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Session II: Cotton in Competition
16:15 March 16, 2016

Mr. José Sette in the Chair
Executive Director, International Cotton Advisory Committee

Ms. Bruna Angel, PCI Fibres, a Wood Mackenzie Business, Oberursel, Germany
"Product Developments in Manmade Fibres: Is Cotton Able to Compete?

Ms. Angel observed that polyester as a molecule goes into plastic bottles, packaging, and many other uses, but that a majority goes into fiber. Polyester owes much of its growth to its versatility. It can be produced as a filament or cut up into staple for blending, it can be used in non-wovens, as fiberfill, and as waddings. Interestingly, the fastest growing application for polyester fiber is in construction as reinforcing in concrete to give flexibility and strength to buildings. (Polypropylene is used in concrete for highways.) Polyester can be produced in a range of micronaire, and blended with cotton or other fibers to achieve desired properties.

She reported that polyester continues to dominate textile fiber consumption, and she observed that the growth in polyester is to a large extent the result of industrial policies in China and India. China produced 64% of all manmade fiber in the world in 2015 and is the largest producer of viscose, polyester and nylon. Polyester production in India is also growing rapidly, although from a much smaller level than in China.

Polyester is the main challenge for cotton, but use of viscose staple is also increasing. She said that viscose is being blended with other fibers, including cotton, to improve weaving performance. Nylon consumption is stable, not growing, and acrylic is in decline. According to Ms. Angel, polyester is not as good as acrylic or nylon but it is very much cheaper. Raw materials for polyester are easy to produce and are not scarce. The technology to produce polyester is commonly available.

Ms. Angel explained that the growth of polyester production capacity in China between 2008 and 2015 has created huge excess capacity in both staple and filament. She attributed the growth in capacity to industrial expansion funded by the Government of China in response to the recession of 2008. She estimated excess capacity at 11 million tons of filament and 9 million tons of staple.

According to Ms. Angel, polyester has a substantial cost advantage over cotton in textile mills because of both a flat price differential and also because of differences in waste factors in the spinning process. When both nominal prices and waste factors are considered, polyester has a price advantage over cotton of more than 50% currently; in China the differential is nearly 100%.

Ms. Angel explained that cotton is losing market share most rapidly in women's wear, and she noted that the fastest world population growth is occurring in Africa where per capita fiber consumption remains very low.

Ms. Angel also called attention to a major challenge facing the polyester industry, marine litter. She said that plastic (polyester) is a sustainability challenge for the world because polyester products break into micro plastic pieces which become sources of pollution. Persistent organic pollutants come off microfibers as they are degrading in the ocean. She observed that the polyester industry is working to increase recycling, and there is research into post-consumer waste products to ensure continuous use of fiber materials. However, such products are currently very expensive.

Ms. Angel observed that the cotton price spike in 2010/11 hurt many retailers and resulted in a defensive shift away from cotton. With cotton prices still above those of polyester, and with lower oil prices making the inputs used in polyester production abundant, cotton will likely continue to lose market share to polyester over the next five years.

Ms. Angel reflected that consumers do not connect polyester to oil and natural gas, and retailers have no incentive to make such a connection. It may be that consumers should make such a connection, but they do not. She observed that we cannot do without polyester and plastics, and therefore we have to reduce or adjust to make sure such practices are sustainable.

Dr. Dean Ethridge, Director, Fiber and Biopolymer Research Institute, Lubbock, Texas, USA
"Policy-Driven Causes for Cotton's Decreasing Market Share of Fibers."

Dr. Ethridge observed that the loss of market share for cotton to polyester is well documented, as well as the fact that the dominant force for the growth in polyester production during the last 25 years has been China, and a secondary force has been other countries in Asia.

Dr. Ethridge asserted that China has used central government power to fund an explosion in production capacity of polyester fiber, and concomitant growth in textile production capacity. Between 2000 and 2010, spinning capacity in China rose from 45 million spindles to 125 million, accounting for 97% of the global increase in textile capacity during the 2000s. According to Dr. Ethridge, this expansion occurred without an economic basis, but was instead a result of economic policies.

