

## CHAPTER VIII

### CONCLUSION

8.1 Summary

8.2 Main Findings of the Study

8.3 Policy Recommendations

8.4 Policy Implications of the Study for  
Agro-based Industrial Development

## CHAPTER VIII

### CONCLUSION

As the epilogue of the thesis, this Chapter presents a summary of the study, the main findings and policy recommendations.

#### 8.1 Summary:

After a detailed discussion of the importance of agro-based industries, the sugar industry has been studied as an agro-based industry. The impact of the two sugar mills of Madurai District namely, the Madura Sugars Ltd. at Pandiarajapuram and the National Co-operative Sugars Ltd. at Alankanalur form the core of the study. The various influences of the two sugar mills on the sugarcane economy of the district have been highlighted in the study.

The 'impact' is classified into three categories as Impact I, II and III. Under Impact I the influence of the mill-cane-price on total cane area and registered cane area have been examined. It is clearly proved that there is a correlation between price and total cane area and between price and registered cane area. This is followed by a study of the influence of the crushing capacity of

the two mills on registered area and canes crushed. This is also proved to be positive. Indexation, average variation and marginal variation principles have been used to compare these influences over time. The period of study (1950-51 to 1980-81) has been divided into three decadal periods in the context of influence of price on Y variables. The influence of crushing capacity on Y variables has been studied in two period segments. The influence of both price and crushing has been proved in the study. Their influence is perceptible especially from 1967-68 onwards. Rival influences of paddy and jaggery have been largely responsible for the extreme fluctuations in sugarcane cultivation. In spite of it, the sugarcane production reached the maximum level in 1980-81, falling in line with the national trend. This is largely due to the various influences of the sugar industry in the district.

A sample survey of 100 member-cane-growers was made in Nilakkottai taluk. Twenty-five non-member cane-growers were interviewed in a non-industry area, namely, Uthamapalayam taluk and another 25 non-member cane-growers were interviewed in the industry area i.e., Nilakkottai taluk. This is a cross section study made in descriptive terms on the basis of the sample survey. This also proves the influence of the sugar mills on the sugarcane growers.

Thus, sugar industry provides the best example for agro-based industries. Growth and development of agro-based industries in many parts of the country have made the agricultural sector more dynamic. This is proved in this study.

Instability is the major problem faced by the agricultural sector. As the agro-based industries foster the demand for agricultural produce, it is argued that growth and development of this sector will pave the way for stability in the agricultural sector.

### 8.2 Main Findings of the Study:

(a) Price being the most important inducing factor of  $X$ , it influences the farmers' decision very much. Farmers are generally price responsive. The acreage changes significantly with changes in the price of the crop in the same direction. That is, assuming other factors to be constant, area under sugarcane is subject to the law of supply. It increases when price increases and decreases when price decreases. This is proved by decrease in the area under sugarcane during the first period from 1950-51 to 1959-60, following decreasing mill-cane-price. In the second period from 1960-61 to 1969-70, the emergence of the second sugar mill with a greater crushing capacity of 1000 tonnes,

was coupled with increasing price trend, caused a significant increase in the area under sugarcane.

(b) When the relative prices of sugarcane and paddy are at normal levels, the farmers respond to a change in factory demand for sugarcane. Crushing capacity reflects the demand for mill-canes. This is also adequately revealed by the study. In certain years when the mill-cane-price was constant, the farmers continued to supply canes to the factory, as usual. Even when there was a marginal decline in price, the supply of canes to the mill only increased. This shows that, the cane-growers attach more importance to assured demand over uncertain prices in the other markets. Sugarcane cultivation had a higher compound growth rate in the second period over the other two periods because of increased total crushing capacity and increased price as well.

(c) From resource allocation point of view, location of a sugar mill is very important. That Nilakkottai taluk leads all other taluks in sugarcane cultivation is obviously because of the location of the two factories in the taluk and also because of the increased crushing capacity of the sugar mills.

(d) Years of falling mill-cane-price as well as stagnant price were followed by a decline in canes

supplied to the mill. This implies that, during such periods, area diversion occurred because other competing prices were more attractive.

(e) Approximately, half the total cane area is devoted to mill-canes and the other half to jaggery-cane. The principles of average variation and marginal variation used in the study reveal the extent of area shifting from sugarcane to paddy, from mill-canes to paddy and from mill-canes to jaggery-canes. With the help of the principle of marginal variation, it is proved that 'area diversion' from mill-canes was to paddy and jaggery was lesser during the period between 1966-67 and 1980-81.

(f) Till the emergence of the National Co-operative Sugar Mills ( $X_N$ ) the sugarcane economy of the district did not witness any drastic change. The emergence and growth of this mill has created a spurt in sugarcane cultivation from 1968-69 onwards. Marginal variation is more than 0.5 for all the years during the period between 1966-67 to 1980-81, except the years 1967-68 and 1969-70.

(g) Sugarcane cultivation was relatively stable but with a low growth rate during the years between 1950-51 and 1965-66. It was relatively more unstable during the period between 1966-67 and 1980-81 but with higher growth rate.

