CHAPTER– 5
FINDINGS
AND
SUGGESTIONS
Chapter – 5

Findings and Suggestions

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Detail</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1</td>
<td>Introduction</td>
<td>249</td>
</tr>
<tr>
<td>5.2</td>
<td>Findings</td>
<td>249</td>
</tr>
<tr>
<td>5.3</td>
<td>Suggestions</td>
<td>262</td>
</tr>
<tr>
<td>5.4</td>
<td>Conclusion</td>
<td>265</td>
</tr>
<tr>
<td>5.5</td>
<td>Scope for the Future Research</td>
<td>266</td>
</tr>
</tbody>
</table>
Findings and Suggestions

5.1 Introduction

A decisive analysis of the performance of selected six sugar co-operatives, the general profile of the selected sugarcane growers and the problems faced by the sugarcane growers of the selected sugar co-operatives in South Gujarat was made in the preceding chapter of the present thesis. The present study “Problems and Prospects of Sugarcane Growers and Co-operative Sugar Industry in South Gujarat” has brought to fore many interesting observations throwing light on the conditions of sugarcane growers and performance of the selected sugar co-operatives. The present chapter derived major findings of the study and made some recommendations pertaining to problems faced by the sugarcane growers and for improvement of the performance of the sugar co-operatives in South Gujarat and furnish the conclusions that are drawn from its findings. The possible areas for further research are also covered in this chapter.

5.2 Findings:

The major research findings obtained are being summarized in this chapter. The findings are classified into four categories viz. Indian Sugar Industry, Sugar Co-operatives in Gujarat, Sugarcane Growers and selected sugar co-operatives under the study.

5.2.1 Findings Related to Indian Sugar Industry

(1) During the last ten years acreage under sugarcane cultivation and sugarcane production in India had declined at Compound Annual Growth Rate (CAGR) of -0.42 per cent and -0.11 per cent respectively.

(2) India’s sugar production has decreased in the last ten years at CAGR of -0.90 per cent and demand for sugar in domestic market has increased continuously at CAGR 0.68 per cent. Sugar production was poised to rebound in 2010-11, as a result of
more quantity of sugarcane delivered to sugar industry. Higher support price declared by the government and open-market prices were instrumented in stimulating plantings and improve incentives to the cane growers during last six years, India has been continuously producing surplus sugar; which has converted negative CAGR into positive CAGR (1.28 per cent).

(3) The duration of crushing season in Gujarat (161) were more than the all India average duration (135) of crushing season in 2015-16.

(4) Sugar companies have been established in large cane growing states like Uttar Pradesh, Maharashtra, Tamil Nadu, Karnataka, Punjab and Gujarat. These six states contribute more than 85 per cent of the total sugar production in the country.

(5) At present, sugar attracts specific central excise duty of ₹ 71 per quintal plus a sugar cess of ₹ 124 per quintal, which translates to ad valorem rate of more than 6 per cent. Including incidence on account of CST, Octroi and Entry Tax, the present total tax incidence would work out to more than 8 per cent. As against this, the GST rate on sugar is only 5 per cent, which is 3 per cent less than present incidence of taxes.

5.2.2 Findings Related to Sugar Co-operatives in Gujarat

(1) Gujarat is the second largest sugar producer in the co-operative sector among the states, contributing 3.95 per cent of sugarcane production and 10.81 per cent of total sugar production in the country during the year 2014-15.

(2) The co-operative sugar industry of South Gujarat has employ about 1.6 lakh labourers for harvesting of sugarcane and more than 4 lakh farmers and family members directly or indirectly depend on this industry.

(3) The basic factors that determine the concentration of a large number of co-operative sugar factories particularly in South Gujarat region of Gujarat state are suitable
agro-climate conditions, irrigation and transportation facilities, availability of labour and raw material, local leadership of the cane growers and government policy.

