Chapter II

Growth of Sugar Industry

This chapter is mainly concerned to the development of sugar industry and indenture labour system in the world economy. It also attempts to know the development of sugar factories under cooperative sector and private sector in the country like India and the growth of sugar industry in the Maharashtra state. However, sugar industry is an organized industry.

Sugar Industry in the world:

Brazil is the world's biggest sugarcane producing country in all over the nation's .while India is the 2nd biggest producer after Brazil. Sugar is produced in 121 countries and global production now exceeds 120 million tons during 2010-11. Sugarcane is the world's largest crop. It was cultivated on about 23.8 million hectares, in more than 90 countries, with a worldwide harvest of 1.69 billion tones. United Nations Food and Agricultural Organization, (FAO), 2011, [1] pointed out major sugar producing countries in the world, some of the selected nations are as follows.

Brazil,India,China,Mexico,Thailand,Pakistan,Colombia,Australia,Indonesia,USA,Philippines,Argentina,Guatemala,SouthAfrica,VietNam,Egypt,Cuba,Myanmar,Peru,Venezuela,Ecuador,Honduras,Sudan,Bolivia,Kenya, Iran, Bangladesh, Paraguay, El Salvador, Swaziland, Nicaragua, Dominican Republic, Mauritius, Zimbabwe, Madagascar, Mozambique, Guyana, Nepal, Malwi, United Republic of Tanzania, Uganda, Ethiopia, Jamaica, Reunion, Panama, Democratic Republic of the Congo, Fiji, Cote d'Ivoire, Japan, Nigeria, Haiti, Belize, Srilanka, Guadeloupe, Senegal, Trinidad and Tobago, Congo, Morocco, Burina Faso, Lao Peoples Democratic Republic, Chad, Cambodia, Angola, Mali, Papua New Guinea, Barbados, Uruguay, Guinea, Liberia, Gabon, Martinique, Somalia, Niger, Ghana, Burundi, Suriname, Saint Kitts and Nevis, Central African Republic, Sierra Leone, Afghanistan, Rwanda, Bahamas, Benin, Cape Verde, Malaysia, Saint Verde, Malaysia, Saint Vincent and the Grenadines, Guiana-Bissau, Portugal, Dominica, French Guiana, French,Polynesia, Oman,Spain,Djibouti,American Samoa, Wallis and Futuna Islands, Samoa. The largest producers of sugar in 2011 were Brazil, India, The European Union, China and Thailand .In the same year, the largest exporter of sugar was Brazil, distantly followed

by Thailand, Australia and India. The largest importers were the European Union, United States and Indonesia.

Approximately 70% is produced from sugarcane, a very tall grass with big stems which is largely grown in the tropical countries. The remaining 30% is produced from sugar beet, a root crop resembling a large parsnip grown mostly in the temperate zones of the north. Sugar means sweet item of the food and juice, but the chemist knows as 'sucrose' one of the families of sugars otherwise known as saccharine in the grouping called carbohydrates. Carbohydrates, as the name implies, contain carbon and hydrogen plus oxygen in the same ratio as in water. However, sugarcane is a genus grasses which requires strong sunlight and abundant water for satisfactory growth. Sugar beet is a temperate climate biennial root crop

Sugar Beet:

The European Union is the world's biggest producer of beet sugar and the principal importer of raw cane sugar for refining. Most of the EU's sugar beet is grown in the northern half of Europe, where the climate is more suited to growing beet. The most competitive producing areas are in northern France, Germany, United Kingdom, and Poland. The EU is the world's leading producer of beet sugar, with around 50% of the total. There are 10 biggest producing sugar beet countries in the world, like Russia, France, United States, Germany, Ukraine, Turkey, Poland, China, United Kingdom, Egypt,

In 2009 France, the United States, Germany, Russia, Turkey were the Worlds five largest sugar beet producers. The beet sugar industry in Europe rapidly developed after the Napoleonic war.

By 1812, French man working for the industrialist. By 1837, France was the largest sugar beet producer in the world, a position it continued to hold in the world in 2010. By 1837, there were 542 factories in France, producing 35000 tons of sugar. By 1880, Germany became the largest sugar beet to producer in the world. Until the latter half of the 20th century, sugar beet production was highly labour intensive, as weed control was managed by densely planting the crop, which then to be manually thinned two or three times with a hoe during the growing season. Harvesting also required

many workers. Today, mechanical sowing application for weed control, and mechanical harvesting have displaced this reliance on manual farm work. The world harvested 271.6 million metric tons of sugar beets in 2011. The world's largest producer was Russia, with a 47.6 million metric tons harvest. The average yield of sugar beet crops worldwide was 58.2 tons per hectare.

Indentured labour System in Sugar Industry:

Sugar cane is a giant grass and has been cultivated in tropical climates in the Far East since ancient times. Sugar has been produced in the Indian subcontinent since ancient times. Sugarcane was a native of tropical South Asia and Southwest Asia. India is known as the original place of producing sugar cane in the world. It appears that in about 55 BC, residents of India began making sugar syrup and cooling it in large flat bowls to make crystals that were easier to store and transport than the cane itself. This is the source of world candy. The use of sugarcane spread in Europe with expansion of the growing sugarcane in the Mediterranean region about the beginning of the 13th century less than two hundred years later, Christopher Columbus, who introduced into Santo Domingo in Mexico on his 2nd voyage in 1493 A.D. Afterwards; it was introduced into Cuba and other West Indies by the 16th century. Marcopolo and Wascodigama had reported that sugar had been exported from India since 16th century when the East India Company was established.

