CHAPTER - II

AN OVERVIEW OF SUGAR INDUSTRY
Sweetening Agent

The word sugar is an English term in the noun form. Sugar is one of the two mother industries in India.

Sugar is a sweet substance obtained from sugarcane, sugar-beet or from the juice of certain other plants, and it is used in cooking and for sweetening tea, coffee etc.

Sugar is a sweetening item and is an essential commodity of mass consumption.

According to Sugar Cess Act, 1982, sugar means any form of sugar including sugar in crystallized or powder form containing 90 per cent of sucrose and produced by the vacuum pan process and includes ram produced by the said process.

The word "Shakkara" was in vogue in Prakrit literature for sugar. Thereafter, its mention is found in many languages with different names varying in pronunciation though resembling in some way. It has been
mentioned as "Schakar" in Persian, "Sukkar" in Arabic, "Suicar" in Assyrian, "Saccharum" in Latin, "Azucar" in Spanish and Portuguese, "Zuchero" in Italian, "Sucre" in French, "Zucker" in German and so on.¹

'Sugar' is of ancient origin. In its crude form it was used as a sweetening agent from times immemorial. Its origin can be traced in the Sanskrit word 'Karkara' which means sand or gravel, thereby suggesting its use in ancient India. In the Prakrit language Sanskrit 'Karkara' became 'sakkare' and the Arabic form of 'Sakkara.' 'Sukkur' is the parent of various words for sugar in many languages.²

Sugarcane (Saccharum officinarum) of the family gramineal vern ganna is the chief source of commercial sugar. Sugarcane is one of the chief commercial crops in India. India is the birth place of sugar from sugarcane since times immemorial. India has been the original homeland of sugarcane and the manufacture of sugar. There is historical evidence that sugar has been known to India for about 2000 years. Even the Indian epics indicate the fact and sugar is one of the five celestial sweets.

The word sugar has its origin from Sanskrit. The Atharva Veda which dates back to 5000 BC also mentions about sugarcane. This is the oldest and authoritative evidence of earliest description of sugarcane.
But still reference to sugar is found long ago in the institute of Manu and the treatise of Charaka and Susruta dealing with medicine. The mention about it in the records of Magesthenese and in Arthashastra of Chanakya also dated back to the period of 321-296 B.C. The first foreigner namely Alexander the Great along with his soldiers were the first to find sugarcane in India when they visited India in 327 B.C. The Chinese Emperor Tai Tsung 627-650 A.D. imported the method of sugarcane cultivation and manufacture of sugar.

Thus production of white sugar from sugarcane has been a very old industry in India. In early days sugarcane was used to make gur for consumption by common people and a certain quantity of sugarcane was also used for making khand sugar for confectionery and other similar purposes.

Sugar from India used to be shipped to other countries of Europe and Asia, and thus India enjoyed monopoly in the world sugar market. For the first time in 1853 modern process of sugar manufacture was introduced in the west which was imported to India as late as 1903. As a matter of fact China acquired the knowledge of sugar making from India.
Though the cultivation of sugarcane has been known in India since 13th century or even earlier but manufacture of white crystal sugar is hardly more than two centuries old.

Sugar also called as mill made white crystal sugar. Sugar is the second most important next to gur and khandsari sweetening agent in Indian homes. But in recent years per capita consumption of sugar in the country increased over the gur and khandasari. Thus sugar is fast replacing gur especially in rural and semi-urban areas. The National Commission on Agriculture was also of the opinion that the consumption rate of sugar was growing faster due to changing dietary habits and purchasing power of people.

North India is accredited as the home place of sugarcane cultivation. Right from the 13th century the Gangetic India popularly known as “Indian Sugarcane Belt” is the citadel of cane cultivation. Gradually it has taken its roots in other parts of the country. It is evident from “safarnamah,” that in the 13th century Ibn-i-Batuta travelled in India and greatly admired the sugarcane cultivation in India. In this there is a specific reference to the Paunda cane of the Malabar Coast. There is a good description of the methods of sugarcane cultivation and manufacture of all forms of sugar and distillation of spirits from it in the Ain-i-Akbari.
Like sugar, sugarcane cultivation in India is also of ancient origin but till the beginning of the current century, the sugarcane was being converted into sweetening agents known as “gur” and “khandasari” (non-centrifugal sugar) adopting indigenous processes. For this, sugarcane is crushed in animal driven or power driven crushers and the juice is clarified and concentrated in open pans. Concentrated and solidified sugarcane juice is gur and as such, its colour varies from pale yellow to dark brown.

