access in order to maintain the solidarity of developing countries in voting blocs such as the G-20T.

A shift to a new Chinese governance institution

In this scenario, the US continues its current strategy, but other actors in the cotton trade—both in China and around the world—see the US' efforts to offer concessions and integrate them into cotton governance as either empty promises that have gone unfulfilled or as reforms that have not gone far enough. For example, other cotton producing countries may feel there has not been enough support to actually help countries benefit from the capital-intensive HVI classification system. As well, efforts to facilitate adoption of the HVI system have done little to address the perceived biases in the system. Measurements of new quality parameters such as short fiber content or neps have not been introduced. Finally, other cotton-producing countries still do not have representation in the formal institution—The Universal Cotton Standards Agreement—that controls the definition of cotton quality and the creation of benchmark standards.

In this context, China may decide to introduce new instruments or new calibration cottons and to govern the standards through Chinese institutions, and other stakeholders in the cotton trade may not have enough vested interest in the US system to warrant supporting

the US coalition, particularly given that other cotton-producing countries are competitors with the US and dependent on the Chinese market. This would be the trajectory that most resembles the earlier shift from British to US control of quality standards. It would represent a significant disjuncture in that it would involve a shift to a different institution led by China over which the US cotton industry would have to try to negotiate some influence and oversight. To the degree that the USDA's standards for validating new measurement instruments and calibration cottons are enforceable through the WTO, this would give the US industry some leverage to this end.

Currently, we increasingly see the possibility of this type of scenario emerging across a number of major international institutions, such as the International Monetary Fund and the World Bank. China and other emerging economies have lobbied for a larger voting share within these institutions, in exchange for a greater role in funding them. However, as these reforms to existing institutions have been slow to emerge, we increasingly see China and the other BRICS countries developing alternative institutions whose agendas they can more easily control by excluding the US and Western Europe. The BRICS' New Development Bank is a current example of this possible trajectory.

Growing Chinese leadership within existing governance institutions

In this third option, the USDA and the US cotton industry would make deeper, more meaningful concessions to integrate both the priorities and the participation of diverse stakeholders in the cotton trade, including China but also other less powerful challengers, in order to establish a strong form of multilateral shared governance that prioritizes transparency. This might include accelerating efforts to include new measurements for parameters like short fiber content. It could also involve integrating other cotton-producing countries into the Universal Cotton Standards Agreement or a similar multilateral agreement through the ICAC to give them voting rights and oversight in the definition of quality and the production of benchmark standards. In this context, the US may still ultimately cede control to China at some point as the leading authority over cotton standards and

as the producer of calibration cottons, but it may be able to direct that transition within the existing institutional structure with more multilateral checks and balances and transparency over a China-led set of quality standards.

What about dispute settlement?

In all of these scenarios, dispute settlement seems likely to remain in private arbitral bodies, and potentially within the International Cotton Association. The ICA has integrated representatives of at least some of its main competitors—e.g. Olam, Chinatex—into its leadership circles, and these firms certainly share US merchants' preference for private arbitration. In addition, continued mergers and acquisitions among merchant firms, as well as the movement of professionals across them, contribute to building common interests among what are increasingly global firms, both culturally and geographically. Indeed, in the earlier shift from British to US governance, Liverpool merchants were able to maintain control over private arbitration of disputes, even as the US took control of the definition of quality and the production of benchmark cottons. Similarly today, with the emergence of the ICA-Bremen, the merchants in the International Cotton Association appear to be positioning themselves to maintain control of dispute settlement through private arbitration, even if the US loses control of quality standards to China.

In conclusion, changes in the balance of global economic power can have critical implications for who controls the rules of the game in globally integrated sectors like cotton. However, economic power does not necessarily determine the ability to set the rules. The ability to accommodate the concerns of different stakeholders in the context of shifting power relations can decrease the likelihood of a more radical shift in who makes the rules of the game. Moreover, a set of more balanced international institutions that reflect the growing reality of a multipolar and interdependent global economy could provide stability against mounting international tensions.

