CHAPTER 4

PROFILE OF THE SELECTED SUGAR FACTORIES

4.1 INTRODUCTION

Indian economy is basically an agrarian economy and development of this country largely depends upon development of agriculture and agro based industries. So agriculture is the back bone of Indian economy as majority people of the country is engaged and dependent on agriculture. Since time immemorial, agriculture has been the main stay of rural Indian economy around which social-economic privileges and deprivation revolve. Agriculture has emerged as an indispensable part of rural economy. Agriculture plays a pivotal role in accelerating the over all economic development of a country. The profile of sugar industries reveals some significant facts relating to the sugar production and other related aspects of their operations. Already brief general characteristic of the case study area, present sugar industrial scenario and resources for sugar industrial development in the selected districts under study have been narrated in the preceding chapter. This chapter consists of two parts viz. sugar production of top countries in the world and in India and second part consists of profile of the selected sugar industries.

4.2 TRENDS IN WORLD SUGAR PRODUCTION

The art of making sugar from sugarcane originated in India from where it spread to Cuba, Mexico, Jamaica, Malaysia and China. Brazil, Mexico, China, India, Pakistan, Thailand, South Africa, Cuba, USA, Australia are the top ten countries produces sugarcane and sugar in the world. There are 94 countries in the world having 2146 sugar mills produced sugar from the sugarcane. Important sugar producing countries in the world are shown in Table 4.1.
Table 4.1
Trends in World Production of Sugar
_________________________________(In lakh tones)

<table>
<thead>
<tr>
<th>Year</th>
<th>Brazil</th>
<th>Mexico</th>
<th>China</th>
<th>India</th>
<th>Pakistan</th>
<th>Thailand</th>
<th>South Africa</th>
<th>World</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003-04</td>
<td>259.56</td>
<td>54.42</td>
<td>114.33</td>
<td>217.02</td>
<td>40.63</td>
<td>77.37</td>
<td></td>
<td>1481.22</td>
</tr>
<tr>
<td></td>
<td>(259.56)</td>
<td>(54.42)</td>
<td>(114.33)</td>
<td>(217.02)</td>
<td>(40.63)</td>
<td>(77.37)</td>
<td></td>
<td>(1481.22)</td>
</tr>
<tr>
<td>2004-05</td>
<td>272.90</td>
<td>56.72</td>
<td>109.12</td>
<td>144.32</td>
<td>44.81</td>
<td>74.62</td>
<td></td>
<td>1472.81</td>
</tr>
<tr>
<td></td>
<td>(272.90)</td>
<td>(56.72)</td>
<td>(109.12)</td>
<td>(144.32)</td>
<td>(44.81)</td>
<td>(74.62)</td>
<td></td>
<td>(1472.81)</td>
</tr>
<tr>
<td>2005-06</td>
<td>281.35</td>
<td>56.19</td>
<td>97.85</td>
<td>152.16</td>
<td>28.39</td>
<td>45.89</td>
<td></td>
<td>1413.54</td>
</tr>
<tr>
<td></td>
<td>(281.35)</td>
<td>(56.19)</td>
<td>(97.85)</td>
<td>(152.16)</td>
<td>(28.39)</td>
<td>(45.89)</td>
<td></td>
<td>(1413.54)</td>
</tr>
<tr>
<td>2006-07</td>
<td>316.22</td>
<td>54.12</td>
<td>30.07</td>
<td>223.47</td>
<td>28.36</td>
<td>45.46</td>
<td></td>
<td>1420.87</td>
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<tr>
<td></td>
<td>(316.22)</td>
<td>(54.12)</td>
<td>(30.07)</td>
<td>(223.47)</td>
<td>(28.36)</td>
<td>(45.46)</td>
<td></td>
<td>(1420.87)</td>
</tr>
<tr>
<td>2007-08</td>
<td>331.99</td>
<td>0.14</td>
<td>30.07</td>
<td>290.90</td>
<td>25.58</td>
<td>47.47</td>
<td></td>
<td>1483.47</td>
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<tr>
<td></td>
<td>(331.99)</td>
<td>(0.14)</td>
<td>(30.07)</td>
<td>(290.90)</td>
<td>(25.58)</td>
<td>(47.47)</td>
<td></td>
<td>(1483.47)</td>
</tr>
<tr>
<td>2008-09</td>
<td>322.90</td>
<td>59.40</td>
<td>154.25</td>
<td>259.36</td>
<td>27.74</td>
<td>77.74</td>
<td></td>
<td>1624.97</td>
</tr>
<tr>
<td></td>
<td>(322.90)</td>
<td>(59.40)</td>
<td>(154.25)</td>
<td>(259.36)</td>
<td>(27.74)</td>
<td>(77.74)</td>
<td></td>
<td>(1624.97)</td>
</tr>
<tr>
<td>Average</td>
<td>297.49</td>
<td>56.13</td>
<td>123.84</td>
<td>216.44</td>
<td>39.99</td>
<td>67.84</td>
<td></td>
<td>1539.51</td>
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<td></td>
<td>(297.49)</td>
<td>(56.13)</td>
<td>(123.84)</td>
<td>(216.44)</td>
<td>(39.99)</td>
<td>(67.84)</td>
<td></td>
<td>(1539.51)</td>
</tr>
<tr>
<td>CAGR</td>
<td>3.70</td>
<td>1.47</td>
<td>5.12</td>
<td>3.01</td>
<td>3.50</td>
<td>0.08</td>
<td></td>
<td>1.56</td>
</tr>
</tbody>
</table>

Note: The figures in the parenthesis are the actual data
Source: Sugar India Year Books-2009 & 2010: 143-144
CAGR: Compound Annual Growth Rate

Table 4.1 reveals that the world production of sugar was 1481.22 lakh tones in 2003-04 which increased to 1624.97 lakh tones in 2008-09. Thus world production of sugar has increased near about 10.4 times during the last 6 years. It can be noted that production of sugar in Brazil increased from 259.56 lakh tones in 2003-04 to 322.90 lakh tones in 2008-09. Brazil has increased the production of sugar during the period by 34.18 percent. Its share in world production of sugar is 18.67 percent. This indicates that Brazil ranks first in production of sugar in the world.

It is also to be noted that production of sugar in India has ranged from 217.02 lakh tones in 2003-04 to 259.36 lakh tones in 2008-09 and an average production of sugar during the said period was 186.44 lakh tones. India's
production of sugar increased during the said period to the extent of 14.45 percent. Its share in world production of sugar is 12.75 percent. This shows that India ranks second in production of sugar in the world. In case of other countries, an average production of sugar during the said period under study was 39.99 lakh tones in Pakistan, 56.13 lakh tones in Mexico, 123.84 lakh tones in China, 67.84 lakh tones is Thailand and 23.91 lakh tones in South Africa respectively. It can be seen that only Brazil, India and China in the world showed an increase trend in the production of sugar during the period under study.

4.3 GROWTH OF SUGAR FACTORIES IN INDIA

The history of sugar industry in India begins in 1903 when a sugar factory was set up in Bihar and U.P. In 1932, there were 32 factories operating in the country. In that year tariff protection was granted to the industry and as a result the numbers of factories have been set up to 137 by 1937. In 1970-71 there were 215 sugar factories throughout India. India has become self sufficient in sugar because of the extensive cultivation of sugarcane in the southern India confined to Maharashtra, Karnataka, Tamil Nadu and Andhra Pradesh. Sugar industry is the second largest agro-processing industry in the country after cotton & textiles. The cultivation of commercial crop like sugarcane depends upon the demand and marketability of sugar. Sugarcane is the major commercial crop in the rural area of India. The major customers of sugarcane are sugar mills. There were 489 sugar factories in India till 2008-09. There are 634 sugar factories in operation in India during the year 2012-13. Amongst which 62 public limited companies, 254 private sugar industries and 318 co-operative sugar industries. Karnataka is rank third in sugar industry having 62 factories next to Uttar Pradesh (205) & Maharashtra (156). Out of 62 factories, 36 are private sugar factories, 3 are public companies and 23 are co-operative factories. In terms of cane crushed, Karnataka
state ranks third followed by Maharashtra and Uttar Pradesh to the extent of 347.53 lakh tones. In terms of sugarcane production Karnataka ranks third followed by Maharashtra and Uttar Pradesh to the extent of 38.72 lakh tones and in terms of sugar recovery, Karnataka ranks second followed by Maharashtra to the extent of 11.14 percent. The concentration of sugar factories in the state of Karnataka are mostly confined to north Karnataka. Important centers of production of sugar in north Karnataka are Belgaum, Bagalkot and Bijapur. Bagalkot district ranks second in sugar factories having 11 factories out of which 10 are private and 01 is co-operative sugar factories accounts for 21%. The present study is concentrated on selected sugar industries of Bagalkot, Bijapur and Belgaum districts of north Karnataka region.

