CHAPTER VI
SUMMARY OF FINDINGS,
CONCLUSIONS AND SUGGESTIONS
6.1 Introduction

The undertaken study has introspected the performance of three selected co-operative sugar factories located each one in Maharashtra, Karnataka and Goa, in terms of the supply trend of sugarcane and sugar production; total cost of sugar production; operational viability and financial feasibility; profiles and problems of cane growers and a comparative performance of three selected units. The analysis has revealed the following broad findings:

6.1.1 Cost Performance

(i) Cost of Sugarcane Procurement: This was the major cost among all the cost components of production. The Chatt. Shahu S.S.K.L. incurred (mean value) Rs. 839.50 (in terms of percentage 71.6% and the highest cost among all the cost components) per bag. Malaprabha S.S.K.L. incurred (mean value) Rs. 881.60 (67.5%) and Sanjivani S.S.K.L. (mean value) Rs. 989.70 (64.7%) per bag.

The Chatt. Shahu S.S.K.L. was observed to have incurred the lowest sugarcane cost per bag in terms of rupee value followed by Malaprabha S.S.K.L. and Sanjivani S.S.K.L. respectively. The value in percentage indicated the actual share in the total cost in inverse order because of the higher operational efficiency achieved by the Chatt. Shahu S.S.K.L., which condensed the share of operational cost, resulted into increased cane
procurement cost. It further indicated that the cost of sugarcane procurement was the first highest major cost in all the three selected units.

The sugarcane procurement cost analysis revealed that the sugarcane procurement management of the Chatt. Shahu S.S.K.L. was more efficient as compared to the sugarcane procurement management of the other two units.

(ii) Manufacturing Expenses: The Chatt. Shahu S.S.K.L. incurred (mean value) Rs. 82.80 (6.9%) per bag, Malaprabha S.S.K.L. Rs. 88.20 (6.6%) and Sanjivani S.S.K.L. Rs. 153.50 (9.8%) per bag. Chatt. Shahu S.S.K.L. and Malaprabha S.S.K.L. were observed to have incurred more or less the same amount of manufacturing expenses per bag. The production efficiency of Sanjivani S.S.K.L. was observed to be very poor because the unit incurred almost twice the amount as compared to other two units.

Based on all these analysis, Chatt. Shahu S.S.K.L. and Malaprabha S.S.K.L. have shown a high degree of manufacturing efficiency and Sanjivani S.S.K.L. indicated a low degree of production performance.

(iii) Administrative Expenditure: The Chatt. Shahu S.S.K.L. incurred (mean value) Rs 21.50 (1.8%) per bag, Malaprabha S.S.K.L. Rs 45.30 (3.4 %) and Sanjivani S.S.K.L. Rs 33 (2.0%) per bag. Malaprabha S.S.K.L. was observed to have spent liberally on the administrative expenses followed by Sanjivani S.S.K.L. and Chatt. Shahu S.S.K.L. The Chatt. Shahu S.S.K.L. and the Sanjivani S.S.K.L. have shown a high degree of cost consciousness in administrative expenses as compared to the Malaprabha S.S.K.L.
(iv) **Salary and Wage Bills:** The Chatt. Shahu S.S.K.L. paid (mean value) Rs. 92.70 (8.0%) per bag, Malaprabha S.S.K.L. Rs. 167.60 (12.4%) and Sanjivani S.S.K.L. Rs. 236.20 (14.6%) per bag. The Chatt. Shahu S.S.K.L. was observed to be more efficient in manpower expenses management because it incurred the least amount of salary and wage per bag followed by Malaprabha S.S.K.L. But Sanjivani S.S.K.L. loaded heavy amount of salary bill on per bag of sugar production, which indicated very poor manpower management.

An analysis of 'Manpower Strategy' in the selected units revealed that the Chatt. Shahu S.S.K.L. ran its operations below the number of workers specified by the commissioner of sugar and the ratio between actual manpower and the standard specified was 1220:1299. A high degree of automation and modernization have attributed to reduce the requirement of manpower in the unit. The number of employees employed in Malaprabha S.S.K.L. was observed to be more than the standard stated because the ratio was 1750:1299. Sanjivani S.S.K.L. has employed the less number of employees because the ratio between the actual and the standard was 625:878.

(v) **Depreciation:** The Chatt. Shahu S.S.K.L. charged (mean value) Rs. 37.40 (3.3%) per bag, Malaprabha S.S.K.L. Rs. 25 (1.7%) and Sanjivani S.S.K.L. Rs. 27.80 (1.8%) per bag. The Chatt. Shahu S.S.K.L. was observed to have charged the highest amount of depreciation due to heavy investments in plant capacity expansion and modernization followed by the Malaprabha S.S.K.L. and Sanjivani S.S.K.L.
(vi) Interest on Key Loan: The Chatt. Shahu S.S.K.L. charged (mean value) Rs. 96.60 (8.4%) per bag, the Malaprabha S.S.K.L. Rs. 111.50 (8.4%) and the Sanjivani S.S.K.L. Rs. 123.30 (7.1%) per bag. The Chatt. Shahu S.S.K.L. was observed to have charged the least amount of interest on key loan burden per bag followed by the Malaprabha S.S.K.L. and the Sanjivani S.S.K.L. But the percentage indicated that Chatt. Shahu S.S.K.L. and Malaprabha S.S.K.L. have accounted heavy share of interest burden per bag of sugar as compared to the Sanjivani S.S.K.L.

This analysis further indicated that any increase in the efficiency of manufacturing and administrative departments and the reduction in wage bills burden was due to investments in plant capacity expansion, automation and modernization and the same has led to the increase in depreciation and interest on key loan burden. On the whole, the Chatt. Shahu S.S.K.L. was observed to have produced sugar at the lowest cost (mean value) (Rs.1,170 per bag), which was followed by Malaprabha S.S.K.L. (Rs.1, 319) and Sanjivani S.S.K.L. (Rs.1,563) respectively. As far as the cost performance was concerned, Chatt. Shahu S.S.K.L. was the most efficient unit, the Malaprabha S.S.K.L. efficient unit, but Sanjivani S.S.K.L. was poor.

6.1.2 Sugarcane Cultivation, Supply and Price Trend

(i) Area Under Sugarcane Cultivation: The Chatt. Shahu S.S.K.L. (on an average) has 6,125 hectares (ha) of land under its jurisdiction for sugarcane cultivation; Malaprabha S.S.K.L. has 15,750 ha. and the Sanjivani S.S.K.L. has 1,197 ha. of land. The Malaprabha S.S.K.L. was observed to have had
more land under its jurisdiction for sugarcane followed by Chatt. Shahu S.S.K.L. and the Sanjivani S.S.K.L.

