Evaluation of Performance of the Mysore Sugar Company Limited

Internal Evaluation Report No. 12 of 2015

STUDY CONDUCTED FOR

THE MYSORE SUGAR COMPANY LIMITED, MANDYA,

AND

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Karnataka Evaluation Authority

BY

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JUNE 2015

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June 2015

PREFACE

The Mysore Sugar Company Limited (MYSUGAR) was established in 1933 in Mandya town. It had been doing well for about 50 years from its establishment. Thereafter its profits have been wavering.

With a view to study as to why the Company was not doing well, the Department of Public Enterprises of the Government of Karnataka initiated an Evaluation study of the Company. After the Terms of Reference had been approved by the Technical Committee of the Karnataka Evaluation Authority (KEA), the study was allotted to M/s Indian Resources Information and Management Technologies Limited (IN-RIMT), Bangalore, by the Department. They completed the task and this is the final report.

The evaluation has made a very objective and deep study of the functioning of the Company. They have looked into the technical issues, human resource management issues and the problems that the farmers supplying sugarcane to the company face. It has also given solutions to all the issues in the report. The simplest and the most important thing suggested in the study is commencing of crushing of cane by 15th of June every year. Delay in doing so results in poor supply of cane, reduced yields and accordingly reduced profits to the Company. The importance of activities ancillary and follow up of crushing has been documented and recommended for implementation. The report has also recommended changing the time period prescribed by the Karnataka Sugarcane (Regulation of Purchase and Supply) Act 2013, from 15 days to 45 days. This recommendation, if implemented, will be of consequence to all Sugar Companies.

The study received constant support and guidance of the Principal Secretary, Planning, Programme Monitoring and Statistics, Government of Karnataka. The evaluation report has been reviewed by members of the Technical Committee of KEA and an Independent Assessor, who provided suggestions and inputs to improve it from its draft form.

I am thankful to the Principal Secretary, Department of Public Enterprises and compliment the Managing Director of Mysore Sugar Company Limited for taking the initiative of getting the evaluation study done, and that too following the procedure prescribed by the Government of Karnataka in getting evaluations done, in letter and spirit.

I am sure that evaluation study and its finding and recommendations will be encouraging and useful to the Mysore Sugar Company Limited and the Department of Public Enterprises, Government of Karnataka, and they will be using it for revitalizing the Company.

Date : 01st June 2015
Place : Bangalore

Chief Evaluation Officer
Karnataka Evaluation Authority

ACKNOWLEDGEMENTS

IN-RIMT expresses its grateful thanks to the Department of Public Enterprises, Karnataka Evaluation Authority and the Managing Director, Mysore Sugar Company Ltd., for entrusting this task and providing guidance and support in carrying out the study. Thanks also are due to the General Manager, Chief Administrative Officer, Chief Engineer, Chief Chemist and other Technical and Administrative Officers of the Mysore Sugar Company Ltd., who were kind enough to provide all available data/ information, including their views and for their sharing of experience. The Cane Development Department's field Staff has rendered the onerous task of arranging the Focused Group Discussions (FGD's) in the various villages visited by the evaluation study team. So, our sincere thanks go to them for having made our work so much easier. Thanks are also due to the sugarcane growing farmers who spared their time to attend the Focused Group Discussions and for having shared their views.

PROJECT TEAM

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EXECUTIVESUMMARY

Karnataka State ranks third in production and fourth in respect of area under sugarcane with fairly balanced spread of sugar factories in southern and northern parts where large tracts of land are put under sugarcane cultivation, especially in the irrigation command areas with assured irrigation facilities. As in the case of rest of the country, Karnataka also has been witnessing fluctuating trends in area, production and productivity. The State presents two segments of sugar industry viz., (i) Khandsari & Jaggery, & (ii) Sugar production. There are 68 sugar factories across the State which can again be classified into (i) State owned (3 units) (ii) Co-operative sector (16 units), & (iii) Private companies (49 units). There is predominance of Private Sugar Companies in the State which take a major share of sugarcane production. As in the case of the rest of the country, sugar industry in Karnataka also is facing with unpredictability due to a number of reasons including uncertainties in sugarcane production on account of weather and rainfall conditions.

The Mysore Sugar Company Ltd., (MYSUGAR), one of the oldest sugar companies established during 1933 is located in Mandya town in Karnataka State. The company was doing well for over half a century since its inception and has made significant contribution to the production of sugar. However, in recent years, its performance is affected by a number of problems with mounting losses and its financial standing is eroded. The Government of Karnataka intended to study the performance of the company by an external agency and take short and long term measures to enable the company to regain its past status. The Department of Public Enterprises and Karnataka Evaluation Authority (GoK) entrusted the task of carrying out the study to M/s. Indian Resources Information & Management Technologies Ltd., (IN-RIMT).

The main objective of the evaluation is to study the performance of the Company, measures undertaken to rehabilitate/ modernise the Company and determine the steps required to rehabilitate the Company.

MYSUGAR: The production capacities of the company include ‘A’ Mill and ’B’ Mill with combined installed capacity of 5000 TCD. It also has a distillery unit with an installed capacity of 36 KLD and also a multi-fuel Co-generation plant with a capacity of 30 MW is in the process of being commissioned. Of these two mills, ‘B’ Mill was installed 80 years ago while the other (‘A’ Mill) was installed during the seventies (40 years). Both the Mills have outlived their utility and their productivity has declined due to snags that are resulting in frequent break-downs, necessitating frequent repairs. It is operating only one Mill (‘B’ Mill) at 3000 TCD and the other Mill (‘A’ Mill) has stopped working for the past 7 years. Presently, rehabilitation / modernization of ‘A’ Mill is under progress and under the rehabilitation plan, the designed capacity of ‘A’ Mill is

being enhanced to 5000 TCD. This would increase overall volume of cane handling to 7500 TCD. The analysis of the data with respect to cane crushing and cane supplied by cane growers reveals that, the total quantity crushed is much lower than the quantity of total supply.

A **Distillery Unit** is functioning as an adjunct to the Mill using molasses for production of Rectified Spirit (RS) and Indian Made Foreign Liquor (IMFL). The designed capacity of this unit is 36 kl of RS/IMFL. The distillery is not functioning regularly on account of non availability of steam and electricity from the sugar unit.

Power: The total capacity of all the motors including those for utilities but excluding 'A' Mill assembly and 'A' Mill accessories is 10145 HP or say 10,000 HP and 'A' mill drive and 'A' mill connected equipments is to the extent of 7713 HP, totaling to 17713 HP equivalent to 13275 KW or 13.27 MW. The internal consumption of the factory and utilities is around 9.00 MW, which appears to be on the higher side. Voltage fluctuation at the point of generating and power factor variation and few other problems at the power house was observed; there is possibility of a 15-20 % overrating of motor / power consumption.

A **Co-generation plant** with a cost of Rs 96 Crores with a designed capacity of 30 MW was installed and got ready for commissioning in the year 2007. This plant has 2 boilers with a steam generating capacity of 80 tons/ hr at a pressure of 66 kg/ cm^2. The 30 MW Co-gen plant is lying idle for the past 8 years. From the time of installation in 2007, the Co-gen plant has worked only for 4 hours. The Co-gen plant can become operational to its full capacity only when the factory crushes cane at 5000 TCD or 208.30 tons/ hr, which is possible only when Mill 'A' is commissioned and runs with 100% capacity. In the 'B' Mill alone, during the year 2014-15, the crushing was just around 1500/1600 TCD, including stoppages.

Boiling house: As for the capacity of the different stations in the Boiling house, it is found that the units have ample capacities to crush 5000+ TCD, except the fact that all of them need major overhauling, repairs, maintenance and re-organization. Virtually, the entire equipment and machinery in the Boiling house needs total overhauling if the expected rate of crushing of 5000 TCD is to be achieved. Major repairs to Pans, Condensers, Crystallizer Centrifuges etc., need to be carried out in the off-season.

As per information, the B. Masscuite and C. Masscuite % cane has been on the high side, clearly indicating the poor quality of cane being crushed in the factory. A study of the comparative statement of the final Manufacturing Report for the past 8 years indicates that, the down-time is too much on the high side to the extent ranging from 27.7% to 78.7%. Capacity utilization of Plant & Machinery is less than 40% based on the installed capacity of 5000 TCD, which the company has never achieved. Technical efficiency, whether in the Engineering or in Manufacturing side is far from satisfactory and does not come anywhere near the industry standards. The total losses are very much on the higher side and almost 0.5% higher than normal mean. This is attributed to the very frequent break-downs resulting in fall of juice percentage and reduction in purity affecting sugar recovery. Also, crushing of dry/ stale cane

almost after every major break-down is affecting the overall recovery of sugar. It is observed that there is considerable delay in procurement of essential spares. A study of each category of items of stores and spares stocked and the period from which they are lying unused / unissued, including visual assessment indicated that at least 3 blocks out of 5 in the stores are stocked with items which have remained unused for the past 10 years and some lying around for 15-20 years.

A comparative study of the performance of the nearby sugar factories Sri. Chamundeswari Sugars Ltd (SCSL), Mandya and Pandavapura Sahakara Sakkare Karkhane Ltd (PSSKL), Pandavapura with Mysore Sugar Company Ltd., (MYSUGAR), indicated that PSSKL has a capacity to crush 3500 TCD; SCSL - 4000 TCD and MYSUGAR - 5000 TCD (In reality, MYSUGAR is operating only one mill of 3000 TCD and the other mill of 5000 TCD is under renovation).The average Cushing days of the three Sugar factories during the last 4 years are: PSSKL-180 days; SCSL- 200 days and MYSUGAR- 198 days. The average cane crushed during the last four seasons varies (PSSKL: 1,30,000 MT to 3,50,000 MT, SCSL: 4,50,000 MT to 6,00,000 MT & MYSUGAR: 2,21,000 MT to 4,11,000 MT) The capacity utilization are: PSSKL: around 70%, SCSL: around 94% & MYSUGAR: around 35%.The loss of sugar in bagasse, loss of sugar in press cake, loss of sugar in molasses, unknown losses and total losses in PSSKL varies from 2.68 to 2.73; in SCSL it varies from 1.94 to 2.00. In case of MYSUGAR, the losses varies from 2.44 to 2.81. The total losses for a factory working without breakdowns and with optimum efficiency, normally, ranges from 1.9% to 2.2%. Compared to these figure the total losses of PSSKL & MYSUGAR have been very much on the high side and if the total losses are more than 0.5% compared to normal, the sugar loss will be 5 kgs of sugar for every ton of cane crushed or 5000 quintals for every lakh tones cane crushing . The time lag between harvesting and crushing is the lowest in SCSL. It is just around 20 hours because of which the recovery is much higher compared to either PSSKL or MYSUGAR. The time lag at PSSKL is about 24 hours. Compared to these two factories, the time lag of MYSUGAR is the highest ranging from 60-90 hours resulting in the factory crushing dry cane/ stale cane which is the reason for low recovery of cane and increase in the losses due to poor milling, boiling house losses, undetermined and total losses. Steam % cane is the lowest around 42 to 46% in SCSL. At PSSKL, it is around 55% and at MYSUGAR, it is around 60 to 65%. Final Molasses purity at SCSL is around 30-31 which is well within the normal limits. At PSSKL, it ranges from 34 to 36. At MYSUGAR also, the purity ranges from 32 to 36. A study of machinery also showed similar variations. In case of MYSUGAR, there are many items which have been in use for a long time and many new items of machinery and equipments have been added. At many places, there is duplication of items. A study of the machinery schedule indicates that the plant can crush 5000 TCD in the existing plant and machinery subject to their commissioning the ‘A’ Mill. Commissioning new set of evaporator bodies, rectification of old evaporator bodies, a set of floating bodies to avoid frequent periodical cleaning, as is being done in SCSL, total rehabilitation and overhauling of plant and machinery can make this plant work well. A total overhauling of machinery along with motivation / skill development is necessary. The cane

department has to work with more efficiency specially in reducing the time lag between harvesting and crushing.

Sugarcane supply: The area under sugarcane in the district is 38,649 ha. Of this area, the Company is planning to get sugarcane from 273 villages covering an area of 12,238 acres or 4935 ha. for the year 2014-2015. The production of sugarcane has been normal ranging between acceptable parameters over the past many years except from 2001 to 2004 and 2008-2009 owing to drought conditions and scarcity of rainfall and consequent dearth of water in the KRS reservoir. So, scarcity of sugarcane being responsible for the sickness can safely be ruled out.

The sugarcane farmers by and large are growing Co-62175 variety for its high yielding qualities. A few of the farmers are growing Co-86032 and M-1. The (VCF-517) variety, is slowly getting popular and area covered has begun to gradually increase. This variety has better yield and higher recovery of sugar and highly suitable to this tract. The productivity has ranged from 40 tons to 60 tons per acre with an average of 45 tons per acre. The farmer's major grouse is that, there is no system in place either from the Sugar factory or the Department of Agriculture or the University of Agricultural Sciences for the timely supply of treated sugarcane setts to the farmers and no concerted effort to bring in or evolve higher yielding sugarcane varieties with better recovery percentage.. The farmers say that, the supply of bio fertilizers reaches them very late. Untimely supply of chemical fertilizers and the spiraling prices are causing severe hardship to them. The labour and transport costs have become prohibitive and are driving the farmers away from agriculture as it is no longer a viable livelihood proposition. Cost of harvesting and transporting of the cut cane to the factory ranges from Rs. 800 to 1000 per ton. Finance in the form of loans is another stumbling block. Though crop loans are available at 7% interest, it is to be repaid within 12 months time. The farmers are unable to repay in time as delayed payment from the factory is a very common occurrence. The farmers are levied interest of 12% for delayed repayment of loans by the banks. This makes finance from banks an unviable proposition.

Physical Performance of the Company: Information available from published reports reveals that the Company has been operating under loss. During seven years under review, the physical turnover in terms of cane crushed and sugar produced has shown fluctuating trends. The Company has not maintained consistency in its operations with annual variation in crushing of cane, recovery percentage and production of sugar and other by-products. One of the reasons quoted by the Company is non-availability of sugarcane and another is frequent break down of machinery and loss of crushing hours in repairs/ replacements.

A study of trends in sugar production from cane indicates that the recovery percentage had ranged between 8-9%. It was seen that the Company had commenced crushing operations only from August/ October in four out of seven years.. An analysis of trends shows that mechanical and electrical issues followed by non availability of cane were responsible for the downtime loss.

On an average 11 hours / day were lost (around 45% of 24 hours / day). Stoppage of crushing on account of mechanical and electrical problems averaged at 32.5% (almost a third).

Production of bagasse ranged between 29% and 32.5% of sugarcane crushed during the period under review, while, the productivity of molasses ranged between 4.4% and 6.0% during the same period with annual variation. The other by-products include Fibre (yield between 12.% to 15%) and filter cake (2.9 to 3%). Molasses percentage at 4.4% to 6.0% is on the higher side.

While these two joint products add to the Company's revenue generation, bagasse reduces cost of fuel.

It was seen that the Company had manufactured Rectified Spirit and Alcohol till 2012-13 and stopped in 2013-14 and restarted production of Rectified Spirit in 2014-15.

Financial status: A study of Company's financial performance during the seven year period under review (2007-08 to 2013-14) indicates that (i) Annual turnover in financial terms has shown variation on year-to-year basis, corresponding to production of sugar and other joint products and other incomes, (ii) Cost of production has shown consistent upward trends, (iii) Component wise cost shows that there has been increase in overhead costs (salaries and other administrative expenses), (iv) Repairs and replacements have shot up over the years, (v) Financial cost/ overhead in terms of interest and debt-servicing has shown substantial rise, (vi) Liabilities on account of borrowings has shown steep rise, and (vii) With negative profit in successive years, accumulated loss has risen significantly.

The factors affecting Company's performance are: (i) Cost of sugarcane has risen significantly, (ii) Average price of realization for sugar and other joint products has remained more or less same with marginal rise, (iii) Conversion cost has gone up, (iv) Inefficiencies in operations have affected productivity viz., (a) older machineries, (b) lower staff productivity, (c) non-availability of sugarcane, (d) frequent break down and loss of crushing hours, (e) Rising overheads, (f) no additional product lines like distillery and Co-gen which can add to the revenue, and (g) financial liability (Debt servicing).

Return per rupee spent on staff has shown fluctuations on a year-to-year basis. During 2008-09 and 2009-10, the ratio of staff cost vis-a- vis income was the lowest and almost 50% of income was spent on salaries and wages only. The loss making trends of the Company in all the seven years under review has sent a clear message that the cost of operations has always been much higher than revenue generation. This has led to accumulated losses.

Over the years cost of sugarcane has risen twice from the base year (2006-07) as a result of which per quintal cost of sugar production has also made continuous change. While sugar price has remained more or less same or has slightly increased, cost of production of sugar which was Rs.13525/- per ton during 2006-07 had gone up to Rs. 22477/- per ton during 2012-13.

The Company has huge debt burden on account of borrowing - both long term and short term in nature. This has added to the overall cost and also viability is eroded. The trends in the Company's interest burden reflected clearly the reasons for sliding financial status of the company. Financial overhead has been rising. For every ton of sugar produced, the debt service burden rose from Rs.1498/- in 2006-07 to Rs. 4646/- in 2012-13.The interest liability on every kilogram of sugar produced varied between years and depending on volume. Generally, it ranged from Rs. 4.5/- to Rs 5.5/- per kg.

A study of trends in Operating Results (OR) of the Company during the years under reference shows some encouraging picture. On two occasions, there was plus margin and on another one, the negative margin was very small. However, higher negative margins were seen in two years. If some of the overheads are ignored, the actual margins could be favourable and manageable for the company.

Observations &Findings: (i) Reduction in cane area is not solely responsible for the sickness of the Company. Draught for two consecutive years has affected the cane availability to the factory during the seasons 2008-09 and 2009-10. (ii) Old / aging equipments which are not being maintained well have contributed to the poor performance of the Company. Higher manpower coupled with inefficiency has affected the Company's performance / profits. (iii) No rehabilitation measures have been undertaken systematically / seriously by the Company. This is apparent from the existing condition of the machinery and their maintenance. (iv)There have been attempts to improve the crushing capacity of the mills by modernizing one set of mill called "A" Mill which was installed in the year 1975-76. With the modernization of "A" Mill, a new bagasse handling system has also been installed. (v) One of the main problems in the factory is in the cane transport system. Unlike the other factories in the region, which crush the harvested cane within 24 hours from the time of harvesting, Mysore Sugar Company takes more than 72 to 96 hours i.e., the time lag between harvesting and crushing is 72 to 96 hours. This inordinate delay in the transport of cane and crushing is responsible for poor recovery percent cane.

Suggestions for Revival:

Operational / Technical: The Company's future prospects depends very much on successful running of the factory without stoppages; commissioning of the Co-gen plant as early as possible and export maximum power to the grid (this will be the main source of revenue to the company); bringing down the power consumption within the factory which at present is very high; improving capacity utilization, bringing down losses in bagasse, molasses, filter cake, unknown losses and thereby the total losses; improving technical performance and efficiencies to reduce losses and improve recovery percent cane; running the distillery round the year by consuming the entire molasses produced by the factory and if necessary buying from other factories; improving distillery efficiency by modernizing / changing the plant and machinery which at present, is not in good shape. Also total rehabilitation / modernization work should be undertaken. Staff in excess may be controlled. Computerization of sugarcane procurement till sugarcane payment release may be implemented and closely monitored to streamline the

process. Overhauling of plant and machinery during off-season has to be taken care of meticulously, so that, the entire plant and machinery is ready in all respects for the ensuing crushing season and the plant works without breakdown. The nature of maintenance should have to be preventive maintenance and not break-down maintenance, All the necessary spare parts required for off-season overhauling and maintenance must be procured before close of the season or immediately after the season is over, so that, there is no delay in overhauling and maintenance for want of spares. Steam consumption in the factory is very much on the higher side. As for stores and spares, the present huge quantities of assorted spares and store items should be identified for their relevance and necessity of retaining / stocking them. Dispensing with some of them would reduce both cost of material and cost of holding.

Sugarcane supply: The company may look into the feasibility of bifurcation of the Cane Development Department into two entities, one for cane procurement and the other for cane development and the latter should concentrate on selection of suitable sugarcane varieties and supplying quality and treated seed materials to the growers. Feasibility of introducing newer varieties in phases should be explored. The company should generate adequate resources for payment of advance to the cane producers at the time of supplying of cane to the factory to meet their harvesting costs and also clear the final payment for the cane supplied within a fortnight of receiving the cane (as warranted by the Karnataka Sugarcane [Regulation of Purchase & Supply] Act 2013) after deducting the advances paid. Making payment directly to the cane growers bank account may be explored. It is felt that, the Government may bring out an amendment to the Karnataka Sugarcane [Regulation of Purchase & Supply] Act 2013 to the effect that payment to farmers could be extended up to a maximum of 45 days after supply of cane to the factory, instead of the 15 days period now provided. The Government of Karnataka may consider providing some financial subsidy / relief per ton of sugarcane purchased (as is being done in the States of Maharashtra and Tamil Nadu), till such time MYSUGAR improves its working (commence co-gen plant) and earn additional income.

