

INDIAN SUGAR INDUSTRY: PROBLEMS & CHALLENGES

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India ranks first in sugar consumption and second in sugar production in the world. Indian sugar industry has been facing problems with respect to raw materials, resources, and infrastructure. Globalisation has brought a number of opportunities but at the same time posed certain challenges for the sugar industry. Mounting losses and decreasing net worth of sugar factories have been responsible for sickness of the sugar industry. Sickness of sugar industry has reached to an alarming position. Indian sugar industry has been cash striven for decades. Low cash inflow due to piling stocks lead to serious financial crisis and finally to the closing of sugar factories. Sugar prices have been a political issue rather than an economical one which worsened the economy of sugar factories many times. The main concern for sugar factories in India is fluctuation in sugarcane production, due to inadequate irrigation facilities, low sugarcane yield and frequent droughts in tropical and subtropical areas where sugarcane is grown on a large scale. India has to gear up to the new challenges of higher cane and sugar production to meet the future requirements. With the present trend of sugarcane and sugar production, India will be hard to sustain and is needed to increase the present trend of cane production to a level that India becomes the world's largest sugar producer.

Sugar, made from sugarcane, was discovered thousands of years ago in New Guinea with the route tracing to India and Southeast Asia. Historically, it is said that the modern process of sugar manufacturing was introduced in the West as early as 1853. However, the same process came to India in as late as about 1903 when the first sugar factory with vacuum pan process and modern milling method was commissioned in Saran in Marhowrah, Bihar in 1904. India was the first to begin with the production of sugar, following the process of pressing the sugarcane to extract juice and boil it to get crystals. It is evidently true that cane sugar (sucrose), which is universally used as an essential consumption item, spread from India to other countries. The process of growing sugarcane and its use in the making of sugar as introduced in India, further spread to China, Ceylon, Java and Persia in the sized century and to Spain in the eighth century. In 1930, there was an advent of sugar processing industry in India with grant of tariff protection to the sugar industry. In 1930-31, the number of sugar mills increased from 30 to 135 and in the year 1935-36, production increased from 1.20 lakh tons to 9.34 lakh tons under the dynamic leadership of the private sector. During the period 1942-43 till 1950-51, the Indian sugar industry had to undergo a difficult situation when the output fluctuated erratically between about 9 to 11 lakh tones, mainly on account of the instability of sugarcane supplies caused by the government preference to food crops during war years. In 1950-51, the era of planning for industrial development began. The Government of India made serious industrial development plans beginning with the establishment of the First Five Year Plan. In the First Five Year Plan period, the volume of sugar production was 18.92 lakh tones resulting in an increase of 69.23 percent over 11.28 lakh tones in 1950-51, on the eve of the planning period. The role of industry in the Second Plan was also equally commendable. The Second Five Year Plan had boosted the sugar production to 30.28 lakh tones with 170.84 percent increase over the production in 1950-51. It was then that the government set several targets for sugar production. In five year plans the government projected the license and instalment capacity for the sugar industry. India is well known as the original home for sugar & sugarcane. Today, India is the second largest producer of sugar next to Brazil. Currently there are about 5 million hectares of land under sugarcane cultivation with an average yield of 70 tons per hectare. India is the largest producer of sweeteners including *Gud* and *khadsari*, equivalent to 26 million tons raw value followed by Brazil in the second place at 18.5 million tons. The Indian sugar industry can be broadly classified into three main sectors namely Public sector, Private sector and the Co-operative sector. India with the second highest population country after China has an average land holding of below 5 acres; vastly in

contrast with sugar producing and exporting countries in other parts of the world with large size land holding, where a major portion of sugarcane supply comes from factory owned farms. Despite small fragmented land holdings, which are a major constraint in improving productivity, India has emerged as the third most cost effective producer of sugarcane in the world next to Australia and Brazil according to an authoritative international study. India has become the largest sugar producing country in the world. During the sugar season it has a share of over 15 % of the world sugar production. Sugar industry is regarded second after the textile industry in India as per the agro processing industry in the country. Indian sugar industry has always been a focal point for socio-economics development in the rural areas. Today, a large number of sugarcane farmers and a large number of agricultural laborers are involved in sugarcane cultivation and ancillary activities.