(4) Gujarat was almost at an equal level with all India in respect of per hectare sugarcane yield with 70.8 tons per hectare, as against the all India per hectare yield of cane of 71 tons in 2015-16. However it could also be seen that the per hectare sugarcane yield in Gujarat is far behind the yield obtained in Tamil Nadu, Maharashtra, Karnataka etc., where the cane yield per hectare ranged between 73 to 103 tons.

5.2.3 Findings Related to Sugarcane Growers

(1) In the agriculture system it has observed it is the male members of the families who are engaged in farming activities; because in the rural areas, a majority of the females work as housewives only. It is quite clear that out of total respondents investigated of this study overwhelming majority (93 per cent) of them were males whereas about 7 per cent were found to be females.

(2) The average age of respondents was found to be 53.13 years, whereas it was observed that the youngest and the oldest respondents’ were 21 years and 97 years old respectively. It was also observed that nearly the 50 per cent of respondents were between 51 to 60 years of age, whereas only one per cent of the respondents were found to be in 20 to 30 years of age group. Nearly the one fourth of the respondents belonged to the age group of 41 to 50 years and 18 per cent were above 60 years of age group. So it can be concluded that the young generation is not that much involved in agricultural activities, whereas elder respondents are shouldering the responsibility of the farming activities.
The average family size of the respondents was found to be about 6 (5.94 actually). There were on an average about 3 males and 3 females in a family. Another interesting observation can be made that there were maximum 11 female members and 8 male members were found in one of these families. The sex ratio was found to be 929 i.e. 929 females per 1000 males. This is quite reassuring compared with the sex ratio of the state.

Out of the total illiterate respondents the maximum respondents i.e. 55.6 per cent were from the Narmada sugar factory, whereas 33 per cent and 11 per cent of the respondents were found to be illiterate in the Madhi sugar factory and the Valsad sugar factory respectively. Thus, these two areas viz. Madhi and Narmada contributed about 89 per cent of the total illiterate farmers in the sample. It has observed during the study that these areas are basically tribal area and proportion of education is very less which responsible for high rate of illiteracy. So, a huge disparity is found within the areas, as far as illiteracy is concerned.

Out of the total respondent farmers 12.9 per cent were the marginal farmers and more than one third were the small farmers. The proportions of the semi-medium and medium farmers were 28.1 per cent and 17.5 per cent respectively. Out of the total respondents only 5 per cent did fall in the large farmers’ group. So it can be concluded that a majority of the total respondents constitute of the small and semi-medium farmer groups.

Apart from sugarcane, various other crops were grown by the selected sugarcane growers. Majority of the selected respondents had cultivated sugarcane alongwith paddy and vegetables.

Nearly three fourth of the respondents supplied water to their fields through pipe lines whereas one fourth of them had used other methods like sprinkler system, drip
irrigation methods etc. So, one may infer that a majority of farmers included in the sample did not use advanced techniques of irrigation.

(8) It has observed that 79.2 per cent of the respondents did not have soil health card and only 20.8 per cent acknowledged having this card. So it may be concluded that a majority of the selected farmers were not aware or conscious about having the soil health card. Out of the total respondents 50.2 per cent had no information about such type of card issued by the government, 36.5 per cent were not interested about having card whereas 13.3 per cent admitted that lack of cooperation from government was also one of the reasons for not having soil health card. Around 50 per cent of the respondents were interested in having soil health card, but due to lack of information or lack of government cooperation they did not obtain the benefits of this card.

(9) Out of the total respondents 61.7 per cent respondents had Kisan credit card while 38.3 per cent did not have it. The association between the level of education of the respondents and holding of the Kisan credit card was examined with chi-square test. The calculated value of chi-square was 13.456 and its associated significance value was 0.036, which was found significant at 5 per cent level. So it may be concluded that statistically significant association existed between the level of education and holding the Kisan credit card. Calculated value of Cramer’s V was 0.211 and its significant value was found to be 0.036, which was significant at 5 per cent level. This shows a moderate positive correlation between these two factors.