This article is based on Quark's book, *Global Rivalries: Standards Wars and the Transnational Cotton Trade*, available here: <https://www.press.uchicago.edu/ucp/books/book/chicago/G/bo15997106.html>.





2016/17 Supply and Use of Cotton by Country August 1, 2018

	Area	Yield	Prod	Beg Stocks	Imports	Cons	Exports	End Stocks	S/U *	S/MU **
	000 Ha	Kgs/Ha	000 Metric Tonnes						Ratio	Ratio
CANADA				0	0	0		0	0.11	0.11
CUBA	4	269	1	1	2	3		1	0.19	0.19
DOM. REP.					1	1		0	0.47	0.47
MEXICO	104	1,575	164	168	230	420	33	109	0.24	0.26
USA	3,848	972	3,738	827	2	708	3,248	599	0.15	0.85
N. America	3,961	986	3,905	996	235	1,133	3,281	709	0.16	0.63
EL SALVADOR				9	34	34		9	0.27	0.27
GUATEMALA				7	26	26		7	0.27	0.27
HONDURAS	0	318	0	0				0		
C. America	2	512	1	16	60	61	0	16	0.27	0.27
ARGENTINA	247	727	180	320	3	143	58	301	1.49	2.10
BOLIVIA	4	639	3	2	0	3	0	2	0.50	0.53
BRAZIL	939	1,629	1,530	884	41	690	607	1,158	0.89	1.68
CHILE				0	0	0		0	0.41	0.41
COLOMBIA	9	856	8	16	28	43	1	7	0.17	0.17
ECUADOR	1	439	1	3	10	11		3	0.25	0.25
PARAGUAY	10	450	5	1	1	3	3	1	0.21	0.41
PERU	27	814	22	16	36	57	1	16	0.28	0.28
URUGUAY				0		0		0	0.06	0.06
VENEZUELA	15	390	6	4	4	10		3	0.30	0.30
S. America	1,252	1,400	1,752	1,247	124	961	670	1,491	0.91	1.55
ALGERIA				1	1	2		0	0.03	0.03
EGYPT	55	694	38	93	111	127	26	90	0.59	0.71
MOROCCO				4	15	15		4	0.24	0.24
SUDAN	70	561	39	20		18	28	14	0.31	0.78
TUNISIA				3	12	12		3	0.22	0.22
