

# CLUSTER PROFILE

## LIGHT ENGINEERING FAISALABAD



*Turn Potential into Profit*

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## 1 Introduction – Faisalabad

Historically known as “Sandal Bar”, Faisalabad district came into existence in 1904 with the new name “Lyallpur”. The name Lyallpur was given with a view to pay tribute to Sir James Lyall, Lt. Governor of Punjab, for his services rendered in colonization of the lower Chenab valley. The new district of Lyallpur had four tehsils namely Lyallpur, Jaranwalla, Samundri and TobaTek Singh. Under a historical announcement by then President of Pakistan Muhammad Zia-ul-Haq, Lyalpur named after Late Shah Faisal Bin Abdul Aziz King of KSA on 1<sup>st</sup> September, 1977. Faisalabad was made the divisional head quarters on 1<sup>st</sup> July, 1982 comprising districts of Faisalabad, Jhang, and Toba Tek Singh. The divisional status of Faisalabad was further descended after the promulgation of Punjab local government ordinance 2001 in which district government of Faisalabad was established along with six tehsils administrations namely Faisalabad city, Faisalabad Saddar, Chak Jhumra, Jaranwalla, Samundry and Tandlianwala.

Faisalabad district is located in central Punjab between River Ravi and River Chenab at an elevation of 605 feet above sea level. The total Area of district is of 5856 Sq km. The district has extreme hot and cold climate. The maximum temperature during the summer touches 48 C and while the minimum temperature recorded is 4 C. The average rain fall in the district is about 400 mm.

Before colonization there was hardly any population in the entire area. Faisalabad city which had a population 9171 in 1901 jumped 179000 in 1951 had further jumped to 2009000 during 1998 census. According to the existing trend, the estimated population of Faisalabad city would be around 5,000,000 in 2010. The density of population in Faisalabad District is also very high. It was estimated to rise to 1080 person per sq km in the year 2004.

A tiny town founded only to act as a market for agriculture produce has now grown into a metropolitan city which enjoys third position in the country, as far as population and industrial growth is concerned. Besides being a big market for agricultural produce, it is highly industrialized city having large industrial base predominantly textile. It is also called “Manchester of Pakistan” on account of its status as regards Textile industry. There is little data on the economic status specific to Faisalabad. However, this is believed to be the second largest industrial city after Karachi.

## 2 Description of Cluster

### 2.1 Light Engineering & Foundry Sector of Faisalabad

Industrial role of Faisalabad has been more than just significant in last few decades. Only textile industry of Faisalabad constitutes more than 70% of total textile exports of Pakistan which have a share of 68% in total Pakistan exports. This makes Faisalabad's share of total Pakistan exports of more than 45%.

The available industrial/technical infrastructure and markets for raw materials and finished products is the industrial base of any industrial sector. One of the foremost supporting setups for a manufacturing industry is engineering. Having strong textiles, agriculture other industrial unit setups, light engineering industry of Faisalabad is demand driven. Textile engineering industry, agricultural engineering industry and foundry sector sums up most of light engineering cluster of the region.

## 2.2 Description of Product

Machines and parts of power looms, knitting machines, winder machines, warping machine, sizing machine, inter locking, jiggers, wheat threshers, choppers, plowing blades etc are being made locally. Although some parts and accessories of sophisticated industrial machines (primarily textile machinery) are being made but complete sophisticated textile machinery plants are not being produced because of technologically obsolete facilities being used in manufacturing. Within limited means this sector is complimenting as well as supplementing the local industry. Although sizeable industrial units have tendency to use most modern and sophisticated imported machinery, however, smaller units entirely depend on local machinery, parts and expertise. Larger units also benefit from the services of this sector especially for parts of machinery and repairing.

Even the locally manufactured low-tech textile machinery (e.g. auto looms, towel machinery & wheat threshers) is being exported to several countries like Bangladesh, Sri Lanka and some of the African countries. Where agricultural implements manufactures have relatively lesser challenges, the textile machinery and spare part sector is in a critical stage because of heavily technology dependent end users.

