General Article

Pakistan's environmental challenges in the textile industry

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There is large number of mechanical and chemical processes involved in the textile industry and each process has a different impact on the environment. This impact starts with the use of pesticides during the cultivation of natural fibres, the erosion caused by sheep farming or the emissions during the production of synthetic fibres. From that moment on, a number of processes are applied, using thousands of different chemicals, to process the fibres and to reach the final stage of textile end product. During the past few decades the awareness regarding environmental problems has increased considerably and has become an important issue in the textile trade due to various environmental and health legislations, and also environmental policy is increasingly dictated through market forces.

Many chemicals used in the textile industry cause environmental and health problems. These problems may occur during the production process, with respect to emissions or occupational health problems. Other problems caused by these chemicals appear due to their presence in the final product. However, worldwide environmental problems associated with the textile industry are typically those associated with the water pollution caused by the discharge of untreated effluent and those because of use of toxic chemicals especially during processing. These chemicals can harm consumer if retained in the fabric. The textile industry is facing challenges due to social and environmental compliance issues from US and European buyers.

Textiles is the most important manufacturing sector of Pakistan and has the longest production chain, with inherent potential for value addition at each stage of processing, from cotton to ginning, spinning, fabric, dyeing and finishing, made-ups and garments. The sector contributes nearly one-fourth of industrial value-added products, provides employment to about 40% of industrial labour force, and consumes about 40% of banking credit to manufacturing sector. Barring seasonal and cyclical fluctuations, textiles products have maintained an average share of about 58% in national exports.

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Textile printing technology facilitates the precise and exact placing of prints on a garment, enables the manufacturers to decrease or increase the size of the print, modify the background tones, produce optical illusions, print advanced graphics, and offer the best translation of every single design. Apparel represents the largest fabric usage and nowadays consumers are more concerned about the green production and choose products that are non-toxic and cause no harm to both humans and the environment. This trend for eco-friendly products has been extended to textile and apparel products, particularly those products which directly come into contact with the skin for prolonged periods.

Chemical usage

Since the textile industry uses high amounts of chemicals and water to form waste after processing, this sector has been convicted of pollution as one of the world's biggest criminals. In the textile industry, about 2000 varied chemicals are used including dye, transfer agents etc.

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product. However, worldwide environmental problems associated with the textile industry are typically those associated with the water pollution caused by the discharge of untreated effluents and those because of use of toxic chemicals especially during processing. Last, but not the least, these chemicals can also cause harm to the consumer if retained on the fabrics.

Import of various dyes in Pakistan increased from Rs 7.79 billion in 2017-18 to Rs 15.20 billion in 2018-19, thus showing an increase of 95% in terms of value. On the other hand import of organic chemicals in Pakistan also increased from US$1.93 billion in 2013-14 to US$ 2.75 billion in 2018-19, thus showing an average increase of 8% per annum. Statistics regarding the import of various dyes in Pakistan are shown in **Table 1.**

Table 1: Import of Dyes in Pakistan
Quantity: in Tonnes
Value: Rs. in Million

Description	2018-19		2017-18	
	Quantity	Value	Quantity	Value
Disperse Dyes	4,196	2,043	4,011	1,389
Acid Dyes Premetalise	1,705	1,039	1,552	857
Basic Dyes	1,048	531	939	388
Direct Dyes	749	262	935	191
Vat Dyes Indigo Blue	4,982	2,646	3,412	1,641
Other Vat Dyes	198	147	369	536
Reactive Dyes	7,690	5,361	9,824	434
Pigments Preparation	2,038	1,505	2550	1,482
Liquid Pigment and Preparations	4,04	289	--	--
Other Pigment and Preparations	107	80	--	--
Dyes Sulphur	2,901	1,148	4,660	767
Other Dyes synthetic	253	149	198	107
Total	**25,867**	**15,200**	**28,450**	**7,792**

Source: Pakistan Bureau of Statistics.

Production of cloth

The weaving and made-up sectors have three different subsectors in weaving viz. integrated, independent weaving units and power loom sector. Cloth is being produced in both mill and non-mill sectors and produce fabrics range from coarse to super varieties. There are a large number of vertically integrated units, where production is controlled from fibre to the end product, and marketed abroad directly. The country's total production of cloth (mill and non-mill sectors) rose from 9.16 billion sq. meters in 2015-16 to 9.17 billion sq. meters in 2018-19.