Besides, sugar beet is a root crop, which is cultivated in cooler climates and became a major source of sugar in the 19th century when methods for extracting the sugar became available.

Sugar was a luxury in Europe prior to the 18th century. By later in the 19 the century, sugar considered a necessity of life of the consumers. At present, sugar is an important part of the human diet, making food more palatable and providing food energy in most parts of the world. Sugar is produced all around the globle.It is derived from sugarcane in the tropics, subtropics and sugar beets in the temperate zone. Cane and beets are processed into sugar at factories. Sugar production and trade has changed the course of human history in many ways. It influenced the formation of colonies, the perpetuation of slavery, the transition to indentured labour, the migration

of workers and peoples, wars between sugar trade controlling nations in the 19the century.

So far as labour is concerned, the demand for cheap labour to perform the hard work involved in its cultivation and processing increased the demand for the slave trade from Africa, especially, West Africa. After slavery was abolished, there was high demand for indentured labourers from India in South Asia. Millions of slave and indentured labourers were brought into the Caribbean and the Americas, Indian Ocean colonies, Southeast Asia, Pacific Islands and east Africa and Natal.

Sugar also led to some industrialiasation of former colonies. The British government had cultivated sugarcane in British India with many advantages and less expense than in the West Indies. As a result, a number of sugar factories were established in Bihar in eastern India under the British Government. India is the home of sugarcane in the world economy. Sugarcane is grown in India from immemorial. India has been known as the original home of sugar and sugarcane in the world economy.

Indian labourers were transported by the British government under indentured labour system in many parts of the world (Salve, 2010).[2] The system of indenture labour came into existence to take the place of slave labour after the abolition of slavery system. Before abolition of slavery system, Negro slaves were imported mostly from Madagascar and the East Coast of Africa during 1715-1810.The abolition slavery in the British colonies by the parliament in 1833 was followed by a serious labour problem in Mauritius. Therefore thousand of indentured Indian labourers were migrated to Mauritius in order to work on sugar plantation. These labourers were emigrated, from the poorest and most cost ridden areas of south India. However, Mauritius was the first British colony to import free labour on large scale from various British colonies to develop sugarcane plantation. The labourers were known as Indian coolies in sugar cane plantations, those workers who were migrated to Mauritius, Madagascar, British Guinea, Trinidad, Surinam, Barbados, Jamaica, Haiti, Costa Rica, Cuba, Dominican Republic, El-Salvador, South Africa, Reunion, Guinea, Fiji, Natal, Spain-Grenada, ST, Vincent, ST-Lucid and Sri lanka, because the Negros were found often inefficient in British and Non British colonies.

The indenture labour system was introduced in British Guinea in 1833, Mauritius, 1834, Trinidad 1844, Jamaica 1845, Fiji 1879, because immigrant workers in France, Germany, Switzerland and Britain were usually employed in occupations rejected by indigenous workers. Indian Coolies or Indian workers were employed chiefly in sugar plantations and they migrated to foreign countries due to unemployment and the pressure on land. Indian labour throughout the second half of the 19th century constituted the chief labourers were employed on the sugar Estates in British Guiana and those labourers were used in cane cutting and sugar mill tasks. There were so many gangs of workers headed by a driver to contract a certain amount of work to be done. Sugar cane cutting , loading and transporting of sugarcane work had to be done by contract workers. During the year 1916, G.K.Gokhale and Pandit Malaviya moved a resolution in the Imperial Legislative Council for the abolition of indenture labour system. The indenture labour system was abolished by the Emigration Act of 1922 in India. At present, free labour is found over most of the parts of the world, a special type of contract labour is known as Coolie and it is found in the plantations regions of south East Asia. According to Encyclopedia Britannica, the word 'Coolie' becomes a synonym for "Indian" in the West Indies and for "Hindu" in South Africa.

In India, working conditions of seasonal migrant workers have not been improved till today. These workers had no minimum wage prescribed and given the fact that they were without work in the lean periods, the sugar mill owners used to employ contracts who come to the villages and lure them by giving a lump sum advance of around Rs.15, 000 to Rs. 20,000. Thus they are fixed for the sugarcane cutting job in the coming season at low rates, virtually becoming bonded labour for the contractors, who are usually the rich farmers or entrepreneurs who owned tractors and Lorries for transporting. The cutting season would begin in October and would extend sometimes up to May in the crushing season of the sugar factory.

Sugar Industry in India:

The sugar industry is the largest among the processing industries next only to cotton textiles. Indian soils and agro-climatic conditions are ideal for the cultivation of the sugar cane ,which is grown in almost all the states and nine union territories of India.

Besides, a major portion of sugar cane grown in all the states and union territories of India is converted into non-centrifugal sugar known as gur and Khandasari.The sugar industry in India has two sectors including organized and unorganized sector. The sugar factories usually belong to the organized sector and those producers who produce traditional sweeteners fall into unorganized sector.Gur and khandasari are the traditional forms of sweeteners.