## 2.3 Cluster Actors

This sector generates employment for more than 1700 individuals ranging from 20-25 workers in bigger units to self employed 1-2 workers in small and cottage level units. Suffering from technological drawbacks, this sector has not been able to generate enough demand for full capacity utilization.

### 2.3.1 Textile Machinery and Industrial Machinery

As discussed earlier various textile industrial machinery is being manufactured locally. This machinery can broadly be categorized into weaving/knitting, spinning, processing and common industrial machinery (boilers etc). In context to textiles, our textile engineering industry is not in equilibrium with our textile industry in general. Pakistan is a big name in textile production but stands nowhere in world when it comes to textile machinery/parts manufacturing. Notable contribution of this industry has been towards weaving and processing sector. Now this sector's products are slowly entering the demise stage of a product life cycle. Normal manufacturers are expert in producing machinery of one to two major industrial sectors. Bigger units have facilities to compliment complete production processes while medium scale manufacturers out source some services from large as well as small scale setups and foundries. There are more than 80 units indulged in direct manufacturing of textile machinery.

### 2.3.2 Textile Spare Parts

The Pakistan textile spare parts industry is a segment of the textile engineering industry and this small scale sector has traditionally experienced a strong presence in the textile engineering industry. Most intensive section of this sector relates to textile weaving sector as Faisalabad is a hub of textile weaving and has more than 50,000 weaving units with more than 400,000 weaving looms of different types. Although parts manufactured are not of very good quality but still this sector has

played a vital role in the development of textile culture in Faisalabad. There are more than 160 manufacturing setups directly involved in textile spare parts manufacturing.

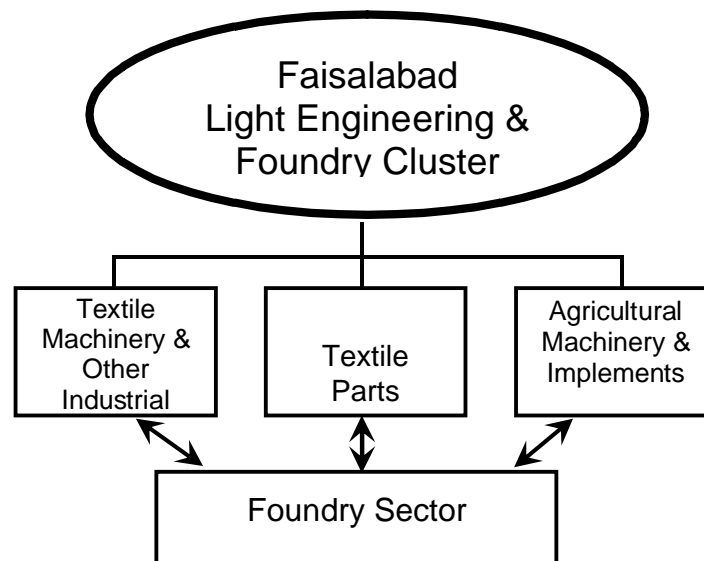
### 2.3.3 Agricultural Machinery

Having far lesser technological dependencies in production than textiles, agricultural machinery and implements manufacturing is tailored towards existing agricultural industry needs. Machinery like wheat threshers, motor & manual choppers, plough blades are made locally. There are more than 50 sizable manufacturing units directly indulged for manufacturing of such products in the sector. Like Textile machinery manufacturers, these units also outsource services like casting from existing small foundry units.

### 2.3.4 Foundry

Foundry sector supplements all light engineering related setups of the cluster. As these units very small in scale and large in numbers, no reliable data could be found relating to the number of units involved in this industry. These units work as a sub contractors of larger manufacturers with limited capacities.

