Sugar Cooperatives in India and Gujarat: Current and Coming Challenges

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Abstract

The sugar industry is one of the largest agro-based industries in India, next to textiles. This industry plays an important role in the national economy. Indian sugar industry has always been a focal point for socio-economic development in the rural areas. It plays a major role in rural development and its importance for India stretches far beyond the role of a sweetener supplier. Sugar industry plays an important role in national economy even though it has to face some challenges regarding supply of sugarcane and production of sugar in times to come.

The challenges which need to be addressed in order to enhance sugarcane/sugar productivity and sustaining soil health include: continuously decreasing size of land holdings with time and increasing population shortage of labour, sugar recovery, decline in sugarcane acreage in times to come, declining factor productivity, cultivation of denotified sugarcane varieties and tendency of the farmers to quit farming. In order to improve sugarcane and sugar production and increase factor productivity in India, utmost attention is needed for the profitable sugarcane cultivation in the small and marginal land holdings. The paper attempts to analyse current scenario of India's cooperative sugar industry and crucially examines the coming challenges against this industry.

Key Words

Sugar Cooperatives, Sugarcane, Sugar production, Challenges, India, Gujarat.

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Introduction

Co-operation is a world-wide movement. Co-operation was introduced in India mainly as a defensive organization for dealing with problems of rural indebtedness. With the acceptance and implementation of a planned economic development wedded to the ideas of socialism and democracy, co-operation became a dynamic economic instrument for achieving the social objectives of the National plan. Agricultural cooperatives play a major role in the agro-industrial sector in many areas. In several countries, cooperatives are dominating companies in key agricultural markets. During the latest years, cooperatives have been undergoing rapid structural development in which growth; consolidation and especially globalization have been significant trends. Globalization - in the form of moving products, capital, cooperation, knowledge and labor across borders - has been booming over the last decade.

Transnational corporations with activities in many other countries are increasingly important. Often cooperatives and globalization may be in conflict with one another: Cooperatives are mostly established in order to process and sell members' products. The aim is to ensure and improve the markets of the owners (farmers). However, this may be a barrier to ensure the optimal allocation of resources. The international competitiveness in a globalized world can steadily be improved when companies are able to purchase raw materials from around the world without any constraints.

Sugar industry is the largest agro-based industry located in rural India. About 50 million farmers, their dependents and a large mass of agricultural labour are involved in sugar cane cultivation, harvesting and other ancillary activities, consulting around 7.5% of the rural population. Besides about 0.5 million skilled and semi-skilled workers, are mostly from rural area, engaged in the sugar processing sector. There has been rapid growth in the production and consumption of sugar in the country during the last decade. The Indian sugar industry has growth from an installed capacity of around 20 million tones cane at the time of independence to 300 million tones currently.

This industry has a great impact and close contact between the farmer and factory compared to any other agro-based industry. After the commencement of five year plans in the country, a rapid growth has been registered in the co-operative sugar industry. The establishment of sugar factories in each and every area brings necessarily many benefits to the farmers and labourers. The establishment and organization of new co-operative sugar factories influence the total acreage under cane cultivation in the area concerned. The co-operative sugar factories have a profound influence on the rural people in terms of their resources and economic benefits particularly upon the cane growers.

Objectives of the study:

1. To study the current trend of sugar cooperatives in India.
2. To analyse the export-import trend of sugar in India.
3. To examine the future challenges against cooperative sugar factories.

Need of the study:

Sugar industry is the largest agro-based industry located in rural India. About 50 million farmers, their dependents and a large mass of agricultural labour are involved in sugar cane cultivation, harvesting and other ancillary activities. There has been rapid growth in the production and consumption of sugar in the country during the last decade. It is quite interesting to study the current situation and future challenges of sugar cooperative industry in India. The suggestions of this paper may helpful to fight against these coming challenges.