Table 4.2
Growth of Sugar Factories in India

<table>
<thead>
<tr>
<th>Year</th>
<th>Co-operative</th>
<th>Private</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003-04</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>(235)</td>
<td>(187)</td>
<td>(422)</td>
</tr>
<tr>
<td>2004-05</td>
<td>-13.31</td>
<td>5.34</td>
<td>-5.21</td>
</tr>
<tr>
<td></td>
<td>(203)</td>
<td>(197)</td>
<td>(400)</td>
</tr>
<tr>
<td>2005-06</td>
<td>17.73</td>
<td>9.64</td>
<td>13.75</td>
</tr>
<tr>
<td></td>
<td>(239)</td>
<td>(216)</td>
<td>(455)</td>
</tr>
<tr>
<td>2006-07</td>
<td>5.43</td>
<td>16.66</td>
<td>10.76</td>
</tr>
<tr>
<td></td>
<td>(252)</td>
<td>(252)</td>
<td>(504)</td>
</tr>
<tr>
<td>2007-08</td>
<td>-1.19</td>
<td>5.95</td>
<td>2.38</td>
</tr>
<tr>
<td></td>
<td>(249)</td>
<td>(267)</td>
<td>(516)</td>
</tr>
<tr>
<td>2008-09</td>
<td>-8.03</td>
<td>-2.65</td>
<td>5.23</td>
</tr>
<tr>
<td></td>
<td>(229)</td>
<td>(260)</td>
<td>(489)</td>
</tr>
<tr>
<td>CAGR</td>
<td>-0.42</td>
<td>6.50</td>
<td>2.64</td>
</tr>
</tbody>
</table>

Note: The figures in the parenthesis are the actual data
Source: Co-operative Sugar (2012): 43 (22)
CAGR: Compound Annual Growth Rate

Table 4.2 shows total number of sugar factories operating under different firms like co-operative, public sector and private sector in India. The total sugar
mills in operation during the crushing season 2003-04 were 422. The sugarcane growers have diverted their sugarcane to the profitable gur and khandasari during the year 2004-05. The lower production of sugar influences the increase in sugar price in wholesale market. The increased sugar price has boosted both sugarcane growers and sugar manufacturers. But during the year 2008-09, the number of sugar factories has increased from 422 to 489. This table shows that during the said period the number of co-operative and public sector factories have decreased as compared to private sector sugar factories. During 2003-04 the growth rate in co-operative sector was 55.68 percent and declined to 46.83 percent during year 2008-09. But during 2003-04 the growth rate in private sector was 44.32 percent and increased to 53.16 percent during year 2008-09. It shows that there was growth rate in private sector as compared to co-operative sector.

A comparative analysis of total sugar mills in the world revealed that India has 582 sugar mills, followed by Brazil 258 and China 235 sugar mills respectively. Thus, India has the largest number of sugar mills in the world. Its share in the world number of sugar industries is 27.12 percent. Though there are only 258 sugar mills in Brazil as compared to 582 in India and the duration of the crushing season more or less the same in both countries, Brazilian sugar production is more or less the same as that of India. The reason for this high sugar production in Brazil is that there are sugar mills with large daily cane crushing capacities. For instance, Usina da Barra, S.A.Sugar factory, 40,000 TCD, Usina Sao Martinho S.A.sugar factory 36,000 TCD, CIA Energetica Santa Elisa sugar factory 35,000 TCD and U.S.J.Acucar e Alcohol S.A sugar factory 24,000 TCD. Etc. There are many sugar factories in Brazil with around 20,000 TCD and the average capacity is 10,000 TCD.
In Brazil, sugarcane crushing capacity at large scale has created so many advantages viz. sugarcane can be produced at lower cost of production, by products can be produced at a large scale; there is a no shortage of raw material which can help the sugar industries to increase the profit and to sugarcane growers for higher price to their sugarcane. But in India, sugarcane crushing capacity is at small scale which has created high cost of the production and there is no such development of by-products in most of the sugar industries because of the insufficient availability of raw material. The available raw materials are sold at lower price or will be dumped at sugar factory area which has created environmental pollution. Thus Indian sugar industries have not fully utilized their by-products which hamper the economy of industry.

4.4 TRENDS IN EXPORT AND IMPORT OF SUGAR IN INDIA

India is presently the world’s largest consumer and the second largest producer of sugar with the national sugar balance regularly moving form surplus to deficit and back. This results in huge swing of India’s position on the world sugar map. Depending upon the level of domestic sugar production relative to consumption, India has been both a large-scale net importer and net exporter of sugar. Depending on the yield of the cane crop, India can not only swing from the exporter’s camp to the importers and back, but also single-handedly change the statistical feature of the world sugar balance during the period under study. Table 4.3 gives India’s position in the global market.
Table 4.3
Growth of Export and Import of Sugar in India, 2003-04 to 2008-09

<table>
<thead>
<tr>
<th>Year</th>
<th>Export (Tones)</th>
<th>Export Value (Crores)</th>
<th>Import (Tones)</th>
<th>Import Value (Crores)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003-04</td>
<td>--</td>
<td>(1200600)</td>
<td>--</td>
<td>(62.70)</td>
</tr>
<tr>
<td>2004-05</td>
<td>-90.94</td>
<td>(108690)</td>
<td>1153.68</td>
<td>(976.18)</td>
</tr>
<tr>
<td></td>
<td>(149.53)</td>
<td>(149.53)</td>
<td>(932740)</td>
<td></td>
</tr>
<tr>
<td>2005-06</td>
<td>195.52</td>
<td>(321204)</td>
<td>-40.09</td>
<td>(558769)</td>
</tr>
<tr>
<td></td>
<td>(569.11)</td>
<td>(569.11)</td>
<td>(651.59)</td>
<td></td>
</tr>
<tr>
<td>2006-07</td>
<td>411.63</td>
<td>(1643403)</td>
<td>-99.81</td>
<td>(3.49)</td>
</tr>
<tr>
<td></td>
<td>(3127.47)</td>
<td>(3127.47)</td>
<td>(1052)</td>
<td></td>
</tr>
<tr>
<td>2007-08</td>
<td>185.05</td>
<td>(4684554)</td>
<td>-53.04</td>
<td>(2.24)</td>
</tr>
<tr>
<td></td>
<td>(5412.16)</td>
<td>(5412.16)</td>
<td>(494)</td>
<td></td>
</tr>
<tr>
<td>2008-09</td>
<td>-28.87</td>
<td>(3332079)</td>
<td>78057.48</td>
<td>(583.11)</td>
</tr>
<tr>
<td></td>
<td>(4448.74)</td>
<td>(4448.74)</td>
<td>(386098)</td>
<td></td>
</tr>
<tr>
<td>CAGR</td>
<td>18.54</td>
<td>24.12</td>
<td>31.58</td>
<td>45.01</td>
</tr>
</tbody>
</table>

Note: The figures in the parenthesis are the actual data.
CAGR: Compound Annual Growth Rate

Table 4.3 shows that India was net exporter of sugar in the year 2003-04. But in the year 2004-05, it became net importer of sugar and export was drastically decreased, due to decrease in domestic production of sugar. The sugar export shows increasing tendency up to 2008-09. In the years 2004-05 and 2005-06, import was more than export due to increasing domestic demand and decrease in production of sugar. During the years 2006-07, 2007-08 and 2008-09 India became the net exporter due to the increase in production of sugar. So India has demonstrated an ability of executing large scale exports and competing successfully with the leading sugar exporters like Australia, Brazil and Thailand in the Middle East and South Asian markets.
Map 4.1: Location of Karnataka State in India
Map 4.2: Location of North Karnataka in Karnataka state
Map 4.3: Location of Selected Districts for the Study in Karnataka
Map 4.4: Selected Districts for the Study

Belgaum District

Bagalkot District

Bijapur District

99
Map 4.5: Location of selected Sugar Factories for the study

- Margur
- Kundargi
- Hosur
- Sankonatti
- Raibag
- Khand.
- Saundatti
- Siddapur
- Balahongal
- Konnur
- Belatagewadi
- Kharapet
- Dandeli
- Kirigal
- Gangapura
- Konnur
- Kankuria
- Gaddige
- Varuna
- Madapura
- Hudi Bore
- Chanda Kavadi
- Koppa
- Kanchugaranahalli
- Timlapura
- Belagula
- Gaddige
- Madapura
- Terakamambi
- Chanda Kavadi
4.5 GROWTH OF SUGAR PRODUCTION IN INDIA

Production of sugar plays important role in the financial position of the sugar mills. India is the world’s largest producer of the sugar accounting for almost 1/5th of the global production. The sugar production is cyclical as it depends upon sugarcane production in the country. An attempt has been made to understand the production performance of sugar factories in India under different sectors is shown in Table 4.4.

<table>
<thead>
<tr>
<th>Year</th>
<th>Co-operative</th>
<th>Private</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003-04</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>(60.15)</td>
<td>(75.31)</td>
<td>(135.46)</td>
</tr>
<tr>
<td>2004-05</td>
<td>-0.22</td>
<td>6.73</td>
<td>-6.31</td>
</tr>
<tr>
<td></td>
<td>(46.53)</td>
<td>(80.38)</td>
<td>(126.91)</td>
</tr>
<tr>
<td>2005-06</td>
<td>77.82</td>
<td>36.80</td>
<td>51.81</td>
</tr>
<tr>
<td></td>
<td>(82.74)</td>
<td>(109.96)</td>
<td>(192.67)</td>
</tr>
<tr>
<td>2006-07</td>
<td>57.00</td>
<td>39.80</td>
<td>47.21</td>
</tr>
<tr>
<td></td>
<td>(129.91)</td>
<td>(153.73)</td>
<td>(283.64)</td>
</tr>
<tr>
<td>2007-08</td>
<td>-6.57</td>
<td>-7.50</td>
<td>-13.42</td>
</tr>
<tr>
<td></td>
<td>(121.37)</td>
<td>(142.2)</td>
<td>(245.57)</td>
</tr>
<tr>
<td>2008-09</td>
<td>-0.46</td>
<td>-46.07</td>
<td>-42.17</td>
</tr>
<tr>
<td></td>
<td>(65.32)</td>
<td>(76.68)</td>
<td>(142.00)</td>
</tr>
<tr>
<td>CAGR</td>
<td>1.43</td>
<td>0.30</td>
<td>0.80</td>
</tr>
</tbody>
</table>

Table 4.4 shows the production performance of sugar industry under different sectors in India during the period of 2003-04 to 2008-09. It shows that
during the period of 2005-06, co-operative witnessed reduction in production, whereas under private sector there was increase in production. But during 2008-09, there is a steep fall in production in both sectors due to inadequate supply of sugarcane to the factories.

From this discussion, it can be observed that there is growth trend in the sugar factories in India. But sugar production had drastically declined from 2003-04 to 2008-09. The failure of monsoon, non-remunerative and unfair statutory minimum prices of sugarcane from recent years influence the decline in sugarcane production. To boost the sugar industry in India, the central and state governments have to relax the controls on sugar industry and they have to fix a remunerative cane price to encourage the sugarcane cultivation. Sugar production in Karnataka is satisfactory amid failure of monsoon during last year.