The Indian sugar industry generates power for its own requirements and even gets surplus power for export to the grid based on by- product bagasse. Along with this, there is a production of ethanol, an eco-friendly renewable energy for blending with petrol. Sugar companies have been established in large sugarcane growing states like Uttar Pradesh, Maharashtra, Karnataka, Gujarat, Tamil Nadu and Andhra Pradesh. These six states contribute more than 85 % of total production in India. 57% of total production is together contributed by Uttar Pradesh and Maharashtra. Sugar industry has been growing horizontally with a large number of small sized sugar plants set up throughout India as opposed to the consolidation of capacity in the rest of the important sugar producing countries and sellers of sugar, where there is greater concentration on larger capacity. The Indian sugar industry comes under the classification of a RED industry which represents highly polluting industries.

SIGNIFICANCE OF THE STUDY

The contribution of the sugar industry to the Indian economy is enormous, with a total turnover of around Rs. 20000 crore per annum. The Indian sugar industries are amongst the largest taxpayers contributing around Rs. 1800crore per annum to the central and state exchequer. Further for about 4.5 crore sugarcane farmers, their dependents - a large number of agricultural labour and about 5 lakh skilled and semi-skilled labour mostly from rural areas earn their livelihood from the sugar industry. This is an employment generating industry through its various ancillary activities, various agencies of distributive trade and through subsidiary industries such as confectionary & alcohol. By way of sugarcane price about Rs. 12000 crore are dispersed amongst cane farmers every year. The sugar industry of India is the most regulated sugar industry in the world. This impact is only confined to changes in imports or exports but also has major repercussions on financial flows and investment potentials. Technology and capital equipment requirements, availability of skilled manpower, potential for research and development and commercialisation of new products and processes in agriculture factory and co-products areas are the requirements for this industry.

Jobs in Indian sugar industry have created ample employment opportunities in rural India. Today, the Indian sugar industry has absorbed about 5 lakh rural people. The cultivation of sugarcane, which is the first phase of the sugar production, employs about 5 crore farmers. Indian sugar mills may be public, private or cooperative enterprises. The major recruiters in the sugar industry are IFFCO and the National Federation of Cooperative Sugar Factories.

OBJECTIVES OF THE STUDY

The essential objective of the study is to offer a relevant and meaningful insight of the problems and challenges of the Indian sugar industry with the help of available information, collection, classification, tabulation analysis and interpretation of data. In this paper, only secondary data has been used. In the study I will analyse the social, technological, and institutional aspects of the problems in the sugar industry. The study objectives can be categorized as follows:

1. Examine the factors that cause problems in the sugar industry and the extent of problems in Indian sugar industry.
2. Study of government policies towards encouraging the sugar industry in India and solving these problems.
3. Suggest a workable, practical, genuine solution to resolve the various problems of Indian sugar industry.

REVIEW OF LITERATURE

In the field of the sugar industry, remarkable work has been done by various government reports and sugar association reports. In order to get familiarity with the research process and to understand research gaps in the chosen research problems, various Ph.D. thesis, research reports, and books were reviewed of which some of the reviewed literature is presented below.

S Pruthi 1995, in his research for Ph.D thesis, studied the history of sugar industry in India. The study focused on the history of sugar; sugar making in ancient and medieval India during the British period and after independence till 1992. He described various problems faced by the sugar industry in india.

D.K.Grover and S.S. Grewal in 1991, examined the problems of the sugar industry in India with special reference to four specific sugar mills and 72 sugarcane growers during the period 1960-61 to 1989-90. The main objectives were to study cane suppliers, related changes in production and price, and to identify the various price and non price factors responsible for these fluctuations.

N.S. Bisht 2002, in his thesis submitted at Kumaun University for Ph.D degree, evaluated the performance of the co-operative sector of the sugar industry and explained various challenges faced by the sugar industry in India.

