CHAPTER - IV

PROFILE OF THE INDUSTRIES & REPRESENTATIVE ORGANISATIONS UNDER STUDY
CHAPTER 4

PROFILE OF THE INDUSTRIES & REPRESENTATIVE ORGANISATIONS UNDER STUDY

4.1 Introduction:

In this chapter the researcher has made an attempt to highlight a synoptic view and the facts and figures pertaining to the industries following under the realm of his study vis-à-vis their representative organisations.

4.2 Sugar Industry in India

Sugar cooperatives in India have been the backbone of India's sugar sector. But because of mismanagement and corruption, the cooperatives are in difficulties now.

The sugar cooperatives in Maharashtra, contribute 95 per cent of the total sugar produced in the state, making private sector's presence almost insignificant in the state. The first sugar cooperative in Maharashtra was formed by Vithalrao Vikhe Patil in 1950 to resist the exploitation of farmers by money-lenders and private mill owners. Patil brought together sugarcane farmers of 44 villages in Ahmednagar district in western Maharashtra and formed Asia's first cooperative sugar factory.

At that time, extracting sugar from cane was so expensive that most of the farmers preferred to convert it to jaggery, which resulted in a glut of jaggery in the market. The cooperative changed this situation by assuring the farmers of off-take of their produce at a reasonable price. The unique aspect of the cooperative movement was that a farmer with a small landholding is also given the same status of a shareholder.
Situation has changed down the years. A major problem being faced by the cooperative sugar sector is unprofessional management, lack of foresightedness and absence of decision-making process.

The decision-making is delayed because of the high number of people involved in the process. Another issue is that of vagaries of nature. Sugar industry is grossly governed by natural vagaries and the infamous sugar cycle of two years surplus followed by one year of shortage.

While India is the third largest sugar producing nation in the world, it is only the seventh largest exporter of the commodity for 2005-06 fiscal. India produces around 20 million tonnes of sugar and exports just one million tonnes. The per capita consumption stands at 18 kg, much lower than 59 of Brazil, which is the largest producer and exporter of sugar.

In India, sugar is under the purview of Essential Commodities Act, 1955, which means that the government controls sugar capacity additions through industrial licensing and determines the price of sugarcane and the quantity that can be sold in the open market.

Sugar export is governed by Sugar Export Promotion Act, 1958, which stipulates that the government can use 20 per cent of the country's total production for sale abroad. Import of sugar or export is mainly resorted to when there is a mismatch in domestic sugar production.

While Brazil also records a high sugar production, the Latin American country is not facing the problem of carry-over stocks since it is producing biofuel ethanol from sugarcane. Brazil is currently the largest producer of ethanol (around 45 per cent available in the market).

The government had announced complete decontrol of the commodity by March 2003, but the decision was deferred to October 2005. Still, restrictions on the commodity continue.
One of the major hurdles faced by sugar mills today is levy system, which basically means that mills are expected to surrender 10 per cent of their production to the government at prices below the market rate. This sugar is used by the public distribution system.

Second restriction is 'free-sale quota'. After surrendering 10 per cent of output as levy, the remaining 90 per cent is sold by mills in a restricted marketing environment. The government releases what is called monthly free-sale quota to mills to be sold within stipulated time-frame.

Levy system and free sale quota system are believed to be restricting the growth of sugar industry. The decontrolled environment is likely to help sugar industry record a more robust growth. We have to explore new markets for exports. The Union government has to encourage production of ethanol and other energy-related byproducts of sugar.

4.3 The Sugar Cooperatives in Maharashtra

It has not woken up to the alarm signals coming from the industry in the past five years. Thirteen cooperative sugar factories in the State have been declared liquidated and 56 are sick. The accumulated losses from the sick factories are over Rs.1,900 Crores. Last year 100 factories could crush cane; this season, only 70 to 80 factories could commence work. A steady decline in the cultivation of sugarcane is directly affecting the factories.

Sharad Pawar, Union Agriculture Minister noted on the occasion of the centenary of the cooperative movement that financial indiscipline, lack of transparency and non-professional management had crippled the sugar cooperatives. The State's sugar industry is urgently in need of a
transformation of its cooperative management and the professional approach.

Most of the players in the industry have not maintained, modernized or expanded their plants. But a few have changed with the times and have pursued an agenda for reform. They have realized that the by-products of sugarcane - such as molasses, bagasse and press mud - can yield profits too.

"Over 95 per cent of the factories are incurring losses and may continue to do so unless the industry changes its myopic outlook," says Kushagra Nayan Bajaj, chief executive officer, Bajaj Hindustan Ltd. (BHL). BHL is already India's largest producer of ethanol or alcohol, from sugarcane, with 145 lakh kilolitres a day. It crushes 31,000 tonnes of sugarcane a day in its plants at Golagokarannath, Palia Kalan and Meerut in Uttar Pradesh. BHL, also the country's largest sugar producer, now aims to triple the plants' capacity to around 100,000 tonnes a day (tcd) over the next three to four years through expansions and acquisitions.

Ethanol is an environment-friendly, clean fuel. Brazil, one of the world leaders in the production of sugar and ethanol, uses 40 per cent ethanol in petrol. The Government of India has allowed the addition of 5 per cent ethanol in petrol to save foreign exchange; India now imports nearly 70 per cent of its crude petroleum requirements.

Shree Renuka Sugars Ltd. (SRSL) in Karnataka's Belgaum district is another factory that makes the most of the opportunity for value-addition. "Gone are the days of selling only sugar. Now it could be any sugar by-product [power, biofertilizers, bagasse, alcohol, and so on], which gives more benefits," says Narendra Murkumbi, its managing director. Its revenue from the sale of power, alcohol and biofertilizers is
steadily rising. Murkumbi initiated the import of raw sugar to produce refined (pure or chemical-free) sugar during the off season, when sugarcane is not available, which usually lasts four to six months a year. This strategy has helped SRSL achieve optimum utilisation of its plant.

In many countries, raw sugar is purified by adding lime to sugarcane juice. The sugar produced in Asian countries is plantation sugar, which is not refined. The purity of sugar is measured in terms of ICUMSA (International Commission for Uniform Method of Sugar Analysis). A lower ICUMSA means less impurity. Brazil and Cuba produce sugar with 50 ICUMSA whereas Indian sugar has an average ICUMSA of over 100. The price of raw sugar in the world market is Rs.7 to 8 a kilogram while refined sugar fetches Rs.20 to 24 a kg. In India, plantation sugar costs Rs.10 to 13 a kg.

India will have to produce more refined sugar as the demand for plantation sugar in the world market is minimal. Sugar experts predict that the market for refined sugar will grow exponentially. In that case, the cooperative sugar factories will have to produce raw sugar to supply the few refined sugar producers in the country.

"We are not quality-conscious, so our asset of human resources becomes a liability. It is high time there was a conceptual change. Let this message go from top to bottom of the factory managements. Then we can prove that we too can produce chemical-free, pure and refined sugar and establish ourselves in the world market," says S.D. Bokhare, managing director of Vikas cooperative sugar factory near Latur, which has bagged several national awards for efficiency.

The State governments of Karnataka, Andhra Pradesh and Tamil Nadu purchase power from sugar factories in their respective territories. This prompted the Maharashtra government to encourage its sugar
factories to take up power generation on a big scale. Many sugar factories, including Natural Sugar and Allied Industries (NSAI) at Ranjani in Osmanabad district, procured turbines to produce power from bagasse. But since the State government and the factories could not make power purchase agreements for the past nine years, the investment in turbines seemed a wasteful expenditure. It was in such a situation that B.B. Thombre, chairman and managing director of NSAI, decided to go in for the production of ferro alloys, used as raw material in the manufacture of various types and grades of steel. With a capacity of 40 tonnes a day, NSAI produces ferro manganese, ferro silicon, and silico manganese and ferro chromium from its existing furnace. Ferro-alloys earn the sugar factory revenue of Rs.45 million a year.

When the rates of bagasse went up following the crisis in cane production, Thombre decided to use agro-waste as fuel in the boiler. NSAI purchased agro-waste at the rate of Rs.300 a tonne from the fields. In 90 days, NSAI procured 7,000 tonnes of agro-waste worth Rs.50 lakhs, which benefited 2,000 farmers.

