

VALUE CHAIN ANALYSIS OF GINNING AND SPINNING SECTOR OF TEXTILE INDUSTRY OF PAKISTAN

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ABSTRACT

Textile sector of Pakistan is the most prominent among all manufacturing sectors and in real terms it is indispensable for country's economic growth. Its contribution in economy is the largest in comparison to rest of the manufacturing sectors. Fortunately, Pakistan by virtue of its agriculture potential possesses the complete supply chain of cotton industry. However, due years of neglect by government and in absence of solid regulatory and fiscal policy, this sector is under serious threat to lose its supremacy in terms of global competitiveness. Country doesn't invest enough in cotton related infrastructure especially at the lower tier of its value chain. This situation is further aggravated due dire prevailing power crisis in the country. The immediate consequences are the shifting of lower tier of textile infrastructure to the countries like Bangladesh and Malaysia. This has not only deprived the country from valuable foreign exchange but has also become the source of increased unemployment and social unrest.

INTRODUCTION

In today's highly globalized world the area of logistics and SCM is the key difference between competitive and non competitiveness. All possible avenues related to SCM are being explored by the enterprises to optimize the SCM in order to lower overall cost and yet remain profitable. New and latest technology is made available/developed to support this objective. Supply Chain Management is the coordinated set of techniques to plan and execute all steps in the

global network used to acquire raw materials from vendors, transform them into finished goods, and deliver both goods and services to customers. It includes chain-wide information sharing, planning, resource synchronization and global performance measurements. The textile sector is no exemption to this increased optimization. Rather, in certain cases, it is more vulnerable to SCM cost as overall textile sector across the globe is primarily the function of Cost Leadership Strategy where keeping cost under control is critical and a decisive factor in the growth of enterprise.

Pakistan textile contributes 8.5 to 10 percent towards total GDP and provides employment to 15 million people. It represents 46% of the large scale manufacturing. Pakistan is a major cotton textile product supplier in the world with a market share of about 28% in world yarn trade and 8% in cotton cloth through an industry comprising of 380 mills. Nonetheless, Pakistan is rapidly losing its global competitiveness especially at the lower tier of textile sector owing to number of reasons which would be examined in the ensuing paragraphs:

MANUFACTURING PROCESS

The complete value chain of textile industry is shown in figure -1 below:

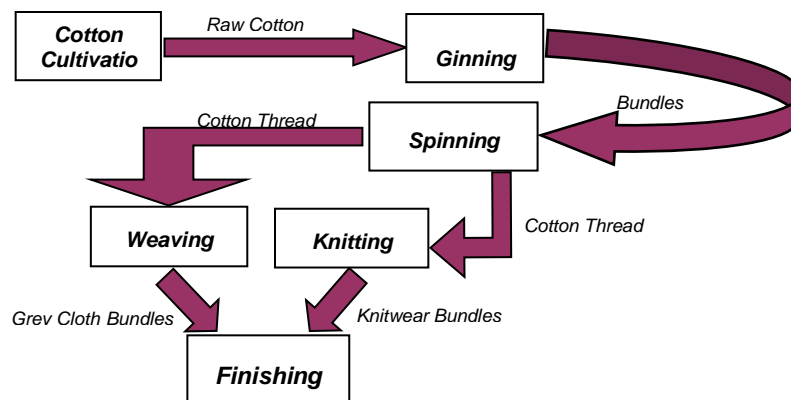


FIGURE -1 TEXTILE VALUE CHAIN (Source Ali et al, 2006)

Cotton is the most important input for the textile industry therefore; it depends a lot on the production of cotton. The process starts with the cultivation of cotton and goes through several *stages* before the final product is finished and ready for export or sale in the local market. The first step where the cotton fibre is separated from the cotton seed is called **Ginning**. In a cotton gin the cotton is vacuumed into tubes that carry it to a dryer to reduce moisture and improve the fibre quality. Then it runs through cleaning equipment to remove leaf trash, sticks and other foreign matter. The raw fibre, now called lint, makes its way through another series of pipes to a press where it is compressed into **Bales**. *Textile mills* purchase cotton and start with raw bales of cotton and process them in stages until they produce **yarn** (fibres twisted into threads used in weaving or knitting) or **cloth**