D.K.Pant 2005, in his thesis examined various process and economics of refined sugar production followed by the Indian sugar industry and also made an attempt to explain the efficient manner of by-product utilisation. He concluded that if the by products of the industry were utilized efficiently, then the sugar production cost could be reduced.

Dr. G.A. Nikam, author of the book "Indian Sugar Industry -A Comparative Study" has made an attempt to find out cost trends, profitability and operational efficiency of the sugar industry of both the states. The study also attempts to compare the working of the sugar industry in different regions of U.P. and Maharashtra.

Dr. O.P. Talwar author of the book 'Practical Hints on sugar Factory Control' deals with measures to remedy the unknown losses in sugar industry. The study raises efficiency for minimize losses by various pan boiling schemes as well as lower the final molasses purity by high speed electrical centrifugation.

RESEARCH METHODOLOGY

The study is based on secondary data only. Collection of primary data not necessarily required. Hence, there is no primary data involved in study. In order to achieve the objective, necessary secondary data were gathered from the sugar year book of the last ten years published by Indian Sugar Mill Association (ISMA). Data is also collected from various agricultural and industrial government websites and reports.

ANALYSIS OF PROBLEMS IN INDIAN SUGAR INDUSTRY

Sugar industry is the second largest agro based industry in India that impacts rural livelihood of 5 crore sugarcane farmers and around 5 lakh workers directly employed in sugar mills. Today, the Indian annual output worth of this industry is approximately Rs. 80000 crores. Surplus production has seen over domestic consumption in the last three sugar seasons. Low exports due to subdued international sugar prices have led to building up of sugar stocks with the mills and low realization from sale of sugar. This has adversely affected the financial health of the mills.

Sugar production in India is moving from North to peninsular India owing to the following reasons:

- Tropical climate in peninsular regions lead to larger quantities of yield per hectare.
- Greater sucrose quantity in sugar crops in the region.
- Longer crushing season in the South. While the crushing season in Uttar Pradesh ranges from November to February (4 months), in the case of peninsular regions, it's October to May or even June (about 8 months).
- Though mills are more abundant in Uttar Pradesh, mills in Maharashtra are larger in terms of size and output capacity, while mills in southern states are better managed and operated efficiently.

AN OVERVIEW OF INDUSTRY

- Indian sugar industry, located in the rural heartland, directly contributes to rural economic development. These industry supports 5 crore farmers and their families, generating employment for around 12% of the entire rural population in 9 major sugar producing states.
- One of the most environment friendly industry supplying eco-friendly *bagasse* based energy for consumption. Approximately potential 4000-5000 MW mainstay of alcohol and Ethanol industry.
- Significant position in the global sugar space thus world sugar prices impacted by India's export-import decisions.
- 65% of total sugar consumption is by bulk consumers viz. Beverages, biscuits and confectionery manufacturers, etc.

INDIAN SUGAR INDUSTRY-STRENGTHS

Sugar is the main product of sugar mills. This is most likely to fetch record prices this year. The mills that are able to secure cane supply will be the biggest beneficiary. In recent years, the mills have undergone capacity expansion, which will increase their processing capacity leading to higher productivity. Favourable Policy like any other industry sugar companies too has liquidity crunch which can be meet through sugar development fund of the government special cess schemes.

INDIAN SUGAR INDUSTRY-WEAKNESSES

Fall in derivatives-The fall in prices of derivatives like Ethanol, bagasse, waste or molasses etc. will also have adverse impact on almost all the companies.

Currency Risk-Most of the companies which have exposure in form of overseas loans imports etc. will be vulnerable to the forex losses in the advent of rupee depreciation.

MAJOR LEGISLATION & POLICIES

- The essential commodity ACT, 1955.
- Sugar control order 1966.
- Sugarcane control order, 1966.
- Levy sugar supply control order, 1979.
- Sugar packing & marketing order, 1970.
- Sugar export promotion ACT1958.
- Sugar cess ACT, 1982.
- Sugar development fund ACT, 1982 & 2002.
- Levy sugar price equalisation fund ACT 1976.
- Molasses control order 1961 & decontrol 1993.
- Removal of sugar levy system, 2013.
- Implementation of GST, 2017.
- State sugar policies.
- Power purchase agreement.