It can be made into different shapes ranging from small lumps of 10 grams each to bucket shaped lumps weighing 30 kg each. This product is similar to “panochas” or “Muscavado” manufactured from sugarcane, in Philippines and “Bangve” or “Rapadura” manufactured from sugarcane in Brazil and “Panela” or “chanaca” manufactured from sugarcane in Columbia, Ecuador, Bolivia, Peru etc. One tonne of sugarcane containing about 12.5% sugar yields about one quintal of gur i.e., 10% recovery.

However, this includes all the clarification agents used, which are all solidified. On the other hand, khandasari sugar is crystalline sugar produced more or less by the same process as adopted by the vaccum pan sugar factories, but instead of vaccum pans, the concentration is done in open pans. The chemical composition and physical appearance
of khandasari sugar is more or less similar to that of sugar produced in the vacuum pan sugar factories.  

Other Sugar Sweets

Khand Sugar

Khand sugar is also called as Deshi sugar. Khandasari is finely granulated, crystallized sugar manufactured by the open pan systems. A certain quantity of cane is also used for making khand sugar which is used for confectionery and other purposes. It is thick in size and brown coloured, generally organized on small scale basis. In recent years the per capita consumption of khandasari has decreased in view of changing dietary habits.

In India in early days khandasari system was the most important process of making khand or raw sugar. The khand sugar produced in villages is further processed in nearby towns for refining. A part of the khand sugar is also used for making powder form of sugar called Bura.

To produce khand sugar three roller bullock driven cane crushers were used in early days. The cane juice so obtained was clarified with vegetable mucilases and the refining was done mostly by hand. A number of changes have taken place in khandasari industry in the matters of production process. For instance presently the khandasari units have
been adopting hydraulically loaded power crushers of six roller mills, capable of crushing 100 tonnes per day.

But this process permits extraction of juice from cane only to the extent of 80-85 per cent of sugar. Another significant development in khandsari sugar industry is that clarification of juice is now done with lime and sulphur-di-oxide. As a step in the process it is then heated to boiling point in the open vats. Rab and molasses are also obtained in khandasari when the decanted supernatant clear juice is processed after the treated juice is allowed to settle in tanks. The older gutter type pans have been replaced by more efficient channel type pans. Even furnaces for burning bagasse are scientifically designed and improved to suit its requirements to heat juice are now in use.

Rab is converted into crystal sugar. For this crystallizers with stirrers are used which work continuously. So khandsari sugar factories are now capable of producing sugar grades of Indian sugar standards. Power operated centrifugals are now in popular use. Rotary driers are also used by replacing sun drying of khand sugar.

**Gur**

Cane juice can be converged into gur. Gur is solidified cane juice. It is hard crystalline and has a colour ranging from golden yellow to
brownish yellow. In recent years the per capita consumption of gur has decreased in view of changing dietary habits.

Sugarcane juice is boiled into sticky, brown mass called gur in which form it is ultimately consumed.

The Agricultural Price Commission on Sugarcane Price Policy for 1979-80 stated that the development of khandsari sugar manufacturing industry in recent years and the role it plays in the sugarcane economy are factors which have assumed importance. It is capable of producing some ten lakh tones of sugar annually, which constitutes a sizeable proportion of the total sugar production in the country.

This industry, which was once concentrated in U.P. is now sprinkled in other areas too and provides another significant demand dimension for sugarcane. Khandsari is, however, not yet integrated with the factory sugar industry. Particularly, there is no certainty to the farmers about the cane quantity that the khandsari industry will buy, the period over which it will buy and the price he will get. In this situation, there is need for the Government of India to extend its co-ordinating and regulating role to khandsari also to pave the way for evolving and enforcing in integrated price policy for sugarcane.
The Indian sugar market has special features in respect of selling activities. The entire sugar market is regulated by the marketing policy and is controlled by the Government. According to Government Sugar Policy, which may change from time to time, each sugar factory is required to surrender a prescribed percentage of its production to the Government which it markets through public distribution system.

The remaining percentage of the production called free sugar, free sale sugar or free market sugar, is left with the factories to be sold in the open market. In other words the factories are free to sell the non-levy sugar or free market sugar. In this way the Government controls the sugar marketing. It exercises indirectly control over the marketing mechanism and in turn releases its fixed quotas.

Sources of Sugar

Sugar is made from the following sources:

1. Sugarcane

Sugarcane called saccharum officinarum L, is the main source of sugar. Sugarcane is a type of plant of tall grass from which sugar juice is produced by crushing to obtain sugar. Sugarcane occupies a prominent position as a cash and commercial crop.
The sugarcane contributes approximately 56 per cent of the total sugar production of the world. In India it occupies about 2 per cent of the total cultivated area. It is not a precise estimate, but on the other hand, the area under sugarcane cultivation fluctuates from year to year. Uttar Pradesh has the largest acreage under sugarcane and it is about 55-60 per cent of the area under sugarcane and it accounts for 45 per cent approximately of the annual production in terms of raw sugar. Sugarcane is a crop of tropics.