Spinning is the process during which yarn is produced from fibre. *Yarn is turned into fabric through the Weaving Process*. The yarns are then wound onto a loom beam which is placed on the **loom** (a machine used to interlace yarns to form cloth). The woven cloth from the

loom is called grey, is whitish but has a natural yellow tint. This cloth is further treated by various means to improve its appearance, feel and then it is bleached, dyed or printed to produce the fabrics used in various products seen on store shelves. There are three basic weaves that are used i.e. plain weave, twill weave and satin weave. **Knitting** is another method of turning yarn into fabric. Knit fabric is constructed of yarns made into loops (stitches) which are linked together by the use of needles

MARKETING CHAIN

Based on the value chain, as depicted in Figure-1, complete market chain as proposed by Bashir et al (2011) is shown in figure-2 below

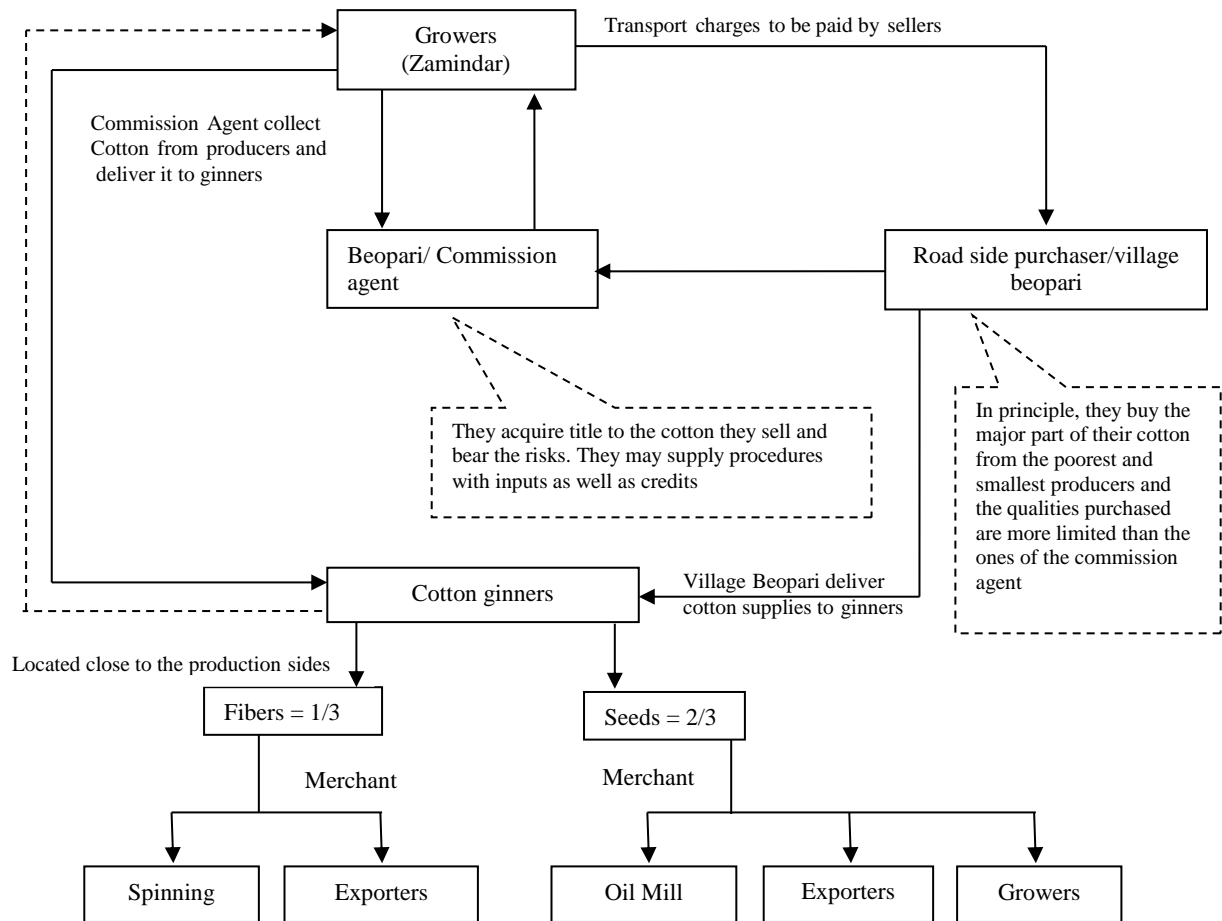


FIGURE - 2 Marketing Channel of Cotton in Pakistan (Source Bashir et al, 2011)

Cotton growers are the farmers who primarily grow cotton in their field. They perform all the activities starting right from the sowing of the cotton to picking, storing and finally selling the cotton. Beoparies are the middleman who purchase cotton seeds from the farmers and then transport it to the ginning factory after weighing it. They also provide the storage place. Ginning

is the third important component of cotton marketing channel where cotton seed is used to make lint cotton and is subsequently converted into bales and sold to spinning factory.

