CHAPTER III

PROBLEMS AND PROSPECTUS OF FOUNDARY INDUSTRIES IN BELGAUM DISTRICT
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3.1 : PROFILE OF BELGAUM DISTRICT

"Belgaum district is one of the 29, district of Karnataka State. Geographically it is located in the north-western part of the Karnataka state, between 15°-23' to 16°-58' north latitude and 74°-05' to 75°-28' east longitude. The Belgaum district is sharing 13415 sq kms area of Karnataka, and population was 42,14,505." ¹ For administrative purpose the district has been divided into three subdivisions, viz, Belgaum, Chikodi, Bailhongal, and ten talukas with its head quarter at Belgaum. The major rivers like Krishna, Malaprabha, Ghataprabha, Hiranyakeshi, Mahadayai, Vedaganga, Dudhaganga, Markandeya, are flowing across the district. The district is covered with thick forests on the western sides along with the western ghat ranges. It has a literacy rate of 64.42 percent. The main food crops of the district are jawar, paddy, wheat, bajra, maize, commercial crops like sugarcane, cotton, tobacco, and groundnut are also grown in the district. It is also rich in mineral wealth. The district has many attractive tourist and pilgrimage centers. The entrepreneurs of the district are highly enthusiastic in the promotion of industries.

3.2 : INDUSTRIAL SCENARIO

The industrial activity in Belgaum started about five decades back. The district has 10 sugar mills and 115 foundries, 30 hydraulic equipment manufacturing unit and about 1500 units engaged in machining of automobile components. Among the engineering industries there are about 12 units engaged in machining of crank shafts. These units have an investment of more than 8 crores and employed 425 people. There are also pharmaceutical units engaged in manufacture of bulk drugs and also packing of tablets and other formulations.

¹ Kamat S.U, Gazetteer of India, State Gazetteer, Belgaum District, Government Karnataka, Belgaum,1987 PP.1.2.
In Belgaum district there are 28,247 small scale industries with an investment of Rs.47591.59 lakhs and providing employment of 1,17,404 as on 31-03-2005.

Similarly, there are 15 medium scale units with an investment of Rs.83.99 crores and providing employment to 2620 people and 16 large scale industries with an investment of Rs.978 crores and providing employment to 8759 persons.

Small Scale Industries

The small scale industries have been the backbone of the Indian economy and contribute more than 60% of country's production, Belgaum is no exception to it.

The initial industries that came to the district were foundries. The foundries came into Belgaum from Kolhapur of Maharashtra. Belgaum is one of the leading centers in the country to supply crank shafts and castings to the Engineering industries. There are also a number of Engineering Industries which take up the machining jobs for major industries in Karnataka, Maharashtra and Tamil Nadu. It has been and continues to be one of the leading centers when it comes to supply of automobile components which go as OEM supplies and also for the replacement market.

Foundries

"Foundries came into Belgaum about 50 years back. At present there are more than 115 foundries in Belgaum. These industries are engaged in manufacture of grey iron and CI castings".

The units are also manufacturing components of sugarmills, Textile machinery, cement industries, automobile industries etc. The units which were using the cupola type of furnace have started using the induction furnaces from 1990 onwards.

Hydraulic Equipments

The hydraulic equipments like hydraulic presses, hydraulic jacks and valves manufactured by industries in Belgaum are well known. The industries have also supplied valves for satellites. There are 30 hydraulic equipment manufacturing units in Belgaum.

Engineering Industries

In order to facilitate the foundries and the hydraulic equipment manufacturing units there are a host of engineering industries engaged in machining activities. The specialty of these industries is their capacity to design and develop special purpose machines and raise to any challenges in designing and maintaining quality standards.

Textile Industry

Belgaum district is known for power loom sarees. Apart from power loom units, there are two cotton weaving units, five spinning mills, two terry towel manufacturing unit engaged in exports and a T-shirt manufacturing unit with 100% exports.

Medium and large scale industries

There are 31 medium and large scale industries in the district having an investment of Rs.1061.99 crores and employing 11379 persons.

Sugar Factories

There are 9 large sugar factories engaged in production of sugar in the district. The cane crushing capacity of these units is 40,000 tonnes per day producing 500 tonnes of sugar per day. Five sugar mills have set up cogenerating power plants of 60mw capacity using bagasse and 3 units have started distilleries.
Agriculture / Horticulture Based Industries

After sugar factories it is the turn of units to utilizing maize as the major raw material and manufacturing starch and glucose. There are two large industries in the district with an investment of Rs.70.00 crores manufacturing starch and glucose using maize.

Oil Seeds

There are two major oil mills in the district with an investment of Rs.10 crores. The major oil seeds grown in the district are soyabean and sunflower. Oil seeds are grown in an area of 1,17,197 hectares producing 73,24,817 tonnes of different types of oil seeds.

