CHAPTER - I

INTRODUCTION

In an era where there is a need for inclusive growth, the sugar industry occupies an important place among organized industries that have successfully contributed to the rural economy. Sugar industry, one of the major agro-based industries in India, has been instrumental in resource mobilization, employment generation, income generation and creating social infrastructure in rural areas it provides employment to more than 5 lakh skilled and unskilled rural workers generating an average of Rs, 600 crore revenue to the government every year. Including farmers, and their family member, more than 45 million people of the rural population of India depend on sugar industry for their livelihood. Its contribution to the central and state exchequer is of high order. The Indian sugar industry has been accounting for around 1% of GDP of the country in the recent past. Sugar industry has brought socio-economic changes in rural India by way of facilitating entrepreneurial activities such as dairies, poultries, fruits and vegetable processing, and providing educational, health and credit facilities. A large number of sugar factories have diversified into by product based industries and have invested and set up distilleries, organic chemical plants, paper and particle board factories and cogeneration plants.¹

There are about 570 installed sugar mills in India today of which 285 are in cooperative sector, 270 in the private sector and 15 in public sectors. The plant size varies from 2500 to 5000 tonnes cane crushing capacity per day and recently a number of sugar mills have expanded to a capacity of 7500 to 15000 tonnes cane crushing capacity per day. The relatively small size of the factories is largely determined by the

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logistic infrastructure, with many small farmers not having the motorized transport. There exists huge a growth potential due to factors like emerging energy dynamics, progressive demise of the subsidized sugar regime etc.²

There has been a rapid growth in the production and consumption of sugar in India during the past 20 years. The sugar industry in India has grown from an initial installed capacity of 20 million tonnes cane in 1950 to 50 million tonnes in 1970 rising to 280 million tonnes in 2007. During the past three years there has been an investment of about Rs. 6000 crores in this sector. The sector also has a significant standing in the global sugar space. India is an important exporter successfully competing with the leading sugar exporters like Brazil, Australia, and Thailand in the Middle East and South Asian markets. Crucially in 2007 and 2008 the country has demonstrated an ability to deliver significant volumes of both raw and white sugar to the channels of international trade.³ India is the largest consumer of sugar in the world with annual consumption of about 24 million tonnes. It also happens to be the second largest producer of sugar next to Brazil, with production in the sugar year 2007-08 crossing 26 million tonnes and global production from cane as well as beet is around 170 million tonnes. Both countries have witnessed a surge in investment in the sector recently. The production in the Indian sugar industry is extremely cyclical leading to frequent surpluses and deficits and they have major impact on global sugar prices.⁴

The sugar cane in India is largely irrigated and 90 percent of the crop is irrigated by canals and drip irrigation. Drip irrigation is becoming very popular. About 80 percent of global sugar production is from sugarcane. It has been clearly established that sugarcane is the
cheapest source of sugar. The cost of sugar production through the cane route can be as low as 40 percent of that of sugar from the sugar beet route. Sugarcane also supports two important rural and cottage industries, viz Gur and Khandsari industries, which together produce about 10 million tonnes of sweetness (Gur and Khandsari sugar) using around 50 to 55 percent of the cane cultivated in the country. Sugarcane is the key raw material, planted once in a year during February to March. It is the major cost driver for the production of sugar. It being an agricultural crop is subject to the unpredictable vagaries of nature, yielding either a bumper crop or a massive shortfall in its cultivation from year to year. Amongst the sugarcane growing countries, the highest sugar recovery of 14 percent is obtained in Queens land in Australia. The sugar recovery in other important cane growing countries like Brazil, South Africa, U.S.A., Cuba and Pakistan varies from 9 to 11 percent. In India, the sugar cane areas are broadly classified into Sub-Tropical and Tropical regions. The later harvests can better yield with a higher sugar recovery. The crop is cultivated under a number of biotic and abiotic stresses resulting in yield stagnation/ fluctuation and low sugar recovery.  