Chatt. Shahu S.S.K.L. has paid the highest cane price to their cane suppliers but that price factor could not motivate the farmers of Kagal taluka to expand the sugarcane cultivation area. But other two factors viz., constant efforts made by the mill's agriculture department and an increase in the yield per hectare affected the area under sugarcane cultivation. It was also observed that these farmers prefer to shift their crop from sugarcane to any other crops if they suspect weak monsoon, very high demand for other crops or fall in sugarcane price in coming year.

Even though the Malaprabha S.S.K.L. has the largest area under its jurisdiction, it could not make use of it effectively. The farmers, who owned about 45 percent sugarcane cultivation area, were yet to be registered, as member suppliers for the mill. Moreover, these farmers were observed to have kept their selling option open whether to supply to the Malaprabha S.S.K.L. or sell to other competitors. The gur producers, local sugarcane juice sellers and other nearby sugar mills were the competitors. If the farmers do not find better price from the local competitors then only the cane growers march with their cane produces towards the Malaprabha S.S.K.L. as gate cane suppliers. It indicated that these farmers do not want to give cent percent sugarcane produce to their own mill. This was because the farmers wanted to encash their cane produce as early as possible by selling either to the gur producers or to the local juice sellers.

The sugarcane growers in Goa were observed to have been motivated to expand their sugarcane cultivation area. The content of sugar in sugarcane is based on the agro-climatic conditions. The agro-climatic condition is not
favourable for sugarcane cultivation in Goa. Hence, the recovery rate was observed to be very poor. The yield per hectare was less than 53 MT per hectare. The assurance of guaranteed market that was given by the sugar factory for their sugarcane also failed to motivate the cane growers in Goa. The analysis further showed that the area under sugarcane purely dependent upon the will and wish of the sugarcane growers.

(ii) Yield Per Hectare: Yield per hectare is one of the parameters wildly used to assess the performance of farms. So far as the State wise average yield was concerned, Karnataka State has shown the highest performance (89.1 MT/ha), followed by Maharashtra (79.5 MT/ha) and Goa (52.6 MT/ha). When the average yield of the selected units were compared with the all India average (67.1 MT/ha) yield, Chatt. Shahu S.S.K.L. was observed to be above (74.2 MT/ha) the average; Malaprabha S.S.K.L. (48.1 MT/ha) and Sanjivani S.S.K.L. (52.6 MT/ha) were observed to be below the national average.

The Karnataka State has shown very high rate of average yield performance. It was due to the best performance of Kaveri belt (above 120 MT per hectare) and Belguam belt. Malaprabha S.S.K.L. is situated in Belguam belt but has shown very poor performance. Malaprabha S.S.K.L. has also possessing the largest sugarcane cultivation area as compared to Chatt. Shahu S.S.K.L. and Sanjivani S.S.K.L. Any small amount of improvement in the yield certainly fetches a large amount of dividend to the mill and to the farmers. The agro-climatic condition is not favourable for sugarcane cultivation in Goa, and hence the yield and recovery rates were observed to be very poor. The farmers of the Chatt. Shahu S.S.K.L. have shown the
highest performance in the yield per hectare as compared to the other two selected units.

(iii) Sugarcane Supply Trend: All the units were observed to have experienced an upward and downward sugarcane supply trend during the study period. The Malaprabha S.S.K.L. was observed to have received the highest amount of local cane (on an average) of 5,30,616 MT per season from its own strong team of loyal members and 38,746 MT of gate cane followed by Chatt. Shahu S.S.K.L. (3,35.097 MT local: 2,07,611 MT gate cane) and Sanjivani S.S.K.L. (58,607 MT local: 87,273 MT gate cane). The Sanjivani S.S.K.L. was noticed to have dependent purely on gate cane (60%) suppliers followed by Chatt. Shahu S.S.K.L. (38%) and Malaprabha S.S.K.L. (7%). An equal importance and impartial treatment towards the gate cane suppliers certainly attracted the outside suppliers forever, which were learnt in case of the Chatt. Shahu S.S.K.L. because on an average, the ratio between locals and the gate cane suppliers was 62:38 during the study period.

On an average, the farmers in Goa could provide 58,607 MT of sugarcane per season, which was less even than 28 percent of Break-Even Point quantity requirements of Sanjivani S.S.K.L. and the same status was observed during the past three decades.

Correlation analysis between the sugarcane supply and the sugarcane price disclosed that the local (member) cane suppliers of Chatt. Shahu S.S.K.L. were observed to be more sensitive with the factory's pricing policy and hence, the co-efficient of correlation showed a positive (+0.75) result and the gate cane suppliers have shown a very weak negative correlation (-0.32), which indicated that any unfavourable pricing policy of the mill's management
certainly reduces the sugarcane supply from the members. Both the member suppliers and the gate cane suppliers of Malaprabha S.S.K.L. did not react much to the fluctuations of cane price and very weak negative correlations (-0.10 and -0.11) were observed between the price and supply trends.

Sanjivani S.S.K.L.'s local cane suppliers were observed to have a very weak positive (+0.02) correlation between the sugarcane supply and the sugarcane price. As against this, a weak negative correlation (-0.26) was observed in case of gate cane suppliers, which indicated that the local cane suppliers of Sanjivani S.S.K.L. have no feeling for the price hick since they have a limited supply capacity and confined attitude towards the sugarcane cultivation. Moreover no other competitors (gur and khandsari producers) influenced the supply trend in Goa. The gate-cane suppliers of Sanjivani S.S.K.L. full filled 60 percent of the cane requirements of the mill as the correlation result showed a negative sign and it indicated no relation between the cane price and the cane supply. Overall, there was no existence of correlation between sugarcane price and sugarcane supply.

(iv) Sugarcane Price: The Chatt. Shahu S.S.K.L. has paid on an average, Rs. 906 and Malaprabha S.S.K.L. has paid (Rs. 816) per MT to the locals as well as to the gate cane suppliers as per the recovery rates. The gate cane suppliers of Sanjivani S.S.K.L. have got higher cane price (Rs. 900) as compared to the local cane suppliers (Rs. 633). The Chatt. Shahu S.S.K.L. was observed to have paid the highest price to the locals and gate cane suppliers followed by the Sanjivani S.S.K.L. (paid only to the gate cane suppliers) and Malaprabha S.S.K.L. paid for both types of cane suppliers.
Neither Chatt. Shahu S.S.K.L. nor Malaprabha S.S.K.L. paid either the SMP or SAP to the farmers during 2002-03.