Sugar industry is an agro-based industry; sugar is one of the best sources of energy food available to the man. Sugar, Gur (jaggery and Khandasri are the chief sweating agents in the world. Sugar is produced all around the global. About 107 countries are producing sugar in the world economy. Sugar is important item in the world market. India is the second largest producer in the world next only to the Brazil. Currently, there are about 4 million hectares of land under sugarcane with an average yield of 70 tons per hectare. India is the largest producer of sugar including traditional cane sugar, sweeteners, khandsari and gur equivalent to 26 million tons raw value followed by Brazil in the second place at 18.5 million tons. There was a total number of 571 sugar mills in different parts of India during 2005.These 571 sugar mills had a production of total quantity of 19.2 MT.

Jobs in Indian sugar industry have created ample employment opportunities in rural India. Today, sugar industry has absorbed about 5 lakh rural people. The cultivation of sugar cane employs about 4.5 corer farmers in the country. Besides, the sugar industry to provides employment to about 2 million skilled and semi skilled workers and other mostly from the rural areas.

Growth of Sugar Industry:

Sugar cane is grown in India from immemorial time. India has been known as the original home of sugar and sugarcane in the world economy. The growth of sugar industry is full of adventure and consequent. It received the attention of the builders of different empires from time to time. India is commonly supposed to be home of sugarcane from Roman period up to the end of 17^{th} century. As early as 1750, trade was fostered by the East India Company in India, but export of sugar to Great Britain first started in 1791.During the period 1780-1850, a number of individual producers had started sugar making factories. However, first modern sugar factory was established in Bihar in 1903. Ranade (1906)[3] had drawn his attention on problem of

sugar industry, especially protection to sugar industry. In fact, sugar industry could not make headway till 1930-31.The sugar industry protection Act was passed by the Indian legislature in 1932, which imposed a protective tariff against imported sugar. As a result protection, the country become particularly self-sufficient in respect of sugar during the period 1936-37.This steps encouraged rapid expansion of the sugar industry .sugar factories increased from32 in 1930-31 to 140 in 1936-37.During the year 1940-41, there were 148 sugar factories in India, which were producing around 1.1 million tons of sugar as compared to 32 sugar factories in 1930-31 producing around 0.12 million tons of sugar.

Co-operative sugar Factories:

The history of modern co-operative sugar mills in India can be traced since 1932.During the period 1933-35,co-oprerative sugar factories were established in Uttar Pradesh and Andhra Pradesh states in India, especially, Biswan (U.P.), Thummapala (A.P.), Ethioppaka and Vuyuary (A.P.). The Ethikoppaka and Co-operative Agriculture and Industrial society Ltd was the first co-operative basis sugar factory in India (Sivayya, 1971).[4] Thereafter, D.R.Gadgil and shri Vithalrao Vikhe patil had made efforts to establish a sugar factory on the co-operative basis in Maharashtra .Therefore, the first co-operative sugar factory was established at Pravaranagar in 1948, which encouraged by the success of this co-operative experiment in sugar industry. However, .other states in the country were started cooperative sugar factories with a view to help the cane growers to reap maximum benefits.

After independence, in the year 1950-51, the era of planning for industrial development began and government laid down targets of sugar production and consumption, licensed and installed capacity, sugar production during each of the five year plan periods.The first Industrial policy resolution was passed by the Government of India in 1948.The industries (Development and Regulation Act 1951 empowered the government to issue licenses for the setting up of new industries expansion of existing ones, and for diversification of products. The industrial policy (Resolution) 1956 considered the need for decentralized sectors of the industrial development in India and also emphasized the urgency of the programme of reducing regional disparities of incomes for which dispersal of industrial undertakings, which was recognized as important medium.

The National. Federation of co-operative Sugar Factories Ltd was established in 1960, when India had only 174 sugar Mills and only 30 were in co-operative sector. The establishment of the NFCSF has changed the scenario.(Vinay kumar,2002) [5] During the year1990-91,there were 385 sugar factories in India, of these, 220 were in co-operative sector. The cooperative sugar factories have shown higher growth and increase in share of cooperative sector in sugar production.They produced 72.74 lakh tons sugar out of 120.74 lakh tons of the sugar production .The percentages of co-operative sector in sugar production was 60.4 percent in the year 1991-91, which decreased to 58.7 percent in the year 2000-2001 due to new industrial policy in the era of globalization. However, sugar factories have increased from 139 in 1950-51to 529 in the year 2011-12 .(see table 2.1) This shows emergence of sugar factories of large size.

Table 2.1

No. of sugar factories in operation in India since1950-51 to 2011-12

Year	No. of sugar factories in operation	Installed Capacity (lakh tone)	Actual sugar production (in Lakh tone)
1950-51	139	16.7	11.0
1960-61	174	24.5	30.2
1978-79	229	59.1	58.4
1985-86	339	72.7	70.2
2000-01	437	168.2	186.0
2006-07	501	---	283.28
2011-12	529	-	263

Source: Indian Sugar Mills Association

During the year, 2000-2001, there were 436 sugar factories in all sectors of the country, of which 259 sugar factories were in co-operative sector. The co-operative sugar factories were produced 105 lakh tons of sugar as against 185.5 lakh tons by all the sugar factories in India.

New Economic policy:

The government was announced new economic policy in 1991. This is known as LPG policy i.e. Liberalization, Privatization, and Globalization. The liberalization policy of 1991 brought a more democratic system of business. The new economic policy with LPG since 1990 opened different sectors for the private sector. The earlier fear about takeover by foreign companies was over thrown by the positive strength shown by Indian corporate sector. (Kakade, 2013).[6] According to Vinay Kumar

(2001), Managing Director of national Federation of co-operative sugar factories Limited, the liberalization process started in 1991 and the entire co-operative sector of the sugar industry has to stand on its own.

