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Cotton:
Review of the World Situation

ICAC International Cotton Advisory Committee

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Summary of the Outlook for Cotton

Global Cotton Consumption Expected to Grow 2018/19

During the past two seasons, consumption had outpaced production. However, while both consumption and production are expanding since the 2015/16 season, global production for this season is increasing at a faster rate. Current projections for the 2017/18 season include production at 25.8 million tons and consumption at 25.4 million tons. Production increases are coming off gains in planted area rather than yields this season. Global average yield for 2017/18 is currently being estimated at 778 kilograms per hectare, a 0.1% increase from the previous season, while area increases are 12% greater from the previous season. Major producers, India and Pakistan, with estimated area increases of 16% and 24% respectively, encountered production losses from pink bollworm this season. While most major cotton producing countries have estimated increased planted area for 2017/18 over the previous season, Australia has decreased planted area yet still increased cotton production with a yield growth of 16% with an estimated yield of 1936 kg per hectare.

Northern hemisphere production which accounts for 88% of world production is estimated at 22.5 million tons for the 2017/18 season, an increase of 12% from the 2016/17 season. Following two seasons of negative growth, India's production estimates for the 2017/18 season is just under 6.3 million tons representing a 7.3% growth based on planted area increase. Production in China is estimated at 5.3 million tons for the season representing a 9.1% growth over the previous season. With increases in both planted area and yields, production in the United States is estimated for the 2017/18 season to come to 4.6 million tons, a 23.6% increase from 2016/17. Despite low yields, planted area increases in Pakistan led to a 9.1% growth in production for the 2017/18 season to 1.8 million tons. Cotton production in West Africa is expected to rise 1.8% during 2017/18 reaching 1.1 million tons.

Production increases are expected in all the major exporting countries in the southern hemisphere. Brazil's 2017/18 crop is estimated to produce 1.7 million tons with an 11% increase over the previous season. Australia production is projected to continue to increase for the third consecutive season reaching 968,000 tons in 2017/18, up 4%. Argentina has reversed three seasons of negative growth in production with an estimated 200,000 tons for the 2017/18 season at a 11.6% increase over the previous season.

Global trade is currently projected at 8.4 million tons for the 2017/18 season. Leading importers include Bangladesh and Vietnam with an estimated 17.2% and 17.1% of global share respectively. East Asia's volume of imports continues to increase and could represent approximately 35% of global share or 2.95 million tons. Despite recently reduced export projections, the USA is expected to continue to lead all exporters in 2017/18 with 38% of global share at 3.16 million tons. Exports from West Africa are expected to increase slightly by 0.5% to 980,000 tons and could represent approximately 12% of the global share of exports. Continued growth is expected for Australian exports for 2017/18 reaching 944,000 tons and accounting for 11% of global share. India, despite lower than expected production, is projected to export 935,000 tons representing 11% of global exports. Exports from Brazil for the season are expected to reach 819,700 tons, representing 10% of global exports. Uzbekistan exports in 2017/18 should remain stable at 330,000 accounting for 4% of world exports.

In 2017/18, world ending stocks are estimated at 19.2 million tons, higher than the 18.7 million tons for the previous season. The international reference price, the Cotlook A Index has averaged 88 cents per pound during the past month with a 2017/18 season to date average of 83.2 cents per pound, slightly higher than the 2016/17 season average of 82.8 cents per pound. Stocks in China are estimated to decline to 9.2 million tons by the end of 2017/18 based on our current projections. The competing price of polyester has risen over the course of the season and continues to increase relative to cotton.

Global cotton production is projected to decline in 2018/19 based on lower yields and decreases in harvested area. Global cotton consumption is projected to continue to grow in 2018/19 based on global economic expansion, an expected acceleration of consumer demand for textiles, manufacturing growth for cotton, and rising environmental and production costs for synthetics. Current estimates for the 2018/19 season are for production to move to 25.3 million tons and consumption to rise to 26.5 million tons. Based on these projections, global stocks would decline to 18.2 million tons with projections for global trade to go to 9.15 million tons.

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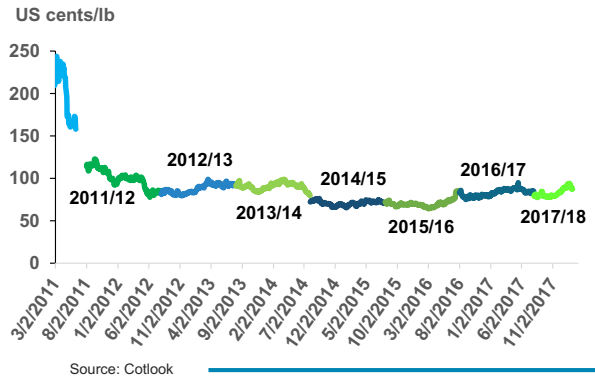
Update on Cotton Price Volatility in 2017/18

By Lorena Ruíz, ICAC

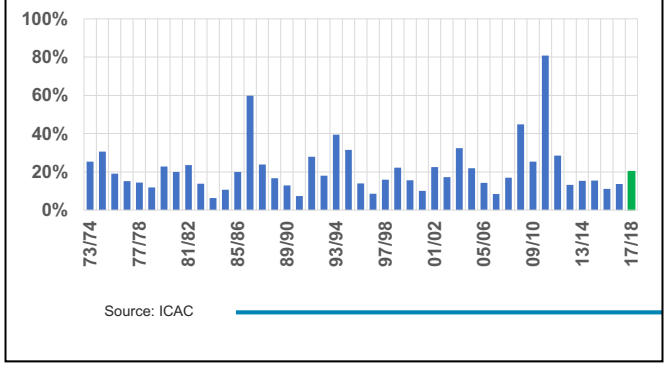
During the first six months of the 2017/18 season, the Cotlook A Index has increased by 11% from 79 cents per pound in August 1, 2017 to 87.60 cents per pound in January 31, 2018. The season average is 82.69 cents per pound, -0.1% lower than in 2016/17. (Figure 1).

Fig. 1: Cotlook A Index



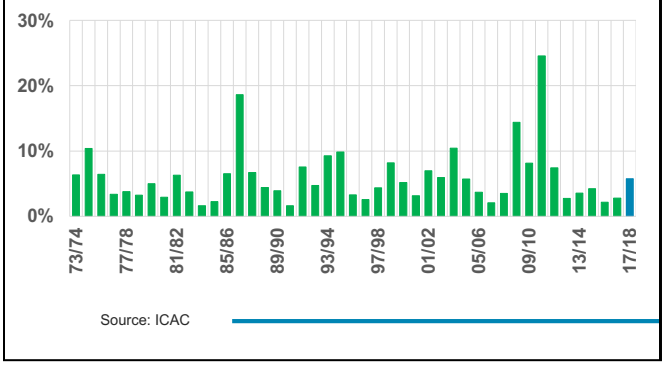
The ICAC Secretariat usually reports volatility measures in terms of the relative spread and the coefficient of variation of prices during the season. These volatility measures have the advantage of measuring the dispersion of prices relative to the season average price. The relative spread is the ratio of the difference between the maximum price and the minimum price to the average price observed during a season. The maximum value of the Cotlook A Index during the current season was reached on January 22, 2018 at 94.10 cents per pound, while the minimum value was registered on August 17, 2017 at 77.40 cents per pound. During the first eight months of 2017/18, the relative spread of the Cotlook A index amounted to 20.2%, higher than the value observed during the same period in the last five seasons. (Figure 2).