4.4 Milk Industry in India

India is the highest milk producer in the entire globe. India is otherwise known as the ‘Oyster’ of the global dairy industry. The dairy industry in India has been witnessing rapid growth. The liberalized economy provides more opportunities for MNCs and foreign investors to release the full potential of this industry. The main aim of the Indian dairy industry is only to better manage the national resources to enhance milk production and upgrade milk processing using innovative technologies/
4.4.1 Areas of improvements:

a. **Raw milk handling:** The raw milk handling needs to be elevated in terms of physicochemical and microbiological properties of the milk in a combined manner. The use of clarification and bactofugation in raw milk processing can aid better the quality of the milk products.

b. **Milk processing:** Better operational ratios are required to amend the yields and abridge wastage, lessen fat/protein losses during processing, control production costs, save energy and broaden shelf life. The adoption of GMP (Good Manufacturing Practices) and HACCP (Hazard Analysis Critical Control Points) would help produce milk products adapting to the international standards.

c. **Packaging:** Another area that can be improved is the range of packing machines for the manufacture of butter, cheese and alike. Better packaging can assist in retaining the nutritive value of products packed and thus broaden the shelf life. A cold chain distribution system is required for proper storage and transfer of dairy products.

d. **Value-added products:** There's vast scope for value-added products like desserts, puddings, custards, sauces, mousse, stirred yoghurt, nectars and sherbets to capture the dairy market in India.
4.5 India's Milk Product Mix

Table No. 4.1

India's Milk Product Mix

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Particular</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fluid Milk</td>
<td>46.0</td>
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<tr>
<td>2</td>
<td>Ghee</td>
<td>27.5</td>
</tr>
<tr>
<td>3</td>
<td>Butter</td>
<td>6.5</td>
</tr>
<tr>
<td>4</td>
<td>Curd</td>
<td>7.0</td>
</tr>
<tr>
<td>5</td>
<td>Khoa (Partially Dehydrated Condensed Milk)</td>
<td>6.5</td>
</tr>
<tr>
<td>6</td>
<td>Milk Powders, including IMF</td>
<td>3.5</td>
</tr>
<tr>
<td>7</td>
<td>Paneer &amp; Chhana (Cottage Cheese)</td>
<td>2.0</td>
</tr>
<tr>
<td>8</td>
<td>Others, including Cream, Ice Cream</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Source: www.dairyindia.com

4.6 Overview of the Indian Dairy Sector

The country is the largest milk (around 100 million MT) producer all over the world. Value of output amounted to Rs. 1179 billion (in 2004-05) (Approximately equals combined output of paddy and wheat!!) 1/5th of the world bovine population Milch animals (45% indigenous cattle, 55% buffaloes, and 10% cross bred cows). Immensely low productivity, around 1000 kg/year (world average 2038 kg/year) Large no. of unproductive animals, low genetic potency, poor nutrition and lack of services are the main factors for the low productivity. There are different regions – developed, average, below average (eastern states of Orissa, Bihar and NE region) in the dairy industry.
4.7 Textile Industry in India

It is the second largest employment generator after agriculture. It holds significant status in India as it provides one of the most fundamental necessities of the people. Textile industry was one of the earliest industries to come into existence in India and it accounts for more than 30% of the total exports. In fact Indian textile industry is the second largest in the world, second only to China.

Textile Industry is unique in the terms that it is an independent industry, from the basic requirement of raw materials to the final products, with huge value-addition at every stage of processing. Textile industry in India has vast potential for creation of employment opportunities in the agricultural, industrial, organised and decentralised sectors & rural and urban areas, particularly for women and the disadvantaged. Indian textile industry is constituted of the following segments: Readymade Garments, Cotton Textiles including Handlooms, Man-made Textiles, Silk Textiles, Woolen Textiles, Handicrafts, Coir, and Jute.

Till the year 1985, development of textile sector in India took place in terms of general policies. In 1985, for the first time the importance of textile sector was recognized and a separate policy statement was announced with regard to development of textile sector. In the year 2000, National Textile Policy was announced. Its main objective was: to provide cloth of acceptable quality at reasonable prices for the vast majority of the population of the country, to increasingly contribute to the provision of sustainable employment and the economic growth of the nation; and to compete with confidence for an increasing share of the global market. The policy also aimed at achieving the target of textile and
apparel exports of US $ 50 billion by 2010 of which the share of garments will be US $ 25 billion.

4.7.1 Significance of Textile Industry

The Indian textile sector plays an exceptionally significant role in shaping the economy of India notably in terms of employment, foreign exchange earnings and share in value added. This sector is the second largest sector after agriculture (Texsummit, 2007). It has come of age and is gaining acknowledgment on the world platform with excellent textiles manufacturing base and availability of massive raw material. India being the second largest producer of cotton in the world, makes it self sufficient, by providing a competitive edge to its competitors worldwide in terms of cost of raw material. Along with abundant cotton production, India has availability of highly skilled labour at very low prices. The Indian economy is fundamentally dependent upon manufacturing of textiles and its trade. There are many reasons for this industry being so important for Indian economy as it contributes (4% of GDP) as well as the country’s export (14% of India’s total exports) and provides employment to the masses (85 million people employed + additional 12 million expected to find jobs by 2010) (Texsummit, 2007). The government says that India’s share in world textile can reach to 8% by 2010 (http://www.fabrics-manufacturers.com). This sector also enjoys a strategic significance due to its foremost contribution to exports and existence of enormous small and medium enterprises (SMEs). With dismantling of the quota system in January 2005, investments in the textile sector have been raising and the export percentage too has increased drastically (Mayer, 2005). Other government initiatives such as setting up of SEZs (Special Economic Zones) for textiles, and allowing 100% foreign direct investment in the textile sector have not only helped
in creating opportunities for Indian entrepreneurs, but also for global investors.

The structure of worldwide trade in textiles also marked a significant turnaround after this period, as all the textile and clothing products can be traded globally without quota-restrictions. The elimination of quota restrictions on the export of textiles under the agreement on textile & clothing did facilitate India in escalating its market share of its major importers, but the growth rate remained much below the expectations. The dismantling of the quota regime symbolizes both an opportunity as well as a threat. It can be an opportunity for the reason that markets will no longer be restricted and, also the domestic market will be exposed to competition. At domestic front, robust economic growth, rising demand, increasing consumerism, expanding organized retail and textile SEZs would provide healthy atmosphere for the growth of industry, whereas it also act as a threat, as markets will no longer be assured by the quotas. However this sector has been doing really well and has reached $ 47 billion market (Home fashion, 2007) but there has been a slowdown in this industry from past few years and the factors like, rigid labour laws, technology obsolescence, lack of training facilities, low capacity, fragmented structure, poor foreign investment and infrastructure constraints continue to trouble the industry.

Today, in the international textile market, China is the biggest competitor of India, followed by turkey, Taiwan, Mexico, Bangladesh, South Korea, Indonesia and Pakistan which are the emerging rivals. It is therefore essential to identify the true competitiveness of Indian textile firms in order to make a true evaluation of the scenario. This study will therefore evaluate the international competitiveness of the Indian textile industry. It will reveal the immense potential of the Indian textile industry
which will enable this sector to realize its lawful place in the economy globally. And further, it will examine the India’s export-competitive performance with respect to USA & European Union

4.7.2 Strengths of Indian textile Industry:

a. India has rich resources of raw materials of textile industry. It is one of the largest producers of cotton in the world and is also rich in resources of fibers like polyester, silk, viscose etc.

b. India is rich in highly trained manpower. The country has a huge advantage due to lower wage rates. Because of low labor rates the manufacturing cost in textile automatically comes down to very reasonable rates.

c. India is highly competitive in spinning sector and has presence in almost all processes of the value chain.

d. Indian garment industry is very diverse in size, manufacturing facility, type of apparel produced, quantity and quality of output, cost, requirement for fabric etc. It comprises suppliers of ready-made garments for both, domestic or export markets.

4.7.3 Weaknesses of Indian textile Industry:

a. Indian textile industry is highly fragmented in industry structure, and is led by small scale companies. The reservation of production for very small companies that was imposed with the intention to help out small scale companies across the country, led substantial fragmentation that distorted the competitiveness of industry. Smaller companies do not have the fiscal resources to enhance technology or invest in the high-end engineering of processes. Hence they lose in productivity.

b. Indian labour laws are relatively unfavorable to the trades and there is an urgent need for labour reforms in India.
c. India seriously lacks in trade pact memberships, which leads to restricted access to the other major markets.

4.7.4 Prospects in the Indian textile Industry

The outlook for textile industry in India is very optimistic. It is expected that Indian textile industry would continue to grow at an impressive rate. Textile industry is being modernized by an exclusive scheme, which has set aside $5bn for investment in improvisation of machinery. India can also grab opportunities in the export market. The textile industry is anticipated to generate 12mn new jobs in various sectors.

4.8 REPRESENTATIVE ORGANISATIONS UNDER STUDY

1 SHRI WARANA SAHAKARI DUDH UTPADAK PRAKRIYA SANGH LTD.
Warananagar, Tal. Panhala, Dist. Kolhapur
(Hereinafter Called Warana Milk Cooperative)

1.1 General Information

Shri Tatyasaheb Kore. Established the Warana Dairy, in 1968. This white revolution has spread to all other 78 surrounding villages and added revenue of Rs. 150 Crores per annum. The dairy plant has a capacity to handle more than 300,000 litres of milk of which 100,000 litres can be converted into milk products. The management of dairy brought the products like Warana pasteurized Milk, Milk Powder, Ghee, Butter, Shrikhand, Amrakhand, Lassi, Cheese, and Strawberry Desert etc.

The turnover for the year 1997-98 was Rs. 138 Crores. By selling 2035 tonnes of Shrikhand in the year 1998, Warana reached a new record of maximum selling of Shrikhand in India. The dairy has acquired an ISO 9002 Certification. M/S. Cadbury India Ltd. has joined hands with Warana Dairy and started production of Bournvita, Drinking chocolate
and Cocoa Powder. "Warana Stymena" - a malted milk product has bagged a mammoth order of 550 metric tonnes from the Indian Army. Even the 60% of total production of the Cadbury India Ltd.'s Bournvita is produced from Warana Dairy. Warana Dairy has won many awards for its quality products and efficiency. The dairy, in future, has ambitious plans to venture into products like branded cheese, pasteurized butter, beverages and ice creams. Warana Cattle-feed division is producing the quality cattle feed, which is supplied to the farmers for their cows and buffaloes, at subsidized prices.