### 4.6 GROWTH OF SUGAR FACTORIES IN KARNATAKA

Karnataka is rank third in sugar industry having 62 factories out of which 36 private sugar factories, 3 public companies and 23 co-operative factories. Karnataka state is famous for private sugar factories. Table 4.5 shows the total numbers of sugar factories in Karnataka during the study period are:

<table>
<thead>
<tr>
<th>Year</th>
<th>Public (%)</th>
<th>Private (%)</th>
<th>Co-operative (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003-04</td>
<td>7.31 (03)</td>
<td>46.34 (19)</td>
<td>46.34 (19)</td>
<td>100.00 (41)</td>
</tr>
<tr>
<td>2004-05</td>
<td>7.14 (03)</td>
<td>42.85 (18)</td>
<td>50.00 (21)</td>
<td>100.00 (42)</td>
</tr>
<tr>
<td>2005-06</td>
<td>7.14 (03)</td>
<td>42.85 (18)</td>
<td>50.00 (21)</td>
<td>100.00 (42)</td>
</tr>
<tr>
<td>2006-07</td>
<td>5.88 (03)</td>
<td>50.98 (26)</td>
<td>43.13 (22)</td>
<td>100.00 (51)</td>
</tr>
<tr>
<td>2007-08</td>
<td>5.88 (03)</td>
<td>49.01 (25)</td>
<td>45.09 (23)</td>
<td>100.00 (51)</td>
</tr>
<tr>
<td>2008-09</td>
<td>5.45 (03)</td>
<td>49.15 (29)</td>
<td>41.81 (23)</td>
<td>100.00 (55)</td>
</tr>
</tbody>
</table>

Note: The figures in the parenthesis are the actual data
Table 4.5 shows the total number sugar factories operating under different sugar firms like co-operative, private and public sector in Karnataka. The total sugar factories in operation during the crushing season 2003-04 were 41. Whereas the total sugar factories operating during the year 2008-09 were 55. There is an increasing trend in number of sugar factories during the study period. The percentage growth of public sector, private sector and co-operative sector sugar factories in India during 2003-04 were 7.31, 46.34 and 46.34 respectively. But during the year 2008-09 the percentage of growth rates of same were 5.45, 49.15 and 41.81 respectively. It shows that private sugar factories have growth over the public and co-operative sector.

4.7. DISTRIBUTION OF SUGAR FACTORIES IN NORTH KARNATAKA

The concentration of sugar factories in the state of Karnataka is mostly confined to north Karnataka. Important centers of production of sugar in north Karnataka are Belgaum, Bagalkot and Bijapur. Belgaum district ranks first in sugar factories having 17 factories, out of which 11 are co-operative and 06 are private factories accounts for 31%. Bagalkot district ranks second in sugar factories having 11 factories out of which 10 are private and 01 is co-operative sugar factories accounts for 20%. In Bijapur district, there are 03 factories out of which 01 is under co-operative sector and 02 are in private sector account for 5.45%. The present study is concentrated on selected sugar factories in Bagalkot, Bijapur and Belgaum districts of north Karnataka region. Table 4.6 shows the total number of sugar factories operating in north Karnataka region during the study period:
Table 4.6

<table>
<thead>
<tr>
<th>Name of District</th>
<th>Public</th>
<th>Private</th>
<th>Co-operative</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bellary</td>
<td>Nil</td>
<td>100.00</td>
<td>Nil</td>
<td>100.00</td>
</tr>
<tr>
<td>Belgaum</td>
<td>Nil</td>
<td>35.29</td>
<td>64.71 (11)</td>
<td>100.00</td>
</tr>
<tr>
<td>Bidar</td>
<td>Nil</td>
<td>25.00</td>
<td>75.00 (03)</td>
<td>100.00</td>
</tr>
<tr>
<td>Bagalkot</td>
<td>Nil</td>
<td>90.90 (10)</td>
<td>9.10 (01)</td>
<td>100.00</td>
</tr>
<tr>
<td>Bijapur</td>
<td>Nil</td>
<td>66.67 (02)</td>
<td>33.33 (01)</td>
<td>100.00</td>
</tr>
<tr>
<td>Haveri</td>
<td>Nil</td>
<td>Nil</td>
<td>100.00 (01)</td>
<td>100.00</td>
</tr>
<tr>
<td>Gulbarga</td>
<td>Nil</td>
<td>66.67 (02)</td>
<td>33.30 (01)</td>
<td>100.00</td>
</tr>
<tr>
<td>Uttar Kannada</td>
<td>Nil</td>
<td>100.00 (01)</td>
<td>Nil</td>
<td>100.00</td>
</tr>
<tr>
<td>Yadagir</td>
<td>Nil</td>
<td>Nil</td>
<td>100.00 (01)</td>
<td>100.00</td>
</tr>
<tr>
<td>Raichur</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
</tr>
<tr>
<td>Gadag</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
</tr>
<tr>
<td>Dharwad</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
</tr>
<tr>
<td>Koppal</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
</tr>
<tr>
<td>Total</td>
<td>Nil</td>
<td>23</td>
<td>19</td>
<td>42</td>
</tr>
</tbody>
</table>

Note: The figures in the parenthesis are actual data.

Table 4.6 shows the total number of sugar factories operating under different sugar firms like co-operative, private and public sector in northern part of Karnataka. It is seen that there are no public limited sugar factories in north Karnataka region. In north Karnataka, numbers of sugar factories under private sector are more than co-operative sector. In north Karnataka region, Belgaum district has got more sugar factories than in other districts. Belgaum district has got maximum co-operative sector sugar industries and where as Bagalkot district has got more number of private sugar factories. North Karnataka districts consisting of Belgaum, Bagalkot and Bijapur districts have got maximum number of sugar
factories than other districts of north Karnataka. Its share in total number sugar factories in north Karnataka is 75%.

4.8 PROFILE OF THE SAMPLE SUGAR FACTORIES

In the rapidly growing present age of science and technology, development has become a symbol of modernity and up to date ness in the field of social and economic change. Every organization today is in the process of development by expanding its capacity, adopting new methods and techniques. The process of development carries planned economic growth, mobilization and allocation of resources to increase the income both of the individual and of the nation. Development is a programme-oriented approach in an organization with the objective of mobilizing existing and new resources. Cultivation of skills is to achieve the developmental goals of the organization. The development also guides an organization towards the achievement of progressive economic and social goals. Development helps to bring new ideas and types of activities and methods for better performance of the work and achievement of the goals. It is an action oriented rather than structure oriented. It is directed towards the dynamics of an organization. Development is the main agency of socio-economic change. A change that requires not only the preparation and execution of long term plans of industrial and agricultural development but also the establishment of modern type of instructions, organization and skill. The profile of selected sugar industries consists of historical profile of sugar industries, manufacture of by products, socio-economic activities of concerned factories.

On this background, it will be appropriate to study the outline of socio-economic changes of sugar factories under study. In this chapter, an attempt has been made to analyze the development of mills towards origin and growth, performance, contribution of the mills to the area of operation in the form of irrigation facilities, agricultural development, modern cultivation and facilities.
like education, medical, recreational and so on. For the purpose of study, the following factories have been selected and the detail profiles of these sugar factories are given as under:

- The Ugar Sugar Works Ltd, Ugar Khurd. (USW)
- The Godavari Bio Refineries Ltd, Sameerwadi. (GBR)
- Shri Prabhulingeshwar Sugars & Chemicals Ltd, Siddapur (PSCL)
- The Nandi Sahakari Sakkari Karakhane Niyamit, Hosur (NSM)
- Sri Doodaganga Krishna.S.S.K. Niyamit, Chikodi (SDK)
- Ryatar Sahakari Sakkare Karkhane Niyamit, Timmapur (RSSK)

4.9 Profile of The Ugar Sugar Works Ltd, Ugar Khurd (USW)

![View of Ugar Sugar Works (Factory)](Photo 4.1 : View of The Ugar Sugar Works Ltd. Ugar Khurd (USW))
4.9.1 Growth

Mysore state came into existence in the year 1956 as per the decision of the central government in accordance with the recommendation of the state Reorganization Committee. In 1973, Mysore state is renamed as Karnataka state. In this state before 1947, there were only 4 sugar industries, amongst which Ugar Sugar Works Ltd. is one of them. Under the able guidance and kind patronage of the Maharaja of Sangli, a public limited company called “Ugar Sugar Works Limited” was floated on 11th September, 1939. This sugar factory was registered in Sangli district of Maharashtra state under companies act. This is located at village Ugar Khurd. Ugar Khurd is situated on the left bank of Krishna river in Athani taluka, Belgaum district in Karnataka state. Its initial authorized capital amount was Rs. 15 lakh of which share worth Rs. 10 lakh were issued at the time of establishment of the Ugar Sugar Works Ltd. Its initial crushing capacity was 500 TCD. The permission for the first expansion of capacity from 500 TCD to 800 TCD was obtained in the year 1954. It has expanded its crushing capacity from 1200 TCD to 3000 TCD in the 1996-97. Now it’s crushing capacity of 15000 TCD as on 2006-07, which is the maximum sugarcane crushing capacity as compared to the neighboring sugar industries. The various allied units of USW are discussed here under:

4.9.2 Distillery Unit

The distillery is an integral part of the sugar industry. The sugar industry has two distillery plants, one is of 45 KLPD and another is of 30 KLPD manufactures industrial alcohol like rectified spirit, potable alcohol and denatured spirit. The sale of potable alcohol in Karnataka has increased due to the supplies regulated by Karnataka State Beverages Corporation Ltd Bangalore and reduction in the duties by the state government. The sale of potable alcohol in Kerala through K.S and Kaycee distilleries is also satisfactory. SSP plant i.e. Zero
pollution Evaporator and dryer system for effluent treatment has started its functioning smoothly. Presently its capacity is 75 KLPD.