The Indian markets are opening up for the world as per the World trade Organization's norms.(WTO's).The Government of India has already removed the quantitative retractions on 1st April 2001. During the year 2009-10, there were 482 sugar mills in the country, of which 246 sugar mills were in private sector and 218 in the co-operative sector. There were 18 sugar mills in the public sector. Total production capacity of sugar mills in India was 23.34 million tons in the year 2009-10. There was rise in global sugar production consequently 165 and 177 million tons in 2010-11 and 2011-12.(See Table 2.2)

Table 2.2.

Sector wise sugar production in India. (in million tons).

Year	Co-operative	Private
2000-2001	10.4	8.01
2001-02	9.4	9.1
2002-03	10.1	9.9
2003-04	6.01	7.5
2004-05	4.6	8.03
2005-06	8.2	10.9
2006-07	12.9	15.3
2007-08	12.1	14.2
2008-09	6.5	7.9

The total sugar production was 18.74 million tons during 2009-10. It increased to 26 million tons in the year 2011-12. During the season 2012-213, the nation's sugar output was expected to reach round 25 million tons. The sugar industry is trying through global alliance, a diverse group of sugar producing nations. However, the sugar industry has been facing the various problems in the era of globalization.

Besides, there is no fixed policy regarding levy sugar and free sale sugar in the market. During the year2001-02, the ratio was 15 % (15:85) and it was 10% (10:90) from 1st April 2002. However, the government of India took decision to abolish the sugar levy and deregulated sale of sugar in the open market. The sugar industry is among the most regulated sectors in India, where in the government of India until now followed the twin policy of production and market control through licensing restrictions, specified catchment area from which mills must procure cane from the cane growers, and specified distances between sugar mills.

In addition, sugar mills are required to pay the State Advice price (SAP) typically higher than the Fair and Remunerative (FAR) prices, set by the government of India to sugarcane farmers irrespective of the market price of sugar.

Under the old system,sugar mills had to sell 10% of their production to the government as levy sugar at below market prices, which the government distribute through the Public distribution system to the below poverty Line population at a highly subsidized price. Market sources pointed out that the sugar industry has suffered losses due to the artificially suppressed prices. While the mills were allowed to sell the balance of 90% at market prices. Market sale was administrated by the government of India through periodic quotas to maintain price suitability in the market.

The Government also announced decontrol policy about sugarcane zones. Therefore, sugar factories have to bring sugarcane from out of area in order to avoid occasional shortage of sugar cane. Sugar mills bring sugarcane and transport it from one area to another area of sugar factories without taking any prior permission of the managing director of the respective jurisdiction or the Director of the sugar or the District magistrate in favour of state government. An adequate and regular supply of sugarcane is essential for successful working of sugar factory. In view of this, the government had prescribed a distance about 50 kms. between an existing sugar factory and new one or expansion period of sugar factory.

However, the government reduced this distance about 30kms. in 1980. The Governor of the Maharashtra State, O.P. Mehra (1983),[7] states that even the new guide lines are not being scrupulously. It is a matter of record that as many as four of ten factories have been permitted within a distance of 30Kms. and in one case a new unit has been followed at place which is hardly 9 kms. from an existing factory. Therefore, sugar factories are unable to unable to develop in the same sugarcane zones. It is, therefore, essential that the previous limit of 50 Kms. between two sugar factories is rigorously maintained.

Adequate availability of sugarcane is essential for successful operation of any sugar factory .this can be ensured if the distance of 50 kms. between the two factories is rigorously maintained. The Gundurao committee (1965) and the tariff Commission (1969) also made the emphatic recommendations in this respect.

According to Tariff commission, the ideal solution to the problem would be to provide for an area of about 60 sq.kms.for 1000 tons of crushing capacity around each

factory which the sugar factory should scrupulously nurse and develop.(Agarwal,, 197) [8] However, the government had declared the new policy in 1998 with regards to licenses for new factories, there will be no other sugar factory in a radius of 15km.

Report of the Rangarajan Committee 2012:

The Hon'ble Prime Minister of India had set up a committee under the chairmanship of Dr. C. Rangarajan, The Chairman, Economic Advisory Council to the Prime Minister to look into all issues relating to the deregulation of the sugar sector. The Report was submitted to the Hon'ble Prime Minister on 12th October, 2012.

The committee has recommended the following reforms

i) Discontinuance of the policy of cane area reservation followed in some sugar producing states with an intention to give freedom to farmers to choose the buyers for their sugarcane.

ii) Determination of sugarcane price by linking it to the revenue realized by sugar mills from sale of sugar and first state by –products.

iii) Removal of obligation from the sugar industry to supply 10% of their production as levy sugar for the PDS at a discounted price.

iv) Abolition of the regulated release mechanism under which the sugar mills are told every month /quarter to sell a certain fixed quantity of sugar.

v) A free international trade policy wherein quantitative controls and time restrictions on export and import of sugar should not be prescribed by the government; instead, the government should follow a tariff rate policy to manage the import/export of sugar as per requirement of the country.