Shri Tatyasaheb Kore started his social service in 1935. He participated in Quit India Movement of 1942. He was associated with underground movement of Late Y.B. Chavan. He was unanimously elected as President of Kodoli Municipality in 1940. The unprecedented depression in 1951 ruined the farmers of this area. This incident made him to set up the above named co-operative sugar factory near Kodoli village.

The factory has provided residential quarters to the workers with all the essential facilities like sanitation, filtered water supply, cheaper electricity etc. Workers avail the credit facility from the departmental store that is Warana Bazar. In case of emergency medical facilities are provided at free of cost. The worker's welfare runs a printing press. Other organisations in Warana Complex too provide such amenities for their workers.

Warana Wired village Project: This project is first of its kind in Asia. This project connects 70 villages with 150 Computer Networking nodes and also provides the Internet facilities to the rural community. People get information of their revenue records, health cards, credit cards, and market prices of agricultural goods. Advanced agricultural
technological information is also available to the farmers. The project is undertaken with the support of Central and State Government and implemented with the help of National Informatics Centre (NIC), C-DAC and Shree Warana Vibhag Shikshan Mandal.

Lift irrigation schemes on co-operative basis were encouraged by providing financial aid, technical know-how and managerial help. An independent irrigation department looks after all these co-operative lift irrigation schemes and even it has involved in giving technical advice on rehabilitation of some such schemes. Around 65 lift irrigation schemes are functioning. Each lift irrigation scheme is quenching the thirst of around 120 acres of land. Along with this, three big lift irrigation schemes are inundating around 4600 acres of land.

Due to these lift irrigation schemes the sugar cane production has gone up by 2 lakh tones. Apart from this, around 5828 wells with pump sets are also functioning, each well watering about 2-4 acres. Since 80% of the population depends on agriculture for their livelihood, all the efforts have been made to strengthen the agricultural field. An independent Agricultural Development Department is looking after the whole scenario of agricultural development. The department supported by qualified personnel guides the cultivators in the agricultural operations to improve the quality and yield of crop by modern and scientific methods of cultivation. The department has a well-equipped soil testing laboratory and a well-maintained workshop where in a fleet of bulldozers, tractors, boring machines, sprayers and dusters help the farmers in their cultivation operations. The agricultural department is encouraging the farmers to adopt new irrigation systems like sprinkler and drip irrigation where in the water are economically used. The sprinkler and drip irrigation systems are sold to the farmers at very low subsidized rates.
The required fertilizers, insecticides and good quality seeds are supplied to the farmers through the departmental units existing in the villages. A full-fledged nursery is supplying good quality saplings to the farmers. The department is trying hard to keep the environment green by putting the plantations along the roadside and at suitable places. Full-fledged efforts are going on to produce the Bio Fertilizer in which the press mate from sugar factory and spent wash from distillery are used. This kind of fertilizer has great export potential.

Today all economic transactions in Warana are through Warana Co-operative Bank Ltd. Established in 1966. It provides loans at subsidized interest rates for all farmers, weaker section and the needy. The bank even accepts NRI deposits. The bank has branches at Kolhapur, Ichalkaranji, Jayasingapur, etc.

Late Tatyasaheb Kore started a 30-bed hospital with latest facilities in 1992. It is a 200-bedded hospital, which is equipped with modern medical technologies along with expert doctors. The experts organise periodical medical camps free of cost for the benefit of rural mass.

Warana Bazar was established in 1978. It supplies all the agricultural goods, equipment, fertilisers, crockery, textile, medicine etc. to the consumers. To reach the rural interior, 30 branches are working at different places along with two departmental stores. The annual sales of the bazaar are more than 33 Crores. This has made Warana Bazar the country's fifth largest co-operative bazaar and the largest one amongst the rural co-operatives. Every year Warana Bazar is arranging the training programme in marketing and salesmanship to train the youth around the area. Shivaji University, Kolhapur, sponsors this training programme "Warana Vyayam Mandir" provides facilities to the body builders and young wrestlers. The training in traditional wrestling and
bodybuilding is given to the interested youngsters around the village. Well-qualified coaches, lodging and boarding facilities for the trainees are provided by the organisation. It gives importance to the physical education and sports. Many prestigious awards have been bagged by the youth of Warana.

2. SHRI HANUMAN SAHAKARI DUDH VYAVASAIK AND KRISHIPURAK SEWA SANSTHA LTD.
Yalgud, Tal-Hatkanangle, Dist. Kolhapur.
(Hereinafter called Hanuman Milk Cooperative)

2.1 General Information
a. Establishment of the society 14 July 1967
b. Registration number K.P.R. /P.R.D. (A) 385.
c. Founder Chairman - Shri Vasantraoji Tatyasaheb Mohite
d. Total Members : 820

- Objects of the Yelgud Milk Union:
  i) To aid and provide assets in the form of milk animals to farmers and landless laborers. ii) To undertake dairy activities and to raise their standard of living in particular and of the village population in general. iii) To improve the dairy industry and to increase the milk production.

2.3 Salient features of the Organisation
a. Many awards are achieved by this milk union.
b. The office work starts with the prayer of "Sahakar Geet" and "Pasaydan."
c. The NCDC New Delhi, has granted, financial assistance of Rs. 40.60 Lac for the dairy project and Rs. 24.70 Lac for the bakery project.

d. For modernization and expansion of society, NCDC has sanctioned loan of Rs. 150.50 Lacs. i.e. 65% of total projected cost Rs. 231.54 Lacs.

2.4 **Participation in National Activities:**

a. Tree plantation

b. Financial Assistance to Schools.

c. Financial Assistance in Natural Calamities.

d. Free distribution of Uniforms to students.

e. Awarded prizes to individuals, for taking education.

f. Financial Aid for family planning programmes.

2.5 **Training for the Staff**

Employees are given training in, Bakery Course, Indian Dairy Diploma, Poultry Course, H.D.C., G.D.C. & A. Artificial insemination course, Live stock supervisor course etc. The entire expenses are borne by the society.

2.7 **Products Manufactured Daily**

<table>
<thead>
<tr>
<th>Bakery Project</th>
<th>Milk Project</th>
<th>Mahila Sanstha</th>
</tr>
</thead>
</table>
f) Sahakar Toast - 381kgs.

Lassi – 913 pack (200ml)

Rajigara Ladu – 300 Packets.

g) Bhaji Pav - 1687kgs.

Standardized Milk - 4100 Lt.

Papad – 10kg.

h) Nankatai – 145kgs.

Ghee – 37kgs.

Gulabjam – 10kgs.

i) Maska – 567Nos.

Curd – 39Ltr.

Dry Cleaning – 100 Dress

Pannier – 7 kgs.

Sahakar Cakes - 9000 Nos.

Sahakar Biscuit - 150kgs.

Birthday Cake - 25kgs.

(Source-Annual Reports of the organisation)

2.8 Marketing of Products - Bakery and Dairy products are marketed in Kolhapur, Sangli, Satara, Ratnagiri and Belgaum District. Government of India’s Navoday Vidyalaya at Kothali, Kagal and Palus are supplied bakery products like Milk, Bread Biscuit, Cakes Shrikhand, Basundi etc.

2.9 Facilities to the Members - Free Veterinary and qualified staff assistance is provided to all producer members in the form of preventive medicine, artificial insemination etc. in emergency cases, expert veterinary surgeons in the field are invited from the District Milk Union (A.I.Service)

a. Financial Assistance - The society provides to the members for purchasing improved varieties of milch cattle. Animal feed, fertilizers, pesticides, insecticides, oil seeds and other agricultural implements are provided to members. Milk rates paid by Society to members are 50 paise more than government rate, per liter of milk purchased.
b. **Computerization** - Since 1992, the Society has gone for computerization of the administrative as well as accounting work. Daily Reports and internal audit is maintained. Consolidated reports are daily prepared.

c. **Solar Energy Equipments** - Society’s dairy unit requires hot water for cleaning the dairy plant and equipments. Society has installed modern equipment based on solar energy which gives 4000 Ltrs heated water at 80\(^0\)c. This has saved the expenses on diesel, fuel to a great extent.

3 **KOLHAPUR ZILLA SAHAKARI DUDH UTPADAK SANGH LTD.KOLHAPUR,**

Tal-Karveer, Dist- Kolhapur

(Hereinafter called Gokul Milk Cooperative)

3.1 **Establishment** - The Kolhapur District Co-operative Milk Producers Union Ltd., Kolhapur established on 16\(^{th}\) March, 1963, is also known as GOKUL. In 1978, the N.D.D.B. constructed a 2 lac liters / day capacity Dairy plant at Gokul-Shirgaon, Similarly, at Gadhinglaj and Bidri chilling centres of 75,000 and 50,000 liters / day capacity were also constructed. The chilling centres at Gogave (Shahuwadi Taluka) and at Tawarewadi (Chandgad Taluka) have been constructers. The expansion of Cattle Feed Plant from 100 MTD to 200 MTD has been completed during October, 1992.