(10) On an average, 45 per cent of the respondents of all the factories except Maroli and Valsad received per annum gross income between ₹5,00,000 to ₹10,00,000. Out of the total respondents of Bardoli sugar factory the highest proportion (i.e. 47 per cent) earned gross income of more than ₹10,00,000 per annum. Economic condition
of the majority of the selected farmers from Bardoli, Madhi and Ganesh sugar factories are better than the farmers of Maroli, Valsad and Narmada sugar factories. The farmers of Maroli, Valsad and Narmada sugar factories earned less in compare to rest of the factories due to proportion of small and marginal farmers is higher, less price paid by sugar factories for sugarcane, delayed in payment etc.

(11) All the respondents were engaged in the farming activities with an average annual gross income of ₹5,00,000. Along with farming, more than a hundred farmers earned on an average annual income of ₹2,00,000 annually through service, one third of the farmers earned average gross income of more than ₹2,00,000 per annum from business. On an average 33 farmers earned income through either working as farm labours or labours. Nearly 60 farmers received on an average income of ₹1,00,000 annually from agriculture and allied activities. Therefore it can be concluded that as per the requirement of a globalised world farmers have started focusing on other sources of income.

(12) A major part of the family income was spent on education next only to food expenditure. On an average, one third of their income was spent on education and more than one fourth of their income was spent on food. This indicates that the selected farmers were conscious about education and realised the importance of “education” in the life of a person. The study also revealed that being a farmer they had spent a very small part of their income on taxes.

(13) An overwhelming majority 70.6 per cent of the respondents have some savings whereas 29.4 per cent do not have any savings. The maximum amount saved was ₹10,00,000 per annum and on an average an amount of ₹66,373 per annum was saved by these 70.6 per cent respondents. The study observed that government
banks and co-operative institutions played very important role in mobilizing rural savings.

(14) The researcher observed that 61.7 per cent of the respondents did not have any debt against them, whereas 38.3 per cent of the respondents admitted that they were indebted and out of them a majority (60 per cent) had borrowed funds from the banks as well as the co-operative institutions. This indicates that the sugarcane growers of South Gujarat region have not depended more on the private money lenders, which shows awareness amongst them regarding other official sources of debt. The banks and the co-operative institutions are lifeline for the needy farmers in their crunch time.

(15) The average amount borrowed was nearly to ₹1,00,000 and the maximum amount was nearly to ₹2,50,000. Around 40 per cent of the respondents had utilised their borrowed funds for productive purposes (farming activity, business purpose, etc.) and about 60 per cent of the respondents had utilised borrowed funds for consumption as well as for unproductive purposes (social purpose home construction, repayment of old debt etc.).

(16) More than eighty per cent of the respondents use modern equipments for sugarcane farming and hence one may claim that the present day Indian farmers have diverted from the traditional farming methods to the modern farming methods.

(17) An overwhelming proportion of the respondents (88 per cent) used pesticides to get rid of the problem of diseases in the sugarcane crop. So it can be concluded that instead of using the natural and homemade pesticides a majority of them were interested in using the more hazardous measures to remove diseases from the crop.

(18) A majority of the selected sugarcane growers of Bardoli, Valsad, Navsari, and Ganesh sugar factories planted CO-86032 variety of sugarcane and around 60 per
percent of the selected sugarcane growers of Maroli Sugar Factory planted CO-86002
variety of sugarcane. Only in Madhi Sugar Factory, three fourth of the sugarcane
growers had planted VSI-0265 variety of sugarcane. The respondents preferred the
specific varieties of sugarcane due to the fewer incidences of crop disease and also
that the variety was likely to give higher production.