The area under sugarcane cultivation progressed enormously in various parts of the country in the recent decades particularly during the Five Year Plans. As a result there has been a growth in the cane sugar industry.

Most of the cane produced in India is used largely for crushing in sugar factories established all over the sugarcane growing areas, for making gur, khandisari sugar and partly for chewing. The main reason attributed for rapid increase of sugarcane cultivation in India has been the increasing demand for cane from the mills. All the area under the respective sugar factory zones has been converted into sugarcane land, the cane replacing all other crops as cash and commercial crops.
Juice is processed initially in modern mills and successfully fermented to centrifugal plants to be refined into white sugar.

Sugar Beet

Sugar beet is the second main crop after sugarcane used in the manufacture of sugar that contributes approximately 44 per cent of the total sugar production in the world. The sugar beet called as Beta Vulgaris L. is an important sugar producing commercial crop in which sugar is stored in roots. It is purely a creation of plant breeding.

The sugar beet is the sweet substance that can be obtained from a plant known as sugar beet. It is a plant with a round or carrot shaped root. Sugar beet is also a source of sugar. One variety is red beet usually beet root. It is used as food especially in salads. Another variety of it is guar beet which is a source of sugar.

Sugar beet is essentially a crop of temperate regions. Genetic and agro technological improvements have now extended its frontiers to higher latitudes of sub-tropics as an irrigated winter crop.

In some foreign countries like Syria, Iraq, Iran, Algeria etc., sugar beet has been fast assuming commercial importance. It is observed that in recent years its cultivation has been extended to other countries.
It is a 6-7 months crop in the case of winter sugar beet and is sown in October and harvested in April and May. It has a potential of yielding 35-45 tonnes of roots per hectare with a root sugar content of 15-16 per cent.

Beets are usually cultivated as a rotation crop. The best yields and quality are obtained from fertile, mellow soils rich in time. Because sugar beet contains sucrose like sugarcane, sugar beets are produced mainly. The production of sugar from sugar beet follows the same process like extraction, purification, evaporation and crystallization. But the sugarcane has certain advantages over the sugar beet in as much as its cultivation is easier and the yield per hectare is higher.

The refuse materials and by-products of sugar beet have great commercial value. In addition to making sugar from beet, by-products from sugar beet like beet pulp and molasses are also produced having high commercial value as cattle feeds and for special fermentation and pharmaceutical purposes. Beet pulp has many valuable uses. It is a residue obtained after the extraction of sugar, more useful as cattle feed and can largely replace barley grains in feed concentrates. It can also be fed to cattle as fresh or as dried pulp. The palatability can be improved by mixing molasses with pulp. The molasses produced from sugar beet is used as raw material for several special fermentations and is also a
rich source of lactic acid, vitamin B and other pharmaceutical preparations.

The beet tops are highly nutritious cattle feed and are known to improve the milk yield of crops.

Beet pulp and bagasse are promising raw material in paper, plastic etc. Rum is a popular alcoholic beverage in many countries which is distilled from molasses. Thus there are many other important uses of sugar beet and sugar derivatives.

There are 122 sugar producing countries in the world out of which 40 countries produce sugar from sugar beet and 82 from sugarcane. The countries like Spain, Portugal, the USA, Afghanistan, China, Iraq, India, Japan, Pakistan and some EEC (European Economic Countries) countries manufacture sugar from both sugarcane as well as sugar beet. Out of such 12 countries, only 6 have dual purpose sugar factories i.e., both sugarcane and sugar beet for sugar manufacturing in the same country.5

The first vaccum pan sugar factory was established in India in the year 1903.6 The Sugar Breeding Institute, Coimbatore was started in the year 1912, with the primary objective of evolving new sugarcane
varieties suitable for cultivation in sub-tropical India for improving productivity. The mandate of the institute includes:

- Breeding of superior sugarcane varieties;
- Conducting basic and strategic researches
- Technology transfer, consultancy, human resource development;
- Collection, maintenance, evaluation, and documentation.

The remarkable development in sugar industry was in 1919 when the Government of India appointed a sugar committee with the task of investigating the possibilities of organizing and developing sugar industry in India.