(h) The sugar mill not only create an assured demand and assured price for sugarcanes, but also help in increasing the yield per hectare by improving the productivity of the area under sugarcane in all possible ways. Provision of chemical inputs such as fertilizers and pesticides, as well as technical help and advice, credit facilities etc. enable the member-cane-growers to avail themselves of these facilities at reasonable cost. This helps them to realise a higher gross income, provided the mill-cane-price is fixed at a reasonable level.

### 8.3 Policy Recommendations:

#### 1) Price Policy:

As mill-cane-price is the most important inducing factor, the central government should pursue a still more realistic price policy. Area diversion and cane diversion occur because of relatively lower mill-cane-price. Prompt announcement of the cane price is very essential.

Cane pricing policy has, of late, become highly controversial. While increasing cost warrants higher cane price, the mills are constrained to offer higher cane price because of the problems concerned with production and marketing of sugar.

On the production side, increasing labour cost is coupled with high rate of depreciation due to overstrained machinery during crushing season. This is because of the seasonality of the industry which imposes a heavy burden on the sugar mills. On the marketing side, Central government's distribution policy compels the sugar mills to sell in the open market 35 per cent of their sugar output only and to handover the rest of the sugar output (65 per cent) to the government for distribution through fair-price shops to the consumers. The Central Government is very particular in maintaining a low price for the procurement sugar from consumers' point of view. Moreover, the sugar mills are also required to store-up the procurement sugar till they get the movement orders for them.

Under these circumstances, the sugar mills in general are not in a position to raise the cane price because of fear of cost escalation. Further expansion of the sugar industry cannot be thought of as a solution because, there is already over-production of sugar in the country as well as in other sugar producing countries of the world. Thus, exports of Indian sugar are also becoming bleak.

## 11) Stable Price for Sugarcane and Optimum Crushing

### Capacity:

It was pointed out earlier in the introductory Chapter that the growth and development of an agro-based industry ultimately depends on the growth of national income and its distribution as well as size of population. Changes in consumption pattern are also necessary, but it is a concomitant of a developing society. In a given national income structure, when an agro-based industry attains maximum growth, what is required is stability at the existing level, in terms of price, and production. Stable price in this context is taken to mean a pre-determined growth rate in price. That is, the mill-cane-price can be marginally increased from 4-5 per cent or around that percentage, every year.

### (a) Pre-determined Increase in Mill-Cane-Price:

A pre-determined mill-cane-price refers to a price which is to be increased annually at a pre-determined rate.<sup>1</sup> The mechanism of such a policy rules out annual variations in the mill-cane-price atleast for a minimum

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<sup>1</sup>The idea of a pre-determined growth in price is derived from Milton Friedman's concept of pre-determined growth rate in money supply as a solution to instability in the economy. See Milton Friedman, "The Optimum Quantity of Money," Macmillan, 1969, pp. 108-110.

period of 5 years. The price thus fixed, will increase at a rate of 4-5 per cent annually. Once in 5 years the 'price-base' may be revised taking into account, the prevalent situation at the end of five years.<sup>2</sup> If the cost of sugarcane cultivation has far outstripped the 'price-base,' a new price-base may be fixed accommodating the difference between the cost and price. Once again, the pre-determined increase in cane price may be set in motion for the next five years.

Similarly, the Central Government may also adopt a pre-determined levy price policy for the levy sugar, if dual-pricing is to be continued. Regional variations may be allowed in the base-price.

(b) Advantages of a Pre-determined Mill-Cane-Price:

The following advantages are claimed in favour of a pre-determined increase in mill-cane-price.

1) This avoids the cumbersome process of price-fixing every two or three years by the Central Government in consultation with the 'Mill Owners' Associations and Cane-growers' Associations. Atleast for a period of five years, the Central Government,

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<sup>2</sup>Price-base in this context is taken to mean the price which will prevail at the end of every five years.

State Governments and the mills can be free from the problems relating to price.

2) Uncertainty is removed in the minds of the cane-growers as well as mill owners regard<sup>ing</sup> the pricing problem. One of the major grievance<sup>s</sup> of the cane-growers is, at present, that, the Central Government does not announce the price in time, so that they can take a decision regarding a choice between paddy and sugarcane.

3) Uncertainty is removed in the minds of the mill owners also regarding the levy price and regarding the cost of the raw material, namely sugarcane. Therefore, they can afford to have definite projections and plans.

4) Since the farmers will settle down between paddy and sugarcane because of the policy of pre-determined increase in mill-cane-price, the next problem is to settle down between mill-cane and jaggery-cane. Of the two, when one is pre-determined, the other will also settle down, because the competition is minimised or even removed. Ultimately, the real magnitudes will exert a pressure upon each other, and the whole mechanism will move into equilibrium.

5) Such a policy of pre-determined increase may pave the way for it being adopted in other sectors as well.

### iii) Increasing Exports:

Subsidised exports must be increased, although the ultimate burden will fall on the people through the cost of subsidy, so that the sugar mills will be eased of the burden of over-production.