The Dairy was commissioned towards the end of 1985. Meanwhile, the Government Milk Scheme in Kolhapur was handed over to the Kolhapur Dudh Sangh in mid 1985. During 1985 the average milk
procurement was 114836 liters per day with 676 village level societies affiliated to the Dudh Sangh.

In 1996-97 the average procurement was 424250 liters / day. In the flush of 1996-97, maximum milk procurement touched figure of 529172 liters / day. Kolhapur Dudh Sangh has won awards of National Productivity council.


### 3.2 Membership: (As on 31st March, 2007)

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>A Class</td>
<td>3017</td>
</tr>
<tr>
<td>2.</td>
<td>B Class</td>
<td>0080</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>3097</td>
</tr>
</tbody>
</table>

Source: Annual Report

### 3.3 Share Capital: (On 31st March 2007)

<p>| | | |</p>
<table>
<thead>
<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1</td>
<td>Authorized</td>
<td>Rs. 51,00,00,000.00</td>
</tr>
<tr>
<td>3.2</td>
<td>Paid up</td>
<td>Rs. 34,61,83,000</td>
</tr>
</tbody>
</table>

Source: Annual Report

### 3.4 Profit (On 31st March 2007) - Rs. 4, 58, 17,507
3.5 **Objectives and Activities**

a. Procurement of milk from Dairy Co-operatives.

b. To take up commercial production and marketing of Gokul products.

c. Manufacture Cattle Feed and supply it to the Dairy Co-operatives.

d. To convert Dairy Co-operatives into Anand pattern.

e. Scientific Breeding -Progeny testing are sire proving programme taken up.

f. To encourage Lady Farmer Members a separate cell called CO-OPERATIVE DEVELOPMENT CELL is opened.

g. TRAINING CENTRE is established to train the society. Secretaries, Management Committee, First Aid and A.I. Workers, Milk Testers etc. effective management of Dairy Co-operatives.

3.6 **Management** - The board consists of 17 elected directors and representatives of state federation N.D.D.B. and Dairy Development Commissioner as well Dy. Registrar of Co-operatives. The Board once elected as tenure of 5 years. The Chairman is elected every year from among the elected members of the board. Board meetings are held regularly every month.

3.7 **Services Offered**

a. Quality based remunerative price guaranteed.

b. Availability of Productive cattle of good and high breeds.

c. Loan and advance guarantees for purchase of dairy cattle.

d. Technical inputs are canalized and delivered.

e. Generation of employment for urban population through growth of allied industry.
3.8 Chronological Progress

- Kolhapur milk union was registered on 16/3/1963.
- Operation flood II implementation started from 1/4/1981.
- Chilling centre at Gadhinglaj (Lingnur) started milk handling on 13/11/1981.
- Cattle Feed Plant at Gadmudshingi started production and distribution of cattle feed to Dairy Co-operative societies on 13/1/1982.
- Chilling Centres at Bidri (Boravade) started milk handling on 1/8/1982.
- Government milk scheme was handed over on 1/5/1985.
- Gokul Diary started on 18/10/1985.
- Product making started from 1986; powder 10 MT/day Ghee 3 MT/day, Shrikhand 1 MT/day, Butter 8MT / day, table butter 1mt/day.
- Cattle feed factory expansion (200MT) completed and started Bypass cattle feed production in Sept. 1992.
- Number of milk procurement routes. Morning 142, Evening 130.
- So far 1656 milk testers have been supplied to village dairy Co-operative societies with the present level subsidy of Rs. 3000/- per milk tester.
• A solar water heating system of a capacity 50,000 liters of water per day heating from 20c to 80c has been installed in Gokul Dairy last year. Annual projected saving in expenditure on furnace oil is estimated to be to the tune of Rs. 6,00,000/-.

• Acquired land at Washi Mumbai of Rs. 2.16 Crores for setting its own packing unit.

• Beginning from 1987 liquid milk marketing was launched in Mumbai. Initial sale was 16,000 liters per day. As so date buffalo and cow milk taken together the sale is more than 300000 liters per day.

• Supply of milk to Goa Union is regular for past many years.

• Beginning July 93 liquid milk marketing was launched in Pune and at present sale is 27,000 liters per day.

• Computers have been introduced at head office and cattle feed plant since Dec., 1993 and 1990 respectively.

• Acquired 18 acres of land for demonstration seed production and Green Fodder production.

• Export of Extra Grade skim Milk powder to Srilanka, thus paving the new way in the marketing.

• Expansion of Gokul Dairy of 7 lac ltrs. Work is started from Jan. 95 and expected date of completion is June, 1997.

3.9 Dairy and Chilling Centers - The Gokul Dairy plant is now handling up to a maximum 447,000 litres of milk per day. Dairy has been manufacturing skimmed milk powder as per IS - 13334 - Part II Extra Grad. Kolhapur Dudh Sangh exports the skimmed milk powder to neighboring countries.
3.10 **Cattle Feed Plant** - Plant commissioned in January, 1982. The feed is being sold under the brand name 'Mahalaxmi' beginning July 1988. By-pass protein production was taken up. The plant has been expanded to a capacity of 200 M.T. / day and beginning from Nov. 1992 the production is completely switched over by-pass feed. CFP has received a prestigious NPC Award for the year 1992-93.

3.11 **Procurement** - During the year 2006-07 the average and peak procurement was 5,33,000 and 6,40,000 liters respectively. Milk is collected from 1884 village dairy co-operatives on 142 milk collection routes. The proportion of Buffalo and milk is about 75% and 25% respectively. The Bulk Fat B/M is 7.1% and the SNF is 9.4%. The cow Fat is 4.2% and the SNF is 8.6%.

3.12 **Animal Husbandry** - In the district there are 27 animal Husbandry centers and regular 29 Veterinary routes looked after by 37 Veterinary Doctors. Regular Services are rendered free of cost and for special services nominal fess are charged.

3.13 **Fodder Development** - The improved varieties of fodder seeds are supplied to the members on basis of 25% subsidy. Manual chaff cutters are distributed with a subsidy of 30% and motorized cutter at a subsidy of 50%. The annual distribution of fodder seeds is over 90 tons. At present 1507 societies are using fodder seeds covering a land area of 5500 acres for fodder cultivation.

3.14 **Embryo Transplantations** - Under the national programme of Embryo Transplantation a state E.T. centre has been established at Kolhapur. The field operations have commenced from August, 1992.
3.15 **Co-operative Development Cell** - With the help of the NDDB, the CD programme has been started from March 1990. The programme covers education and training programme for women, members, and secretaries.

3.16 **Gokul, Gram Vikas Programme** - About 175 villages will be covered under this programme every year. Each village will be adopted by one of its field workers who will have total responsibility of this programme for that village. He is designed is 'Gokul Doot'.


3.18 **Workers Training** - The workers (around 83 in number) were deputed for training on reduction of wastage, at Lansing Institute of Training, Mehsana (Gujarat). The workers are given training in energy conservation, the maintenance of boiler, refrigerators, milk packing and processing machines, powder plant etc.

**Table No. 4.2**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Centre</th>
<th>Capacity Lts</th>
<th>Actual Lts</th>
<th>Utilization %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Boravade (Bidri)</td>
<td>1,00,000</td>
<td>1,04,000</td>
<td>104%</td>
</tr>
<tr>
<td>2.</td>
<td>Lingnur (G.hinglaj)</td>
<td>1,25,000</td>
<td>92,000</td>
<td>73%</td>
</tr>
<tr>
<td>3.</td>
<td>Tawarewadi (Chandgad)</td>
<td>1,00,000</td>
<td>65,000</td>
<td>64%</td>
</tr>
<tr>
<td>4.</td>
<td>Gogave (Shahuwadi)</td>
<td>50,000</td>
<td>41,000</td>
<td>82%</td>
</tr>
</tbody>
</table>

Source: Annual Report
3.19 Milk and Milk Products Marketing:

For the year ended on 31.03.2007 the sale has been as under:

- a. Shrikhand - 76 M.T.
- b. Pure Ghee - 376 M.T.
- c. Butter - 1262 M.T.
- d. Table Butter - 647 M.T.
- e. Milk Powder - 348 M.T.
- f. Cream - 1.30 M.T.
- g. Cooking Butter - 30 M.T.
- h. Lassi/Panir/Curd - 56000 liters
- i. Milk - 2084.9 lakh liters

3.20 Institution Building Programmes: - During the year ended 31.03.2008 Gokul organized programmes as follows:

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Particular</th>
<th>Programme</th>
<th>Beneficiaries</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Managing Committee Visioning</td>
<td>148</td>
<td>1736</td>
</tr>
<tr>
<td>2.</td>
<td>Male educational programme</td>
<td>135</td>
<td>7604</td>
</tr>
<tr>
<td>3.</td>
<td>Female educational programme</td>
<td>144</td>
<td>11239</td>
</tr>
<tr>
<td>4.</td>
<td>Cleaning programmes</td>
<td>138</td>
<td>2314</td>
</tr>
<tr>
<td>5.</td>
<td>Sahakar Manch Programme</td>
<td>142</td>
<td>2983</td>
</tr>
</tbody>
</table>