He noted that China has established large scale government-controlled cotton production in the far-western region of Xinjiang, which now accounts for two-thirds of China's total cotton production. Textile production is also being encouraged there as part of a policy of pacification of an unstable region.

The four largest cotton producers today are China, India, Pakistan, and the United States, which together account for 72% of world cotton production. However, of the four, only the United States is a reliable exporter. Dr. Ethridge noted that excluding China, the proportion of the

world's cotton supply sold into the market is relatively stable. However, China built a reserve between 2010/11 and 2014/15 of 12 million tons. The reserve policy of the Government of China is unrelated to market signals, and because of the reserve, one-fourth of the global cotton supply is now held off the market.

Dr. Ethridge reported that world polyester production climbed from 9 million tons to 48 million tons between 1990 and 2015, and that China's share of world polyester production rose from 13% to 70% in that interval. According to Dr. Ethridge, this growth has resulted in a durable structural imbalance in the world fiber market in the form of the construction of polyester plants in China.

In addition to control of textile production capacity, cotton production, and polyester production, the Government of China exerts direct control over domestic cotton prices via regulation. Because of intervention by the government, cotton prices in China are consistently above international cotton prices, and they are above prices of polyester. Accordingly, there is an overwhelming cost incentive for textile mills to substitute polyester for cotton whenever consumer demand will allow.

Dr. Ethridge concluded that the loss of market share for cotton has been largely the result of policies of the Government of China following China's accession to the WTO in 2001 and the end of the Multifiber Arrangement (MFA) in January 2005. However, he observed that offsetting forces are emerging. Vietnam, Bangladesh and India all have an advantage over China in the production of cotton textiles. Nevertheless, China's dominance of polyester production will continue. Because domestic industrial policies are not actionable in the World Trade Organization (WTO), a reversal of cotton's loss of market share cannot be expected.

He observed that economists have been speculating that China would transition toward a consumer oriented economy for many years. However, such a shift has yet to happen, and it is unknown whether there will be such a shift in the next five years. Regardless of domestic consumer demand in China, the excess polyester production capacity in China will not be allowed to fail.

Because an excess of polyester will be available to manufactures for many years, cotton must enhance consumer demand to pull cotton through the value chain.

Mr. Mark Messura, Executive Vice President Global Product Supply Chain, Cotton Incorporated, Cary, NC, USA
"Innovative Technical Options for New Cotton Products."

Mr. Messura observed that retailers and brands choose among fibers based on price, marketing factors and technical fiber performance characteristics. Price cannot be controlled, but marketing factors and technical performance can be influenced. Cotton must focus on providing solutions based on cotton's advantages such as softness, breathability, being hypoallergenic and absorbent. A challenge is to improve the technical fiber performance characteristics to engineer new uses of cotton.

STORM COTTON AND STORM DENIM are water-repellent technologies for cotton that still provide a breathable fabric.

TransDRY is a moisture management technology that enables the use of cotton in multifunctional clothing such as sportswear and after-leisure wear. Mr. Messura noted that the functionality of cotton products must meet the needs of consumers performing varied activities.

Mr. Messura noted that there is a trend toward lighter weight fabrics, and cotton is providing options. For example, consumers perceive cotton as cleaner and having less odor than manmade fiber products. This attribute creates opportunities with sweat-hiding technology for clothing worn during athletics and during leisure. The technology moves sweat away from the skin and hides sweat marks.

Other technologies engineer cotton products to provide insulation, thus expanding the range of products in which cotton can be used.

Knit fabrics treated with liquid ammonia create better drape, flow and brighter colors, helping cotton to compete against viscose.

The use of cotton in non-clothing products is growing rapidly, such as feminine hygiene products and diapers using unbleached cotton. Cotton can be used in composites, such as hard structures like plastic cases, making the cases biodegradable.

Mr. Messura said that technology developed by Cotton Incorporated is licensed to adopters broadly and without exclusivity. Retailers and product manufacturers are always concerned about costs, and therefore cotton must demonstrate the efficacy and value of new technologies.

Mr. Sette thanked the presenters and encouraged all participants to return to the Town Hall on Thursday for the second day of the 33rd International Cotton Conference Bremen.