The comparative analysis revealed that the gate cane suppliers in Goa were observed to have received higher cane price benefits but they were deprived of certain benefits such as transport facility, harvest allowance, etc., which were given only to the local suppliers. The cane suppliers of Malaprabha S.S.K.L. were observed to have got higher price benefits as compared to the other selected mills even though the average recovery percentage was lower (10.62%) than the Chatt. Shahu S.S.K.L. (12.73%).

6.1.3 Operational Performance

(i) Production of Crystallized Sugar: All units have shown a wide fluctuation in the sugar production during the study period. The Chatt. Shahu S.S.K.L. has produced (mean value) 6,91,877 quintals of sugar where as the Malaprabha S.S.K.L. has produced 5,96,381 quintals of sugar and the Sanjivani S.S.K.L. 1,32,821 quintals of sugar.

The Chatt. Shahu S.S.K.L. was observed to have produced the highest number of bags, denoting the high degree production efficiency followed by the Malaprabha S.S.K.L. and Sanjivani S.S.K.L. The quantum of sugar production depends upon the availability of best quality and large quantity of sugarcane and the Chatt. Shahu S.S.K.L. was observed to have received the same during the study period.

(ii) Duration of Crushing Season: During the study period, the Chatt. Shahu S.S.K.L. crushed (mean value) 182 days; Malaprabha S.S.K.L. 154 days and the Sanjivani S.S.K.L crushed 101 days and the all India average
was 146 days. Among all the three units, Chatt. Shahu S.S.K.L. was observed to have topped in the number of crushing days followed by Malaprabha S.S.K.L and both were above the averages of States and all India average. So far as the Sanjivani S.S.K.L.'s performance was concerned, it was (27%) below the all India average indicating a poor cane procurement management.

During 1995-96, all the three units were noticed to have crushed for a maximum number of days due to a bumper crop of sugarcane. Duration of the crushing season was highly influenced by the cane supply trend prevailing in the region. If an unit does not get sufficient (above normal capacity) amount of cane to crush, the situation may prolongs the crushing period and the slow flow of cane supply may increase the number of gross days affecting the efficiency and productivity of the units.

(iii) Rate of Recovery: As far as rate of recovery was concerned the Chatt. Shahu S.S.K.L. has shown 12.73 percent followed by Malaprabha S.S.K.L. (10.62%) and the Sanjivani S.S.K.L. (9.63%). The Chatt. Shahu S.S.K.L. was observed to have achieved the highest rate of recovery followed by the Malaprabha S.S.K.L. recording above the three States and all India averages and the Sanjivani S.S.K.L. was found to be below the national average. The recovery rate of Sanjivani S.S.K.L. was found to have fluctuated with the quantum of gate cane supply during the study period. Chatt. Shahu S.S.K.L. and the Malaprabha S.S.K.L. have received high quality sugarcane and hence, the recovery rates were also high. The recovery rate of Sanjivani S.S.K.L. was very poor because of poor quality local sugarcane, containing
less than 9 percent sugar. The local farmers could not produce and supply good quality cane due to very nature of the topography in Goa.

(iv) Man and Machine Efficiency: Chatt. Shahu S.S.K.L. has shown a very high (mean value of 88%) degree of men and machine efficiency (this percentage was over and above the standard specified (84%) by the Bhargava Sugar Industry Enquiry Commission (BSIEC) and the Govt. of India 86 percent) followed by Malaprabha S.S.K.L. (83%) and Sanjivani S.S.K.L. (78%). But as per the plant set up standard specification of 1987 issued by the Govt. of India, only the Chatt. Shahu S.S.K.L. has shown above the standard. Malaprabha S.S.K.L. has shown higher efficiency (83% one percent more) as per the BSIEC (82%) standard and three percent less as per the central Govt. specification (86%). Even though Sanjivani S.S.K.L. is old and with out-dated equipments, it was able to extract 78 percent of sugar and that too by crushing low quality of sugarcane. Though it did not indicate high efficiency but certainly matched with its age-old technology and quality of cane.

Based on the analysis, Chatt. Shahu S.S.K.L. was observed to have achieved the highest degree of production efficiency followed by the Malaprabha S.S.K.L. and Sanjivani S.S.K.L. respectively. No sugar factory can extract cent percent sugar content from sugarcane because a small amount of sugar content goes as normal process loss.

(v) Capacity Utilization: All the three selected units began their venture with 1,250 MT Crushing Capacity Per Day (CCPD). In the course of time Malaprabha S.S.K.L. and Chatt. Shahu S.S.K.L. have increased their crushing
capacity from 1,250 MT CCPD to 2500 MT CCPD and later on 3,500 MT CCPD. When a sugar factory makes use of stoppage time (to be kept for cleaning) for production purposes, the capacity utilisation (time) exceeds its normal capacity, which is allowed over and above 20 percent.

Both Chatt. Shahu S.S.K.L. and Malaprabha S.S.K.L. were observed to have crushed 13 percent more than the normal capacity and reaped the benefits of over utilization of men and machines. Sanjivani S.S.K.L. also exceeded (124%) the allowable over utilisation limit of 20 percent. An increase in the crushing capacity from 2500 MT to 3500 MT per day opened the gateway to the gate cane suppliers of Chatt. Shahu S.S.K.L. and it was observed to have marched a large number of gate cane suppliers towards the mill after increase in the crushing capacity, which indicated that the gate cane suppliers did not want to wait in long queues since they come from a long distance.

Sanjivani S.S.K.L. has shown a higher rate of capacity utilisation because of heavy rush of sugarcane suppliers within a few numbers of days, which indicated lack of proper planning of sugarcane inflow management during the crushing seasons. The cane related diseases and bad monsoon were the two major factors affecting the sugarcane supply in terms of cane quality as well as cane quantity.

(vi) Total Number of Hours Crushed and Hours Lost: The manufacturing records of Chatt. Shahu S.S.K.L. showed the time lost was about 5 percent to the total time available for crushing during the study period; the records of Malaprabha S.S.K.L. indicated 10 percent and Sanjivani S.S.K.L. revealed 24 percent of time lost. The allowable ratio between total number of hours
crushed and the total number of hours lost is 10:1, which means 10 percent in case of sugar industry.

