# A SURVEY OF SMALLER COTTON PRODUCING AND EXPORTING COUNTRIES AND THEIR IMPACT ON THE US COTTON SECTOR Srinivasa Konduru California State University Fresno, CA Mechel Paggi Fumiko Yamazaki Center for Agribusiness

Fresno, CA

### <u>Abstract</u>

Cotton is one of the most important crops in the world and is grown in about eighty countries and100 million households worldwide are involved in cotton cultivation. While China, India and the US produce more than two-thirds of the total cotton worldwide, there are many other countries that are emerging/smaller cotton producing and exporting countries that play an important role in international cotton markets. In addition to this, the US cotton sector also faces competitive forces from cotton product substitutes, input suppliers to the cotton sector and buyers/importers of cotton. In this context, this paper analyzes the competitive forces/threats faced by the US cotton sector from the emerging/smaller cotton producing and exporting countries. The study identifies these smaller and emerging cotton producers and categorizes them into Africa, Central Asia and other smaller players. The strengths, weaknesses and opportunities faced by them are analyzed to understand their role in global cotton markets. The results show that cotton from Africa has great potential to play much bigger role in global markets, as their yields are yet to catch up with global averages and due to their high quality cotton fiber and low cost of production. Cotton from Central Asia can improve its standing in global markets provided economic and land reforms progresses at a greater pace in the future and irrigation infrastructure efficiency is improved. But, our analysis shows that the threat from the smaller players/new entrants to the US cotton maybe much less of a problem than the threat posed by the synthetic fiber producer. Further research has to be done to understand the threats posed by the substitutes for products of cotton.

### **Introduction**

Cotton is one of the most important crops in the world and is grown in about eighty countries. The Food and Agricultural Organization (FAO) has estimated that about 100 million households were involved in cotton production worldwide in 2001 (Baffes, 2007). Cotton accounts for more than a quarter of total merchandize exports in many African countries as well as a considerable contribution to their GDP. While China, India and the US produce more than two-thirds of the total cotton worldwide (see Figure 1), there are many other countries that are emerging/smaller cotton producing and exporting countries that play an important role in international cotton markets. Along with the competition from emerging countries, another source of competition faced by the US cotton sector is the threat from substitutes of cotton like the various man made fibers. In addition the cotton sector is facing threat from the market power of buyers/importers of cotton and input suppliers to cotton sector like the seed and chemical suppliers. In this context, it is necessary to analyze the competitive forces/threats faced by the US cotton sector to understand their impact on the performance of the US cotton sector. The analysis of the competitive forces and the threats posed by them is done by utilizing the Porter's five-force framework (Porter, 2008). The Porter's framework is based upon the structure-conduct-performance paradigm in industrial organizational economics, helps in analyzing the level of competition within an industry and competitive strategy development. The five forces of competition that the US cotton sector faces include, the threat from existing major cotton exporters such as India and Brazil, the threat from new entrants or smaller players like West African and Central Asian countries, the threat from substitutes for cotton, the bargaining power of buyers like China and the bargaining power of suppliers of inputs to cotton cultivation.



Figure 1: Projected Global Cotton Production 2014-15 (000MT) Source: USDA

In this paper, we initially consider a subset of the five forces focusing on the threat from new entrants/smaller cotton producers and exporters in the global cotton markets. Recent technological advances and trade liberalization have moved some of the smaller cotton producers to the forefront of global cotton markets. The study identifies these smaller and emerging cotton producers and exporters and categorizes them into three groups (See Figure 1). They are Africa (Benin, Burkina Faso, Mali, Togo, Zimbabwe), Central Asia (Uzbekistan, Turkmenistan, Tajikistan) and Other smaller players (Pakistan, Greece, Turkey). The strengths, weaknesses, opportunities and threats faced by them are analyzed to understand their role in global cotton markets. The political, economic, social and technological changes that are unfolding in those countries and the strategies adopted by them to improve their cotton sectors are included in the analysis. The analysis is done by reviewing the literature about cotton sectors in various countries as well as the authors' own observations and discussions in cotton sectors of some countries.



Figure 2: Porter's Five-Force Analysis

In the following section, a discussion is provided about the cotton sectors in Africa, Central Asia, Pakistan, Turkey and Greece. A brief analysis of strengths, weaknesses and opportunities are provided where possible. The last section provides the conclusion for the study.