3.21 Leadership Development Programmes

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Particular</th>
<th>Programme</th>
<th>Beneficiaries</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Bachat Gat Establishment</td>
<td>52</td>
<td>2143</td>
</tr>
<tr>
<td>2.</td>
<td>Women's Educational Programmes</td>
<td>52</td>
<td>3284</td>
</tr>
<tr>
<td>3.</td>
<td>Women's Skill Development</td>
<td>46</td>
<td>874</td>
</tr>
<tr>
<td>4.</td>
<td>Account Writing Training</td>
<td>42</td>
<td>1283</td>
</tr>
</tbody>
</table>
5. Cultural Programmes 47 3094
6. Leadership Dev. Programmes 40 731
7. Bachat Group Formation program. 50 3340
8. Mahila Reevaluation Programme 21 1577
9. Bachat Group Regional Meetings 11 1455
10. Co-Op. Week gathering 02 635
11. Review Gatherings 03 439

3.22 ‘Clean Milk Production’ Programmes

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Particular</th>
<th>Programme</th>
<th>Beneficiaries</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Employee workshop</td>
<td>19</td>
<td>481</td>
</tr>
<tr>
<td>2.</td>
<td>Committee Member Motivation programme</td>
<td>176</td>
<td>1925</td>
</tr>
<tr>
<td>3.</td>
<td>Men and Women members education</td>
<td>149</td>
<td>12196</td>
</tr>
<tr>
<td>4.</td>
<td>Programmes for school children</td>
<td>13</td>
<td>1766</td>
</tr>
</tbody>
</table>

3.23 Milk Business Development Training Centre:

Gokul Milk Union has its own training centre working since last 23 years. The details of programmes run in the year 2006-07 are given below:

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Training programme</th>
<th>No. of participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Extension Supervisor Training</td>
<td>100</td>
</tr>
<tr>
<td>2.</td>
<td>Accounts Writing for secretary</td>
<td>24</td>
</tr>
<tr>
<td>3.</td>
<td>Artificial Insemination of Cows and buffaloes</td>
<td>31</td>
</tr>
<tr>
<td>4.</td>
<td>Women farmers training</td>
<td>30</td>
</tr>
<tr>
<td>5.</td>
<td>Managing committee members</td>
<td>52</td>
</tr>
</tbody>
</table>


<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>6.</td>
<td>Milk tester and fatometric training</td>
</tr>
<tr>
<td>7.</td>
<td>Personality Development (women)</td>
</tr>
<tr>
<td>8.</td>
<td>Farmers training (Jalna/Widarbha package)</td>
</tr>
</tbody>
</table>

3.24 Some Important Indicators (31.03.2007):

<table>
<thead>
<tr>
<th>Members:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Societies</td>
<td>3017</td>
</tr>
<tr>
<td>Individual</td>
<td>80</td>
</tr>
<tr>
<td>Share Capital (Rs.)</td>
<td>34,61,83,000</td>
</tr>
<tr>
<td>Working capital (Rs.)</td>
<td>1,39,18,45,000</td>
</tr>
<tr>
<td>Milk collection (Average per day liters.)</td>
<td>5,33,000</td>
</tr>
<tr>
<td>Profit (for the year 2006-07) (Rs.)</td>
<td>4,58,17,000</td>
</tr>
<tr>
<td>Dividend to members</td>
<td>10%</td>
</tr>
<tr>
<td>Sale of milk and products (Crores)</td>
<td>429.57</td>
</tr>
</tbody>
</table>

4 INDIRA GANDHI MAHILA SAHAKARI SOOT GIRANI LTD.,

Ichalkaranji, Dist.Kolhapur
(Hereinafter called Indira Spinning Cooperative)

4.1 General information - Shri. Dattajirao Kadam, M.P. and Shri. A.G.Kulkarni, M.P established Deccan Co-operative Spinning Mill-the first co-operative Spinning Mill of our country and later on Navmaharashtra, the first 100% Export Oriented Unit (EOU) in the co-operative sector. Shri. K.B. Awade, established the Indira Gandhi Mahila Sahakari Soot Girani Ltd., a women’s project.

4.2 Registration - The Mill was registered on 23rd October 1992. The cost of Project Report for 25000 spindles was Rs. 29.88 Crores. The
shareholders collected more than Rs. 3.00 Crores and Government contributed Rs. 1331.10 lack at one go. Land admeasuring 57 acres in village Shivnakwad, 8 Kms away from Ichalkaranji was purchased, and factory building was constructed.

4.3 Installation of machinery - Machinery erection commenced on 1st April 1995. In the first phase 6000 spindles were commissioned in October 1995 and regular commercial production started on 22nd October 1995. The next phase of 6000 spindles was completed on 15th October 1996. Further 6000 spindles on 23rd April 1997 and 21000 spindles started on 1st 1998. The full-fledged working on 25000 spindles commenced on 1st July 2002.

4.4 Project Cost & Finance - The project cost as per revised estimates worked out to Rs. 6164.00 lacs and the same was considered under the scheme of NCDS for equity participation. Accordingly the State Govt. has sanctioned and disbursed the amount of Rs. 1442.70 lacs towards the balance amount of share contribution. In all, the State Govt. participation in equity is Rs. 2773.80 lacs, NCDC has also sanctioned Margin Money Assistance of Rs. 50.00 lacs.

4.5 Manpower - Present workforce includes about 500 workers and 60 technical and administrative staff personnel, hailing mainly from nearby villages. Women operatives have been handling the production work in day-shifts male workers are working in night shift. The workers are given on-the-job training. Various programmes and activities are arranged for them round the years. Most of the work systems are computerised in the line with ISO - 9000 LAN System has been established to facilitate better communication and speedy disposal of work assignments. The Management has adopted the latest technology. A
Captive Power Plant of 2.5 WM capacity has been installed as stand-by arrangement for fulfilling power requirements.

4.6 **Achievements** - The mill has won "God Medal" for best Technical Performance for last three consecutive years amongst all the mills in the State Co-operative sector. It has won national awards for Technical Performance announced by AIFCOSPIN. The first Board of Directors, has been elected unopposed in April 2003 under the chairmanship of Chairperson Mrs. Sapan U. Awade. The official inauguration ceremony was organized on 23rd January 1999 at the hands of Smt. Sonia Gandhi.

5 **NAV MAHARASHTRA SAHAKARI SOOT GIRANI LTD.**

A. P: Sajani - Ichalkaranji, Dist.Kolhapur
(Hereinafter called Nav-Mah. Spinning Cooperative)

5.1 **Establishment** - Nav Maharashtra Sahakari Soot Girani Ltd. is the first 100% EOU in spinning sector in India established at Ichalkaranji, in co-operative sector.. The mill started its commercial production in 1986, and since then exporting the cotton yarn to the countries like Italy, U.K. Belgium, Spain, Turkey, Mauritius, Malaysia, Philippines, Hongkong, China, Taiwan, S.Korea, Japan and Latin America.

5.2 **Plant and Machinery:** - The will is equipped with State-of-art-technology-machinery with 25920 Spindles. Precisely, the Blow Room and Carding, Comber Speed frames are from Marzoli and Co. Italy and Trumac Trutzchler, Contamination clearer system of Seizer. The draw Frames are from LMW and Rieter, Switzerland. The Ring Frames are from KTTM and Winding machines of Schlafhorst 238 and Murata 21C, Japan along with Siro clearer of Loepfe, Switzerland.
5.3 Share Capital - As in April 2007, there are total 4815 shareholders who have paid share capital of Rs. 2128 lacs. M.S. Government is also a shareholder contributing more than 608 lacs towards share capital.

5.4 The employment Position – Employees are given training for updating their knowledge. Good attendance rewards, sports, industrial safety competitions etc. are organized in the factory. Workers welfare trust is established for providing free medical and educational facilities to the workers and their family members. About 650 workers and 80 staff members were employed by the mill as of June 2008. Nav Maharashtra Spinning mill gives employment to about 50 women workers also.

5.5 Production - The Mill has Uster HVI 900 Series and Tens rapid Tester from Uster and PT - 7000 Evenness Tester from Premier to monitor the quality of cotton yarn. 100% cotton grey yarn auto coned, air spliced and Siro, electronically cleared in count range of NE27/1 KW, NE30/1 KW, NE32/1 KW, NE34/1KW, NE40/1CW, NE40/1CH.

Delivery and Payment

a. The yarn can be delivered from mills immediately after 100% payment credited in on Bank - for local delivery.

b. 100% payment by irrevocable and confirmed L / C payable preferably at sight and freely negotiable by any bank in India - for export.
6 CHOUNDESWARI SAHAKARI SOOT GIRANI LTD.,
Ichalkaranji, Dist- Kolhapur
(Hereinafter called Choundeswari Spinning Cooperative)

6.1 **Address**: At: Dharangutti, Post - Chipari, Tal-. Shirol,

6.2 **Beginning** - It is a co-operative spinning unit manufacturing 100% cotton yarn. The mill is registered under Cooperatives Act and its registration no. is KPR/PRG/ (1) 22 dt. 26/02/1991. The mill is situated in district of Kolhapur and Sangli with the main object to meet the weaver's requirement of cotton yarn and also to give employment to the down trodden and unemployed persons.

The mill is formed under the leadership of Devang Kosti Samaj and its steering committee. All the members are basically weavers by occupation. The mill was started with capacity of only 5000 spindles on November 1996 .The capacity later on increased to 12,480 spindles.