Sugar Industry in Cooperative Sector:

The sugar industry has been organized into three sectors Viz. the private, the public and the co-operative line. Co-operative is a form of organization in which the members unite due to common economic necessity and this necessity they try to fulfill by forming an organization. In case of sugar co-operatives, the economic necessity of the sugarcane farmer is to get a remunerative price for sugarcane and this necessity can be the best served if the sugarcane farmer gets a share in the marketable end product of sugarcane processing i.e. sugar. The main factor contributing to the success is the ability of co-operatives to solve the most difficult problems of cane supply to the factories. Sugarcane is a perishable commodity and it has to be crushed soon after it is harvested. It is therefore, essential that there is a steady supply of cane to the factory throughout the crushing season. If the cane is not crushed within twenty-four hours, there is a process of deterioration which reduces the recovery of sugar. The members of the co-operatives are not involved in the harvest and transport of cane. These operations are planned and carried out entirely by the agricultural departments of the factories. The important factor contributing to the successful working of sugar co-operatives is the nature of leadership involved in these enterprises. The sugar co-operatives play a crucial role in the economic life of growers. As a result the growers take keen interest in their working.

Sugar Co-operatives in India:

During the last decade or so, the sugar industry has undertaken multi-dimensional activities not only for its survival but also for global competence. This all aimed at improving the mill and boiling house efficiencies of the conventional plant, reducing energy consumptions per tone of cane crushed, better utilization of co-products and also to have a techno-economic process for producing sulphur-less white sugar. India is the only country in the world that produces plantation white sugar. All other counties are producing either raw sugar or refined sugar or both. India is the largest sugar consumption and second largest producer of sugar in the world according to the USDA Foreign Agricultural Service. Indian Sugar Industry has total turnover of Rs. 500 billion per annum and contributes almost Rs. 22.5 billion to central and state exchequer as tax cess and excise duty every year according to the sources of Ministry of Food & Government of India.

These revenues are steadily increasing every year with upward revision of the levies and taxes. Thus, the Sugar industry today stands as one of the supporting pillars of Indian economy. In terms of number of mills, India ranks first with 529 mills, followed by china 241, Brazil 231. It plays a major role in rural development and its importance for India stretches far beyond the role of a sweetener supplier. The Sugar factories are located in various parts of the country work as nucleus for development of rural areas by mobilizing rural resources and generating employment.

The tables below depict the factories in operation, Area, Production of sugarcane, consumption, import and export of sugar during last ten years.

Table I indicates that the area under cane cultivation was the highest ever (5151 thousand hectares) in the year 2006-07. The yield per hectare was highest in the year of 2011-12.

Table-1
Area under Sugarcane, Production and Yield of Sugarcane in India

Year	Area Under sugarcane (in ‘000 tons)	Production of sugarcane (in ‘000 tons)	Yield of Sugarcane (tons per Hectare)
2003-04	3938	233862	59.4
2004-05	3662	237088	64.8
2005-06	4201	281172	66.9
2006-07	5151	355520	69.0
2007-08	5055	348188	68.9
2008-09	4412	285029	64.6
2009-10	4175	292302	70.0
2010-11	4886	342382	70.1
2011-12	5085	357667	70.3
2012-13*	5101	335328	65.8

*Provisional, First Advance Estimates
Source: Cooperative Sugar, vol.44, January, 2013

The industry currently has 529 operating sugar mills in different part of the country, out of them 228 are cooperative in nature. Maharashtra and Uttar Pradesh are the top two Indian states in terms of number of cooperative sugar industries and area under cultivation as well as their contribution to sugar production in India

Figure 1: No. of Cooperative Sugar Factories in India

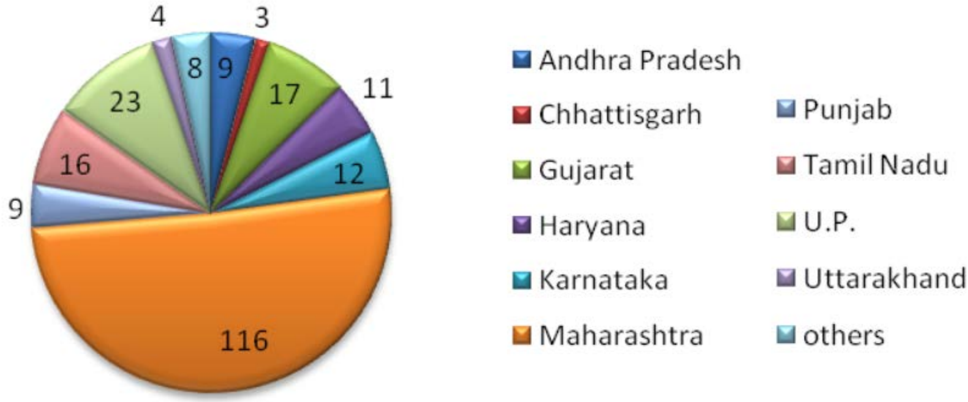


Table-2
No. of sugar factories, Sugar Production, Consumption, Export and Import of India