Chatt. Shahu S.S.K.L. was observed to have achieved a high degree of time management followed by Malaprabha S.S.K.L. On the other hand, the Sanjivani S.S.K.L. was observed to have not planned its material management properly because of the dominance of uncertain gate cane suppliers.

6.1.4 Financial Performance:

(i) On an average, the financial health of the selected co-operative sugar factories was affected by the similar types of problems as encountered by the sugar sector at national level viz., low profit percentage, accumulated sugar stock and huge interest burden on temporary borrowings.

(ii) Net profits to sales relations were observed to be very poor because the relation between these two was less than 0.001 percent in all the three selected units, which indicated poor performance in the profitability.

(iii) It was observed that the capital structure of all the units showed an upward trend indicating a healthy capital structure of all units.

(iv) It was evident from the analysis that the performance of previous year influenced the current year's profits and sales because half of the previous year's sugar production was sold during current year.
(v) Huge capital investment in modernization and automation was observed in the form of fixed assets, thereby the Z-scores of \( x_1, x_3 \) and \( x_5 \) variables of the Chatt. Shahu S.S.K.L. and the Malaprabha S.S.K.L. were found to have been reduced.

(vi) Chatt. Shahu S.S.K.L., one of the well-known healthy units in Asia has also shown a negative ratio of working capital during 2003-04 and also experienced heavy loss (Rs. 251.61 lakh) during 2002-03 because of reduction in the production due to poor monsoon and cane diseases.

(vii) Chatt. Shahu S.S.K.L was observed to have earned huge amount of Earning Before Depreciation, Interest and Tax (EBDIT) by realizing its sugar stock in the international market. During the study period of 10 years, Sanjivani S.S.K.L. has shown negative performance of EBDIT for four years, which indicated that the unit could not recover even basic indirect expenses.

(viii) Z-scores of Chatt. Shahu S.S.K.L. indicated that the unit was 'likely to become sick' for nine years and 'sick' for one year during the study period. Z-scores of Malaprabha S.S.K.L. indicated that the unit was 'financial good' for one year, 'likely to become sick' for seven years and 'sick' for two years during the study period. So far as the Sanjivani S.S.K.L. was concerned, Z-scores indicated that the unit was 'financially good' for four years, 'likely to become sick' for three years and 'sick' for three years during the study period.

(ix) Sugarcane price competition among the units in and around the Belguam district affected the financial health of Malaprabha S.S.K.L. The unhealthy cane
price competition also taught a good lesson to the member farmers of Malprabha S.S.K.L., who have approached other sugar mills being the registered members of mill and have not received sales proceeds in time from the mills where they supplied sugarcane.

(x) The Sanjivani S.S.K.L. was observed to be a starving unit. Its productions, profits and survival depended upon the attitude of gate cane suppliers. Out of 31 years of its business venture, the unit earned profits only during seven years. During 1995-96 and 1996-97, it earned maximum profit of Rs.95 lakh and Rs.92 lakh respectively whereas the maximum profit earned by Chatt. Shahu S.S.K.L was Rs.14.94 lakh (2000-01) and Malprabha S.S.K.L. was Rs.2.46 lakh (2001-02) during the study period.

(xi) Sanjivani S.S.K.L. was under the patronage of Government of Goa, which allocated uninterrupted supply of funds to make mill's losses good, hence, the total debts and equities got diluted.

(xii) Chatt. Shahu S.S.K.L was observed to have maintained a high degree of financial consistency followed by Malprabha S.S.K.L. and Sanjivani S.S.K.L. since the Co-efficient of Variations were 6.09 percent, 19.09 percent and 46.42 percent respectively.

(xiii) On an average, all the selected units have fallen under 'likely to become sick category' according to the standard specified in Edward Altman's Z-Score Model because the ratios of net profits to net sales and debts and equities of the selected units were observed to be very weak.
Based on all these analysis, so far as the financial performance was concerned, Chatt. Shahu S.S.K.L. has shown the best performance in terms of consistency, better performance by Malaprabha S.S.K.L. and satisfactory performance by Sanjivani S.S.K.L.

6.1.5 Sugarcane Growers' Profiles and Problems:

(i) On an average 15 percent of the total number of farmers were young, 41 percent fall under the middle age group and 44 percent of the farmers were old in the selected units. More number of adult members from each farmer's family in Kagal taluka was observed to be directly engaged in agriculture activities as compared to the other two selected units.

(ii) M.K. Hubli (Malaprabha S.S.K.L.) farmers' educational level was observed to be higher than the other two selected units. It was also evident from the survey that the educational level of other family members (spouses and children) also was observed to be higher as compared to the other two selected units. Chatt. Shahu S.S.K.L.'s farmers were found to have not given much importance to education. Low level of education among the farmers' community certainly a set back that affected directly the agriculture process and production and indirectly the progress of the sugar mills.

(iii) Ten percent of the farmers in Kagal (Chatt. Shahu S.S.K.L.) taluka were found have earned more than Rs.4 lakh per annum by cultivating sugarcane crop and none of the farmers from M.K.Hubli area and from Goa were found to have earned more than Rs.4 lakh. More than 50 percent of the farmers in
Goa were found to have earned less than Rs.50,000, which indicated a very poor income earning performance by a large group of farmers in Goa.

(iv) The farmers of Chatt. Shahu S.S.K.L. (97%) and Malaprabha S.S.K.L. (93%) were observed to have enjoyed sufficient irrigation facilities as compared to the farmers of (59%) Sanjivani S.S.K.L. But the Malaprabha S.S.K.L.’s farmers complained (during personal interactions with them) about the shortage of water supply and it was because of the water supply through canals purely depends upon quantum of water reserve that again depends on quantum of rainfall during monsoon in the area. Due to topography of the land in Goa region, 50 percent of the agriculture land is unsuitable for cultivation because of that the farmers prefered to plant cashew trees on hill slopes and rocky areas.

The farmers of Chatt. Shahu S.S.K.L. and Malaprabha S.S.K.L. were found to have reaped higher yield due to high degree of soil fertility in the region as compared to the yield gained by the farmers in Goa.

(v) The survey revealed that Chatt. Shahu S.S.K.L. and Sanjivani S.S.K.L. were concerned, about 25 per cent of the farmers held more than 5 acres of land and in case of Malaprabha S.S.K.L. it was 50 percent, indicating a large number of the farmers in M.K.Hubli taluka having owned economic size land for sugar cane cultivation.