### iv) Increasing Domestic Consumption:

Domestic consumption of sugar must be raised. This can be made possible by changing the ratio of the free-sale from 35 per cent to a higher percentage. Otherwise the present system of distribution based on the number of people in the family may be reverted to the old policy of income-based distribution. The present policy of number-based distribution has proved a failure because the people in the low-income group are not in a position to buy their month's quota; or they buy their quota only to sell it outside at a price in between the open market price and fair-price. This practice has become very common since the policy was introduced.<sup>3</sup>

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<sup>3</sup>Facts and figures available from the Pandyan Consumers' Co-operative Super Market at Madurai which distributes sugar through fair-price shops throughout the district reveal that since the introduction of the dual pricing policy, the off-take of sugar in fair-price shops has been around 50 per cent in the rural areas and 75 per cent in the urban areas. It is also reported by the officials that, before this policy was introduced, the fair-price shops did not experience any backlog of sugar.

The philosophy of fair-pricing and rationing coincide with scarcity. When scarcity disappears, either cyclically or permanently, pricing and distribution policy also should be revised promptly. For example, 1978-79 was a year of bumper crop of sugarcane and surplus sugar production, followed by complete decontrol of price and distribution. This was also the year of maximum domestic consumption of sugar, which stood at the level of 62,14,000 tonnes. Thus, the past experience speaks in favour of relaxation of control. If relaxation of the control is ruled out, a change in the ratio of levy versus free sugar may be effected, allowing a higher ratio for free sugar.

v) Better Utilisation of By-products:

The two sugar mills studied in this thesis provide examples for the frequent losses incurred by the sugar industry in general.<sup>4</sup> Better and fuller utilisation of the sugarcane as well as the by-products of the sugar mill is another measure to improve the situation on both sides.

It has been shown in the study that still about 50-60 per cent of the total cane area goes to

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<sup>4</sup> See Appendix I - Tables 2 & 3 on the progress of the two mills since their inception.

jaggery-making. Although jaggery-making is yet another agro-based industry existing in the traditional sector, in view of the low recovery of sugar in this activity, the cultivators need to be encouraged to send their canes more for mill crushing than for jaggery-crushing. Jaggery sector realises about 55-65 per cent of sugar recovery while the sugar mill realises as much as 92-94 per cent of sugar recovery from sugarcane. The value of sugar lost in bagasse, due to poor extraction in the jaggery/khandasari sector, is estimated to be of the order of Rs.1,500 crores per annum.<sup>5</sup>

Mahalingam suggests the following measures to improve the situation and restore equilibrium in the sugar industry and sugarcane economy.<sup>6</sup>

(a) 50 per cent of the sugarcane production should be handled by the sugar mills for the production of white sugar.

(b) 30 per cent of the sugarcane should be allotted for the production of low purity sugar and gur to meet the current demand for low purity sugar (jaggery).

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<sup>5</sup>M. Mahalingam, "Sugar-Alcohol-Paper Complexes," *Kisan World*, Vol. 8, No. 8, Sakthi Sugars Ltd., Madras, 1985, p. 4.

<sup>6</sup>Ibid.

(c) Sugarcane juice from the balance of 20 per cent sugarcane may be utilised with molasses for production of alcohol which is in great demand in many industries such as plastics, pharmaceuticals, pesticides, ethyl hexanol etc.

He also suggests that alcohol can be purified and used as automobile fuel to fight energy crisis. Further he suggests that every sugar mill must have a sugar-alcohol-paper complex, for fuller utilisation of by-products. To achieve this model, in his opinion, a sugar mill ought to have a minimum capacity of 2000-2500 tonnes per day. This would mean, approximately, 4.0 lakh tonnes and above, of canes will be crushed by a sugar mill on an average. This is to be combined with a mini paper plant, with an annual capacity of 5000-10000 tonnes of paper. During off-season, the alcohol unit can be activated to keep the labour force engaged and the mini paper plant, in his opinion will compensate for losses in the mainsteam, if any.

#### **8.4 Policy Implications of the Study for Agro-based Industrial Development:**

The study of sugar industry as an agro-based industry leads to certain inferences relating to agro-based industrial development.

The study on the impact of sugar industry leads us to the inference that an agro-based industry of the type of sugar industry will lead to growth and development of the related crop economy. The characteristics of sugar industry as an agro-based industry, in abstract terms, are the following.

- a) It is a well-organised industry in the modern sector.
- b) It has direct contact with the farmers.
- c) It is rural-based, located near the source of raw material.
- d) It is an agro-based manufacturing industry.
- e) It is subject to government control with regard to the price of raw material, and distribution of its product.
- f) It is capital intensive.
- g) It releases three by-products which can be utilised.

The sugar industry, with the characteristics stated above, provides a valid ground for an integrated approach with regard to other agricultural crops. Although every agro-based industry is a category by itself, because

of the fact that every agricultural produce is a category by itself, other agro-based industries which fit into these characteristics may be given the same approach with minor modifications.

However, while considering other agro-based industries, it is not possible to impart all these characteristics to them. Some of the characteristics may have to be ignored. It may be stated in conclusion that an integrated plan with an emphasis upon backward linkages of the agro-based industry must form an integral part of the agricultural plans.