Number and Type of Textile Machinery and Spare Parts units in Faisalabad						
Sr.#	Industry Group	Number of Units				
		Small	Medium	Large	No Data	Total
1	Textile Machinery	32	13	7	12	64
2	Textile Spare Parts	105	29	2	30	166
3	Agricultural Machinery	50	27	15		92
<b>Total</b>		<b>187</b>	<b>69</b>	<b>24</b>	<b>42</b>	<b>322</b>



### 2.3.5 Raw Material Suppliers

A fairly large number of material suppliers are present in the Faisalabad city. Their number is estimated to be more than 60. The material they supply, reach to them via

different sources that include the imported material, locally processed material (Pakistan Steel Mill products) and scrap (local and/ or imported). Manufacturers also source directly from scrap dealers. Most of the importers reside out of Faisalabad, i.e. Karachi and Lahore. Hence, the raw material suppliers can broadly be categorized into scrap dealers, retailers of imported material and dealers of the Pakistan Steel Mill.

### **2.3.6 Machinery Importers**

Most of the machine importers reside in the nearby city of Lahore, whereas, only two of them reside in the cluster. There is huge gap between the technologies level of the cluster and the world; so, most of the discarded machines from the 1st world countries are imported as scrape. These machines are prepared for production locally. The big players also get the benefit of using the imported scraped machines, but they sometimes bother to import the new machines as well.

### **2.3.7 Retailers**

Numerous retailers of textile spare parts can be found on Railway Road market. These retailers primarily sell textile weaving machinery parts which has a very strong presence (more than 400000 weaving looms) in the cluster.

### **2.3.8 Traders**

The manufactured goods are sold to the traders within the city and out of the city (country-wide). Each manufacturing concern has its own relationship with the dealers of the different areas of the country. The terms of sale and services are different between each manufacturer and trader.

### **2.3.9 Indenting Exporters**

The Indenting exporters received the trade lead from the international market and cater the orders, from the goods manufactured in the cluster. Bigger manufacturers export directly, while others have to rely on the indenters for export orders.

### **2.3.10 Freight Forwarding Agencies**

The freight forwarding agencies are responsible for shifting the products, within and outside the cluster. There are nearly 35 freight forwarding agencies providing countrywide services.

## **2.5 Geographical Location**

Geographically these light engineering and foundry setups and shops are concentrated on main Samundri Road of Faisalabad. Some manufacturers can also be found on Maqbool Road, which is a well known industrial area. Textile spare parts have a separate market at Railway Road.

## **3 Analysis of Business Operations**

### **3.1 Production Processes**

Production process depends on the type of desired product. Different textile/industrial machinery and agricultural implements can be casting related while others can be related to fabrication. Of course a combination of both processes can be used in production of a specific machine. Normally relatively complex machinery is consists of assembling of both casted and fabricated parts. Textile parts sector mostly caters to casting related products. Broadly the production process can be categorized into following parts:

- **Raw Materials Sourcing**

Country's basic source of raw materials for metal industries is Pakistan Steel Mill. Some dealers represent Pakistan Steel Mills and some import materials. Since Pakistan steel mill does not produce enough to fulfill industrial demand, manufacturers have to source from scrap stores as well as importers.

- **Casting**

Casting is melting of metal and injecting it into pre-made molds consisting of wooden/metallic boxes and sand.

- **Fabrication**

Fabrication is molding of metallic sheets into formation of a certain shape (done by re-rolling machines)