(19) Majority of the respondents had received finance for sugarcane crop either from the
sugar factory or from the co-operative banks. So it can be concluded that even
today, the co-operative institutions play an important role in agricultural finance.
Most of the respondents used finance for purchasing seeds, fertilizers, equipments,
pesticides etc., but very few of them had used the finance for purchase of new land.

(20) A significant statistical difference was observed between the average per acre
production, price, cost of production and average revenue of sugarcane between
2011-12 and 2015-16.

(21) The production cost of sugarcane was increased by 23 per cent and the gross
income was increased by 5 per cent, so it can be concluded that cost of production
of sugarcane increased faster than the revenue received from sugarcane crop
between the year 2011-12 and 2015-16.

(22) Nearly 50 per cent of the respondents believed that higher production cost had
lowered the returns from farming, so this can compel the farmers to sell out the
agricultural land for commercial and industrial purposes.

(23) The respondents believed that global warming, more use of fertilizers and pesticides
were the most important reasons for reduction in sugarcane production.

(24) More than three fourth of the respondents accepted that the sugar factories provide
finance, transportation, communication, and used proper weight and provided
qualities seeds, fertilizers etc. However, very few of them agreed with the view that
the sugar factories arrange workshops, seminars, field trips and provide guidance for improvement in productivity. It can be concluded that the sugar factories provided many facilities to their members but have not taken major initiatives to create awareness among the sugarcane growers related to changes in sugarcane farming.

(25) Factor Analysis technique highlights the problems faced by the sugarcane grower members of the selected sugar factories. The eight factors indicate the major problems faced by the sugarcane growers. These factors cover the problems related to rise in price of inputs, problem related to field, problems related to timely availability of fertilizers, seeds, pesticides, water, finance, price of sugarcane, cooperation and guidance from sugar factories, unauthorised deduction and waiting for cane harvesting as well as problems related to production and payment received by the sugarcane growers. These factors contributed about 68 per cent variations in the problems faced by the sugarcane growers of South Gujarat.

5.2.4 Findings related to Selected Sugar Co-operatives under the Study

(1) The high level of yield per hectare was observed in Bardoli and Narmada sugar factories i.e. 80.58 and 76.22 tons, which was higher than the all over Gujarat and India. But it is a matter of great concern that while in Bardoli sugar factory the yield has reached an average level of over 80 tons per hectare, in Madhi, Maroli, Valsad and Ganesh sugar factories, the average yield is still very low.

(2) The percentage sugar recovery of Bardoli Sugar Co-operative was higher (11.24) than total percentage sugar recovery of Gujarat and India, not only that but also it was found to be better than the other co-operative sugar factories under the study. The lowest percentage sugar recovery (9.18) was recorded in Maroli Sugar Factory during the year 2015-16.
(3) In Gujarat the sugar co-operatives fixed the sugarcane price as per FRP or more than FRP based on profit sharing. This system of paying cane price does not give any encouragement to the cane growers to grow better variety of cane with higher recovery. Because the cane price is paid to cane growers by the sugar co-operatives on the basis of weight without reference to the quality of cane and with regards to its sucrose content. This system of payment of cane price is discouraging to those cane growers who grow better quality of sugarcane.

(4) The capacity utilization of the Bardoli and Narmada Sugar Factories was more than 100 per cent which indicated that the performance of the Bardoli and Narmada Sugar Factories was above the optimum level. The performance of Valsad Sugar Factory was very low because the capacity utilization of this factory was below 50 per cent.

(5) The problem of recruitment of suitable personnel with the requisite background knowledge and training for the co-operative sector has indeed been found to a difficult task. Many a times in sugar co-operatives, untrained and less educated managerial or technical personnel were appointed on the basis of personal contact with main administrators or have some political background.

(6) The extension services for transmitting the latest developments from laboratories to land were considerably poor and insufficient. Lack of direct contact between sugar factories and the cane cultivators has been another vital factor which is adversely affecting the development activities. There is no co-ordination between research and development activities, which results in poor performance of the sugar co-operatives.