# **Results and Discussion**

# Africa:

About 37 out of 55 countries in Africa produce cotton in varying quantities (ITC, 2013). But, overall the entire continent of Africa is a small producer (about 8% of global production) compared to bigger producers like the US, India and China. The largest producers in Africa over the years have been Burkina Faso, Mali, Cote d'Ivoire, Benin, Cameroon and Egypt. In many of the cotton producing countries in Africa, the cotton sector contributes a significant amount to their GDP or to their total exports. In francophone Africa (Benin, Burkina Faso, Chad, Mali and Niger) the income from cotton exports can comprise of up to 60 percent of GDP. In 2011, 48% of Mali's and 31% of Togo's exports in value were based on cotton (Baffes, 2007). The growth in Africa's cotton production over the years can be attributed to acreage increase, subsidies to inputs and rise in price of cotton, than to the increase in yields. It has been reported that the average cotton yields in Africa is around 355 Kg/ha compared to about 750 Kg/ha world wide in 2011-12 (ITC, 2013). The lower yields can be attributed to low usage of fertilizers and pesticides, lack of availability of quality seeds and degradation of soil fertility from continuous cultivation.

The cotton production in Africa is labor intensive and not capital intensive and has not evolved much over a long time. But, the cotton that is grown in Africa is considered to be of superior quality compared to cotton from other areas (Baffes and Estur, 2009). Most upland cotton grown in Africa is above medium grade in global cotton markets. The cost of production of cotton is also competitive with that of the US, as the average cash costs amount to about \$63/acre or about 60 percent of gross income, which is significantly lesser than that of the US (Estur, 2013). But, the cost does not take into consideration the unpaid family labor and purchased inputs account for most of their cash costs.



Figure 3: Projected Cotton production in Africa 2014-15 (million 480lb bales) Source: USDA

Due to Africa's small share of global cotton production, it is unable to meet the requirements of major importers consistently. Due to the low levels of production, the African cotton sector cannot meet the demand of major textile manufacturers consistently for extended periods of time. Also, due to the lack of adequate storage facilities and other transportation infrastructure, the quality of African cotton is considered to be of poor and has low reputation in international markets (ITC, 2013). Efforts to reduce contamination by making improvements in production, ginning, storage and transport, have been successful to some extent. But, still the lack of good reputation is preventing African cotton to grab a larger share in global markets.

Many countries in Africa are adopting policies to improve the competitiveness of cotton sectors in their countries as benefits from cotton related value chain improvements can improve the livelihoods of many people in rural areas. Initiatives to reinforce public-private partnerships in cotton the sector are being encouraged to improve efficiency as well as improve the value addition (Gergely and Poulton, 2007). On the other hand, in spite of various measures to improve the competitiveness of the cotton sector in African countries, they are not successful, some believe this is due to the high amount of subsidies provided by countries like the US and the EU to their cotton farmers (Alston 2007,

In order to attain more competitiveness in the global markets, adequate reforms have to be brought into the marketing management and regulatory system and productivity gaps have to be plugged. Most African cotton is marketed exclusively through intermediaries; there is no feedback on quality requirements to the producers from the yarn and textile manufacturers. Promoting contracts in the cotton farming sector can minimize this drawback. Also, the ownership of African cotton companies and gins by some trading companies (ITC 2013) leads to the lack of closer links between the producers and the consumers, and also prevents establishment of long term direct relationships between African cotton producers and consumers worldwide.

In spite of all the hindrances that the African cotton faces in global markets, it can still overcome the deficiencies with strengths like the quality of the fiber due linked to the fact that it is handpicked, and low costs of production provides substantial growth potential for cotton in Africa. In addition there are potential benefits from international markets, which prefer cotton originated from small farmers in Africa to promote develop goals.

# Central Asia:

Cotton from Central Asia constitutes to about 7 percent of global output. Uzbekistan is largest among Central Asian countries (5% of global output) followed by Turkmenistan, Tajikistan, Kazakhstan and Kyrgyzstan. Cotton plays an important in the economy of Uzbekistan, contributing about 10 percent of its total exports. The cotton production in the Central Asian countries declined by about 30 percent after the fall of Soviet Union, which used to contribute about 20 percent of global output in 1970s and 1980s (Baffes, 2007).