6.3 **The Project** - The mill factory building stands near Kolhapur-Sangli road.

6.4 **Shareholders** - The mill has total 2198 share holders and Govt. of Maharashtra also is a shareholders.

Share capital:

a. Shareholder Capital - 162.55 lakhs
b. Share Anamat - 10.88 lakhs
c. State Govt. of Mah. - 1548.00 lakhs
d. Total - 1711.43 lakhs

==========
6.5 Capacity - The mill has capacity of 12480 spindles. Average count 31, Average daily production of yarn about 43000 kgs. of cotton yarn. The cotton yarn is sold in Ichalkaranji and Malegaon market.

6.6 Employment - There are total 231 workers employed in Choundeswari Spinning Mills. The composition is as follows.

\[
\begin{array}{ll}
\text{a. Permanent workers} & 52 \\
\text{b. Badli workers} & 34 \\
\text{c. Temporary workers} & 109 \\
\text{Trainee workers} & 018 \\
\hline
\text{Total} & 213 \\
\end{array}
\]

Out of these 213, there are 150 male workers and 63 female workers at the time of the survey. The staff members (Supervisors, clerks and managers) were about 30. Out of this 30 people 20 belong to administrative section and 10 belong to production section. There are many industries in and around Ichalkaranji and hence acute shortage of workers is the problem faced by the spinning mills.

6.7 Production - The mill requires nearly 17.6 lakhs kgs. of cotton per year as raw material. This raw material is purchased from the Maharashtra Staff Co-op. Cotton Growers marketing federation and private traders as per availability. Considering the requirement of the weavers in the area of operation, the production of 43s, 34s, 26s, 20s warp yarn is manufactured in the mill. Annually the mill manufactures 10.73 lakhs kgs of yarn of average 40s count.
6.8 Management - The board of directors has 17 members strength. The board of directors is elected as on dt. 8/12/2003. Present Chairman and board of directors are related with textile industry and all of them are weavers.

6.9 Achievements:

a. The mill is honored by the All India Federation of Co-Op. Spinning Mills Ltd., for two times by rewarding certification of appreciation for operating cash profit per installed spindles and contribution per spindles.

b. The mill is rewarded by the Maharashtra State Co-op. Spg. Mills Federation, Mumbai for best performance in financial and technical administration. The mill has gained profit of Rs. 29.53 lakhs in last as a cash gain.

6.10 Future Plans - The Choundeswari mills intend to expand its capacity by another 12500 spindles in the future. The spinning mills shareholders are the weavers themselves hence 70 to 75% of yarn production is purchased by the shareholders themselves. The mill has not taken any loan also. The annual sales turnover is about 12 Crores in rupees. The mills management organizes workers education program and blood donation camps. Workers are provided with masks so as to get the protection against air dust and cotton particles.

7 SHREE DATTA SHETKARI SAHAKARI SAKHAR KHARKHANA LTD.,
Shirol, Tal-Shirol, Dist. Kolhapur
(Hereinafter called Datta Sugar Cooperative)

7.1 General Information - The organisation got registered under the Maharashtra Co-Operative Societies Act, 1960 on 9th June 1969. An
Industrial License for a Sugar Factory with initial crushing capacity of 1250 M. Tonnes per day was issued.

7.2 **Sugar Factory Project** - The project of Rs. 2.94 Crores was implemented within 22 months and trial crushing operation started on the 16th March, 1972.

a. 1250 TCD Plant was first commissioned in 1971-72, which was a trial season. Regular production started from 1872-1973 seasons.

b. Expanded capacity up to 2500 TCD was commissioned in 1980-1981.

c. Expanded capacity up to 2500 TCD under liberalized licensing policy is in operation since 1981-1982.

d. Substantial expansion up to 5000 TCD has been completed during the season 1989-90 and commercial production commenced from 29th March, 1990, with expanded capacity.

e. Expansion-cum-modernization of first phase up to 7000 TCD has been completed during the off-season 1999-2000 and commercial production commenced from 23rd November 2000 with expanded capacity.

7.2.1 **Area of Operation** - The area of operation of the Sugar Factory Companies of 87 villages from Shirol, Hatkanangale, Karveer and Kagal Talukas of Kolhapur District (Maharashtra) and 28 villages from Chikodi and Athani Talukas of Belgaum District (Karnataka). Out of these 115 villages, 14 villages from Shirol Taluka have been exclusively allotted to the Factory and remaining villages are common with the other neighboring factories.
7.3 **Share Capital & Term Loan** - The Government of Maharashtra had contributed an amount of Rs. 45.00 Lakhs towards share capital. The said Share Capital has been fully repaid by the Karkhana. Term Loan to the extent of Rs. 150.00 Lakhs availed from IFCI in participation with LIC has been totally repaid.

### 7.3.1 Financial Position: (Rupees in Lakhs)

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Particulars</th>
<th>Financial position</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>2001</td>
</tr>
<tr>
<td>1.</td>
<td>Total fixed assets</td>
<td>9034.00</td>
</tr>
<tr>
<td>2.</td>
<td>Investment</td>
<td>109.56</td>
</tr>
<tr>
<td>3.</td>
<td>Term loan</td>
<td>2199.35</td>
</tr>
<tr>
<td>4.</td>
<td>Deposits</td>
<td>1793.39</td>
</tr>
<tr>
<td>5.</td>
<td>Share capital</td>
<td>2068.81</td>
</tr>
<tr>
<td>6.</td>
<td>Reserves</td>
<td>138.59</td>
</tr>
<tr>
<td>7.</td>
<td>Net worth</td>
<td>1631.17</td>
</tr>
</tbody>
</table>

7.4 **Performance**

#### 7.4.1 Cane Crushing Season - 1971-1972 was a first trial season when only 7,347 M. Tones of Sugarcane was crushed. Regular season started from 1972-1973. Some mechanical problems like breakdown of the Boiler, tripping of the turbine etc. were occurred. During 1973-74, 1974-75, the drought conditions, severely affected cane cultivation and the working of the Factory.

#### 7.4.2 First Expansion - To raise the crushing capacity from 1250 TCD to 2000 TCD an Industrial License bearing No. IL-26 (78) dated 31ST May, 1978, for expansion was procured and project was purchased from M/s. Backau wolf New India Engineering Works Ltd., Pune, at a cost Rs.
2.25 Crores. The erection of the expansion project completed within 5 months and crushing operations of the increased capacity actually commenced from the season 1980-1981. During this season, the factory has crushed 3.19 Lakhs M. Tonnes of Sugarcane producing 3.91 Lakh Bags of sugar with an average Recovery of 12.26% which topped the list of Sugar Factories in India.

7.4.3 Second Expansion - The Management increased the capacity to crush 2500 M. Tonnes of sugarcane per day, during the season 1981-1982. The factory crushed 4.22 Lakh M. Tonnes of Sugarcane producing 5.12 Lakh Bags of sugar with an Average Recovery of 12.12% and the factory stood second in India in respect of Average Recovery.

7.4.4 Third Expansion - The management increased the crushing capacity from 2500 TCD to 5000 TCD during the season 1989-1990. The erection of the expansion completed within 11 months and started the commercial from 29th March, 1990. The Management increased the crushing capacity from 5000 TCD to 7000 TCD in two phases. The 1ST phase was completed in 1999/2000 crushing season and IIInd phase completed. The crushing season was started with expanded capacity to 7000 TCD from 2000/2001 season.

7.5 Distillery & Ethanol Plant - The capacity of distillery was 30,000 Liters/day .An additional capacity of 30,000 Liters/day installed and commissioned 27th Feb. 2002.

An Ethanol plant of 30,000 liters/day capacity commissioned on 25th May, 2002
7.6 **Co-generation** - Shirol factory is pioneer in co-generation of electricity, from the year 1990/1991 onwards to the extent of 1.5 MW. Present Co-Generation is to the tune of 3 MW Electricity, which is supplied to the MSEB, from 2003/2004 season. Income from the co-generation is Rs. 1.50 to 2.00 Crores per season approximately.

7.7 **Paper Plant** - The factory established Paper plant of 20 TPD based on Bagasse and Agricultural residues during the year 1983 by investing huge capital of Rs. 787=00 Lakhs ,on co-operative basis . Because of water pollution problems, the Paper Unit was shut down in the year 1992 with a loss of Rs. 1544.87 Lakhs. Paper Mill employees were merged in the Sugar Factory.

7.8 **Environment Department** - The Environmental Management cell looks after all the related issues of Pollution control. The effluent quantity has reduced to meager 450 M$^3$/Day for crushing of 7500 TCD. The effluent is treated in the full-fledged ETP based on activated sludge process. The treated effluent is used for irrigation of about 40Ha of land Press mud, Bagasse and Ash are mixed in definite proportion with the spent wash and aerated for about 21 days to get good quality of compost which is sold to the member farmers at a subsidized rate of Rs. 200/- per tonne.

7.9 **Water Management** - Shree Datta Sugar factory has a crushing capacity of 7500 TCD. The water consumption of the factory during 2001-02 was 3000 Cum/d. The factory technicians reduced the water consumption as mentioned below:
### Water Consumption

<table>
<thead>
<tr>
<th>S. N.</th>
<th>Year</th>
<th>Water consumption Cum/d</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2001-02</td>
<td>3000</td>
</tr>
<tr>
<td>2</td>
<td>2003-04</td>
<td>900</td>
</tr>
</tbody>
</table>

During current season 2004-05 the water consumption is further reduced to 450 cum/d. The electricity required at Jack well was reduced as below.