(7) The sugar co-operatives in the districts under the study have 70 to 75 per cent modern techniques adopted for various operations during the sugar production. In
comparison to the other states of India, regards to plant modernization, sugar co-operatives in Gujarat are considerably in a better position. But in this context, very less progress has found in the case of Madhi, Maroli and Valsad Sugar Factories.

(8) It is quite distressing to note that attention has not been given to the utilization of by-products in the best possible manner by the sugar co-operatives in the district under study.

(9) Some of the sugar co-operatives in the South Gujarat are facing the financial crises which can create a possibility to established private sugar factory in this area. Threat of privatization is another issue adversely affecting sugar co-operatives in Gujarat. Hence, urgent attention should be given to this problem by sugar co-operatives.

(10) In recent years political factor is also involved in sugar co-operatives in Gujarat which can negatively affect the efficiency and policies of the sugar co-operatives in the state. The evils of the politicization in sugar co-operatives can be proved perilous for the existence of the sugar co-operatives.
<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Null Hypothesis</th>
<th>Result of Chi-Square Test (P-value)</th>
<th>Rejected / Failed to Reject</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>There is no association between the level of education and holding of the Kisan credit card by them.</td>
<td>13.456 (0.036) **</td>
<td>Rejected</td>
</tr>
<tr>
<td>2</td>
<td>There is no association between the level of education and saving behaviour.</td>
<td>23.346 (0.001)***</td>
<td>Rejected</td>
</tr>
<tr>
<td>3</td>
<td>There is no association between the level of education and debt.</td>
<td>9.158 (0.165)</td>
<td>Failed to Reject</td>
</tr>
<tr>
<td>4</td>
<td>There is no association between the group of income and saving behaviour.</td>
<td>19.015 (0.001)***</td>
<td>Rejected</td>
</tr>
<tr>
<td>5</td>
<td>There is no association between the group of income and debt.</td>
<td>6.629 (0.157)</td>
<td>Failed to Reject</td>
</tr>
</tbody>
</table>

**Note:** 1. Figure in the parenthesis denotes p – value  
2. ** indicates significance at 95 % level  
3. *** indicates significance at 99 % level
Table 5.2
Result of Hypothesis

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Null Hypothesis</th>
<th>Result of Z – Value (Wilcoxon Signed Rank Test) (P-value)</th>
<th>Rejected / Failed to Reject</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>There is no significant difference between the average sugar cane cultivation area during 2011-12 and 2015-16.</td>
<td>-1.483 (0.138)</td>
<td>Failed to Reject</td>
</tr>
<tr>
<td>2</td>
<td>There is no significant difference between the average per acre production of sugarcane during 2011-12 and 2015-16.</td>
<td>-2.215 (0.027)**</td>
<td>Rejected</td>
</tr>
<tr>
<td>3</td>
<td>There is significant difference between the average price of sugarcane between 2011-12 and 2015-16.</td>
<td>-3.339 (0.001)***</td>
<td>Rejected</td>
</tr>
<tr>
<td>4</td>
<td>There is no significant difference between the average production cost for sugarcane during 2011-12 and 2015-16.</td>
<td>-12.815 (0.000)***</td>
<td>Rejected</td>
</tr>
<tr>
<td>5</td>
<td>There is no significant difference between the average (per acre) income from sugarcane between the years 2011-12 and 2015-16.</td>
<td>-4.717 (0.000)***</td>
<td>Rejected</td>
</tr>
<tr>
<td>6</td>
<td>There is no significant difference between the per acre average cost of seeds between 2011-12 and 2015-16.</td>
<td>-12.032 (0.000)***</td>
<td>Rejected</td>
</tr>
<tr>
<td>7</td>
<td>There is no significant difference between the per acre average cost of fertilizer between 2011-12 and 2015-16.</td>
<td>-13.208 (0.000)***</td>
<td>Rejected</td>
</tr>
<tr>
<td>8</td>
<td>There is no significant difference between the per acre average cost of pesticides between 2011-12 and 2015-16.</td>
<td>-11.746 (0.000)***</td>
<td>Rejected</td>
</tr>
<tr>
<td>9</td>
<td>There is no significant difference between the per acre average cost of irrigation between 2011-12 and 2015-16.</td>
<td>-10.744 (0.000)***</td>
<td>Rejected</td>
</tr>
<tr>
<td>10</td>
<td>There is no significant difference between the per acre average cost of labour between 2011-12 and 2015-16.</td>
<td>-11.987 (0.000)***</td>
<td>Rejected</td>
</tr>
<tr>
<td>11</td>
<td>There is no significant difference between the per acre average cost of equipment between 2011-12 and 2015-16.</td>
<td>-10.433 (0.000)***</td>
<td>Rejected</td>
</tr>
<tr>
<td>12</td>
<td>There is no significant difference between the per acre average of other costs between 2011-12 and 2015-16.</td>
<td>-3.837 (0.000)***</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