(Figures in Million Tones)

Year (Oct. - Sept.)	Number of factories in Operation	Production	Consumption	Export	Import
2000-01	436	18.51	16.20	0.98	-
2001-02	434	18.53	16.78	1.09	-
2002-03	453	20.14	18.38	1.50	0.12
2003-04	422	13.54	17.28	0.29	0.55
2004-05	400	12.69	18.50	0.04	2.60
2005-06	455	19.26	18.94	1.10	-
2006-07	504	28.36	20.16	1.72	-
2007-08	516	26.35	22.00	4.95	-
2008-09	489	14.53	23.00	0.21	2.40
2009-10	490	18.91	21.00	0.23	4.08
2010-11	527	24.39	20.73	2.60	-
2011-12*	529	26.34	22.00	3.39	-

*Provisional

Source: Cooperative Sugar, vol.44, January, 2013

Table-2 indicates that in the year of 2006-07 production of sugar is highest, but due to the government policy export was not that much increased. The government has permitted to export sugar under OGL during the season 2011-12. About 3.5 million tones sugar has been exported from India under this scheme and earn Rs. 8736.15 crores from this export during the year 2011-12 as per DGCI&S, Kolkata.

Figure 2: India's Share in Global Sugar Production (2012-13)

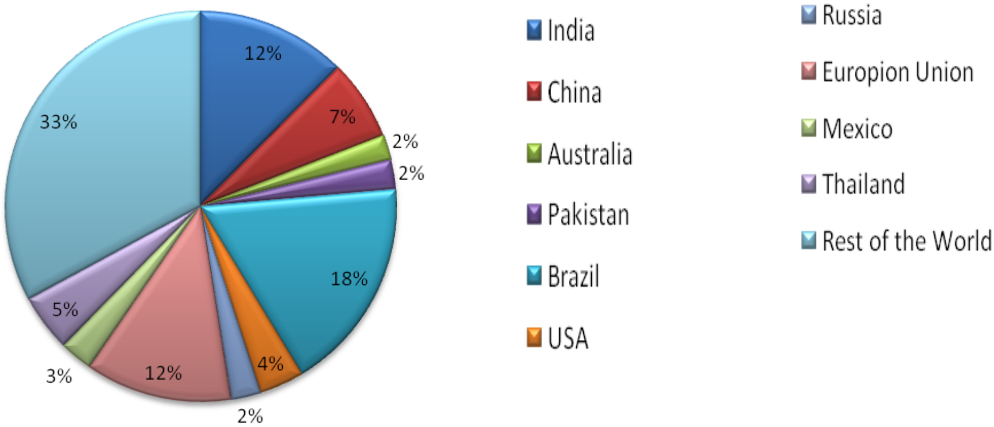


Figure 3: Percentage of sugarcane production utilised for different purpose (2010-11)

