

CHAPTER V

ROLE OF SUGAR INDUSTRY AS AN AGRO-BASED INDUSTRY

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Sugar industry being an agro-based industry, plays a significant role in the national economy from consumption and production points of view. From consumption point of view, it is an important consumer good industry. The aggregate demand for sugar is annually increasing. The crystal sugar produced by the industry is used by people in their daily life; it is used in the hotel industry, bakery products, beverages etc. Thus, at home and outside, people need sugar in their daily life. From production point of view, sugar industry employs about 2 lakhs of skilled and unskilled workers and about 50,000 technicians, while providing support to about 20 million sugarcane cultivators. Besides, quite a large number of people are engaged in sugar trade and transport of sugar and sugarcane.¹

The significance of a modern sugar factory can be best understood in its close connections with

¹Vadilal Dagi, "A Profile of Indian Industries," Vora & Co., Bombay, 1976, p. 214.

agriculture and extension of sugarcane cultivation. Since 1972-73, the Indian sugar industry has entered the world market and is earning foreign exchange.

Moreover, the case studies of researchers with reference to particular sugar mills reveal the contribution of sugar mills to the socio-economic development surrounding the factory areas. In overpopulated countries like India, the solutions to unemployment hinge heavily on the successful growth of manufacturing industries. In areas where sugar mills are established, many small-scale industries and households emerge creating an active socio-economic structure.

Role of industry in rural development in India needs no emphasis, but, the role of agro-based industries like sugar industry, in leading to integrated rural development needs to be emphasised in the Indian context. Sugar industry easily fulfils the role of an agro-based industry by fostering the demand for sugarcane.

5.1 The Backward Linkages of Sugar Industry:

The influence of sugar industry on the agricultural economy in general, and sugarcane economy in particular, can be understood by its backward linkages

with agriculture. This Chapter is devoted to a general study of the backward linkages of the sugar industry with reference to area under sugarcane cultivation, yield per hectare and sugarcane production.

1) Area under Sugarcane:

The first impact of the establishment of a sugar mill in the sugarcane growing area, is on the area under sugarcane cultivation. It is true that a sugar mill is established in an area already having sugarcane cultivation. However, the establishment of a sugar mill in a sugarcane growing area further encourages sugarcane cultivation in the regions around the sugar factory.

Writing on the sugar industry in Gujarat, Parmar says, "One of the most important aspects of the sugar industry is the switchover of the land to sugarcane crop from other crops in the region."² This was due to the fact that sugarcane cultivation became more remunerative than other crops. As the number of factories increased from 205 in 1968-69 to 286 in 1977-78, the area under sugarcane increased from 25,32,000 hectares to 32,20,000 hectares in the same period.³ Khot and Kamala have also

²G.D. Parmar, "Sugar Industry in South Gujarat," Souvenir of the 62nd Annual Conference of the Indian Economic Association, Department of Economics, South Gujarat University, Surat, 1979, p. 23.

³Ibid.

confirmed the influence of the sugar industry in Mandya taluk in Mysore, "The first inevitable change that took place was the continuous increase in the area under sugarcane cultivation in the Mandya taluk."⁴ Similar influence of the sugar industry is exemplified by Kharke also.⁵ Thus, the establishment of a sugar mill in a sugarcane encourages more sugarcane cultivation in the regions around the mill.

Thereafter, when the crushing capacity of the mill is increased, the area under sugarcane also increases. This is effected by shifting the area under other crops such as paddy to sugarcane. It is because, the sugarcane cultivators who become members of the sugar mills, enjoy certain relative advantages. The member-ryots are assured of demand for their sugarcane in a specified area, at an assured price. Thus, the basic equilibrium market conditions are created between the cane-growers and the sugar mill. These conditions are, an assured supply of canes to the mill, an assured demand for the canes grown by the member-growers and an assured price.

⁴S.M. Khot and G.V. Kamala, "The Role of Processing Industries in Economic Development: A Case Study," Indian Journal of Agricultural Economics, Vol. XXI, No. 4, October-December 1966.

⁵R.N. Kharke, "Co-operative Sugar Industry in Marathwada: A Lead Industry for Development," Agriculture and Agro Industries Journal, Vol. 10, No. 12, December 1977.

However, in the case of sugar industry, such an equilibrium is subject to two kinds of diversions.

They are,

1) diversion of the cane area to the next immediate rival crop, that is, paddy; and,

2) diversion of the canes cultivated by the member-growers to jaggery production.

The first kind of diversion occurs when the price of the rival crop, that is, paddy, increases before sugarcane cultivation starts. Sometimes, even after the sugarcane cultivation has commenced, a steady and continuous increase in paddy price may cause area diversion in the subsequent years. If such a diversion occurs, the amount of canes crushed by the factory will show a decline. That is, such a diversion will lead to a decline in

- a) total area under sugarcane;
- b) area under canes registered by the mill;
- c) total sugarcane output; and,
- d) cane crushed by the mill.