(vi) Besides sugarcane cultivation, a large number of farmers in Kagal taluka were found to have cultivated maize and oil seeds. The farmers of Malaprabha S.S.K.L. were observed to have cultivated rice and the farmers in
Goa were observed to have given equal importance to cultivate rice, fruit, vegetable and cashew nuts. All most all the farmers were found to have cultivated one or the other crop.

(vii) More than 80 percent of the farmers (in all the selected units) were observed to have used both the chemical and the cattle manure as fertilizer in their fields, which indicated that the cane cultivators prefered to use both types manure.

(viii) A large number of the farmers of Chatt. Shahu S.S.K.L. were observed to have tractors (83%) and bullock carts (73%). In case of Malaprabha S.S.K.L., 40 percent of the farmers were observed to have tractors and 33 percent of the farmers have bullock carts. The farmers of Sanjivani S.S.K.L. were found to be not financial sound to buy and maintain tractors (only 7%) as compared to the other two selected units.

(ix) A large number of the Chatt. Shahu S.S.K.L. farmers (95%) and Sanjivani S.S.K.L. farmers (83%) felt that an increase in the cost of cultivation and decrease in profit margin (because cane price did not increase proportionately) were the main cause for reduction in the interest in agricultural activities among the young farmers. They also felt that Kagal taluka was just 20 km away from Kolhapur, (a commercial centre) where a plenty of job opportunities attracted their grown up young generation. The farmers in Goa felt that the availability of any salaried job will provide a guaranteed income to their sons and daughters. This attitude of the farmers created lethargy towards agriculture activities among the young generation.
More over the agriculture in Goa many times depends upon uncertain factors like monsoon and other factors. A decrease in profit margin was another major reason that was expressed by the majority of the farmers of the selected units.

Based on the analysis, it is concluded that a increase in the cost of cultivation and decrease in the profit margin were observed to be the two major causes for reduction in the interest in agricultural activates among the young farmers.

(x) The farmers of M. K. Hubli and Goa were faced with an acute shortage of additional work force in their fields (observed by allotting ranks to the field problems). An insufficient water supply was observed to be the second major problem of these farmers followed by financial problem. The farmers of all the units (average 98%) were found to be unhappy with the prevailing sugarcane price policy of the Govt. and sugar mills.

(xi) The large number of farmers (93%) of the Chatt. Shahu S.S.K.L. have approached Primary Agricultural Co-operative Society (PACS) or / and invested their own savings (77%) in cane cultivation. The farmers of Malaprabha S.S.K.L. have approached PACS (67%), the nationalised banks (67%) and made use of their own savings (30%). The farmers (43%) of the Sanjivani S.S.K.L. invested their own savings and 33 percent of them approached either to the nationalised banks or the co-operative banks.

The analysis showed that the Primary Agricultural Co-operative Societies (PACS), nationalised banks and the farmers' own savings were found to be the three major sources of agricultural finance.
(xii) A large number of the farmers of Kagal and M.K. Hubli area were observed to be in need of less amount of loan as more than 75 percent of the Chatt. Shahu S.S.K.L. and the Malaprabha S.S.K.L. were observed to have applied for an amount less than Rs.50,000 loan. The financial institutions around M.K. Hubli area were observed to have explained in detail to the farmers about the quantum of loan available and various provisions laid down by the sanctioning authority and hence the ratio between the amount of loan applied and the amount of loan sanctioned was 1:1. The range (minimum and maximum amount) of loan applied for was Rs.15,000 to Rs.3,00,000. The farmers' agricultural borrowing scene in Goa was slightly different, 40 percent of them asked for less than Rs.50,000 loan, and an equal number of the farmers were found to have applied for loan in between Rs.50,000 and 1 lakh; the range of loan applied was in between Rs.20,000 to Rs.2 lakh. On an average the farmers in Goa were found to have got 90 percent of their loan requirements.

(xiii) So far as the factors prevented the farmers from visiting banks and PACS were concerned, high rate of interest and not getting the loan in time were found to be the two main causes of the farmers of Chatt. Shahu S.S.K.L.; there was no need of bank loans observed to be the only reason expressed by the farmers of Malaprabha S.S.K.L.; and unclear title of the land, delay in sanctioning of the loans, the high rate of interest and lengthy loan procedures were the multi-dimensional problems were found to have faced by the formers in Goa.
The slip boys of Chatt. Shahu S.S.K.L. were observed to have not (100%) taken any interest in providing cane cultivation guidance to the farmers. The agriculture department (100%) and slip boys (100%) of Malaprabha S.S.K.L. were found to have played an effective role in imparting cultivation knowledge to the needy farmers. Three fourth of the total number of farmers in Goa were found to have received co-operation from all the three concerned caretakers viz., mill's agriculture department, slip boys and Govt. agriculture departments.

On an average, the degrees of co-operation expressed to the farmers by the three concerned caretakers was observed to be very good in Malaprabha S.S.K.L. followed by Sanjivani S.S.K.L. and Chatt. Shahu S.S.K.L. respectively.

Cent percent of the Chatt. Shahu S.S.K.L.'s farmers were found to have used factory transport services to transfer sugarcane from fields to mill followed by the Sanjivani S.S.K.L. (83%) and Malaprabha S.S.K.L. (80%). This clearly speaks a continued trust and faith of the farmers in their respective sugar factories. On an average, 88 percent of the farmers preferred to make use of factory transport service.

The management of Chatt. Shahu S.S.K.L. was found to have gained a high (94.6%) degree of confidence by providing suitable seeds, quality fertilizers and pesticides to their member farmers followed by the Sanjivani S.S.K.L. (70%) and Malaprabha S.S.K.L. (56.6%). The agriculture department of Malaprabha S.S.K.L. was observed to have provided low quality fertilizers to the sugarcane growers.
(xvii) The management of Chatt. Shahu S.S.K.L. was found to have not arranged any study tour and field experiments for their farmers. Similarly the management of Malaprabha S.S.K.L. was found to have ever thought of seminars, workshops and festivals for the farmers. On the other hand, cent percent of the farmers in Goa were found to have attended the farmers’ meetings. This denoted that the awareness level of the Chatt. Shahu S.S.K.L. and the Malaprabha S.S.K.L. farmers to the latest developments in terms of methods of cultivation, seeds, fertilisers etc., was found to be poor and this will certainly affect the efficiency and productivity of the concerned sugar mills

(xviii) More labour requirement, limited land holding and additional cost and investments were found to be the major constraints for all the farmers while adopting the new cultivation techniques and technologies in sugarcane cultivation.