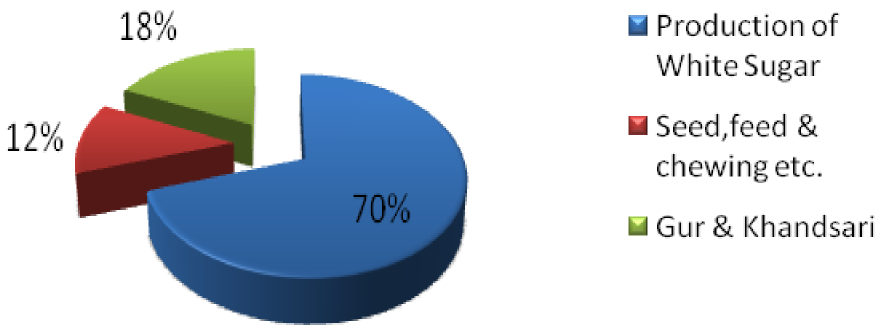
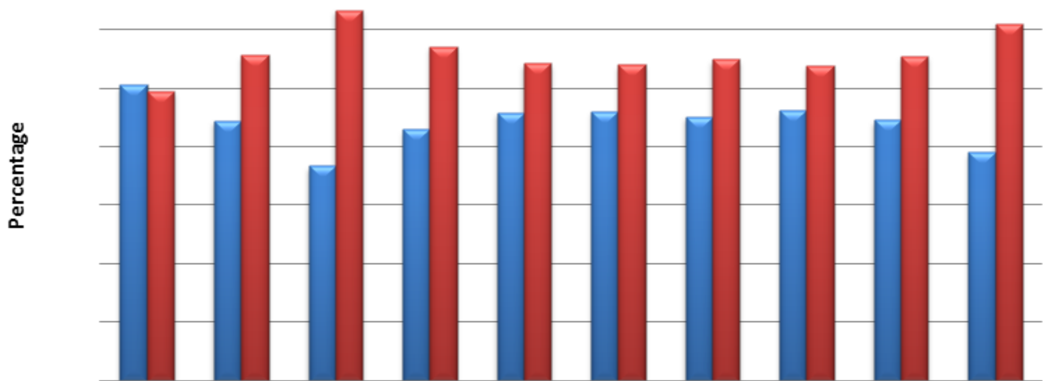


Figure 4: Sugar Production by Sugar Factories in Inida



	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Coop.	50.5	44.4	36.7	42.9	45.8	46	45.1	46.1	44.5	39
other	49.5	55.6	63.3	57.1	54.2	54	54.9	53.9	55.5	61

The chart indicates that share of the cooperative sugar mills for production of sugar are gradually reduced during last decade.

Sugar Cooperatives in Gujarat:

Gujarat is one of the well-known sugar cane producing regions in India. After independence, the government gave importance to the growth of sugarcane farming in the state and established a number of sugar cane mills. So far as sugar industry in Gujarat is concerned, it is developed only in co-operative sector and that is the policy of the state government. This industry has been developed for the past 57 years in the state of Gujarat. The first sugar factory was established in 1955 at Bardoli in South Gujarat and second one in 1956 at Kodinar in Saurastra. After the market liberalization policies took place in the 1990s, the export of the sugar industry is increased to a great extent. Bardoli Sugar Factory is one amongst other cooperative factories in India that were started in the initial phase of development of cooperative sugar factories in the country. In fact this was the third sugar factory in India that had been set up in cooperative sector and first in Gujarat State. This was also the beginning of "**WHITE SWEET**" revolution in Gujarat. Bardoli Sugar Factory is the oldest sugar factory in the state and played an active role in setting up of other sugar cooperatives in different parts of the state by providing necessary assistance, information and guidance. Bardoli Sugar Factory is the largest factory in Gujarat in terms of annual crushing capacity and sugar production.

Gujarat Cooperative Sugar Industry:

Gujarat Cooperative Sugar Industry has been divided into two zones, namely South Gujarat zone and Saurashtra zone based on the location of the factory. Out of total 25 incorporated factories, 22 factories are located in South Gujarat zone and 3 in Saurashtra zone.

Table 3: Cooperative Sugar Factories in Gujarat

Sugar Zone	Names of Cooperative Sugar Factories
South Gujarat Zone	Bardoli, Gandevi, Madhi, Chalthan, Maroli, Valsad, Sayan, Mahuva, Ukai, Ganesh, Kamrej, Pandvai, Narmada, Copper, Vadodra, Sardar, Kaveri, Daman-Ganga, Mahi-Panchmahal, Mandvi, Kantha Vibhag and Ukai Asargrashta
Saurashtra Zone	Kodinar, Una and Talala Cooperative Sugar Factories.