- **Machining**

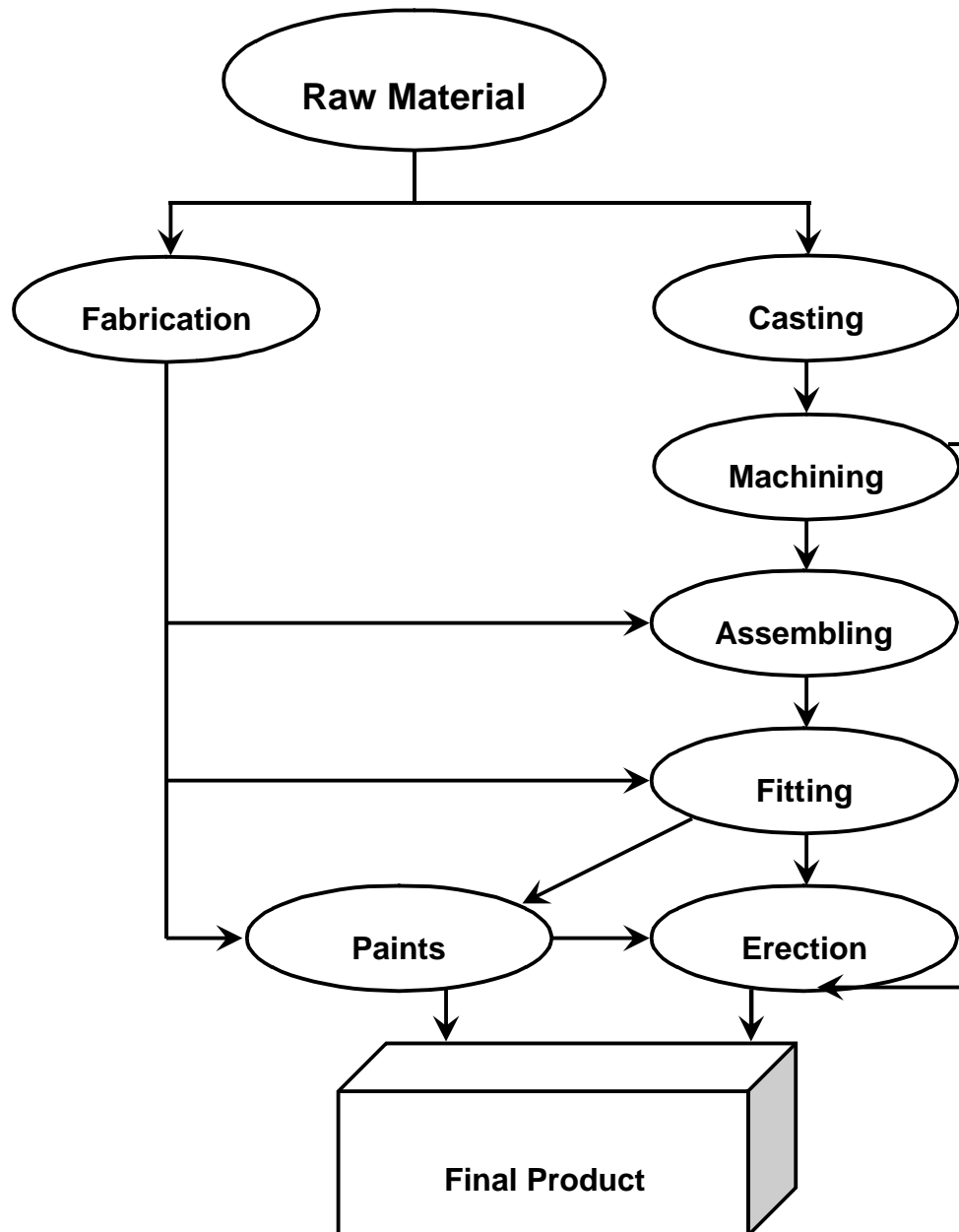
Machining is processing of parts after casting to fit into part specifications. It includes various processes like drilling, threading, and phasing.

- **Fitting and Erection:**

Fitting and erection consists of assembling of different parts to form desired product.

### Production Process & Work Flow

Workflow differs with respect to products. Primarily divided into two categories i.e. fabrication and casting.



Most units are only into casting related products as it is directly related to traditional foundry setups prevailing in the cluster. Moreover, fabricated products normally include complete made machinery which only bigger units can afford.

### 3.2 Technology Status

Sector is suffering from serious technological deficiencies. Lack of education among entrepreneurs, limited financial resources and change repellent culture has resulted in production facilities with primitive process techniques and obsolete machinery and equipment. This has hampered manufactured products quality severely. Textile sector being heavily technology dependent, this has forced textile manufacturers to import most of their machinery.

### 3.3 Quality Control

No real quality control system and standard is followed in the industry. Physical appearance and measurement fits are the only parameters considered for declaring a part of machinery fit. This makes reliability of machines and parts even more vulnerable.