**Note:** 1. Figure in the parenthesis denotes p – value
2. ** indicates significance at 95 % level
3. *** indicates significance at 99 % level
5.3 Suggestions

The following suggestions are offered to solve the problems faced by sugarcane growers as well as to improve the competence and performance of the sugar co-operatives in Gujarat in particular South Gujarat.

(1) To boost the share of sugar co-operatives of Gujarat in national trade, quality and quantity of sugar need to be improved through modern techniques. Research and development should improve the yield of sugarcane, which will reduce the adverse effect of weather, pests, diseases etc. In order to get regular supply of water, all the areas under sugarcane cultivation should be brought under drip irrigation. Drip irrigation equipments should be supplied either free of cost or at subsidised rate by the Government.

(2) The area, yield, production of sugarcane, production of sugar and sugar recovery of sugar co-operatives in Gujarat had moderately fluctuated during the study period because of the irregular monsoon, price of sugarcane, delay in payment of cane price, traditional cultivation method, lack of professional attitude of cane growers etc. These issues should be eradicated by suitable policy implementations by the sugar co-operatives.

(3) The Government should take necessary steps to restructure the cane reservation area, minimum distance criteria, price determination of sugarcane, trade policy for sugar, regulations relating to by-products for betterment of the sugar industry.

(4) Government should adopt the Brazil’s CONSECANA payment system as well as model of ethanol programme and essential policy framework should be developed for the off take of ethanol by petroleum companies on practical terms (see Annexure -4).
(5) To help the sugar industry to tide over the immediate finance problems, credit norms should be comfortable and more funds should be made available at low rate of interest, which may be solve the difficulty of sugar co-operative in making payment of sugarcane.

(6) The Government should implement crop insurance against convincing reasons for sugarcane crop, which would be helpful for the cane cultivations during the crop failure situation.

(7) In South Gujarat most of the sugar co-operatives arrange seminars and workshops for the sugarcane growers to make improvement in sugarcane production and productivity of land. But in this regard the cooperation from the cane growers is very limited. So, the sugar co-operatives should take positive initiatives to create awareness amongst the cane growers.

(8) Government should take some imperative initiatives to create awareness amongst the farmers of their soil testing through soil health card scheme launched by the Government. Sugar co-operatives also compel the cane growers to submit soil health card to the factory.

(9) It has been suggested by the administrators of the factories that with the help of sugar co-operatives, State Government should appoint one committee to determine the price of sugarcane and send its recommendations to the Central Government, which would be guided to the committee who fix FRP of sugarcane as well as to the sugar co-operatives of Gujarat.

(10) The management of the sugar co-operative should adopt professional and profit oriented approach which would improve the competence and performance of sugar co-operatives in Gujarat.
The Co-operative Sugar Factories are facing the problem of disposing of molasses and this has resulted in odd smell and pollutes the atmosphere around the co-operative sugar factory. Hence urgent attention is to be given to this problem.