Oil mills are also an important component of marketing channel where it purchases the seed from the ginning factory and convert it in oil and cotton seed cake. The oil is used for cooking purposes after getting further treatment from ghee mills and seed cake is used/processed for animal feeding. Spinning factories purchase the cotton lint bales from ginning units and convert it into cotton yarn. This yarn is sold to the weaving unit and textile units.

COTTON CULTIVATION

Cotton production is a breathing line to Pakistan's economy. Hazoor et al (2011) asserts that nearly 26 percent of all farmers grow cotton and it constitutes 15% of the total cultivated area. Pakistan main production come from Punjab (80%) followed by Sindh (20%). Cotton associated products constitute 54% of country foreign exchange (Government of Pakistan, 2009). In addition, the cotton seed is crushed to make edible oil and live stock feed. Keeping in view the large chunk of people associated with cotton businesses, directly or indirectly, cotton production has a direct bearing on country's poverty reduction strategy (Cororaton and Orden, 2008).

Aftab et al (2010) asserts that cotton production has been impressive in Pakistan since independence. Cotton bales production increase from 1.1 million bales in 1947 to 10 million bales by 2000. Nonetheless, due absence of R&D, Pakistan has low quality of cotton as compare to the rest of the Asia (SMEDA, 2006). It is estimated that due to less availability of profit, farmers are also inclined towards other cash crops like sugar cane (Saleem, 2003).

Pakistan has very low per unit returns from the export of cotton as Pakistani cotton is labelled as low quality products which means low price (Iqbal and Ahmed, 2007). Hassan (2007) estimates that Pakistani cotton suffers loss of around \$350 million per annum, which is attributed to farm level problems and issues like poor quality, improper picking methods, adulteration of cotton with water and other materials, mixed grades, seed varieties, improper packing, storage and transportation means.

Hazoor et al (2011) study has also concluded that recent introduction of BT cotton crop is gaining much popularity especially in Punjab due its increase yield per acre. However, the same is also casting negative shadows on cultivation of other crops as farmers are lure/motivated to use BT cotton as early as Feb-Mar and leave their land for wheat.

PROBLEMS WITH COTTON CULTIVATION

Lack of modern farming techniques used in picking, stocking, packing and transporting cotton coupled with a general approach of farmers not keeping cotton of different varieties separate, eventually; individualistic characteristics of different cotton varieties are lost. As a result clean and good quality cotton is not delivered to the ginning factories. Further, workers/labours involve in ginning sector are ill-trained and less educated to handle raw cotton. As a result trash proportion is significantly high in cotton lint production. Moreover, cotton standards cannot be ensured as the instruments that measure the cotton qualities, like fiber length and fiber strength, which are "quoted" in cotton trading, is not calibrated and rechecked by an

independent agency, thus greatly reduces the market acceptability. The use of BT and non BT cotton is causing disparity of cotton yield across the cotton land escape. The same is causing inconsistency of production and yield standard which entails regulations to maintain similar standard.

GINNING

Second transfer point in the cotton value chain is the ginning. There are 5000 oil mills in the country (SMEDA, ud). It is pertinent to mention that Ginning factories are located at pivotal position in the cotton value chain. CABI south Asia 2008 report asserts that ginning factories are the major clients of the cotton growers and provide raw material to the textile, clothing industry and the oil mills, so millions of people in Pakistan have their livelihood dependent on performance of this sector. Ginning is an important transfer point in the cotton value chain. After picking of seed cotton by the farmers, it is transported directly or indirectly to the ginning factories for further processing. Ginning sector acts as bridge between the farmer field and textile industry. Ginning stage of cotton plays a significant role in determining the quality of raw material for textile and clothing industry. Process of ginning converts cotton into cotton lint and seeds. Baffes, 2001 estimated that lint accounts for about 30-35 percent of the cotton.