### 3.4 Market Analysis

Within very limited means the light engineering sector of Faisalabad is complimenting local textile and agriculture machinery pretty well but is clearly at a disadvantage with respect to technology and faces an uphill battle with technologically far better countries like China, India, Taiwan and Germany.

#### 3.4.1 Market Competition

Market competition can be broadly categorized into two sub parts i.e. foreign competition and local competition. Details for these categories with respect to nature of industry are given below:

##### Foreign Competition

Pakistan imported machinery worth US \$ 532 million in financial year 2003 and US \$ 586 million in financial year 2004 for textiles alone. As imported machinery is state of the art, local machinery made using obsolete technologies can not compete in performance and productivity with it. Moreover, machinery used in over 60% of textiles industry processes is not manufactured locally because of technological drawbacks and unavailability of skilled labor. Local machinery competes only on the basis of its price and soon this advantage is likely to fade away as free trade and globalization will see more and more Chinese and Indian machinery starts entering Pakistani markets.

As agricultural industry of the region is not technology intensive by nature, basic machinery and implements related to agriculture are developed indigenously and are exported to countries like Bangladesh and Sri Lanka.

Textile spare parts are consumed locally. A minute quantity of parts is exported only to those countries that have already imported Pakistani machinery. It is done only by manufacturers whose machinery has already been exported to the particular country. Local made parts are far cheaper than imported parts but do have quality drawbacks as well. Complex spare parts that are not made locally have imports as the only substitute.

##### Local Competition

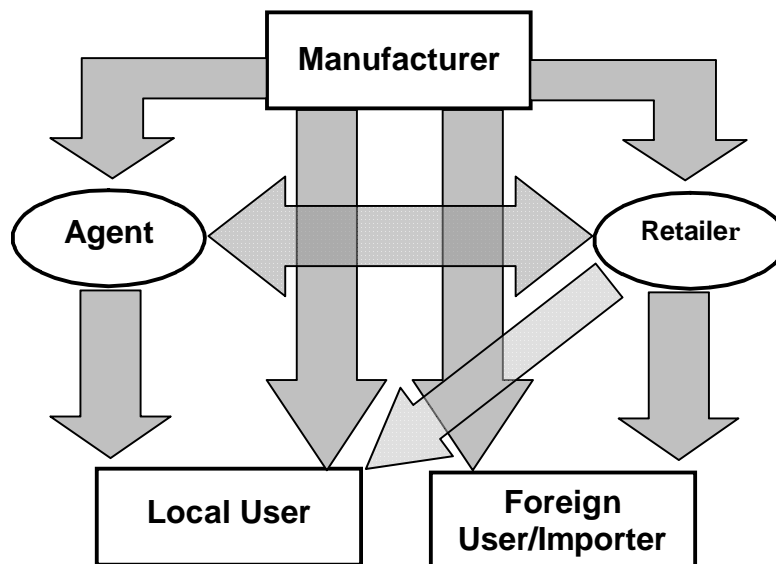
Textile parts manufacturers have intense competition among themselves as lots of small manufacturers (apx.200 units) are engaged in this business.

Textile machinery manufacturers make many kinds of machinery used in weaving, knitting, dyeing, and spinning industries. There are more than 80 manufacturers of textile machinery in Faisalabad and have strong competition among themselves. Bases of competition rang from procurement of raw materials to product pricing and sales.

Agricultural machinery and implements manufacturing units are approximately 50 in the region and again portray strong competition among them.

### 3.4.2 Products Marketing and Distribution

Textile and agriculture machinery contains manufacturer's name on. Textile parts don't even have that. No real concept of branding and advertisements is followed. Normally products are rated by customers via historical durability of the products of a particular manufacturer. Machine Manufactures have shops along with manufacturing setups at Samundri Road where these are sold directly to end user. Textile parts do have a separate market on Railway Road where different traders sell them after buying from original manufacturers. Marketing is limited to word of mouth and sales agents only. Manufacturers engaged in exporting of their products normally export to foreign importer of that product directly.