4.9.3 Co-generation Unit

This project is first of its kind in Karnataka state using non-conventional energy source i.e. Bagasse as fuel. It generates electricity to the tune of 862.62lakhkw of which exported 476.54lakhkw through Tata Power Trading Company by consuming 3.19lakh MT of Bagasse which consists of purchased quantity of 0.9lakh MT from neighboring sugar factories. The generation cost per unit of electricity has gone down in view of reduction in the cost of Bagasse.

4.9.4 Ethanol Project

This project is working smoothly and supplied 24.75lakh BL of ethanol to oil companies like Hindustan Petroleum Corporation Ltd, Bharat Petroleum Corporation Ltd and Indian Oil Corporation. However due to increase in the rectified spirit prices, the sugar industry has requested to increase in the ethanol prices, for which oil companies have not agreed and the government has finalized their problem and government is continuing the policy of mixing of 5% ethanol with petrol.

4.9.5 Jewargi Unit

This unit has started by beginning of season 2007-08. Its initial crushing capacity was 3500 TCD. Co-generation plant was started in the same year, using non-conventional energy source i.e. Bagasse as fuel. Their plant electricity generation was 16 mw. The unit exports 8 mw through Tata Power Trading Company.

4.9.6 Joint Venture Sadashiv Sugars Ltd

It is another plant of Ugar sugar works Ltd. It is established under joint venture of local people. This unit was started by beginning of season 2007-08
along with co-generation plant of 8 mw. This plant is also using non-conventional energy source i.e. Bagasse as fuel. This sugar mills initial crushing capacity was 2400 TCD. This unit is located at Sadashivnagar, Maharastra.

4.9.7 Packaging Unit

Considering the packaging need of 100% Eou, the company has decided to set up a joint venture packaging unit named as “Ugar Quality Packaging Pvt Ltd.”, at Ratnangiri with Sri Jitendra Joshi, who has got technical expertise in packaging industry and is already having a packaging unit at Ratnangiri styled as “Quality Screen”. This unit has started in 2007.

4.9.8 Export Oriented Unit

This is unit of sugar ships. It is another unit of Ugar Sugar Works Ltd. This unit has started its production from January 2007. This unit has exported 20165 boxes of sugar ships to M/s. Fragies (GMBH), Germany, with nearly Rs.24.77 lakh every year.

4.9.9 Bio-gas Co-generation Unit

The company’s 1 mw bio-gas power generation plant for utilizing biogas available from distillery effluent treatment plant jointly setup with Indian institute of science and national bio-energy board is running satisfactory.

4.9.10 Welfare Programmes

i) Dematerialization of Shares

The company has provided connectivity with NSDL and CDSL for dematerialization of its shares for trading in electronic form. The company has been allotted ISIN-NO-INEO71EO1023 for this purpose. So far 5.83crore shares have been dematerialized by the shareholders i.e.64.82% of total shareholding. As per SEBI requirement, a common agency is to be appointed for acting as Registrar and Share Transfer Agent for handling the work relating to physical and
dematerialized form of shares in this behalf. So company has appointed M/S. Big share services Pvt Ltd as the Registrar and Transfer Agent of the company with effect from 03rd July, 2007 as common agency to handle both physical and demat share work.

ii) Welfare Activities

The factory is looking after the welfare of its members and employees too, besides making whatever contribution it can to the society. It is seen that the overall contribution of USW Ltd, towards the members and society is satisfactory. Factory management has been successful enough in maintaining cordial relationship with the employees. There never has been any instance of conflict between the two. While the workers community carries most regard and respect for the management, management in turn care for them. The management has provided many facilities to the employees, a few importances of which are as below.

a) Educational Facilities

The management has no doubt understand the importance of education because many of the directors. In board the people who guide it and need it are all philanthropists and educational promoters. The factory has started a Kannada and English convent school, high school, pre-university Arts and Commerce college in the factory premises for the children of the workers and general public. Shirgaokar Vidyavihar has educational institutions with strength of 6000 students and 240 teaching and non-teaching staff. They provide value-based education.

b) Medical Facilities

The factory has established 30 bed hospitals. It provides general and specialized health care services for the employees and their families. It also
conducts health awareness programmes like pulse polio and AIDS prevention programmes. This hospital has held numerous medical camps in remote rural areas.

c) Other Facilities (HRD)

The factory provides continuous training and personal development programmes by providing regular training and all round exposure to the employees and staff. The factory has a well equipped township with recreation facilities such as club house, playground and so on.

d) Other Welfare Measures

The employees made a good familial life and also secure full economical support. The factory is paying its workers according to the norms fixed by the state government besides it has provided the following facilities.

- The factory has provided well built RCC quarters in the factory area.
- The factory is supplying cooking gas to workers.
- The factory has provided uniforms for certain category of workers.
- The factory has established big bazaar for the workers at concessional rates.
- The factory has established a consumer co-operative society, so as to enable its employees to get rations at a reasonable price.
- The factory has established co-operative credit society to secure the quick loans to workers.

4.9.11 Research and Development

The factory carries out research and development in sugarcane, process modifications in the sugar production. Quality and ethanol production improvement in technology, co-generation of power and bio-math from press
mud and zero effluent discharge system. Benefit derived as a result of the above efforts results in production improvement, cost reduction, product development and import substitution.

4.9.12 Irrigational Facilities

Irrigation is the heart beat of agriculture. Sugarcane needs more water than any other crops. This crop, which is not dependent only on rains, requires continuous irrigation. The factory has understood the importance of irrigation in sugarcane cultivation and has extended loans to the lift irrigation scheme which are working on co-operative basis. The river Krishana provides the natural irrigation facilities for the nearby sugarcane growers. The factory is trying its best to provide irrigation facilities to its members in an economical and practical way.

4.9.13 Performance of The Ugar Sugar Works Ltd, Ugar Khurd (USW)

### Table 4.7

Performance of the Ugar Sugar Works Ltd, (USW) 2003-04 to 2008-09

<table>
<thead>
<tr>
<th>Year</th>
<th>Cane Crushed (Lakh M.T)</th>
<th>Sugar Produced (Lakh/ Qtl.)</th>
<th>Sugar Recovery (%)</th>
<th>Molasses Produced (Lakh/ Qtl.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003-04</td>
<td>-- (8.37)</td>
<td>-- (8.48)</td>
<td>NA</td>
<td>-- (3.99)</td>
</tr>
<tr>
<td>2004-05</td>
<td>24.97 (10.46)</td>
<td>33.96 (11.36)</td>
<td>NA</td>
<td>10.85 (4.41)</td>
</tr>
<tr>
<td>2005-06</td>
<td>48.57 (15.54)</td>
<td>57.22 (17.86)</td>
<td>NA</td>
<td>49.89 (6.61)</td>
</tr>
<tr>
<td>2006-07</td>
<td>4.95 (16.31)</td>
<td>4.03 (18.58)</td>
<td>NA</td>
<td>6.96 (7.07)</td>
</tr>
<tr>
<td>2007-08</td>
<td>-3.99 (15.66)</td>
<td>-0.86 (18.42)</td>
<td>NA</td>
<td>-8.06 (6.50)</td>
</tr>
<tr>
<td>2008-09</td>
<td>-27.78 (11.31)</td>
<td>-31.00 (12.71)</td>
<td>NA</td>
<td>-26.46 (4.78)</td>
</tr>
<tr>
<td>Average</td>
<td>12.94</td>
<td>14.56</td>
<td>11.02</td>
<td>5.56</td>
</tr>
<tr>
<td>CAGR</td>
<td>5.15</td>
<td>6.98</td>
<td>NA</td>
<td>3.06</td>
</tr>
</tbody>
</table>

Note: The figures in the parentheses are the actual data
NA: Not Applicable
CAGR: Compound Annual Growth Rate
On the basis of above table, the following observations can be made:

1) The quantity of cane crushed rose from 8.37 lakh M.T in 2003-04 to 11.31 lakh M.T in 2008-09. Its average cane crushing was 12.94 lakh M.T. It rose between 8.37 lakh M.T in 2003-04 to 16.31 M.T in 2006-07. The CAGR of cane crushed was 5.15% over the study period. It indicates the progress in cane crushed during the study period because of expansion of crushing capacity of sugar factory.

2) The sugar production increased from 8.48 lakh Qtl. in 2003-04 to 12.71 lakh Qtl. in 2008-09. Its average annual sugar production was 14.56 lakh Qtl. It shows the fluctuation in sugar production during the period under study. The CAGR of sugar production was 6.98 % during the study period. It is observed that there is a stable sugar production during the study period because of sufficient availability of sugarcane.

3) The recovery percentage of sugar from sugarcane increased from 10.15 percent in 2003-04 to 10.96 percent in 2008-09. It rose between 10.15 percent in 2003-04 and 11.50 percent in 2005-06. On an average the sugar recovery percentage was satisfactory throughout the study period. It was also highest during 2007-08 which shows the efficiency of the factory in recovery of the sugar constantly over the study period. It indicates the efficiency of this factory in recovery of the sugar constantly during study period.

4) The quantity of molasses produced rose from 3.99 lakh Qtl in 2003-04 to 4.78 lakh Qtl in 2008-09. Its average molasses production was 5.56 lakh Qtl. There is a fluctuation in molasses production during the study period. The CAGR of molasses production was 3.06% over the study period due to progress in cane crushing.
Figure 4.1: Performance of Ugar Sugar Works Ltd, (USW)

Source: Table 4.7

Figure 4.2: Compound Annual Growth Rate of Performance of Ugar Sugar Works Ltd, (USW)

Source: Table 4.7
4.10 Profile of The Godavari Bio Refineries Ltd, Sameerwadi (GBR)

4.10.1 Growth

The Godavari Sugar Mill Ltd is a limited company belonging to Somaiya group. Its founder director Padmabhushan Late Sri K.J.Somaiya incorporated it in the year 1939. It has been demerged to Godavari Bio refineries Ltd. (GBR) as per high court order dated 20-03-2009. It has been contributing to the industrial development of India for more than six decades. Under the dynamic leadership of Dr. Sameer Somaiya and his professional team, the company with two sugar mills is fully integrated and is among the top 10 sugar complexes out of 500 sugar mills in India. The company is one of the largest producers of alcohol and a pioneer in manufacture of alcohol based chemicals in India.