A major recommendation of the Rangarajan Committee 2012 relates to revise the existing arrangement for the price to be paid to sugarcane farmers, which suffers from problems of accumulation of arrears of cane dues in years of high price and low price for formers in other years. The existing arrangement comprises a fair and remunerative price (FRP) announced each year by the centre, under the sugarcane control and on the advice of CACP, as the minimum price of sugarcane.

However, many states in North India also announce a state advice price (SAP) under state legislation .Generally, the SAP is substantially higher than the FRP and

wherever SAP is declared, it is the ruling price. Instead of the present arrangement, the committee has proposed that at the time of cane supply, farmers be paid FRP as the minimum price, as at present.

Further, subsequently, on a half yearly basis, the state government concerned would announce the ex-mill prices of sugar and its by-products and farmers would be entitled to a 70% share in the value of the sugar and by-products produces from the quantity of cane supplied by each farmer. This implies that farmers would also get a share of the profits. With such system in operation, states should not declare an SAP.

It has been observed that procurement prices of sugarcane are varied from factory to factory in the Maharashtra state and other states in the country. As regards sugar recovery, it depends upon the quality of sugarcane, which is poor in India. The main reasons for the quality of Indian sugarcane are lack of adequate irrigation facilities, water logging and lack of drainage facilities. Pests and diseases also have damaging effect on sugarcane crop. These drawbacks are mainly responsible not only for low per acre yield but also for low sugar recovery. (Pandey). [9] The average recovery rate for the Indian sugar mills is just 9.5 to amitsharmadreams30 10% against 13 to 14% in some other producing countries. Besides, crushing season of sugar factories was varied from 111 days to 171 days in India. Most of the sugar factories are suffering from shortage of sugarcane supply.

However, sugarcane supply is the fundamental reason for the sugar factory not to make any profit and run precariously almost every year.(Agarwal,1976).[10] Consequently, sugar factory stops its crushing operation due to the unforeseen breakdowns ,shortage of raw materials and shortage of power etc. (IAMR,1979).[11] The stoppages results into the loss of cane sugar production deterioration in cane processing and loss of daily earnings of unprotected workers and unorganized seasonal migrant workers in the sugar factories.

It may be noted that the financial position of some sugar factories is not satisfactory after post liberalization period in India. Table 2.3 shows cooperative, public and private sector wise sickness sugar factories in India from 2007-08 to2010-2011.

Table 2.3

Sector wise sickness sugar factories in India

Season	Co-operative	Public	Private	Total
2007-08	49	37	23	109
2008-09	83	41	26	150
2009-10	95	45	32	172
2010-11	139	--	23	162

Source: Pudhari, Daily Newspaper, 10 December, 2010.

It has been observed from this table that there were 109 sickness sugar factories in India, of which, 49 sugar factories were in cooperative sector and 37 and 23 sugar factories in the public and private sector. Accordingly sickness sugar factories under cooperative sector has increased from 49 in crushing season 2007-08 to 139 during 2010-11.

However, the strength of sickness sugar factories has been increased from 109 in the crushing season 2007-08 to 162 in the year 2010-11.

During the year 2010-11, there were 162 sickness units (sugar mills) in the country, of which 139 were sickness unites in the cooperative sector and 23 unites in the private sector. (See table 2.4).

Table 2.4

State wise Sickness sugar factories under co-operative and private sector in India (2010-11)

States	Private	Cooperative	No.of sickness units
Maharashtra	02	48	50
Uttar Pradesh	10	25	35
Karnataka	02	15	17
Tamil Nadu	4	12	16
Punjab	1	12	13
Andhra Pradesh	--	8	8
Haryana	--	7	7
Gujarat	1	6	7
Uttara Khand	1	3	4
Assam	---	2	2
Kerala	1	1	2
Bihar	1	-	1
Total	23	139	162

Source: Pudhari, Daily Newspaper, 10 December, 2010

As many as 162 mills were declared as sickness sugar mills and they had closed its production due to various reasons like no availability of adequate cane and

the uneconomic size of the sugar mills.The minimum economic size as it exists in India is 2500 tons of cane crushed per day. It is necessary to take care of the problem of sick sugar cooperatives.

It is necessary to protect sugar industry against downward trend of the world price in the world market. There is a need to give protection to cooperative sector in order to develop various sectors in India. The sugar cooperatives establish industries in rural areas involving the bulk of the rural population in the process of peaceful and concurrent socio-economic development of all the communities in the developing country like India.

In the era of globalization, the government has removed the restrictions on the sugar industry. As a result of this, private entrepreneurs have entered in the sugar production under Private sector. However, the share of the sugar co-operatives has been declined in India.In the year, 2007-08, there were 516 sugar factories in the country .out of which 249 factories were in co-operative sector.

Sugar industry in Maharashtra:

There are four regions in the state of Maharashtra viz.South Maharashtra, Central Maharashtra, North-Maharashtra and West coast Maharashtra (Konkan). Maharashtra sugar industry is one of the most notable and large scale sugar manufacturing sectors in the country. Which has been contributing nearly 40% of India's total sugar production .In 2001-02, sugar industry in Maharashtra produced an approximate 50-67 lakh tone of sugar.

During 2009-10, there were 199 sugar factories in the Maharashtra state. Out of which 164 sugar factories were in the cooperative sector and 35 factories were in the private sector. Table 2.5 shows the region wise sugar factories in the Maharashtra state.