N. Africa	125	620	78	120	140	174	54	110	0.49	0.64
BENIN	418	416	174	58		4	142	87	0.60	21.78
BURKINA FASO	740	385	285	85		4	247	120	0.48	29.93
CAMEROON	224	488	109	64		2	113	58	0.50	30.53
CENT. AFR. REP.	32	216	7	2			7	3	0.42	
CHAD	298	239	71	23		1	42	51	1.19	102.19
COTE D'IVOIRE	343	408	140	19	0	2	136	21	0.15	10.25
GUINEA	12	276	3	1			3	1	0.40	
MADAGASCAR				3				3		
MALI	656	404	265	86		5	240	106	0.43	21.20
NIGER	5	447	2	0		1	1	0	0.11	0.25
SENEGAL	20	355	7	1		1	5	3	0.41	3.23
TOGO	133	293	39	12			38	14	0.36	
F. Africa	2,881	383	1,103	358	0	19	975	467	0.47	24.33
ANGOLA	3	302	1	0		1	0	0	0.33	0.48
ETHIOPIA	82	629	52	19	4	55	0	19	0.34	0.34
GHANA	15	370	6	9	0	1	1	12	4.42	9.33
KENYA	29	183	5	2	3	8		3	0.36	0.36
MALAWI	90	232	21	10		3	16	12	0.61	3.94
MOZAMBIQUE	116	263	31	26			37	20	0.53	
NIGERIA	253	202	51	22	1	25	31	18	0.32	0.71
SOUTH AFRICA	18	870	16	9	18	22	9	12	0.37	0.52
TANZANIA	350	127	45	69		39	24	51	0.82	1.31
UGANDA	72	388	28	21		1	32	16	0.49	18.33
CONGO, DR				2	8	8		2	0.27	0.27
ZAMBIA	120	332	40	40		2	44	34	0.76	
ZIMBABWE	155	271	42	7		3	24	22	0.83	7.83
S. Africa	1,324	257	340	243	54	191	220	226	0.55	1.19
KAZAKHSTAN	111	634	70	13	0	12	55	16	0.24	1.35
KYRGYZSTAN	14	810	12	4	4	1	14	4	0.27	4.19
TAJIKISTAN	162	525	85	27		11	74	27	0.32	2.40
TURKMENISTAN	545	542	296	74		140	143	86	0.30	0.61
UZBEKISTAN	1,250	631	789	242	1	371	403	259	0.34	0.70
C. Asia	2,082	601	1,252	360	5	535	689	392	1.47	0.73