Presently the company operates 2 units of sugar mills in Karnataka and Maharashtra states i.e. at Sameerwadi, near Mahalingpur, Tq.Mudhol, Dist.Bagalkot, Karnataka state and at Pratapgad (on lease) Kudal, Songaon-Karandoshi, Tq.Jawali, Dist.Satara, Maharashtra state.
4.10.2 Sugar Unit at Sameerwadi

The initial crushing capacity of this unit when it started in the year 1973 was 1250 TCD. The increase in irrigational facilities started to attract more and more farmers towards sugarcane cultivation. The increase in supply of sugarcane necessitated the mill to increase its crushing capacity. This mill started crushing 3500 TCD from the year 1984-85. Subsequently during 1994-95 it raised its capacity to 8500 TCD. The managing committee contemplated over the need for further expansion, as a result at present the mill has increased its capacity to 15000 TCD. This gap has been done with a view to meet out the demand of bagassa and raw materials for the distillery and power generating units. The various allied units of GBR are:

4.10.3 Distillery Unit

The distillery is an integral part of the sugar factory. This unit has been the pioneer in the manufacturing of industrial alcohol, acetic acid, and ethyl acetate. This unit is India’s largest manufacture of paraldehyde, crotonaldehyde, crotonic acid, sorbic acid and potassium sorbate. These products were first manufactured in India using indigenously developed technology by this unit. This unit has increased ethanol capacity from 60,000 lpd to 2,00,000 lpd. The unit’s total fermentation capacity increased from 50 million liters per year to 95 million liter per year. Ethyl acetate capacity increased to 75,000 tons per year making it among the top 10 producers in the world.

4.10.4 Power Generating Unit

In this unit 24 mw cogen facility is created in the first phase during the year 2002. This unit is based on multi-fuel boiler which burns coal in times of biomass shortages. GBR has agreed to supply 16 mw of electricity generated to
Karnataka Electricity Transmission Ltd on contract basis. The mill plans to increase its cogeneration capacity to 64 mw from the existing 24 mw.

4.10.5 Organic Fertilizer Unit

This mill manufactures “Bhumi labh”, a by-product of sugar processing unit and is manufactured out of the press mad, an organic fertilizer certified by “Ecocert International, France”. Bhumilabh ensures higher land fertility, greater yield and reduces the need for chemical fertilizers.

4.10.6 Welfare Programmes

The managing committee has been showing a lot of concern for its sugarcane supplier’s towards their welfare. The following are some notable programmes:

i) Loans to Sugarcane Suppliers

The mill has extended loans to the turn of Rs.1.76crores to its 356 members of sugarcane suppliers for the purchase of seeds and pesticides. This assistance has resulted in increase in the cane growing area and the production of sugarcane as well.

ii) Agricultural Research

The mill has started a government recognized research institute known as the ‘K.J.Somaiya Institute of Applied Agricultural Research’ (KIAAR), which is engaged in extensive research in sugar to identify and promote new sugarcane varieties.

iii) Educational Assistance

The mill has been extending financial assistance to the needy talented children of the members of sugarcane suppliers, its workers and outsiders. The mill is also running a residential convent state government English medium
school on its own for the children of its members of sugarcane suppliers and workers within factory premises. It has also got aided Kannada medium primary school and high school in the mill area. It provides value based education to the children of its workers and local inhabitants.

iv) Health Facilities

The mill is committed to offer general and specialized healthcare services. The K.J.Somaiya hospital is a 100 bed hospital offering free and quality services. The mill has implemented the insurance scheme for protection of the health of its employees. Under their scheme, 68 employees have received assistance for the surgical operations and 273 employees have received help to get treatment for their incurable diseases. The Janata Insurance plan has been introduced for the employees. On the event of death of any employees his successors will get Rs50,000 so far. 38 employees of the deceased persons have been extended with this monetary help.

v) Labour Welfare Activities

The factory management has been successful enough in maintaining cordial relationship with the workers. Workers union has been established by the factory during 1976. It is functioning very well. There never have been any instances of conflict between management and union. While the workers community carry regard and respect for the management, the management in turn care for them. The management has provided many facilities to the workers, a few important of which are as below.

• It provides financial assistance to the workers children for their higher education.
• It provides medical facilities for the workers and their families.
• It has provided quarters for workers in the factory area.
• It has established a consumer’s co-operative society, so as to enable its workers to get ration at concessional rates.
• It has provided bonus facility for workers.
• Certain category of workers has been provided with uniform.
• It has provided vehicle facility to workers children for education from factory area to near school.
• It has established worker’s co-operative credit society in factory area to avail quick and easy loans to workers.
• It has also constructed community hall for recreational facilities to the workers and their family members.
• It has provided Union Bank of India ATM facility to get money easily at all times within the factory premises.

4.10.7 Performance of The Godavari Bio-refineries Ltd, Sameerwadi(GBR)

Table 4.8
Performance of the Godavari Bio-refineries Ltd, (GBR) 2003-04 to 2008-09

<table>
<thead>
<tr>
<th>Year</th>
<th>Cane Crushed (Lakh M.T)</th>
<th>Sugar Produced (Lakh/ Qtl.)</th>
<th>Sugar Recovery (%)</th>
<th>Molasses Produced (Lakh/ Qtl.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003-04</td>
<td>--</td>
<td>--</td>
<td>NA</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>(12.08)</td>
<td>(12.96)</td>
<td>10.71</td>
<td>(5.18)</td>
</tr>
<tr>
<td>2004-05</td>
<td>16.56</td>
<td>27.24</td>
<td>NA</td>
<td>18.4</td>
</tr>
<tr>
<td></td>
<td>(14.08)</td>
<td>(16.49)</td>
<td>10.42</td>
<td>(6.13)</td>
</tr>
<tr>
<td>2005-06</td>
<td>16.41</td>
<td>29.47</td>
<td>NA</td>
<td>6.04</td>
</tr>
<tr>
<td></td>
<td>(16.39)</td>
<td>(21.35)</td>
<td>11.65</td>
<td>(6.50)</td>
</tr>
<tr>
<td>2006-07</td>
<td>-15.13</td>
<td>-22.95</td>
<td>NA</td>
<td>-8.46</td>
</tr>
<tr>
<td></td>
<td>(13.91)</td>
<td>(16.45)</td>
<td>11.07</td>
<td>(5.95)</td>
</tr>
<tr>
<td>2007-08</td>
<td>26.96</td>
<td>29.12</td>
<td>NA</td>
<td>-56.6</td>
</tr>
<tr>
<td></td>
<td>(17.66)</td>
<td>(21.24)</td>
<td>11.09</td>
<td>(2.25)</td>
</tr>
<tr>
<td>2008-09</td>
<td>-22.99</td>
<td>-30.08</td>
<td>NA</td>
<td>-33.67</td>
</tr>
<tr>
<td></td>
<td>(13.06)</td>
<td>(14.85)</td>
<td>10.87</td>
<td>(5.97)</td>
</tr>
<tr>
<td>Average</td>
<td>14.06</td>
<td>17.22</td>
<td>11.02</td>
<td>3.96</td>
</tr>
<tr>
<td>CAGR</td>
<td>1.99</td>
<td>2.29</td>
<td>NA</td>
<td>2.39</td>
</tr>
</tbody>
</table>

Note: The figures in the parentheses are the actual data
NA: Not Applicable
CAGR: Compound Annual Growth Rate
On the basis of above Table 4.8, the following observations can be made.

1. The quantity of cane crushed by GBR Ltd., increased from 12.08 lakh M.T during 2003-04 to 13.60 lakh M.T during the 2008-09. Its average cane crushing was 14.60 lakh M.T during the same period. It ranged between 12.08 lakh M.T in 2003-04 and 17.66 lakh M.T in 2007-08. The CAGR of cane crushed was 1.99% over the study period. It indicates that there is no sufficient supply of sugarcane to the factory.

2. The sugar production of GBR Ltd increased from 12.96 lakh Qtl in 2003-04 to 14.85 lakh Qtl in 2008-09. Its sugar production ranged between 12.96 lakh Qtl in 2003-04 and 21.35 lakh Qtl in 2005-06, with an average sugar production of 17.22 lakh Qtl. The CAGR of sugar production was 2.29% during the study period. It shows that there is no stable sugar production for want of sufficient sugarcane to the factory.

3. It is observed that the recovery percentage of sugar from sugarcane ranged between 10.42% in 2004-05 and 11.90% in 2007-08. The average sugar recovery was 11.02% during the study period. The sugar recovery percentage of the factory was satisfactory throughout the study period. The highest recovery of sugar indicates the technical efficiency of the factory in recovering the sugar constantly over the study period.

4. It is observed that the molasses production of factory ranged from 5.18 lakh Qtl during 2003-04 to 5.97 lakh Qtl during 2008-09. Its average molasses production was 3.96 lakh Qtl. The CAGR of molasses production was 2.39% over the study period.
Figure 4.3: Performance of Godavari Biorefineries Ltd, GBR

![Performance of GBR Graph](image)

Source: Table 4.8

Figure 4.4: Compound Annual Growth rate of performance of Godavari Bio-refineries Ltd, GBR

![CAGR Bars](image)

Source: Table 4.8
4.11 Profile of Shri Prabhulingeshwar Sugars & Chemicals Ltd, Siddapur (PSCL)

4.11.1 Growth

It was established in Siddapur, Jamkhandi taluk of Bagalkot district under private sector and commenced its crushing during 1999-2000. The company has initial crushing capacity of 3500 TCD along with co-generation power plant of 17.5 mw. The company has invested Rs.87.15 crores to complete the project. The project cost has increased from 87.15 crore to Rs.108.10 crore. The company has successfully launched white sugar under the name “Prabhu Sugar” in the market during the year 2000-01.