INDIA'S SUGAR PRODUCTION IN RECENT YEARS

Sugar production in India has been cyclic in nature, where every 2-3 years of high sugar production are followed by 2-3 years of low sugar production. From the sugar season 2013-14 onwards the country could consistently achieve sugar production more than the domestic requirement and could also generate surpluses for export. Maharashtra and U.P contribute over 60% of total sugar production while the rest comes from states like Tamilnadu, Karnataka Gujarat and Andhra Pradesh. According to an article published in THE ECONOMIC TIMES on 2 December, 2020 India's sugar production stood at 42.9 lakh tonnes during October-November period of 2020-21 marketing year as against 20.72 lakh tonnes in the year before. Indian sugar industry has faced many challenges in recent years, out of which the COVID-19 pandemic has been the most recent one. The entire production of sugar and by-products like molasses, ethanol, *bagasse* have been adversely affected by the pandemic.

PROBLEMS & CHALLENGES

Sugar industry in India is plunged with several serious and complicated problems which call for immediate attention and rational solutions. Some of the burning problem are briefly described as under:

- **LOW YIELD OF SUGARCANE-** Although India has the largest area under cultivation the yield per hectare is extremely low as compared to some of the major sugar producing countries of the world. For example, India's yield is only 64.5 tons per hectare as compared to 90 tonnes in Java and Hawaii. This leads to low overall production and results in short supply of sugarcane to sugar mills. Efforts are being made to solve this problem through the introduction of high yielding early maturing frost resistant and high sucrose content varieties of sugarcane as well as by controlling diseases and pests which are harmful for sugarcane.
- **SHORT CRUSHING SEASON-** Manufacturing of sugar is a seasonal phenomenon with a short crushing season varying normally from 4-7 months in a year. The mills and its workers remain idle during the remaining period of the year, thus creating financial problems for the industry as a whole. One possible method to increase the crushing season is to sow and harvest sugar cane at proper intervals in different areas adjoining the sugar mill. This will increase the duration of supply of sugar cane to sugar mills.
- **FLUCTUATING PRODUCTION TRENDS-** Sugar Cane has to compete with several other food and cash crops like cotton, oil seed, rice etc. Consequently, the land available to sugarcane cultivation is not the same and the total production of sugarcane fluctuates. This affects the supply of sugar cane to the mills and therefore production of sugar also varies from year to year.
- **LOW RATE OF RECOVERY-** Rate of recovery in India is less than ten percent which is quite low as compared to the other major sugar producing countries. For example, the recovery rate is 14-16 percent in Java, Hawaii, and Australia.
- **HIGH COST OF PRODUCTION-** High cost of sugar cane, inefficient technology, uneconomic process of production, and heavy excise duty results in high cost of manufacturing. The production cost of sugar in India is one of the highest in the world. Intense research is still required to increase the sugarcane production in the agricultural field, to introduce new technology, and to reduce production costs through proper utilization of by-products of the industry. For example Bagasse can be used for manufacturing paper pulp, insulating board, plastic, carbon, cortex etc, Molasses can be used for alcohol, and manufacturing DDT, acetylene, rayon, polythene, rubber, plastics. Press mud can be used for extracting wax.
- **SMALL & UNECONOMIC SIZE OF MILLS-** Most of the sugar mills in India are small sized with a capacity of 1000 to 1500 tonnes per day. This makes large scale production uneconomical.
- **OLD MACHINERY-** Most of the machinery used in Indian sugar mills particularly those of Uttar Pradesh and Bihar is old and obsolete, being 50-60 year old and requires rehabilitation. But a low margin of profit prevents several mill owners from replacing the old machinery by the new one.
- **COMPETITION WITH GUD AND KHANDSARI-** *Khandsari* and *Gur* have been manufactured in rural India much before the advent of sugar in the organised sector. Since the khandsari industry is free from excise duty, it can offer higher prices of cane to the cane growers.
- Further cane growers themselves use cane for manufacturing Gur and save on labour cost which is not possible in the sugar industry. It is estimated that about 60% of the cane grown in India is used for making *khandsari* and *Gur* and a sufficient supply of organised sugar from these basic raw materials.
- **REGIONAL IMBALANCES IN DISTRIBUTION** –Over half of sugar mills are located In Maharashtra and UP and about 60% production comes from these 2 states. On the other hand, there are several states in the North-east, J&K and Orissa where there is no appreciable growth of this industry; this leads to regional imbalances which have their own implication.
- **LOW PER CAPITA CONSUMPTION-** Annual per capita consumption of sugar in India is only 16.3 kg as against 48.8 kg in USA, 53.6 KG in UK, 57.1 KG in Australia, and 78.2 kg in Cuba. The world average is about 21.1 Kg which reflects a low market demand.