2016/17 Supply and Use of Cotton by Country (cont'd) August 1, 2018

	Area	Yield	Prod	Beg Stocks	Imports	Cons	Exports	End Stocks	S/U *	S/MU **
	000 Ha	Kgs/Ha	000 Metric Tonnes						Ratio	Ratio
AUSTRIA				0	4	3	1	1	0.14	0.17
AZERBAIJAN	51	626	32	9		16	10	15	0.59	0.96
BELARUS				4	11	11		4	0.34	0.34
BELGIUM				2	7	3	4	1	0.18	0.40
BULGARIA	1	324	0	1	5	5	0	1	0.18	0.19
CZECH REP.				0	3	3		0	0.13	0.13
DENMARK					0	0				
ESTONIA										
FINLAND										
FRANCE				2	12	9	3	2	0.13	0.18
GERMANY				9	30	24	6	9	0.30	0.38
GREECE	211	1,009	213	44	6	20	223	20	0.08	1.00
HUNGARY				0	1		1	0	0.03	
IRELAND				0	0	0		0	0.09	0.09
ITALY				7	34	33	2	6	0.18	0.19
LATVIA				0	0	0	0	0	0.03	0.04
LITHUANIA				0				0		
MOLDOVA				1	2	2		1	0.34	0.34
NETHERLANDS				0	4	4		0	0.10	
NORWAY										
POLAND				0	3	3		0	0.12	0.12
PORTUGAL				7	34	34	0	6	0.18	0.19
ROMANIA				0	0	0		0	0.09	0.09
RUSSIA	1	520	1	16	51	55	0	13	0.24	0.24
SLOVAK REP.										
SPAIN	61	903	55	23	3	5	56	20	0.32	3.74
SWEDEN				0	0	0		0	0.74	0.74
SWITZERLAND				0	1	1	0	0	0.17	0.29
UKRAINE				0	2	2		0	0.25	0.25
UNITED KINGDOM				0	0	0		0	0.14	0.14
FORMER YUGOSLAVIA				1	7	7		1	0.19	0.19
Europe	327	922	301	130	222	243	306	103	0.19	0.42
Including EU-28	273	982	268	97	147	149	295	68	0.15	0.45
CHINA	3,100	1,581	4,900	12,650	1,096	8,000	13	10,632	1.33	1.33
TAIWAN				41	140	153		29	0.19	0.19
HONG KONG				30	1	0	0	30	62.05	
Sub total	3,100	1,581	4,900	12,722	1,237	8,154	13	10,691	1.31	1.31
AUSTRALIA	557	1,598	891	180		7	812	252	0.31	37.72
INDONESIA	8	615	5	96	746	700		147	0.21	0.21
JAPAN				16	56	62		9	0.15	0.15
KOREA, D.R.				1	5	5		1	0.24	0.24
KOREA, REP.				54	232	229	1	56	0.24	0.24
MALAYSIA				17	85	65	24	13	0.15	0.20
PHILIPPINES	0	567	0	3	14	13		4	0.31	0.31
SINGAPORE				0	7		7	0	0.05	
THAILAND	2	517	1	46	267	261	0	52	0.20	0.20
VIETNAM	2	750	1	149	1,198	1,168		181	0.16	0.16
E. Asia	588	1,541	905	565	2,610	2,516	845	719	0.21	0.29
AFGHANISTAN	40	387	16	5		4	10	7	0.48	1.56
BANGLADESH	43	665	28	346	1,412	1,409		379	0.27	0.27
INDIA	10,845	541	5,865	1,507	596	5,148	991	1,829	0.30	0.36
MYANMAR	244	634	155	104	10	207		62	0.30	0.30
PAKISTAN	2,496	666	1,663	704	538	2,147	24	734	0.34	0.34
SRI LANKA				0	2	2		0	0.09	0.09
S. Asia	13,671	565	7,729	2,667	2,558	8,919	1,024	3,011	0.30	0.34
IRAN	75	702	53	33	66	110	0	42	0.38	0.38
IRAQ	13	361	5	2	4	9		2	0.21	0.21
ISRAEL	8	1,761	14	2			14	2	0.13	
SYRIA	35	983	35	22		24	22	11	0.23	0.45
TURKEY	420	1,674	703	826	801	1,455	73	802	0.53	0.55
Sub total	554	1,462	810	889	882	1,610	109	861	0.50	0.53
WORLD TOTAL	29,867	773	23,075	20,312	8,125	24,516	8,185	18,798	0.77	0.77