Financial: The concern that warrants urgent attention is enhancing efficiencies of the three important M's viz., Men, Material & Machines. The first, i.e., Men can be addressed through a special drive for enhancing their productivity. There are a number of modern and latest techniques and tools for (i) employee productivity, (ii) employee incentivisation and motivation, (iii) policies aimed at recruitment, training and skill upgradation, (iv) following Carrot and Stick policy of rewarding and reprimanding, and (v) revisiting the present policy of retaining personnel on contractual basis. The Company has accumulated losses to the tune of about Rs. 464.22 Crores on which interest liability is rising continuously since repayment of loan is not possible in view of negative cash flow. A strong finance department is needed to address the number of issues relating to cash flows and money management and for this purpose, a full-fledged Factory Cost Accountant would be necessary. Reduction in the interest liability is of prime importance since substantial amount of money has to go towards this charge. It is desirable to explore negotiations with funding agencies for a one-time-settlement (OTS) of

outstanding loan and waiver of part of interest. The Company may seek financial assistance (in the form of interest-free loan) to be used for OTS and meeting operating costs partly, since Working Capital and other financial accommodation from financial institutions involves higher interest burden and the Company would not be in a position to sustain this cost.

Human Resources: The present system of engaging labour through contractors and their payment on period-basis may be reviewed and a new system of payment on output basis may be considered. The Company should revisit this policy and consider at least some important positions to be filled on regular basis so that the employees may feel secured and their outlook may change with improved output. Over-staffed departments should be identified and the Heads of the Departments may be motivated to reduce the number in view of improved technology available.

Chapter - 1

INTRODUCTION

Chapter 1

INTRODUCTION

1.1 Background

Karnataka State (the then Mysore Sansthan under Arasu Dynasty) had initiated promotion of industrial activities as early as dawn of the twentieth century. Among them, as testimony of **Mr. Leslie F. Coleman's** vision, the then Mysore Government established a Sugar Factory at Mandya way back in 1933, more than a decade prior to Indian Independence. This pioneering effort of the visionary transformed the region into a hub of industrial activities. The Mysore Sugar Company Limited, popularly known as MYSUGAR is running into 9th decade of its existence. The company was doing well for over half a century since its inception and in the later years, its performance was affected by a number of problems and is presently incurring heavy financial losses, especially during the last decade. Poor performance and progressive decline in operations in terms of crushing of sugarcane, has rendered the company into a perpetually loss making unit with mounting losses and negative net worth. Inspite of this, the company has made significant contribution to

- Production of sugar,
- Providing market to farmers for their cane produce, and
- Employment to large number of unskilled, skilled personnel and agriculture labour in the area.

The Government of Karnataka intends to review the working of the company and evaluate the performance through a third party evaluation process. The Department of Public Enterprises, Government of Karnataka and the Karnataka Evaluation Authority (KEA), entrusted the task of carrying out the study to Indian Resources Information & Management Technologies Ltd., (IN-RIMT), Bengaluru.

1.2 Objectives & Scope

The main objective of the evaluation is to study the performance of Mysore Sugar Company Limited and assess the status of the measures undertaken to rehabilitate/ modernize the company.

Based on the Terms of Reference, broad scope of the study covers the following aspects:

- ✓ Study and identify major reasons for the sickness of the company;
- ✓ Review the trends in availability of sugarcane from the area and explore the linkage between supply trends and working of the factory;
- ✓ Review and analyze measures taken and being taken by the company in terms of Rehabilitation / modernization; and review the status of measures initiated in improving the working of the company;
- ✓ Carry out a critical study and analysis of sugar cane production in the command area of the factory *vis-a-vis* **the Company's procurement policies** and mechanism including identification of problems in cane procurement;
- ✓ Study and review the processes involved in procurement of cane and payment to farmers and identify problems;
- ✓ Review and identify measures initiated by the Company aimed at enhancing sugar cane production through horizontal, vertical expansion of sugarcane area and enhancing productivity levels, to meet and ensure its requirement ;
- ✓ Also, study and review whether the company has taken advantage of on-going Government programmes on area and productivity enhancement from time to time;
- ✓ Study and review whether or not the Company has put in place a system of supply-chain management and its relations/outreach to the farmers and whether or not the farmers have been loyal to the company in supply of cane and if not, whether they are supplying their produce to other buyers for better gains and other purposes;
- ✓ Critically review the time-sequence of sugarcane harvest, transport, supply at factory gate, crushing and payment ;

- ✓ Based on a detailed study of internal (Technical, operational, managerial, financial, administrative and other aspects) and external factors (sugarcane area, production, productivity, supply, prices, competitive environment), **explore the prospects for Company's viable working;**
- ✓ Based on the overall performance, strength, weakness and opportunities, **recommend short and long term measures for Company's future performance.**

(*Terms of Reference for the study is presented in Annexure 1*)

IN-RIMT submitted an inception report together with a Work Plan within the stipulated time. For carrying out the study, a few suggestions offered by the committee were considered and modifications were carried out in methodology proposed by the consultant. A draft report was submitted to KEA on April 10, 2015 followed by a presentation on May 4, 2015. Some suggestions were offered by KEA Technical Committee on the draft report which have been incorporated in this final report.

The report consists of seven chapters. Chapter 1 deals with background of the study and broad scope. Chapter 2 gives detailed methodology adopted for the study. A review of the working of the factory / company is presented in Chapter 3 including details of relevant technical aspects relating to the present status of plant machinery, equipments, their efficiencies and utilization levels. Chapter 4 discusses about the sugarcane production, farmers surveys, FGD's, issues relating to sugarcane supply etc., while Chapter 5 deals with broad highlights of the physical & financial performance of the company during the seven year period. Chapter 6 discusses major findings and Chapter 7 offers suggestions for improved performance of the Company.

Chapter - 2

METHODOLOGY

Chapter 2

METHODOLOGY

The main objective is to review and study trends in area, production, productivity and supply of sugarcane to the mill, since, one of the reasons quoted for sickness is non availability of sugarcane. The other aspects *viz.*,

- efficient and economic management of all operations entailed in production of sugar and other joint products, and
- financial performance and viability of the Company,

emerging as prominent indicators of the Company's poor performance in the few years, were also studied.

A multi - disciplinary team of experts consisting of Sugar Technologist **–** Production Engineer, Agronomist / Agricultural Economist and Cost & Management Accountant were involved in the study. Field studies were carried out by teams of field investigators.

The study was taken up in two stages *viz.,*

(i) Visits to farmers fields, interactions with the farmers and their groups, elected members of the local bodies like Gram Panchayats etc., and those connected with sugar cane production including Government Departments to assess the status of the area under sugarcane, production and productivity, farmers preferred choices in respect of sale of sugarcane,

(ii) Detailed study of the working of the mill through visits to the factory (each department), interactions with the Heads of the Departments including an assessment of department-wise performance.

2.1 Field Visits

With this back ground, it was programmed to cover 10-12% villages and interview the sugarcane growers through Focused Group Discussions (FGD's) and individual

farmer interviews. A questionnaire was prepared to elicit the required information from the sugarcane growers (Questionnaire attached at Annexure 2).

The selection of the villages was done by stratified random sampling method. 18 villages from Mandya, Srirangapatna and Malavalli taluks were covered in the study. The list of villages is enclosed at Annexure 3. Focused Group Discussions were conducted in all these villages involving 266 farmers covering all categories ranging from small and marginal farmers to big farmers. Care was taken to ensure that all farmers had an opportunity to express their views and opinions. The study team also requested the farmers to give suggestions to overcome the problems of the farmers *vis-à-vis* the MYSUGAR Company. Some of these opinions have been quite an eye opener and refreshingly original.

The study called for interaction with the sugar cane producing farmers in the area. As many as 266 villages are covered under the sugar supply chain. During 2014-15, about 15000 farmers had registered for supply of cane to the factory. The details of registered cane growers **–** village wise, for the crushing season 2014-15 is given in Annexure 4. Average holding size under cane ranges from 1 to 5 acres with predominantly small and medium farmers. Using details of villages and number of farmers, a supplier survey was conducted covering around 20 farmers in each category viz., Marginal Farmers, Small Farmers and Medium Farmers to get better inputs spread across larger number of villages and farmers. Specially devised questionnaires were used to capture information from the farmers on various aspects of seed sourcing, package of practices, harvesting, transport, supply, realization of money from the Mill and other relevant information including their suggestions based on their experience.

A list of registered farmers was obtained from the Cane Development Officer to select villages and farmers for detailed study. As many as 20 villages were selected and 79 were covered comprising 28% marginal, 45% small, 18% medium and 9% large farmers. Among those selected, representation was given to all the categories with educational qualification ranging from illiterates to Post-Graduates, as given under.

Category	Numbers	%
Illiterate	14	18
Pre-matric	19	24
SSLC	18	23
PUC	15	19
Graduates	10	13
Post Graduates	03	04
Total	79	100

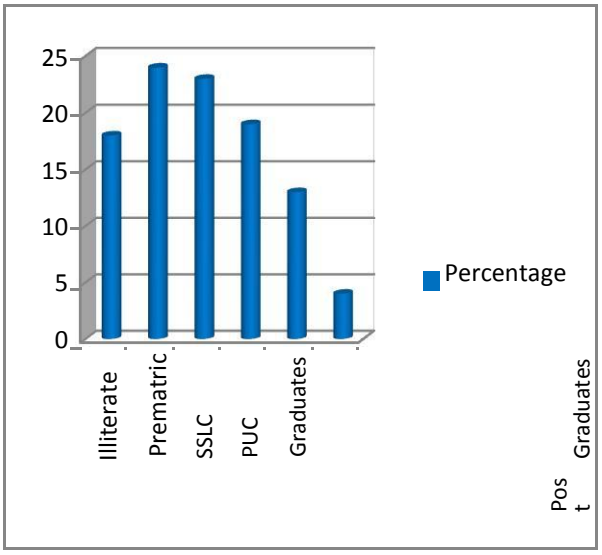


Table1: Villages covered under FGD

Sl. No	Name of the village	Taluk	No. of FGDs	No. of Farmers
1	Sathanur	Mandya	01	02
2	Hulivana	Mandya	01	21
3	Keelara	Mandya	01	19
4	Anusosalu	Mandya	01	20
5	Maragowdanahalli	Mandya	01	17
6	Kommerahalli	Mandya	01	22
7	Alakere	Mandya	01	26
8	Thumbaker	Mandya	01	24
9	Panakanahalli	Mandya	01	25
10	Chandagalu	Mandya	01	20
11	Hebbakavadi	Mandya	01	09
12	Mangala	Mandya	01	09
13	Chikkamalagodu	Mandya	01	09
14	Ansale	Malavalli	01	10
15	Naguvanahalli	SR Patna	01	09
16	Hosur	Mandya	01	11
17	Chandagalu (N-Halli)	Mandya	01	11
18	Melapura	Mandya	01	02
			18	266

In each village, one Focused Group Discussion was held to have broad-based and factual information. Questionnaires were used to capture information from farmers on wide ranging aspects of sugarcane production and management aspects.

During interactions with each Head of the Department on working of the mill, checklists for providing data were given to each Department in charge. Table below gives details of visits/ discussions of the evaluation team during of the course of the study.

Table 2: FACTORY & FIELD VISITS

Date	Activity	Villages
14.06.2014	Preliminary visit to MYSUGAR factory followed by field visit	Sathanur
04.07.2014	Discussion with The Chief Administrative Officer & data collection	-
15.10.2014	Meeting with the Managing Director at Bangalore	-
20.10.2014	MYSUGAR factory (Discussions/ interactions with the Chief Engineer, Chief Chemist, General Manager, Cane DevelopmentOfficerandotherTechnical& Administrative Staff)	-
27.10.2014	MYSUGAR factory (CE, GM,LWO)	-
12.11.2014	MYSUGAR factory (GM,CC,CE,PPM, CDO, Accounts Officer, Stores Manager)	-
21.11.2014	MYSUGAR factory (CE, CC, GM); Field visits	Hulivana, Keelara
02.12.2014	MYSUGAR factory (CE, CC, GM, Others); Field visits	Kommerahalli, Alakere, Maregowdanahalli, Anesaslu
10.12.2014	MYSUGAR factory (CE, CC, GM, Others); Field visits	Panakanahalli, Tubakere, Chandagalu
15.12.2014	MYSUGAR factory (CE, CC, GM, Others); Field visits	Mangale, Hebbakawadi, Anasale, Chikkamungodu
24.12.2014	MYSUGAR factory; Field visits	Chandagalu, Naguvenahalli, Hosur, Melapura
26.12.2014	Meeting with the Managing Director at Bangalore	
03.01.2015	MYSUGAR factory; Field visits	KM Doddi and visit to - M/s Chamundi Sugars Private Ltd.
02.02.2015	MYSUGAR factory	-
03.02.2015	MYSUGAR factory (Meeting with MD & Heads of various departments)	-
21.02.2015	MYSUGAR factory (GM, CC, FA , Steam Generation Unit, Manufacturing Section, CE etc.,)	-

2.2 Secondary Data

The data/ information required for carrying out the study was listed and provided to the concerned Departments/ Staff of the Mysore Sugar Company Ltd., Most of the data required was provided by the Company. However, information on (i) Materials and Stores, (ii) Finance and Accounts, & (iii) Personnel were supplied only partially, in spite of repeated requests.

2. 3 Limitations

Efforts were made to obtain detailed information from respective Departments by the Consultant, but, some of the data required could not be accessed due to non-availability and the Consultant had to infer some aspects by means of personal judgement based on experience. Working results of the most recent years *viz.,* 2012-13 and 2013-14 were not made available (Annual reports, P&L Account and Balance sheets). IN-RIMT was unable **to analyze most recent trends in the Company's** working and financial and technical performance.

Similarly, details on some technical inputs were not made available by the following Departments

- Machinery schedule in the form I (1), for the past 7 years.
- Rehabilitation and modernization proposed by engineering department.
- Rehabilitation and modernization proposed by manufacturing department.
- Rehabilitation measures to improve the working of the Distillery
- Stores inventory including details, nature of items remaining unutilized for 5 years or more.
- Cost of manufacturing and conversion.
- Application submitted to BIFR.

In the light of the above, some of the Consultant's observations had to be arrived at on the basis of certain inferences and experience in the earlier studies.

Chapter - 3

SUGAR INDUSTRY AND REVIEW OF THE WORKING OF MYSUGAR

Chapter 3

SUGAR INDUSTRY & REVIEW OF THE WORKING OF MYSUGAR

3.1 Sugar Industry - Indian Context

India is the largest consumer of sugar and the second largest producer, next only to Brazil. However, in terms of per capita consumption, the country ranks third in the world. A unique feature of this industry is that, sugarcane and sugar production by and large, are located in the rural and semi-urban areas as a result of which, large number of rural workforce finds gainful employment. But, this industry does not have a reasonable degree of predictability in its production, since the sector is subject to controls across the entire value-chain of sugar production and sale. This has telling influence on efficiency and cyclicality in sugar and sugarcane production. Besides, it also impacts the interests of stakeholders across the value-chain.

3.1.1 Area and Production

Sugar production has shown fluctuating tendencies in the last one decade or so. Annual upward and downward changes are regular phenomena, mainly on account of the fact that the production of sugar is based on cane availability and in turn, cane production and productivity are sensitive to climate and rainfall. They are subject to cyclical pattern. From 42 lakh hectares of area under sugarcane during 2005-06, the area has moved to around 50.12 lakh hectares after annual fluctuations over a period of a decade. So also, sugarcane production has moved from 2811.77 lakh tons during 2005-06 to 3549.5 lakh tons during 2014-15. Correspondingly, production of sugar which was 193.2 lakh tons during 2005-06 was estimated to reach 250.46 lakh tons in 2014-15. Fluctuations in productivity are observed as reflected in the following Table.

Table 3: Trends in Area under Cultivation, Yield of Sugarcane & Production of Sugar

Crop/marking Year	Area (lakh Hectares)	Production (Lakh Tonnes)		Sugarcane Yield (Tonnes/Hectares)
		Sugarcane	Sugar	
2005-06	42.0	2811.7	193.2	66.92
2006-07	51.5	3555.2	282.0	69.02
2007-08	50.6	3481.9	263.0	68.88
2008-09	44.2	2850.3	146.8	64.55
2009-10	41.7	2923.0	188.0	70.02
2010-11	48.8	3423.8	243.5	70.09
2011-12	50.4	3610.4	263.4	71.67
2012-13	49.99	3412.0	258.5	68.25
2013-14	50.12	3521.4	245.5	69.84
2014-15	N.A.	3549.5#	250.46	N.A.

Source: Commodity Profile for Sugar 2015

#: As per 2nd Advance Estimate (2014-15) of DAC released on 18/2/2015

The national average productivity per unit of area has risen slightly over the same period of 2005-06 to 2014-15, which augurs well from micro and macroeconomic points of view.

Production and supply of sugar under regulated conditions poses a number of issues and problems since there are divergent and conflicting interests among the stake holders. In the face of this, the Government has to strike a balance between varied interests such as perishable nature of sugarcane, predominance of small land holdings of sugarcane farmers whose interest is to be protected, the imperatives of maintaining price of sugar at a reasonably affordable level for common households, management of Public Distribution System (PDS), and more importantly, sustaining growing sugar consumption level domestically.

3.1.2 Regulatory Regime

In the context of the above, the Government of India is constantly engaged in formulating strategies and programmes that encompass wide gamut of policy and regulatory aspects of sugar industry. The present day policies, which are a culmination of a number of initiatives, aim at addressing issues such as:

(i) ***Cane reservation area***; under which, it is obligatory on the part of both Mills and Farmers to purchase cane from farmers and farmers to sell to the designated mills for a price to be determined by Central and State Governments from time to time (normally annually).

(ii) ***Location of the factories*** has to be in such a way that minimum distance criterion of 15 km between any two sugar mills is to be maintained with some provision for increasing this distance wherever necessary but with prior approval from competent authorities.

(iii) Under policy on ***Price of sugarcane****,* Central Government fixes SMP as the minimum price, which is used for arriving at the price of levy sugar. However, some States have evolved their own sugarcane pricing policies called *State Advised Price (SAP)* which tends to be somewhat higher than SMP.

(iv) A sugar mill has to sell certain percent of its production as ***Levy sugar****, (*10% of its production) to the Central Government at a pre-determined price, for the Government of India PDS programme. (However, this obligatory condition has now been discontinued).

(v) The policy on **r*egulated release of free-sale*** *(non-levy) sugar,* under which sale is regulated by the Central Government through a controlled release mechanism (generally monthly or quarterly).

(vi) ***Trade policy for sugar*** - depending on mill-wise monthly production and stocks, local production levels and world market conditions, quantitative controls on both exports and imports are common in the sector.

(vii) Regulations relating to by-products*:* In respect of molasses, the State Government has fixed certain quotas for different end users and also restriction on movement across State boundaries. In respect of co-generation from bagasse, there are regulations relating to freedom to sell power to consumers other than the local

power utility, or their electricity boards which restrict sugar mills to sell to private consumers and put a barrier on such open access sale by frequent or routine invocation of statutory provisions meant to deal with emergencies.

Of all the regulations, Cane area reservation and bonding are aimed at ensuring the twin purposes of giving a minimum assured supply of the highly-perishable raw material to a mill, while committing the mill to procure at a minimum price (SMP/SAP). However, this arrangement restricts the freedom of both the parties and deprives of bargaining power of the farmer, who is forced to sell to a mill even if **there are cane arrears and also reduces the farmer's remuneration if the designated**
mill has a lower recovery rate. Mills also lose flexibility in augmenting cane supplies, especially when there is a shortfall in sugarcane production in the cane reservation area. Moreover, mills are tied down to the quality of cane that is supplied by the farmers in the area.

Trends in SAP's among major States producing sugar is shown in the following Table which indicates substantial increase at All-India level (from Rs.1450/- per ton in 2011-12 to Rs.2200/- per ton in 2014-15 representing over 50% increase). Haryana has highest price for cane (increasing from Rs.2210/- per ton to Rs.3050/- per ton) followed by Karnataka and Tamil Nadu (Rs.2100/- per ton to 2650/- per ton during the corresponding period), and Uttar Pradesh (Rs.2400/- per ton to Rs.2800/- per ton).

Table 4 : State Advised Cane Price

State	2011-12	2012-13	2013-14	2014-15
India (SMP)	1450	1700	2100	2200
UP	2400	2800	2800	2800
Maharashtra	1800 - 2050	2100 - 2500	NA	NA
Punjab	2200	2400	2800	2850
Haryana	2210	2710	2950	3050
Gujarat	NA	2500	NA	NA
Andhra Pradesh	2000	2500	2600	NA
Karnataka	2000	2400	2500	2500
Tamil Nadu	2100	2350	2650	2650

3.1.3 Price fixation norms

The Government of India determines price for sugarcane on the basis of a number of parameters to ensure that neither of the stake holders is at a disadvantageous position nor the price serves as a deterrent to stake holders.