### Crushing和Electricity Consumption

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Year</th>
<th>Days</th>
<th>Crushing (MT)</th>
<th>Electricity Consumption (KWH)</th>
<th>Consumption per day</th>
<th>Consumption per MT of crushing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1999-00</td>
<td>177</td>
<td>1068296</td>
<td>557919</td>
<td>3152</td>
<td>0.522</td>
</tr>
<tr>
<td>2</td>
<td>2000-01</td>
<td>167</td>
<td>1191800</td>
<td>471600</td>
<td>2824</td>
<td>0.395</td>
</tr>
<tr>
<td>3</td>
<td>2001-02</td>
<td>153</td>
<td>1122850</td>
<td>401778</td>
<td>2626</td>
<td>0.357</td>
</tr>
<tr>
<td>4</td>
<td>2002-03</td>
<td>150</td>
<td>1068001</td>
<td>289600</td>
<td>1930</td>
<td>0.270</td>
</tr>
<tr>
<td>5</td>
<td>2003-04</td>
<td>97</td>
<td>685733</td>
<td>150861</td>
<td>1555</td>
<td>0.220</td>
</tr>
<tr>
<td>6</td>
<td>2004-05</td>
<td>71</td>
<td>540815</td>
<td>108153</td>
<td>1523</td>
<td>0.200</td>
</tr>
</tbody>
</table>

### Electricity Consumption for ETP

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Year</th>
<th>Days</th>
<th>Crushing</th>
<th>Electricity Consumption</th>
<th>Consumption per day</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2001-02</td>
<td>153</td>
<td>1122850</td>
<td>283680</td>
<td>1854</td>
</tr>
<tr>
<td>2</td>
<td>2002-03</td>
<td>150</td>
<td>1068001</td>
<td>222680</td>
<td>1551</td>
</tr>
<tr>
<td>3</td>
<td>2003-04</td>
<td>97</td>
<td>685733</td>
<td>148440</td>
<td>1530</td>
</tr>
<tr>
<td>4</td>
<td>2004-05</td>
<td>71</td>
<td>540815</td>
<td>107400</td>
<td>1512</td>
</tr>
</tbody>
</table>
Besides this the load of Effluent treatment plant is also reduced considerably and the disposal problem was totally finished.

### 7.11 Horticulture

In the year 1982, management of factory started Horticulture development scheme, and tree plantation programme was implemented as follows

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Type of trees</th>
<th>No. of trees</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Coconut</td>
<td>5</td>
</tr>
<tr>
<td>2.</td>
<td>Betel nut</td>
<td>311</td>
</tr>
<tr>
<td>3.</td>
<td>Mango</td>
<td>173</td>
</tr>
<tr>
<td>4.</td>
<td>Sapota</td>
<td>63</td>
</tr>
<tr>
<td>5.</td>
<td>Guava</td>
<td>165</td>
</tr>
<tr>
<td>6.</td>
<td>Pomegranate</td>
<td>15</td>
</tr>
<tr>
<td>7.</td>
<td>Dreakstrick</td>
<td>32</td>
</tr>
<tr>
<td>8.</td>
<td>Forest trees</td>
<td>11081</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>17040</strong></td>
</tr>
</tbody>
</table>

### 7.12 Socio Economic Activities

- Gobar Gas Plants- are provided with a subsidy amount. So far 692 plus Gobar Gas Plants are constructed.
  a. Datta Oos Vahatuk yojna: 34 trucks, 84 tractors, 156 trailers and 4 bullock carts fitted with rubber tyres are provided to the members.
  b. The Factory owns one bulldozer of 80 HP capacities and one tractor of 35 HP capacity and also 2 tractors of 50 HP capacities each to facilitate the agriculturists for development of their lands.
  c. Workers Co-Operative Credit Society: Short-term loans to its members.
d. Consumer Store: cloths, ready-made cloths, food-grains, utensils, 
electrical items, sewing machines, bicycles etc. at reasonable 
prices.
e. Diesel Petrol Pump: has been installed at factory site.
f. Fire Fighting Unit: At Factory site.

7.13 Medical Centre
A Medical Center is available in the premises of the factory. Facilities are made available to employees and the population at nominal charges.

7.14 Industrial Training Centre (ITI)
The Management has started Industrial Training Center.

7.15 Co-operative Credit Society
It is a cooperative society of factory employees and gives short term loans to its members.

7.16 Employee Welfare - Late Dattajirao Kadam Kamgar Kalyan Mandal Dattanagar implements various schemes of labour welfare. Workers get Rs. 10,000 Medical Aid, for major operation. Mandal has Gymnasium, Akhada, Library, Balwadi, and Recreation Hall. 50% Medical Expenditures for the employees suffering from Heart Diseases, Paralysis, TB, Cancer & Leprosy and a paid leave up to 6 months.

7.17 Computerization - Computerization started in 1987 for calculation of the salary of the employees. They are having latest computer hardware and software. Fiber Optic Cabling connects various departments to a Central Server. The System Developed is On-line type. The transactions are recorded into the computer system at the source point as and when they occur.
7.19 Sugarcane Development Activities - The factory has appointed one Agri. Assistant for every 300 cane growers. The Agri. Assistant gives advice to the concerned cane growers. They give them ideas about new technology in sugarcane and motivation. The CDO, Agri. Overseer conducts the village wise meeting.

7.20 Cane Development Activities

a. Soil Testing - Factory has set up Soil Testing Laboratory in 1987. PH, Electric conductivity, organic carbon, calcium, nitrogen phosphorus, potash, zinc, ferrous, manganese, these element level are checked in laboratory and recommendations are given

b. Supply of Sugarcane Seed Material - Three-tire sugarcane seed nursery programme is started by factory. Quality seed material brought from Research Station viz: VSI & Padegaon, are given to the farmers.

c. Supply of Chemical Fertilizers - Factory supplies chemical fertilizer doses.

d. Supply of Bio-Fertilizers - Factory supplies Bio-fertilizer to the members.

e. Supply of Organic Manure - Factory supplies good quality press mud, compost manure, poultry manure, neem oil cake on subsidized rate.

f. Motivation for new technology - The new technology in sugarcane cultivation is given to the cane growers.

g. Sugarcane Plating Technology - An idea of plating sugarcane in 4 Feet distance furrow and PATTA plating technology is suggested to farmers with some incentive in the form of fertilizers.
h. **Seed Material** - Two eye budded sets seed material. One Reye bud sets or polybag seedling for Adsali planting.

i. **Application of Trash Mulching** - Factory motivates farmers for keeping sugarcane trash to previous crop in ratoon.

j. **Use of Fertilizer** - The soil, plant and water samples are analyzed and recommendations are given to the growers.

### 7.21 Efficiency Award - First Prize

: for excellent technical performance - for consecutive seven years - by National Federation of Co-operative Sugar Factories and Govt. of India - from 1982 to 1988.

### 8 SHRI CHH. SHAHU SAHAKARI SAKHAR KARKHANA LTD.

Kagal, Tal- Kagal, Dist - Kolhapur.

(Hereinafter called as Shahu Sugar Cooperative)

#### 8.1 General Information

- Industrial License : I/L/S (77) Sugar dt. 12-01-1977

Shri Viramsinha Jaysingrao Ghatge is the chief promoter and Shri Vijay S. Autade is the managing director of the factory.

The position as on 31.03.2008.

- a. Share Capital : 1137.63 Lakhs
- b. Total Income : 14980.87 Lakhs
- c. Total Expenditure : 14579.94 Lakhs
- d. Net Profit : 00400.93 Lakhs
- e. Total Loans and : 08035.48 Lakhs
- f. Net Worth : 03762.73 Lakhs
8.2 Co-generation Project - 12.5 MW capacity project has been completed with a project cost of Rs. 6,150/- lakh. The generation of electricity has been commenced with effect from 15-03-2008.

8.3 Sugar Production & Marketing - During 2007-08, 10,15,790 quintals of sugar has been produced and 352440 quintals have been exported. The factory has received "Two star Export House Certificate" has been given for its export performance.

8.4 Computerization - During 2007-08, the factory has gone for thin client pcs in place of desktop computers. They have started smart card scheme for farmers members from 2006-07.

8.5 Sugarcane Development Scheme - The factory has spent Rs.30.52 Lakh for new seeds, basal does, green manure, Insecticides, Sugarcane plot prizes, land leveling, Pipeline, tilling equipments, workshops and training etc.

8.6 Compost fertilizers

a. Vermi Compost - Shahu Sugar factory has produced and sold 330 metric tons of vermi compost to the farmer members.

b. Phospo Compost - VSI Pune has identified this factory for their research work and has taken trials of improved varieties of sugarcane on the plots of the factory.

c. Compost Fertilizer Project - The factory has started a project of compost fertilizer production project in 2001-02. The fertilizer produced in this project is made available to its member farmer’s @Rs.200/- Ton. The use of such fertilizers has shown improvement in the sugarcane productivity.
8.7 Study on Low productivity - The farmers producing less than 20 Mt of sugarcane per acre are covered under the study and remedial measures to improve the productivity are suggested by the factory.