Indian sugar industry has been facing raw material, and resource as well as infrastructural problems. Most of sugar units in India utilize production capacity below 50% how capacity utilization and inadequacy of raw material led to closer of 100 sugar factories in India. Mounting losses and decreasing net worth of sugar factories have been responsible for sickness of sugar industry. How cash inflows due to priling stocks leads to serious financial crisis and finally to close sugar factories. Sugar prices have been a political issue rather than economical issue. The main concern of sugar industry in India is
fluctuation in sugarcane production due to inadequate irrigation facilities, lower sugarcane yield, and frequent drought in tropical and sub-tropical areas where sugarcane is grown on a large scale. Sugar recovery is also lower in comparison with other sugar manufacturing countries. This leads to escalation of production costs and weakness of competitive edge of the sugar industry. Most of sugar mills in India are having daily sugarcane crushing capacity of 1250 tonnes. These mills cannot have economies of scale so they have to incur high production costs. Therefore, daily crushing capacity should be extended to 2500 tonnes. Special attention is needed to be given on water resource management. All the area under sugar cultivation should be brought under drip irrigation to conserve water as well as fertilizers. Adequate and regular power supply to sugarcane growers and sugar factories would increase production and productivity. In the era of globalization, sugar industry needs more competitive edge which can be given by way of modernization, enhancing productivity and manufacturing excellent quality sugar at competitive prices. To enhance share of Indian sugar industry in global trade quality and quantity of sugar needs to be enhanced. A high powered committee of the Government of India studied the matter and has recommended total liberalization of sugar sector to ensure steady and stable growth in production.

Recently, in a move to bring relief to the beleaguered sugar mills, the centre has announced a new scheme extending these mills financial assistance. As part of this scheme, sugar mills which have been facing a crisis due to a production glut and low prices will get interest free loans to help them pay the dues of the farmers who supply them sugarcane.

The cooperative sector of sugar industry in India has played a major role in the growth of Indian sugar industry and has been solely
responsible for transforming India from a deficit sugar producing country to one of the major sugar producing countries of the world. 1904 is a landmark in the history of cooperative sector of the sugar industry as the year saw the setting up of the first vacuum pan process sugar plant at Saran in Marhowrah in Bihar and the enactment of Cooperative Societies Act. The first cooperative sugar factory was set up at Etikoppaka in Andhra Pradesh in 1933. Three more cooperative sugar factories – two in Andhra Pradesh viz. Biswan were set up by 1935. But as these factories were set up by poor and marginal farmers lacking managerial skills and as the Indian agricultural economy was geared to sub-serve the British industrial and commercial interests under the political atmosphere of foreign domination and laissez-faire, only two factories viz Etikoppaka and Thummapala continued to be under cooperatives at the time of India’s independence. As the cooperative form was ideally suited, Government decided to industrialize the country by building up a large and growing cooperative sector. On April 6, 1948, the Government passed the Industrial Policy Resolution, followed by the Industrial Act, 1956, wherein the principle of cooperation was assigned an important role for the country’s economic development, particularly for industries based on agricultural produce, such as sugarcane. The setting up of sugar factories in cooperative sector transformed India from a sugar scarce country to one of the largest producers of sugar. India was the world’s largest producer of sugar during 1982, 1988 to 1993, 1995, 1996 and 2000 with cooperative’s share of the sugar production during the said years being 55 percent to 61percent.9

The total number of working sugar factories grew to 246 in cooperative sector as compared to 516 sugar factories in all sectors.
From a mere 0.5 percent of the total sugar production in 1950-51, the cooperatives grew to about 46 percent in 2007-08, which by all means is an achievement to be proud of. It provides necessary finance and where withal for organizing their economic activities. A small portion from the earning of the various grower members of the factory, particularly in the Maharashtra state, is kept every year for taking up activities like modern poultries, dairies, irrigation scheme, gobar gas plant etc. All the activities lead to betterment of economic condition not only of the farmers but also all the landless labourers and other people in the area. It is only the cooperative sugar factories which can ensure the maximum benefit of the industry processing the raw material accurately to producers of the raw material. Many factories have started distilleries for alcohol production from molasses and few have put up paper making units based on sugarcane bagasse. It is an acceptance of the fact that cooperatives have been recognized as an important sector of economic growth.  