The total installed capacity is around 20 million bales in 1221 factories around the country which is working on three shift bases (Government of Pakistan, 2010). However, PGCA (2008) study estimated that only 82% of the ginning factories are operational at any one time. Present ginning sector was mainly developed under second five year plan in early 60s under the loan provided by industrial development bank in 1962 (CABI South Asia , 2008). As stated earlier, cotton in ginning is used to produce cotton lint, seed, and waste cotton. Seed is used to produce oil and seed cake, while cotton lint is used for the manufacturing of textile and clothing products as shown in figure -3 below

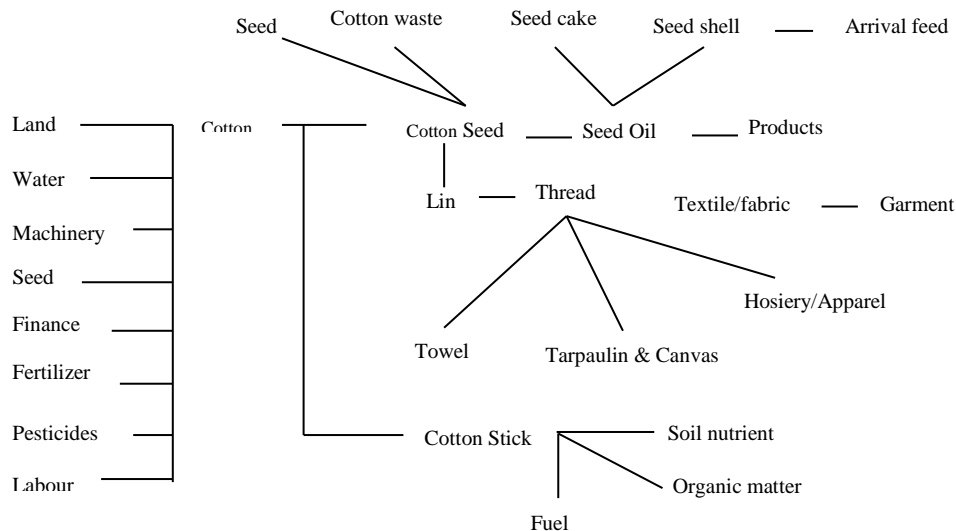


Figure -3 Cotton Value Chain source CABI South Asia

Due lack of modern techniques/equipment the quantity of trash produced is staggering 5% of the total cotton composition (Altaf , 2008) as shown in Figure -4

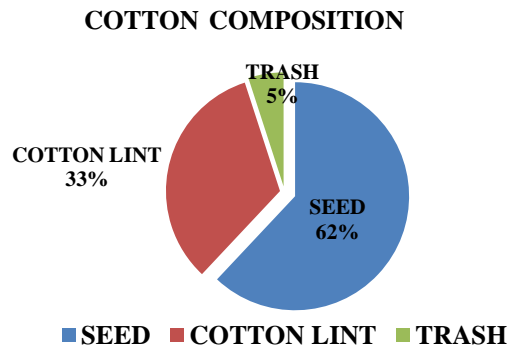


Figure 4 Cotton Composition source CABI South Asia

Total share of ginning, processing and bailing in value addition of the textile industry stands around 4.60 percent as shown in table -1 (Statistical Yearbook, 2006, Chapter 13). It is also pertinent to mention that 50% of ginning factories are of medium size capacity (CABI South Asia, 2008). This means that the production is also limited due capacity issues. Same needs more attention in current circumstances

VALUE ADDED CATEGORY	SHARE IN TOTAL
Ginning , processing , bailing	4.60%
Manufacture of textile	88.04%
Manufacture of wearing apparel	5.38%
Manufacture of footwear	1.98%
Total	100%

Table -1: Value Addition by Industry (Textile) source Statistical Yearbook

Trend of cotton lint production has remained haphazard in last two decades in which a peak in the production was achieved in the middle of last decade and then starts declining again. Overall the production fluctuated from 8 to 14.6 million bales (Economic Survey of Pakistan, 2010-11). The same is shown in figure -5 below:

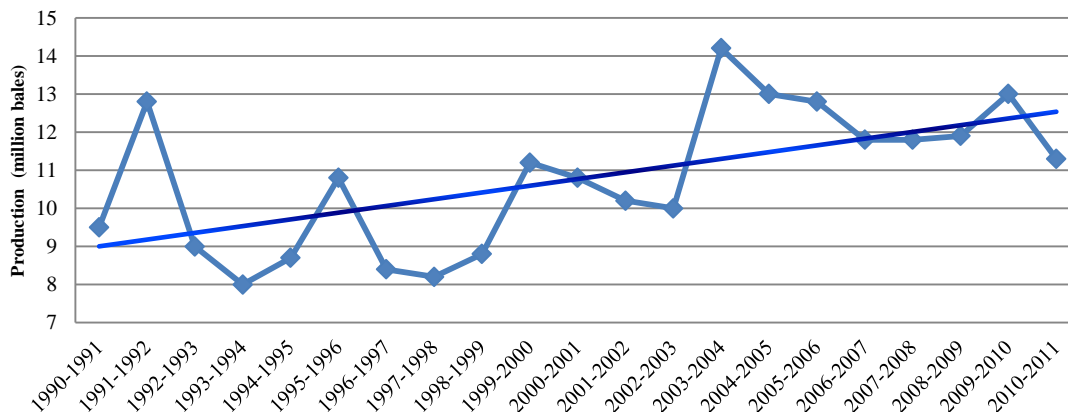


Figure 5 Production Trend of Cotton Lint in Pakistan Source Economic Survey of Pakistan

It is also pertinent to mention that Ginning Output ratio (GOT) is decreased in last four decades and in contrast during the same period, GOT% of India has seen a growth of around 35% (UNCTAD report ,2005b). Nonetheless, CABI South Asia (2008) reports points out that in last couple of years GOT of average in ginning unit is on rise which reflects a bit positive trend. The cotton losses during entire Ginning chain stand at average 8% (CABI South Asia , 2008) however, it is believed that actual losses could be much higher than estimated as workers involve in ginning lacks formal education and training (CABI South Asia , 2008)

PROBLEMS IN GINNING SECTOR

Quantity of trash is very high, approximately 5%, due use of inferior quality seed as the major issue faced by ginning units. It is estimated that contamination in cotton goes as high as 19 grams per bale (Salam, 2008). Further, existing ginning technology is old as it lacks moisture control system, results in excessive heating of the seed cotton, and is inefficient in trash removal (EDB, 2005). Ginning sector has old machinery and practicing out-dated methods Salam (2008) and has also failed to keep pace with fast changing international standards (Altaf, 2008). Subsequently poor ginning technology results in impaired cotton quality.

Saw gins are locally manufactured and entire manufacturing process remained mired with lack of skills and capacity constraints (SMEDA, ud). There are no standards for manufacturing of ginning machinery and no proper ginning practices (EDB, 2005). In addition, quality of seed is also one of the major issues faced by ginning units. This in turn has adversely affected the performance of higher value added sectors of cotton value chain, more particularly the export of cotton yarn (Government of Pakistan, 2008,). The reason for this as indicated by SMEDA (2007) include:

- Poor handling by middleman, known as Beoparies,
- Poor storage places where larger quantity of contaminates is absorbed in cotton along with moisture. This in turn increases trash quantities manifold hence causing loss of around US\$ 3 billion annually.

Power shortage is another dire issue faced by ginning units. This is causing frequent break down and disruption in production. Same is resulting in higher production cost. Apart from this, no substantial FDI could be lured in the sector partially owing to inconclusive government policies. Further, banks are lending loan to the sector at a very high interest rates which is making borrowing difficult. As a result sector is deprived of valuable investment (CABI South Asia, 2008)

SPINNING

Spinning sector not only meets the demand of local industry but at the same time one third of cotton yarn is exported to other countries (Pakistan economic survey, 2007-08, Noor, 2011). At present, there are 10 million spindles and 198 thousand rotors are installed and nearly 9 million spindles and 118 rotors are in operation. The capacity utilization has stagnated at 93% in spindles and 59% in rotors during 2009-10 (Noor, 2011). The spinning productivity flow chart is shown in figure - 6 on the following page