*/ Ending stocks divided by consumption plus exports.

Subtotals and total include countries not shown.

**/ Ending stocks divided by consumption.



2017/18 Supply and Use of Cotton by Country August 1, 2018

	Area	Yield	Prod	Beg Stocks	Imports	Cons	Exports	End Stocks	S/U *	S/MU **
	000 Ha	Kgs/Ha	000 Metric Tonnes						Ratio	Ratio
CANADA				0	0	0		0	0.12	0.12
CUBA	4	269	1	1	2	3		1	0.19	0.19
DOM. REP.					1	1		0	0.47	0.47
MEXICO	212	1,580	335	109	175	435	62	122	0.25	0.28
USA	4,492	1,014	4,555	599	1	729	3,527	899	0.21	1.23
N. America	4,713	1,038	4,893	709	180	1,170	3,589	1,022	0.21	0.87
EL SALVADOR				9	35	35		9	0.27	0.27
GUATEMALA				7	27	27		7	0.26	0.26
HONDURAS	0	318	0	0				0		
C. America	2	512	1	16	62	63	0	16	0.26	0.26
ARGENTINA	328	688	226	301	3	146	58	326	1.60	2.24
BOLIVIA	4	639	3	2	1	3	0	2	0.50	0.53
BRAZIL	1,176	1,671	1,965	1,158	10	725	930	1,478	0.89	2.04
CHILE				0	0	0		0	0.41	0.41
COLOMBIA	11	949	11	7	35	45	1	7	0.16	0.16
ECUADOR	1	439	1	3	10	10		3	0.31	0.31
PARAGUAY	10	419	4	1	1	3	2	1	0.26	0.43
PERU	26	814	22	16	40	60	1	17	0.28	0.28
URUGUAY				0	0	0		0	0.06	0.06
VENEZUELA	14	390	6	3	5	11		3	0.30	0.30
S. America	1,572	1,422	2,236	1,491	105	1,002	992	1,838	0.92	1.83
ALGERIA				0	2	2		0	0.04	0.04
EGYPT	91	769	70	90	117	139	50	88	0.46	0.63
MOROCCO				4	15	15		4	0.24	0.24
SUDAN	84	952	80	14		18	60	16	0.21	0.90
TUNISIA				3	12	12		3	0.22	0.22
N. Africa	175	857	150	110	146	186	110	110	0.37	0.59
BENIN	530	485	257	87		4	194	146	0.74	36.48
BURKINA FASO	879	311	273	120		4	244	145	0.58	36.19
CAMEROON	183	635	116	58		2	107	65	0.60	34.36
CENT. AFR. REP.	33	21	1	3			3	0	0.10	
CHAD	150	213	32	51		1	57	26	0.44	51.13
COTE D'IVOIRE	326	568	185	21		2	127	78	0.60	38.01
GUINEA	12	245	3	1			3	1	0.38	
MADAGASCAR				3				3		
MALI	704	455	321	106		5	261	161	0.60	32.11
NIGER	5	429	2	0		1	1	0	0.12	0.25
SENEGAL	20	353	7	3		1	6	3	0.49	4.04
TOGO	169	285	48	14			42	19	0.45	
F. Africa	3,010	413	1,245	467		19	1,045	647	0.61	33.73
ANGOLA	3	301	1	0		1	0	0	0.33	0.48
ETHIOPIA	60	700	42	19	21	60	3	19	0.29	0.31
GHANA	15	132	2	12		1	1	12	6.03	9.33
KENYA	25	184	5	3	4	8		3	0.41	0.41
MALAWI	90	78	7	12		3	13	3	0.16	0.87
MOZAMBIQUE	124	201	25	20			30	15	0.49	
NIGERIA	261	77	20	18	1	13	20	6	0.17	0.46
SOUTH AFRICA	37	1,008	38	12	6	28	10	18	0.48	0.65
TANZANIA	1,400	136	190	51		43	39	159	1.94	3.70
UGANDA	77	519	40	16		1	29	26	0.85	29.20
CONGO, DR				2	7	7		2	0.30	0.30
ZAMBIA	126	326	41	34		2	40	34	0.80	
ZIMBABWE	202	203	41	22		3	35	25	0.65	8.80
S. Africa	2,441	186	454	226	60	191	223	326	0.79	1.71
KAZAKHSTAN	116	634	73	16	0	13	42	34	0.63	2.64
KYRGYZSTAN	14	810	11	4	3	1	13	4	0.28	4.19
TAJIKISTAN	187	532	100	27		15	78	34	0.36	2.29
TURKMENISTAN	545	559	304	86		140	159	91	0.30	0.65
UZBEKISTAN	1,208	662	800	259	1	389	300	370	0.54	0.95
C. Asia	2,069	622	1,288	392	4	558	593	534	2.12	0.96