**Protection to Sugar Industry**

By the year 1930, the number of sugar factories established in India was only 30. The production of sugar by 30 sugar factories and a few gur refineries was only of the order of 0.1 million tones per annum. India was importing about one million tonne of sugar from other countries mainly Java (Indonesia) for meeting its internal requirements of sugar. In order to develop the Indian sugar industry and to protect it from competition from foreign sugar, the Government of India promulgated the Indian Sugar Industry (Protection) Act, 1932 imposing a protective tariff on imported sugar.
Immediately after the grant of protection to the Indian sugar industry, there was a sudden spurt in the number of sugar factories established in India and by 1939-40, there were 142 sugar factories producing about 1.2 million tones of sugar per annum. Subsequently, under the different Five Year Development Plans introduced by the Government of India from 1951 onwards the sugar industry developed to a considerable extent.\(^7\)

**Development in Sugar Industry**

Subsequently the Indian sugar industry was given protection. The significant step which prompted the growth of the industry was that the Tariff Board in its report, 1931 recommended encouragement to the expansion of the white sugar industry. The Sugar Industry Protection Act, 1932 imposed protective duties for seven years. The Act of 1932 acted as a great stimulus to the industry.

**National Sugar Institute**

The National Sugar Institute, Kanpur previously known as Imperial Institute of Sugar Technology, was established in the year 1936 and since then it has been serving the sugar industry by meeting its manpower requirement, research and development need and consultancy services. It is also a centre of the advanced research and development
work in the sugar. Apart from these the institute provides the following services also to the sugar industry.

1. Providing technical assistance.
2. Preparation of specifications.
3. Preparation and issue of Indian sugar standards.
4. Development of design of the equipments.

Before independence, the industrial base was very narrow despite the rich natural resources it was endowed with. The national endeavour thus has been to promote rapid and balanced economic development. The nation has accepted the concept of balanced economic development aimed at a socialistic pattern of society in which there will be decentralized economic units and at the same time enable such units to enjoy the economies of large scale production.

The cultivation of sugarcane in India in the pre-independence period assumed greater importance by the enactment of the Sugarcane Cane Act, 1934. This Act was passed by the Government of India in 1934 in those days in order to give some ameliorating measure of relief to the cane growers. This Act empowered the provincial Governments to fix minimum cane price for sugarcane.
The matter of continuation of protection to sugar industry was referred to the Tariff Board in 1937. The Board recommended to impose import duty and it was implemented after a lapse of considerable period.

The sugar industry continued to enjoy protection during the second world war under the Protective Duties Continuation Act.

The protection of the sugar industry was continued till March 1948 and extended till March 1950, after which it was discontinued. Thus protection was extended continuously for about 18 years from 1932 to 1950.

In the year 1930-31 there were 29 factories in operation in the country. They had 1.17 lakh hectares of area under sugarcane cultivation. The quantity of sugarcane produced was 36.35 lakh tones. Just before the independence the position of the sugar industry was such that there were 145 factories in operation. The area under sugarcane cultivation increased to 12.9 lakh hectares and the production was 47.27 lakh tones of sugarcane in the year 1945-46. The total quantity of sugar produced was 1.20 lakh tones in the year 1930-31 which went up to 9.59 lakh tones in the year 1945-46.
The progress of sugar industry in terms of factories in operations, area under sugarcane cultivation, production of sugarcane, total cane crushed and sugar produced can be seen from Table 2.01.

TABLE 2.01

PROGRESS OF SUGAR INDUSTRY

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of factories in operation</th>
<th>Production of Sugarcane ('000 tonnes)</th>
<th>Area under Sugarcane ('000 hectares)</th>
<th>Total cane crushed (000 tonnes)</th>
<th>Total sugar produced ('000 tonnes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1930-31</td>
<td>29</td>
<td>36,354</td>
<td>1,176</td>
<td>1,339</td>
<td>120</td>
</tr>
<tr>
<td>1935-36</td>
<td>135</td>
<td>62,185</td>
<td>1,681</td>
<td>10,045</td>
<td>934</td>
</tr>
<tr>
<td>1940-41</td>
<td>148</td>
<td>51,978</td>
<td>1,617</td>
<td>11,492</td>
<td>1,113</td>
</tr>
<tr>
<td>1945-46</td>
<td>145</td>
<td>47,273</td>
<td>1,299</td>
<td>9,510</td>
<td>959</td>
</tr>
</tbody>
</table>


Licensing

Since 1952, the development of the sugar industry was being regulated by the Government of India under the provisions of the Industries (Development and Regulation) Act, 1951. The licensing system had been controlling both the substantial expansion in the existing sugar factories and setting up of new units. The advantage
under this system was that the sugar factories had their cane supply area reserved and the factories had the freedom to develop their area for the best return without fear of anyone else usurping it. Even the co-operative sector of the sugar industry took advantage of their reserved area and were able to improve sugarcane production both quantity and quality-wise and sugar production.