Farmers' Share in Sugar Value

SNP Parameter - All India value

1. Recovery rate (%) : 10.31
2. Ex-mill price of sugar (Rs./qtl.): 2825
3. Gross conversion cost (Rs./qtl. of cane): 43.50
4. Harvesting cost, if borne by millers (Rs./qtl. of cane): 3.05
5. Transportation cost (Rs./qtl. of cane) : 0.66
6. Cost incurred by millers (Rs./qtl. of cane): 47.21
7. Cost incurred by farmers (Rs./qtl. of cane): 103.91
8. Total cost of sugar produced from crushing of 1 qtl of cane (Rs.) {sum of 6 & 7} 151.12
9. Cost incurred by farmers expressed as a percentage of the total cost: 68.76

Source: Dr. C. Rangarajan Committee Report

It is seen that the cost share for farmer comes to 68.75% in total cost of production. The recommended ratio of return (price of sugar) between the farmer and the mills is 70:30. It is also desirable that returns from other by-products like molasses, bagasse and press mud should also be shared in this proportion.

3.1.4 Cost of conversion

This depends on the crushing range and varies widely between lower capacity and higher capacity mills. As per Agriculture Costs and Prices Commission estimates, for every quintal of sugar produced, the conversion ranges from Rs.653/- to Rs.117/- as reflected in the Table below.

Table 5: Conversion cost

Sl. No.	Crushing capacity	Conversion cost (Rs/qtl of sugar)
1	Upto 1250 tons/day	653/-
2	Between 1250 - 2000 tons/day	424/-
3	Between 2000 - 2500 tons/day	358/-
4	Between 2500 - 3500 tons/day	320/-
5	Between 3500 - 5000 tons/day	202/-
6	Between 5000 - 7500 tons/day	117/-
	Average	**339/-**

Source: Commission on Agriculture costs and prices.

3.2 Karnataka Sugar Industry

Karnataka State ranks third in production and fourth in respect of area under sugarcane with fairly balanced spread of sugar factories in southern and northern parts where large tracts of land are under cultivation of sugarcane, especially in the irrigation command areas with assured irrigation facilities. As in the case of rest of the country, Karnataka also has been witnessing fluctuating trends in area production and productivity. The State presents two segments of sugar industry namely (i) Khandsari & Jaggery and (ii) Sugar production. There are 68 Sugar factories across the State of Karnataka. The sugar industry is again divided into (i) State owned, (ii) Co-operative and (iii) Private companies. There is predominance of Private companies in the State which take a major share of sugarcane produced. The three Government of Karnataka owned companies are the Mysore Sugar Company Limited, Mandya; Mysore Paper & Sugar Mills, Bhadravathi and Gangavati Sugar Mills, Gangavati. There are as many as 12 sugar factories in Co-operative sector, 4 sugar mills under co-operative sector which is now leased, followed by 49 in private sector. As in the case of the rest of the country, sugar industry in Karnataka also is facing with unpredictability due to a number of reasons including uncertainties in sugarcane production on account of weather and rainfall

conditions and the sugar industry has to cope-up with this trend. The difficulties faced are common to majority of the States of the country.

3.3 Manufacturing Process

Sugar cane is the main source in manufacturing white sugar in India. In India, sugarcane is harvested manually and this cane which reaches the factory is cut into pieces and crushed in a series of rollers to extract the juice in the 'Mill house'. Water is sprayed continuously on the crushed cane so as to get the maximum extraction of the juice/ sugar. The fibrous residue left after the complete extraction of the juice is **known as 'bagasse', which is generally used in boilers as fuel or also as a ra**w material in the manufacture of pulp and paper.

The cane juice from the mill house is slightly acidic which is treated with sufficient milk of lime to adjust the pH to approximately 7.0 - 8.4. It is then heated to a temperature of 100° C to 102°C and allowed to settle. This results in the coagulation of colloidal and suspended impurities present in the juice. Much of the color is also removed during lime treatment. The coagulated juice is then clarified to remove dust and dirt and the clarified sludge is further filtered through the filter processes. The solid material retained in the filters is called as 'filter cake' or 'press mud' which is usually sold to the farmers for use as manure.

The clarified juice is then pre-heated and boiled under reduced pressure in Multiple Effect Evaporators. Then the juice is concentrated in vacuum pans where further evaporation reduces the water content by 60%. The partially crystallized syrup from the vacuum pan, known as Massecuite, is then transferred to the crystallizers where complete crystallization of sugar occurs. The Massecuite is then centrifuged to separate the sugar crystals from the mother liquor. The spent liquor is discarded as the black strap molasses.

The sugar is then dried and bagged for the transport. The black strap molasses is generally used in distilleries as a raw material to manufacture various varieties of

alcohols. The flow diagram for the sugar manufacturing process is as follows.

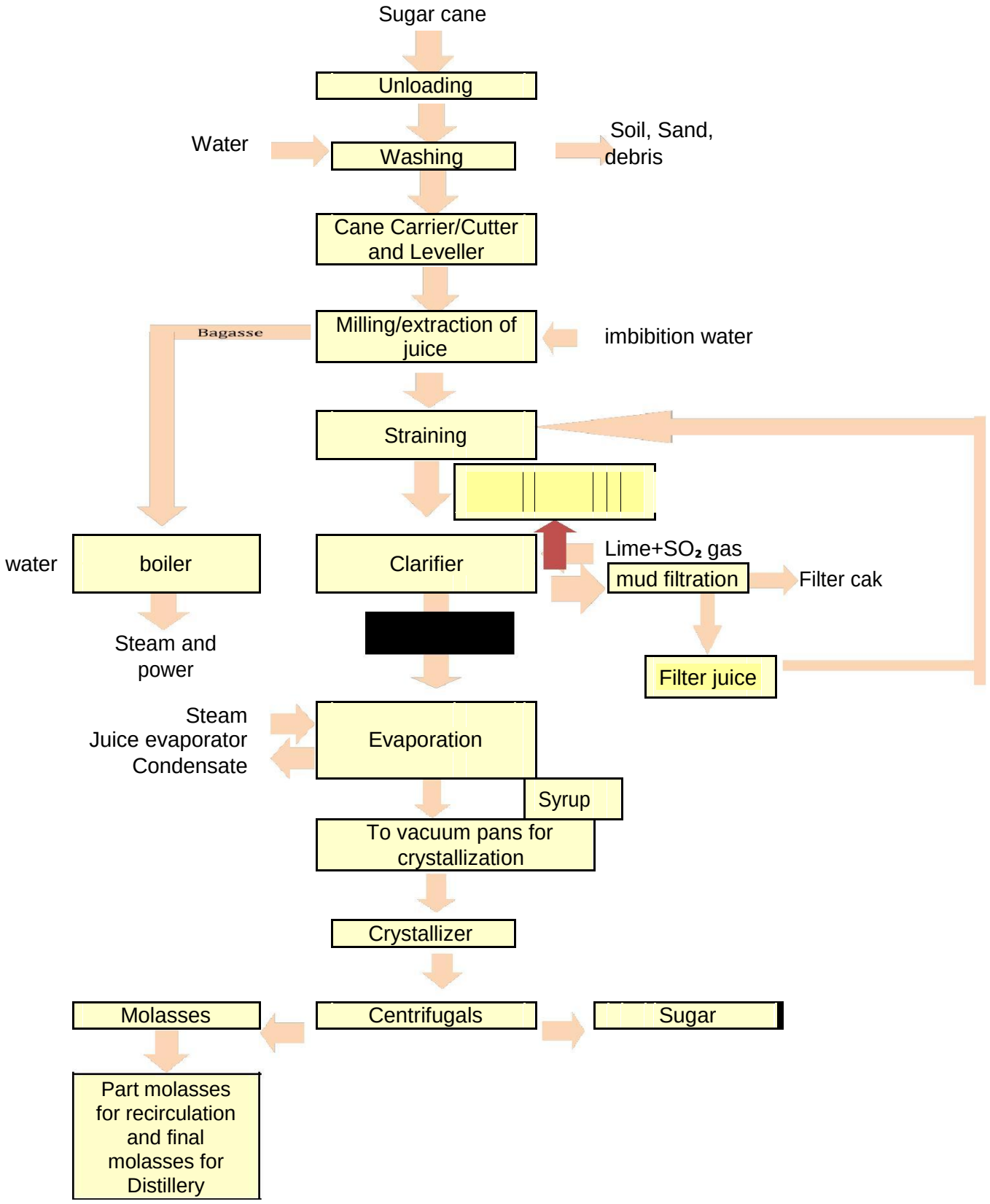


Fig.1:Flow Diagram of Sugar Manufacturing process

3.4 Mysore Sugar Company Limited - A Performance Review

The Mysore Sugar Company Limited is one of the oldest among sugar companies in the country established during 1933 (around 82 years ago) and is the brain-child of Mr. Leslie F. Coleman, whose vision helped the Maharaja of Mysore and Sir. Mirza Ismail in setting up of this factory at Mandya town. Assured availability of water for irrigation from Krishnarajasagar dam further boosted the prospects of sugarcane production in the area and this has benefitted large number of farmers in the region.

Initially, the command area of this factory was spread over 125,000 acres (50,000 ha) of land covering more than 100 villages, wherein, sugarcane replaced many crops, mainly paddy and ragi. As per most recent information, the effective area under sugarcane has come down drastically to around 50,000 acres (20,000 ha). Even so, the estimated production of sugarcane from this area is considered at 18 lakh tons (at 90,000 tons/ ha or 36000 tons/acre by a conservative yield norm). A number of reasons are attributed for such reduction in the sugarcane area. Setting up of some sugar factories both in private and co-operative sectors in the region is another reason for short supply of cane to MYSUGAR.

3.4.1 Cane Crushing

The factory consists of two mills i.e., 'A' Mill and 'B' Mill, both with a designed crushing capacity of 2500 tons/ day each and collectively accounting for 5000 tons/ day. **Of late, only 'B' Mill** is **operational and 'A' Mill** is not functioning. **The 'B' Mill was** installed 80 years ago while **'A' Mill** during the seventies. Both the mills have outlived their utility and their productivity has declined due to snags that are resulting in frequent break downs, necessitating frequent repairs.

As per details available, MYSUGAR had a capacity to crush 5000 TCD. But in reality, it was operating 1 mill only with 3000 TCD and the other mill of 2500 TCD is under repair. This mill has stopped working from the past 7 years. After total rehabilitation / modernization by KCP **–** Chennai, the mill **('A' Mill)** is now made

functional with a crushing capacity of 5000 TCD and it is under trial run for 2-3 hours a day with the help of power purchased from the Karnataka Electricity Board.

A study of cane crushing and cane supplied by cane growers (including agreed quantity and quantity not agreed) reveals that, the total quantity crushed was much lower than the quantity of total supply, during the past 7 years, as is evident from the following Table.

(Quantity : in tons)

Table 6: Details of crushing season wise total quantity of sugarcane available, quantity procured from farmers and utilisation

Year	Agreed Qty of Sugar cane	Agreed Quantity supplied	Non agreed quantity supplied	Total	Percentage of utilization of agreed quantity
2007-2008	6,69,730	3,73,153	-	3,73,153	56.56
2008-2009	1,73,875	34,722	40,018	77,740	19.97
2009-2010	5,24,975	97,100	26,701	1,23,801	18.5
2010-2011	7,20,640	4,33,717	72,000	5,05,717	60.18
2011-2012	9,24,640	4,11,583	12,466	4,24,049	44.51
2012-2013	10,11,915	2,63,901.81	22,473.40	2,86,375.21	26.08
2013-2014	3,73,560	1,04,997	1,20,669	2,25,666	28.11
2014-2015	4,89,520	-	-	2,78,237	-

3.4.2 Distillery Unit

A distillery unit is functioning as an adjunct to the mill using molasses for production of Rectified Spirit (RS) and Indian Made Foreign Liquor (IMFL). The designed capacity of this unit is 36 kl of RS/ IMFL. It was observed that, from 2013-14, production of IMFL has been discontinued. The distillery working depends mainly on the working of sugar unit for raw material i.e, molasses, steam, electricity etc.,

The details of fermentation, distillation column, year of installation, plant stoppage and licenses renewal etc., are given below.

1. Fermentation

a) Yeast vessels – 2 sets of S.S vessels

b) Pre – Fermentation – 3 Nos = 20,000 liters each.

c) Main – Fermentation – 7 Nos = 1, 75,000 liters each.

2. Distillation Column

a) Analyser Column:	Number of segments: 10
	Number of plates: 18
b) Degasifying Column	Number of segments: 2
	Number of plates: 3
c) Rectification Column:	Number of segments: 8
	Number of plates: 48
d) Exhaust Column:	Number of segments: 3
	Number of plates: 12
e) Heads Column:	Number of segment: 4
	Number of plates: 20

3.Year of Installation = 1935

Capacity = 7 KLPD

Expanded capacity = 36 KLPD

4. Stoppage

Plant stopped from July 2013 to October 2014 due to non renewal of distillery license. Reasons for stoppage were non submission of water consent from KSPCB Bangalore and non-payment of excise audit dues.

However, the distillery license was renewed on 14.10.2014 for the year 2014-15. Due to boiler problems, the plant operations are delayed. The Plant started on 17.12.2014 and stopped on 24.12.2014 due to non availability of steam. Now, MYSUGAR is in a position to start the plant and dispose off molasses by running of

the distillery. The distillery had worked for 10 days intermittently and produced 138056 litres of alcohol. The consumption of Molasses was 546 MT and the yield was 253 liters/ MT of Molasses.

Rehabilitation, modernization and good and successful running of the distillery will be in the best interest of the establishment. Any subsidiary industries attached to the main unit of sugar factory like distillery, Co-gen plant will add to the profit of the Company. Only requirement is that, all these units will have to be run effectively and efficiently.

3.4.3 Power and Utilities

As per the details available, total Horse Power (HP) of all the motors including those of **utilities and excluding 'A' Mill assembly and 'A' Mill accessories is 10145 or say** 10,000 HP**. The power rating of 'A' mill drive and 'A' mill connected equipments is to** the extent of 7713 HP. This adds upto a total of 17713 HP or 13275 KW or in other words 13.27 MW of power. The internal consumption of the factory and utilities is 9.00 MW which appears to be on the higher side. Voltage fluctuation at the point of generation and power factor variation are few other problems at the power house which needs to be tackled in the interest of safety of the motors.

Details of the number of standby motors coupled to the pumps and the numbers in actual use were not available. In the absence of this information, it is difficult to quantify the over-rating of the motors/ excess power consumption than the normal. But, during the course of discussions, it was understood that the over- rating may be to the extent 15-20%. If this is true and correct, there is need for an introspection and reduction of power consumption drastically, so that, more power can be exported to the grid.

A study of the motors installed in the new mill set up for cane leveler, cane cutter, cane filter, cane carrier drive, individual mill drive etc., shows that there will be higher consumption of electric power in the mill itself to the extent of nearly 4 to 5 MW. The expected consumption of electricity when the new mill is commissioned and the

Co-gen plant is started is likely to be around 9-10 MW, leaving just around 4-5 MW for supply to the grid which again very much depends on continuous uninterrupted, trouble free crushing to full capacity, and this is a big challenge.

The company was **planning to draw 10 MW of power from KEB to take trial of the 'A'** Mill. The trials were planned February 2015 onwards. Simultaneously, the factory had planned to take trials of the Co-gen plant by starting one boiler and raising steam to full working pressure of 66 kg/cm^2 and to generate 14 MW of power. This will enable them to run the co-generation alternator partially and generate about 12 /14 MW of electricity.

As of now, the electrical energy consumption is nearly 6-7 MW. This load is very much on the higher side for a factory crushing 2500 TCD. In actual practice, the total requirement for a factory of this size is less than or around 3 MW or 3000 KW because the existing mills are turbine driven.

The details of motors and their HP which form **part of 'A' Mill installed** are given below:

Table 7: Details of Motors of 'A' Mill

Sl. No	Description of equipments	Quantity	Total power in HP
1	Feeder table, 15 Hp, 1440 rpm	3	45
2	Feeder table, 20 Hp, 1440 rpm	1	20
3	Chopper, 350 Hp, 585rpm	1	350
4	Leveler/cutter, 250 Hp, 585 rpm	2	500
5	Pusher drum, 50 Hp	1	50
6	Fibrize 1085 Hp, 736 rpm	2	2170
7	Fibrizer carrier, 60 Hp, 1475 rpm	1	60
8	1st cane carrier, 100 Hp, 1480 rpm	1	100
9	GRPF drive, 250 Hp, 1500 rpm	1	250
10	1,2,3 & 4th mill drives 740 Hp, 995 rpm	4	2960
11	5th mill drive, 600 Hp,995 rpm	1	600
12	1st belt converyor, 15 Hp	1	15

Sl. No	Description of equipments	Quantity	Total power in HP
13	Rotary screen, 10 Hp,	1	10
14	Inter rake carrier, 40 Hp, 1460 rpm	4	160
15	Rake elevator, 125 Hp, 1460 rpm	1	125
16	2^{nd} belt conveyor, 20 Hp	1	20
17	Centralized oil pump, 1.5 Hp, 1480 rpm	2	3
18	Mill hydraulic pump, 12.5 Hp, 1450 rpm	1	12.5
19	Lube oil pump, 3 Hp, 1430 rpm	10	30
20	Rotary screen spray water pump, 12.5 Hp, 2890 rpm	1	12.5
21	Mill juice pump-1, 50 Hp, 980 rpm	2	50
22	Mill juice pump-2, 30 Hp, 980 rpm	2	30
23	Mill juice pump-3, 30 Hp, 980 rpm	2	30
24	Mill juice pump-4, 30 Hp, 980 rpm	2	30
25	Mill juice pump-5, 30 Hp, 980 rpm	2	30
26	Imbibitions water pump, 50 Hp, 1470 rpm	2	50
	Total installed power		**7713 HP (5754 KW)**

The commissioning of the 'A' Mill depends on a few factors combined with the commissioning of the Co-gen, Boiler/Turbo Alternator. The hydraulic systems for the mills are yet to be received and installed. Similarly, two pumps for the Co-gen alternator are also to be received.

3.4.4 Water

Enough water required for the process is available to the Company from the Cauvery river. Water supply is also augmented from the canal network existing in the area. As a result, the industry does not face dearth of potable quality of water.

3.4.5 Co-generation

A Co-generation (Co-gen) plant was installed at a cost of Rs. 96.00 crores with a designed capacity of 30 MW. It got ready for commissioning in 2007. But, the same is not functional due to various reasons, main among them being non-availability of required quantity of bagasse. The plant has two boilers each with a steam generating capacity of 80 tons/hr at a pressure of 66 kg/cm^2 which means production

of a total of 160 tons of steam per hour when fully operational. This quantum of steam available can generate 28 MW of power. One Turbo Alternator station is installed to form a complete Co-gen station along with a control station. The alternator is designed for generating 30 MW power. The turbine is designed to work at 66 kg/cm^2 inlet pressure and it is a multipurpose/ multi stage turbine. The plant has been lying idle for the past 8 years and has worked only for 4 hours during these 8 years. **The Co-gen plant can become operational to its full capacity only when the factory crushes at 5000 TCD or 208.30 tons/hr.** This is possible only **when `A' Mill is commissioned and run with 100% capacity. Presently, the 'A' Mill is** run for 2 to 3 hours daily for taking trials.

The Company has entered into a Power Purchases Agreement (PPA) with the State **Electricity Board for drawing 10 MW of power to prepare for taking trial of the 'A' Mill** and the new Mill has very high power requirement with the Co-gen boiler/ Alternator not likely to get started soon. If the company draws 10 MW on 24 hours basis, the cost will be around Rs.12.00 lakhs/ day and for how long the power will be drawn depends on the trial and how fast the Co-gen Turbine/ Alternator will get ready for commissioning.

The Management recently took a decision to start the Co-gen plant with the help of one boiler. The second boiler is undergoing major overhauling. As this will not be ready for this season, the Management is planning to start Co-gen plant with the help of one boiler and generate 14 MW power and, for generating 80 tons of steam/hr, bagasse requirement will be 40 tons/hr. Out of this, nearly 1.5 tons bagasse gets used for providing Bagacillo to vacuum filter and start up losses. With the balance quantity of 38.5 tons bagasse, the Co-gen plant can produce only 14 MW of power, and, using around 8.5 to 9.00 MW for internal consumption, balance 5.0 to 5.5 MW can be exported to the grid.

For generating 40 tons bagasse, the factory has to crush not less than 120 to 125 **tons of sugarcane/hr. The 'B' Mill alone cannot be used to crush this quantity. Hence 'A' Mill will have to be commissioned. A sketch showing production/ utilization of** bagasse as given by the Co-gen consultant is attached as Annexure 5. (This sketch

is based on crushing of 5000 TCD and can be re-drawn for a crushing of 120 /125 tons cane per hour resulting in 2880 tons to 3000 TCD). Hence, Co-gen plant can be **commissioned only when 'A' mill is commissioned. It was seen that, throughout** the 2014-**15 season, crushing in 'B' Mill was just around 1500 /1600 tons per day** including stoppages.