Tobacco

There are 12 tobacco processing units in the district. These units are located in chikodi and Hukkeri taluks, Nippani is the major market for tobacco.

Other Sectors

The information technology based industries are also showing inclination to be setup in this part of the state. Belgaum is capable of offering very good infrastructure and logistics for investors in the field of information technology.

The district provides scope for establishing floriculture based activities. There are at present 8 floriculture units which are performing well.

The bio-technology based industries like Enzymes for pharmaceutical units, vermin compost, tissue culture etc, provide scope for establishment of manufacturing facilities in the district.
3.3 : GROWTH OF FOUNDRY INDUSTRIES [FERROUS AND NON-FERROUS] IN BELGAUM DISTRICT

Foundry came into Belgaum about 50 years back. At present there are more than 115 foundry industries [Ferrous and Non-Ferrous] in Belgaum district. These industries are engaged in manufacture of grey iron and CI castings. The units are also manufacturing components of sugar mills, textile machinery, cement industries, automobile industries etc. The units which were using the cupola type of furnace have started using the induction furnaces from 1990 onwards.

"There is a tremendous growth in foundry industries [Ferrous and Non-Ferrous] from 1995-96 to 2004-05 in Belgaum district"3.

It is shown in table 3.1

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3 Office of the District Industries center, Belgaum.
Table 3.1 Growth of Foundry Industries [Ferrous and Non-Ferrous] in Belgaum district.

<table>
<thead>
<tr>
<th>Year</th>
<th>Foundry Unit Nos</th>
<th>Growth %</th>
<th>Persons employed Nos</th>
<th>Growth %</th>
<th>Investment Rs. in lakhs</th>
<th>Growth %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995-96</td>
<td>69</td>
<td>6</td>
<td>601</td>
<td>6</td>
<td>361.09</td>
<td>4</td>
</tr>
<tr>
<td>1996-97</td>
<td>74</td>
<td>7</td>
<td>651</td>
<td>8</td>
<td>380.59</td>
<td>5</td>
</tr>
<tr>
<td>1997-98</td>
<td>77</td>
<td>4</td>
<td>669</td>
<td>3</td>
<td>397.29</td>
<td>4</td>
</tr>
<tr>
<td>1998-99</td>
<td>84</td>
<td>9</td>
<td>725</td>
<td>8</td>
<td>423.59</td>
<td>7</td>
</tr>
<tr>
<td>1999-00</td>
<td>90</td>
<td>7</td>
<td>785</td>
<td>8</td>
<td>463.93</td>
<td>10</td>
</tr>
<tr>
<td>2000-01</td>
<td>94</td>
<td>4</td>
<td>817</td>
<td>4</td>
<td>487.93</td>
<td>5</td>
</tr>
<tr>
<td>2001-02</td>
<td>97</td>
<td>3</td>
<td>842</td>
<td>3</td>
<td>507.18</td>
<td>4</td>
</tr>
<tr>
<td>2002-03</td>
<td>103</td>
<td>6</td>
<td>904</td>
<td>7</td>
<td>539.18</td>
<td>6</td>
</tr>
<tr>
<td>2003-04</td>
<td>107</td>
<td>4</td>
<td>930</td>
<td>3</td>
<td>552.98</td>
<td>3</td>
</tr>
<tr>
<td>2004-05</td>
<td>115</td>
<td>7</td>
<td>1015</td>
<td>9</td>
<td>644.00</td>
<td>16</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>57</strong></td>
<td><strong>59</strong></td>
<td><strong>64</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Office of the District Industries center, Belgaum

Note: Growth rate is on previous year figure.

The above table shows overall growth of foundry industries [Ferrous and Non Ferrous] in terms of number of units, employment, and investment are more than 50 percent. Growth of number of units has the highest as it is 9
percent, employment and investment are 8 percent and 7 percent respectively in 1998-99. Growth of employment and investment are highest as they are 9 percent and 16 percent respectively. But growth rate of No. of units fell down to 7 percent in 2004-05. Growth rate of No. of units, employment and investment are least to the tune of 3 percent, 3 percent, and 4 percent respectively in 2001-02. The other years including 1995-96, 1996-97, 1997-98, and 1999-2000, 2000-01 2002-03 and 2003-04 have growth rate more than 50 percent in terms of No. of units, employment and investment.

The Growth of foundry Industries (Ferrous and Non Ferous) In Belgaum District is shown in Figure 3.1
Figure 3.1 Growth of Foundry Industries (Ferrous and Non-Ferrous) in Belgaum district.