## 3.5 Financing

Faisalabad being one of the most industrial cities of Pakistan has branches of all major banks operating in the country. To date no special financing scheme for the foundry and light engineering sector of Faisalabad has been introduced by any of the banks. Conventional financing on standard rates is available through all banks. Biggest issue in

this aspect has been the spread of technology gap between local manufacturer and modern trends. Modern machinery and equipment is too expensive for common entrepreneur of this sector to be affordable even through bank financing.

### **3.6 Human Resource**

The sector is severally short on skilled and technically qualified labor. Only 1% workers have certificate / diplomas from technical training institutions. This lag has resulted in practical workers unawareness about latest production techniques. Shortage of good quality technical training institutes is adding to this trouble. Synergies between practical industry demand and educational curriculum are also very minimal. This all has merged to not only create workers in this industry to be unskilled but has also made them unwilling to accept technical training as a mode of their improvement on job.

## **4 Institutional Setup**

### **4.1 Entrepreneurs Associations**

#### **4.1.1 Faisalabad Foundry & Engineering Industries Group (FFEIG)**

Faisalabad Foundry & Engineering Industries Group (FFEIG) is group that is representative of foundry and engineering industry of the cluster. Its membership consists of 170 members, which includes all sizable units of the industry. Most of the cottage level manufacturers are not part of this group.

#### **4.1.2 Faisalabad Chamber of Commerce & Industry (FCCI)**

Faisalabad Chamber of Commerce & Industry (FCCI) has advocated the collective opinion, concern and aspiration of the private sector. It is the main representation, which has a great say in the policy matters with the Government. FCCI serves as bridge between the private sector and the Government.

### **4.2 Govt/Semi Govt Support Institutions**

Following Government/Semi Government institutes can play a vital role in the uplift of foundry and engineering cluster of Faisalabad.

#### **4.2.1 Pakistan Industrial Technical Assistance Centre (PITAC)**

This centre was established in 1962 with the objectives to provide in-plant advisory and consultancy services, technical training, designing and manufacturing of dies and tools, prototype product development disseminate modern technical know-how and keep liaison with the industries. This center has done a lot for the development of engineering industry but its role has diminished for the past 10-15 years due to technical obsolescence of its machinery and equipment. PITAC has its collection center in Faisalabad.

#### **4.2.2 Engineering Development Board (EDB)**

Engineering Development Board is a Government Organization for promotion of Engineering Industry in Pakistan to develop a long term vision for the development of the Engineering sector, formulate and co ordinate Government policies relating to the

Engineering sector Promotion of export, enhancement of technical training and formulate policies and guidelines for utilization of technical development and engineering funds.

#### **4.2.3 Pakistan Engineering Council**

The Pakistan Engineering Council is a statutory body constituted under the PEC Act No. V of 1976 enacted by the Parliament. Some of its statutory functions relate to recognition of engineering qualifications for the purpose of registration of professional engineers and consulting engineers and promotion of engineering education, safeguarding the interests of its members and fostering of high professional standards in the country.

#### **4.2.4 Small and Medium Enterprise Development Authority (SMEDA)**

The Small and Medium Enterprises Development Authority (SMEDA) was established in 1998 under the Ministry of Industries and Production in order to foster the development of SME in the economy and was expected to take a key role in this process. Its functions include, inter-alia, the facilitation on policy making and the provision of overall planning, programming, research and evaluation of matters related to SME in Pakistan; monitoring and evaluation; encouraging and facilitating development of SME and to protect their interests. SMEDA has its Regional Business Coordinator in Faisalabad.

#### **4.2.5 Punjab Small Industries Cooperation (PSIC)**

PSIC is also working for the facilitation of small industries in Punjab. They offer soft loans to small entrepreneurs at subsidized rates. Their main focus is on small units.