**Indian Institute of Sugarcane Research**

The Indian Institute of Sugarcane Research (IISR), Lucknow was established in the year 1952 by the erstwhile Indian Central Sugarcane Committee for conducting researches on fundamental and applied aspects of sugarcane culture as well as to co-ordinate the research work done on sugarcane in different parts of the country. The Government of India took over the institute from the Indian Central Sugarcane Committee on 1st January 1954. On April 1st 1969, it was transferred to the Indian Council of Agricultural Research (ICAR), New Delhi.

**Controls**

The increase in domestic demand resulted in shortage of sugar. To remedy the situation the Government resorted to impose control over the sugar industry under the Sugar Control Order, 1942. Accordingly the
prices of sugarcane white sugar as well as distribution of white sugar were controlled.

The Government of India appointed two expert committees in 1951 and 1955 to examine the cost structure of sugar and fair price payable to the sugar industry. The first expert committee did not favour regional schedules and constructed an all India schedule. The second expert committee recommended adoption of the all India schedule with certain modifications till regional schedules were ready.

**Tariff Commission**

In 1958, the Government of India asked the Tariff Commission to examine and report on the cost structure of sugar and the fair price payable to the sugar industry. The Tariff Commission, 1959 recommended four regions for the fixation of fair prices on the basis of the cost of production, the duration of crushing and the recovery of sugar. As against the four zones recommended by the Tariff Commission, the Government gradually increased the number to 22.

**Ordinance**

An Ordinance was passed by the Government in 1961 to take powers to fix the total quantity of sugar to be manufactured by each factory. The ordinance also empowered the Government to frame rules
for fixing production quotas and if any factory produced sugar in excess of its quota it was liable to pay on such excess output a penalty in the form of special excise duty.

Molasses Control

In exercise of powers conferred by section 18G of the Industries (Development and Regulation) Act 1951 (65 of 1951) the Central Government issued the Central Molasses Control Order, 1961. Under this order the sale, distribution and prices of molasses were governed by the Molasses Control Order 1961. Subsequently, the Molasses Control Order 1961 was extended even to cover molasses produced by the khandasari units.

Gundu Rao Committee

In the year 1963, Government had set up a separate technical committee under the chairmanship of S.N.Gundu Rao, a famous sugar technologist with the task of studying the sugar industry and to make recommendations on rehabilitation and modernization of sugar factories in India. The committee submitted its report in 1965.
**Sen Commission**

In the year 1964 the Government of India constituted the Sugar Enquiry Commission under the chairmanship of Dr. S.R. Sen and it submitted its report. It is popularly called Sen Committee.

**Sugar Control Order**

Under Sugar (Control) Order, 1966 only recognized dealers had to carry on the business of purchasing, selling and distributing of sugar. They were licensed under the Order relating to the licensing of the sugar dealers for the time being in force in any State. The Central Government was empowered under the Order to direct that no sugar should be manufactured from sugarcane except under and in accordance with the conditions specified in the license. It might also direct that no producer should sell or agree to sell or otherwise dispose of or deliver any kind of sugar or remove any kind of sugar from the bonded godowns of the factory.

The producers or recognized dealers had to follow the directions regarding production, maintenance of stocks, packing, storage, sale, grading, stocking, marketing, payment, disposal, delivery and distribution of any kind of sugar.
Dual Pricing Policy

The Government of India introduced dual pricing policy for sugar in the year 1967 to protect weaker sections of the consumers by selling sugar at controlled price. The Sugar (Control) Order 1966 empowered the Government to regulate production, sales and quality of sugar. The three policy objectives of dual price policy of 1967 were:

(a) to provide an incentive to sugarcane growers to bring more area under sugarcane;

(b) to give an incentive to the sugar industry to maximize sugar production; and

(c) to ensure availability of a substantial portion of output for the consumer at a reasonable price.

SISSTA

The South Indian Sugarcane and Sugar Technologists’ Association (SISSTA) was started in the year 1968. SISSTA’s contribution to the spread of knowledge in the field resulted in the adoption of better early, mid and late maturing varieties of cane and improved harvesting technology which boosted the fortune of the “recovery starved” states of the South India.
The Molasses Control Order, 1971 was issued and under this order the Central Government partially decontrolled molasses and allowed sugar factories to sell 20 per cent of their production in the free market.

**Bhargava Commission**

Another important event in the development of sugar industry was constitution of Sugar Industry Enquiry Commission, in the year 1974, under the chairmanship of Justice Sri V. Bhargava, a former judge of the Supreme Court which submitted its report in 1974. This Commission is popularly referred to as Bhargava Commission. These two Commissions provided in their reports by far the most objective and impartial insight into the working of the sugar industry. The Bhargava Committee played a major role in framing the sugar policy and its recommendations have special significance to the sugar industry.