<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>69</td>
<td>74</td>
<td>77</td>
<td>84</td>
<td>90</td>
<td>94</td>
<td>97</td>
<td>103</td>
<td>107</td>
<td>118</td>
</tr>
</tbody>
</table>
MAP SHOWING BELGAUM DISTRICT IN KARNATAKA STATE

Study Area

KM 5

0 8 16 24 KM
3.4: DISTRIBUTION OF FOUNDRY INDUSTRIES [FERROUS AND NON-FERROUS] IN BELGAUM DISTRICT

"The foundry industries [Ferrous and Non-Ferrous] in Belgaum district are located in three taluks including Belgaum, Chikodi, and Gokak out of ten taluks". It is shown in the following table.

Table 3.2 Distribution of Foundry Industries [ferrous and non ferrous] in Belgaum District.

<table>
<thead>
<tr>
<th>Sl No</th>
<th>Taluks</th>
<th>No of units</th>
<th>No of workers</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Athani</td>
<td>00</td>
<td>00</td>
</tr>
<tr>
<td>02</td>
<td>Bailhongal</td>
<td>00</td>
<td>00</td>
</tr>
<tr>
<td>03</td>
<td>Belgaum</td>
<td>125</td>
<td>765</td>
</tr>
<tr>
<td>04</td>
<td>Chikodi</td>
<td>04</td>
<td>30</td>
</tr>
<tr>
<td>05</td>
<td>Gokak</td>
<td>02</td>
<td>10</td>
</tr>
<tr>
<td>06</td>
<td>Hukkeri</td>
<td>00</td>
<td>00</td>
</tr>
<tr>
<td>07</td>
<td>Khanapur</td>
<td>00</td>
<td>00</td>
</tr>
<tr>
<td>08</td>
<td>Raybag</td>
<td>00</td>
<td>00</td>
</tr>
<tr>
<td>09</td>
<td>Ramdurg</td>
<td>00</td>
<td>00</td>
</tr>
<tr>
<td>10</td>
<td>Savadatti</td>
<td>00</td>
<td>00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>131</strong></td>
<td><strong>805</strong></td>
</tr>
</tbody>
</table>


The above table shows distribution of foundry industries [ferrous and non ferrous] in Belgaum district in 2004-05. The majority of foundry industries [Ferrous and Non-Ferrous] are situated in Belgaum taluk i.e. 125 foundry industries [Ferrous and Non-Ferrous] having 765 workers. The other two taluks including Chikodi and Gokak have 4 and 2 foundry industries [Ferrous and Non-Ferrous] and 30 and 10 workers respectively.

The Distribution of Foundry Industries (Ferrous and Non Ferrous) In Belgaum District is presented in Figure 3.2.
Figure 3.2: DISTRIBUTION OF FOUNDRY INDUSTRIES [FERROUS AND NON-FERROUS] IN BELGAUM DISTRICT
3.5 : PROBLEMS OF FOUNDRY INDUSTRIES IN BELGAUM DISTRICT

The Problems of Foundry industries in Belgaum District are classified into two categories viz 1. Financial Problems and 2. Non-Financial Problems. 3.3 Chart shows problems of foundry industries in Belgaum District.
Chart 3:3 Problems of Foundry Industries in Belgaum District

- Grant of inadequate finance
- Problem of working capital
- Level of types
- Problem of Bad debts
- Release of subsidiary and other incentives
- Financial Problems
- Problems of Foundry Industries
- Non-Financial Problems
- Raw material problems
- Marketing Problems
- Electricity Problems
- High Credit Period
Grant of Inadequate Finance

Adequate finance is required by the foundries, because these industries require installation of heavy and costly machines and large investment of capital in land and building at the initial stage are to be started on a large scale to make the investment paying.

Problem Of Working Capital

Current assets or working capital is required for the purchase of Raw materials with a view to processing the materials into castings and founder for meeting the day today expenses of their industries, such as payment of salaries stationary, rent, rates, working capital generally involves the use of short term funds in business in quickly convertible into cash through a regular cycle. The materials are changed into castings, castings are sold out to realize cash and cash is utilized in purchasing of materials or for other purposes Adequacy of working capital helps a lot in maintaining industry.

Level Of Taxes

The first appropriation out of profits is payment or provision of tax. The amount of taxes to be paid is determined by the prevailing tax regulation. Foundry industries have not discretion in this respect. Very often taxes have to be paid in advance on the basis of the profit of the preceding year. Tax liability is payable in cash. An adequate provision for tax payments is, therefore an important aspect of working capital planning. As tax liability increases, it will lead to an increase in the requirement of working capital of foundry industry and vice-versa.

Problem Of Bad Debts

The level of working capital is also influenced by credit policy which relates to sales. The credit terms granted to customers have a bearing on the magnitude of working capital by determining the level of book of debts
(receivables) Higher book debts will mean more working capital. The working capital requirements of foundry industry are, thus affected by the terms of sale and the role given to credit by foundry industry in its dealings with debtors.