Fig. 2: Relative spread of the A Index: First 6 months of each season



The coefficient of variation is calculated as the ratio of the standard deviation of daily prices to the average price observed during a season. The coefficient of variation of the Cotlook A Index during the first six months of 2017/18 was 5.78%, slightly lower than the long-term average but the highest level observed since 2011/12. (Figure 3).

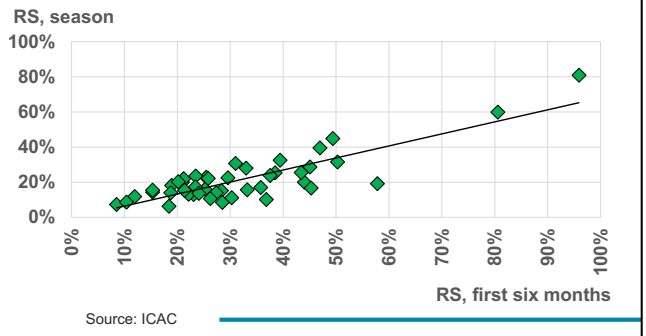
Fig. 3: Coefficient of variation of the A Index: First 6 months of each season



In an attempt to anticipate the volatility levels of the Cotlook A Index over the entire 2017/18 season, an analysis is made of the correlation between the observed volatility levels over the first six months of the season and the volatility levels over the entire season. So, the coefficient of variation and the relative spread during the first six months of the season are reasonable predictors of the corresponding measures of volatility of the Cotlook A Index over the entire season. Based on a simple extrapolation, the relative spread for 2017/18 could reach 30%, the highest level since 2010/11. A similar conclusion is reached by extrapolating the volatility level for 2017/18 with the correlation coefficient (8.5%), whose correlation between the first six months of the season and the entire season is 0.82. (Figures 4 & 5).

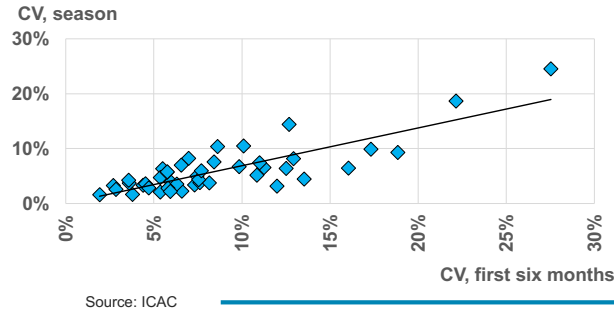
In conclusion, cotton prices are above the long-term average of 72 cents per pound and the two volatility measures suggest that cotton price volatility has increased slightly from the levels observed in the last five seasons, but remains lower than the record level observed in 2010/11.

Fig. 4: Relative spread: Values over the entire season vs. values over the first six months of each season



Source: ICAC

Fig. 5: Coefficient of variation: Values over the entire season vs. values over the first six months of each season



Source: ICAC

An Overview of Mexico's Cotton Sector

By Lorena Ruiz, ICAC and Jesús García Feria, SENASICA, México

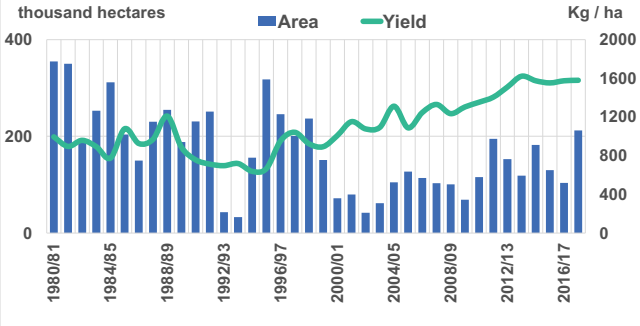
As in many other countries, cotton cultivation in Mexico is characterised by its high social and economic impact, which makes the crop a significant job-generator and a driver of economic activity.

Mexico was a net exporter of cotton fibre until the end of the 1980s. However, the crop started to lose its relevance in the following years, mainly due to falling international prices, rising production costs and the incidence of pests, such as whiteflies (*Bemisia tabaci and B. Argentifolii*), the bollworm/tobacco budworm complex (*Helicoverpa zea and Heliothis virescens*), the cotton boll weevil (*Anthonomus grandis*), and the pink bollworm (*Pectinophora gossypiella*).

Since its introduction in Mexico in 1911, the pink bollworm became established in Comarca Lagunera and other cotton-growing regions in Northwest Mexico. In 1965, it reached the Mexicali Valley, B.C., and from there it spread along the Pacific Coast to all the cotton-producing regions in Sonora and Sinaloa. It is one of the most destructive pests for cotton in America, Asia, and Africa because, if no controled actions are taken, it can damage up to 40% of the cotton bolls. Larvae feed on the flower buds (squares) and bolls and destroy the seeds and fibre or make it useless for marketing. On the other hand, the cotton boll weevil species is native to Mexico. The first records of damage caused by this pest date back to 1848 in the state of Veracruz. The cotton plant is the only known host plant on which both adults and larvae feed. The female deposits her eggs on the flower buds by making a hole with her beak. When the larvae emerge, they feed inside the flower buds (square), which subsequently fall off. The boll damage is sporadic, but it can increase when squares are scarce. Control of the cotton boll weevil can account for up to 40% of the crop production costs.

Cotton production in Mexico depends on three main factors: cotton prices, water resources, and seed availability. Mexican cotton output declined from 353,000 tons in 1980/81 to 24,000 tons in 1993/94. This decline was mainly due to the drop in international prices, which went down from 94 to 57 US cents per pound. Since then, the domestic supply of cotton fibre has recovered and the current lint production is similar to the level observed 4 decades ago. In 2017/18, after two consecutive seasons of decline in planted area, the cotton area recovered and reached 212.000 hectares, twice the planting area recorded in 2016/17. The increase in area was possible

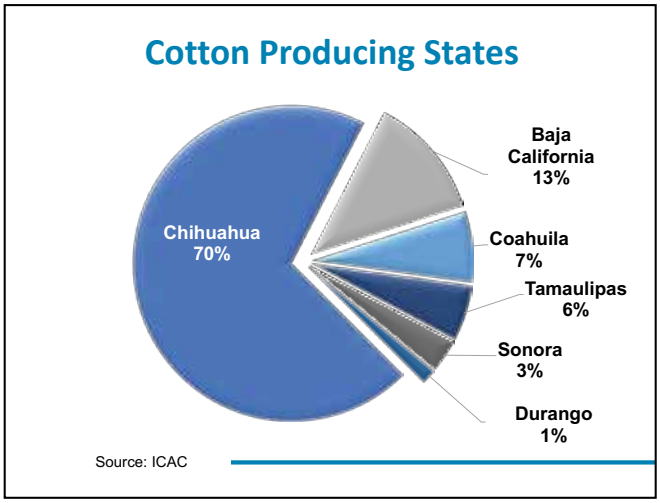
Planted Area and Average Yield



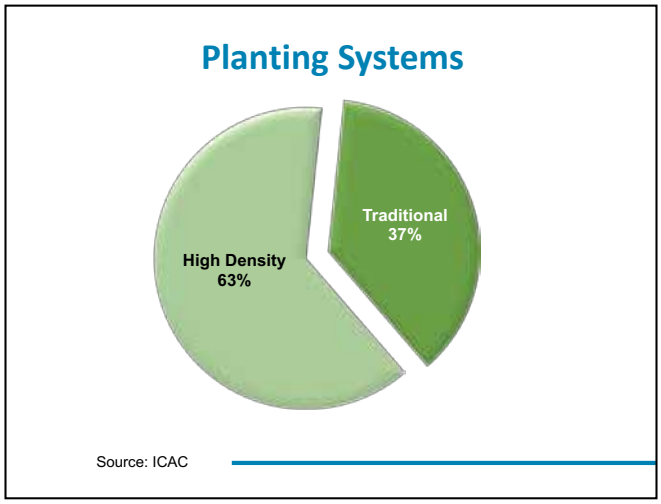
Source: ICAC

due to crop rotation and better cotton prices vis-à-vis competing crops such as sorghum and corn.