The Sugar Industry Enquiry Commission was set up:

(a) to study the working of the sugar industry in all the aspects, with particular reference to its performance during the last ten years and the conditions of the plant and machinery in different sugar mills;
(b) to identify the inadequacies in the performance of the sugar industry and the causes thereof;

(c) to study in detail the causes for the existence of a large number of sick sugar mills;

(d) to study the progress and the working of sugar mills in the cooperative sector;

(e) to suggest in the light of such studies, a rational and efficient organization of the sugar industry in different parts of the country, in order to improve its working, performance and also to suggest measures for solving the problem of sick sugar mills, in the context of the demand for nationalization of the sugar industry;

(f) to study the relationship between sugarcane supplies and the owners of the sugar mills, with particular reference to the supply of cane and the payment of cane price and to make suggestions for improvement in the present laws and practices in this regard;

(g) to study the problem of large fluctuations in sugarcane production and its processing into gur, khandasari and sugar and to make suggestions for securing stable conditions with a view to achieving a balanced development in these fields; and
(h) in the light of the fore-going studies, to suggest a blue-print for the development of the sugar and allied industries over a period of ten to fifteen years.

The terms of reference were very wide and comprehensive and covered, for the first time, all the important aspects of the sugar industry. The Commission submitted its report in 1974.

By notification dated 31st October 1975, the Ministry of Petroleum and Chemicals notified the revised prices for various grades and molasses.

Molasses Control (Regulation of Fund for Erection of Storage Facilities) Order, 1976 was issued by the Government. Under this order every sugar factory or khandsari unit was required to credit the amount earmarked from the prices of molasses for construction of storage facilities to a separate head of account.

Decontrol

The Government decontrolled sugar completely from August 1978. With a view to solve the problem created by the policy of control the entire sugar industry (Co-operative, Public Sectors) put together entered into voluntary agreement to set up a special committee to regulate the monthly release of sugar.
Monthly Release Mechanism

From June 1979 the Government itself reinstated the mechanism of monthly release of sugar and accordingly the voluntary agreement was terminated voluntarily.

The adverse factor like raising price of sugar made the Government of India feel and was compelled to impose partial control over sugar industry with dual prices system from December 1979. A ratio was fixed both for levy and free sugar. In addition, restrictions were also imposed on the movement of sugar from one state to another.

Subsidies

In the year 1979, the Government of India constituted a Committee on Controls and Subsidies under the chairmanship of Mr.V.Dagli. This was a good and comparatively recent profile of the sugar industry on controls and subsidies.

Levy and Free Sugar

The Levy Sugar Supply (Control) Order 1979 empowered the Government to collect levy sugar from any producer or the authorized dealer, of such type or grade or in such quantities as it might deem necessary. Under the orders, a prescribed percentage of total production
of sugar factories was procured by the Government as levy sugar for distribution at controlled rates through public distribution system. The balance of the production called free sale sugar, or free market sugar was allowed to be sold by the factories at open market prices.

Yet another development was the report on sugar prices by the Bureau of Industrial Costs and Prices (BICP).

In the year 1980 the Government of India constituted the Agricultural Price Commission which submitted its report on price policy for sugarcane for the year 1980-81 and for the year 1981-82. On the sugar industry the reports of BICP and APC are the important documents.

In the year 1980, the Government of India constituted a separate committee under the chairmanship of Dr. S. R. Sen on cost of production estimates.

The Sen Commission 1980 made recommendation for four zones, in its interim report, and later on recommended five zones. The Tariff Commission in its 1969 report had recommended 15 zones whereas the number of zones were increased to 16 by the Tariff Commission, 1973. Before 1958, the cost of production of sugar in India was determined on
the basis of the all India cost schedule prepared by Naidu Committee, 1955 and later on amended by Gopala Krishnan Committee, 1955.

**Increasing Licensing Capacity**

The requirement of sugar to meet the rising domestic consumption, exports and buffer stock, by the end of the Fifth Plan (1978-79) was placed at 57 lakh tonnes (later revised to 54 lakh tonnes by the Planning Commission). To achieve this production, the Government decided to raise the licensed capacity of the sugar industry to 70 lakh tonnes (annual sugar production) partly by establishment of new sugar factories and partly by expansion of existing units.