The cooperative sector of the sugar industry found itself in a disconcerting situation. The cooperative sugar factories, whose operations by definition are supposed to be autonomous and democratic, found the transition difficult and in many cases impossible mainly because of the sugar cooperatives in most of the states were run by government appointed administrators, of the restrictive clauses is lack of finance with the poor and marginal sugarcane growers who constitute the cooperative sugar factories and difficulties in raising funds for modernization and expansion, vis-à-vis the rich industrialists of the private sugar factories. Low cane productivity is one of the major problems of the sugar industry in India. To improve the quality and per hectare yield of sugarcane, technologies developed by various
organizations in the country and new varieties, to suit millions of small sugarcane growers. Now technology for achieving higher targets of production and cost efficiency will have to be developed. Most of the machineries in sugar cooperatives particularly those of Uttar Pradesh and Bihar are out dated. So sugar plants, need to be upgraded, because of availability of cheap labour, sugarcane cultivation has been mainly manual. Introduction of latest practice of sugar technology with automation would improve the efficiency of sugar extraction, reduce loss of sugar in the process and cost of fuel and further improve the quality of sugar, thereby leading to an overall reduction in the production of sugar.\textsuperscript{11}

The role of cooperative in the liberalized economy has become all the more important as the protective umbrella over the cooperatives is being removed by the Government and the cooperative will have to strive hard on their own in order to survive in a free economy. Though the comparison with the private sector are unfair in the present circumstances, as the cooperatives are still working in the same ambit and have limitation in procuring finances as compared with the private sector which has immense potential finances. The private sector has access to the flow by the set up established under cooperative laws. While Government has withdrawn the proposal of non voting shares, presumably on the ground of democratic functioning.\textsuperscript{12} Since 1991 the de-licensing policy has been adopted by the Government, the problems of sugar cooperatives have increased to many folds and the protection provided to them is being withdrawn by the Government. But central government regulates sugar price through releases. Presently free sale is 90% of the total production and levy sugar 10%. The overall realization per quintal is much below the cost of factories. Therefore, the industry
hopes that the government frees the sugar industry from the responsibility of supply of levy sugar and the threats the problem related with it. The globalization on process poses new challenges for the sugar cane agriculture and sugar industry. Sugar cultivation has assumed five dimensions, maximization of productivity, minimization of cost of production, sustainability, value addition and competitiveness. Therefore, in the era of globalization, sugar industry needs more competitive edge which can be given by way of quality management at all level.

Research Problem

Uttar Pradesh is the most important sugar producing state in the country. A total 27 sugar factories are functional in Uttar Pradesh cooperative are located in rural areas and serve as a focal point for the economic upliftment of rural masses. The sugar cooperatives in Uttar Pradesh have made substantial progress turning round on all time high record output of 6.70 lakh tonnes in the year 2007-08 by crushing 75.12 lakh tonnes of cane. However, increased production of this agro-based industry did not commensurate with the targeted goals and objectives. For the past few years, the sugar cooperatives have been facing various problems which are directly or indirectly responsible for its retarded growth. These problems include instability in production, shortage of raw materials, obsolete technology (plant and machinery) shortened crushing period, unrealistic location of the majority of mills, huge financial losses and erosion of net worth, shortage of finance for modernization, expansion and rehabilitation of the mills, rising cost of sugar production of sugar cooperatives. By all accounts not only the State Government has been relevant to devolve powers to cooperative sector but also excessive and undue interference of the state authorities.
There is no clear demarcation on the functional domain between the governments and federation. The aspects of the cooperative sector are controlled, determined or regulated by the Government viz, installation of new sugar mills, expansion, modernization and rehabilitation of old units, quality and quantity of sugar to be sold to consumers in the open market and all other related matters. This immense control of the industry has prompted the present study to evaluate the situation of U.P. cooperatives sugar mills under the topic of “A Critical Study of Performance of Cooperative Sugar Industry of U.P. State: A Case Study of Satha Cooperative Sugar Factory of Aligarh District”.