It has observed during the study, that most of the sugar factories do not adopt proper pollution abatement measures due to weak financial strength. In this context, it is suggested that every sugar co-operatives have to take initiatives and arranged special funds for the pollution control activities.

Maroli sugar factory should take initiatives to motivate cane growers to utilise planter and cane harvesting machine in their field.

It is suggested that to set up an independent research and experimental station covering all the sugar co-operatives in the districts under the study, which will definitely help in increasing the cane yield and make the cultivation of cane more profitable.

The researcher found certain loopholes in harvesting system of the factories during the course of the discussion with the cane growers. It is reported that if cane is harvested a little early, before the date of its maturity, the factories deduct five per cent from the entire cane weight. On the other hand however, the late harvested cane will not be allowed five per cent addition to the total cane weight. This policy of the sugar co-operatives should be modified to protect the interest of the cane cultivators.

There is an urgent need to encourage investment in expansion and modernization of existing sugar factories rather than making fresh investment on the new sugar factories.

To strengthen the economic condition of sugar factories and reduce the cost of production further diversification of the sugar industry for utilising by-products
like bagasse, molasses etc. needs to be intensified. There is ample scope of their extended use.

(18) The sugar co-operatives should evolve a suitable long term strategy for cane development and optimum utilisation of existing capacity. In this context, more vigorous efforts should be made to build up effective co-ordination and exchange of problems and ideas between the sugarcane research institute, Pusa, the cane development organisation and the factories for achieving the goal of cane development.

(19) A new ray of hope has emerged from a declining condition in the co-operative sector due to the cooperative attitude of the eminent leaders of the co-operative sector who have come together to share the same stage with other political parties. Not only that but the future of the co-operative sector will be bright if the huge majority of local groups are involved in the progressive work of co-operative sector and the attraction of the youth towards the co-operative sector is maintained constantly.

7.4 Conclusion

Sugar industry is the second largest agro-based industry of India after the cotton textile industry. The sugar industry in India has a tremendous potential for growth. The performance of sugar co-operatives not only depends on its economic efficiency but also on climate conditions and yield of sugarcane. The per hectare sugarcane yield in Gujarat (70.8 tons) is far behind the yield obtained in Tamil Nadu, Maharashtra, Karnataka etc., where the cane yield per hectare ranged between 73 to 103 tons. This is due to the fact that the sugar co-operatives do not take any special measures for making the cane growers to use high yielding varieties of sugarcane in the study area. Recovery of sugarcane can be improved through using modern machineries, otherwise share of private
sector will be increase and co-operatives sector will be reduced. Hence, it will improve the productivity and increase the financial strength of the factory. The sugarcane growers will positively contribute for improving health of sugar co-operatives through cooperation and by adopting proper strategies to improve production and recovery from sugarcane. Hence, the government will have to formulate a suitable long term policy for the industry that takes into account the interest of farmers, consumers and sugar co-operatives for increasing the share of Gujarat in sugar production in the years to come.

7.5 Scope for the Future Research

This study is the foundation stone for bring out further research in the field of problems and prospects of the sugar industry in South Gujarat. Further research can also be carried out through the study of other aspects of sugar industry, wage structure in sugar industry, labour structure in sugar industry, price mechanism of sugar, policies of the sugar industry, performance analysis of the sugar industry. This study is confined only to some selected six co-operative sugar factories in the six districts of South Gujarat but the research work can be carried out also in all the co-operative individually as well as conducting a comparative study of these sugar co-operatives. Further research can also be made on the growth and development of sugar industry in India as well as at the international level. This research is restricted to problems faced by sugarcane growers of the selected sugar co-operatives but the further research can be made on the problems of workers and labourers as well as the problems related to the administrative staff. This is just a preliminary research work which can open up many dimensions for further research.