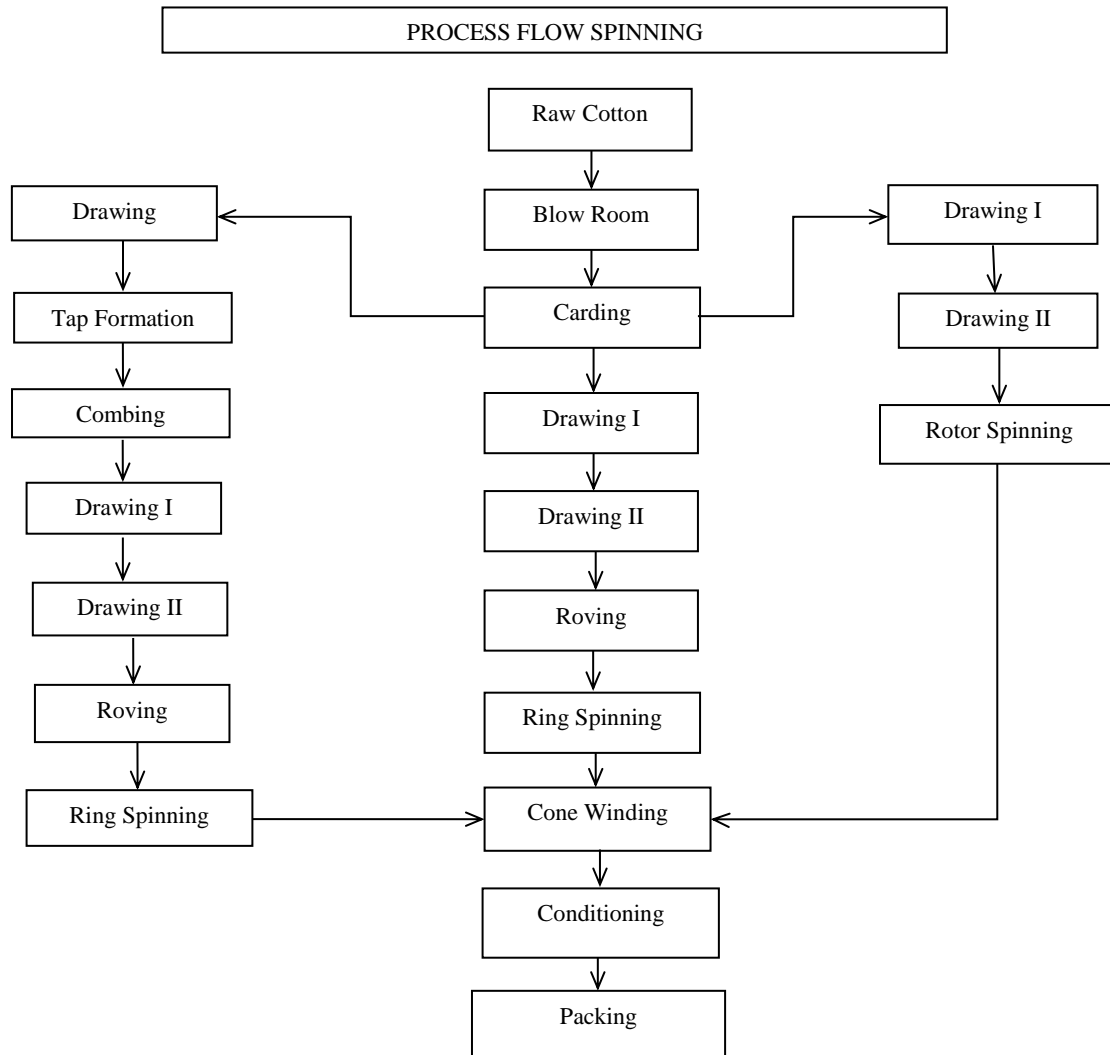


Figure 6 Spinning Flow Chart (source SMEDA , 2005)

Pakistan spinning industry is normally tilted towards production of low value added yarn (SMEDA, 2005). Pakistan is the only country with odd fibre-mix at the ratio of 80% cotton and 20% manmade fibre (MMF) against world proportion of 40% cotton and 60% MMF. (Noor 2012). Production of yarn has seen the growth at the rate of 7% per annum in last decade (Federal Bureau of Statistic, GOP) as shown in figure- 7.



Figure 7: Production of Yarn Source Federal Bureau of Statistics, Government of Pakistan.

Average price realization of Pakistani cotton yarn is very low as compare to its competitors and that too has reduced from US\$ 2.34/kg in 2007 to US\$ 2.27 in 2012 (Federal Bureau of Statistic , GOP) as depicted in figure -8.