2017/18 Supply and Use of Cotton by Country (cont'd) August 1, 2018

	Area	Yield	Prod	Beg Stocks	Imports	Cons	Exports	End Stocks	S/U *	S/MU **
	000 Ha	Kgs/Ha			000 Metric Tonnes				Ratio	Ratio
AUSTRIA				1	3	3		1	0.18	0.18
AZERBAIJAN	139	537	75	15		17	39	34	0.61	2.00
BELARUS				4	11	11		4	0.34	0.34
BELGIUM				1	7	3	4	1	0.19	0.42
BULGARIA	1	324	0	1	5	5	0	1	0.18	0.19
CZECH REP.				0	2	2		0	0.09	0.09
DENMARK					0	0			0.12	
ESTONIA										
FINLAND										
FRANCE				2	10	8	2	2	0.15	0.19
GERMANY				9	26	22	4	9	0.34	0.41
GREECE	243	906	220	20	6	20	218	8	0.04	0.42
HUNGARY				0				0		
IRELAND				0	0	0		0	0.10	0.10
ITALY				6	33	32	2	6	0.19	0.20
LATVIA				0	0	0	0	0	0.03	0.04
LITHUANIA				0				0		
MOLDOVA				1	2	2		1	0.34	0.34
NETHERLANDS				0	4	4		0	0.11	
NORWAY										
POLAND				0	3	3		0	0.12	0.12
PORTUGAL				6	31	32		5	0.15	0.15
ROMANIA				0	0	0		0	0.09	0.09
RUSSIA	1	520	1	13	47	49	0	11	0.23	0.23
SLOVAK REP.										
SPAIN	70	943	66	20	3	7	61	20	0.29	2.64
SWEDEN				0	0	0		0		
SWITZERLAND				0	1	0	0	0	0.19	0.32
UKRAINE				0	2	2		0	0.26	0.26
UNITED KINGDOM				0	0	0		0	0.13	0.13
FORMER YUGOSLAVIA				1	7	7		1	0.19	0.19
Europe	455	795	362	103	207	235	330	107	0.19	0.45
Including EU-28	314	912	286	68	137	145	291	54	0.12	0.37
CHINA	3,350	1,758	5,890	10,632	1,358	8,650	14	9,217	1.06	1.07
TAIWAN				29	153	153		29	0.19	0.19
HONG KONG				30	1	0	0	30	61.83	
Sub total	3,350	1,758	5,890	10,691	1,512	8,804	14	9,276	1.05	1.05
AUSTRALIA	500	2,088	1,044	252		6	905	385	0.42	60.58
INDONESIA	8	615	5	147	797	791		158	0.20	0.20
JAPAN				9	57	58		8	0.14	0.14
KOREA, D.R.				1	5	5		1	0.24	0.24
KOREA, REP.				56	258	236		78	0.33	0.33
MALAYSIA				13	125	98	23	17	0.14	0.18
PHILIPPINES	0	567	0	4	13	13		4	0.31	0.31
SINGAPORE				0	6		6	0	0.05	
THAILAND	2	517	1	52	327	299		82	0.27	0.27
VIETNAM	2	750	1	181	1,574	1,576		180	0.11	0.11
E. Asia	528	2,001	1,058	719	3,161	3,088	934	916	0.23	0.30
AFGHANISTAN	38	387	15	7		4	12	5	0.31	1.20
BANGLADESH	45	764	34	379	1,671	1,662		422	0.25	0.25
INDIA	12,235	519	6,350	1,829	330	5,200	1,126	2,183	0.35	0.42
MYANMAR	249	634	158	62	57	207		69	0.34	0.34
PAKISTAN	3,097	580	1,795	734	671	2,346	46	808	0.34	0.34
SRI LANKA				0	2	2		0	0.09	0.09
S. Asia	15,668	533	8,354	3,011	2,731	9,424	1,184	3,489	0.33	0.37
IRAN	79	709	56	42	70	116		52	0.45	0.45
IRAQ	10	361	3	2	5	8		2	0.24	0.24
ISRAEL	7	1,853	13	2			13	2	0.14	
SYRIA	25	954	23	11		22	4	9	0.34	0.39
TURKEY	462	1,817	840	802	824	1,481	46	939	0.62	0.63
Sub total	585	1,600	936	861	908	1,638	62	1,006	0.59	0.61
WORLD TOTAL	34,569	777	26,866	18,798	9,075	26,377	9,075	19,287	0.73	0.73

*/ Ending stocks divided by consumption plus exports.

Subtotals and total include countries not shown.