ROLE OF THE GOVERNMENT

- Government declared the new policy on August 20, 1998 regarding licences for new factories, which manifests that there will be no sugar factories in a radius of 15 km.
- Setting up of Indian Institute of Sugar Technology at Kanpur.
- In 1982 the Sugar Development Fund was set up for modernization of the industry.

- In April 2013 government decontrol sugar industry by removing the sugar levy system.
- As sugar falls under essential commodities it is being regulated by the state government in coordination with the centre government. Thus, Statutory Minimum Price (SMP) is decided by the central government and stationary administered price SAP is decided by the state government.
- Government put the sugar industry in a 5% GST slab as a result of implementing GST.
- Government has given huge subsidies to sugar mills for debt redemption.
- Central government regulation for buffer stock and private storage limit is an important policy intervention.

CONCLUSION

In order to ensure sustainable good health of the sector, a revenue sharing formula should be evolved between the sugar mills and the cane farmers in the ratio of their relative cost as per the recommendations of the Rangrajan committee. As per committee recommendations, the ideal value sharing is 70% for cane growers and 30% for mills including revenue from the sugar control board to implement the revenue sharing formula. For successful implementation cane growers are to be guaranteed FRP payments irrespective of the sugar market behaviour. In case the revenue in a particular season warrants higher payment to growers, they should be entitled to a second payment. Sugar is an agro-based industry therefore; the prices always fluctuate around monsoon. The low yield of sugarcane during short crushing season, inadequate supply of cane and remote location of these industries specially in Uttar Pradesh and in Bihar create problems for sugar mills which results in low milling efficiency. Low recovery of sugar from sugarcane also poses a problem for the sugar industry. Further, Indian sugar mills do not have sugar plantations of their own hence do not have control over quantity and quality of sugarcane supplied by various cane growers. Another problem of the sugar industry is that the by-products of sugar mills are not fully utilised like *molasses* and *bagasse*. Levy sugar obligations cause a huge financial burden on mills under which mills are bound to sell sugar at a price decided by the government. Arbitrary fixation of fair remunerative price, FRP, fixed by the centre has been adversely affecting the sugar mills.

RECOMMENDATIONS

Adoption of recommendations of Rangrajan committee

- Removal of SAP and adoption of linkage formula.
- Phase out cane reservation area and bonding
- Review of minimum distance criterion.
- Introduction of better trade policies.

Technical improvements

- Sugar recovery rate for India is 9.26% which is very low as compared to Brazil & Cuba whose recovery rate is 13-14%.
- Replacement of old machinery
- Modernization of production techniques.
- Improvements in productivity of sugar cane with use of better quality of seeds, manure and pesticide.
- Control over *Gud* & *khandsari*
- Currently there is no government control over the gur industry.
- Hence there is diversion of sugarcane for producing gur over sugar
- When the price of *Gur* increases there is a direct impact on the production of sugar.
- As a result sugar industries are working under capacity due to low availability of sugarcane.
- A policy to be adopted for control over *gur* so as to mitigate the irregular supply of sugarcane.

Other suggestions

- Sick units should be merged with other healthy units and accordingly healthy units be given some financial concession so as to encourage such mergers.
- Increase in import duty is necessary for the domestic market because currently the international price is less than domestic price.

- Export duty exemption and tax waivers should be provided which will help in finishing our surplus stock.

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