Further more, findings of the study proved the set hypotheses viz., the sugarcane procurement cost component dominates in the total cost and low price for sugarcane, high cultivation cost and insufficient water supply are the major problems of the farmers, as true and the existence of correlation between sugarcane supply and sugarcane price was as the other hand disproved.
6.2 SUGGESTIONS

The undertaken study on the working and performance of the selected sugar co-operative factories exhibited some deficiencies and weaknesses in their performance. Based on the finding of the study, the following policy suggestions are made for the improvement of their performances.

6.2.1 Sugarcane Price

- A clear descriptive chart of Statutory Minimum Price (SMP) with proportionate bonus payable as per recovery rate needs to be given to all the sugarcane growers by the sugar factories as soon as the Government of India notifies the SMP. Based on that farmers can compute tentative revenue for their cane proceeds. This kind of knowledge sharing system will certainly improve the quality of sugarcane because every farmer will try to improve the sugar content in sugarcane crop and the farmers will also take more interest in adopting scientific methods of sugarcane cultivation.

- There is no link among Statutory Minimum Price (SMP), sugarcane production in the country and the demand for sugarcane. The Govt. of India should declare SMP based on the estimated sugarcane production in the coming season after considering monsoon and other factors (cost of cultivation, diseases affected in the region, etc.) that already affected the sugarcane crop so that the farmers can get the benefits of short supply of sugarcane.
The farmers were observed to be not happy with the sugarcane price policy, and as a result, the farmers may likely to switch on to other crops that will fetch them more income in future and forever. Hence, the Govt. of India, apex bodies of sugar and the mills of the concerned regions must come out with suitable sugarcane price policy, which will benefit to both mills and farmers.

The farmer members of Chatt. Shahu S.S.K.L. were observed to be more sensitive to the cane price, it is advised to frame a 'Farmers' Favour Price Policy' as framed by the Malaprabha S.S.K.L. (which has given more benefits to the farmers) because Chatt. Shahu S.S.K.L. also got high-grade cane from the members as well as from the non-members. Therefore, it is advised to follow 'High Price for High Recovery' policy approach so that certainly mill can maintain and attract the gate cane suppliers.

The units in and around the Belguam district were observed to have been following unhealthy competition like 'Price- Push and Cane-Pull' to attract sugarcane suppliers of other units. In this regard, keeping in mind the long term interest of all the sugar manufacturing units, the units are advised to adopt certain good practices to attract gate cane suppliers, such as, increase in the capacity of the mills (more the crushing capacity lesser the time to wait in queue); unbiased treatment (treating members and the non-member suppliers on equity basis); and in time payment (cane bill payment within two instalments one within fifteen days). These practices will in future help to overcome such unhealthily competitions and will bring an improvement in the performance of the units.
A large number of farmers of Malaprabha S.S.K.L. were observed to have accused about the declining trend in the support from Government (83%) and sugar mill (30%) day by day. Both the Government of Maharashtra and sugar mills need to think over to bring back the farmers’ interest towards agriculture. A proportionate increase in cane price with the rate of inflation will always keep compensating an increasing cost of cultivation and a decreasing profit margin. Hence, it is advised to link sugarcane price with the increasing general price index of the nation.

6.2.2 Sugar Production

- A plant modernization and automation is regarded to be one of the key factors, which can increase efficiency of the units. In this context, the Sanjivani S.S.K.L. and the Malaprabha S.S.K.L. are advised to go for advanced production technology so as to reduce the per bag cost of production. Towards this end, plant modernization policy as adopted by the Chatt. Shahu S.S.K.L. may be thought in case of both the units.

- The administrative cost of the Malaprabha S.S.K.L. was noticed to be higher as compared to the administrative cost of other two selected units. Therefore, this unit is advised to analyse the sub cost-components of administration and accordingly initiate certain measures to monitor the administration cost so as to minimise spending on the administrative overheads.
Chatt. Shahu S.S.K.L. was found to have saved a lot on salary and wage bill but the same cost burden popped up in the per bag cost in the form of depreciation and interest on key loan. This showed that the top management has not given a thought to the 'Cost and Benefits' effect on the total cost before making new heavy investments. Hence, the sugar mills are advised to prepare their heavy investment plans keeping in view the 'Cost and Benefit' effect on the total cost in the near future.

- Over utilisation of crushing capacity beyond a particular limit is not advisable and hence in case of Sanjivani S.S.K.L., it is advised to spread the crushing load throughout the crushing season by developing and implementing a proper sugarcane cutting order plan containing a database of farmers, area, and variety of sugar cane planted, date of planting and date of maturity will certainly address the problem of over loading.

- Sanjivani S.S.K.L. was observed to have been facing inherent problems of low quality sugarcane and insufficient quantity of sugarcane supply. In order to overcome the said problems, it is advised to go for a high yielding sugarcane variety with high degree of sugar contents, which suits agro-climatic conditions of the region so as to enhance sugarcane productivity on the one hand and bring down the cost of sugar production on the other. Converting the gate cane suppliers as registered members is another means to ensure a guaranteed cane supply to the factory.
The time lost for cleaning and miscellaneous purposes is considered to be inevitable in all the units but the hours lost due to cane shortage and mechanical losses can be controlled with the help of proper cane cutting order planning and proper management of machines and spare parts.

6.2.3 Interest Burden

All the selected units were found to have paid a large amount of interest on key loans, which indicated a crunch of mill's earning goes without proper planning that can be plugged in certain ways. The factory can make use of its internal source (reserve) to pay off the sugarcane bills of cane growers instead of borrowing from co-operative banks, so that the interest burden on key loan can be reduced.

Management of the mills also can request the wealthy farmers to keep their money as fixed deposits in the factory itself, which can be given as loan to the needy farmers. So that factory can reduce its interest burden on key loans, which is borrowed from co-operative banks to maintain the sugar stock. Factory can announce a little bit higher rate of interest on deposits and little bit lower rate of interest on landings as compared to the interest rates of co-operative banks so as to attract both the parties.

The sugarcane growers generally borrow from financial institutions to buy their basic requirements such as seeds, pesticides, fertilizers, etc. If factory itself takes initiative to meet such basic requirements of the farmers, then the
cane growers need not approach any financial institutions. The farmers and the mills can share the benefits of large scale buying from suppliers.

Majority of the farmers in Goa opined that they were not getting loan in time. Hence, the authorities of sugar mills and the concerned Govt. agencies need to take necessary steps towards this end so as to enable the farmers to avail the financial assistance without any delay. Another best solution to this problem is, sugar mills can open their own Farmers' Co-operative Credit Societies so that the member farmers can approach their own credit society instead of going to the different banks and moneylenders for their agriculture credit needs. Instead of applying for key loan, the deposits of farmers can be utilised for this purpose.