The company has exported 102898 quintals of sugar in 2003-04. The company has exported 435 quintals in 2005-06 to Yemen, Afghanistan, Bangladesh, Srilanka, USA and Dubai. The company ranked first in respect of export of sugar accounting for 16 percent of the total export of sugar produced in Karnataka. South Indian Sugarcane and Sugar Technologists Association (SSTA) Chennai has awarded “SVP memorial trophy to the company as the best performing sugar factory in Karnataka”. Its allied units are given below.
4.11.2 Distillery Unit

As an allied concern of the main plant, a distillery unit was established in 2003-04. This plant was constructed at a cost of Rs.140.57 lakh with an initial capacity of 16200 litre of rectified spirit per day. Now its annual installed capacity is 60,000 lakh litre.

4.11.3 Co-generation Unit

This plant is producing 20,000 to 24,000 units per day during working season of which 8000 units is used for distillery unit itself and remaining 16000 units is supplied to Karnataka Electricity Board on contract basis. The company is regularly generating electricity and exporting it to the KPTCL.

4.11.4 Economic Measures

In order to maintain economic security and better standard of living to the workers of the factory, a number of measures have been provided like housing facilities for workers, power, water supply, co-operative society, consumer society etc.

4.11.5 Labour Welfare Activities

The factory management believes that “Profit is not only the value among others in life”. As such the management from this angle has been undertaking multifarious welfare activities for working class management and workers, the cardinal principle of good management and progressive growth of the factory. The main activities of this factory are manifold like educational, medical, social, economic, cultural and recreational and so on.

4.11.6 Educational Facilities

It has been realized that “education is the important factor in achieving rapid economic development, Social justice and education opportunity”. True to its belief, the management of the factory felt the need for the some sort of arrangement for imparting education to the children residing in factory colony and has planned to start CBSE English medium school within factory area.
From the above table, the following observations can be ascertained.

1) The quality of cane crushed by this factory increased from 3.66 lakh M.T in 2003-04 to 5.74 lakh M.T in 2008-09. Its average cane crushing was 6.62 lakh M.T during the same period. It ranged between 3.66 lakh M.T in 2003-04 to 9.63 lakh M.T in 2007-08. The CAGR of cane crushed was 7.79% during the study period. It indicates that there is much progress in cane crushing because of full utilization of cane crushing capacity.

2) Sugar production increased from 3.88 lakh Qtl in 2003-04 to 6.07 lakh Qtl in 2008-09. Its sugar production ranged between 3.88 in 2003-04 and 11.86 lakh Qtl in 2007-08, with an average sugar production of 7.58 lakh Qtl. The CAGR of sugar production was 7.74% during the study period. It shows that there is stable of production of sugar over the study period of much availability of sugarcane.

3) The recovery percentage of sugar from sugarcane ranged between 10.17 percent in 2004-05 to 12.35 percent in 2007-08. On an average, the sugar
recovery percentage of 11.17 percent was satisfactory throughout the study period. The average sugar recovery was also the highest indicating the technical efficiency of the factory in recovering the sugar constantly over the study period.

4) The molasses production increased from 1.34 lakh Qtl in 2003-04 to 2.48 lakh Qtl in 2008-09. Its average molasses production is 2.55 lakh Qtl. The CAGR of molasses production was 10.80 % over the study period. It indicates that there is much progress in molasses production due to higher crushing capacity.
4.12 Profile of The Nandi Sahakari Sakkare Karakhane Ltd, Hosur (NSM)

Photo 4.4 : View of The Nandi Sahakari Sakkari Karakhane Niyamit. Hosur (NSM)

4.12.1 Growth

The Nandi Sahakari Sakkare Karkhane Niyamit, Krishnanagar, Hosur, Dist. Bijapur has started under Karnataka Co-operative Societies Act, 1959 on 5-5-1982. The sugar mill started its cane crushing & sugar production activity from 1992-93 crushing season with a crushing capacity of 2500 M.T. per day. The increase in irrigation facilities started to attract more and more farmers towards sugarcane cultivation. The increase in supply of sugarcane necessitated the factory to increase its crushing capacity. To increase the capacity further there was a need of 47 crore. It was difficult to raise the capital. However Dr. M.R. Desai the chairman succeeded in raising capital and the factory started crushing 3500 TCD in the year 1994-95. The managing committee contemplated over the need for further expansion, along with co-generation plant. There is a need of another Rs.9.825 crore and internal capital through share capital of Rs.18.82 crore and invested the working capital of Rs.20.85 crore. During the year 2011, crushing capacity expanded to 5000 TCD along with Bagasse based co-generation of 18.1 MW. The factory manufactures the best quality sugar and is also generating power and exporting 12 MW to KPTCL.
During 2008-09 crushing season, the factory had crushed 4,01,959 MTs of sugarcane and produced 4,29,941 Qtls. of sugar with a recovery of 10.64%. The factory achieved highest sugar recovery during the years 1996-97, 1997-08 and 1998-99 in the entire “SOUTH INDIA” and secured the “Shri S.V.Partha Sarthy Award” for highest recovery from SISSTA for the years 1996-97 and 1998-99. The “Best Co-operative Sugar Factory Award” was given to Nandi SSK Niyamit for the year 1998-99 by the Karnataka State Federation of Co-operative Sugar Factories Limited, Bangalore, on November 14, 1999.

The factory received the “Technical Efficiency Award” for the year 1998-99 and “Financial Management Award” for the year 2001-02 from National Federation of Co-operative Sugar Factories Ltd., New Delhi. The factory bagged the “Low Conversion Cost Award” on Production of Sugar for the year 2000-01, and Best Award for “Sugarcane Research & Development Activities” for the year 2001-02 form the Karnataka State Federation of Co-operative Sugar Factories Ltd., Bangalore on December 23, 2003 for overall development and administration of the factory. The managing director was also awarded “The Best Administrator Award” along with cash prize of Rs.10,000 by the Karnataka State Federation of Co-operative Sugar Factories Ltd., Bangalore on December 23, 2003.

The Factory received “S.V.Partha Sarthy Award” for “Best Cane Development” from SISSTA and “Best Co-operative Society” from state co-operative federation Bangalore for the year 2005-06. The Karnataka State Co-operative Marketing Federation Ltd., Bangalore gave the “Best Co-operative Institution” award to the factory on July 28, 2007 during the Co-operative Centenary Programme held at Mysore. The factory has obtained an ISO 9001/2000 & ISO 14001/2004 certification from NQA global assurance, U.K.
The factory has been continuously given “A” Class Audit Rating. The factory aims at economic & social upliftment of its members and sugarcane growers.

4.12.2 Co-generation

This unit has started its functioning in 2006 using non-conventional energy source i.e. Bagasse as fuel. The present production capacity of this unit is 18 mw. It has supplied 12 mw of electricity to Karnataka Vidyut Prasarana Nigam. Remaining 6 mw is used for internal purpose. It earned Rs.13.58crore to the factory for every year from co-generation.

4.12.3 Distillery Unit

At the beginning of season 2011-2012, the factory has raised its capacity to 5500 TCD with a view to meet out the demand of raw materials for the distillery. The managing committee and well-wisher of the factory and the farmers thought of establishing distillery unit to make the factory financially more stable. The annual general body meeting unanimously gave its approval for the said project and now it expects to commission the distillery plant soon.

4.12.4 Welfare Programmes for the Members

The managing committee has been showing a lot of concern for its member’s welfare. The following are some notable ones.

a) Loans to Members

The factory has extended loans to the tune of Rs.2.56crores to its members for irrigation from wells just at the rate of interest of Rs.6% p.a. This assistance has resulted in increase in the cane growing area and the production of sugar cane as well. Further a loan of Rs.112.50lakhs has been given for purchasing of seeds, pesticides and fertilizer.
b) Health Facilities

The factory has implemented the insurance scheme for protection of the health of its members at a cost of Rs.13.23 lakhs. Under this scheme, 98 people have received assistant for the surgical operations and 593 people have received help to get treatment for their incurable diseases. On the event of death of any member, his successors will get Rs.25000. Till 2008-09, 38 farmers of the deceased persons have extended with this monetary help.

c) Educational Facilities

The factory is running a residential convent school on its own for children of its members and workers. It has also started CBSE school in the factory area during the year 2011-12. The factory has been extending financial assistance to the needy talented children of the members and workers for their higher education.

d) Social Work

The factory has been undertaking the repairs and development of the roads in its area of operation so as to enable the smooth transportation of sugarcane to factory and also for the general public. It has also constructed a community hall with a cost of Rs.45 lakh and provides it for the functions of members and workers at concessional rate.

4.12.5 Establishment of Research Centre

A research centre has been established at Hosur village of Bijapur taluka. The centre takes up the following works.

- Soil testing
- Improving the quality of sugarcane seeds
- Training and providing information to the members about the us of proper irrigation methods, organic fertilizers and pesticides etc.
4.12.6 Worker Welfare Facilities

The factory is providing the following facilities to its workers for their workers:

- The workers have been provided quarters at concessional rates by the factory.
- The factory has established a co-operative credit society so as to provide loans to workers at the rate of 6% per annum.
- The factory has established a consumer’s co-operative society, so as to enable its workers to get rations at a reasonable price.