In Mexico, cotton fibre is produced mainly in five states. Chihuahua consists of most of the country's cotton area accounting for 70%. Baja California ranks second with 13%, followed by Coahuila 7%, Tamaulipas 6%, Sonora 3%, and Durango 1%. According to the georeferencing records, a total of 5,800 cotton growers and 68 ginning plants participated in the current season. The harvest is 99% mechanical, and while cotton is mostly harvested using stripper machines, some growers prefer spindle type harvesters due to the lower fibre trash content.



Ninety six percent of the area is planted with imported insect-resistant and herbicide-tolerant transgenic varieties, under two types of sowing: traditional row (102 cm) system (37% of the area) and narrow-row planting (38 cm) system (remaining 63%). The regions determine the time for sowing and harvesting according to the weather conditions. Optimum planting periods range from mid-February to early May, and the harvest takes place between July and November.

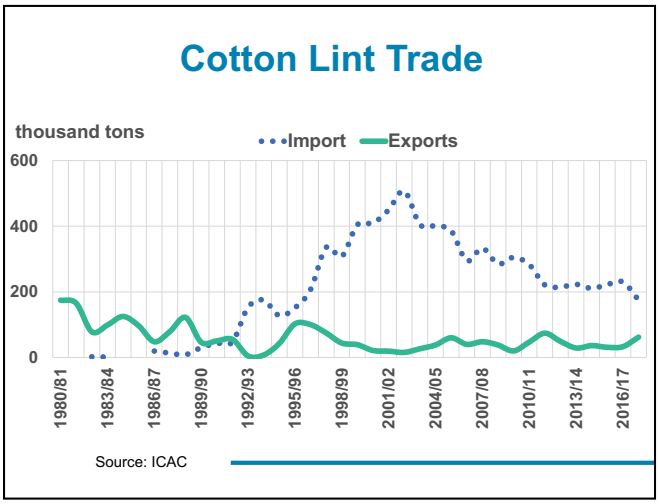


Almost 100% of Mexico's planted area is irrigated. Furrow and sprinkler irrigations are used, the latter method used primarily by Mennonite growers. However, the Federal Government is encouraging the adoption of this technology among other farmers to achieve a more efficient water use, since most of the cotton-producing regions are in zones where water is scarce.

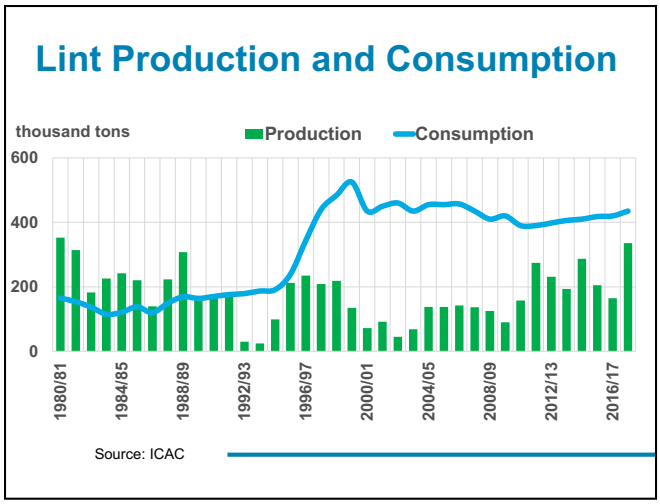
Average cotton yield in Mexico is today one of the highest worldwide. Although cotton fibre yields vary significantly among the states, the estimate for the average cotton yield per hectare nationwide is at around 1,600 kilograms for the 2017/18 season.

The state of Chihuahua has the highest cotton fibre yield in Mexico. Mennonite growers who have a particular organizational structure and produce with a high level of technology, from soil preparation, sowing, irrigation, as well as input use and application, own most of the cotton planted area resulting in high yields.

Cotton fibre production in Mexico is insufficient to supply the needs of the domestic industry. Around 50% of the fibre required by local spinners is imported, mainly from the United States. According to trade reports, in the last five-years, the average imported fibre per cotton season is 230,000 tons. With regard to exports, Mexico exports about 35,000 tons of cotton fibre annually. Primary destinations are China, Vietnam, Indonesia, and Taiwan. All cotton fibre production in Mexico has HVI testing and bale barcode identification. A bales' average weight is 225 kilograms.



In the last forty years, domestic fibre consumption has more than doubled from 165,000 tons to about 440,000 tons of fibre. Since 2015, the Federal Government, through the Ministry of Economy and the Ministry of Finance and Public Credit, implemented a comprehensive support strategy for the textile and apparel industry, which allows it to face the increasing competition and imports coming from countries such as China and Vietnam. Some of the measures are:



- The Tax Administration Service (SAT, for its acronym in Spanish) has carried out extensive origin verification audits for textile and clothing imports. The qualification for preferential tariff treatment under the North American Free Trade Agreement (NAFTA) depends on whether they qualify as goods produced in the NAFTA region.
- A sectoral register of importers that identifies and measures the risk of their operations.
- A minimum 5-day automatic advance notice is required for imports to the Tax Administration Service (SAT).
- Continuous audit program is established by SAT for importers of goods and their customers.
- The tariff rate will remain at 25% on textile imports for those countries with which Mexico has no free trade agreements.
- Warranty prices on imports of raw and convertible material.

Binational Program for Suppression and Eradication of the Cotton Boll Weevil and the Pink Bollworm between Mexico and the United States

In view of the high levels of infestation and economic losses caused by the cotton boll weevil and the pink bollworm in 2002, the binational program was implemented, which operates jointly between the National Service for Agri-Food Health, Safety, and Quality (SENASICA), through subsidiary plant protection bodies, and the U.S. Department of Agriculture (USDA). Likewise, representatives of the delegations of the Ministry of Agriculture, Livestock, Rural Development, Fisheries and Food (SAGARPA), as well as the state plant health committees, the Cotton Product System and the National Institute for Forestry, Agriculture and Livestock Research (INIFAP), take part in the program.

The binational program includes four main actions:

1) Mapping or georeferencing

   Allows identifying the size, location, grower, variety, and sowing dates for the farms.

2) Trapping

   The primary objective is monitoring plots for pest detection. Scout and delta traps are used for the cotton boll weevil and the pink bollworm, respectively. Each trap has a barcode that allows transferring information to a central system. The expert system provides data such as the type of trap, captures, crop's phenological stage, as well as day and time in which the trap was checked. The system also generates a report of those traps that are pending assessment.