A detailed study of DPR of Co-gen plant shows that there are certain stipulations/ conditions based on which Co-gen plants steam availability to processing is determined. One of the major conditions is that the steam % cane should be limited to not more than 48. However, in reality the steam % of cane is ranging from 62 **–** 65 which means an increase of 14-17%. In case suitable bleeding system is not followed, the factory will be drawing more live steam than required. The control room **automation supplied by 'Yukagowa' was under major maintenance schedule, as this**
is the nerve center for a trouble free performance of the two stations.

As for the capacity of the different stations in the Boiling house, it is found that the units in the Boiling house have ample capacities to crush 5000 TCD + except the fact that all of them need major overhauling, repairs, maintenance and reorganizations.

3.4.6 Rehabilitation / Modernization

It is observed that, the higher total losses are attributed to the very frequent breakdowns resulting in the fall of juice % and reduction in purity affecting sugar recovery. The second reason is the crushing of dry / stale cane almost after every major breakdown and this is affecting the overall recovery of the sugar. It is also understood that there is considerable delay in procurement of essential spares. There are few items of machinery urgently required to make the boiling house balanced for a crushing of 5000 TCD.

Stores and spares:

A study of each category of items of stores and spares stocked and the period from which they are lying unused/ unissued, including a visual assessment, indicates that,

at least 3 blocks out of 5 in the stores are stocked with items which have remained unused for over 10 years and some items are even lying around for the last 15 to 20 years. Since detailed list and the value of such unissued spares was not available, estimated lock-in of resources in unused spares could not be made.

While a number of proposals have been given by the manufacturing department, nothing has been discussed in detail with the Management so far and are still remaining in the proposal stage itself. Many works are in the nature of repair & maintenance and can be done during the course of the season itself, but, the will to do and carryout actions seem to be lacking. New evaporation station is under erection, supplied by M/s KCP Ltd. The Vacuum trial has already been taken but the juice, stream, water, and vapor line connections are yet to be made.

Virtually, the entire equipment and machinery in the boiling house needs total overhauling if the expected rate of crushing of 5000 TCD is to be achieved. Major repairs to pans, condensers, crystallizer centrifuges etc., need to be carried out, which are off season works and nothing can be done during the season when the crushing is in progress unless the units are isolated and kept out of use, till repairs are completed.

It was understood that, as against indent placed in May 2012' for 2 centrifugal machines with a strict delivery period of 6-8 weeks, only one was received recently. The total cost of the two machines put together is Rs 46.00 lakhs and the company has paid an initial advance of Rs 9.00 lakhs along with the placement of the purchase order.

A study of the comparative statement of the final Manufacturing Report for the past 8 years indicates that, the down-time is too much on the higher side to the extent ranging from 27.7% to 78.7%. Capacity utilization of plant and machinery during the last 8 years is less than 40% based on an installed crushing capacity of 5000 TCD, which the company has never achieved. This capacity is in existence since more than 4 decades.

Technical efficiency, whether in the engineering side or in the manufacturing side, is far from satisfactory and does not come anywhere near the industry standards. This has resulted in huge losses by way of sugar recovery. The total losses are very much on the higher side and almost 0.5% higher than normal, which means, for every ton of cane crushed, the factory is losing 5 kg of sugar and for every lakh ton of cane crushing, the factory is losing 5000 bags of sugar equivalent to Rs 1.5 crore at Rs. 3000/- per quintal of sugar.

As mentioned earlier, cane shortage and mechanical losses account for the maximum down- time losses and this need to be tackled on war footing.

The Centrifugal station is in a big mess. Many of the machines have been virtually scrapped and need total replacement. The number of machines used for different Massecuites are as follows:

For A - Massecuites single / double crushing total machines **–** Out of 4, only 3 are working,

For B - Fore worker, total 4 machines **–** only 2 are working,

For C - Fore worker, total 7 machines **–** only 2 are working,

For C - Abler worker, total 5 machines - only 2 are working.

The performance of C machines is far from satisfactory, because of which the workers are using water, resulting in higher percent of molasses and higher purity of molasses. The ultimate result is that there is increase in loss in molasses percentage. The centrifugal station needs thorough overhauling and if this is not undertaken during the off season, any amount of modernization in other stations will not increase efficiency.

3.5 Comparative Study of 3 Sugar Factories

In order to study the performance of the nearby sugar factories around Mandya and compare the performance with that of Mysore Sugar Company Ltd., (MYSUGAR) visits were undertaken to Sri. Chamundeswari Sugars Ltd (SCSL), Mandya and

Pandavapura Sahakara Sakkare Karkhane Ltd. (PSSKL), Pandavapura. The evaluation team had detailed discussions regarding the cane area, time for transport from the time of harvesting till crushing, performance of the plant and machinery, labour strength etc. The comparative performance of the three factories is reproduced below. Item wise details of comparative performance statement is given in Annexure 6.

1. Capacity of the plant : As per details furnished by the factories, PSSKL has a capacity to crush 3500 TCD; SCSL - 4000 TCD and MYSUGAR - 5000 TCD This is as per I (1) return submitted to the Government of India, Ministry of Food, Department of Sugar. In reality, MYSUGAR is operating only one mill of 3000 TCD and the other mill of 5000 TCD is under renovation.

2. Cushing days : The average Cushing days of the three Sugar factories during the last 4 years are: PSSKL-180 days; SCSL- 200 days and MYSUGAR- 198 days

3. Cane crushing/ seasons : Average Cane crushed during the last four seasons varies as under for the factories:

   PSSKL : 1, 30,000 MT to 3, 50,000 MT
   SCSL : 4, 50,000 MT to 6, 00,000 MT
   MYSUGAR : 2, 21,000 MT to 4, 11,000 MT

   However, during the seasons 2014-15, MYSUGAR had not performed well and crushed only 1,82,000 MT till 2nd Jan 2015, in 143 crop day of 117 Cushing days.

4. Capacity utilisation : The capacity utilization are:

   PSSKL : around 70%
   SCSL : around 94%
   MYSUGAR : around 35%

5. Losses: This includes loss of sugar in bagasse, in press cake, molasses, unknown losses and total losses.

   PSSKL : the average total losses vary from 2.68 to 2.73.

SCSL : the average total losses vary from 1.94 to 2.00.
MYSUGAR : the average total losses vary from 2.44 to 2.81.

The normal total losses for a factory working without breakdowns and efficiency ranges from 1.90% to 2.2%. Compared to these figures the total losses of PSSKL & MYSUGAR have been very much on the higher side and if the total losses are more than 0.5% compared to normal, the sugar loss will be 5 kgs. for every ton of cane crushed. One can imagine that for a factory crushing around 3 lakh tons of cane annually, the loss will be worth around Rs. 4.5 crores @ Rs 3000/- per Quintal. Hence, it is absolutely necessary that the factory especially MYSUGAR reduces its down time losses, breakdowns, bring down losses in bagasse, press cake, molasses and undetermined losses,to the normal limits..

6. Recovery of cane : Recovery of sugar from cane is directly related to the quality of cane,time lag between harvesting and crushing, milling efficiency, boiling house efficiency, reduction of total losses etc. Based on all these requirement it has been found that the time lag between harvesting and crushing is the lowest in SCSL.. It is just around 20 hours because of which the recovery is much higher compared to either PSSKL or MYSUGAR.

   The time lag at PSSKL is about 24 hours. Most of the cane, (to the extent of nearly 70%) comes to this factory by bullock carts. from within a radius of 5 km while balance also comes from 5-6 km radius by tractors and trucks.

   Compared to these two factories, the time lag of MYSUGAR is the highest ranging from 60-90 hours resulting in the factory crushing dry cane/ stale cane which is the reason for low recovery of cane and increase in the losses.

7. Steam % cane : The steam percent is lowest at around 42 to 46% in case of SCSL, while in case of PSSKL it is around 55% and MYSUGAR, it is around 60 to 65%. A thorough study of the steam utilization / steam % cane needs to be done.

8. Final molasses purity: Final Molasses purity at SCSL is around 30-31 which is well within the normal limits. At PSSKL, it ranges from 34 to 36. At MYSUGAR also, the purity ranges from 32 to 36. This is mainly on account of the poor performance of the centrifugal machines and cooling and reheating arrangements not available in the crystallisers and quality of **'C'** masscuite boiling needs to be improved. If these are taken care of, the FM purity can be brought down and thereby the losses in the final molasses.

9. Machinery and Equipments : The schedule of machinery in the return I (1) which is submitted to Govt. of India was studied in detail. It was observed that the SCSL has required machinery for a capacity of 4000 TCD .The PSSKL has retained most of the old items of machinery which was installed in the year 1959 except for the mills which has been dismantled. They have added a few extra items to achieve the 3500 TCD capacity.

   In case of MYSUGAR, there are many items which have been in use for a long time and many new items of machinery and equipments have been added. At many places, there is duplication of items. A study of the machinery schedule indicates that the plant can crush 5000 TCD in the existing plant and machinery **subject to commissioning of 'A'** Mill. A new set of evaporator bodies, rectification of old evaporator bodies, a set of floating bodies to avoid frequent periodical cleaning(as is being done in SCSL), total rehabilitation and overhauling of plant and machinery can make this plant work well. Alongside, motivation / skill development is necessary. The cane department has to work with more efficiency specially in reducing the time lag between harvesting and crushing.

Chapter - 4

SUGAR PRODUCTION, PRODUCTIVITY AND SUPPLY STATUS

Chapter 4

SUGARCANE PRODUCTION, PRODUCTIVITY AND SUPPLY STATUS

4.1. Sugarcane cultivation in Mandya District

Initially, the command area under cane cultivation for MYSUGAR Company was 50,000 ha spread over 106 villages. However, over the years, the command area has been reallocated to other sugar factories and currently it stands at 19,600 ha., of which cultivable area is 10,233 ha.

During the year 2014-15, as per information provided, it was planned to procure sugarcane from about 6700 registered farmers in 273 villages covering 12,238 acres. A larger number of villages are under Mandya taluk with a few villages in Srirangapatna and Malavalli taluks.

The production of sugarcane has all along, been normal ranging between acceptable parameters over the past many years except during 2001 to 2004 and 2008-2009 owing to drought conditions and scarcity of rainfall and consequent dearth of water in the KRS reservoir. So, scarcity of sugarcane being responsible for the sickness can safely be ruled out.

4.2 Registration of Farmers - Process & Methods

The Field Assistants of the Cane Development Department of the Mysore Sugar Company visit the sugarcane growing farmers regularly on schedules. When the land is prepared for sowing and the planting of sugarcane seed setts is being done, the farmers are required to register themselves as cane suppliers. This is done by filling out a registration form which has the name of the sugar cane farmer, name of the village, survey number, extent under sugarcane, the variety, the date of sowing and the projected date of harvesting etc. along with the anticipated yield. This is followed up by the sugarcane farmer (the first party) entering into an agreement with the General Manager (second party) on a legal bond paper with the solemn

declaration on the part of the farmer to supply his cane produced to the company and not to anybody else and the General Manager declares that he will procure the entire quantity of sugar cane produced by the farmer at the rate fixed by the Government. This is witnessed and supported by the Field Assistant, Field Supervisor, Assistant Cane Development Officer and the Cane Development Officer. Once this process is completed the Sugar cane growing farmer becomes a registered cane supplier to MYSUGAR. The MYSUGAR and the farmers have been following this procedure and abide by the conditions laid down in the agreement.

4.3 Varieties of Sugarcane Cultivated and Productivity

The sugarcane farmers by and large are growing Co-62175 variety for its high yielding qualities. A few of the farmers are growing Co-86032 and M-1 from Mauritius. Of late, a variety, VCF-517, evolved and released by the University of Agricultural Sciences, V.C.Farm, Mandya, is slowly getting popular and area under this variety has begun to gradually increase. This variety, it is said, has better yield and higher recovery of sugar and is highly suitable to this tract.

As per interactions with farmers and their groups, productivity has ranged from 40 tons per acre to 60 tons per acre depending on the intensity of cultivation and implementation of better crop management practices and water availability. To improve this, the Department of Agriculture is conducting demonstrations where the selected progressive farmers are given inputs like treated seed setts, fertilizers (both chemical and bio-fertilizers). Plant Protection Chemicals and biological control methods like Trichograma cards which are predators on the pests of sugarcane are also being distributed to the farmers as per their demand and availability. All these demonstrations are aimed at increasing the productivity levels of sugarcane on a sustainable basis.

4.4 Supply of sugarcane to MYSUGAR

The sugarcane growers are supplying all their total sugarcane production to MYSUGAR as per the agreement. However, when the factory has break-downs, they are being requested to divert their cane to other factories in the neighbourhood.

4.5 Time taken for Acknowledgement

The sugar factory acknowledges the receipt of sugarcane as shown below:

- In 1 week : 25%
- In 2 weeks : 19%
- In 1 month: 34%
- In 2 months: 22%

This break-up indicates that 56% of the farmers are receiving acknowledgement ranging from 1-2 months. This is an avoidable delay which would benefit the farmers in receiving timely payment.

4.6 Time taken for crushing the cane

The time taken from receipt to crushing ranges from 12 hrs to 36 hrs under normal conditions. This gets delayed unduly when there is a mechanical/ boiler break-down which leads to decrease in sugar recovery percentage.

4.7 Time taken for receiving payment

The time taken to receive payment for the sugarcane by the sugarcane growing farmers ranges from:

- Within 15 days: 22%
- 1 month: 12%
- 2 months: 12%
- 3 months: 41%
- 6 months: 13%

So, 78% of the farmers are receiving payment beyond the prescribed time as required under Karnataka sugarcane regulation of purchase and supply Act, 2013. This delay is causing a lot of pain and suffering to the farmers as they incur penal interest for delayed payment of crop loans to the banks/ institutions.

4.8 Time schedule variance with other factory nearby

As per discussions held with Management and FGD, Sri. Chamundeswari Sugars Ltd., and Pandavapura Sahakara Sakkare Karkhane Ltd., are giving acknowledgements and crushing the cane within the prescribed time, whereas, MYSUGAR is lagging behind. However, with regard to payment to growers, though there is delay, situation is better when compared to the other two factories.

4.9 Highlights of the Focused Group Discussions (FGD's)

1) **The farmers' major grouse is that, there** is no system in place either from the Sugar factory or the Department of Agriculture or the University of Agricultural Sciences , for the timely supply of treated sugarcane setts to the farmers. They feel that there is no concerted effort to bring in or evolve higher yielding sugarcane varieties with better recovery percentage.
2) Use of bio-fertilizers is not prevalent. The farmers say that the supply of bio-fertilizers reaches them very late to be available to the crop on the field.
3) Untimely supply of chemical fertilizers and the spiraling prices are causing severe hardship to them.
4) As the sugar factory has not been functioning at full efficiency, even the press mud that was being made available to the farmers has been done away with.
5) The labour and transporting costs have become prohibitive and are driving the farmers away from agriculture as it is no longer a viable livelihood proposition. Harvesting and transporting of the cut cane to the factory costs are ranging from Rs. 800/- to 1000/- per ton.
6) Finance in the form of loans is another stumbling block. Crop loans are available at 7% interest, which is to be repaid within 12 months time. However, the farmers are unable to repay in time as delayed payment from

the factory is a very common occurrence. The farmers are levied interest at 12% for delayed repayment of loans. This makes finance from banks an unviable proposition.

7) Canal irrigation becomes sparse after the month of March which has a direct effect on the yield and the percentage of recovery.

Farmers Problems with Sugar Factory

1) The crushing of cane should ideally start in the first week of June to enable the farmers to cultivate ratoon crop which saves a lot of input cost to the farmers. If not, they will have to uproot and take up fresh planting which becomes very expensive. They feel, once the harvesting permission is accorded, there should be no delay in the factory to receive and crush the delivered cane. Ideally, crushing should be done within 24 hours from the delivery to the sugar factory. This will ensure better juice collection and higher recovery percentage. It was noticed during the teams visits to the fields that there were farms with standing crops even after 15 months, though it had matured for harvesting 3 months back.
2) Frequent breakdown of the machinery is causing backing up of the cane being transported. Cart-loads of cane in rows of 2 for more than 3 kilometers were noticed since the factory had stopped crushing due to breakdown.
3) No advance is being paid to the farmers for harvesting and transport as it was in vogue earlier. Even the payments which are statutorily required to be made within 14 days of supplying the cane to the factory are not being done in time. Sometimes payments are delayed up to 3 months.
4) Some farmers expressed that they should have a say in the fixing of sugarcane price.

However, the farmers were very vocal that the Sugar factory should continue as a Public Sector Undertaking (PSU) and that it should never be privatized. The farmers are praying that urgent action be taken by the Government to restore the factory to its former glory.

Survey Findings

- Almost 100% of the farmers feel the delayed start of crushing by the sugar factory is playing havoc with their cropping/ harvesting schedules. If done on time, the farmers will have ample opportunity to take up ratoon cropping which significantly reduces the cost of cultivation and though the yield is relatively lesser, it is made up by the higher recovery percentage.
- Timely availability of treated seed setts and very slow proliferation of new high yielding varieties/higher recovery percentage is poor. The farmers are forced to depend on other farmers for their seed requirement. (20% of farmers)
- Supply of supplemental manures such as fly ash and press mud is missing since the factory is not crushing cane to its capacity. (100% of farmers)
- About 30% of farmers expressed that frequent break downs of machinery is causing the piling up of sugarcane at the factory gate, thereby causing delay in crushing leading to reduction in juice percentage.
- When the factory is unable to take delivery from the farmers, an alternative arrangement of diversion of cane to other factories may be made (opinion of 30% of farmers interviewed).
- The cane development department of the sugar factory may meticulously draw up a schedule of planting; oversee the timely cultural operation and stick to the optimum time of harvesting to ensure better yields to both the farmers and the factory. (opined by 100 % of farmers)
- The study reveals that none of farmers had received their payments within a fortnight of the factory taking delivery of the cane, 15% received payment within one month. Majority of the farmers received their payment within 3 months while 20% within 6 months and 10% after one year.
- The farmers have stated that they have received the acknowledgement in confirmation of their delivery being received by the factory within the period: 20% within 1week,19% within 2 weeks, 28% within a month and 22% within 2 months.
- The following is the percentage of farmers expressing levels of satisfaction over their relationship with MYSUGAR on aspects of a) notification, b) collection c) acknowledgement and d) payment.

Relationship on various aspects	Satisfactory in %	Not Satisfactory in %	No response
a) Notification	91	6	03
b) Collection	86	11	03
c) Acknowledgement	84	14	02
d) Payment	59	38	03

Chapter - 5

PERFORMANCE OF MYSUGAR

Chapter 5

PERFORMANCE OF MYSUGAR

5.1 Physical Performance

Information available from published reports reveals that the Company has been operating under loss year after year since over 13 years. The physical turnover in terms of cane crushed and sugar produced has shown fluctuating trends as reflected in the following Table.

Table 8: Production Details

Year	Cane crushed (tons)	Sugar produced (tons)	Recovery	Change over base year
2006-07	649234	521974	7.92	
2007-08	369422	275085	7.40	(-)
2008-09	76963	33580	5.73	(-)
2009-10	122563	9067.5	7.10	(-)
2010-11	500729	42339.0	8.04	(+)
2011-12	411062	373945	9.15	(+)
2012-13	283511	23855.5	8.15	(+)
2013-14	223409	19223.5	8.31	(+)
2014 -15	278237	20125	7.23	(-)

Source: MYSUGAR - Annual Reports

It is observed that, in physical terms, the Company has not maintained consistency in its operations with annual variation in crushing of cane, recovery percentage and production of sugar & other by-products.

One of the reasons quoted by the Company is non-availability of sugarcane and another is frequent break down of machinery and loss of crushing hours in repairs / replacements. Except for two or three drought years, the farmers were willing to

supply cane but the company could not lift the same due to some technical and other reasons. It was also observed that the company was advising the farmers to sell cane to any other company of their choice due to its inability to absorb the stock of sugarcane.

The cumulative capacity is 5000 tons/ day or 13.00 lakh tons of cane for a crushing period of 260 days/ year. Even if only one mill is considered, the designed capacity would be 6.50 lakh tons of cane. It is seen from the above table that in no year the company had reached 100% capacity utilization. This ranged between as low as **19% to as high as 85%. If only one mill ('B' Mill) is considered to be operational, the** capacity utilization is not at the breakeven level.

5.1.1 Recovery

A study of the trends in sugar production from cane indicates that, recovery percentage had ranged between 8-9 % between the reference years except in two years when the recovery dipped below 7%. A comparative analysis of recovery in respect of two companies (Sri. Chamundeshwari Sugars Ltd., & Pandavpura Sahakara Sakkare Karkane Ltd.,) in the vicinity indicated marginal variation.

The recovery percent has not shown any significant improvement during the same period and is considered to be lower when compared with neighboring mills, not to speak of other parts of the State (North Karnataka where the recovery percentage ranges between 10.5 to 12%). The recovery percent also does not match up with national average of 10%. This, in the opinion of the sugar industry experts, is on account of poor quality of the cane produced and delayed crushing after harvesting due to variety of reasons like lack of coordination etc.,.

It was seen that the company had commenced crushing operations only from August/ October in four out of seven years. The farmers complained about this delay and feared that the standing sugarcane tends to wither if harvest is delayed and this leads to weight loss to farmers and poor recovery to the mill in which case, both

stake holders are at a loss. A comparative study of commencement of crushing by other two companies showed some variation.