Besides, many cases were registered for expansions under liberalized licensing procedure involving a capacity of 1.21 lakh tonnes (annual sugar production). The overall position as on 15.9.78 can be seen at a glance in the following table:\(^8\)

<table>
<thead>
<tr>
<th></th>
<th>Capacity in terms of annual sugar production (lakh tonnes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Total licensed capacity (including 1.21 lakh tones under liberalized procedure)</td>
<td>73.72</td>
</tr>
<tr>
<td>(b) Installed capacity (up to 1997-98 season)</td>
<td>51.63</td>
</tr>
<tr>
<td>Total</td>
<td>23.24</td>
</tr>
<tr>
<td>(c) Capacity remaining to be established</td>
<td></td>
</tr>
<tr>
<td>(i) 77 new factories</td>
<td>18.09</td>
</tr>
<tr>
<td>(ii) Expansions in 91 cases including 18 cases registered under liberalized procedure</td>
<td>10.97</td>
</tr>
</tbody>
</table>
Rolling Plan

In the context of Five Year Plan 1978-83 of the rolling plan system, adopted by the Government, the Fifth Plan which was originally scheduled to end on 31st March 1979 was terminated a year in advance i.e., on 31.3.1978. Thereafter the rolling plan came into being whereby the planning process would be of continual advancing periods for five years and would be formulated at the end of every year. The Planning Commission therefore took up formulation of the rolling plan. A working group was constituted by the Planning Commission to formulate targets for the sugar industry.

Indian Sugar Mills Association

The Indian Sugar Mills Association is an apex industry association of the Indian Sugar Industry. To co-ordinate the activities of sugar mills in India, the Indian sugar mills association was constituted.

Most of the sugar mills in India are its members. It has a widespread organization and maintains intimate contact with all regions in India through a network of branches and affiliated regional associations. The association is represented on all important Government and agencies associated with sugar industry. It interacts with the Central and State Government on matters relating to sugar.
policy, fixation of sugar/sugarcane price and protects and promotes the interests of its members in particular and sugar industry in general.

New and Expansion

The Government of India after thoroughly reviewing the problems issued revised guidelines for licensing of new factories and expansion of the existing sugar factories during the Eighth Five Year Plan. In brief they are as follows:°

(1) New sugar factories will continue to be licensed for a minimum economic capacity of 2500 tonnes cane crushed per day (TCD). There will not be any maximum limit on such capacity. However, in areas specified as industrially backward areas by the Government of India and certified by the Indian Council of Agricultural Research to be agro-climatically suited for development of sugarcane, licensing of new sugar factories in the co-operative and public sectors will be allowed for an initial capacity of 1750 TCD subject to the condition that the units will expand their capacity to 2500 TCD within a period of 5 years of going into production.

(2) Licenses for new sugar factories will be issued subject to the condition that the distance between the proposed new sugar factory and an existing/already licensed sugar factory should be
25 kilometres. This distance criterion of 25 kms can, however, be relaxed to 15 kms in special cases where cane availability so justifies.

(3) The basic criterion for grant of licenses for new sugar units will be their viability, mainly from the point of view of cane availability and potential for development of sugarcane.

(4) All new licenses will be issued with the stipulation that cane price will be payable on the basis of sugar sucrose content of sugarcane.

(5) Other things being equal, preference in licensing will be given to proposals from the co-operative sector and the public sector, in that order, as compared to the pubic sector. In case, more than one application is received from any zone of operation, priority will be given to the application received earlier. However, in such cases also, preference will be given to the Co-operative Sector, followed by the Public Sector and the Private Sector in that order, even though the applications of the first two sectors may be of a later date.

(6) Priority will continue to be given to sugar factories with capacity of less than 2500 TCD to expand to the aforesaid minimum economic capacity.
(7) While granting licenses for new units and expansion projects, the additional capacity to be created up to the end of the Eighth Plan, i.e., 1996-97 will be kept in view.

(8) While granting licenses for new sugar factories, industrial licenses in respect of down-stream units for the use of molasses, i.e., industrial alcohol etc., will be given readily.

Sugar Development Fund (SDF)

There is separate legislation for development of sugar known as the Sugar Development Fund Act, 1982. It provides that an amount equivalent to the proceeds of the difference of excess levied and collected under the Sugar Cess Act, 1982 reduced by the cost of collection is determined by the Central Government.

Under Sugar Cess Act, 1982, a cess of Rs.14 per quintal is being collected from all sugar producing factories in India. The objective of SDF is that the fund has to be utilized by the Government of India, *inter alia*:

- for making loans
- facilitating rehabilitation and modernization of any factory.
- Defraying expenditure for the purpose of building and maintenance of buffer stock with a view to stabilizing the price of sugar.

Any factory which is approved by the financial institution for assistance for modernization and rehabilitation of plant and machinery are normally eligible for a loan under this scheme.

The pattern of assistance from the SDF for modernization / rehabilitation is normally as per the following pattern.

(i) 50% of total project cost is taken as a loan from the financial institution.

(ii) 12.5% of the total project cost is invested through generation of funds or by collecting additional share capital by the promoters i.e., co-operative societies in case of co-operative sugar factories.