Source: GSFCSF Report-2010-11

Amongst 17 operational factories, 15 are in South Gujarat zone and 2 are in Saurashtra zone. The Gujarat Sugar Industry is constituted with incorporation and registration of 25 cooperative sugar factories. However during crushing season 2010-11, 17 factories were operational. The cooperative sugar factories namely Bardoli, Gandevi, Madhi, Chalthan, Maroli, Valsad, Sayan, Mahuva, Ukai, Ganesh, Kamrej, Pandvai, Narmada, Copper, Vadodra, Kodinar and Talala were operational and 8 factories namely Sardar, Kaveri, Daman Ganga, Mahi-Panchmahal, Mandvi, Khantha Vibhag and Ukai Asargrashta were non-operational during the same season. Una Sugar Mill in Saurashtra zone is non-operational since long and is on the verge of liquidation. In early eighties, three factories were liquidated. Two factories in Saurashtra Zone and one in South Gujarat have been liquidated due to non-availability of sugarcane.

Performance:

The industry which started with a tiny capacity of merely 1, 000 TCD in 1955, has today made its presence felt in Sugar Industry of India in general and Cooperative sector of India in particular. This industry of the state is not only known for its size globally but for its efficiencies too, particularly when the industry itself is sailing through rough weather. This is evident from the fact that during crushing season 2010-11 some of the factories of Gujarat have won awards for highest crushing, maximum sugar exported during the season, best financial management etc. from its apex body called National Federation of Cooperative Sugar Factories Ltd. New Delhi. At the time of inception of the industry, white sugar was the only product manufactured by the factories. However, over last 6 decades, many factories have setup integrated plants where they manufacture and process entire gamut of sugarcane and its by-products. Along with processing of white sugar, many factories have set up distillery and ethanol plants, paper and particle board manufacturing plant, co-generation of electricity and organic manure plants in the state. The table below depicts the broader performance and achievements of Gujarat Cooperative Sugar factories during crushing season 2010-11.

Table 5: Performance Highlights of Cooperative Sugar Factories in Gujarat

Performance Parameters	Performance
Total Installed Capacity (TCD) Sugar Production	65,000 TCD
Total Number of Registered Factories	25
Total Number of Operational Factories	17
Total Number of Operational Distilleries	09
Total Farmer Members	3 Lakh
Total Area under Sugarcane Cultivation	1.89 Lakh Hectors
Total Sugarcane Produced	130.29 Lakh Tonnes
Total Sugarcane Crushed	122.85 Lakh Tonnes
Sugar Recovery	10 %
Total Sugar Produced	122.87 Lakh Quintals
Molasses Produced	5.85 Lakh Tonnes
Actual Ethanol Produced	29,252.10 (KLDP)
Total Full Time Employment	25,000 People
Total Seasonal Employment	3 Lakh People
Annually Tax Paid to State Government	820.8 (Rs. Millions)
Annually Tax Paid to Central Government	1570.7 (Rs. Millions)
Total Investment (Book Value)	5820.34 (Rs. Millions)
Average Cane Price Paid to Cane Suppliers	2,129 (Rs. per Tonne)

Source: Annual Report No.51 GSFCSF

The performance of Gujarat Cooperative Sugar Industry is not only restricted to above objectives. There is no doubt that within a span of 6 decades, it has brought about rural transformation in sugarcane growing belts of Gujarat. The economic conditions in sugarcane growing belts of Gujarat has improved drastically. The real success of any industry should not only be measured by economic contributions and the value it has created for its different stake holders, but what impact it has made on social well-being of its stakeholders should also be considered.

In recent times, central and state governments, management gurus and management experts has been talking of corporate social responsibility, which means that all private companies should give back something to the society in return of the gains it has received from the society at large. The ideology of CSR for Indian companies itself is in its nascent stage. However social responsibility of cooperative sugar factories is embedded since its inception and it has been contributing benevolently in bringing socio-economic well-being of all its stakeholders. The cooperative sugar factories of the state have been actively developing and building social infrastructure in their region. Many cooperative sugar factories in the state has constructed primary health centres and multi-specialty hospital, schools, colleges, concrete roads, veterinary hospitals, providing treated drinking water in surrounding villages etc. Many factories' have initiated water conservation and harvesting measures, conservation of soil health by providing organic manure at subsidized rates, and providing pest control assistance. Cooperative sugar factories have also supported other agriculture service societies like primary agriculture credit societies, cooperative banks, dairy cooperatives and milk collections centers and purchase and sales unions. Due to constant economic, social and infrastructural support and guidance provided by the cooperative sugar factories of Gujarat, the second generation members of these factories have taken professional education and set up their own non-agriculture enterprises in big cities and towns. Some of the members of sugar factories in South Gujarat have become globally competent and migrated to the countries like US, UK, Canada, and Australia.