One of the major reasons for the depletion of cotton acreage is due to the substantial reduction in the area of Aral Sea, which is a main source of irrigation in Uzbekistan (Baffes, 2007). In addition to that, various policies like the state control of cotton procurement, land ownership in the hands of government and indirect taxation of agricultural sector have also impeded the growth of the cotton sector in Uzbekistan. The state has the ownership of land and the right to use land for agriculture is linked to conditions of acceptance of the state's quota system (Abdullayev, et. al., 2007). The state controls the area of cotton that is planted as well as the amount of irrigation water released to the crops as well as large number of farms still rely on state controlled machine tractor parks for machinery needs (MacDonald, 2012). Even though the government provides subsidies for some inputs like fertilizers, the indirect taxation in the form of price and foreign exchange rate controls, more than offset the benefits of subsidies to farmers. The indirect tax on agricultural production applied as an overestimated exchange rate used for converting internal prices. Because of the overestimated exchange rate, farmers received less for their cotton and wheat than they would have if their production had been marketed at world prices (Djalalov, 2007). The indirect taxation decreased during the early 2000s, but increased thereafter as Uzbekistan tried to counter increased global food prices with increased taxation on cotton farmers. This has led to a decrease in cotton acreage and a decline in its share in the global markets.



Figure 4: Projected Cotton Production in Central Asia 2014-15 (Thousand 480lb bales) Source: USDA

There are also other inefficiencies in the cotton marketing system of Uzbekistan due to the presence of governmentsanctioned or government-owned monopolies and oligopolies at various stages (Abdullayev, et. al., 2007). Due to lack of competition in the crucial cotton value chain, productivity has not reached global levels in many places. Another controversial aspect of Uzbekistan's cotton sector that has created bad reputation in global markets is the employment of child labor in cotton fields (Cannell, 2007). Various non-government organizations, western governments and consumers are building up pressure on Uzbekistan's government to abolish exploitation of child labor in its cotton fields.

In order for Uzbekistan to improve its cotton sector, reforms and investments have to be made in various areas. Water use efficiency has to be increased as presently about 60 percent of water diverted from rivers fail to reach the respective cotton fields (Baffes, 2007). Investment in infrastructure has to be made so as to increase the cotton yields. Credit facilities that are lacking presently for cotton farmers have to be provided so that their dependence on government owned facilities or services are minimized. Reforms need to be made in the areas of land ownership and indirect taxation so that the cotton sector can gain efficiencies. The state control of the planting and procurement of cotton can only reduce the competitiveness of Uzbekistan's cotton. It is expected that the circumstances are not going to change immediately, and Uzbekistan's cotton sector growth is to be slow.

#### <u>Pakistan:</u>

Pakistan was the fourth largest exporter and third largest consumer of cotton in the world in 2013-14. Cotton is a very important crop for the economy of Pakistan as it contributes about 8 percent to its GDP, accounts for 17 percent of total employment and about 54 percent in foreign exchange earnings (USDA GAIN report, 2014). Cotton cultivation in Pakistan is highly labor intensive, especially the harvesting of cotton. The average size of the cotton farm is about 4.9 acres and about half of the all cotton farms in Pakistan fall in this category (Salam, 2008). These small farms also operate under liquidity constraints and have problems in marketing their product. Though cotton yields in Pakistan are increasing, it is not able to meet its own demand due to various factors like high input costs, ambiguity between federal and provincial responsibilities and programs, control of intellectual property rights, pesticide regulation, etc. The increase in cotton yields is attributed to the cultivation of Bt cotton, presently 95 percent of total cotton area is under Bt cotton (USDA GAIN report, 2014). But due to delays in approval of new varieties by the federal government, cotton farmers are not able to plant the latest genetically modified varieties like Bollguard II, etc. In addition to these factors, cotton production in Pakistan also faces problems of high input costs, electricity load shedding during critical periods of crop growth and reduced availability of canal water during peak sowing seasons (Salam, 2008). On the other hand, the government of Pakistan is also promoting the participation of private sector in textile industry by introducing various incentives. It has invested approximately \$6.8b for establishing infrastructure for cotton sector (USDA GAIN report, 2014).

