CHAPTER - V

Impact of changes in the cost structure and by products

In the sugar industry the principal output is of course sugar but it is also associated with certain others which are termed as by products viz. Molasses, Bagasse and Press mud and all of them have uses leaving salable value.

The cost structure of sugar production includes cost of sugar cane, their cost of carriage to the factory, cess or Purchase Tax on sugar cane which sums up to the total cost of sugar cane (i.e. cost of raw material). This is added up by the conversion charges viz. Power, Fuel, Stores, Wages, Repairs, Maintenance, Depreciation and other overhead expenses. This is added by the packing and distribution expenses, office overheads and cane development expenses to form the total cost. The total cost is then added with the profit element for quoting the price.*

The price of sugar in India changes frequently with a tendency to move upward which has no concern to tune with the cost structure of the sugar. But there are other factors which have a play in the impact of changes in the cost structure of the sugar. The season for attaining maturity of the sugar cane, their harvesting period, carrying cost, percentage of recovery, crushing period, labour rates are not uniform throughout India which, therefore, cause variation in the incidence of cost.

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* 1. Sugar cost Accounts - G.C. Skinner
   2. Principles of costing - Blocker & Whelmer
that influence changes in the cost structure. This is also influenced by the type of producing factories owned by Government Company, Private Joint Stock companies, Partnership Firms and Co-operative societies.*

There are factories who have their own cultivation and others who purchase the sugar cane either from a reserved area of cultivation without facing competition against gur and khandsari producers or from a general area of cultivation on competitive level.

The cost of production is highest in Madhya Pradesh and lowest in Karnataka and Maharashtra which brings a wide gap in the cost at the two places. There exist a total divorce in the cost of production in the various producing areas in India which is bound to reflect on the prices. The basis of cost for each factory depends on the quantity of cane crushed which vary directly with the number of crushing hours cum percentage of recovery. All conversion costs other than packing charges vary inversely proportionate to the recovery. Apart from the cost of cane and its directly related charges, the major items of expenses viz. salaries, wages etc., which are otherwise variable, would be the same irrespective of the rate of recovery. Therefore, when the rate of recovery increases, the incidence of cost in this respect is bound to be comparatively lower.

When there is an improvement in the rate of recovery the cost of production will certainly come down proportionately. Furthermore, the incidence of higher cost due to idle capacity of the plant and machinery is bound to come down if the idle capacity is eliminated either by way of increasing production or by crushing in the factory for gur and khandsari production in addition to the crushing for sugar.**

** 1. Industry Subsidiary to sugar - S.N.G.Rao
2. Sugar industry in India - R.N. Agarwal.
The main by products of sugar industry are (1) Molasses, (2) Bagasse and (3) Press Mud. The percentage of these by products are considerably high such as Molasses (about 4%) which is the main and most costly by-product; Bagasse ranging from 28-30% in the Southern States and 30-35% in the Northern States, and the Press Mud to the extent of about 3% to 7%. The known uses of Molasses are manufacture of portable spirit, industrial alcohol, manuring, cattle fodder, tobacco curing, and for foundaries. About 70% of the total molasses produced were being utilised by the distilleries. But due to increase in the production and for want of proper containers, which are costly requiring considerable capital backing, as well as for transport difficulty a substantial quantity of molasses are being wasted or destroyed. The quantity of production of molasses is bound to increase further if the sugar plants are utilised to the full working capacity and in that event the production and wastage of molasses will increase quite substantially. But if these molasses can be utilised by the existing distilleries or new distilleries are set up for the purpose. The excess of wine produced can be comfortably exported without touching the public fund for subsidy. If so, it will increase employment, foreign exchange earning and other ancillaries in a vicious circle. The industrial alcohol can be utilised for industries as fuel including sugar industry.

The principal uses of bagasse after chemical treatment are for the production of Plastics, Moulding-powder, Biogas, Manure, Cattle fodder, Paper, Newsprint, Insulation Boards etc. * But at present almost the entire bulk

* 1. Industry Subsidiary to Sugar - S.N.G. Rao
2. Sugar Industry in India - R.N. Agarwal
of the bagasse is utilised as fuel by sugar gur and khandsari industries which indicates that the entire bulk of bagasse constituting about 32% of the sugar cane is a waste (i.e. loss) the incidence of which is reflected on the cost of sugar production. In addition, a sizeable amount of cane trash is left out in the fields after harvesting which can be profitably utilised for the production of paper, pulp etc. or as animal fodder. At present about 54% of the total cane production is utilised for Gur and Khandsari and about 33% for the production of sugar. If the entire bulk of bagasse is taken into consideration, the same is due to size about 32% of the total cane production i.e. about 521.93 lakh tonnes per year.* If the production of industrial alcohol is increased, the same can replace the bagasse for use as fuel and therefore, can be appreciably utilised for beneficial purposes and reduce problems of high cost for sugar production. It may also improve the supply condition of the other products that may emanate from bagasse. This too will increase employment opportunities as well as increase ancillary industries through vicious circle.

The Press Mud varies from 3 to 7% and used as manure (sulphitation) or as building material (carbonation) after conversion into lime. The sulphitation factories produce sulphitation press mud as a by product at the end. The present trend of expansion and new set up of sugar factories are being made up for sulphitation process which can be utilised for manure and other beneficial commercial purposes. The sulphitation press-mud contain 8 to 10 percent of wax which is a good substitute for the imported camauba.