Release of Subsidy and other Incentives

There is a need to release huge amount of subsidy and other incentives to foundry industries as they require huge amount of adequate amount of working capital to carry its operations smoothly. Incentive like packages should be provided for the development of these foundry industry.

Raw Material Problems

The price of raw material goes on increasing. Due to this fact it is not possible for the foundry men to produce casting as per the specification of the customer at a competitive price. The arrangement should be made to produce and distribute the raw materials at a reasonable price to the foundry industries to produce a good quality casting which is helpful to the foundry people.

Marketing Problems

The markets of foundry products is far away from their destination. The cost of transport of casting from industry to market is higher burden on the industry which is burden on the part of foundry man. It is desirable that the industry be adjacent to the market area. It is again an important factor determining the size of the foundry unit. so there is a need to establish big industries in the region.

Electricity problems

The consumption of power is very high for foundry units. As electric power is relatively cheaper to generate and what is more easier to transmit
over a long distances. Therefore it is necessary to avoid load shedding and supply electric power on a continuous basis. This also provides a good measure of size and growth of foundry units.

**High Credit Period**

Credit terms fixed by a unit are affected by the prevailing trade practices as well as changing economic conditions. Although high credit period affect the profitability as well as the cost of foundry units, therefore foundry units should determine the credit period on the basis of cost benefit trade off, this will avoid the problem of inadequate or excess working capital.

In addition to the above, foundry industries are facing the following major problems.

**Labour Problems**

Availability of skilled, semiskilled, and unskilled labours are the major problems to the foundry industries. Some times production of casting is hampered due to the non availability of skilled workers. Due to this it is not possible to the specification of the unskilled working which is an extra burden the part of foundry man.

**No Proper Infrastructure For Pattern Making Testing And Inspection**

Proper in infrastructure for pattern making, testing and inspection is very essential for foundries, because in the pattern making section, the patterns are designed and prepared as per drawing of the casting received from the planning section, and moulding process to be employed. The material of the patterns may be selected from a wide range of alternatives available. The selection is depending on factors such as the number of casting required, possibility of in the casting, core boxes needed for making cores and all other. Auxiliary tooling items are also manufactured in the pattern of making section. Before the casting is dispatched from the foundry,
it is required to test and inspect the casting to ensure that it is flawless and conform to the specification desired.

Casting Rejection

Casting rejection occurs because of casting defects. Manufacturing process are not properly controlled and perfect control is impossible. Several types of defects may occur during casting considerably reducing the total output of casting besides increasing the cost of their production. It is therefore, essential that they may be suitably eliminated. However, it is important to the producer, designer, consumer and engineer that such defects as do occur in castings be recognized and their origin and control be properly understood.

Disposal of Burnt Sand

Disposal of burnt sand is a major problem for foundry industries. Mounding sand is the principal raw material used in mounding because it possess several major characteristics required for mounding after the solidification of metal and cooling of sand mould, the mould either manually on the pouring floor itself or mechanically. In the latter case mould is rapidly jarred by mechanical vibrations so that the sand become loose and falls through a grate or screen in to a pit or on a belt conveyer arranged below the floor. Such burnt sand is to be disposed which requires a separate space.

Hazards of Wastage

The melting, casting and solidification of metals involve many intricate operations and processes. Consequently perfect control is impossible, These hazardous wastage can be misnamed and controlled by having a sound grasp regarding their origin and fundamental causes in the
context of quality specifications imposed by the design and service requirement. It is therefore, imperative to maintain close control over the raw materials used in molding and core making practices by following adoption of proper melting techniques and procedures, at different stages to minimize the hazardous wastage.

Problems Of Patterns Makers

Availability of pattern makers is the major problem to the foundry industries. As pattern making is a responsible kind of job and needs workers of high skill. The pattern set must satisfy the following requirements.

- Secure the desired shape and size of casting
- Have high strength and long life in order to make as many moulds and cores as required
- Be simple in design for ease of manufacture, light in mass and convenient to handle, cheap and readily repairable
- Retain its dimensions and rigidity during the definite service period

The pattern set comprises of the patterns of the casting and gating elements, core boxes, pattern plates for mounting and fixing in position the patterns of the casting and the gating system, sand drying boards, jigs and templates for finishing up. They make use of flasks and various accessories, such as filing frames, plates, pins, clamps, and templates, along with the pattern set, which form the moulding equipment. It needs workers of high skill.
Problems Of Dumping Slag

Slag is oxide or other reaction product of metal being cast. Slag may also include other non-metallic from the melting operation. Since there is not much difference between the specific gravities of alloys, the problem of removing slag from the melt is more complicated in foundries. To prevent slag inclusion in the casting, it is removed from the molten metal before it reaches the mould cavity.

All these above problems affect the growth of foundry industries in the present area. Of competition in the strict undertaken for study.