3) Control

   Different types of activities are implemented under the Integrated Pest Management approach. Cultural control, establishes dates for sowing and destruction of stubbles for each state. Chemical control, is initiated at economic threshold levels of the boll weevil in the zone. Ecological control (use of pheromone *gossyplure*) is mandated for pink bollworm control. Autocidal control, consists of the release of sterile pink bollworm moths (adults) to control the population levels by taking advantage of their mating.

4) Sampling

   For evaluation and follow-up of the program development.

The binational program was initially started in the state of Chihuahua. Due to its excellent results, it was extended to Tamaulipas in 2004, Baja California and Sonora in 2008, and Coahuila and Durango in 2014. Total resources allocated to the program amount to 700 million Mexican pesos (around US$ 38 million); USDA and local cotton growers have provided a similar amount. During its operation over 15 consecutive years, the Binational Program has covered more than 1.4 million hectares of cotton. The application of pheromone *gossyplure* was carried out on 88,435 hectares across Baja California, Chihuahua, Coahuila, Durango, and Sonora states, while more than 6 billion sterile pink bollworm moths were released during 2005-2013 in Juarez Valley, Chihuahua, Mexicali Valley, Baja California, and San Luis Río Colorado, Sonora.

The state of Chihuahua was declared free of pink bollworm in December 2014, and Baja California and Sonora obtained the same recognition in 2016. As regard to the cotton boll weevil, the state of Baja California,

northern Sonora and 15 municipalities, as well as three agroecological zones, have the cotton boll weevil-free status. Since 2016, 85% of the cotton area in Mexico was found to be free of pink bollworm and boll weevil-free zones.

The implementation of the Binational Program, the adoption of transgenic varieties, the integrated pest management (IPM) and the training of growers and technicians, have produced positive results for the crop and increased profitability for cotton growers. In the last decade, the average yield in the state of Chihuahua rose from 1,100 to slightly over 1,700 kg of fibre per hectare. Also, it is estimated that 4 million litres of insecticides were no longer needed after achieving eradication of the pink bollworm and the cotton boll weevil, which translates into a saving of over 2.2 billion Mexican pesos (US$ 100 million) to cotton growers.

National Cotton Product System Committee

The National Cotton Product System Committee (CNSPA), established on March 30, 2009, represents six cotton-producing regions: Chihuahua, Baja California, Lagunera Region, Sonora, Tamaulipas, and Sinaloa. The main stake-holders in the production chain are growers, processors, spinners, traders, input and service providers. The National Committee is in charge of formulating the Cotton Product System Guiding Plan. The plan is the guiding document that determines the direction of actions the committee should take. It includes objectives and strategies that the production chain must comprehensively address and identify projects to achieve those strategies.

Since its establishment, the Committee has made significant progress in the integration and communication among different actors of the cotton fibre -textile-garment chain, through the preparation of planning models for the financing, development, and marketing of cotton fibre.

The Cotton Product System is actively involved in managing government support, mainly technology packages and contracting of coverages. Likewise, it collaborates with the authorities in the implementation of plant health measures for pest control and eradication.

Challenges

Currently, Mexico is the world's fourteenth cotton fibre producer. Owing to a combination of factors, fibre production in the country is in the process of recovery. However, marketing of fibre is still a major limiting factor for the production sector. Cotton growers require storage infrastructure, as well as financing models that allow them to have the liquidity necessary to maintain their operation.

On the other hand, it is imperative to continue with the binational program for the cotton boll weevil and pink bollworm suppression and eradication to avoid new infestation that could lead to outbreaks and spreading over already declared pest-free zones.

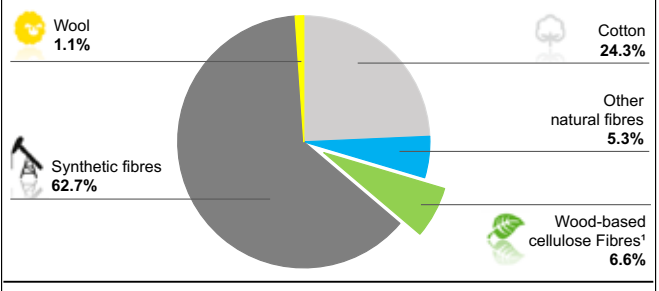
Wood-Based Cellulosic Fibres – A Complement to "Big Brother" Cotton

By Wolfram Daubek-Puza, Director Market Intelligence & Economic Affairs, Lenzing AG, Austria

Global Fibre Market

The worldwide demand for fibres is growing by about three to four percent each year as a result of population growth and rising wealth. In 2017, the global demand for fibres reached almost 105 million tons. (Figure 1).

Figure 1. Global Fibre Market
Global fibre consumption 2016



¹ Wood-based and cotton (cotton linter) based cellulose fibres

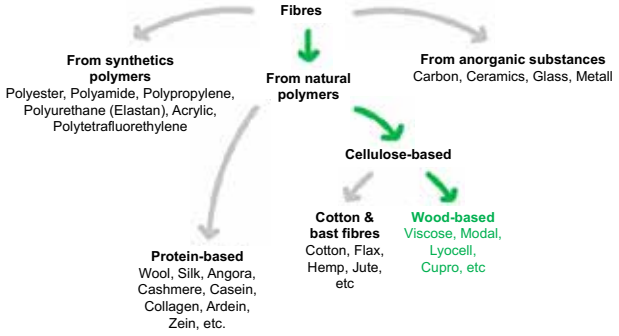
Source: ICAC, CIFRS, TFY, FEB, Lenzing estimates

Three trends are shaping overall developments in the global fibre market:

1. Population growth is a driving force in global fibre consumption. UNESCO expects the world population to increase from a current number of approximately 7 billion people to 7.7 billion in 2020.
2. Rising wealth generates additional demand, particularly in emerging economies as they seek to catch up with the western industrialized countries. Per capita fibre consumption in 2010, for example, totaled about 5 kilograms in India, 12 kilograms in China and 25 kilograms in Western Europe.
3. Concern is growing about sustainability and climate change. Consumers increasingly prefer products manufactured with a lower environmental impact and produced by using fewer (and more sustainable) resources. In addition, the public wants to know how products affect global climate change (CO_2 footprint).

These trends drive the demand for fibres with such properties as absorbency and moisture management, which also make clothing more comfortable. One group of fibres especially suited for this purpose is cellulosic-based fibres: cotton, flax, hemp, jute and ramie; and the wood-based cellulose fibres (WBCF) such as Viscose, Modal and Lyocell. (Figure 2).

Figure 2. Fibres on the World Market



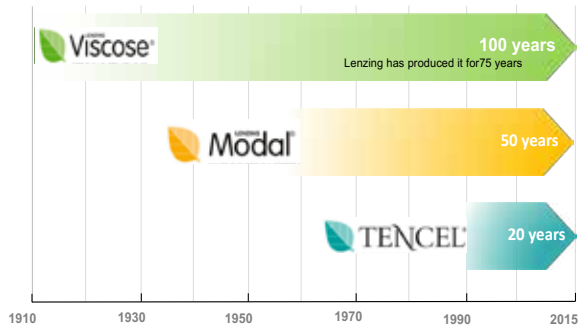
The History of Wood-Based Cellulosic Fibres (WBCFs)

The history of cotton production is well known but where do these related fibres come from? Rayon was the first man-made fibre and was developed in the late 19th century as a substitute for silk. Today, the name "viscose" is more popular but the two names are often used interchangeably, and the US Federal Trade Commission regards viscose as an alternative name for rayon. Viscose is also the name of the process used to make the fibre, and some people differentiate staple fibres from filament fibres by calling the former viscose and the latter rayon.

