CLUSTER PROFILE

FOUNDRY CLUSTER, GUJRAT



Turn Potential into Profit

Small & Medium Enterprise Development Authority
Ministry of Industries, Production & Special Initiatives
Government of Pakistan
8th Floor, LDA Plaza, Egerton Road **Lahore**
Tel: 92-42-111-111-456 Fax: 92-42-6304926-27, Email:
http://www.smeda.org.pk

By: **Ch. Rukhsar Ahmed** (Regional Business Coordinator, Gujrat)

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Description of the Cluster

1.1 History & Background of Cluster

Gujrat region is prominent in manufacturing of Electric Fans. People have been associated with fan manufacturing prior to partition. After partition the availability of the electricity has increased the trend of usage of electrical home appliances and Gujrat has attained a name in the manufacturing and export of electric fans. There are many other factories engaged in manufacturing of electrical goods, electric motors and rice cleaning mills.

The existence of strong electrical home appliance industry, especially manufacturing of Fans and Room Coolers has emerged the Foundry Cluster of Gujrat. Basically this cluster is the off shot of growing fan manufacturing sector of Gujrat. There are approximately 61 foundries located in Gujrat and are predominately concentrated in the Small industrial Estate and G.T. Road**.**

1.2 Description of Products

The main products of the foundry produced in the cluster are: Body for Ceiling Fan Motor, Gear Box, Ceiling Fan Sockets, Moving Liver, Lock Nuts, Base for Pedestal Fan and Others.

The production of two varieties of castings is Grey and Aluminum casting and the percentage of Grey Iron casting is higher than Aluminum casting. However, Aluminum casting has the major share approx 75 % of total castings produced.

1.3 Core Cluster Actors

The Cast Iron and Non Ferrous produces are two main stream of Foundry Cluster Gujrat. Cast iron industry produces fan components casting (manufacturing of bottom and top cover casting).The market share of unorganized sector is high and all of them are having sub contracting relationship with the organized sector. These are mostly located in small industries estate and surrounding of G.T. Road Gujrat. The major raw material used is pig iron, cast iron scrap, coke and lime stone. The technology mostly used in cast iron is Cupola furnace, pit furnace and rotary furnace. Poor foundry practices are found in this cluster in terms of manual mixing of sand and reusing the hot sand for further moldings, which affects the product quality.

The non-ferrous industry has low entry barriers like little investment and most of the units are of small scale. The prices of raw material particularly Aluminium is increasing day by day. The daily production is lower than the cast iron and steel casting segments. The technology that is used is rotary and pit furnaces. As per the association the total market size of Foundry Cluster Gujrat is as follows:

Table 1: Foundry Cluster, Gujrat[1]

Number of Units	Total Units Approximately **61** - Large Size Independent Units: 22 - Small and Medium Size Units: 39
Installed Capacity	Installed Capacity of Cluster is Around 1,193,750 Nos.
Capacity Utilized	Approximately 70%
Employment Generation	750 (Directly)

1.4 Other Cluster Actors

Raw material supplier and machinery suppliers contribute and support to the activities of the cluster and thus play an important role.

1.4.1 Machinery Suppliers:

Majority of the machine suppliers are located in Lahore. Machinery suppliers normally importers second hand or scrapped machinery in broken form and refurbished them locally. The big players also get the benefit of using the imported scraped machines, but they sometimes also import the new machines.

1.4.2 Raw Material Suppliers

The majority of foundry units are obtaining raw material from scrap dealers of local and imported scrap, traders and dealers of Pakistan Steel Mills, Karachi. Scrap suppliers are almost all dealers are sitting in cluster. A large number of material suppliers and dealers are present in Gujrat, Gujranwala, Lahore and Karachi.

The suppliers also import steel scrap, iron scrap, lead, magnesium, bentonite, mould coats and alloy additions & ferro-alloys from China, India, Japan, Germany, Thailand and Middle East. Most of the raw material is obtained by either relying on visual inspection or by a test certificate provided by the suppliers, or sometimes on oral assurances by the traders. In-house testing facilities are not available with the units and if the material is sent for testing in labs, the costs go up significantly.