**/ Ending stocks divided by consumption.



2018/19 Supply and Use of Cotton by Country August 1, 2018

	Area	Yield	Prod	Beg Stocks	Imports	Cons	Exports	End Stocks	S/U *	S/MU **
	000 Ha	Kgs/Ha	000 Metric Tonnes						Ratio	Ratio
CANADA				0	0	0		0	0.12	0.12
CUBA	4	269	1	1	2	3		1	0.19	0.19
DOM. REP.					1	1		0	0.47	0.47
MEXICO	202	1,587	320	122	175	435	60	122	0.25	0.28
USA	4,253	947	4,028	899	1	740	3,266	922	0.23	1.24
N. America	4,464	975	4,350	1,022	180	1,181	3,326	1,045	0.23	0.88
EL SALVADOR				9	35	35		9	0.26	0.26
GUATEMALA				7	27	27		7	0.26	0.26
HONDURAS	0	318	0	0				0		
C. America	1	522	1	16	62	63		16	0.26	0.26
ARGENTINA	372	651	243	326	3	146	99	326	1.33	2.23
BOLIVIA	4	640	3	2	1	3	0	2	0.50	0.53
BRAZIL	1,211	1,671	2,024	1,478	10	728	1,118	1,666	0.90	2.29
CHILE				0	0	0		0	0.41	0.41
COLOMBIA	10	950	10	7	36	45	1	7	0.16	0.16
ECUADOR	1	439	1	3	10	11		3	0.31	0.31
PARAGUAY	10	420	4	1	2	3	2	3	0.82	1.35
PERU	27	819	22	17	38	59	1	17	0.28	0.28
URUGUAY				0	0	0		0	0.06	0.06
VENEZUELA	15	392	6	3	5	10		3	0.30	0.30
S. America	1,651	1,400	2,311	1,838	105	1,006	1,220	2,028	0.91	2.02
ALGERIA				0	1	1		0	0.05	0.05
EGYPT	109	770	84	88	120	137	67	88	0.43	0.64
MOROCCO				4	14	14		4	0.25	0.25
SUDAN	88	702	62	16		18	44	16	0.26	0.89
TUNISIA				3	12	12		3	0.22	0.22
N. Africa	197	740	146	110	148	182	111	110	0.37	0.60
BENIN	550	509	280	146		4	282	140	0.49	35.00
BURKINA FASO	864	334	289	145		4	285	145	0.50	36.13
CAMEROON	230	530	122	65		2	124	61	0.48	32.05
CENT. AFR. REP.	32	251	8	0			4	4	0.93	
CHAD	144	245	35	26		1	54	6	0.11	12.56
COTE D'IVOIRE	333	585	195	78		2	173	97	0.56	47.71
GUINEA	12	286	3	1			3	2	0.58	
MADAGASCAR				3				3		
MALI	736	448	330	161		5	321	165	0.51	33.00
NIGER	4	469	2	0		1	1	0	0.11	0.25
SENEGAL	25	300	7	3		1	6	4	0.54	4.71
TOGO	180	300	54	19			46	27	0.58	
F. Africa	3,109	426	1,326	647		19	1,300	654	0.50	34.09
ANGOLA	3	304	1	0		1	0	0	0.34	0.48
ETHIOPIA	65	735	47	19	21	62	3	22	0.34	0.36
GHANA	15	373	5	12		1	4	12	2.22	9.28
KENYA	25	221	6	3	4	8	1	3	0.37	0.41
MALAWI	86	248	21	3		3	9	12	0.99	3.99
MOZAMBIQUE	119	222	26	15			27	15	0.55	
NIGERIA	250	205	51	6	1	23	14	21	0.57	0.93
SOUTH AFRICA	38	1,008	38	18		28	10	18	0.49	0.66
TANZANIA	1,400	137	192	159		44	175	132	0.60	3.01
UGANDA	74	369	27	26		1	43	9	0.21	10.42
CONGO, DR				2	7	7		2	0.30	0.30
ZAMBIA	121	392	47	34		2	47	32	0.67	
ZIMBABWE	193	292	57	25		3	43	36	0.78	12.66
S. Africa	2,410	217	523	326	52	204	378	321	0.55	1.57
KAZAKHSTAN	113	665	75	34	0	13	58	38	0.53	2.89
KYRGYZSTAN	14	851	12	4	3	1	13	5	0.33	4.79
TAJIKISTAN	191	535	102	34		15	85	36	0.36	2.43
TURKMENISTAN	534	561	300	91		141	143	106	0.37	0.75
UZBEKISTAN	1,209	662	800	370	1	409	393	370	0.46	0.91
C. Asia	2,061	626	1,289	534	4	579	693	555	2.06	0.96