In the first attempts of creation, a fibre called nitrocellulose was produced - a highly flammable compound also known as gun cotton made by treating cotton cellulose with nitric acid. Fibres made of nitrocellulose were then treated with chemicals to render them nonflammable. Most commercial viscose production today is based on this process. Technological advances led to the possibility of dissolving cellulose xanthate in dilute sodium hydroxide and this is the type of cellulose that is most commonly used today.

A new manufacturing process was developed by Lenzing AG in the early 1960s to improve the fibre's softness in combination with a high wet strength. The fibre is called Modal and is most commonly made from beech wood. It is stronger than rayon when wet and softer to the touch. Thirty years later, a new closed-loop production process was developed that made the fibre more environmentally-friendly by recycling almost 100% of the solvent. This is the Lyocell process, known by Lenzing's brand name of TENCEL®, produced at Lenzing facilities in Austria, the United Kingdom and the United States. (Figure 3).

Figure 3.



Fibre Classification

Viscose, Modal and Lyocell fibres are biodegradable. Cellulose is sourced from renewable plants, including beech trees, pine trees, bamboo, cotton linter and eucalyptus trees. These fibres are a sort of hybrid, since they use the same natural cellulose found in plant-based fibres such as cotton, jute and linen, but the cellulose is then mechanically or chemically transformed into fibres.

The Wood-to-Fibre Transformation Process for Lyocell

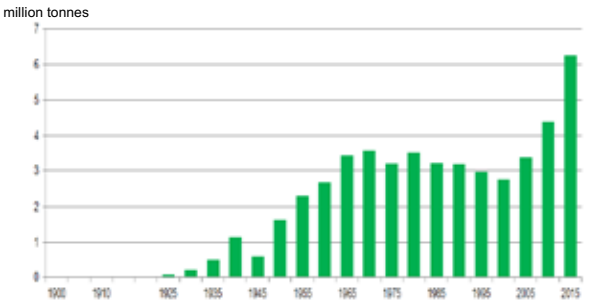
The transformation process for Lyocell is much shorter than the Viscose process. It starts in a forest, where the trees grown for Lyocell production are harvested by loggers, debarked and chopped into wood chips. Then, at the pulp mill, the chips are cooked to a wet pulp, which is then dried. The dry pulp is soaked in a solvent and filtered to extract a clear solution, which is then extruded through the nozzles of a spinneret to make fibres (Figure 4). Those fibres are then cut, washed, dried and taken to the packing station. An important part of this process, as mentioned above, is that almost 100% of the solvent can be recovered and reused, which earned this process the European Union's European Business Award for the Environment.

Figure 4.

Global Production of WBCFs

Global production of WBCFs, is ilustrated in Figure 5. Marginal increases in output had occurred until the 1920s and were followed by steady surges reaching a peak in 1973 of almost 3.9 million tons. A general decline continued for decades until 2001, when world production had dropped to 2.7 million tons. Thereafter, the production began a remarkable recovery, to an estimated 7 million tons in in 2017.

Figure 5. History of Wood Based Cellulosic Fibres Production



Source: CIRFS, The Fiber Year, Lenzing MI

A robust production of WBCFs is self-explanatory but a comparison with the production of the most important plant-based fibre, cotton, is worthwhile. The development of the two fibres has been showing opposing trends, especially in recent years, but a projected movement for the coming years remains positive for both. The International Cotton Advisory Committee (ICAC) forecasts cotton output to reach around 28 million tons by the 2022/23 season, and WBCF production is estimated to surpass 10 million tons over the same period. At present, cotton's share of the world fibre market has fallen below 30%, while WBCFs account for just over 6% of the fibre market. Nevertheless, strong growth rates among all synthetic fibres have lifted their share of the global fibre market to 66%.

The Structure of the WBCF Market

Wood-based cellulosic fibres have enjoyed a remarkable upswing over the last 15 years but not all sub-segments contributed to this growth. The majority of wood-based cellulosic fibres are staple fibres, with current production of more than 6 million tons. Their only decline in production during the upswing after 2002 was related to the financial crisis in 2008. Their average annual growth rate for that period accounts for about 7%. Production of Viscose, Modal and TENCEL® fibres has more than tripled since 2001.

In contrast, acetate tow output has softened since 2014. Acetate tow production is correlated with cigarette

consumption because cigarette filters are the main end-use of acetate tow. Global cigarette shipments continue to decline as a result of public bans on smoking, increasing health awareness and declining advertising in many countries. Furthermore, tax-driven retail price increases, the prevalence of e-cigarettes, illegal products and a weak economy spurred a further decline in acetate tow's market share.

Filament fibre, also called filament yarn, now amounts to just 5% of the entire market and has been declining for decades with its current volume of nearly 400,000 tons, comparable to its levels in the early 1930s. This volume is just a fraction of its peak level in 1969, when global output exceeded 1.4 million tons. Lower-priced synthetic fibres have displaced filament yarn in the global market.

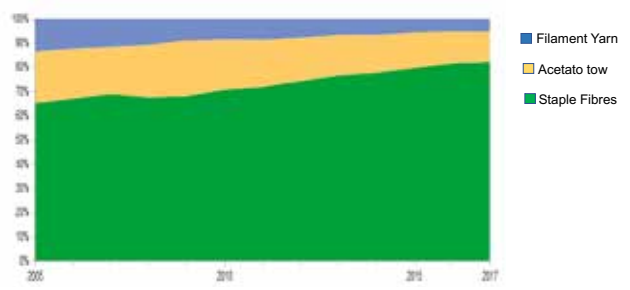
The filament yarn market consists of cupro[1] and acetate filaments as well as textile and industrial Viscose filament yarns. After 30,000 tons of cupro filament were produced in 1970, manufacturing virtually halted until 2000, after which, demand for the filament began to grow. This fibre is based on cotton linter and is mainly used in woven fabrics for linings, high-quality garments, underwear and outerwear. Today's acetate filament output of around 50,000 tons, currently produced in fewer than 10 plants, is currently at one-eighth of its peak level of more than 400,000 tons in 1970. Viscose filament output fell from 1 million tons in 1969 to about 280,000 tons due to a decline in textile filament production. Industrial yarn, for reinforcement material in "run flat" and high-performance tires, benefited from increased vehicle production in Europe and the United States. Further growth is expected for other reinforced rubber products and precursor materials for carbon fibres due to their lower cost compared to the cost of acrylics.

A more recent survey of the changing WBCF market structure in favor of staple fibres is illustrated in Figure 6. The latest estimates assume a market share of the three-generation staple fibres at 82%, compared to 65% in 2005. The acetate tow share declined over the same period, from 21% to 13%. The filament business has been suffering the most, with a long-term contraction to 5% share at present from almost 40% in the late 1960s.

Applications of WBCFs

WBCFs have a wide spectrum of uses: apparel, hygiene, skin wipes, home and interior applications and protective wear. Strong increases are underway in technical applications for industry, automotive and agricultural uses.