[1] Source: Foundry Association Gujrat

1.5 Geographical Location

Foundry products are manufactured in many areas of Gujrat. However the major cluster of Foundry is on G.T. Road and Small Industrial Estate. The cluster is approachable by metal roads and railway facilities.

1.6 Current Cluster Scenario

The Foundry still mainly exists at the level of SMEs, with exception of some firms, who have gained an extraordinary growth. This sector is not an organized sector. There is no exact figure available about total no. of units, installed capacity and operational capacity.

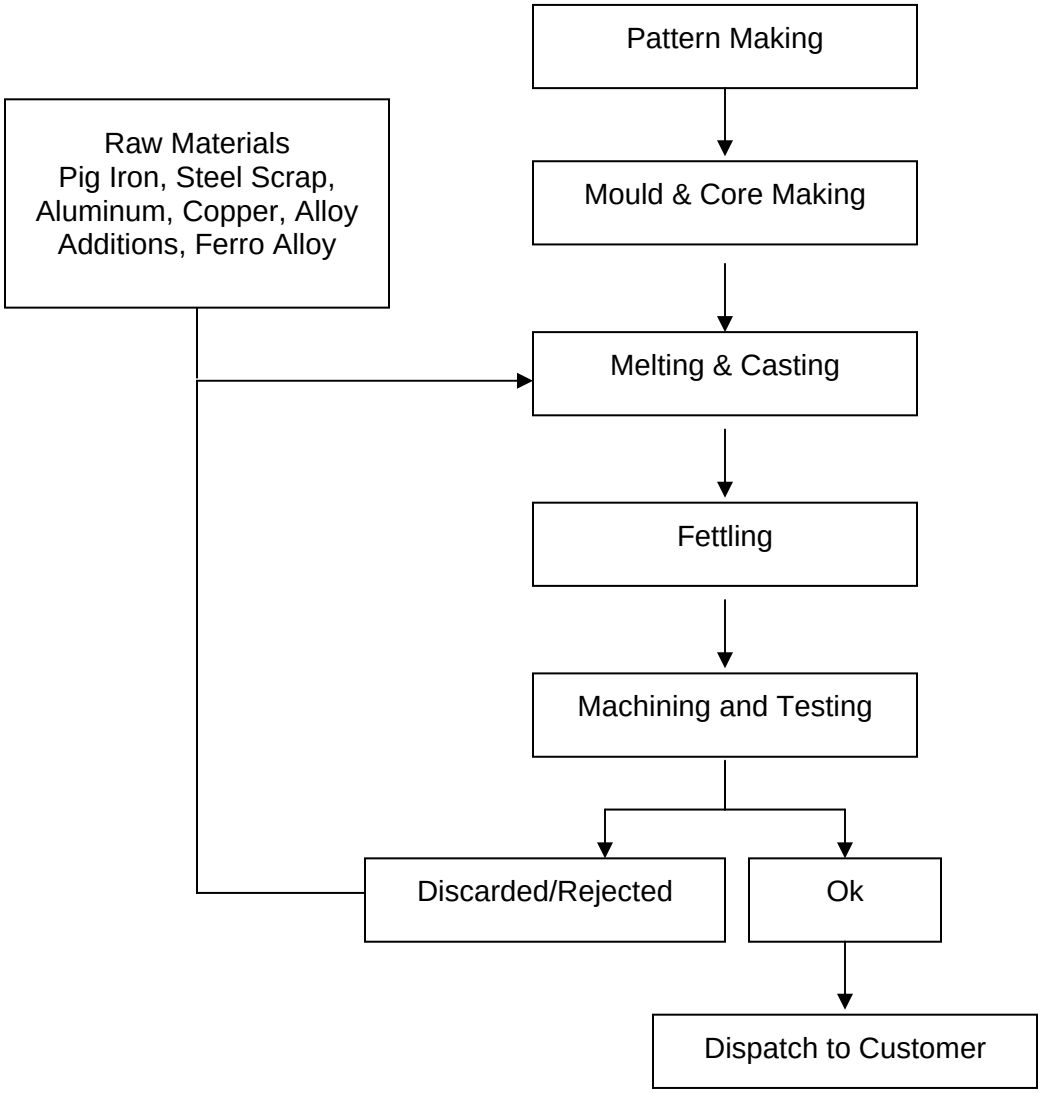
There is a lack of technical know how in raw material characteristics. Supply chain is crucial to this field and without proper raw material supply these units cannot keep up with the production. There is no refining done in the furnace and whatever the quality of scrap is put in without any testing, the hot molten metal of the same specs will come out that result in lower quality of products and high wastage of raw materials.