More than 90% of the total fabric production comprises of non-mill loom sector. Therefore, this sector's weaving capacity continues to enjoy a predominant position. High growth in fabric production is due to the setting up of shuttle-less weaving machines. In Pakistan, shuttle-less weaving is supposedly the largest consumer of cotton yarn, while the non-mill weaving sector contributes to the exports by producing low quality sheeting fabrics. Productions of cloth in mill and non-mill sectors are given in **Table 2.**

Export of cloth

There are more than 700 processing mills in Pakistan. All Pakistan Processing Mills Association represents the organized finishing sector. More than 50% of the total processing companies are in the unorganised sector with second hand machinery working under very basic conditions. These are the mills all over Pakistan, but a large number of them are in the Faisalabad area. The smaller mills are facing grave issues of power availability and its increasing cost. While the larger organised mills are able to address these issues, therefore, small processing units working on commission suffer, when there is a shortage of orders and frequent power shutdown

At present textile industry of Pakistan is contributed up to US$ 13.3 billion to the national exchequer after approval of the trade package from the European Union. On the other hand, Pakistan offered the lowest unit price for its textile and clothing products even lesser than Bangladesh, India, and China in international markets. Statistics export of cotton fabrics from Pakistan are shown in **Table 3.**

Exports of finished textiles Export of finished textiles products have been expanding since 1990. Worldwide governments and businesses respond to consumer preferences for ecologically friendly production and consumption and therefore, set and impose environmental standards. Thus, even the goods currently being exported are subject to increasing expectations to meet stringent environmental standards.

Pakistan's exports of value-added textile finished products rose 3% to US$ 8.60 billion in 2018-19 from US$ 8.35 billion a year ago. Since many of the countries that enjoy the GSP status are not expected to fall in the GSP Plus group however, Pakistan in a position to export more of its products to the EU on low duties. Export figures of textile finished products from Pakistan are given in **Table 4.**

Future Prospects

The public awareness and the growing perception of social cognizance about the environment have forced the textile industry to produce

environmentally friendly products. For this reason, nowadays many companies and organizations focus on the environmentally friendly way of production. In order to create a sustainable textile, the main change factors have been linked to eco-materials so less and harmless waste, reusing/recycling, lesser usage of energy, water and chemicals and ethical issues in production processes.

Along with the technological developments in recent years, developments in the textile sector as well as in many sectors have played a major role in the increase of environmental problems. The main environmental impact in the textile industry is manifested by the discharge of high amounts of chemical loads into the receiving environment. Other important elements are high chemical and water use, energy consumption, air pollution and solid waste.

Over the years, Pakistan has enjoyed the benefit of plentiful supplies of its own raw cotton, available at most competitive prices. The government and the industry to help and vitalize the value-added sector of the textile industry in recent years have taken a number of measures. One of these is to try to correct the imbalance, caused by the dependence of the entire country's economy on a single commodity, raw cotton. Serious efforts have been made by the industry to increase substantially the domestic production of polyester fibre, whose supplies can be technically pre-determined and controlled by man-made as against raw cotton, being always on the mercy of Mother Nature. Consequently, there is a growing trend for going in for blended fabrics, especially polyester/cotton in garments and other made-ups, like bed sheets, as it is found that the polyester content in the blended fabric produces an aesthetic appeal that 100% cotton cannot produce. This change can also help the national economy apart from revitalizing the textile and cotton industry. For example, basing on crop size of 10 million bales, if our textile industry sets a target to utilize 7 million bales of cotton, and the balance requirement is met through man-made fibres, we will release 3 million bales of cotton for export, thus bringing in valuable foreign currency.

References:

1. All Pakistan Textile Mills Association (APTMA)
2. Pakistan Bureau of Statistics.
3. Trade Development Authority of Pakistan
4. State Bank of Pakistan-Annual Reports
5. Textile Commissioner Organization, Government of Pakistan. ◆

Table 2: Products of Cloth

(Million sq meters)

Products	2015-16	2016-17	2017-18	2018-19
Cotton cloth	962	964	965	966
Blended cloth	77	79	79	79
Total	1,039	1,043	1,044	1,045
Non mill sector	8,120	8,126	8,127	8,128
Total	**9,159**	**9,169**	**9,171**	**9,173**

Source: Trade Development Authority of Pakistan.

Table 3: Export of Finished Textile Products

Value: (US $ Million)

Products	2014-15	2015-16	2016-17	2017-18	2018-19
Knitwear (Hosiery)	2,419	2,364	2,361	2,711	2,900
Readymade Garments	2,101	2,195	2,319	2,577	2,653
Towels	781	803	800	797	786
Bed Wear	2,095	2,220	2,138	2,261	2,262
Total	**7,396**	**7,582**	**7,618**	**8,346**	**8,601**

Source: Trade Development Authority of Pakistan.

Table 4: Export of Cotton Fabrics from Pakistan

Year	Quantity (Million Sq. Mtr.)	Value (Million US$)	Unit Value (US $ / Sq. Mtr)
2014-15	2,520	2,453	0.97
2015-16	2,152	2,214	1.03
2016-17	2,049	2,136	1.04
2017-18	2,250	2,204	0.98
2018-19	2,198	2,102	0.97

Source: State Bank of Pakistan Annual Reports.