Figure 6. Shares of Wood Based Cellulosic Fibres Market



Source: CIRFS, The Fiber Year, Lenzing estimates

WBCFs blend easily with other fibres to add strength, wrinkle resistance and ease of care, which is a significant asset. WBCFs have many properties similar to cotton and other natural cellulosic fibres. They are breathable, comfortable to wear and easily dyed in vivid colors. They do not build up static electricity or pill, unless the fabric is made from short, low-twisted yarns. They are soft to the skin and have moderate dry strength and abrasion resistance. Like other cellulosic fibres, they are not resilient, which means that the fabric wrinkles. However, the moisture management of Viscose, Modal and Lyocell is superior. A blend with Lyocell enhances cotton's spinning potential and yields fabrics that are lighter than 100% cotton textiles.

Thinking Ahead, Designing the Future

WBCFs enjoy an almost inexhaustible raw material base and a potential supply of several million tons from large-scale investments and conversions from paper to cellulosic fibre manufacturing.

The growing world population and higher disposable incomes in populous nations that now show below-average consumption per capita will mean continuous growth in the size of the world fibre market. These growth drivers will also result in higher demand for WBCFs because they offer the best alternative to cellulosic fibres.

An additional aspect that will support WBCF growth is sustainability, which has become a buzzword in consumer awareness, and involves the question of the environmental impact of fibres in garments Solvent recycling in the Lyocell process reduces the environmental impact of its production, which was a major problem with older Viscose processes. Some factories, particularly in Asia, still do not have the same high environmental standards as

1) A type of rayon made by dissolving cotton cellulose with cuprammonium salts and spinning the resulting solution into filaments.

the modern Lenzing Group plants; however, the Chinese government is working to raise its industry standards.

The need for clothing will double by 2025. This will pose a burden on the environment because 80% of the clothing that gets thrown away (estimated at 50 million tons) ends up in landfills. In response, Lenzig has developed a closed-loop production process: cotton scraps left over from cutting operations are used to produce pulp for a new kind of Lyocell fibre, Refibra™, thereby reducing the amount of resources extracted from nature and reducing the industry's impact on the environment. Refibra™ fibre production offers a useful example for the clothing industry, including cotton, of a more environmentally-friendly production process.

2016/17 Supply and Use of Cotton by Country February 28, 2018

	Area	Yield	Prod	Beg Stocks	Imports	Cons	Exports	End Stocks	S/U *	S/MU **
	000 Ha	Kgs/Ha	000 Metric Tons						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	1.50	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**	**1,492**	**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	423	35	19	20	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	850	15	9	17	22	7	12	0.41	0.56
TANZANIA	331	123	41	69		39	30	40	0.58	1.03
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	**1,304**	**244**	**319**	**242**	**70**	**190**	**225**	**216**	**0.52**	**1.14**
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) February 28, 2018

	Area	Yield	Prod	Beg Stocks	Imports	Cons	Exports	End Stocks	S/U *	S/MU **
	000 Ha	Kgs/Ha	000 Metric Tons						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	2,923	1,676	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	**2,923**	**1,676**	**4,900**	**12,722**	**1,237**	**8,154**	**13**	**10,691**	**1.31**	**1.31**
AUSTRALIA	557	1,670	931	180		7	812	292	0.36	43.70
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	10	10		3	0.28	0.28
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**	**1,609**	**945**	**565**	**2,606**	**2,514**	**845**	**758**	**0.23**	**0.30**
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	30	57	110		30	0.27	0.27
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**	**886**	**873**	**1,610**	**109**	**849**	**0.49**	**0.53**
WORLD TOTAL	**29,671**	**778**	**23,094**	**20,308**	**8,128**	**24,513**	**8,190**	**18,815**	**0.77**	**0.77**

*/ Ending stocks divided by consumption plus exports.
**/ Ending stocks divided by consumption.
Subtotals and total include countries not shown.

2017/18 Supply and Use of Cotton by Country February 28, 2018

	Area	Yield	Prod	Beg Stocks	Imports	Cons	Exports	End Stocks	S/U *	S/MU **
	000 Ha	Kgs/Ha	000 Metric Tons						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	4,616	1,001	4,621	599	2	729	3,157	1,336	0.34	1.83
N. America	**4,837**	**1,025**	**4,959**	**709**	**181**	**1,170**	**3,219**	**1,459**	**0.33**	**1.25**
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	304	658	200	301	3	145	87	273	1.18	1.89
BOLIVIA	4	639	3	2	1	3	0	2	0.50	0.53
BRAZIL	1,050	1,622	1,703	1,158	10	725	820	1,327	0.86	1.83
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	**1,423**	**1,370**	**1,949**	**1,492**	**105**	**1,002**	**910**	**1,634**	**0.85**	**1.63**
ALGERIA				0	2	2		0	0.04	0.04
EGYPT	91	719	65	90	111	139	40	88	0.49	0.63
MOROCCO				4	15	15		4	0.24	0.24
SUDAN	84	561	47	14		18	27	16	0.36	0.90
TUNISIA				3	12	12		3	0.22	0.22
N. Africa	**175**	**643**	**113**	**110**	**140**	**186**	**67**	**110**	**0.44**	**0.59**
BENIN	450	436	196	87		4	164	115	0.69	28.86
BURKINA FASO	759	373	283	120		4	249	150	0.59	37.44
CAMEROON	235	502	118	58		2	108	66	0.61	34.89
CENT. AFR. REP.	33	219	7	3			7	3	0.49	
CHAD	150	200	30	51		1	56	24	0.43	48.73
COTE D'IVOIRE	326	427	139	21		2	99	59	0.59	28.99
GUINEA	12	273	3	1			3	1	0.40	
MADAGASCAR				3				3		
MALI	730	416	304	106		5	252	153	0.60	30.63
NIGER	5	447	2	0		1	1	0	0.11	0.25
SENEGAL	19	330	6	3		1	5	3	0.48	3.67
TOGO	144	303	44	14			40	17	0.44	
F. Africa	**2,863**	**396**	**1,133**	**467**		**19**	**984**	**596**	**0.59**	**31.10**
ANGOLA	3	301	1	0		1	0	0	0.33	0.48
ETHIOPIA	60	633	38	19	25	60	3	19	0.29	0.31
GHANA	15	372	6	12		1	4	12	2.14	9.33
KENYA	25	184	5	3	4	8		3	0.41	0.41
MALAWI	90	236	21	12		3	18	12	0.56	3.95
MOZAMBIQUE	124	185	23	20			28	15	0.52	
NIGERIA	261	204	53	18	1	24	28	20	0.38	0.84
SOUTH AFRICA	19	998	19	12	11	22	7	12	0.41	0.55
TANZANIA	347	294	102	40		43	17	82	1.36	1.91
UGANDA	77	351	27	16		1	24	19	0.76	21.16
CONGO, DR				2	7	7		2	0.30	0.30
ZAMBIA	126	356	45	34		2	41	36	0.85	
ZIMBABWE	202	266	54	22		3	39	34	0.80	11.91
S. Africa	**1,370**	**289**	**396**	**216**	**68**	**197**	**212**	**271**	**0.66**	**1.38**
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	344	326	0.45	0.84
C. Asia	**2,069**	**622**	**1,288**	**392**	**4**	**558**	**637**	**490**	**2.02**	**0.88**