- A huge amount of interest was observed to have been paid to hold sugar stock because of the government policy and therefore the government should take care of holding sugar stocks in public warehouses. If it is not possible to hold entire stock, the government can hold at least levy quota, which belongs to Public Distribution System. This will reduce the warehouse cost and stock holding cost of every sugar mill.

6.2.4 Man Power Management

- Chatt. Shahu S.S.K.L. and Sanjivani S.S.K.L. were observed to have run their operations with the manpower below the number of employees specified by the commissioner of sugar as per their capacity. The number of employees
employed in Malaprabha S.S.K.L. was found to be more than the standard stated; the ratio between the actual workforce and the standard specified was 1750:1299. Hence, it is advised that the Malaprabha S.S.K.L. should cut down its additional work force by making a thorough study on manpower requirement within the units and comparing with the manpower employed by the of other units.

- Sanjivani S.S.K.L. is not in need of seasonal employees because the factory does not have distillery unit. These seasonal employees are also paid in off-season. It is advised that the Sanjivani S.S.K.L. may introduce Voluntary Retirement Scheme (VRS) for its tired workers so that the wage bill can be cut down to the extent of not less than Rs.1.5 crore (estimated) per year. The required manpower can be appointed during the crushing season on temporary basis.

6.2.5 Sugarcane Cultivation and Supply

- Today the farmers are more interested in high yielding variety of sugarcane, hence the sugar mills must try to help the farmers in getting high yielding variety of seeds. Over and above, the farmers need to be imparted the knowledge of scientific methods of cultivation.

- Malaprabha S.S.K.L. was observed to have shown a very low performance so far as yield per hectare is concerned in spite of the unit is being in the high performance zone. Therefore, it is advised to the mill's agriculture department to conduct extensive survey of farmers to ascertain the reasons for low
performance in the fields, so as to initiate necessary steps to improve the field performance.

- Malaprabha S.S.K.L. was observed to have had a large area of sugarcane fields under its jurisdiction but almost 50 percent of the sugarcane-cultivated fields have not registered by the sugarcane growers on the members of role. Therefore, the mill’s management is advised to put its efforts to gain the confidence of the unregistered (45%) sugarcane growers and get them as registered member suppliers. An action plan towards this end will fetch a large amount of dividend to the unregistered cane growers as well as to the mill.

- The management of Sanjivani S.S.K.L. should convince its farmers the causes and effects of continuous short supply of local sugarcane to the factory. The change in the farmers’ attitude may change the destiny of Sanjivani S.S.K.L., to some extent. The farmers in Goa should try to grow sugarcane to the tune of 2,00,000 MT per year and expand the cane cultivation area at least to the tune of 5,000 hectares (at present rate of yield 52.6 per hectare) so that the mill can get BEP quantity of cane from local suppliers to achieve ‘No Profit No Loss’ target. Another alternative to this problem is converting the gate cane suppliers into member suppliers so that guaranteed cane supply can be assured.

- The survival of Sanjivani S.S.K.L. was dependent on gate cane supplier (60%), hence, the unit is advised to maintain a good relationship with them by framing a ‘well-nit policy’ so as to over come the problems of uncertainty of
gate cane supply and short supply of sugarcane forever, which can be achieved by converting the gate cane suppliers into registered member; giving equal treatment (which will avoid confusion in the minds of local suppliers also) in terms of concessions; and by attracting large numbers of sugarcane growers not only from Belgaum district area but also from costal belt of North Kanara district. If the management of mill does not take any action in this regard, Sanjivani S.S.K.L. will not get gate cane in future because the farmers of the North Kanara district of Karnataka are planning to establish a separate sugar mill at Joyada taluka, which is a centre for all the gate cane suppliers of Goa. They may likely to march towards the new factory in future to get the benefits of higher recovery rates. This is major threat before the Sanjivani S.S.K.L. in particular and the farmers of Goa in general. It is high time to attract gate cane supplier permanently since they are not sensitive with the price factors.

During an interaction with the farmers, it was observed that the farmers' knowledge about the recent developments in sugarcane cultivation in terms of mechanised farming, seeds, fertilisers and pesticides was poor. Therefore, in the interest of the sugar mills, it is necessary to organise workshops / seminars/ study tours in those areas so as to enable their awareness in the recent developments.

It is evident form the field survey of the farmers of Malaprabha S.S.K.L. that they did not have trust in seeds and fertilizers provided by the mill and a similar view was expressed by the farmers in Goa. Against this background, both the
units are advised to initiate appropriate measures, which can promote confidence among the farmers. Both the units should analyse the actual causes behind the no confidence in the hearts and minds of the farmers.

- Whenever the sugar factories want to introduce new cultivation techniques and technologies, the factory management is advised to create required environment so that the farmers can easily adopt them without much more difficulties. The required environment should be introduced step by step, such as discussing the pros and cons of introducing new cultivation techniques and technologies, requirements in the form of man, material, money; taking the sugarcane growers into confidence by arranging meeting, workshops etc.; ascertaining the number of farmers who are ready to accept; and providing them training in the factory's cane field.

- During personal interaction with the agriculture officers of the selected units, it was revealed that the officers faced problems while convincing new technology and planting methods to the middle aged and aged farmers and also expressed their happiness that the farmers of less than 40 years old were more co-operative and quick in adopting new methods of cane cultivation. The agriculture officers of the selected units are advised to take the cane growers into confidence by arranging meetings and workshops.

- Chatt. Shahu S.S.K.L. has a good number of young farmers in their members' roll and hence, the factory can make use of such young generation to impart
knowledge of new technology and new methods of sugarcane cultivation in order to reap high yield in the fields and high production in mill.

* Waiting in a long queue is one of the factors affected the gate cane suppliers, and hence, to overcome this problem all the mills are advised to prepare a systematic and pre-planned members and gate cane suppliers list as a part of material management planning. Neither the sugarcane growers alone nor the mill's agriculture department can overcome the problem of quality and quantity of sugarcane. It needs reciprocal efforts and hence, regular meetings with farmers may improve the quality and quantity of the sugarcane supply.

6.2.6 Problems of Sugarcane Growers

* It is observed that all the farmers of select units were under the clutches of three major problems *viz.*, shortage of labour, insufficient water supply and deficiency of finance. It may be difficult on the part of the sugar mills to supply additional workforce to the farmer members but certainly the mills can take up the action plan to solve the farmers' problem of finance (already discussed) and water supply to some extent.