The second kind of diversion occurs when the relative price of jaggery shows increasing trend when

compared to the cane price offered by the mill. However, the member-growers are not free to divert their sugarcane to jaggery production as they are governed by an agreement with the sugar mill. But, during periods of labour strike, power cut or mechanical failures, the sugar mill may release the member-growers from the agreement.

In spite of such diversions, the area under sugarcane tends to increase over long periods as the number of factories increases. Table 5.1-a and 5.1-b illustrate this.

TABLE 5.1-a SUGAR INDUSTRY AND SUGARCANE CULTIVATION AT THE ALL-INDIA LEVEL

Year	No. of Mills	Daily crushing capacity (Average)	Total area under sugarcane ('000 hect.)	Yield per hectare (tonnes)	Cane area registered by the mill	Cane crushed by the mills ('000 tonnes)
1950-51	138	873	1707	40.5	2,75,234	11,147
1955-56	143	1012	1846	39.3	4,89,592	19,241
1960-61	174	1168	2413	45.7	6,80,722	31,109
1965-66	200	1249	2836	43.7	8,26,178	36,104
1970-71	216	1359	2615	48.3	7,90,973	38,204
1975-76	253	1569	2762	50.9	8,22,180	41,849
1980-81	314	1723	2648	56.8	9,09,172	51,641

Source: Indian Sugar, October 1982, p. 476.

**TABLE 5.1-b SUGAR INDUSTRY AND SUGARCANE CULTIVATION -
TAMIL NADU**

Year	No. of Mills	Total area under sugarcane ('000 hect.)	Cane output ('000 tonnes)	Cane crushed by mills ('000 M. tonnes)
1950-51	12	50	2150	942
1955-56	4	49	3970	618
1960-61	8	81	6311	1459
1965-66	14	101	8754	2643
1970-71	15	135	10443	3326
1975-76	16	128	11936	1970
1980-81	21	136	13549	4997

Source: Indian Sugar, October 1983, pp. 477-480.

Table 5.1-a reveals that during the period between 1950-51 and 1980-81, the number of factories increased by 228 per cent while the average actual crushing capacity increased by 197 per cent. Correspondingly, there was an increase of 463.3 per cent in the cane crushed by the factories. Registered cane area shows an increase of 330.3 per cent. These changes on the sugarcane side are obviously due to the establishment of sugar factories and expansion of the crushing capacities of the existing mills. Table 5.1-b illustrates similar trend at the State level.

11) Yield:

Sugar industry provides a channel through which the researches carried on by various agencies such as the Department of Agriculture, sugarcane research wings of the Agricultural Universities reach the sugarcane growers. As the farmers reach an optimum allocation of their lands between various crops, taking into account various constraints, subsequently they take efforts to improve the yield per hectare. Moreover, the sugar mills insist upon certain varieties from production point of view.

The technical information about cane cultivation are first collected and experimented by the sugar mills in their model farms. The farmers are invited to visit the model farms and see the effects of the experimentation. Therefore, the sugar factory itself supplies the hybrid variety seeds to the farmers at concessional rates. Further, the technical experts of the mill, called Cane Officers and their assistants visit the sugarcane fields to give on-the-spot advices to the farmers. Thus, the sugar mills evince keen interest in the sugarcane cultivation from beginning to end, because of the fact that their own existence depends on the prospects of sugarcane cultivation.

111) Sugarcane Production:

Sugarcane production is the result of the combined effects of the area under sugarcane and yield per hectare. In the foregoing two paragraphs it has been explained how the sugar industry influences the area under sugarcane and yield. As a result of this, the total sugarcane production tends to increase over long periods. At the All-India level, the sugarcane production which was of the order of 49,380000 tonnes increased to 154,248000 tonnes in 1980-81. This is almost a three times increase in production, in spite of fluctuations every year.⁶

3.2 Other Benefits Extended by a Sugar Mill to the Cane-growers:

The sugar mills directly assist the sugarcane growers in the following ways:

1. Soil tests are conducted by the factory experts in order to assess the fertility level of the soil and the farmers are given technical advice regarding economical doses of chemical inputs.

2. The factory conducts ground water survey in the registered cane areas to exploit ground water resources

⁶Season and Crop Reports of Tamil Nadu, Govt. of Tamil Nadu.

by erecting tube wells. The factory also helps the farmers by providing deep borewell facilities at concessional rates for deepening their wells.

3. Agro-service centres are run by the factory in different places in the registered cane areas to maintain close contacts with the farmers and to provide them with necessary technical and administrative helps.

4. The farmers are provided with hybrid seeds at concessional rates. For this, the factory breeds the required cane varieties in its model farms and also in the villages in the selected sugarcane fields. The farmers are required to buy the seeds from these sources.