The textile sector of Pakistan is also expected to face an increased demand from the EU to export textiles duty free due to a recent agreement between the two governments. The free trade policy of Pakistan allows it to export and import any amount of cotton. The government of Pakistan is also trying to increase cotton production by focusing on increasing the cotton area, encouraging use of certified seeds, discouraging late cotton sowing, subsidizing fertilizers and controlling cotton leaf curl disease by integrated pest management programs.

### **Turkey:**

Cotton is an important crop for Turkey and it ranks eight in the world in term of cotton production. The cotton production in Turkey is considerably small, done in about 330 thousand hectares and producing about 2.3 million bales in 2013. But the consumption of cotton in Turkey in 2013 is around 6.2 million bales, thereby making it dependent on cotton imports. The textile industry is one of the most important sectors for the Turkish economy, accounting for 8 percent of GNP, 16 percent of industrial employment and 17 percent of total exports. To meet the needs of the textile industry, Turkey imported about 2.3 million bales in 2013. The US is the leading exporter of cotton to Turkey followed by Greece, Brazil and Tajikistan in 2012 (FAOSTAT, 2013).

Cotton is grown in three main regions in Turkey, the Southeastern Anatolian (GAP) region, Aegean region and Mediterranean region. The cotton growing area in the Aegean region has been decreasing, whereas the cotton area in the GAP region has increased in the last two decades due to major investments in that area particularly in irrigation projects. The Turkish government has spent more than US\$25 billion over the past three decades on Southeast Anatolia (GAIN Report, 2013). It is estimated that once the irrigation projects are completed, about 1.3 million hectares of land will be irrigated, which could eventually increase cotton planting and production in the region. But, cotton industry is facing competition from other crops like corn and soybeans as well as faced by problems of lack of irrigation facilities in some parts and pressure from urbanization (Konduru, 2014). But, overall the cotton sector is bound to grow due to

a developing textile industry, which is supported, by a good regulatory environment and demand from markets like the EU.

### Greece:

Cotton is an important crop for Greece as it is only one of the two countries producing cotton in European Union along with Spain. The cotton harvested in Greece accounts for only about 0.5% of the total agricultural production of European Community (LMC international, 2007). The main cotton growing areas of Greece are Thessaly and Macedonia. Most of the cotton is grown in small, highly specialized farms (Tsaliki, 2005). The majority of cotton farmers in Greece grow between 5 and 12.5 acres of cotton, whereas the average cotton growing area is 11.25 acres in 2005 (LMC international, 2007). Almost all the cotton crop is grown under irrigated conditions. There are approximately 30 ginning companies in Greece and the top 5 companies handle about 60 percent of ginning capacity. The Greek cotton sector was plagued by low production, bad quality, defaults, and delivery problems in 2009, but it regained its status by 2011-12 (Gain Report, 2012).

The Common Agricultural Policy (CAP) of European Union (EU) has undergone various changes and the present policy focuses more on direct support for farmer's incomes rather than on price and production support for specific crops (Konduru, 2013). So, following this principle, most aid to farmers became 'decoupled', meaning that the farmers receive a single payment not linked to the production of a specific crop (LMC international, 2007).

# **Conclusions**

In this paper, we have analyzed the cotton sectors in emerging/smaller cotton producing and exporting countries around the world. Cotton from Africa has a great potential to play much bigger role in global markets, as the yields are yet to catch up with global average and due to high quality cotton fiber and low cost of production. Cotton from Central Asia can improve its standing in global markets provided the economic and land reforms progress at a greater pace in the future and irrigation infrastructure efficiency is improved. Players like Pakistan can also improve their standing in the global markets provided they invest in productivity improvements like allowing GM varieties, development of skills and adoption of best practices. All these emerging/smaller cotton producing sand exporting countries can pose a threat to competitiveness of the US cotton in various countries, provided they take corrective actions in their policies governing cotton sectors in their countries.

But, our analysis using the Porter's five force framework shows that the threat from the smaller players/new entrants to the US cotton maybe much less of a problem than the threat posed by the synthetic fiber producer. In order to meet the competition from the synthetic fibers, the cotton sector worldwide has to innovate, create new products, new ideas and new technologies to deliver value to the cotton consumer (Lyon, 2014). Even though the present study which analyzed the emerging/smaller cotton producers and exporters has been useful and has helped us to understand the competitive threats faced the US cotton sector, it is necessary that further research be done on the threats from substitutes for cotton, as well as other threats to understand the future of cotton.

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