5.1.2 Crushing Operations – Trends

An analysis of trends in number of days lost in each crushing season during the seven year under study indicates that the hours lost have shown increasing tendencies. A further study of break-up of reasons for loss of crushing hours shows that mechanical and electrical systems working followed by non availability of cane were the reasons for the loss as reflected in the following Table.

Table 9: Crushing Trends

Year	Days worked	Total available hours	Total hours of crushing	Hours Lost	Hours lost/ Day	Electro + Mech problems	Non-availab-ility of Cane	% of hours lost due to electro - mech reasons	% of hours lost due to non-availability of cane
2007-08	211	5039	3220	1819.0	8.60	768.80	746.55	42.25	41.00
2008-09	134	3189	685	2504.0	18.7	200.60	2303.00	08.00	92.00
2009-10	178	4245	1053	3192.3	18.0	98.30	3094.00	03.00	97.00
2010-11	255	6110.3	4363	1748.3	6.9	947.45	462.00	54.20	26.45
2011-12	208	4971	3580	1391.0	6.7	798.30	345.15	57.40	24.80
2012-13	198	4745.3	2567	2178.3	11.0	415.30	1232.45	19.00	56.60
2013-14	131	3117	2123	984.00	7.5	428.75	431.00	43.60	43.80
2014-15 (12.08.2014-25.02.2015)	123	2945	1606.45	1338.15	10.88	1052.3	172.45	35.73	5.86
Average	179.75	4295.20	2399.68	1727.11	11.00	522.50	1230.00	32.5	54.50

The above analysis shows that on an average, 11 hours/ day were lost (around 45% of 24 hours/ day), while, average crushing days stood at 188 with lowest number during 2013-14 and highest during 2010-11. However, during 2008-09 and 2009-10,

maximum hours were lost for want of sugarcane. Stoppage of crushing on account of mechanical and electrical problems averaged at 32.5% (almost a third). Year wise variations showed that on four out of the seven years, nearly half of the hours lost were attributed to electrical and mechanical reasons.

5.1.3 Production and Productivity

Sugar is the main product while bagasse, molasses & press mud are by-products generated from crushing of cane. Production of bagasse ranged from 29% to 32.5% of sugarcane crushed during the period under review, while, the productivity of molasses ranged between 4.4% and 6% during the same period with annual variation. The other by- products include Fiber (yield between 12% to 15%) and filter cake (2.9% to 3%). Molasses at 4.4% to 6.00% is on the higher side.

Molasses is used for production of Rectified Spirit and alcohol while bagasse is used as fuel required for the factory or generation of power through Co-generation system. **While these two joint products add to the Company's rev**enue generation, bagasse reduces cost of fuel. It was seen that though an investment of Rs.96.00 crores was made for installation of a Co-gen unit, it is yet to commence generation of power and is lying idle as of now.

It was seen that the Company had manufactured rectified spirit and alcohol till 2012-13, stopped in 2013-14 and restarted production of rectified spirit in 2014-15. The analysis of production of these two joint products in different quantities during the reference period depending on cane crushed and sugar produced (recovery), is presented below:

Table 10: Rectified Spirit and Alcohol

Year	Sugar (tons)	Rectified Spirit (thousand liters)	Quantity of rectified spirit / ton of sugar	MG Alcohol (in ,000 liters)	Qty of MGA / ton of sugar (litres)
2007-08	27378.40	4234.67	155	231.18	08
2008-09	8840.50	2056.60	233	137.56	16
2009-10	9067.50	640.45	71	29.66	03
2010-11	42339.00	6910.70	163	517.67	12
2011-12	37954.00	4835.84	127	401.34	11
2012-13	23704.00	2481.70	105	179.85	08
2013-14	19223.50	Nil		Nil	Na

Source: MYSUGAR annual reports

5.2 Financial Operations (Turnover, Trends)

A study of the company's financial performance during the seven year period under review (2007-08 to 2013-14) indicates the following:

- ✓ Annual turnover in financial terms has shown variation on an year-to-year basis, corresponding to production of sugar and other joint products, and other incomes;
- ✓ Cost of production has shown consistent upward trends;
- ✓ Component wise cost shows that there has been increase in overhead costs (salaries and other administrative expenses);
- ✓ Repairs and replacements have shot up over the years;
- ✓ Financial cost/ overhead in terms of interest and debt-servicing has shown substantial rise;
- ✓ Liabilities on account of borrowings has shown steep rise, and
- ✓ With negative profit in successive years, accumulated loss has risen significantly.

5.3 Factors Affecting Company's Performance

The following are the factors affecting the company's performance:

- ✓ Cost of sugarcane has risen significantly;
- ✓ Average price realization for sugar and other joint products has remained more or less same with marginal rise;
- ✓ Conversion cost has gone up;
- ✓ Inefficiencies in operations have affected productivity *viz.*, (i) older machineries, (ii) lower staff productivity, (iii) non-availability of sugarcane (drought years), (iv) frequent breakdown and loss of crushing hours, (v) rising overheads, (vi) no additional product lines like Co-gen, Rectified Spirit which can add to the revenue, and (vii) financial liability (debt servicing).

5.4 Sugarcane Prices

Sugarcane prices are fixed by Government of India and the State Governments. In case of Karnataka, the Government of Karnataka has evolved its own SAP (State Advised Price) under which, prices for sugarcane are announced every year. During the last seven years, the cane prices paid by the mills in Karnataka (including MYSUGAR) are as follows:

Table 11: Sugarcane Prices in Karnataka

Year	SAP Karnataka (Rs/ton)	Change (Rs/ton)	Recovery %
2007-08	972	-	7.04
2008-09	1250	278	6.71
2009-10	1950	700	7.10
2010-11	1900	50	8.05
2011-12	2000	100	9.15
2012-13	2400	400	8.15
2013-14	2650	250	8.31

The table indicates that during the last seven years the sugarcane prices has increased by Rs. 1678/- which accounts to 173% increase.

5.5 Conversion Cost

A comparison with national average of conversion cost for a 2500 ton/ day capacity mill shows that the MYSUGAR reported Rs. 650/- per ton to Rs.850/-per ton of cane crushed against national average of Rs.350/- which appears to be just little less than twice national average. For every ton of sugarcane crushed MYSUGAR is over-spending around Rs. 300/-. This is mainly on account of inefficiencies in the sugar production processes.

5.6 Old Machinery

Majority of the plant and machinery were installed years ago (ranging from 40-80 years) which have undergone wear and tear over a period of time. They break-down frequently leading to stoppage of work for repairs. Many times, spare parts are not available and wherever available, procurement becomes a time consuming job. A study of the amount of money spent on repairs and replacements to plant and machinery indicates disproportionately higher percent of the original cost in comparison with industry norms. Following Table gives the amount of money spent over a period of seven years on repairs.

Table 12: Cost of repairs to Plant & Machinery (Rs. in lakhs)

Year	Value of P & M	Repairs cost	% to value
2006-07	1897.78	330.19	17.40
2007-08	1754.55	340.14	19.40
2008-09	1610.94	182.87	11.40
2009-10	1551.17	376.63	24.30
2010-11	1659.58	432.24	26.00
2011-12	10738..89	591.08	5.05(35.6)
2012-13	Na	Na	Na

Source: Annual Reports for respective years with explanatory notes.

For 2011-12, cost of repairs was abnormally high, while block value of assets represented cost of Co-gen.

The above table shows how the repairs to plant and machinery have made twin impact on working of the factory, *viz.,* i) Financial burden and ii) time loss in repairs and replacements.

5.7 Increase in Overheads / other Costs

While the Company's operations have been fluctuating on a year to year basis, overhead expenses (both fixed and variable overheads) have shown constant rise, thereby affecting financial status of the company. Following Table shows the trends over seven years under reference.

Table 13: Trends in Cost of Overheads (Rs. in lakhs)

Year	Salaries and wages	Other administrative costs	Financial overheads	Total cost
2006-07	1510.12(14.10%)	54.83(0.5%)	781.16 (7,3)	10681.06
2007-08	1450.14(16.80%)	55.01(0.64%)	1527.32(17.70)	8623.32
2008-09	1412.93(24.70%)	61.84(1.08%)	1610.90((28.10)	5720.91
2009-10	1529.81(18.90%)	82.12(1.01%)	2999.71(37.10)	8083.90
2010-11	1595.72((13.80%)	134.97(1.17%)	2114.88(18.30)	11536.35
2011-12	1753.77(16.75%)	1504.15(14.40%)*	1741.03(16.60)	10462.85
2012-13	NA	NA	NA	NA

The above table shows that major burden on the Company is the interest on borrowings and this is increasing year after year. Though the proportion of salaries and wages is at reasonable level (around 15%), slight variations are noticed between the years. There is scope to bring down this element of cost.

The following Table shows how every rupee spent on Staff results in income generation (precise contribution per capita of Staff can be worked out, but it is not attempted here due to lack of data on the same).

Table 14: Income Generation *vis-a-vis* Salaries and Wages (Rs. in lakhs)

Year	Gross income Generated	Gross cost on Salaries and Wages	Cost: Income – Cost Ratio
2006-07	8533.45	1510.12 (17.70)	5.65:1
2007-08	6196.10	1450.14 (23.40)	4.27:1
2008-09	3998.48	1412.93 (35.30)	2.83:1
2009-10	3175.01	1529.81(48.45)	2.07:1
2010-11	12133.48	1595.72 (13.14)	7.60:1
2011-12	8557.50	1753.77 (20.50)	4.88:1
2012-13	Na	Na	Na

Figures in parenthesis represent percentage of gross salaries to gross income.

As can be seen from the above Table, the return per rupee spent on Staff has shown fluctuations on a year-to-year basis. During 2008-09 and 2009-10, the ratio of staff cost *vis-a-vis* income was the lowest and almost 50% of income was spent on salaries and wages only.

5.8 Overall Cost – Trends

The loss making trends of the Company in all the seven years under review has sent a clear message that the cost of operations has always been much higher than revenue generation. This has led to accumulated losses. The details of cost sheet for the years 2010-11, 2011-12, and 2012-13, showing cost of production of various items is presented in the Annexures 7 to 9.

Table 15: Cost V/s Income - Trends (Rs. in lakhs)

Year	Income generated	Cost incurred	Cost:income Relation(Ratio)	Net impact
2006-07	8533.45	10681.06	1.25:1	(-)2147.61
2007-08	6196.10	8623.32	1.39:1	(-)2427.22
2008-09	3998.48	5720.91	1.43:1	(-)1722.43
2009-10	3175.01	8083.91	2.54:1	(-)4908.90
2010-11	10733.99	11526.35	1.07:1	(-)792.36
2011-12	8557.50	10462.85	1.22:1	+1905.35
2012-13	Na			

Source: MSCL Annual reports

The Company has been incurring losses in all the years under reference. For every rupee earned, the Company has spent between Rs.1.07 (2010-11) and Rs. 2.54 (2009-10). The six year average was Rs.1.48 for every rupee of income generated.

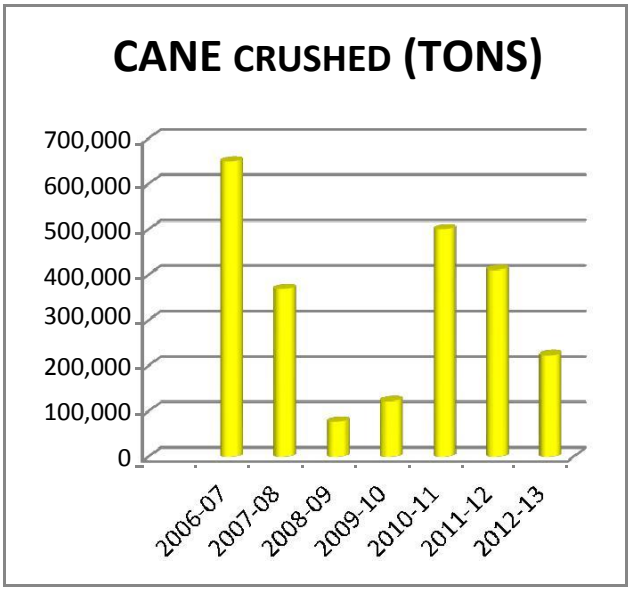
5.9 Cost of Sugarcane V/s Sugar Production

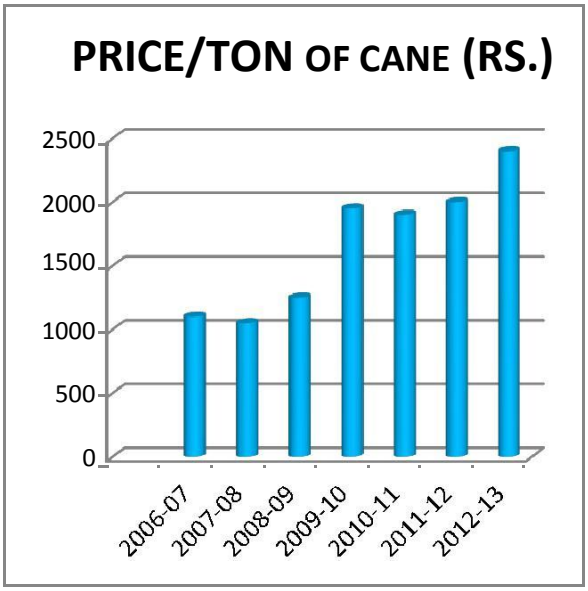
Over the years, cost of sugarcane has risen twice from the base year (2006-07) as a result of which, per quintal cost of sugar production has also made continuous change as reflected in the following Table.

Table 16: Sugar cane V/s Sugar Production

Year	Cane crushed (tons)	Price/ton of cane (Rs.)	Cane cost Rs. lakhs	Sugar Produced (tons)	Cane Cost/ton of Sugar(Rs.)
2006-07	649,234	1100	7141.57	52197	13526
2007-08	369,422	1050	3878.93	27508	14100
2008-09	76,963	1250	962.04	3358	28650*
2009-10	122,563	1950	2389.98	9068	26356
2010-11	500,729	1900	9513.85	42339	22470
2011-12	411,062	2000	8221.25	37395	21985
2012-13	223,409	2400	5361.82	23855	22477

Source: MSCL, Mandya





The cost per ton of sugar produced (without considering other by-products) is directly related to:

- Cost of sugarcane;
- Recovery percentage of sugar from cane;
- Cost of conversion;
- Volume of sugarcane crushed, and
- Overhead expenses (indirect cost and fixed overheads)

It is seen that the per ton cost which was Rs.13526/- during 2006-07 had gone up to Rs. 22477/- during 2012-13.

Table 17: Cost per ton of sugar produced – Trends

Year	Sugar produced (tons)	Gross expenditure (Rs. lakhs)	Per ton cost of sugar produced	Cane cost	Other cost
2006-07	52197	10681.06	20,264	13526	6738
2007-08	27508	8623.32	31,348	14100	17248
2008-09	3358	5720.91	170,366	28650*	181768*
2009-10	9068	8083.91	89,148	26356	62792
2010-11	42339	11526.35	27,229	22470	4769
2011-12	37395	10462.85	27,977	21985	5992
2012-13	23855			22477	

** During the year 2008-09, part of sugarcane juice was transferred to distillery unit and as such the average cost per ton does not reflect the factual position.*

It is seen that per ton cost of sugar varied on a year to year basis. It was higher when volume of cane crushed was low while it came down when crushing volume went up. Thus, the cost has direct relation to volume of cane crushed. Higher the crushed volume, lower will be the cost per ton and *vice a versa*.

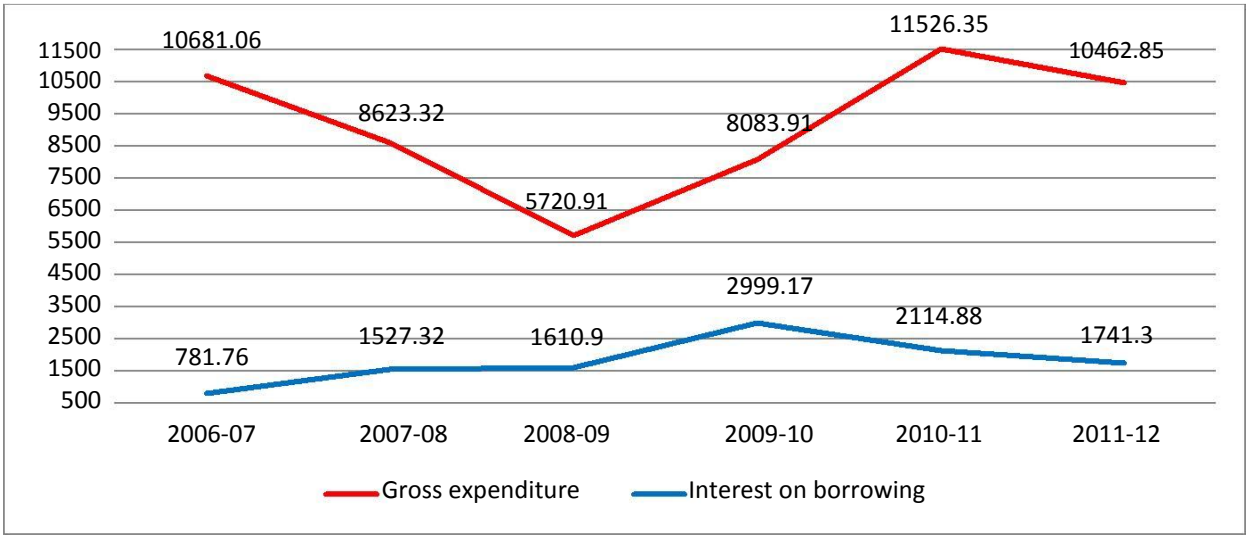
5.10 Financial Overheads and Cost of Sugar - Trends

The company has huge debt burden on account of borrowing - both long term and short term in nature. This has added to the overall cost and also viability is **eroded. The trend in the Company's interest burden clearly indicates the reasons** for sliding financial status of the company.

Table 18: Company's Interest Burden

Year	Gross expenditure	Interest on borrowing	% of interest to the total Cost	Sugar Produced (tons)	Cost per ton of sugar produced
2006-07	10681.06	781.76	7.30	52197	1498
2007-08	8623.32	1527.32	17.70	27508	5553
2008-09	5720.91	1610.90	28.15	3358	47972*
2009-10	8083.91	2999.17	37.10	9068	33074
2010-11	11526.35	2114.88	18.35	42339	4995
2011-12	10462.85	1741.30	16.65	37395	4646
2012-13				23855	

*During the year part of juice was transferred to distillery



It is seen that the interest liability on every kilogram of sugar produced varied between years and depending on volume. Generally, it ranged from Rs. 4.5 to Rs. 5.5 per kg.

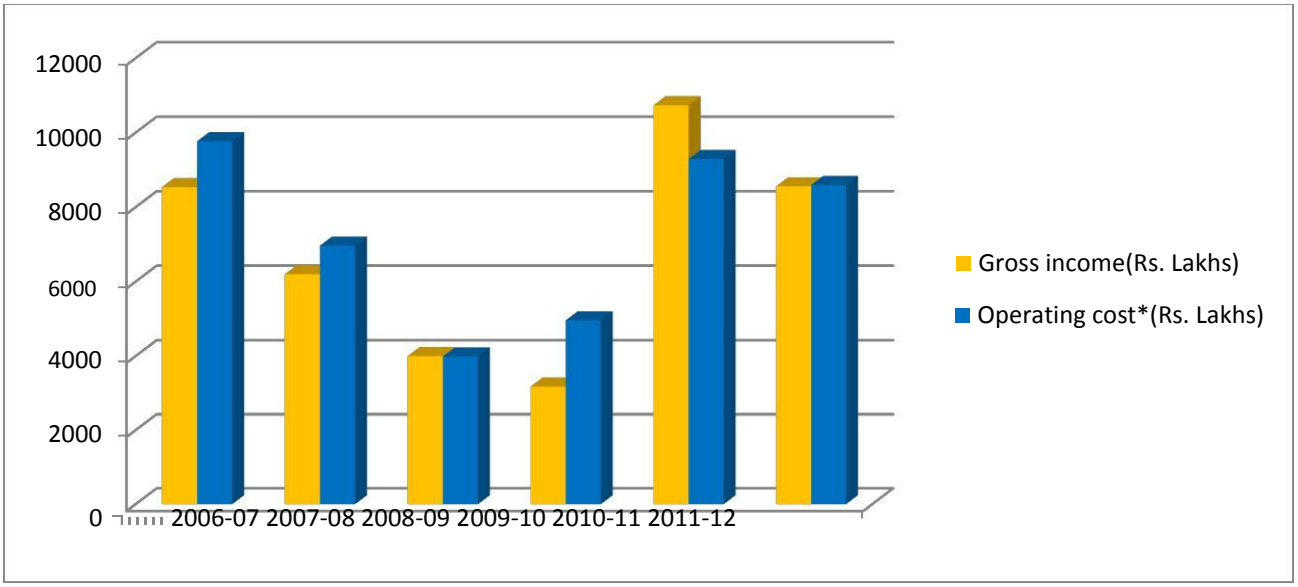
5.12 Operating Performance

A study of trends in Operating Results (OR) of the Company during the years under reference shows some encouraging indicators as reflected in the following Table:

Table 19: Operating Results

Year	Gross income (Rs. Lakhs)	Operating cost* (Rs. Lakhs)	Margin (Rs. Lakhs)
2006-07	8533.45	9768.47	1235.02(-)
2007-08	6196.10	6966.2	770.10(-)
2008-09	3998.48	3987.86	10.62(+)
2009-10	3175.01	4959.84	1784.83
2010-11	10733.99	9289.71	1444.28(+)
2011-12	8557.50	8593.91	36.41(-)
2012-13	Na	Na	Na

*Excluding depreciation, interest and tax (OC - EDIT)



On two occasions, there was plus margin and on another one, the negative margin was very small *viz.,* 36.41(2011-12). However, higher negative margins were seen in two years. If some of the overheads are ignored, the actual margins could be favourable and manageable for the company.