2 Analysis of Business Operations

2.1 Production Operations

Production process of Foundry Products can be explained as follows

Figure: Process Flow Chart of Foundry Products



2.1.1 Raw Material:

The raw materials constitute 40 to 70% of manufacturing costs, depending upon the segment of the industry. A majority of the foundry units are procuring raw material from scrap dealers of local and imported scrap, traders and dealers of Pakistan Steel Mills, Karachi.

2.1.2 Pattern Making:

This refers to the model of castings that are prepared on the basis of drawings given by the customer. These patterns are usually made with wood.

2.1.3 Molding & Core making Painting of Main Structure:

Moulds are prepared in the sand with the help of patterns to get the same shape as that of the pattern. Core making is useful for getting hollowness in the castings.

2.1.4 Melting, Casting & Fettling:

Metals are melted in suitable furnaces to get the required composition and then the molten metal is poured into the moulds After solidification, the castings are removed from the mould boxes and unwanted metal attachments like runners and raisers are removed and the sand adhered to the casting is cleaned.

2.1.5 Machining, Testing & Inspection:

These castings are sent for further operations like heat treatment and machining before dispatching of the component, non-destructive tests are carried out for the product final check or as per the customer requirements. Non destructive tests are inspections checks and surveys carries out by means of methods that do not alter the material and do not required the destruction or removal of test samples from the concerned structure. The main feature of this kind of test is the possibility to check the concerned parts without interfering with the tested materials. Non-destructive tests are thus a crucial tool for the product final check.

2.2 Raw Materials Availability

A large number of material suppliers and dealers are present in Gujranwala, Lahore and Karachi. Suppliers procure coke from Hyderabad, Makerwal, Khoshab, copper from Quetta and Lime stone from NWFP (Dealers network available in Gujranwala and Lahore).

Different gauge of metal sheets are available at many areas of Gujranwala, most of the supplier are in Javaid Sheet Market, Sheikhupura raod and Gondlanwala Road, Gujranwala. Glass for oven, timers, moving motors, auto ignition is also major raw materials which are imported from China. Main wholesale market for purchase of Burners and knobs are in Abid market Lahore and gas cocks in Sheikhupura.

2.3 Quality Assurance

There is no practice of testing composition of raw materials and finished goods. Only visual inspection and dimensions check as per the drawing / samples are considered for declaring a product fit.

2.4 Technology Status

Technology wise cluster is far behind from the other countries due non adoption of scientific practices, modern machinery, testing facilities and automation. A huge amount of energy is wasted by the melters in terms of electricity and gas usage.

Most foundries use cupolas using coke. There is growing awareness about environment & many foundries are switching over to induction furnaces. Production capacities of our foundries are very low as compared with other countries of the world. Most of the foundries are using manual method of pattern and mould making which leads to high wastage and increase in production time.

2.5 Marketing & Sales

Most of the foundries are supplying to the domestic market. Owners have developed contacts with fan manufacturers and other factories. Sales agents are also working in this sector.