8.8 Extension Activities

a. Computerized Meteorological Unit - In collaboration with VSI, Pune the weather record machine has been installed at Murgud Centre which will provide weather information to the members.

b. Bio-Gas Plants - The factory has motivated the members to go for Bio-Gas plants by giving them subsidy assistance.

c. Ethanol Project - During the year from 01.04.2007 to 31.03.2008 the factory has produced 98,66,400 lits of spirit in 210 days.

d. Irrigation Schemes - The factory has promoted 19 water supply schemes for its members out of which 13 have been already implemented. 03 schemes are under construction. 04 schemes have repaid their Bank loans. The factory provides its consultancy services to members for their independent small water schemes also.

e. Diesel Pump - The factory has started its own diesel pump for supplying good quality diesel to its members for their vehicles like tractors & trucks.

f. Area Development Fund - As per Multistate Co-op. Act of 2002 the separate trust has been established for administration of area development fund. The social, cultural, educational and sports activities are organized under the control of this trust.

g. Sports Activities - The factory provides scholarships and financial incentives to the sportsmen participating in state and national level competitions. The factory has established gymkhanas at Kagal and
Shindewadi Village. It has helped different sportsmen organisations for purchase of gym equipments.

**h. Sugar Schools** - The factory has established the seasonal primary level schools for children of their workers. These children are provided educational opportunities, cultural events, free uniforms and educational trips and nutrition's diets.

**i. Shahu Sugar Newsletter** - The factory has started the news periodical which covers factory workers gatherings, programmes, and information about events happening in and around the factory. The members are given the issues of this periodical every month for their information.

### 8.9 Employee Welfare

**a. Facilities** - The factory has maintained cordial and harmonious industrial relations between management and workers. Medical facilities, educational facilities, educational and credit co-operatives facilities are provided to the employers.

   a. Accident insurance schemes medical insurance scheme, library facilities, is provided to the employees. "Shahu Pariwar Varta" a house magazine is published regularly by the factory. Free housing accommodation, uniforms, Tea powder and breakfast on confessional rates are made available at canteen. The factory gives concession in the light in the factory campus. The safety programmes are organised on the factory sight. The retiring employees are felicitated by giving them presents. The meritorious children of employees and members are given rewards for their performance in the 10th and 12th standards.
b. **HRD programmes** - The employees are deputed for training to different training centers and member farmers are given latest information in the workshops organized by the factory. The factory organise human resource development programmes for its employees. The expert resource persons are called for their speeches on factory sight.

c. **Cultural Activities:** - The Factory Anniversary Day, Worker Day (1st May), Shiva Jayanti, Ganesh Chaturthi, Dr. Ambedkar Jayanti, Shahu Jayanti, National Safety Day, Armed Forces Day, Blind Welfare Day, Co-operative Day etc. are celebrated at factory sight. Sports competitions are also organised deputed frequently for outside training programmes.

9 SHRI TATYASAHEB KORE WARANA SAHAKARI SAKHAR KARKHANA LIMITED, WARANANAGAR, 
Taluka- Panhala, District- Kolhapur 
(Hereinafter Called Warana Sugar Cooperative)

9.1 **Warana Group of Cooperatives** - Shree Tatyasaheb Kore Warana Sahakari Sakhar Karkhana Limited, is located at Warananagar in Panhala Taluka of Kolhapur District, Maharashtra State, (Warana Sugar Factory), 10 KM. away from Wathar (Pune-Bangalore National Highway No. 4) and 32 KM. away from historical city Kolhapur,

9.2 ‘**Warana Complex’** - is a co-operative center of activities in the field of agriculture, Agro-based Industries, Education, I.T., Bio-Technology, Medical, Bio-Medical Engineering, Banking, Consumer Services etc. Presently Vinay Kore leads Warana Complex dynamically with vision.
9.3 Group information - The establishment of a co-operative sugar factory in 1959 completely revolutionized the life of Warana. This co-operative sugar factory has bagged first prize for its best technical efficiency in the year 1988 National Federation of Co-operative Sugar Factories Ltd. New Delhi. In 1991-92 it has also been a Vasantdada Sugar Institute, Pune for its best technical efficiency and higher reduce mill extraction in region of Maharashtra. The sugar factory has also bagged many prizes from the National Federation of co-operative sugar ac New Delhi, The crushing capacity of the factory is more than 5000 tonnes/day. During the season of 1 total crushing capacity reached more than 7200 tonnes/day, which is once again a milestone in India. The turnover of the sugar factory for the year 1997-98 was Rs. 138.5 Crores. The factory is also proposing to sugar to the market in small packets of varying sizes ranging from 1 kg. to 5 kg. There are further plans the sugarcane juice in small pouches to the market. Warana’s total growth is dependent on this sugar factory. This is parent unit giving inspiration and enthusiasm for the overall growth.

9.4 A Brief History - Shri Tatyasaheb Kore is the founder of this complex. He started his social service in 1935. He participated in Quit India Movement of 1942. He was associated with underground movement of Late “Y.B. Chavan. He was unanimously elected as President of Kodoli Municipality in 1940.

An unprecedented depression in 1951 ruined the farmers of this area. They burnt out their sugar canes rather than making jaggery and selling it at throw away prices. Because of this shocking incident he set up a cooperative sugar factory near Kodoli village.
9.5 Achievements

i. First Prize for the Best Technical Efficiency at National level for the season 1988-89

ii. Second Prize for the Best Technical Efficiency at National Level for the season 1982 to 85

iii. Best Technical Efficiency Award during 1991-92 Season


v. First Prize for Reduced Mill Extraction and Second Prize for Best Technical Efficiency 1992-93 season.

vi. 1992-93 Season - First Prize in Cane Development Work in South Maharashtra and Best Tech Efficiency Award from

vii. 1993-94 Season - First Prize in Sugarcane Development work.

viii. 1995-96 Season - Sugarcane Development Award (First Prize).

ix. First Prize in Sugarcane Development Work in Highest Sugar Recovery Zone at National Level

x. First Prize to our Chief Agriculture Officer Shri, A.A. Patil as ‘Best Chief Agriculture Officer 1996-97 seasons.

xi. 1997-98 Season-Best Technical Efficiency Award (First Prize) from Vasantdada Sugar Institute, Pune.

xii. Award of Most Innovative Factory at State Level to our Sugar Factory for the year 1997-98.

xiii. First Prize Technical Efficiency in South Zone for the year 1997-98 seasons.

xiv. First Prize to the Managing Director Shri. VS. Chavan as “The Best Managing Director 2000-2001 seasons.
xv. 2000-2001 Season - Best Technical Efficiency Award (Second Prize)

xvi. Best Sugarcane Development Award for the Season 2000-2001

9.5 Facilities: Shri Tatyasaheb Kore started a 30-bed hospital with latest facilities in 1992. It is a 200-bedded hospital, which is equipped with modern medical technologies along with expert doctors. The experts organise periodical medical camps free of cost for the benefit of rural mass.

Lift irrigation schemes on co-operative basis were encouraged by providing financial aid, technical know-how and managerial help. An independent irrigation department looks after all these co-operative lift irrigation schemes and even it has involved in giving technical advice on rehabilitation of some such schemes. Around 65 lift irrigation schemes are functioning. Each lift irrigation scheme is quenching the thirst of around 120 acres of land. Along with this, three big lift irrigation schemes are inundating around 4600 acres of land. Due to the efficient working of these lift irrigation schemes the sugar cane production has gone up by 2. Apart from this, around 5828 wells with pump sets are also functioning, each well watering about 2-4 acre.

The factory has provided residential quarters to the workers with all the essential facilities like sanitation, filtered water supply, cheaper electricity etc. Workers avail the credit facility from the departmental store that is Warana Bazar. In case of emergency medical facilities are provided at free of cost. The worker’s welfare runs a printing press.

Warana has received one mega project costing Rs 2.5 Crores in Information Technology viz. “Warana Wired village Project”. This pilot project is first of its kind in Asia. This project connects 70 villages with
150 Computer Networking nodes and also provides the Internet facilities to the rural community. The people get all the information of revenue records, health cards, credit cards, agricultural goods market prices of National as well as International markets.

Advanced agricultural technological information is available to the farmers at the press of the button. The project is run with the support of Central and State Government. It is implemented with Informatics Centre (NIC), C-DAC and Shree Warana Vibhag Shikshan Mandal.

“Warana Vyayam Mandir” provides facilities to the body builders and young wrestlers. The training in traditional wrestling and body building is given to the interested youngsters around the village. Well-qualified coach, lodging and boarding facilities for the trainees have resulted into the creation of many “Bhimas” on the land of Warana.
Reference:
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4. Deshmukh Vilasrao, the then Chief Minister of Maharashtra, speech given at the Inauguration of 47th Annual General Body Meeting of National Federation of Cooperative Sugar Factories, www.coopmah.com
5. www.nottinghamuni.org “The Indian Textile Industry: International Competitiveness”, a dissertation presented in part Consideration for the degree of “MA Management” to the University of Nottingham, taken from Internet
6. Kolhapur Gazetteer, Govt. of Maharashtra
7. Annual Reports of the Co-operative Organizations.