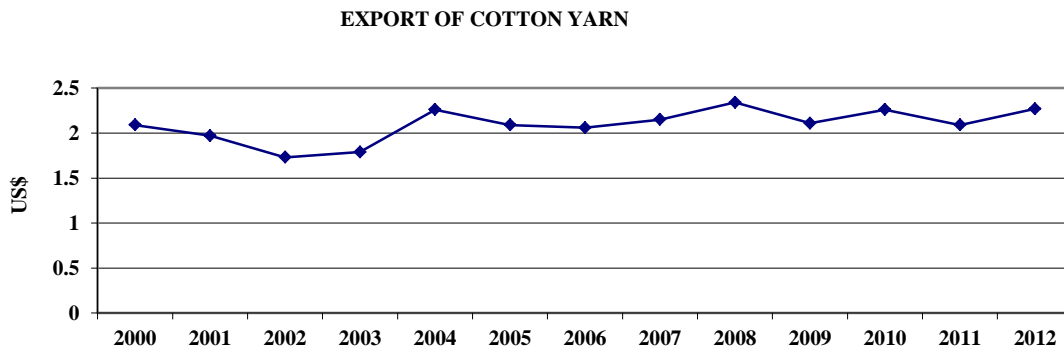


Figure 8: Cotton Yarn Price Source Federal Bureau of Statistics, Government of Pakistan

Cotton from ginning is contaminated with non-lint components. This results in production of contaminated yarn that sells for a lower price. Contamination level as high as 7% by weight is not unusual (Noor, 2011). The value chain shows that electricity is the largest single cost component of spinning. The electricity cost of US\$ 0.9/Kwh is not competitive in an international context (Pakistan value chain analysis, 2006).

PROBLEMS OF SPINNING SECTOR

Availability of power is the most important problem mired the spinning sector. The same needs to be addressed on immediate basis. Moreover, the technology deployed in cotton ginning is outdated, inefficient and based on local manufacturing by semi-literate mechanics. The level of

technology in the spinning industry is generally satisfactory as compare to ginning sector. However, the product mix of spinning sector is not in line with international production ratio and 70% manufacturing is coarse cotton which does not fetch high prices in international market.

Pakistan's textile industry is unable to compete with countries like Bangladesh as these countries enjoy the status of Least Developed Countries (LDCs) and get benefitted due duty-free export facility in EU under the EU's Generalized System of Preferences + (GSP Plus) treatment while Pakistani textiles with GSP are facing 12% duty. This coupled with high production cost is making things worse for Pakistan textile sector.

RECOMMENDATIONS

- On urgent basis Government should take steps to solve power crisis in order to stem the flow of infrastructure and capital from textile sector to other countries especially power loom sector. In this regard measures should be taken to eliminate/reduce circular debt in power sector as it will allow IPPs to operate on their full capacity and can ensure less interrupted power supply to power supply sector. The high power tariff should be reviewed as it is increasing overall production cost and making Pakistani textile products less competitive.
- Farmers should be provided with better seed quality across the cotton landscape. The discrimination of BT and Non BT cotton should end hence forth.
- Government should ensure impartial application of cotton standards by setting up the independent agency protected and empowered by law which can over see these standards.
- Schemes should be launched to provide formal training to farmers and middleman especially in the area of picking, stocking, packing, transportation and handling of raw cotton. Further, Government should build storage facility where raw cotton can be stored in line with international standards before it is provided to ginning units. In this regard help/engagement of private sector should be sought by offering them special incentives in the form of tax leverage or rebate.
- Ginning sector should be upgraded on war footing. The sector already lacks formal training and expertise and use of out dated technology is making things worse. In this regard following strategy is proposed:
 - Ginning sector/owners should be provided with low interest rate loans in collaboration with international donors/monetary sector to help them upgrade/update their infrastructure in line with modern technology.
 - Government should lure private sector to set up training institute for the training of their labour force

- Legislation should be carried out to force Ginning Unit Owners to produce cotton lint of international standard and those who failed to comply should be fined/penalised.
- Spinning sector should improve its product mix of cotton yarn production and bring it in line with international ratio by investing it in modern technology. Further, the tilt should be more towards fine cotton yarn instead of coarse so that the worth of Pakistani cotton yarn is increased. This fine cotton yarn would add to over all export value of cotton products of Pakistan.
- Pakistan should continue to lobby for GSP Plus treatment from EU. Though EU has primarily granted this package on 75 items mainly on Pakistani plea to support economy in wake of recent floods but this is relatively less in comparison to what Pakistan has suffered.

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