2.6 Financing

Almost all the registered commercial and industrial development banks of Pakistan have their branches in the cluster and providing the financing at competitive rates. But most of stakeholders depend upon their own financial equity based resources. It is also observed that the entrepreneurs normally prefer obtaining loan from the informal sources. Due to unawareness, ineffective information flow and paper work these entrepreneurs are reluctant to go to the financial institutions.

2.7 Human Resources

Human resource is present in abundance and skills are traditionally inherited. Most of the labour is semi skilled and is trained on the job. There is no qualified engineer to monitor production process, only people having long experience in this industry are taking care of all production issues.

3 Institutional Setup

3.1 Government & Semi-government Organizations

SMEDA, PSIC & TDAP are three organizations which are providing facilitation to this cluster at the government level.

3.1.1 Small and Medium Enterprise Development Authority (SMEDA)

The Small and medium enterprise development authority was established in October 1998 to take on the challenge of developing Small & Medium Enterprises in Pakistan. The basic function of SMEDA are focus on providing and facilitating business development services to small and medium enterprises as and individual as well as collective level. It has a Regional business center (RBCs) in Gujrat. SMEDA provides following services to SMEs

I. Training Services
II. Marketing advice.
III. Technical advice.
IV. Facilitation in arranging finance from banks.
V. Legal Services
VI. Business plan development.

3.1.2 Trade Development Authority of Pakistan (TDAP)

TDAP 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, TDAP 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. TDAP also initiate projects in various export sectors to train necessary manpower that can manage the export trade and industry.

3.1.3 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. It offers helps in following areas

I. Offering credit facilities to small and cottage industries (new and existing businesses).
II. Establishing industrial areas for small industries.

3.2 Local Bodies/Chambers/Association

Gujrat Chamber of Commerce & Industry (GT CCI) established in 1993 for promotion of Gujrat industry. GT CCI sends its trade delegations to the different countries, especially African, Far eastern, Middle Eastern, and Central Asian States for the promotion of bilateral trade among the respective countries.

4 SWOT Analysis

4.1 Strengths

- Easy Availability of raw materials
- Gujrat is well connected by rail & road,
- Strong presence in local market
- Abundance of skilled and unskilled labour
- Demand for the product is on the increase.

4.2 Weaknesses

- Mainly concentrating on low value products
- Lack of technical know how in raw material characteristics
- Lack of knowledge about markets available for similar products in other parts of the country
- Use of poor quality scrap and untested raw material and alloying.
- High Utilities cast (Gas & Electricity) and load shedding.
- Large unorganized existence
- Most of the foundries are supplying only to domestic market.
- Credit factor in domestic sales.
- Lack of standardization and testing procedures by testing laboratories
- Concentration only on rough casting instead of finished.

4.3 Opportunities

- Exploit local expertise in related sectors, clusters technologies Opportunities exist for common procurement of raw materials, consumables and joint marketing.
- Opportunities exist for technology improvement to increase the yield.

4.4 Threats

- Increasing regulatory pressures e.g. tax regime ever increasing, tax mechanism complicated for SMEs, requirement of various other Government departments like Labour, Wapda etc. Uncertainty in inputs costs
- Competition from countries like India & China, which have more advanced engineering technology base.
- Political situation of the country
- The growth of steel consumption is dependent upon growth of the economy in general. Slow down will adversely effect the units

5 Investment Opportunities

Keeping in view the strong presence of Fan Manufacturing and Electrical Home Appliances Industry in the area, there is an ample opportunity of investment in the cluster. Some potential projects for investment are as follows:

- Raw Material Stores of Steel Scrap, Iron Scrap, Lead Magnesium and Ferrous and Non-ferrous Alloys.
- Manufacturing of Gear Box, Ceiling Fan Sockets, Moving Liver, Lock Nuts, Base for Pedestal Fan Thermostats etc
- Die and Mould Making
- Networks of Vendors
- Traders (Importers and Exporters)