Table 2.5

Zone wise distribution of sugar factories in Maharashtra

Zones	Cooperative	Private	Total
South Maharashtra	.42	4	46
Central	50	11	61
North	13	1	14
Marathwada	44	14	58
Vidarbha	15	05	20
Total	164	35	199

The Technical performance of sugar mills in the Maharashtra state for last five crushing seasons is given in table 2.6 .Maharashtra produced more than 8.90 million tons of sugar during 2010-11 and 2011-12 for two seasons. It was lowest during 2008-09 (4.58). The contribution of the state in country's sugar production remained about 37% during 2009-10 and 2010.-11.

During 2012-13, the nations sugar output is expected to reach 25 million tons of which Maharashtra will contribute around 7 million tons due to drought conditions in the sugar growing areas. Production of sugarcane and sugar has fluctuated from season to season in the country due to various reasons like variations in the area under sugar cane ,climate conditions, water availability during the crop growth period, government policy on sugarcane pricing, remunerative and timely payment of cane price to the sugarcane growers, changing cropping pattern etc.

Table 2.6

Technical performance of Sugar mills in Maharashtra (2007-08 to 2011-12)

Particulars and season	2007- 08	2008-09	2009-10	2010-11	2011-12
No. of installed sugar mills	193	195	199	209	214
Installed capacity (ooo TCD)	470.80	474.70	501.20	534.90	551.60
No. of sugar mills not in operation	19	50	57	42	42
No. of sugar mills in operation	174	145	142	167	172
Gross days	182	107	170	186	156
Sugarcane crushed (million tons)	76.23	40.03	61.39	80.22	77.13
Sugar production (million tons)	9.07	4.58	7.07	9.05	8.98
Capacity utilization %	92.12	97.67	94.91	93.23	98.56
Recovery % of sugarcane	11.94	11.46	11.55	11.37	11.65
Lost hrs % to available hours	15.68	15.31	15.44	15.62	15.35

Source: Technical Performance of VSI, 2011-12, Pune

During2011-12, there are 214 sugar mills in the Maharashtra state having installed sugarcane crushing capacity of 0.55 million tons per day. Of these, 157 sugar mills were in co-operative sector and 57 mills in private sector. Besides, cane crushing capacities of these sugar mills in the Maharashtra varied from 2500 TCD to 7500 TCD. During 2011-12 crushing season, there were 172 sugar mills in operation. Out of these, 42 sugar mills were not in operation due to various reasons. The problem of low availability of sugar cane and low capacity utilization is a serious Problem.

Maharashtra is likely to be the most seriously affected with as many as 50 sugar factories were not in operation due to sickness units.However, the state sugar Commissionerate has given permission to set up 20 new private sugar factories in the parched districts of Aurangabad, Jalna, Beed and Osmanabad.Of the 20 new sugar factories, nine have been approved for Beed, eight for Osmanabad and the remaining three for Jalana and Aurangabad districts.

Sugar factories in Kolhapur District:

Kolhapur district is the southern part of Maharashtra. Kolhapur is known as 'Dashin kasi.The district is one most agriculturally advanced district of not only Maharashtra but also in India. It is fast becoming an industrialized district as well as an already a front runner in agro-based industries. The jaggery of Kolhapur is well – known not only in the state but all over India. Kolhapur is famous in the country for production of jaggery, Kolhapur chappals, silver, and Indian wrestling.

Kolhapur district is bounded by Sangli district at the North, by Belgaum district of Karnataka state at the South and East and by Ratnagiri and Sndhudurg districts at the West. Geographically, Kolhapur district can be divided into the following three zones.

(i) Western zone (ii) Central zone (iii) Eastern zone

Western zone consists of Shahuwadi, Panhala, Radhanagari, Chandgad, Bhudargad, Ajra, Bavada talukas. Central zone includes Karveer, Kagal, and Gadhinglaj. Eastern zone consists of karveer and kagal talukas.

The physical setting of the Kolhapur district can be best appreciated in the background of its relief and drainage. The Kolhapur district is at the tail end of the Maharashtra state. The district lies in the Krishna, Panchganga basin and is fed by a large number of tributaries which originate in the western hill tops and flow over the

slope of Sahyadri towards the eastern part of the district, except two minor streams in Bavada tahsil, like such river and the Tillari, which drain into Arabian Sea in the west. The rivers in the district have perennial water and provide good scope for irrigation.

The principal rivers of Kolhapur district are the Krishna, Warna, Panchganga, Hiranyakeshi, Ghataparbha, Tamraparni, Dudhaganga, Vedganga, Kumbhi-kasari, Tulsi and Bhogavati. These rivers with their several tributaries flow and drain the Kolhapur district, facilitating extensive irrigation of lands in several parts of the district.Panchganga, Warna, Dudhaganga, Vedganga, Bhogavati, Hiranyaeshi and Ghataprabha are main rivers which flow towards east through Western Ghats. The river Panchaganga .The river Panchganga is formed by the tributaries namely the Kasari, the Kumbhi, the Tulsi and Bhogavati.Krishna river flows in the east on eastern border of the district, similarly Tillari river flows on western border to west.

Sugarcane continuous to dominate the bans of the rivers. The rainfall is not uniform in all parts of the district. Major portion of the district lies in the rain shadow of Sahyadri ranges. Kolhapur district gets rain from the North-East monsoons. However; the rainy season starts from June and lasts up to the end of October.