2017/18 Supply and Use of Cotton by Country (cont'd) February 28, 2018

	Area	Yield	Prod	Beg Stocks	Imports	Cons	Exports	End Stocks	S/U *	S/MU **
	000 Ha	Kgs/Ha	000 Metric Tons						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	1,028	250	20	6	20	218	38	0.16	1.93
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	62	939	58	20	3	7	54	20	0.32	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	**447**	**858**	**384**	**103**	**207**	**235**	**322**	**136**	**0.24**	**0.58**
Including EU-28	**306**	**1,008**	**308**	**68**	**137**	**145**	**283**	**84**	**0.20**	**0.58**
CHINA	3,157	1,693	5,345	10,632	1,387	8,115	14	9,236	1.14	1.14
TAIWAN				29	153	153		29	0.19	0.19
HONG KONG				30	1	0	0	30	61.83	
Sub total	**3,157**	**1,693**	**5,345**	**10,691**	**1,541**	**8,269**	**14**	**9,294**	**1.12**	**1.12**
AUSTRALIA	500	1,936	968	292		6	944	310	0.33	48.77
INDONESIA	8	615	5	147	792	742		202	0.27	0.27
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	86	67	23	10	0.11	0.15
PHILIPPINES	0	567	0	3	10	10		3	0.30	0.30
SINGAPORE				0	6		6	0	0.05	
THAILAND	2	517	1	52	305	277		82	0.30	0.30
VIETNAM	2	750	1	181	1,431	1,308		306	0.23	0.23
E. Asia	**528**	**1,858**	**982**	**758**	**2,950**	**2,714**	**973**	**1,003**	**0.27**	**0.37**
AFGHANISTAN	38	387	15	7		4	12	5	0.31	1.20
BANGLADESH	45	764	34	379	1,573	1,437		550	0.38	0.38
INDIA	12,235	515	6,296	1,829	323	5,302	935	2,211	0.35	0.42
MYANMAR	249	634	158	62	57	207		69	0.34	0.34
PAKISTAN	3,097	581	1,799	734	290	2,346	22	455	0.19	0.19
SRI LANKA				0	2	2		0	0.09	0.09
S. Asia	**15,668**	**530**	**8,304**	**3,011**	**2,245**	**9,300**	**969**	**3,291**	**0.32**	**0.35**
IRAN	79	709	56	30	60	116		30	0.26	0.26
IRAQ	10	361	3	2	5	8		2	0.24	0.24
ISRAEL	7	1,892	13	2			13	2	0.14	
SYRIA	25	954	23	11		22	4	9	0.34	0.39
TURKEY	462	1,817	840	802	801	1,481	54	907	0.59	0.61
Sub total	**585**	**1,601**	**936**	**849**	**875**	**1,638**	**71**	**952**	**0.56**	**0.58**
WORLD TOTAL	**33,123**	**779**	**25,789**	**18,815**	**8,377**	**25,350**	**8,377**	**19,254**	**0.76**	**0.76**

*/ Ending stocks divided by consumption plus exports.

**/ Ending stocks divided by consumption.

Subtotals and total include countries not shown.

2018/19 Supply and Use of Cotton by Country February 28, 2018

	Area	Yield	Prod	Beg Stocks	Imports	Cons	Exports	End Stocks	S/U *	S/MU **
	000 Ha	Kgs/Ha	000 Metric Tons						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	109	175	435	60	122	0.25	0.28
USA	4,869	876	4,266	599	2	737	3,532	1,336	0.34	1.81
N. America	**5,080**	**903**	**4,588**	**709**	**181**	**1,177**	**3,592**	**1,459**	**0.33**	**1.24**
EL SALVADOR				9	35	35		9	0.27	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	305	662	202	301	3	146	102	229	1.18	1.57
BOLIVIA	4	640	3	2	1	3	0	2	0.50	0.53
BRAZIL	1,155	1,399	1,616	1,158	10	728	898	1,327	0.86	1.82
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	0.26	1.35
PERU	27	819	22	16	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	**1,528**	**1,219**	**1,864**	**1,492**	**105**	**1,006**	**1,004**	**1,592**	**0.85**	**1.58**
ALGERIA				0	1	1		0	0.04	0.05
EGYPT	82	719	59	90	125	137	47	88	0.49	0.64
MOROCCO				4	14	14		4	0.24	0.25
SUDAN	88	702	62	14		18	44	16	0.36	0.89
TUNISIA				3	12	12		3	0.22	0.22
N. Africa	**170**	**710**	**121**	**110**	**153**	**182**	**91**	**110**	**0.44**	**0.60**
BENIN	432	501	216	87		4	220	108	0.69	27.05
BURKINA FASO	770	392	302	120		4	297	151	0.59	37.70
CAMEROON	225	501	113	58		2	121	56	0.61	29.74
CENT. AFR. REP.	32	251	8	3			7	4	0.49	
CHAD	144	230	33	51		1	52	5	0.43	10.35
COTE D'IVOIRE	313	440	138	21		2	126	69	0.59	33.76
GUINEA	12	286	3	1			3	2	0.40	
MADAGASCAR				3				3		
MALI	701	419	293	106		5	295	147	0.60	29.33
NIGER	4	469	2	0		1	1	0	0.11	0.25
SENEGAL	18	347	6	3		1	5	3	0.48	4.11
TOGO	138	318	44	14			39	22	0.44	
F. Africa	**2,790**	**415**	**1,159**	**467**		**19**	**1,166**	**571**	**0.59**	**29.75**
ANGOLA	3	304	1	0		1	0	0	0.33	0.48
ETHIOPIA	58	487	28	19	25	62	0	10	0.29	0.15
GHANA	15	373	5	12		1	4	12	2.14	9.28
KENYA	25	221	6	3	4	8	1	3	0.41	0.41
MALAWI	86	248	21	12		3	18	12	0.56	3.99
MOZAMBIQUE	119	204	24	20			26	13	0.52	
NIGERIA	250	205	51	18	1	24	28	20	0.38	0.84
SOUTH AFRICA	18	1,098	20	12	10	22	7	12	0.41	0.54
TANZANIA	333	216	72	40		44	65	46	1.36	1.05
UGANDA	74	369	27	16		1	36	9	0.76	10.42
CONGO, DR				2	7	7		2	0.30	0.30
ZAMBIA	121	392	47	34		2	50	32	0.85	
ZIMBABWE	193	292	57	22		3	52	36	0.80	12.66
S. Africa	**1,316**	**276**	**363**	**216**	**66**	**200**	**288**	**213**	**0.66**	**1.06**
KAZAKHSTAN	113	665	75	16	0	13	58	38	0.63	2.89
KYRGYZSTAN	14	851	12	4	3	1	13	5	0.28	4.79
TAJIKISTAN	191	535	102	27		15	85	36	0.36	2.43
TURKMENISTAN	534	561	300	86		141	143	106	0.30	0.75
UZBEKISTAN	1,209	665	804	259	1	409	440	283	0.45	0.69
C. Asia	**2,061**	**627**	**1,293**	**392**	**4**	**579**	**740**	**468**	**2.02**	**0.81**