Significance of the Study

India is known as the original home of sugarcane. In global sugar economy, the Indian sugar industry has achieved a number of milestones with great potential per production and export of sugar and sugar products. The sugar industry, being second largest agro-based industry in India, plays a major role in the socio-economic development of rural areas by mobilizing rural resources, generating employment and higher income, besides giving a fillip to transport and communication facilities. Apart from 55 million sugarcane farmers, their dependents and a large mass of agricultural labour involve in sugarcane cultivation, harvesting, machine manufacturing and ancillary activities, constituting 7.5 percent of the rural population. Besides that about 0.5 million skilled and semi-skilled worker, mostly from the rural areas are engaged in the sugar industry.15

The present study gains an added importance because; sugar cooperatives are under going a phase of rapid accumulated loss and degradation. Presently, the sugar cooperatives in Uttar Pradesh consist of both the modern and out dated technologies. Taking these variations
into consideration, a study on the pattern of financing viz-a-viz its financial structure has a significant role to play. The main objectives of this study are directed at improvements in efficiency, productivity and cost reduction. Although there have been researches concerning various problems and prospects of the sugar cooperative mostly dealing with its growth patterns, the financial aspects have, so far, not been adequately studied. The present study, therefore, differs with the earlier ones as its scope is mainly the financing and financial structure of sugar cooperative under the Uttar Pradesh Sugar Federation. The problems faced by the sugar cooperatives under the federation are too important to be ignored. Although the major share of capital comes from the government, the commercial banks, schedule banks and other financial institutions play an equally important role. The relevance of this study lies in the fact that a critical evaluation of the performance statements of cooperative sugar industry has been made and conclusions drawn keeping in view the practically of their implementation.

**Scope of the Study**

The present study has attempted to explore various phases of cooperative movement in India is general and sugar cooperatives in particular various factors of sugar cooperatives and Satha Sugar factory have been taken into consideration. Productivity, efficiency and profitability of sugar cooperatives in general and Satha Sugar factory in particular have got special emphasis. Last but not least, the future of sugar cooperatives in the era of globalization, privatization and liberalization has been assessed and analyzed.
Objectives of the Study

The study would focus upon the following objectives:

1. The sugar cooperatives more competitive in this era of globalization o assess and appraise the growth and development of sugar industry in India.

2. To evaluate sugar cooperative business performance in terms of productivity, efficiency and profitability.

3. To critically analyse the causes of degradation of sugar industry.

4. To evaluate the impact of government’s liberalized policy on cooperative sugar industry.

5. To assess and analyze the business performance of Satha sugar factory of Aligarh District.

6. To find out various problems faced by Management, Workers, and farmers in achieving their goals.

7. To suggest measures to overcome these problems and how to make

Research Methodology

The present study intends to examine the issues framed in the objectives and hypothesis in the context of Satha Sugar Cooperative factory of Aligarh district. This study has been divided into two phases. In the first phase, the relevant data and literatures were collected from secondary sources as Annual Reports, Statements, Journals and Periodicals etc. In the second phase the published literatures available on sugar factory were scanned to get fully acquainted with the subject matter and then to find out the problems, the primary data were gathered by surveying the opinions of key personnel, workers and
farmers of Satha sugar mill through broad discussion with all of them. Further, the ideas and views of the Managing Directors and Executives were ascertained through personal interviews/discussions.

Procedure of Data Analysis and Interpretation

The objectives of this research are achieved depending upon the analysis of technical performance as well as the financial performance of the sugar mills. The various factors are used to analyse the technical and financial performance. The main objective of analysis and interpretation of the technical and financial statements of the Sugar factory was to formulate an opinion with regard to the financial health, profitability and efficiency of the Satha sugar factory to derive conclusions and lay down policies for future guidance. The procedure of analysis of Technical & financial statements involved compilation, comparison and interpretation of relevant data.

Survey method has been followed for this study. Primary and Secondary information has been Collected through Various Sources are analyzed quantitatively and qualitatively. For qualitative analysis, Graphical representation of data has been used and for quantitative analysis some mathematical, financial and statistical tools are used.

For field survey/enquiry the information of Satha Sugar Mill and Anoopshahar Sugar Mill has been collected. The data covers to study the performance and efficiency of Satha Sugar Mill is of 32 years while for comparison purposes data of 5 years has been used of Anoopshahar Sugar Mill.
Sampling

Sampling is done only to find out the problems faced by the management, workers and farmers related to Satha sugar factory. For this purpose a well designed questionnaire has been used which has three parts according to the respondents. Part one deals with the management group, part two deals with the workers and third part is related to the farmers. The farmers are divided into three groups according to their capacity of holding land. The farmers are then categorized as small size farmers, marginal size farmers and large size farmers and two hundred respondents from each group have been selected conveniently and collected data through personal visits.