2018/19 Supply and Use of Cotton by Country (cont'd) August 1, 2018

	Area	Yield	Prod	Beg Stocks	Imports	Cons	Exports	End Stocks	S/U *	S/MU **
	000 Ha	Kgs/Ha	000 Metric Tonnes						Ratio	Ratio
AUSTRIA				1	3	3		1	0.18	0.18
AZERBAIJAN	143	672	96	34		20	66	44	0.50	2.13
BELARUS				4	11	11		4	0.34	0.34
BELGIUM				1	7	3	4	1	0.19	0.43
BULGARIA	1	324	0	1	6	6	0	1	0.17	0.17
CZECH REP.				0	2	2		0	0.04	0.04
DENMARK					0	0			0.12	
ESTONIA										
FINLAND										
FRANCE				2	9	8	1	1	0.14	0.17
GERMANY				9	24	21	4	8	0.31	0.36
GREECE	243	910	221	8	6	20	207	8	0.04	0.42
HUNGARY				0				0		
IRELAND				0	0	0		0	0.11	0.11
ITALY				6	32	30	2	6	0.19	0.20
LATVIA				0	0	0	0	0	0.03	0.04
LITHUANIA				0				0		
MOLDOVA				1	2	2		1	0.34	0.34
NETHERLANDS				0	4	4		0	0.11	
NORWAY										
POLAND				0	3	3		0	0.12	0.13
PORTUGAL				5	30	31		4	0.14	0.14
ROMANIA				0	0	0		0	0.10	0.10
RUSSIA	1	523	1	11	48	48	0	12	0.24	0.24
SLOVAK REP.										
SPAIN	70	933	65	20	3	7	61	17	0.25	2.42
SWEDEN				0	0	0		0		
SWITZERLAND				0	1	0	0	0	0.19	0.33
UKRAINE				0	2	2		0	0.26	0.26
UNITED KINGDOM				0	0	0		0	0.12	0.12
FORMER YUGOSLAVIA				1	7	7		1	0.19	0.19
Europe	464	778	361	107	207	214	230	85	0.19	0.40
Including EU-28	314	914	287	54	131	141	291	50	0.12	0.36
CHINA	3,287	1,740	5,720	9,217	1,548	8,953	14	7,519	0.84	0.84
TAIWAN				29	155	155		29	0.18	0.18
HONG KONG				30	0	0	0	30	51.93	
Sub total	3,287	1,740	5,720	9,276	1,703	9,108	14	7,578	0.83	0.83
AUSTRALIA	350	1,816	636	385		6	789	226	0.28	37.38
INDONESIA	8	618	5	158	825	830		158	0.19	0.19
JAPAN				8	56	57		7	0.13	0.13
KOREA, D.R.				1	5	5		1	0.24	0.24
KOREA, REP.				78	236	236		78	0.33	0.33
MALAYSIA				17	128	105	23	17	0.14	0.17
PHILIPPINES	0	570	0	4	13	13		4	0.30	0.30
SINGAPORE				0	6		6	0	0.05	
THAILAND	2	520	1	82	307	302		88	0.29	0.29
VIETNAM	2	754	1	180	1,717	1,734		164	0.09	0.09
E. Asia	378	1,716	649	916	3,292	3,294	818	745	0.18	0.23
AFGHANISTAN	36	387	14	5		4	11	4	0.25	0.90
BANGLADESH	45	768	35	422	1,805	1,812		450	0.25	0.25
INDIA	11,895	508	6,048	2,183	330	5,252	1,126	2,183	0.34	0.42
MYANMAR	239	637	152	69	55	207		69	0.34	0.34
PAKISTAN	2,954	679	2,005	808	614	2,463	46	917	0.37	0.37
SRI LANKA				0	2	2		0	0.09	0.09
S. Asia	15,172	544	8,256	3,489	2,805	9,743	1,184	3,624	0.33	0.37
IRAN	71	710	50	52	65	116		52	0.45	0.45
IRAQ	9	362	3	2	5	8		2	0.24	0.24
ISRAEL	7	1,485	10	2			10	2	0.24	
SYRIA	18	958	18	9		14	4	9	0.49	0.61
TURKEY	467	1,826	852	939	833	1,703	63	857	0.49	0.50
Sub total	575	1,626	935	1,006	912	1,852	76	925	0.48	0.50
WORLD TOTAL	33,765	767	25,889	19,287	9,466	27,464	9,466	17,713	0.64	0.64

*/ Ending stocks divided by consumption plus exports.

Subtotals and total include countries not shown.

**/ Ending stocks divided by consumption.



ICAC 77th Plenary Meeting

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