4.12.7 Performance of The Nandi Sahakari Sakkare Karkhane Niyamit (NSM)

Table 4.10

<table>
<thead>
<tr>
<th>Year</th>
<th>Cane Crushed (Lakh M.T)</th>
<th>Sugar Produced (Lakh/ Qtl.)</th>
<th>Sugar Recovery (%)</th>
<th>Molasses Produced (Lakh/ Qtl.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003-04</td>
<td>--</td>
<td>(3.66)</td>
<td>NA</td>
<td>--</td>
</tr>
<tr>
<td>2004-05</td>
<td>2.73</td>
<td>(3.76)</td>
<td>NA</td>
<td>-20.98</td>
</tr>
<tr>
<td>2005-06</td>
<td>41.49</td>
<td>(5.32)</td>
<td>NA</td>
<td>37.65</td>
</tr>
<tr>
<td>2006-07</td>
<td>45.86</td>
<td>(7.76)</td>
<td>NA</td>
<td>75.34</td>
</tr>
<tr>
<td>2007-08</td>
<td>-11.34</td>
<td>(6.88)</td>
<td>NA</td>
<td>-24.30</td>
</tr>
<tr>
<td>2008-09</td>
<td>-41.86</td>
<td>(4.00)</td>
<td>NA</td>
<td>-31.70</td>
</tr>
<tr>
<td>Average</td>
<td>5.23</td>
<td>6.01</td>
<td>11.39</td>
<td>2.12</td>
</tr>
<tr>
<td>CAGR</td>
<td>1.49</td>
<td>0.40</td>
<td>NA</td>
<td>1.56</td>
</tr>
</tbody>
</table>

Note: The figures in the parentheses are the actual data.
NA: Not Applicable
CAGR: Compound Annual Growth Rate

On the basis of the above table, the following observations can be made:

1. The quantity of cane crushed has increased from 3.66 lakh M.T in 2003-04 to 4.00 lakh M.T in 2008-09. Its average cane crushing was 5.23 lakh M.T.
during the study period. The CAGR of cane crushed was 1.49% over the study period. It shows that there is no much progress in cane crushed for want of sufficient supply of sugarcane.

2. The production of sugar has increased from 4.15 lakh Qtl in 2003-04 to 4.25 lakh Qtl in 2008-09. Its sugar production raised between 4.15 lakh Qtl in 2003-04 and 8.81 lakh Qtl in 2006-07 with an average production was 6.01 lakh Qtl. The CAGR of sugar production was 0.40% during the study period. It shows there is no stable sugar production because of insufficient availability of sugarcane.

3. The recovery percentage of sugar from sugarcane raised between 10.65 percent in 2008-09 and 12.28 percent in 2007-08. The recovery percentage of sugar from sugarcane has decreased from 11.30 percent in 2003-04 to 10.65 percent in 2008-09. On an average the sugar recovery percentage was 11.39 percent which was satisfactory during the period under study. The average recovery was also the highest indicating the technical efficiency of this factory in recovering the sugar constantly over the study period. It indicates that there is no efficiency of this factory in recovery of the sugar during the study period.

4. The molasses production has increased from 2.05 lakh Qtl in 2003-04 to 2.93 lakh Qtl in 2007-08. Its average molasses production was 2.12 lakh Qtl during the study period. The CAGR of molasses production was 1.56% during the study period. There is no such progress in molasses production during the study period for lack of sugar production.
Source: Table 4.10

Figure 4.7: Performance of Nandi S.S.K Niyamit (NSM)

Source: Table 4.10

Figure 4.8 Compound Annual Growth rate of performance of Nandi S.S.K Niyamit (NSM)

Source: Table 4.10
4.13 Profile of Sri Doodaganga Krishna.S.S.K. Niyamit, Chikodi (SDK)

![Photo 4.5: View of Sri Doodaganga Krishna.S.S.K. Niyamit, Chikodi (SDK)](image)

4.13.1 Growth

The initial crushing capacity of this sugar factory when it started in the year 1973 was 1250 TCD. The increase in supply of sugarcane necessitated the mill to increase its crushing capacity. To increase the capacity further there was a need of Rs.27crore. It was difficult to raise the capital. However, Shri Prabhakar Kore, the promoter and M.P succeeded in raising the capital and the mill started crushing 3500 TCD in 1984-85. Subsequently, during 1994-95 it raised its capacity to 4250 TCD. At present the mill has increased its capacity to 5500 TCD. This has been done with to meet out the demand of bagassa and raw materials for the distillery and co-generation units.

4.13.2 Distillery Unit

The increasing demands of the growers for higher rate for sugarcane, increases the cost of production. Shri Prabhakar Kore, MP, Director and well wisher of the factory and the shareholders thought of establishing distillery unit to make the factory financially more stable. The annual general body meeting unanimously gave its approval for this project. The cost of the project was Rs.95crores. A loan of Rs.69.5crores was secured from the South Canara Central Co-Op Bank Ltd. Kolhapur. The remaining amount was mobilized from
the factory funds. The unit started working on 21-10-2002. It is producing high quality liquor. Its capacity of production of liquor is 30 KLPD.

4.13.3 Power Generating Unit

It is another unit of factory. The cost of the unit was Rs.109.54 crores. A loan of Rs.98.92 crore was secured from HUDCO Bangalore and Rs.10.62 crores were secured as loan from the sugar Development Board of Central Government, with an agreement to supply 16 mw of electricity generated to the chikkodi grid of KPTCL Ltd. The unit started working from 25-03-2004. It has been supplying electricity to the Chikkodi grid as per the agreement. It has supplied 1072 lacks of units of electricity to Karnataka Vidyut Prasarana Nigam. The present production capacity of the unit is 20mw per day.

4.13.4 Welfare Programmes for the Members

i) Loans to Members

The factory has extended loans of Rs.1.56 crores to its 256 members for facilitating irrigation from wells just at the interest of 6%. As a result, 7202 acres of land has come under irrigation. In the second phase, the factory has provided loans to 38 irrigation schemes to the tone of Rs.2.67 crores. Further a loan of Rs.72.90 lakh has been given to purchase of seeds, pesticides and construction of gobar gas plants. This assistance has resulted in increase in the cane growing area and the production of sugar cane as well.

ii) Health Facilities

The factory has implemented the ‘Arogya Vima Yojana’, the insurance scheme for protection of the health of its members at a cost of Rs.13.23 lakhs. Under this scheme 52 people have received assistance for the surgical operations and 973 people have received help to get treatment for their incurable diseases. The Janata Personal Accident Insurance Plan has been introduced for the members on the event of death of any member, his successors will get Rs.50,000. So for 27 farmers of the deceased persons have been extended with this monetary assistance.
iii) Educational Facilities

In collaboration with the prestigious KLE society, Belagavi, the factory has been extending financial assistance to the needy talented children of the members. The factory is also running a residential English medium convent school on its own for the children of its members and workers. It has also planned to start a Kannada medium government primary school and high school in the factory area.

iv) Social Work

The factory has been undertaking the repairs and development of the roads in its area of operation, so as to enable smooth transportation of sugar cane to factory and also for the general public. It has also constructed a community hall at a cost of Rs.30lakh and provides it for the functions like marriages and other recreational activities. The concern of the managing committee towards the members has resulted in building up a cordial relationship between the members and management.

4.13.5 Establishment of Research Centre

A research centre has been established at Ankali village of Chikkodi taluka by the factory. It has extended assistance of Rs.10lakhs for establishing this centre. The centre takes up the following works.

- Soil testing
- Improving the quality of sugarcane seeds
- Training and providing information to the members about use of proper irrigation methods, use of organic fertile, pesticides and also about raising of fruit, vegetable and horticulture crops.

4.13.6 Labour Welfare Activities

Only earning profit is not the goal of any co-operative institution. It has to look after the welfare of its workers. It is providing the following facilities.

- The workers have been provided with well built RCC quarters in the factory area.
• The workers are being supplied with cooking gas.
• It provides financial assistance to the worker’s children for their higher education.
• It has established a health care centre for the workers and their families.
• It has established a consumer co-operative society, so as to enable its workers to get their ration at a reasonable price.
• It conducts health awareness programmes like pulse polio programme and AIDS prevention programme for the workers and their family members.
• It conducts health camps such as eye testing, blood donation, dental camps etc.

All the above points highlight the concern of factory towards the welfare of the workers.

4.13.7 Performance of Shree Doodhaganga Krishna Sahakari Sakkare Karkhane Niyamit, Chikkodi (SDK)

Table 4.11
Performance of Shree Doodhaganga Krishna S.S.K Niyamit, (SDK) 2003-04 to 2008-09

<table>
<thead>
<tr>
<th>Year</th>
<th>Cane Crushed (Lakh M.T)</th>
<th>Sugar Produced (Lakh/ Qtl.)</th>
<th>Sugar Recovery (%)</th>
<th>Molasses Produced (Lakh/ Qtl.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003-04</td>
<td>--</td>
<td>--</td>
<td>NA</td>
<td>--</td>
</tr>
<tr>
<td>2004-05</td>
<td>(3.95)</td>
<td>(4.14)</td>
<td>10.20</td>
<td>1.52</td>
</tr>
<tr>
<td>2005-06</td>
<td>(4.94)</td>
<td>(5.77)</td>
<td>NA</td>
<td>30.26</td>
</tr>
<tr>
<td>2006-07</td>
<td>(8.11)</td>
<td>(8.31)</td>
<td>10.81</td>
<td>(1.98)</td>
</tr>
<tr>
<td>2007-08</td>
<td>(9.3)</td>
<td>(10.86)</td>
<td>NA</td>
<td>40.40</td>
</tr>
<tr>
<td>2008-09</td>
<td>(7.85)</td>
<td>(9.21)</td>
<td>11.50</td>
<td>(2.78)</td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td>4.08</td>
<td>7.50</td>
<td>2.63</td>
</tr>
<tr>
<td>CAGR</td>
<td></td>
<td>7.31</td>
<td>8.46</td>
<td>8.06</td>
</tr>
</tbody>
</table>

Note: The figures in the parentheses are the actual data
NA: Not Applicable
Source: Sugar India Year Books 2007 to 2010 : 201- 203
CAGR: Compound Annual Growth Rate
The following observations can be ascertained from the above table

1. The cane crushed has increased from 3.95 lakh M.T in 2003-04 to 6.03 lakh M.T in 2008-09. Its average cane crushing was 6.48 lakh M.T during the period under study. It ranged between 3.95 lakh M.T in 2003-04 and 9.34 lakh M.T in 2006-07. The CAGR of cane crushed was 7.31% over the study period. It indicates that there is much progress in cane crushed over the study period because of full utilization of crushing capacity.

2. The sugar production increased from 4.14 lakh Qtl. in 2003-04 to 6.74 lakh Qtl in 2008-09. Its average sugar production was 7.50 lakh Qtl. The CAGR of sugar production was 8.46% over the study period. It shows that there is stable production of sugar during the study period because of sufficient availability of sugarcane.