It is followed cold weather fromNovember to February and by hot weather from March toMay.Ajara,Chandgad,Bavada,Radhanagari,Shahuwadi tahsils come in the heavy rainfall tract.Bhudhargad, Gadhinglaj ,karveer tahsils have sufficient rainfall, while kagal tahsils falls into inadequate rainfall tract, the remaining two tahsils,viz, Hatkangale,Shirol tahsils may be classified under poor rainfall tract.

Kolhapur district is one of the constituent regions of the fertile belt in the Maharashtra state. Kolhapur district has been known as home land for producing gur as well as jaggery or Kolhapur gur, It has been changed the face of Kolhapur district and structural changes in the agrarian economy of the district. As regards, co-operative movement in Kolhapur district, this is one of the oldest movement in Kolhapur district and notable achievements in various fields. (See Table 2.7).

Shri Chhatrapati Shahu,s economic policy was responsible for expansion of co-operative movement in then Kolhapur state.Inorder to remove the monolpy of capitalist organization ,he emphasized on co-operative form in all the sectors in Kolhapur State.Shri Chhatrapati Shahu Maharaja pointed out that mills and sugar factories should not go into the hands of capitalist and private mill owners, but should remain in the hands of people, so he encouraged the labourers and farmers to form cooperative societies.(Ghuge ,1975).[12]

As a result of Shahus, s economic policy, the first Kolhapur sugar cane mill was established byShri Chhtrapati Rajaram Maharaja in the year 1933.During five year plan periods, more than 20 sugar factories have been established in the Kolhapur district. There were 20 sugar factories in the Kolhapur district during 2010-11.

All these sugar factories have located in various talukas of the district like Karveer, Panhala, Radhanagari, Kagal, Shirol, Hatkanangale, Gadhinglaj, Chandgad; Bhudargad etc Table 2.8 shows data of sugar factories in respect of crushed cane, sugar production, recovery of sugar etc.

Table 2.7.

Kolhapur Co-operative Societies.

Sr.No.	Type of Co-operative Society	Number
1	District Central Co-op. Bank	1
2	Primary Agricultural Credit Society	1504
3	Food grain Banks	16
4	Primary Urban Co-op Banks	62
5	Urban Co-op. Credit Societies	2158
6	Wage-earners Credit Societies	294
7	Marketing Societies	51
8	Processing Co-op. Societies	64
9	Agricultural Co-op. Credit Societies	15
10	Water Supply Society	541
11	Handloom Co-op. Societies	15
12	Power loom Co-op. Societies	318
13	Industrial Co-op. Societies	199
14	Industrial Colonies	17
15	Consumers Co-op. Societies	291
16	Housing Co-operative Society	94
17	Labour Co-op. Societies	94
18	Transporters Co-op. Societies	64
19	Co-operative Sugar Factories	17
20	Co-operative Spinning Mills	47
21	Milk Producers Co-op. Societies	2755
22	Co-operative Fishing Societies	22
23	Co-operative Poultry	67
24	Co-operative Animal Husbandry Societies	271
25	Other Co-operative Societies	175
	Total of all Co-operative Society	**9624**

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It has been observed from table 2.8 that sugarcane crushed in metric tons and sugar production, recovery of sugar etc are varied from factory to factory due to various factors like size of plant, area under sugar cultivation, crushing capacity, capital investment, output, duration of crushing season, installed capacity, capacity utilization, adequate supply of sugarcane, lost hours, natural calamities, strikes of sugarcane growers as well as workers etc. It was observed that the average recovery of sugar for the sugar factories in Kolhapur district was about 12% during the year 2010-11

Table 2.8
Crushed Sugarcane, sugar production, recovery of Sugar factories in Kolhapur District

Sr. No.	Name of the Factory	Crushed Sugarcane (M.T)	Sugar production (Lakh quintal)	Recovery %
1	Dudhganga	4,94680	647600	13.19
2	Bhogavati	4,40,280	5,59,620	12.76
3.	SadashivMandlik(Hamidwada)	3,44,330	4,37,650	12.76
4.	Guru Datta(Takalwadi)	5,07,425	6,36030	12.65
5.	Kumbhi-Kasari	4,85,030	6,04,950	12.59
6.	Datta factory (Asurle)	3,26,250	408,100	12.55
7.	Shahu Factory-Kagal	4,45640	59100	12.44
8.	Dr.D.Y.Patil (Gaganbawada)	3,87,480	4,79,300	12.40
9.	Sharad Factory,Narande	4,79,100	5,80,530	12.25
10	Jawahar factory,Hupri	10,88,640	12,91,660	12.1
11.	Warna	10,76,100	12,64,100	11.83
12.	Chhat.Rajaram factory ,Bavada	3,73,100	4,23,640	11.44
13.	Gadhinglaj factory,Harli	323300	3,71,100	11.50
14.	Uday factory,Harli	301098	3,56,500	12.34
15.	Indira factory, Tambole	2,41,198	2,73,270	11.76
16.	Panchnganga	4,57450	5,25,700	11.49
17	Doulat	2,14,133	2,29,540	10.72
18.	Ajara.Factory,Ajara	3,16,160	4,04,400	12.79
19.	Nalawade sugar, Mhalunge	1,88,100	2,38,33 0	11.60
20	Udaysingh,Gaikawad,Bambavade	-----	----	--

Pudhari (Daily Newspaper) 21-03-2011

Sugar industry is seasonal as its operations exclusively depend upon the supply of sugar cane. Most of the sugar factories start their crushing season in the first week of the November and discontinue in the last week of April Month in each year. Therefore, the average duration of the crushing season of the sugar factories depends on the availability of cane as there is a violent fluctuation in the production of cane which depends largely on the monsoons and other factors. The minimum and maximum numbers of days of crushing season are from 120 to 180 days. Sometimes, sugar factory stops its crushing season operation due to various reasons like unforeseen breakdowns, and shortage of raw materials, strike of workers, and shortage of power. Etc.