5. The factory introduces new techniques such as companion cropping, multi cropping etc.

6. The farmers are offered advices on water management.

7. The farmers are supplied with plant protection equipments on loan or on nominal charges.

8. The factory also introduces crop insurance schemes.

Besides the services mentioned above, the sugar factory also helps the farmers in many other ways, such as credit arrangements, road and transport facilities and borewell machinery. The factory bears a portion of the transportation cost if the distance exceeds a certain limit. Moreover, the sugar mill is also capable of creating social overheads like roads, water supply, housing, drainage, hospitals, schools, housing etc.

The sugar mills are not very much disturbed by the power cuts because they have their own generator units which are run by the alcohol which is an important by-product of the sugar mill. Thus, the sugar mills play a very vital role in initiating the socio-economic development of the sugarcane area. Since sugar mills are employed in the rural areas, they are also a source of employment to the rural folks.

5.3 Location Factors:

Sugar industry is raw material oriented as 60-70 per cent of the total value of the final product is constituted by the sugarcane alone. Moreover, because of the perishable nature of the sugarcane, long distance haulage of sugarcane is not possible. Therefore, the sugar mills have to be located near the cane growing areas.

If road and transport facilities are available, the sugar mills may be established in the semi-urban areas also.

5.4 Problems Faced by the Sugar Industry:

The sugar industry is generally confronted with the following problems.

1. Seasonal Fluctuations:

Highly perishable nature of the sugarcane necessitates processing to be undertaken within 24 hours of harvesting. Processing is carried out continuously throughout the day in three shifts of eight hours duration.

The duration of the sugarcane crushing season depends on mainly the maturity period of the cane, which in turn depends on climatic conditions and irrigational facilities. In India, owing to very wide seasonal fluctuations, the cane availability period ranges from four to six months in a year. This implies that the operation of a sugar factory is subject to seasonal variation and that most of the operations of the factory tend to concentrate in a period of six months. This imposes both financial and administrative

strains upon the factory. "It is understood that greater the magnitude of variation, greater would be the economic burden felt by the unit."⁷ Very often the factory machinery are over-worked beyond the rated capacity and this results in higher rate of depreciation.

2. Operational Difficulties:

During the period of its intensive operation in a year, the factory has to mobilise the required man power and other facilities to maintain the system. The factory administration finds it very difficult to arrange for the transportation of the sugarcane, after giving the 'cutting order,' from the farms to the factory. Sometimes due to non-availability of vehicles, the cutting order is also delayed.

3. Cane Diversion:

When the factory has to delay the cutting order, the member-cane-growers start diverting their cane to jaggery production through local crushing units run at the cottage level, because, the larger the harvesting period, the higher is the cost of cultivation.

⁷Ibid., p. 148.

Besides these general problems, there are certain specific problems faced by certain units, or the whole industry during certain periods.

5.5 Problems Faced by the Indian Sugar Industry at Present:

India has emerged as the largest producer of sugar in the world as a result of rapid rise in production of sugarcane and sugar. The total production of sugarcane has increased quite substantially from 70.5 million tonnes in 1950-51 to a record of 187.3 million tonnes in 1981-82, showing a rise about 3.2 per cent per annum. In 1982-83 also there was a record production of 183.6 million tonnes. Between 1950-51 and 1981-82 the area under sugarcane rose by about 1.9 per cent per annum to 3.2 million hectares and the yield per hectare also had gone up by 1.2 per cent per annum to 58.7 tonnes per hectare.

However, this phenomenal growth in sugarcane production and sugar output has not been uniform and there have been wide fluctuations in area under sugarcane, total sugarcane production as well as production of sugar. Under normal monsoon conditions, almost once in 3 to 5 years a cyclical trend is witnessed both in the sugarcane cultivation and sugarcane production. In Farwar's opinion, "The main feature of the cyclical pattern observed in the past has been the abundance of sugarcane and sugar for

2 years and the consequent fall in prices, followed by 2 years of scarcity and rising prices of sugarcane and sugar."⁸

Varying degrees of control have been exercised over sugar in the past. Years of sugar scarcity have witnessed strict controls while years of plenty have witnessed relaxation in controls. (Please Refer Appendix I-Table 4).

Indian sugar industry has been facing the problem of over-production and surplus stock in the past two years. The foreign demand for Indian sugar has fallen because of high cost of production of Indian sugar and bumper sugar production in the world. There has been an unprecedented production in 1981-82 and 1982-83 due to the most attractive price offered to cane-growers in 1979-80 and 1980-81 by sugar factories. As a result, the Indian sugar industry is now faced with the problems of glut. Efforts are needed to export more quantities of sugar so that the backlog of supplies may be cleared.

⁸B.B. Parwar, "Some Dimensions of Agricultural Development in India," State Bank of India Monthly Review, Vol. XXII, No. 81, August 1983, p. 339.