#### **4.2.6 Export Promotion Bureau (EPB)**

Is the primary agency of the Government of Pakistan engaged in promotion and boosting of country's exports. Since its inception in 1963, it continues to facilitate the exporters in overcoming difficulties faced by them, EPB helps exporters to participate in exhibitions abroad and sends delegations to export markets with a view to explore new markets and develop the traditional markets. EPB also initiate projects in various export sectors to train necessary manpower that can manage the export trade and industry.

### **4.3 Educational Institutions**

Only Technical Education and Vocational Training Authority (TEVTA) is the major institute offering courses relevant to the local foundry and engineering industry of Faisalabad. TEVTA is managing nearly 400 different technical, commercial and vocational training institutes through out the province. In Faisalabad, the two important institutes of TEVTA include Government College of Technology (GCT) and Govt. Apprenticeship Training Center (GATC).

The objectives of this organization include the provision of the up-to-date training facilities to the technical staff and the trainers to improve the efficiency of the available human resources. Currently the TEVTA is striving to upgrade the courses and the training programs according to the need of the industry.

#### 4.4 Banks and Financial Institutions

Faisalabad being one of the most industrial cities of Pakistan has branches of all major banks operating in the country. To date no special financing scheme for the foundry and light engineering sector of Faisalabad has been introduced by any of the banks. Conventional financing on standard rates is available through all banks. Biggest issue in this aspect has been the spread of technology gap between local manufacturer and modern trends. Modern machinery and equipment is too expensive for common entrepreneur of this sector to be affordable even through bank financing. The main banks and financial institutions involved in financing are as follows:

- Union Bank Ltd.
- Muslim Commercial Bank Ltd (MCB)
- Bank Alfalah
- Askari Bank & Askari Leasing Ltd
- Habib Bank Ltd
- Faisal Bank Ltd.
- Meezan Bank Ltd.

#### 4.5 Private BDS Providers

No significant private business development service providers are operating in the region with specific reference to foundry and light engineering industry.

### 5 SWOT Analysis

#### 5.2 Strengths

- Demand Driven Industry (more than 4000 units for textiles alone)
- Strong presence in local market
- Availability of cheaper labor
- Geographically situated at ideal location (near end users)
- Most setups are self employed and have simpler management structure

#### 5.2 Weaknesses

- Obsolete technology machinery and equipment used for manufacturing
- Availability of raw material and inconsistent raw material prices
- Unskilled labor (only 1% workers have certificate / diploma from technical / training institutions)
- Absence of research and development culture
- Lack of synergies between Govt. support institutions and practical market.
- Lack of standardization and quality control
- Non-sophisticated marketing sense. (branding & grading)

- Unorganized vendor base
- Limited access to information (availability of finance, technological know how & Govt. regulations)
- Energy costs

### 5.3 Opportunities

- Import substitution. Pakistan imports machinery worth approximately US \$ 600 million annually for textiles only.
- Free trade agreements like SAFTA and Pakistan's recent attempt to get included in ASEAN.
- Lesser sophisticated African markets.
- Research and development and reverse engineering

### 5.4 Threats

- Competition from countries like India & China, which have more advanced engineering technology base.
- Lagging in technology, hence producing substandard goods that hamper consumer perception about local engineering products.
- Non-organized manufacturing and vendor base and unhealthy competition.
- Uncertainty in inputs costs
- Allowance of duty free textile machinery.
- Increasing duties on import of machinery / tools used in manufacturing of textile machinery and parts
- High dependence on single supplier of raw material i.e. Pakistan steel
- Non-existence of research and development culture likely to widen technology gap more and more with the passage of time.

## 6 Investment Opportunities in Cluster

The investment opportunities prevailing in this cluster are as follows:

- Specialized Components Manufacturing Unit
- Reverse Engineering of Products and Parts
- Computer Aided Product/Pattern Designing Center
- Sand Processing Plant
- Heat Treatment Units
- Testing facilities
- Trading (Relevant Machinery Imports)
- Local Machinery Manufacturing
- Consultancy (Technology, Production Processing, Supply Chain Management and Export marketing)



***For Further Information Please Contact SMEDA Regional Business Center, Faisalabad***