While depreciation is only book adjustment and a source of cash flow for the Company, major element of cost is in respect of financial costs (interest burden).

The study of the operating performance shows that two predominant factors have a bearing on viability of the company namely, (i) level of operations and (ii) recovery of fixed over expenses. Based on the data, an attempt is made to determine the level of operation at which the company can achieve break-even (recover 100% fixed expenses) under two situations viz., (i) if Co-gen becomes operational, & (ii) if the company is not in a position to run Co-gen unit (see Annexures 11 & 12 for details). It is seen that in the first situation, minimum cane required to be crushed would be between 2500-2750 tons / day while in the second situation, a minimum of 4000 tons of cane has to be crushed just to recover fixed overhead expenses. Any quantity above these two levels would result in profit.

Chapter - 6

OBSERVATIONS & FINDINGS

Chapter 6

OBSERVATIONS & FINDINGS

- ✓ Reduction in cane area is not solely responsible for the sickness of the Company. Yes, there is a steep reduction in the area under sugarcane from 1,25,000 acres to 25,583 acres as per the background information furnished. Drought for two consecutive years has affected the cane availability to the factory only during the seasons 2008-09 and 2009-10.

- ✓ Old / aging equipments which are not being maintained well have contributed to the poor performance of the Company. A study of the condition of the machinery shows that, no rehabilitation measures have been undertaken systematically / seriously by the Company.

- ✓ However, there have been attempts to improve the crushing capacity of the **mills by modernizing one set of mill called "A" Mill which was inst**alled in the year 1975-76. The mill has not run to its full capacity so far and is running only for 2 to 3 hours daily with the help of power purchased from the KEB.

  The technical staff avers that, this is only a trial run. With the modernization of **"A" M**ill, a new bagasse handling system has also been installed.

- ✓ The plan is to export 18 to 20 MW of power to the grid and balance to be consumed by the factory when the Co-gen plant is fully commissioned. Unfortunately, this Co-gen unit has not been working virtually from the time of installation, except for 4 hours during the initial period. Only one boiler is presently working after a recent thorough overhaul. The second boiler is yet to be commissioned and is undergoing major maintenance.

- ✓ No date has yet been fixed for commissioning the second boiler.

- ✓ The Company has installed a new set of evaporator bodies supplied by M/s KCP Ltd., and this set is yet to be commissioned because there is not enough

juice to commission it. The evaporator has huge capacity to handle a crushing of 5000 TCD. Poor crushing is responsible for the non availability of sufficient juice to commission the evaporator set.

- ✓ The Company has procured a new vacuum filter and it is yet to be installed and commissioned.

- ✓ It is not possible to determine total capacity of the plant in the absence of details of plant and machinery. The Company has been reporting that the capacity of the plant is 5000 TCD in all the returns which are sent to the various agencies, including the Central Government.

- ✓ One of the main problems in the factory is in the cane transport system. Unlike the other factories in the region which crush the harvested cane within 24 hours, MYSUGAR takes more than 72 hours i.e., the time lag between harvesting and crushing is 72 to 96 hours. This inordinate delay in the transport of cane and crushing is responsible for poor recovery percent cane. Most of the time, the factory is crushing stale cane resulting in reduction in recovery percent cane, milling losses, etc,.

- ✓ **"Karnataka Sugarcane Regulation of Purchase and Supply" Act 2013 may not** be indicating or specifying the time within which the cane should get crushed, after harvesting but, there is a provision for payment of sugarcane price within a stipulated period. The time-lag has got to be reduced and governed. There are other conditions in the order, which are very important and needs to be followed. (Copy of the order / Act in enclosed vide Annexure 10)

Chapter - 7

SUGGESTIONS FOR REVIVAL

Chapter 7

SUGGESTIONS FOR REVIVAL

7.1 Operational / Technical:

The problems of the Company in the various branches of the factory have been discussed in the foregoing chapters. Every problem of the Company needs to be tackled on priority, but if only a selective approach is adopted to address the problems, other problems remain unresolved, leading to adverse effect on operational efficiency of the company. However, most important issues to be addressed with immediate steps are:

1. The downtime losses and total losses have been very high resulting in huge losses to the Company, which needs to be addressed immediately.
2. The Company should start its crushing operations in the month of June, preferably by middle of June, every year so that the cultivated sugarcane does not remain unharvested for more than 12 months, and the farmers can have ratoon crop which will be beneficial to the farmers by way reduction of cost of raising the next crop, and to the factory, by way of better sugar recovery percent from cane.
3. Poor /underutilization of the installed capacity of the plant and machinery has resulted in the duration of the season getting unnecessarily extended, culminating in poor or reduced sugar recovery percent. The Company should concentrate on thorough/ major overhauling of plant and machinery immediately, to catch-up with ensuing crushing season.
4. The centrifugal station needs special attention, since it is here that the **Company is losing lot of sugar molasses resulting in increased '*total losses'***.
5. The major source of revenue to the factory is from its Co-gen plant, which has a capacity to produce 28 MW of power and supply not less than 18-20 MW power to the grid. Even by crushing for 200 days, the Company will be able to earn around Rs. 40 Crores in a season. The Company should prioritize

commencement of Co-gen without any delay since every day of operations would mean loss to the company. Hence efforts should be directed to put Co-gen under productive use to be able to achieve higher income realization. This needs a very concerted effort from the management, including and especially from the Technical Heads and Technical Staff, with the support and involvement of the work force.

6. Every large capacity sugar factory will have a distillery attached to it mainly on account of the fact that, a sugar factory crushing around 7-8 lakh tonnes of cane in a year produces around 28000 to 32000 tonnes of molasses. This quantity is enough to put up a distillery of 30 - 35 kiloliters (kl) of Rectified Spirit (RS) per day and it can be kept running for about 200 days. The revenue so earned will be quite enormous and will augment the funds available for other activities. Since MYSUGAR sends out more molasses than normal, containing high fermentable sugar, it is all the more urgent to run the distillery more efficiently round the year and priority needs to be given to this aspect.
7. Steam consumption in the factory is very much on the higher side, ranging from 60% to 65% against the normal of 50%. The company should target this issue to reduce steam and power consumption, and in turn export more power to the grid.
8. As for stores and spares - the present huge quantities of assorted spares and store items should be identified for their relevance and necessity of retaining / stocking them. Dispensing with some of them would reduce both cost of material and cost of holding. For this purpose, an ABC analysis needs to be attempted.

7.2 Sugarcane supply

1. Feasibility of bifurcation of the Cane Development Department of the factory into two entities may be explored; namely - one for cane procurement and the second for cane development. The latter should concentrate on selection of suitable sugar cane varieties, growing sugarcane for supplying quality and treated seed material to the sugarcane growers.

2. The company should generate adequate resources for payment of advance to the cane producers at the time of supplying the cane to the factory to meet their harvesting and transporting costs, and clear the final payment for the cane supplied within a fortnight of receiving the cane [as warranted by the Karnataka Sugarcane (Regulation of Purchase and Supply) Act 2013] after **deducting the advances paid. Making payment directly to the cane grower's** bank accounts may be explored. However, it is felt that the Government may bring out an amendment to the Karnataka Sugarcane (Regulation of Purchase and Supply) Act 2013 to the effect that payment to farmers could be extended upto a maximum of 45 days after supply of cane to the factory, instead of the 15 days period now provided.
3. Proactively involve in the supply of bio pest control measures viz., Trichogramma cards from the Parasite Control Laboratory of the Department of Agriculture. This would considerably reduce the dependence on costly chemical pest control measures.
4. Government of Karnataka may consider providing some financial subsidy/ relief per ton of sugarcane purchased (as is being done by Maharashtra and Tamil Nadu), till such time MYSUGAR improves its working (commence co-gen plant) and earn additional income.

Long Term measures

1. Cultivation of improved high yielding varieties of sugarcane suitable to the area such as VCF-517, M-1, Co62175 in the lands belonging to MYSUGAR for seed material to be distributed to the sugarcane growers at nominal cost to ensure good recovery percentage of sugar.
2. Supply these sugar cane setts after the prescribed treatment to the growers to ensure disease free planting material.
3. Supply fly ash and press mud to the growers at nominal cost to the growers to augment the addition of compost to the sugarcane growing fields.
4. The Agriculture / cane department should explore possibility of introducing early maturing, mid maturing and late maturing varieties of cane so that the

recovery percent cane remains constant throughout the season. Varietal changes, as is done in neighboring factories like Chamundeshwari Sugars, should be considered with the help, guidance and assistance of sugar cane research stations.

5. Computerization of sugarcane procurement process, till the release of payment, may be implemented and closely monitored to streamline the process

7.3 Financial

1. The concern that warrants urgent attention is enhancing efficiencies of the thr**ee important M's** *VIZ.,* Men, Material and Machines. The first, i.e., Men can be addressed through a special drive for enhancing their productivity. There are a number of modern and latest techniques and tools for (i) employee productivity, (ii) employee incentivisation and motivation, (iii) policies aimed at recruitment, training and skill up gradation, (iv) following Carrot and Stick policy of rewarding and reprimanding, and (v) revisiting the present policy of retaining personnel on contractual basis.
2. The Company has accumulated losses, and interest liability is rising continuously, since repayment of loan is not possible in view of negative cash flow. A strong finance department is needed to address a number of issues relating to cash flows and money management. The cash flow statements are a must for budgeting, forecasting, budgetary control, without which, it is not possible to achieve economy. A full-fledged Factory Cost Accountant would be necessary for this purpose.
3. Reduction in the interest liability is of prime importance since substantial amount of money has to go towards this charge. Under BIFR, it is desirable to explore negotiations with funding agencies for a one-time-settlement (OTS) of outstanding loan and waiver of part of interest.
4. The Company may seek financial assistance (in the form of interest-free loan) to be used for OTS and meeting operating costs partly, since Working Capital and other financial accommodation from financial institutions involves higher interest burden and the Company would not be in a position to sustain this cost.

7.4 Human Resources

1. The present system of engaging labour through contractors and their payment on period-basis may be reviewed and a new system of payment on output basis may be considered.
2. MYSUGAR is presently following a policy of engaging contractual employees even for regular jobs with a view to reducing the cost and this may be working well for the time being. But, this is not a permanent solution. The Company should revisit this policy and consider at least some important positions to be filled on regular basis so that the employees may feel secured and their outlook may change with improved output.
3. Over-staffed departments should be identified and the Heads of the Departments may be motivated to reduce the number in view of improved technology available.
4. Government of Karnataka may consider ensuring a minimum period of working ranging between 3 - 5 years for the Managing Directors so that they can implement the policies and ensure improvement in the working and achieving desired results.

PHOTOGRAPHS

FIELD VISITS AND INTERACTIONS WITH OFFICERS, STAFF AND SUGARCANE GROWERS,

Plate : 1




Interactions with G.M and Staff


Keelara Village


Keelara Village




Kommerahalli

Sathnur Village

Cart loads of sugarcane waiting for delivery

Thumbakere village order

Chikkaballi Village

Chandagalu village

Panakanahalli


Panakanahalli




Hulivana village

ANNEXURES

ANNEXURE-1

Terms of Reference for Evaluation of Performance of The Mysore Sugar Company Limited

1.0 **Study title:**

1.01 Title of the proposed study is "Evaluating the Performance of The Mysore Sugar Company Limited".

2.0 **Background Information:**

2.01 The Mysore Sugar Company Limited (MSCo) was established in 1933 by the Maharaja of Mysore, in Mandya and is one of the oldest sugar mills in the country. It was established with an objective to help local farmers by utilizing the sugar cane grown in the area. Presently, the Government of Karnataka (GOK), the chief promoter of the Company, holds 94.78% of the shares of MSCo and the balance is held by the public, farmers and financial institutions. At present, MSCo's chief products are white sugar crystals and Rectified Spirit.

2.02 MSCo has the following production facilities:-

a) Sugar Cane Mills 'A' and 'B' with combined installed capacity of 5,000 TCD
b) A primary distillation plant with an installed capacity of 36 KLD
c) A multi-fuel Co-generation plant with a capacity of 30 MW which is in the process of being commissioned.

2.03 MSCo initially had produced Indian Made Foreign Liquor (IMFL) and Indian Made Liquor (IML) blend with a total plant capacity of 5.58 lakhs litres and an acetic acid plant of 15 tonnes per day capacity. However, the units were closed down, since, they were uneconomical.

2.04 Initially MSCo's Command Area under cane cultivation was 1,25,000 acres. However, over the years, the Command Area has been re-allocated to other sugar factories and currently stands at around 49,000 acres out of which the effective cultivable area is 25,583 acres.

2.05 MSCo's operations suffered on account of drought situation that prevailed in its Command Area during the year 2004-05 and 2005-06 resulting in lower availability of cane. The problems of the Company were further compounded on account of old equipment and machinery, high manpower cost and high interest cost.

2.06 MSCo could not meet its debt obligations and was unable to make payments towards some of the statutory dues. Successive losses led to

erosion of its net worth. MSCO is currently in the process of rehabilitation and several measures have been undertaken in this regard

3.0 **Evaluation, scope, purpose and objectives:**

3.01 The importance of taking evaluation of this project and its objective is to study the performance of MSCO and the status of the measures undertaken to rehabilitate/modernise MSCO.

4.0 **Evaluation questions:**

4.01 Based on the objectives, the evaluation questions are framed as mentioned here under:-

a) What are the reasons for sickness of the Company? Can this be attributed only for reduction in area under sugarcane cultivation?
b) What are the rehabilitation/ modernisation measures undertaken by the Company?
c) What is the status of the implementation of the above stated rehabilitation/ modernisation measures?
d) Are there any problems in procuring the cane from the growers? What are the issues in timely distribution of inputs/payments to avoid distress sale by the farmers?
e) What measures have been taken to increase the effective cultivable area? Whether productivity of cane is enhanced with government measures to promote cane growing?
f) Whether the farmers who are supposed to deliver all their sugarcane to Mysugar company are really doing so or supplying part of their produce to other sugar factories?
g) What is the average time taken by the factory to acknowledge the receipt of cane from the time farmers reach the factory gate?
h) What is the average time taken after getting the information from farmer for crushing the crane?
i) What is the average time taken to receive the full payment from the date farmer supply the cane?
j) Is the time consumed in activity (g),(h)and (i) is as per the Karnataka sugarcane (Regulation of purchase and supply) Act 2013 is in great variance in a near by sugar factories for the corresponding period?
k) What are the future prospects of the Company?

5.0 **Evaluation Methodology:**

5.01 The evaluator is required to analyse the operational and financial performance of the Company for the past 7 years. A few key areas may be visited and their performance efficiency assessed. Similarly interviews may be held with a few officers and sugarcane growing farmers to understand

their views and get some suggestions. Evaluator should examine monthly cash flows and suggest ways to match them. The evaluation is also inclusive of the following:-

a) Analysis of the causes of Sickness;
b) Analysis of the status of rehabilitation/modernisation measures and implementation strategy;
c) Analysis of financial revival and steps taken in this regard.

5.02 Interview to be held with at least ten farmers each from the category mentioned below who are supplying cane regularly.

a) Small and Marginal farmers
b) Medium farmers
c) Big farmers

6.0 Deliverables and Time Schedule:

6.01 MSCo will provide the required information and data to the Consultant who is expected to adhere to the following timelines and deliverables:-

a) Work plan submission: Within one month after the release of first instalment of the contract amount.
b) Primary data collection: Within two months after the work plan is approved by Karnataka Evaluation Authority (KEA).
c) Draft evaluation report submission: Within one month after the completion of collection of data for approval by a joint team of KEA and [illegible] agency officers.
d) Final report submission: Within one month after the draft report is approved.

Thus the evaluation study must be completed within 5 months from the date of commencement of work by the Consultant.

7.0 Cost and schedule of budget releases:

7.01 Output based budget release by MSCo shall be as follows:-

a) 30% of the contract cost will be released on signing of the Memorandum of the Understanding executed between MSCo and the Consultant;
b) 30% will be released after the work plan is approved by KEA;
c) 20% will be released after the draft evaluation report is approved by KEA and MSCo;
d) Balance 20% will be released only after the final report is submitted to MSCO and at least five copies to KEA, along with soft copy.

Income tax will be deducted from each payment as per rates in force. In addition, the evaluator is expected to pay the service tax at their end.

8.0 **Contact person to get further details about the evaluation study:**

Sri Shankar G, the General Manager of MSCo (Mobile No. 09343828802) will be the contact person for getting information and details for this study.

9.0 **Agency for evaluation:**

The study is awarded to Consultant, Karnataka Evaluation Authority with the support from the department of Public Enterprises.

10.0 **Other general conditions:**

The evaluation report and its findings must demonstrate highest professional standards. The KEA will provide the required over site for the study.

Approved in the 8th Technical Committee Meeting of KEA held on 21-04-2014

Chief Evaluation Officer
Karnataka Evaluation Authority
Bangalore-560001

Annexure 2

IN-RIMT, BANGALORE

Mysugar Evaluation Study

Questionnaire – Respondent - Sugarcane Grower

1 District block village

*2 Name of respondent*_____

3 Age sex m/f education

4 Land holding: own _____ acres. Irrigated_____ dry____ Total____ acres

5 Leased /share: Cropping _____irrigated _____ dry_____ Total_____

6 Cropped area :

Crop 1: irrigated_____ dry _____ Total_____

Crop 2: irrigated_____ dry _____ Total_____

7 Area under sugarcane: _____ acres

8 Area under perennials: _____acres

9 Source of Irrigation for sugarcane: (1) canal (2) borewell (3)river (4)open well

10 Whether water availability is adequate for sugarcane: yes / no

If no, do you buy water from others yes / no

If yes, what is the annual cost

11 Are you a registered supplier of cane to MYSUGAR : YES / NO

If NO, are you an unregistered supplier - yes / no

12 Since how many years you have been supplying cane to MYSUGAR_____ Years

13 Annual production of cane: _____tons

Of which, cane supplied to MYSUGAR: _____ tons

14 Cane supplied to other mills: _____ tons

15 Cane sold to others (cane juice makers etc)_____ ton

16 Jaggery units _____ tons

17 Months of supply of cane to MYSUGAR(Preceding five years)with quantity

Month/ year	*08-09*	*09-10*	*10-11*	*11-12*	*12-13*
June					
July					
August					
Sept					
Oct					
Nov					
Dec					
Jan					
Feb					
Mar					
April					
May					
Total					

18 Do you receive payment in installments yes/ no

If yes, in what proportion/ percentage: 50% 75% 100%

19 When did you receive payment for cane supplied from MYSUGAR:

1) *Within a fortnight of supply*
2) *Within a month of supply*
3) *Within 2 months of supply*
4) *Within 3 months of supply*
5) *After six months of supply*
6) *After a year of supply*

20 Do get payment as per GOK declared prices: yes/no

If no: what is short-payment for your cane: 5%, 10% 15% 20%

21Do you receive receipt/ acknowledgement for cane supplied by you: Yes/ no

If yes, after how many days do you receive confirmation -

a) One week b) two weeks c)one month d) more than 1 month e) did not get

22 Are you satisfied with the arrangement between you and MYSUGAR:

1. *In respect of notification:* ***fully satisfied/ satisfied/ not satisfied***
2. *Collection,:* ***fully satisfied/ satisfied/ not satisfied***
3. *Acknowledgement* ***fully satisfied/ satisfied/ not satisfied***
4. *Payment* ***fully satisfied/ satisfied/ not satisfied***

23 Do you sell cane to any other mills: yes/ no

If yes, name and quantity supplied

24 Do you get better terms from other mills: yes / no

If yes, please list out:

If no, the reasons for your supplying to these mills instead of MYSUGAR

24 Do you have any grievances against MYSUGAR as a cane producer and supplier: yes/ no

If yes, please elaborate -

If no, the reason for your not supplying cane to MYSUGAR -

25 Do you have any suggestions for improving relations between farmers and MYSUGAR -

26 Can you list out some Plus points/ advantages in dealing with MYSUGAR

Signature:

Date:

Place:

Annexure 3

Details of Villages and FGD

Sl No	Name of the village	Taluk	No. of FGDs	No. of Farmers
1	Sathanur	Mandya	01	02
2	Hulivana	Mandya	01	21
3	Keelara	Mandya	01	19
4	Anusosalu	Mandya	01	20
5	Maragowdanahalli	Mandya	01	17
6	Kommerahalli	Mandya	01	22
7	Alakere	Mandya	01	26
8	Thumbaker	Mandya	01	24
9	Panakanahalli	Mandya	01	25
10	Chandagalu	Mandya	01	20
11	Hebbakavadi	Mandya	01	09
12	Mangala	Mandya	01	09
13	Chikkamalagodu	Mandya	01	09
14	Ansale	Malavalli	01	10
15	Naguvanahalli	SR Patna	01	09
16	Hosur	Mandya	01	11
17	Chandagalu (N-Halli)	Mandya	01	11
18	Melapura	Mandya	01	02
Total			18	266

Annexure 4

Details of Village wise Registed/agreedcane growers/farmers to provide sugar cane for the crushing season 2014-15

Sl No.	Name of the Village	No of agreed farmers/cane growers	Agreed Quantity of sugarcane supply in MT tons
1	Aruvana halli	1	40
2	Arakere	107	6205
3	Anavalu	140	9635
4	Alakere	98	5825
5	Arranakere	2	100
6	Anka halli	1	100
7	Avvara halli	3	600
8	Albujanahalli	1	150
9	Alada halli	1	70
10	Agata halli	1	180
11	Abalavadi	1	30
12	Ambara halli	1	40
13	Belthur	28	1965
14	Beluru	198	12700
15	Bellundagere	83	5735
16	Bedura kotte	1	50
17	Ballena halli	4	530
18	Brahmapura	1	320
19	Bevina halli	11	610
20	Beedana halli	1	60
21	Belavadi	4	460
22	Betta halli	2	230
23	Bannuru	4	660
24	Banagatta	2	240
25	Balagatta	1	50
26	Balethiguppe	2	180
27	Beby	2	180
28	Besegara halli	8	370
29	Boodaguppe	2	190
30	Nbootana hosuru	9	850
31	B. Hattana	9	860
32	Balana halli	3	390
33	Beemana halli	1	40
34	Bhomana halli	1	120
35	Beladagula	24	2510
36	Bilena halli	4	500
37	Budanur	61	4850
38	B. Hosur	10	950

39	B Gowdagere	174	9580
40	Billagodi	13	785
41	Bhavakallu	11	680
42	B Hosa halli	62	4000
43	Beeragowdana halli	44	2615
44	Bommuruagrahera	15	1660
45	Bhechana halli	11	1180
46	Beerana Halli	3	400
47	Bevakal	6	350
48	Bhana halli	7	780
49	Chakkana halli	40	3560
50	Chirana halli	92	5715
51	Chamalapura	69	6380
52	Chikkaballi	30	1625
53	Chandagalu	47	12,440
54	Channa halli	4	360
55	Chikkabanasavadi	51	3100
56	Challa Nayakana halli	10	560
57	Chikka thamana halli	38	3215
58	Chikkamulagodu	134	955
59	Chindagiri kopalu	21	1950
60	Chinne halli	6	680
61	Chikka kothagere	5	150
62	Chalanayakana halli	1	50
63	Chunchagahalli	1	100
64	Chandrae halli	1	45
65	Chokana halli	16	1270
66	Devaraya pattna	12	1170
67	Dhodamulugodu	49	3900
68	Dhodakothagere	7	480
69	Dyapasandra	41	4670
70	Dhodabanasavadi	103	4730
71	D kere godu	1	70
72	Danayakanapura	4	350
73	Dhasavalli	4	470
74	Dudda	9	450
75	Dhodagaru devana halli	1	120
76	Echegere	94	5180
77	Guthallu	91	6730
78	Gopalapura	10	905
79	Gowdahalli	1	120
80	Gende hosahalli	1	100
81	Gaddijagihundi	1	40
82	G kebbe halli	16	1715

83	Gulor	1	100
84	Gajjelagere	1	120
85	Ganadalu	14	2520
86	Goravalle	113	7315
87	Gammana halli	34	2520
88	Gunnaikanahalli	16	1770
89	GG halli	56	4420
90	Garakahalli	4	320
91	Gudigena halli	3	220
92	Gopana halli	4	410
93	Gorakabaljosa halli	7	240
94	Guthigana halli	1	80
95	Hemmige	23	1780
96	Hulivana	255	15,430
97	Hoolikere	9	955
98	Hebbadi	19	2260
99	Hosur	3	400
100	Hancha halli	14	2050
101	Hosa budanur	158	10,555
102	Hanakere	93	8140
103	Halasagere	34	3490
104	Honne maddu	7	740
105	Honna gali	17	1225
106	Honna gali mata	2	200
107	Holalu	246	16070
108	H koduge halli	18	1810
109	H Hosa halli	10	610
110	Hadya	5	610
111	Hebbadi	6	560
112	Hebbakavadi	25	2220
113	Hanumnallu	8	820
114	Haluvadi	2	200
115	Hangarapura	4	290
116	Honagana halli	86	6335
117	H kodihalli	27	1810
118	H malligere	21	1755
119	Halagodu	16	1520
120	Hodagatta	14	905
121	Honnaikana halli	50	3795
122	Hampapura	7	480
123	Hulikere koppalu	5	580
124	Hullena halli	28	2775
125	Hiremarali	1	100
126	Hosa kotte	1	80
127	Halagere	1	80

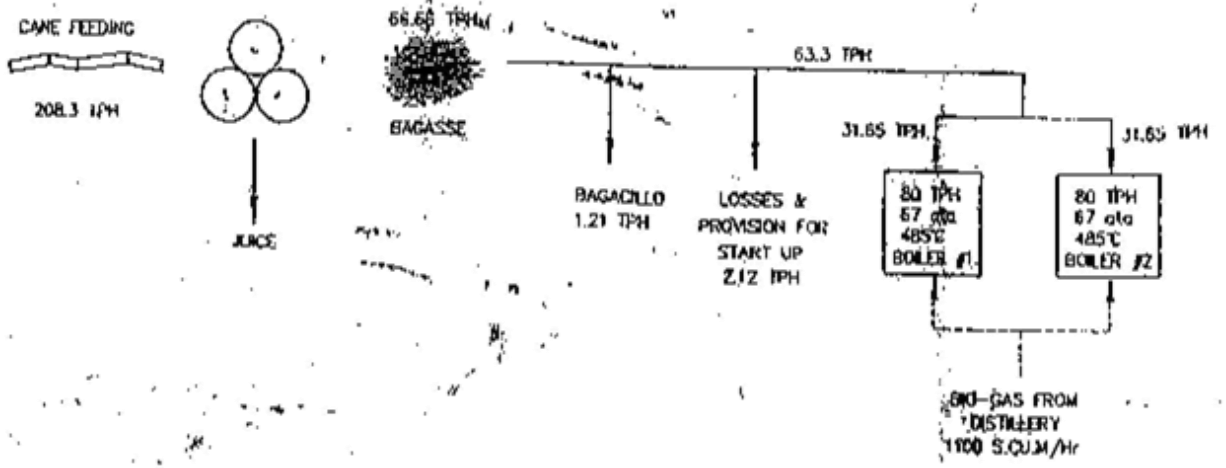
128	Haralahalli	7	540
129	Honaganapura	6	780
130	Hosakere	5	400
131	Hydra halli	34	2870
132	Indavalu	10	510
133	Ingalaguppe	8	790
134	jeegundi patna	6	365
135	Javana halli	3	310
136	Jayapura	13	1020
137	Kadukothana halli	11	1275
138	Kabbana halli	10	820
139	Kommara halli	54	1480
140	Koolagere	3	190
141	Kokkarebellru	1	50
142	Kachigere	12	610
143	Kenchana halli	2	220
144	Kanna hatti	7	450
145	Kalena halli	9	1170
146	Kadiyalla	1	100
147	Kalathavadi	2	220
148	Kodihalli	12	1130
149	K gowdagere	3	150
150	Keragandhuru	14	1280
151	Kothathi	189	11970
152	Kurahatti	1	100
153	Kerekatte	2	150
154	Kermagla dhodi	3	120
155	Kamada halli	2	200
156	Keelara	223	12855
157	Kodihalli hosuru	13	1190
158	Kabbe halli	6	560
159	Keregodu	113	8815
160	Kuduragondi	1	100
161	K gowda kere	7	420
162	Karasavadi	1	40
163	Kalasthavadi	1	60
164	Karimani	1	100
165	Kodisetty pura	1	200
166	Kodaga halli	6	600
167	Kirandhuru	1	150
168	Karadi koppala	3	240
169	K shetty halli	1	40
170	Kannaganamaradi	2	180
171	Lalanakere	33	2280
172	Lokasara	1	80

173	Lakshmisagra	2	200
174	LakshmikodanaDoddi	5	320
175	Madala	9	555
176	Modichakana halli	51	4500
177	Maragowdana halli	176	11335
178	Mandya rural	115	8610
179	Maradevana halli	17	1620
180	Muthana halii	1	30
181	Madhadevana halli	9	700
182	Maralakere	3	400
183	Mudagandhuru	1	150
184	Manasakyathanalli	17	1350
185	Mangala	21	1340
186	Marasinganahalli	12	1010
187	Melapura	91	10550
188	Mundagadore	3	190
189	Mandya Koppalu	16	1360
190	Marana halli	30	2440
191	Madhara halli	2	280
192	M shetty halli	2	200
193	Mallanayakanakatte	132	7340
194	Maradipura	5	420
195	M kebbe halli	12	1090
196	Monagana halli	16	1485
197	Motha halli	31	1570
198	M. Kebbena halli	3	240
199	Mothagere	11	1310
200	Mahadevapura	17	1540
201	Malligere	4	210
202	Manigere	1	200
203	Macha halli	1	150
204	Makana halli	7	440
205	Majjige pura	1	150
206	Maraliga	6	560
207	Mayappana halli	2	160
208	Maralagala	2	150
209	Modigere	11	1270
210	Malavalli	1	200
211	Madahalli	1	80
212	M Hattana	5	380
213	Mulalahalli	1	40
214	Mahadeshwarapura	7	520
215	Nalla halli	21	1855
216	Nughe halli	3	260
217	Naguvanahalli	3	440

218	Nagaragatta	3	220
219	Nilanakoppalu	4	360
220	Nilamane	2	140
221	Nilavagilu	4	510
222	Nanjanahalli	1	60
223	Nagaragatta kaval	5	750
224	Raya shetty pura	1	50
225	Rampura	6	350
226	Ramandur	3	310
227	Rangapura	1	70
228	Panakahalli	250	18670
229	Palahalli	5	600
230	Peehalli	19	1490
231	Pura	3	240
232	Singattagere	10	810
233	Sunaga halli	96	7090
234	Sabbenahalli	26	2865
235	Sathanuru	209	14855
236	Shivalli	51	3805
237	Soudhenahalli	14	1240
238	Samphalli	79	4810
239	Santhekesalagere	55	3180
240	ST kodi halli	64	3065
241	Sangapura	6	420
242	Sambuna halli	39	3590
243	Sriragapattana rural	6	770
244	Sundhhalli	1	100
245	Shavara	5	150
246	Shankarapura	2	90
247	Sunkathonnur	1	100
248	Taggahalli	2	90
249	Thumaba kere	67	3700
250	Thipapura	1	80
251	T Malligere	24	2140
252	Thirumala sagara chathra	10	915
253	Thuraganuru	48	3590
254	Thonnuru	6	590
255	Tadagawadi	19	2040
256	TM hosur	1	80
257	Tharipura	2	360
258	Toranagere	6	590
259	Thailuru	1	50
260	Thangalagere	1	60
261	Thavarekere	2	60

262	Ummadahalli	77	4895
263	Upparakanahalli	65	5355
264	Unjankere	3	220
265	Uramara kesalagere	1	80
266	Veerajpura	11	670
267	V Balakere	2	100
268	Valagere halli	3	220
269	Vediyandahalli	3	600
270	Yedaganahalli	4	420
271	Yerahalli	11	680
272	Yeliyuru	1	50
273	Yenaholle Koppalu	1	120
Total		6733	489520

Annexure-5



AVANT-GARDE
ENGINEERS AND CONSULTANTS (P) LTD.
CHENNAI 600 083, INDIA.

THE MYSORE SUGAR COMPANY LIMITED
BAGASSE BASED CO-GENERATION
BAGASSE BALANCE

	NAME	SIGN	DATE
DRN	TKVN		16.12.96
CHD	SSK		
APPD	SBS		

DRAWING NO. FIG. 4.4 REV. 0

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Annexure 6

COMPARATIVE STATEMENT OF THE PERFORMANCE OF THREE FACTORIES IN MANDYA DISTRICT (1) MYSUGAR CO (2) PANDAVAPURA SSK LTD. (3) CHAMUNDESHWARI SUGAR													
SL NO.	Particular	MYSUGAR CO.				PANDAVAPURA SSK				CHAMUNDESHWARI SUGARS			
		SEASON YEARS				SEASON YEARS				SEASON YEARS			
		2011-12	2012-13	2013-14	2014-15	2011-12	2012-13	2013-14	2014-15	2011-12	2012-13	2013-14	2014-15
1	Installed capacity	5000 MT	5000 MT	5000 MT	5000 MT	3500	3500	3500	3500	4000 TCD	4000 TCD	4000 TCD	4000 TCD
2	Crop Days				128	182	107					112	112
3	Crushing Days	208	198	131	135	101.64	64.66		165			112	112
4	Total cane crushed	411062	283511	223409	213025	349883	219104	130463				337850	382848
5	Rate of Crushing I/S	1985	1434	1720	1111							3074	3528
6	Rate of Crushing E/S	2756	2651	2526	2501							3278	3773
7	Recovery % cane	9.15	8.15	8.31	7.55							9.19	9.29
8	Hours lost % hours available	27.98	45.91	31.89	55.57							6.43	6.12
9	Mill extraction	91.18	90.61	90.97		91.18	90.71	90.08				95.15	95.01
10	Boiling house Recovery	86.64	84.25	83.99		80.95	82.76	82.91				24.99	86.78
Total Losses		2.44	2.52	2.56	2.73	2.85	2.71	2.68	2.58			1.96	1.94
11	Loss in Bagasse	1.02	1.00	0.98	1.00	0.96	1.01	1.05	0.96			0.56	0.55
12	Loss in Press cake	0.09	0.11	0.11	0.10	0.13	0.09	0.09	0.11			0.07	0.07
13	Loss in Molasses	1.21	1.30	1.35	1.5	1.57	1.53	1.41	1.39			1.28	1.26
14	Unknown Losses	0.13	0.11	0.12	0.13	0.19	0.08	0.13	0.12			0.25	0.26
15	Steam % cane				61.22	54 to56	54 to56	54 to56	54 to56			49.32	46.36

16	Molasses purity	31.75	34.01	34.64	36.11	34.90	34.90	35.8	34.46				30.41
17	Molasses %	4.21	4.26	453		5.18	5.06	4.30	4.40			5.19	4.79
18	Pol % Bagasse	1.02	1.00	0.98		0.96	1.01	1.05	0.96			0.56	0.56
Co-Gen facility													
19	Installed capacity	30.00	30.00	30.00	30.00					30.00	30.00	30.00	30.00
20	Actual production									20.22	20.22	20.22	20.22
21	Export to grid									300 to 320	300 to 320	300 to 320	300 to 320
22	Store Inventory					4.00	4.00	4.00	4.00	6.00	6.00	6.00	6.00

Annexure 7

THE MYSORE SUGAR COMPANY LTD., MANDYA.				
COST SHEET FOR YEAR ENDING 31/3/2011(2010-11)				
SL NO	Particulars	Sugar Unit	Distillery unit	Remarks
		Rs.	Rs.	
1	Raw Materials	925938720	57638161	
2	Salaries	115268183	5053445	
3	Sugar Bagging	32135929		
4	Excise Establishment		0	
5	Stores & Spares	15291914	0	
6	Power/Fuel/Steam	17840076	3148249	20988325
7	Water Charges	0	0	0
8	Insurance	252947	137268	390215
9	Repairs & Maintenance			
	Machinery	42985799	224407	
	Building	290	0	
	Others	1507690		
	Rent			
10	Rates & Taxes	484145	2740883	
11	Cult, Gen Charges	3887		
12	Travelling Charges	816879	2953	
13	Depreciation	11200246	1976514	13176760
	Total(1 to 13)	1163726705	70921880	
	ALLOCATION:			
	Welfare	2219971	391760	2611731
	Bonus & Incentive	9689726	1709952	11399678
	PF & Gratuity	14861278	2622578	17483856
	TOTAL	26770975	4724290	
	SUB TOTAL	1190497681	75646169	
	Less Molasses Dist.	51778770		740505
	51778770			
	TOTAL EXPENDITURE	1138718910	75646169	
		Qtls	Ltrs	Molasses
	Production	416150	4900022	22280
	Cane Crushed	497618		
	Cost per unit	2736.32	15.44	2324
	Recovery	8.36		4.48
	Cost of Conversion	511.31	3.68	
		29857080		
	Cost of Molasses	2324		
	Excise Duty	750		
	Education Cess 3%	22.5		
	Total	3096.5		

Annexure 8

THE MYSORE SUGAR COMPANY LTD., MANDYA.				
COST SHEET FOR ENDING 31/3/2012(2011-12)				
SL NO.	Particulars	Sugar Unit	Distillery unit	Remarks
		Rs.	Rs.	
1	Raw Materials	847565753	91056039	
2	Salaries	113385306	4929634	
3	Sugar Bagging	35475671		
4	Excise Establishment		0	
5	Stores & Spares	14315051	0	
6	Power/Fuel/Steam	11603056	2047598	13650654
7	Water Charges	0	0	0
8	Insurance	454296	89945	
9	Repairs & Maintenance			
	Machinery	58029469	470589	
	Building	545510	0	
	Others	1852339		
	Rent			
10	Rates & Taxes	582992	2724241	
11	Cult, Gen Charges	914874		
12	Travelling Charges	1634635	14354	
13	Depreciation	11741513	1983287	13724800
	Total(1 to 13)	1098100465	103315684	
	ALLOCATION:			
	Welfare	2647594	467222	3114816
	Bonus & Incentive	9510482	1678320	11188802
	PF & Gratuity	29689371	5239301	34928672
	TOTAL	41847447	7384844	
	SUB TOTAL	1139947911	110700527	
	Less Molasses Dist.	52241537		0
	TOTAL EXPENDITURE	1087706374	110700527	
		Qtls	Ltrs	Molasses
	Production	379540	6996345	19582
	Cane Crushed	414176		
	Cost per unit	2865.85	15.82	2667.83
	Recovery	9.16		4.73
	Cost of Conversion	632.71	2.81	
		24850560		
	Cost of Molasses	2667.83		
	Excise Duty	750		
	Education Cess 3%	22.5		
	Total	3440.33		

Annexure 9

THE MYSORE SUGAR COMPANY LTD., MANDYA.				
COST SHEET FOR YEAR ENDING 31/3/2013(2012-13)				
SL NO.	Particulars	Sugar Unit	Distillery unit	
		Rs.	Rs.	
1	Raw Materials	698442061	51697917	
2	Salaries	129473817	5042500	
3	Sugar Bagging	20665972		
4	Excise Establishment		0	
5	Stores & Spares	13942210	0	
6	Power/Fuel/Steam	7459500	1950508	9410008
7	Water Charges	0	0	0
8	Insurance	762044	157999	
9	Repairs & Maintenance			
	Machinery	42825055	497460	
	Building	0	0	
	Others	819074		
	Rent			
10	Rates & Taxes	822641	2655198	
11	Cult, Gen Charges	14694		
12	Travelling Charges	1153510	13541	
13	Depreciation	11620506	1388096	13008602
	Total(1 to 13)	928001084	63403219	
	ALLOCATION:			
	Welfare	3812214	672744	4484958
	Bonus & Incentive	160256	28281	188537
	PF & Gratuity	15617524	2756034	18373558
	TOTAL	19589995	3457058	
	SUB TOTAL	947591079	66860277	
	Less Molasses Dist.	39950472		0
	TOTAL EXPENDITURE	907640607	66860277	
		Qtls	Ltrs	Molasses
	Production	240200	3408161	12225
	Cane Crushed	293511		
	Cost per unit	3778.69	19.62	3267.93
	Recovery	8.15		4.31
	Cost of Conversion	870.93	4.45	
		17010660		
	Cost of Molasses	3267.93		
	Excise Duty	750		
	Education Cess 3%	22.5		
	Total	4040.43		

Annexure 10

KARNATAKA ACT 33 OF 2013

THE KARNATAKA SUGARCANE

(REGULATION OF PURCHASE AND SUPPLY) ACT, 2013

Arrangement of Sections

Sections:

STATEMENT OF OBJECTS AND REASONS

Act 33 of 2013.- It is considered necessary to enact a legislation to regulate the purchase and supply of sugarcane in the State.

The salient features of the Bill are,-

(1) Constitution of Sugarcane Control Board to advise regarding State Sugarcane Advisory Price (S.A.P);
(2) Prohibition of the distribution and planting of unsuitable varieties of seeds of sugarcane;

(3) Purchase of sugarcane in the reserved area;

(4) Payment to cane growers within stipulated time; and

(5) To provide for certain other consequential matters. Hence, the Bill. [L.C. Bill No. 09 of 2013, File No. Samvyashae 14 Shasana 2013.] [Entries 14, 24 and 27 of List II of the Seventh Schedule to the Constitution of India.]