Monthly Reviews - State Bank of India.
and can be beneficially used for the manufacture of carbon papers, wax papers, leather polishes, various coating purposes etc. With the increase in quantity of sulphitation sugar and thereby sulphitation press mud, it is likely that the production of the said wax will become increased and if it is properly refined and blended through modern plants it will ensure wide commercial uses and a considerable amount of foreign exchange can be saved. The increased quantity of the press mud after the extraction of the wax content in it can be well utilised as a manure in the agricultural fields which will also save up expenses against purchasing of fertilisers.*

If the process of proper utilisation of the by-products are adhered to, the same will not doubt fetch some fortune and since they are to be processed as such it will be a normal treatment to allot a certain percentage of the total cost of production to the by-products which will on their turn reduce the total net cost of production of sugar. Thus with the cost reduction in the main product (i.e. sugar) and additions in the total revenue out of the by-products through proper treatment there may not be any case of deficiency or loss in any sugar factory.

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Analytically, with the total fixed cost levelled at MM1, the variable cost line is MB and sales line OA, the total quantum of profit is represented by the triangle APB for a certain period of time say a year. But, as soon as some portion of the total cost is allocated to the by products, the fixed cost level is bound to come down say at LI1, so far as the production of sugar is concerned. Since no change in the variable cost or in the sales level is apprehendable, the variable cost line is bound to come down to a lower level say LC. This situation will shift the B.E. point from P to its left at P, so that the B.E. level of output will shift and become reduced from OC to OC and the total cost will come down from OD to OD, whereby the profit earning level of production will come down, that is to say, the industry will start earning profit at an earlier level of production. At this stage the total quantum of profit will substantially increase with the same level of production and will be represented by the triangle AP,C.

The sugar factories can work on farm link basis as well as distillery link basis which will ensure a further cost reduction. In the case of a farm linked sugar factory, the owners of the cultivated land may vest their lands to the factory management for the purpose of growing and raising of sugar cane in exchange of money consideration of the average estimated output value at Government rate. For the purpose of growing sugar cane the factory management may employ the same labour at the same rate as would have been done by the owner of the said land or the original cultivator would have done in his own case. This is due to eliminate purchase tax or cess on sugar cane which means cost reduction. Such an approach would not be difficult particularly in respect of the
factories run by co-operative societies. With such an arrangement the Government may sustain some loss of revenue on account of tax of cess, but since the output is likely to increase under such condition the Govt. loss is due to become compensated by way of tax on excess sugar produced.

In the case of a distillery like factory again, most portion of the molasses can be processed for the production of wine and industrial alcohol. While the wine can be exported to the maximum possible extent at a competitive price without resorting to Govt. subsidy which will fetch a substantial amount of foreign exchange, the industrial alcohol may be utilised as a fuel in the concerned industries as well as for other purposes which will save foreign exchange to a certain extent. The big sugar factories with higher production capacities may instal their own distillaries close to the sugar factory which will considerably solve the problems of containers and transport facilities for the molasses produced in those sugar factories. The molasses produced in the factories having smaller capacities may be utilised by the existing distillaries, for other purposes and for export to the needed extent.

As for the bagasse, all the factories may set up their units, very close to their sugar factories, for the purpose of manufacturing boards, paper pulp etc., which will be mostly labour oriented and seasonal type so that there will be every scope to utilise the surplus labour of the fields in the post harvest period. The output of this part of by product can be suitably marketed in the normal process.

The utilisation of the surplus labour of seasonal character during the non-seasonal period will provide more of stability in the labour problems,
less shift in the labour, increase their income with opportunities for a better standard of living. This will also facilitate to translate into action Govt. policy for granting Social benefits and improvements in the rural and village areas particularly to the peasants’ community.

The sugar industry is faced with competition considerably against the producers of gur and khandsari. Since they are not required to pay tax or cess either for the sugar cane purchased by them for the manufacture of gur and khandsari or on the output. If they are made to pay these taxes and cess at both ends, the degree of competition would come down considerably. This would be further reduced if the pricing of refined sugar is made to keep parity with the gur and khandsari prices. The demand for refined sugar may increase in lieu of an equitable decrease in the supply of gur and khandsari.

It would be very much important to impose restrictions by which the gur and khandsari producers shall have obligation to crush their sugar cane in the crusher of a factory plant, since it will not be permissible to allow wastage of sugar juice to the extent of 50% or more, of the sugar cane crushed by them, which is national loss. For this purpose the factory may enjoy to crush canes of lesser juice content or sucrose content variety, which will serve the purpose of gur and khandsari producers. Such an arrangement will also ensure higher production and profit for the producers of gur and khandsari in addition to the producers of refined sugar.

To sum up, therefore, utilisation of the byproducts of sugar viz. Molasses, Bagasse and Press Mud to the fullest possible extent for the
purpose of producing newer goods, of material importance and use, which will bring more earning and economy both to the industry and to the Government. The saving of sugar juice, in the case of gur and khandsari industries by crushing their required sugar cane in the crushers of sugar mills, will also increase earnings of the sugar producing concerns as well as of the gur and khandsari concerns conforming economy. As the gur and khandsari producers will earn more revenue as a result of higher production, they may expect to higher total revenue even after meeting tax etc. payable similar by sugar producers.