3. The recovery percentage of sugar from sugarcane has increased from 10.20 percent in 2003-04 to 11.16 percent in 2008-09. Its average sugar recovery percentage was 11.18%. On an average the sugar recovery percentage was satisfactory during the period. It ranked second in recovery percentage of sugar in Karnataka during 2005-06.

4. It is observed that the molasses production rose from 1.52 lakh Qtl. in 2003-04 to 2.42 lakh Qtl in 2008-09. Its average molasses production was 2.63 lakh Qtl. The CAGR of molasses production was 8.06% over the study period. There is progress in molasses production due to sufficient sugar production during the study period.
Figure 4.9: Performance of Shri. Doodhaganga Krishna S.S.KNiyamit (SDK)

Source: Table 4.11

Figure 4.10: Compound Annual Growth rate of performance of Shri. Doodhaganga Krishna S.S.KNiyamit (SDK)

Source: Table 4.11
4.14 Profile of Ryatar Sahakari Sakkare Karkhane Niyami, Timmapur (RSSK)

4.14.1 Growth

It was registered on 29-7-1982 under Karnataka Co-operative Societies Act, 1959 and got license from the government of Karnataka in the year 1994. The plant has initial crushing capacity of 2500 TCD. The plant was established at Rannanagar, Timmapur in Mudhol taluka, Bagalkot district under co-operative sector and started its first crushing on 09-05-1999. It has extended its crushing capacity to 3500 TCD during the year 2005-06 and later on to 5000 TCD during the year 2009-10. The plant has a total investment of Rs.70,45 crores.

4.14.2 Co-generation Power Plant

This plant was established in the year 2005-06 with a capacity of 11mw. It supplies 05 mw of electricity to Karnataka Vidyut Prasarana Nigam. Remaining 06 mw is used for internal purpose. It earned Rs.186.56 lakhs every year.
4.14.3 Other Activities

The factory has provided good quality of sugar seeds and fertilizer for the sugarcane growers at the concessional rate.

4.14.4 Welfare Activities

For the well being of the sugarcane growers and workers, ‘Rait Bhavan’ has been constructed for recreational activities with a cost of Rs. 25 lakhs in the factory area.

4.14.5 Performance of The Ryatar Sahakari Sakkare Karkhane Niyamit (RSSK)

Table 4.12

Performance of the Ryatar Sahakari Sakkare Karkhane Niyamit (RSSK), 2003-04 to 2008-09

<table>
<thead>
<tr>
<th>Year</th>
<th>Cane Crushed (Lakh M.T)</th>
<th>Sugar Produced (Lakh/ Qtl.)</th>
<th>Sugar Recovery (%)</th>
<th>Molasses Produced (Lakh/ Qtl.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003-04</td>
<td>(1.15)</td>
<td>(1.27)</td>
<td>NA</td>
<td>--</td>
</tr>
<tr>
<td>2004-05</td>
<td>-7.83 (1.06)</td>
<td>-8.66 (1.16)</td>
<td>NA</td>
<td>-53.27 (0.84)</td>
</tr>
<tr>
<td>2005-06</td>
<td>232.08 (3.52)</td>
<td>244.83 (4.00)</td>
<td>NA</td>
<td>256.41 (1.39)</td>
</tr>
<tr>
<td>2006-07</td>
<td>47.73 (5.20)</td>
<td>52.00 (6.08)</td>
<td>NA</td>
<td>101.44 (2.80)</td>
</tr>
<tr>
<td>2007-08</td>
<td>-27.12 (3.79)</td>
<td>-26.64 (4.46)</td>
<td>NA</td>
<td>-35.00 (1.82)</td>
</tr>
<tr>
<td>2008-09</td>
<td>-37.20 (2.38)</td>
<td>-42.83 (2.55)</td>
<td>NA</td>
<td>38.46 (1.12)</td>
</tr>
<tr>
<td>Average</td>
<td>2.85</td>
<td>3.25</td>
<td>11.11</td>
<td>1.39</td>
</tr>
</tbody>
</table>

Note: The figures in the parentheses are the actual data
NA: Not Applicable
CAGR: Compound Annual Growth Rate

It is observed from the Table 4.10 that:

1. The quantity of cane crushed has increased from 1.15 lakh M.T in 2003-04 to 2.38 lakh M.T in 2008-09. Its average cane crushed was 2.85 lakh M.T during the same period. It ranged between 1.06 lakh M.T in 2004-05 and
5.20 lakh M.T in 2006-07. The CAGR of cane crushed was 12.89% over the study period. It indicates that there is better progress in cane crushed during the study period because of full utilization of crushing capacity of the factory.

2. The sugar production has increased from 1.27 lakh Qtl in 2003-04 to 2.55 lakh Qtl in 2008-09. Its sugar production ranged between 1.16 lakh Qtl in 2004-05 and 6.08 lakh Qtl in 2006-07, with an average production of 3.25 lakh Qtl. The sugar production was highly fluctuation during the period under study. The CAGR of sugar production was 12.32% over the study period. It shows that there is better stable production of sugar over the study period because of sufficient availability of sugarcane.

3. The recovery percentage of sugar from sugarcane has decreased from 10.68 percent in 2003-04 to 10.48 percent in 2008-09, with an average recovery percentage of 11.11%. This was satisfactory throughout the study period.

4. The molasses production has increased from 0.84 lakh Qtl in 2003-04 to 1.12 lakh Qtl in 2008-09. It’s ranged between 0.84 lakh Qtl and 2.80 lakh Qtl, with an average production was 1.39 lakh Qtl. It shows the fluctuation in the molasses production. The CAGR of molasses production was 4.91% during the study period. There is better progress in molasses production because of stable sugar production during the study period.
4.15 CONCLUSION

This chapter consists of two parts. The first part describes the sugar production in world in general and India in particular. The second part consists of detail profile of the selected sugar factories under study. There are 94 countries in the world having 2146 sugar factories producing sugar from the sugarcane. World production of sugar has
increased to 10.4 times during the study period. It can be noted that production of sugar in Brazil was 259.56 lakh tones in 2003-04 to 322.90 lakh tones in 2008-09. Brazil has increased the production of sugar during the period by 34.18%. Its share in world production of sugar was 18.67% during the study period. This indicates that Brazil ranks first in production of sugar in the world.

It is also to be noted that production of sugar in India has ranged from 217.02 lakh tones in 2003-04 to 259.36 lakh tones in 2008-09 and an average production of sugar during the study period was 186.44 lakh tones. This shows that India ranks second in production of sugar in the world. A comparative analysis of sugar factories in the world revealed that at present India has 582 sugar factories, followed by Brazil 258 and China 235 sugar factories. Thus, India has the largest number of sugar factories in the world. Its share in the world number of sugar factories is 27.12%. Though there are only 258 sugar factories in Brazil as compared to 582 in India and the duration of the crushing season more or less the same in both countries, Brazilian sugar production is more or less the same as that of India. The reason for this high sugar production in Brazil is that there are sugar factories with large cane crushing capacity. The sugar factories are operating under different sugar sectors like co-operative, private and public sector in India. The data shows that there were 422 sugar factories in India during 2003-04. But during the 2008-09 this has increased from 422 to 489. It is seen that India was net exporter of sugar during the year 2003-04. But in the year 2004-05, India became net importer of sugar and export was drastically decreased due to decrease in domestic production of sugar. The sugar export shows increasing tendency from 2006-07 to 2008-09 due to increase in production of sugar. India has demonstrated an ability of executing large scale exports and competing successfully with the leading sugar exporters like Australia, Brazil etc.

Karnataka ranks third in sugar industry having 62 sugar factories out of which 36 are in private sector, 03 are public limited companies and 23 are in co-operative sector.
Karnataka is famous for private sugar factories. During 2003-04 the total number of operating in Karnataka were 41, increased to 55 during the year 2008-09 and 62 during the year 2011-012. There was an increasing trend in number of sugar factories in Karnataka during the study period. In north Karnataka there were 42 sugar factories during the year 2008-09. Out of which 23 are in private sector and 19 are in co-operative sector. There are no public limited factories in northern part of Karnataka. There is an increasing trend in private sugar factories as compared to co-operative sugar factories in north Karnataka.

The second part describes the detail profile of selected sugar factories under study viz. The Ugar Sugar Works Ltd, Ugar Khurd (USW), The Godavari Bio Refineries Ltd, Sameerwadi (GBR), Shri Pabhulingeshwar Sugars & Chemicals Ltd, Siddapur (PSCL), The Nandi Sahakari Sakkare Karakhane Ltd, Hosur (NSM), Sri Doodaganga Krishna Sahakari Sakkare Karakhane Niyamit, Chikkodi (SDK) and Ryatar Sahakari Sakkare Karkhane Niyamit, Timmapur (RSSK) with their origin, growth, performance, contribution of the factories to the area of operation in the form of irrigation facilities, agricultural development, modern cultivation and facilities like education, medical and so on. It is to be noted that study highlights the performance relating to cane crushed, sugar production, sugar recovery percentage and production of molasses of the selected sugar factories. An average cane crushed for the each sugar factories during the study were 12.94 lakh M.T in USW, 14.60 lakh M.T in GBR, 6.63 lakh M.T in PSCL, 5.23 lakh M.T in NSM, 6.03 lakh M.T in SDK and 2.86 lakh M.T in RSSK respectively. It can be seen that average cane crushed has varied from sugar factories to sugar factories because of difference in crushing capacity. An average sugar production for the each sugar factories during the study were 14.56 lakh Qtl in USW, 17.22 lakh Qtl in GBR, 7.58 lakh Qtl in PSCL, 6.01 lakh Qtl in NSM, 7.50 lakh Qtl in SDK and 3.25 lakh Qtl in RSSK respectively. It is seen that average sugar
production has varied from sugar factories to sugar factories because of difference in crushing capacity. On an average, the sugar recovery percentage was satisfactory of all selected sugar factories throughout the study period. It was also highest which shows the efficiency of the factories in recovery of the sugar constantly over the study period.