KARNATAKA ACT 33 OF 2013

(First published in the Karnataka Gazette Extraordinary on the Twelfth day of March, 2013)

THE KARNATAKA SUGARCANE

(REGULATION OF PURCHASE AND SUPPLY) ACT, 2013 (Received the assent of the Governor on the Eighth day of March, 2013)

An Act to regulate the purchase and supply of sugarcane required for use in sugar factories in the State of Karnataka.

Whereas it is expedient to regulate the purchase and supply of sugar cane required for use in Sugar Factories in the state of Karnataka and to provide for matters connected therewith or incidental thereto;

Be enacted by the Karnataka State Legislature in the Sixty-fourth year of the Republic of India as follows:-

1. Short title and commencement.-

(1) This Act may be called the Karnataka Sugarcane (Regulation of Purchase and supply) Act, 2013.

(2) It shall come into force at once.

2. Definitions.- In this Act, unless the context otherwise requires-

(a) "Board" means the Sugarcane Control Board constituted under section 3;

(b) "Commissioner for Cane Development and Director of Sugar" means an officer appointed by the State Government to perform the duties and functions of Commissioner for Cane Development and Director of Sugar;

(c) "Crushing season" means such period during which sugarcane is crushed normally as the State Government in consultation with the Board may, by notification, specify;

(d) "Deputy Commissioner" means the Deputy Commissioner of concerned revenue district;

(e) "Factory" means a sugar factory wherein twenty or more workers are working or were working on any day of the preceding twelve months in any part of such sugar factory where any manufacturing process connected with the production of sugar is being carried on or is ordinarily carried on with the aid of power;

(f) "Government" means the Government of Karnataka;

(g) "Khandsari sugar manufacturing unit" means a unit engaged or ordinarily engaged in the manufacture or production of khandsari sugar with the aid of a crusher driven by any mechanical power by open pan process;

(h) “Occupier of a factory" means the person who has control over the affairs of a factory or khandsari sugar manufacturing unit and where the said affairs are entrusted to the managing agent, such agent; (i) “Prescribed” means prescribed by rules made under this Act;

(j) “Reserved area” means an area notified under the Sugarcane (Control) Order, 1966;

(k) “State” means the state of Karnataka; 3

(l) “Sugarcane” means Sugarcane intended for use in a sugar factory or khandsari sugar manufacturing unit;

(m) “Sugarcane-grower” means a person including a tenant who cultivates sugarcane either by himself or through members of his family or through hired labours.

(n) “Sugar season” means the year commencing on the first day of the October and ending with thirtieth day of September next year.

3. Sugarcane Control Board.-

(1) The State Government shall as soon as may be, after the commencement of this Act, constitute a Sugarcane Control Board (hereinafter referred to as the Board), for the State to perform such duties and functions assigned in this Act.

(2) The board shall consist of the following members, namely:-

(a) The Minister in charge of Sugar ----- Chairman

(b) The Minister in charge of Agriculture ----- Co- Chairman

(c) Secretary-II, Finance Department (Expenditure) or his nominee not below the rank of Deputy Secretary ----- Member

(d) Secretary to Government, Commerce and Industry Department ----- Member

(e) Agricultural Commissioner ----- Member

(f) not more than five farmers representatives nominated by the State Government from any sugarcane growers ----- Members

(g) not more than five members nominated by the State Government from among the persons running Sugar Factories ----- Members

(h) Commissioner for Cane Development and Director of Sugar ----- Member Secretary

(3) The Headquarters of the Board shall be at Bangalore.

(4) Notice of the meetings of the Board, the place, quorum and procedures regarding transactions of the business of the Board shall be such as may be prescribed.

(5) Subject to the pleasure of State Government or sub-section

(7), a non-official member shall hold office for a period of three years from the date of nomination. A member nominated once to the Board is not eligible for re-nomination for a second time.

(6) A non-official member may resign his office under his hand addressed to the Government but he shall continue in his office until his resignation is accepted.

(7) The Government may remove a non-official member from his office if he incurs any one of the disqualification specified below, namely:-

(a) becomes an un discharged insolvent; or

(b) is convicted and sentenced to imprisonment for an offence which in the opinion of the Government involves moral turpitude; or

(c) becomes of unsound mind, stands so declared by a competent court; or 4 (d) refuses to act or becomes incapable of acting.

(8) The Board shall meet at least thrice in a year commencing before starting of the crushing season, after closure of the crushing season and at the end of the sugar season. The Member Secretary of the Board may subject to the control of the Chairman thereof convene meetings as often as may be necessary and shall do so when required by one-third of the members.

(9) When the office of non-official member nominated to the Board becomes vacant by resignation, death, removal or otherwise, the Government shall nominate within three months a new member to fill such vacancy and such new member shall hold office for the remaining period of the term of office of the member in whose place he has been nominated.

(10) No proceedings of the Board shall be rendered invalid for the mere fact that there was one or more unfilled vacancy in the Board at the time of such proceedings were made.

4. Functions of the Board.- The functions of the Board shall be,-

(a) to recommend ways and means of maintaining healthy relations between occupier of the factory and cane growers.

(b) to offer advice on any matter which be referred to it by the Government or the Commissioner for Cane Development and Director of Sugar, especially in respect of the regulation of the purchase of sugarcane;

(c) to bring to the notice of the Commissioner for Cane Development and Director of Sugar, cases of breach of any of provisions of the Act and of the rules made there under and to make suggestions for the prevention of the same;

(d) to advice the Government regarding suitability or otherwise of cane varieties for cultivating in different regions; and

(e) to advice the Commissioner for Cane Development and Director of Sugar, in the sugarcane development work.

(f) to decide sugarcane price on revenue sharing basis taking into consideration actual revenue realised from sugar, bagasse, molasses and press-mud.

5. Power to declare varieties of cane to be un-suitable for use in factories.- The Government may, on the recommendations of the Sugarcane Control Board, declare any variety of sugarcane grown in any area specified in such notification as un-suitable variety , and no factory shall purchase such sugarcane variety so declared .

6. Prohibition of distribution of certain varieties of seeds.- The occupier of the factory or any other person acting on his behalf, shall not distribute to any person in any area or shall not plant, sugarcane seed of any variety if the same has been declared by the Government as unsuitable under section 5.

7. Purchase of sugarcane in reserved area.-

(1) A sugarcane-grower in reserved area may sell sugarcane grown to the occupier of the factory to which the area is so reserved.

(2) The factory shall enter into an agreement with a cane-grower in such form, by such date on such terms and conditions as specified in clause 6 of the Sugarcane (Control) Order, 1966 for the purpose of purchasing the sugarcane offered in accordance with sub-section(1). 5

(3) No person other than the factory aforementioned shall purchase or enter into an agreement to purchase sugarcane grown by the sugarcane grower except in accordance with agreement under sub-section (2).

8. Weighment.- (1) All dealings and contracts in connection with the purchase and supply of sugarcane shall be made according to the metric system of weights and multiples or sub-multiples thereof, and all weighments shall be made by means of weigh-bridge or scale and recorded correctly to the nearest 1/20th of quintal.

(2) No scales or weights shall be used, kept or possessed by or on behalf of the occupier of the factory which are inaccurate or which do not permit an easy reading of the recorded weight by the vendors of sugarcane which are not according to the metric system of weights and multiples and sub-multiples thereof to the nearest 1/20th of a quintal: Provided that a margin of error up to five kilograms or one percent, whichever is less, in weighment cannot be considered: Provided further that a weigh-bridge shall not be deemed to be incorrect which weighs within one per cent of the correct weight and cannot be adjusted more correctly.

(3) All scales and weights used, shall be kept open to inspection or examination at all reasonable times without notice and the occupier shall make available all scales weights for such inspection or examination whenever required by the sugarcane growers or any other officer of the Government authorised.

(4) Deductions not more than that allowed by Central Government on the net weight of sugarcane purchased, shall be allowed as binding materials.

(5) Weighments of sugarcane shall not be made more than half-an-hour after sunset unless adequate lighting arrangement are made at the weigh-bridge by the occupier of the factory.

(6) The occupier of a factory shall cause the time of arrival and departure of each cart, tractor, lorry or any vehicle to be recorded in the farmers pass book.

(7) The occupier of factory make at all purchasing centers adequate arrangements to the satisfaction of the Commissioner for Cane Development and Director of Sugar-

(a) regulating the entry and parking to avoid congestion;

(b) roads and approach roads to the weigh-bridges; and

(c) cattle sheds and troughs.

(d) Canteen, drinking water, first aid centre and other basic amenities

(8) Any representative of cane growers shall be allowed to be present at the time of weighment of sugarcane at any weigh-bridge to watch or check weighment and examine records in which weights are recorded;

(9) In no case, sugarcane be purchased without actual weighment and such part of the mechanism of a weigh-bridge by which its adjustment is controlled shall be kept suitably sealed or locked;

(10) All weigh-bridge or scales at purchasing centers shall be tested at least a week in the presence of any person nominated by the Commissioner for Cane Development and Director of 6 Sugar in this behalf and record of such tests shall be properly maintained. Any sugarcane grower who wish to be present at the time of testing shall also be allowed;

(11) Excess sugarcane brought by a cane grower to the extent of ten per cent of the weight specified in the unit wise requisition slip shall be accepted and there shall be no objection to the acceptances of less weight up to any extent.

9. Payment to sugarcane growers.-

(1) As soon as sugarcane is supplied to the occupier of a factory, the factory shall be liable to pay the price of sugarcane supplied within fourteen days to the sugarcane growers.

(2) Payment shall be made on the basis of the recorded weight of the sugarcane at the factory. The price of the sugarcane to be payable be calculated to the nearest rupee.

(3) An occupier of a factory shall be liable to make for all payments due for sugarcane purchased by him and if such occupier of the factory fails to make payments, the occupier of such factory shall be

responsible for making such payments with interest as specified in Sugarcane (Control) Order, 1966 thereon from the date such payment falls due .

10. Penalty.- If any person contravenes any of the provisions of this Act, or any rule made there under, he shall be punishable with rigorous imprisonment for a term which may extend to one year, or with fine which may extend to five thousand rupees or with both.

11. Cognizance of Offence.- No court shall take cognizance of any offence punishable under section 10, except on a complaint made by an officer authorized by the Commissioner for Cane Development and Director of Sugar and no court inferior to that of a Magistrate of First Class, shall try any such offence.

12. Power to compound offences:- (1) On the application of a person accused of an offence under this Act or the rules made there under, the Commissioner for Cane Development and Director of Sugar or any other officer authorized in this behalf may accept from him a sum of money not exceeding ten thousand rupees by way of composition for such offence at any stage before the judgment in the case has been pronounced.

(2) When the Commissioner for Cane Development and Director of Sugar, compounds an offence under this section, the occupier of factory or any other person shall not be liable for prosecution in respect of such offence or to any further penalty under section 10.

13. Offences by Companies, Firms and Partnerships:- Where the occupier of a Sugar factory is a Company, Firm or a Partner or a Society or Other Association, any one or more of the partners or members or directors thereof, as the case may be, shall be prosecuted and punished for any offence committed under this Act.

14. Commissioner of Cane Development and Director of Sugar to be public servant.- The Commissioner of Cane Development and Director of Sugar and every Officer appointed under this Act shall be deemed to be public servant within the meaning of section 21 of the Indian Penal Code, 1860. 7

15. Protection of acts done in good faith.- No suit, prosecution or other legal proceedings shall lie against Government or any Officer or Official for anything which is done in good faith or intended to be done in pursuance of any provisions of this Act or any rule or order made there under.

16. Power to make rules.-

(1) The Government may make rules to carry out the purposes of this Act.

(2) In particular and without prejudice to the generality of the foregoing powers, such rules may provide for:-

(a) the procedure of transactions of Business of the Sugarcane Control Board;

(b) the form in which any notice required shall be given.

(3) the form of agreement to be entered into for the purchase of sugarcane, the date by which such agreement should be made and the terms and conditions thereof;

(4) the correct weighment of sugarcane, the provision of facilities for weighment and for checking weighments and timings of weighments; and

(5) any other matter which is to be or may be prescribed under this Act.

The above translation of Karnataka Sugarcane (Purchase and supply control) Act, 2013 (Karnataka Act No.33 of 2013) be published in the Official Gazette under clause (3) of Article 348 of the Constitution of India.

H.R. BHARDWAJ
GOVERNOR OF KARNATAKA

By Order and in the name of the Governor of Karnataka

K. DWARAKANATH BABU
Secretary to Government (I/c),
Department of Parliamentary
Affairs and Legislation.

Annexure 11

MYSUGAR COMPANY MANDYA			
SUGGESTED BREAK EVEN ANALYSIS **(WITH COGEN)**			
	SITUATIOIN 1(9% recovery)	**SITUATION 2(9.%)**	**SITUATION 3(9%)**
CRUSHING	1000	2000	3000
DAYS OF WORKING	250	250	250
HOURS WORKED/DAY	22	22	22
RECOVERY	9%	9.00%	9.00%
RS produced (liters)	42	84	126
CANE PER HOUR	45	91	136
SUGAR PRODN/day(tons)	90	180	270
BAGASSE PRODUCTION/HR	15	29	44
Bagasse available for cogen	13.5	28	42
steam generation	27	55	84
Power generation/hr	5.4	11	17
power gen/day	119	243	371
value of power/day(Rs)	594	1214	1854
value of sugar/day(rs)	2520	5040	7560
value of RS/day	168	336	504
value of products/day	3282	6590	9918
cost of prodn(Rs))			
sugarcane (2250/ton)	2250	4500	6750
conversion cost(Rs 3500/ton of sugar(LAKH RS)	315	630	945
total cost(optg)(LAKH RS)	2565	5130	7695
contribution/day(Rs)	717	1460	2223
Annual operating details:			
Value of power/year(Rs lakh)	148500	303500	463500
value of RS(Rs 40/litre Rs lakh/	42000	84000	126000
sugar production/year (tons)	22,500	45,000	67,500
Value (Rs 28000/ton)Rs in lakh	630000	1260000	1890000
value of power	148500	303500	463500
Gross Income (Rs lakh)	778,500	1,563,500	2,353,500
cost of production			
cane cost(2250/ton)	562500	1125000	1687500

conversion cost(3500)	78750	157500	236250
total cost	641250	1282500	1923750
contribution	137,250	281,000	429,750
fixed over head cost	334,000	334,000	334,000
contribution: Fixed overhead ratio	0.411	0.841	1.287
Note:	all financial figures in 000s sugar crushed, Bagasse produced, sugar produced- in tons rectified spirit in 1000 liters value of sugar assumed at Rs 28000/ton value of power at Rs 5000/mw sugar cane cost Rs 2250(average) conversion cost Average Rs 3500/ton of sugar produced It is expected that the company has adequate Bagasse production to produce power as projected fixed over head: all administrative costs, depreciation, interest on borrowings, other costs included. Staff cost opportuned at 60:40 ratio (factory wages and administrative salaries)accordingly Rs 7.00 crores taken to be administrative cost Contribution: Fixed cost ratio would be 0.41:1,0.84:1 and1.28:1 respectively for 1000/2000/3000 tons/day crushing. With co-gen production of power, the company can achieve break even for crushing at between 2500-3000 tons/day 250 days of uninterrupted working since power generation substantially enhances revenue. If the company consistently crushes 750,000 tons annually@ 3000 5ons/day, it ma make profit in the ratio of 1.28:1		

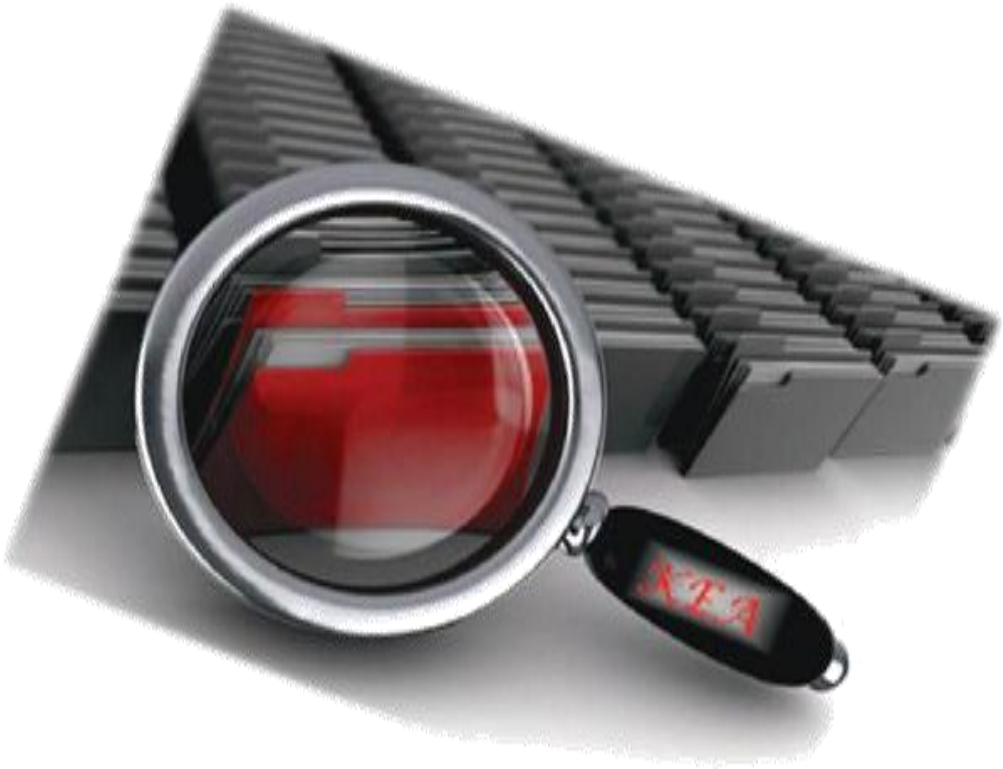
Annexure 12

MYSUGAR- MANDYA- SUGGESTED BREAK EVEN PROJECTIONS(WITHOUT CO GENERATION)						
(Rs in 000s)						
Particulars	BREAK EVEN ANALYSIS(without Co-gen)					
	SITUATIOIN 1	SITUATION 2	SITUATION 3	SITUATION 4	SITUATION 5	SITUATION 6
CRUSHING(tons/day)	1000	2000	3000	4000	5000	7500
DAYS OF WORKING	250	250	250	250	250	250
HOURS WORKED/DAY	22	22	22	22	22	22
RECOVERY	9%	9%	9%	9%	9.00%	9.00%
RS produced (litres)	21	42	63	84	105	157.5
Cane crushed/hour	45	91	136	182	227	341
Sugar production	90	180	270	360	450	675
BAGASSE prodn/day	320	640	960	1280	1600	2400
Cane crushed/ year	250000	500000	750000	1000000	1250000	1875000
value of sugar/day(rs)	2520	5040	7560	10080	12600	18900
Bagasse value/day	384	768	1152	1536	1920	2880
VALUE OF R Spirit	84	168	252	336	420	630
value of products/day	2988	5976	8964	11952	14940	22410
cost of prodn(Rs)						
sugarcane (2250/ton)	2250	4500	6750	9000	11250	16875

conversion cost(Rs 3500/ton of sugar(LAKH RS)	315	630	945	1260	1575	2363
total cost(optg)(LAKH RS)	2565	5130	7695	10260	12825	19238
contribution/ day(Rs)	423	846	1269	1692	2115	3173
contribution/ ton of cane crushed(Rs)	0.4230	0.4230	0.4230	0.4230	0.4230	0.4230
CONTRIBUTION/YEAR	105750	211500	317250	423000	528750	793125
for /YEAR	339000	339000	339000	339000	339000	339000
contribution cost ratio	0.31	0.62	0.94	1.25	1.56	2.34
Note:1	Financial Figures in 000s cane crushed, sugar produced and bagasse in tons Rectified Spirit: in 000 liters Ratio of contribution to overhead costs is 1:0.31 , 1:0.62, 1:0.94,1:125,1:1.56 and 1:2.34 respectively for Situations Nos. 1,2,3,4,5, and 6 The company might function at no-profit no loss level if it can crush between 7.5 Lakhs to Rs 8.00 Lakhs. If this figure is surpassed it would make profit At 5000 tons /day and 250 days of uninterrupted crushing the Benefit Cost ratio(above Break even level) is 1.56:1. (or Rs 1.56 paise for every Re 1/- spent.					

THE MYSORE SUGAR COMPANY LIMITED, MANDYA,

AND



TRA- APRIL-2014 IRA- JAN-2015 DRA- MAY-2015

FNO- KEA 36 EVN 2012(P)

INTERNAL EVALUATION REPORT NO: 12 OF 2015

THE MYSORE SUGAR COMPANY LIMITED, MANDYA,

AND

ಕರ್ನಾಟಕ ಮೌಲ್ಯಮಾಪನ ಪ್ರಾಧಿಕಾರ
Karnataka Evaluation Authority

EVALUATION OF PERFORMANCE OF

THE MYSORE SUGAR COMPANY LIMITED