2018/19 Supply and Use of Cotton by Country (cont'd) February 28, 2018

	Area	Yield	Prod	Beg Stocks	Imports	Cons	Exports	End Stocks	S/U *	S/MU **
	000 Ha	Kgs/Ha	000 Metric Tons						Ratio	Ratio
AUSTRIA				1	3	3		1	0.18	0.18
AZERBAIJAN	143	672	96	15		20	66	44	0.61	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	0.18	0.17
CZECH REP.				0	2	2		0	0.09	0.04
DENMARK					0	0			0.12	
ESTONIA										
FINLAND										
FRANCE				2	9	8	1	1	0.15	0.17
GERMANY				9	24	21	4	8	0.34	0.36
GREECE	238	1,034	246	20	6	20	232	38	0.16	1.94
HUNGARY				0				0		
IRELAND				0	0	0		0	0.10	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				6	30	31		4	0.15	0.14
ROMANIA				0	0	0		0	0.09	0.10
RUSSIA	1	523	1	13	48	48	0	12	0.23	0.24
SLOVAK REP.										
SPAIN	61	933	57	20	3	7	54	17	0.32	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	0.13	0.12
FORMER YUGOSLAVIA				1	7	7		1	0.19	0.19
Europe	**456**	**831**	**379**	**103**	**207**	**214**	**219**	**159**	**0.37**	**0.74**
Including EU-28	**300**	**1,011**	**303**	**68**	**131**	**141**	**283**	**80**	**0.19**	**0.57**
CHINA	3,157	1,693	5,345	10,632	1,852	8,358	14	8,062	1.14	0.96
TAIWAN				29	155	155		29	0.19	0.18
HONG KONG				30	0	0	0	30	61.83	
Sub total	**3,157**	**1,693**	**5,345**	**10,691**	**2,007**	**8,514**	**14**	**8,121**	**1.12**	**0.95**
AUSTRALIA	450	1,979	890	292		6	944	310	0.33	51.34
INDONESIA	8	618	5	147	776	760		223	0.27	0.29
JAPAN				9	56	57		7	0.14	0.13
KOREA, D.R.				1	5	5		1	0.24	0.24
KOREA, REP.				56	236	236		78	0.33	0.33
MALAYSIA				13	88	65	23	10	0.11	0.15
PHILIPPINES	0	570	0	3	10	10		3	0.30	0.30
SINGAPORE				0	6		6	0	0.05	
THAILAND	2	520	1	52	284	280		87	0.30	0.31
VIETNAM	2	754	1	181	1,455	1,393		370	0.23	0.27
E. Asia	**478**	**1,890**	**904**	**758**	**2,915**	**2,818**	**973**	**1,091**	**0.27**	**0.39**
AFGHANISTAN	36	387	14	7		4	12	4	0.31	0.90
BANGLADESH	45	768	35	379	1,546	1,580		550	0.38	0.35
INDIA	11,895	512	6,096	1,829	339	5,567	935	2,211	0.35	0.40
MYANMAR	239	637	152	62	55	207		69	0.34	0.34
PAKISTAN	3,328	629	2,094	734	609	2,463	22	673	0.19	0.27
SRI LANKA				0	2	2		0	0.09	0.09
S. Asia	**15,547**	**540**	**8,393**	**3,011**	**2,550**	**9,827**	**969**	**3,508**	**0.32**	**0.36**
IRAN	71	710	50	30	65	116		30	0.26	0.26
IRAQ	9	362	3	2	5	8		2	0.24	0.24
ISRAEL	7	1,902	13	2			13	2	0.14	
SYRIA	18	958	18	11		14	4	9	0.34	0.61
TURKEY	467	1,826	852	802	833	1,703	54	817	0.59	0.48
Sub total	**575**	**1,631**	**937**	**849**	**913**	**1,852**	**71**	**863**	**0.45**	**0.47**
WORLD TOTAL	**33,148**	**765**	**25,369**	**18,815**	**9,159**	**26,469**	**8,377**	**18,153**	**0.76**	**0.69**

*/ Ending stocks divided by consumption plus exports.

**/ Ending stocks divided by consumption.

Subtotals and total include countries not shown.

Supply and Distribution of Cotton
February 28, 2018

Seasons begin on August 1

	2013/14	2014/15 Est.	2015/16 Est.	2016/17 Est.	2017/18 Proj.	2018/19 Proj.
			Million Metric Tons			
BEGINNING STOCKS						
WORLD TOTAL	**19.428**	**21.317**	**22.973**	**20.308**	**18.82**	**19.25**
CHINA	10.811	13.280	14.118	12.650	10.63	9.24
USA	0.827	0.512	0.795	0.827	0.60	1.34
PRODUCTION						
WORLD TOTAL	**26.225**	**26.269**	**21.485**	**23.094**	**25.79**	**25.37**
INDIA	6.766	6.562	5.746	5.865	6.30	6.10
CHINA	7.000	6.600	5.200	4.900	5.34	5.34
USA	2.811	3.553	2.806	3.738	4.62	4.27
PAKISTAN	2.076	2.305	1.537	1.663	1.80	2.09
BRAZIL	1.734	1.563	1.289	1.530	1.70	1.62
UZBEKISTAN	0.910	0.885	0.832	0.789	0.80	0.80
OTHERS	4.928	4.801	4.075	4.609	5.23	5.15
CONSUMPTION						
WORLD TOTAL	**24.101**	**24.587**	**24.139**	**24.513**	**25.35**	**26.47**
CHINA	7.600	7.550	7.600	8.000	8.12	8.36
INDIA	5.087	5.377	5.296	5.148	5.30	5.57
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	1.44	1.58
VIETNAM	0.673	0.875	1.007	1.168	1.31	1.39
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	3.632	3.75	3.79
EXPORTS						
WORLD TOTAL	**9.029**	**7.779**	**7.548**	**8.190**	**8.38**	**9.16**
USA	2.293	2.449	1.993	3.248	3.16	3.53
INDIA	2.015	0.914	1.258	0.991	0.94	0.87
CFA ZONE	0.973	0.966	0.963	0.972	0.98	1.16
BRAZIL	0.485	0.851	0.939	0.607	0.82	0.90
UZBEKISTAN	0.615	0.550	0.500	0.403	0.34	0.44
AUSTRALIA	1.058	0.527	0.616	0.812	0.94	0.88
IMPORTS						
WORLD TOTAL	**8.858**	**7.800**	**7.572**	**8.128**	**8.38**	**9.16**
BANGLADESH	1.112	1.183	1.378	1.412	1.57	1.55
VIETNAM	0.687	0.934	1.001	1.198	1.43	1.45
CHINA	3.075	1.804	0.959	1.096	1.39	1.85
TURKEY	0.924	0.800	0.918	0.801	0.80	0.83
INDONESIA	0.651	0.728	0.640	0.746	0.79	0.78
TRADE IMBALANCE 1/	**-0.171**	**0.020**	**0.023**	**-0.062**	**0.00**	**0.00**
STOCKS ADJUSTMENT 2/	**-0.063**	**-0.047**	**-0.034**	**-0.013**	**0.00**	**0.00**
ENDING STOCKS						
WORLD TOTAL	**21.317**	**22.973**	**20.308**	**18.815**	**19.25**	**18.15**
CHINA	13.280	14.118	12.650	10.632	9.24	8.06
USA	0.512	0.795	0.827	0.599	1.34	1.34
ENDING STOCKS/MILL USE (%)						
WORLD-LESS-CHINA 3/	**49**	**52**	**46**	**50**	**58**	**56**
CHINA 4/	**175**	**187**	**166**	**133**	**114**	**96**
COTLOOK A INDEX 5/	**91**	**71**	**70**	**83**	**83**	

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.