Coming Challenges:

1. Land holding becoming smaller and smaller
2. Shortage of labour for performing various field operations
3. Plateau yield and sugar recovery
4. The sugarcane acreage may decline in times to come
5. Unavailability of seed cane of improved varieties
6. Sustaining the gains already made
7. Prevailing invasive insect-pests and diseases affecting productivity

8. Bridging the gap between theoretical yield and commercial yield
9. Declining factor productivity
10. Increasing urbanization
11. Natural challenges
12. Tendency of the farmers to quit farming
    - Increasing cost of sugarcane production
    - Scarcity of labour
    - Easy access to financial loans
    - Organic sugarcane farming

Suggestions:

In view of the above, the following is being suggested to address these challenges so as to improve factor productivity of sugarcane and sugar in national Interest.

1. Developing high yielding sugar rich varieties with less of fibre, greater resistance to biotic stresses, less demanding on soil fertility.
2. Bring wastelands into sugarcane cultivation.
3. Planting and harvesting by the mills may ensure timely planting and its maturity-wise scheduling of desirable varieties.
4. Timely application of inputs (irrigation, fertilizers, pesticides).
5. Ensuring maturity-wise harvesting so as to optimally utilize the crushing season and enhance sugar recovery.
6. Payment on quality basis may promote supply of quality cane to the mills for improving recovery.
7. Research strategy should be pro-nature and pro-small farmer oriented.
8. Adoption of new technology.
9. There is a need to strengthen the linkages among the sugar factories, farmers and Krishi Vigyan Kendras.
10. Adoption of some of the positive features of sugarcane cultivation followed in Brazil may also help in improving sugarcane cultivation, reducing cost of production and improving recovery as well as increasing sugarcane acreage.

Conclusion:

Agricultural cooperatives play a major role in the agro-industrial sector in many areas. In several countries, cooperatives are dominating companies in key agricultural markets. During the latest years, cooperatives have been undergoing rapid structural development in which growth; consolidation and especially globalization have been significant trends. Sugar industry is the largest agro-based industry located in rural India. Indian Sugar Industry has total turnover of Rs. 500 billion per annum and contributes almost Rs. 22.5 billion to central and state exchequer as tax cess and excise duty every year according to the sources of Ministry of Food & Government of India.

The industry currently has 529 operating sugar mills in different part of the country, out of them 228 are cooperative in nature. Maharashtra and Uttar Pradesh are the top two Indian states in terms of number of cooperative sugar industries and area under cultivation as well as their contribution to sugar production in India. Share of the cooperative sugar mills for production of sugar are gradually reduced during last decade i.e. 50% in 2002-03 to 39% in 2011-12. So far as sugar industry in Gujarat concerned, it is developed only in co-operative sector and that is the policy of the state government. This industry has been developed for the past 57 years in the state of Gujarat. Amongst 17 operational factories, 15 are in South Gujarat zone and 2 are in Saurashtra zone.

The challenges which need to be addressed in order to enhance sugarcane/sugar productivity and sustaining soil health include: continuously decreasing size of land holdings with time and increasing population shortage of labour, sugar recovery, decline in sugarcane acreage in times to come, declining factor productivity, cultivation of denotified sugarcane varieties and tendency of the farmers to quit farming.

In order to improve sugarcane and sugar production and increase factor productivity in India, utmost attention is needed for the profitable sugarcane cultivation in the small and marginal land holdings. Therefore, all the research and development programmes for sugarcane should be formulated and implemented in the letter and spirit. Adoption of some of the beneficial features of sugarcane agriculture in Brazil may also be very useful in Indian context.

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