* So far as the water problem is concerned, mills can also think of what are other water sources available or can be developed in the region. Many sugar mills have taken initiative to rejuvenate old lakes, wells, some initiated to dig additional tube wells and wells. Irrigation departments have taken initiative to impart knowledge about rain harvesting, drip irrigation and new methods of cane planting to reduce the water requirements such as circular style etc.
A large number of farmers of Chatt. Shahu S.S.K.L. were observed to have expressed their unhappiness about the mill's sugarcane weighing procedures and unauthorised deductions, which indicated red signal for the management of Chatt. Shahu S.S.K.L. therefore, it is advised to the management to bring necessary changes to check malpractices in cane weighing, which can strengthen the loyalty of the farmers towards the mill, else it may affect the goodwill of the mill in future.

- The banks must explain in detail to the farmers about various procedures laid down by the sanctioning authority and the quantum of agriculture loan can be applied under the various schemes, so that the farmers can avoid approaching other unreliable sources. This can be done through the farmers meeting and agriculture loan melas.

- A large number of farmers in Goa were found to have not availed the loans in time. Hence, it is advised to the bankers in Goa, to come out with concrete solution such as arranging workshops on agriculture loans and schemes; imparting knowledge about the procedures to be followed to get the loans; and explaining the power of sanctioning authority to avoid the doubts in the minds of farmers. A few farmers of Kagal taluka never visited banks and some of them did not get co-operation from bank employees. Looking at the background, it is advised to the mill's management and bank authorities to arrange bank awareness programmes for farmers.
The farmers of Chatt. Shahu S.S.K.L. were found to be neither properly informed nor properly guided either by the slip boys or by the Government Agriculture Department and hence, the management of Chatt. Shahu S.S.K.L. should take note of it and adopt an action plan such as arranging workshops or meetings at village level from time to time to the farmers.

A large number farmer of Malaprabha S.S.K.L. were found to have no trust in seeds and fertilizers provided by the mill and a few farmers in Goa also felt a similar view. Hence, both the units need to analyse the actual causes behind 'No Confidence Concept' in the hearts and minds of the farmers through an informal interaction with them and accordingly initiate necessary measures to build trust and confidence in the farmers.

6.2.7 Financial Performance

All the units were observed to have very low (less than 0.003 %) return ratio of net profits to net sales, which can be improved by reducing interest burden on key loan (already suggested). As soon as the farmers receive their cane bills, they spend a part of it and the rest they keep in banks. These farmers may be convinced to keep their earnings in the factory itself as a deposit instead of keeping it in other banks. In India, the farmers demand their sugarcane bills immediately due to their bitter experience with the factories in the past. Management can take them into confidence and the differences can be sorted out by giving them a full proof and guaranteed assurance of payment on demand.
No unit was observed to have prepared its financial statements in a uniform format, hence, it is very difficult to make intra-firm or inter-firm comparisons. It is advised to follow a uniform format for all types of cost statements, manufacturing reports and annual reports. The federal sugar authorities can discuss this matter during annual conferences and workshops and take a policy decision on these matters. This is the right time to introduce uniform costing, financial and management reporting systems in the entire sugar industry since the sugar industry is already influenced by the galloping impact of globalisation. Uniformity may give new look to sugar cooperatives.

6.3 Unexplored Areas In The Field Of Sugar Sector For Further Research

The sugar sector research works can be broadly classified into six major categories, viz., sugarcane; sugarcane cultivation; sugar production; marketing of sugar and consumption pattern; by-products of sugar industry; and sugar polices of Government.

So far sugarcane is concerned a large number of empirical studies have been under taken and going on in various Sugarcane Research Centres in India. Many research studies have been also done on cane cultivation with special references to the problems and prospects of sugarcane growers. A few engineering scholars have modified the sugar production technology to improve the extracting capacity at low cost in consultation with cost experts. The areas like marketing of sugar and consumption pattern, by-products of sugar industry,
sugar polices of Government, etc., are yet to be deeply penetrated by the research scholars.

If one wants to pursue research in sugar sector, one can study the following areas, which are yet to investigated:

i. So far no one has prepared sugarcane mapping based on a thorough research study, which may help sugarcane cultivators and sugar mills. Most of the research on sugarcane undertaken by the Sugarcane Research Centres in India do not get wide publicity hence, such research work do not reach in the fields of the cane cultivators in India. Such research piece should contain various sugarcane varieties available, which is the suitable region for such varieties to cultivate and yield details. The title of the research may be ‘study of sugarcane with special reference to sugarcane mapping (India or World)’

ii. ‘Study of By-products of sugar industry with special reference to Ethanol production and its impact on Indian Economy’ can be analysed in the light of increasing demand for oil and role of ethanol in controlling / stabilising Indian economy.

iii. Some of the sugar mills produce raw sugar to save the cost of chemicals, which is a heavy burden for them, and such raw sugar has good demand in many countries (e.g. China). The subject can be analysed under title ‘the policy adopted by the Indian sugar mills to produce raw sugar and its impact on Indian Economy’.

iv. It is observed that there is no uniformity followed by the sugar mills in India in keeping their accounts, which hinders the inter-firm and intra-firm comparison process. An interested research scholar can evaluate the accounting
system of Indian sugar mills under the title 'evaluation of accounting system followed by the Indian sugar mills' and also he can develop and propose a new standardised accounting system for the Indian sugar mills.

v. 'Problems and prospects of sugar industry in major sugar producing countries in the world - a comparative study of select (Five/Ten) major sugar producing countries'.

vi. 'The Indian Government policies towards the sugar sector and its impact on Indian economy' can be analysed in the light of - sugarcane price policy, control policy, etc.

vii. Many Indian sugar mills are exporting sugar and also selling sugar within the country under their brand name. More than 50 percent of sugar is used as raw material in food processing industry in India. Based on this back ground one can study 'the marketing of sugar and consumption patter in India'.

viii. The share beet sugar (USA produces) is 25 percent of the total sugar production in world. Nobody has under taken any study to 'compare the cane sugar and beet sugar production'.

ix. One can evaluate the performance of three different business organisations, which are in the same field (i.e. sugar production) which can be studied under the title 'the performance evaluation of co-operative sector, private sector and public sector sugar mills - A comparative study of select mills.'

x. 'The role of Primary Agricultural Credit Society (PACS) in sugar cane cultivation' this can be studied by selecting a few sugar mills and PACS with in the jurisdiction of such mills.