The stoppage results into the loss of cane sugar production, deterioration in cane processing and loss of daily earnings of unprotected and unorganized contract basis seasonal workers as well as migrant workers. It was observed the cane crushing capacity of the surveyed sugar factories varied from 1250 to 7500 MTC in case of a few small sugar factories. The size of sugar factory is small due to the shortage of good cane in sufficient quantities; poor percentage of sugarcane and partly due to a limited area under sugarcane caused by cultivating other commercial crops. As a result of this, sugar factories suffer from inadequate cane supply. Therefore, size of sugar factory is small and to be varied from factory to factory.

Operation Area of sugar factory:

It has been observed that the bulk of the sugarcane growers fall within 20 Kms.jurisdiction area of the sugar factory in the Kolhapur district. Besides, sugar factories do not have their fixed reserved cane zones. Consequently, sugar factories have to bring cane from out of area in order to avoid occasional shortage of cane. Hence, out of area villages are also differed from factory to factory. Besides, it is observed that there has been increasing unhealthy competition among sugar factories with a view to transporting stolen sugarcane from one area to another area of the sugar factory.

Therefore, unhealthy competition among sister cooperative sugar factories are affected by a number of factors such as fluctuating cane prices of sugarcane harvesting, transporting, un utilization of crushing capacity of the sugar mills, sick units, low outputs, exploitation of labour. Closure of crushing in an earlier period, visible unemployment in respect of cane harvesting and transporting labour and

contract basis seasonal Migrant workers. Adequate availability of cane is essential for successful operation of any sugar factory. This can be ensured if the distance of 50 kms. between the two sugar factories is rigorously maintained.

Cane price:

During the period 2011-12, it was found that cane price fixed by each factory was found to be differentiated in the Kolhapur district. Because some sugar factories have to pay higher prices to cane growers in order to attract more cane growers. The prices of cane are varied from factory to factory, and area under sugar cane cultivation in each sugar factory fluctuates due to discrepancy in sugarcane prices accordingly. Table 2.9 shows the rate of sugarcane per tons in sugar factories of the Kolhapur district.

Table 2.9

The rate of sugarcane per tons for crushing season 2009-10

Sr.No.	Name of sugar factory	Sugarcane rates per tons (Rs.)
1.	Shahu Factory	2750
2.	Hamidwada	2710
3.	Dudhganga (bidri)	2550
4.	Warna	2400
5.	Datta-Asurle –porle	2375
6.	Jawahar-Hupri	2311
7.	Sharad-Narande	2311
8.	Kumbhi-Kasari(Kuditre)	2310
9.	Dr.D.Y.Patil,Gaganbavada	2200
10.	Chhat.Rajaram-Bavada	2200
11.	Indira Mahila,Tambole	2400
12.	Bhogavati –Parite	2000
13.	Gadhinglaj	2200
14.	Doulat-Chandgad	2100
15.	Ajara	2100
16.	Panchganga-Ichalkaranji	2300
17.	Udaysingh Gaikawad	2000

Sources: (1.) Daily Newspaper Lokmat, 20 May, 2011, (2.) Sakal, 9 June, 2011

The government of Maharashtra had declared Rs.2000 per tons as a rate of sugarcane during 2009-10. In practice, the rates of sugarcane were varied from factory to factory. (See table 2.9).

However, the union of sugarcane growers was struggling to get Rs.3000 per ton as a rate of sugar cane and the union of cane growers was started agitation at the time of beginning the crushing season 2012-13 in the Southern Maharashtra. The average duration of crushing season of the factories depends on the availability of cane as there are violent fluctuations in the production of cane.

During the year 2013-14, as per the formula to calculate the sugarcane Price, the Fair and Remunerative Price (FRP) have been fixed at a minimum rate of Rs. 2100 per ton for 9.5% recovery. Some factories, which manage to achieve 13.5% recovery, and give farmers Rs. 2940 per ton of sugar cane. The FRP formula formed by the union government covers various input costs such as labour, seed, fertilizer and pesticides, land maintenance, water and electricity and comes out with a rate applicable across the country.

The state Sugar Commissioner Vijay Singhal said, the situation is critical for sugar factories but the FRP rates are good this year. They are increased almost by 23% as compared to the last year.

Member of Parliament Raju Shetty and Farmers union leader, Raghunath Patil, said, the factories did not offer good rates to farmwers in November 2012 last year and forced farmers to come on the road for better sugar prices, If state government does not intervene in the situation,the farmers will be compelled to protest again in this year. (The Times of **India, September 10, 2013**). Last year, the state government withdrew itself from the sugarcane price fixing mechanisms and announced that sugar factories should decide purchase price after negotiations with farmers. So far as European countries are concerned, Sugar factories are required to pay farmers a minimum price of EUR 26.29 per ton for sugar beet for the production of quota sugar. The EU reference price for white sugar is fixed at EUR404.4 per ton and EUR 33.2 per ton for raw sugar.

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