Hypothesis Used

Ho: The difference between cane crush in both the sugar co-operatives is insignificant.

Ho: The difference between recovery of both the sugar co-operatives is insignificant.

Ho: The difference between total sugar productions in both the sugar co-operatives is insignificant.

Ho: The difference between total crushing days is insignificant for both the sugar co-operatives.

Ho: The difference between gross percentages of utilization is insignificant for both the sugar co-operatives.

Ho: The difference between total sugar losses is insignificant for both the sugar co-operatives.

Ho: The difference between total hours lost is insignificant for both the sugar co-operatives.
Statistical Tools Used

For qualitative analysis the Line diagramme, bar diagrams has been used and for quantitative analysis the descriptive statistics like mean, standard deviation, bivariate correlation analysis, regression model and the inferential statistics like t test has been used. The following tools are used for the calculation of various factors in the two sugar cooperatives by using SPSS 10.0 and MS-Excel.

1. Mean \( M = \frac{\sum X_i}{n} \)

2. Standard Deviation \( \sigma = \sqrt{\frac{\sum (x_i - \bar{x})^2}{n}} \)

3. \( R^2 = \text{Coefficient of Determination} \)

4. Coefficient of Correlation \( r = \frac{\sum (x - \bar{x})(y - \bar{y})}{\sqrt{\sum (x - \bar{x})^2 (y - \bar{y})^2}} \)

5. Regression equation, \( Y = a + bX \)

6. Percentage of variation (simple growth rate) = \( \{(P_2 - P_1)/P_2\} \times 100 \)

7. t-test for equality of means with unequal variances

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t = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{n} + \frac{\sigma_2^2}{n}}} \]

Outline of the study

The study is divided into seven chapters. Chapter one deals with the introduction of the study, this covers the concept and issues of Indian sugar industry in general and sugar cooperative sector in
particular, research problems, significance of the study, scope of the study, objectives and methodology of the research. Chapter two presented a survey of concerned literature of this subject. Chapter three discussed the growth and development of Indian Sugar industry and role of cooperative in Indian sugar industry. Chapter four devoted to the performance of sugar cooperative in Uttar Pradesh with comparative analysis to Maharashtra. Chapter five analysed a case study of Satha Sugar factory in Aligarh, its overall performance and a comparative study with Anoopshahar Sugar mill in terms of efficiency and profitability. Chapter six deals with the problems of Satha Sugar factory faced, by the management, workers and farmers. Finally in chapter seven conclusions drawn from the study are made and some suggestion have also been put forward to improve the efficiency of Uttar Pradesh sugar cooperative in general and Satha Sugar factory in particular.

**Limitations of the study**

Like most of other survey studies the present study is also not free from limitation. Limitations of this study are stated below:

1. A case study is based completely on the information provided by the sugar factories in annual reports. It is presumed that the whole information is given in annual report is correct. If there is any information, which is not correct then the findings of the study may also be affected accordingly.

2. The results of the present survey study are based on the information received from the management, workers and farmers of Satha Sugar Cooperative only. It has become a partial study because it does not study the attitude of their all employees.
3. This study does not deal with personal problems of all workers and farmers, because it is not easy to seek the related information from the people. Moreover, to generalize the conclusion, we have tried to concentrate on the questions of common interest only.

4. It does not verify from the employers, the information received from these respondents is related to their problem and performance of Satha sugar factory.

5. One can doubt regarding correctness of the facts gathered from the respondents. Indeed, the information received is not verified from any other related or knowledgeable person. Moreover, respondent’s lack scientific attitude hence they do that qualify exactly.

6. Samples, in this study have been taken only from selected workers and farmers; therefore, we do not claim to have concluded samples from all workers and farmers.

7. The investigator was stranger to the respondents. So, they seemed to have some hesitation while replying to the questions.

8. Uncertainly of life routine and low wages of workers forced them to give an irrelevant answer.

9. Participant observation has revealed more information and detailed facts regarding the life and social condition of worker in Satha Cooperative Sugar Factory.
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