(iii) Loan from SDF is granted up to a maximum of 37.5% of the total project cost on the recommendations of financial institution against enquiry participation.10

The loan from the fund carries simple interest at a concessional rate of 9% per annum. In case of default in repayments, a penal interest
of 2½% is charged. The loan and interest thereon is repayable in 5 yearly instalments.

The Sugar Development Fund Act has been introduced in the Parliament for the purpose of amendment for providing subsidy.


The proposed amendments in the existing Sugar Development Fund Act of 1982 are aimed at making funds from the Sugar Development Fund (SDF) to the mills for bagasse-based co-generation power projects and for production of anhydrous alcohol or ethanol. The proposed changes suggest that the SDF could also be used for defraying expenditure on internal transport and freight charges to the sugar factories on export shipments of sugar with a view to promote exports.

A programme of planned development was thus adopted after 1947 under successive five year plans with the object of building up by democratic process, a rapidly expanding economy pledged to the values of socialism and democracy, while development and expansion of industries in the public sector in the fields reserved for it as well as in other spheres, have been a major policy towards that end.
At the time of commencement of the First Five Year Plan 1950-57 there were 139 sugar factories under operation. There was 17.07 lakh hectares of area under sugarcane cultivation producing 548.23 lakhs tones of sugarcane. Total sugar produced recorded 11.00 lakhs tones.

By the end of the First Five Year Plan a number of factories in operation went up to 143 and by the end of Second Five Year Plan 1960-61 the number raised to 174. In the year 1965-66 there were 200 sugar factories which increased to 385 in the year 1990-91.

The cane area under cultivation in 1955-56 was 18.74 lakh hectares, the area steeply increased to 22.15 lakh hectares in 1960-61 and further raised to 28.36 lakh hectares in the year 1965-66.

In the year 1990-91 total cane crushed was 122.34 lakh tones with a sugar production of 120.47 lakhs tones.

The progress of sugar industry from 1951 to 1991 can be seen from Table 2.02.

Mahajan Committee (1997)

The Government of India had in pursuance of a Directive by the Allahabad High Court constituted a High Power Committee on Sugar Industry in 1997. The committee was headed by Mr. B.B. Mahajan,
<table>
<thead>
<tr>
<th>Year</th>
<th>No. of factories in operation</th>
<th>Production of Sugarcane ('000 tonnes)</th>
<th>Area under Sugarcane ('000 hectares)</th>
<th>Total cane crushed (000 tonnes)</th>
<th>Total sugar produced ('000 tonnes)</th>
</tr>
</thead>
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<td>1,707</td>
<td>11,348</td>
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<td>1995-56</td>
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<td>18,642</td>
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<td>170,648</td>
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<td>1990-91</td>
<td>385</td>
<td>241,045</td>
<td>3,686</td>
<td>122,338</td>
<td>12,047</td>
</tr>
</tbody>
</table>

former-Secretary food. The committee considered the various policy issues and institutional framework relating to sugar industry, trade, and sugarcane cultivation in India. It made recommendations on various policy matters and institutional arrangements.

The important recommendations of the Committee are as follows:

1. Complete decontrol of sugar price
2. Discontinuation of supply of sugar through public distribution system
3. A fixed share for the growers in the sale realization from the sale of sugar.
4. To face competition from foreign producers
5. A regular annual export quota of one million tones of sugar.
6. Abolition of the scheme of incentives.
7. No new license should be issued for khandasari units within reserved area.

There were 392 sugar factories in India in the year 1991-92 and by the end of the year 1996-97 the number increased to 412 representing an increase of 20 factories during the five years. The total quantity of sugar produced was 13.40 lakh tones in the year 1991-92. The sugar
production increased to 16.45 lakh tones in 1995-96 and there was a decline in production in the year 1996-97.

The figures relating to progress of sugar industry in the country during the period 1992 to 1997 are shown in Table 2.03.

TABLE 2.03
PROGRESS OF SUGAR INDUSTRY (1992-1997)

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of factories in operation</th>
<th>Production of Sugarcane ('000 tonnes)</th>
<th>Area under Sugarcane ('000 hectares)</th>
<th>Total cane crushed (000 tonnes)</th>
<th>Total sugar produced ('000 tonnes)</th>
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<td>1995-96</td>
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<td>281,100</td>
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<td>174,726</td>
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<tr>
<td>1996-97</td>
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<td>130,379</td>
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Sugar – A Regulated Industry

Sugar is the only industrial product which is regulated at every stage right from growing of the raw material till the completion of
marketing of finished product. The prices of cane, sugar and also of by-products are fixed by the Central Government. The Central Government has an overall control on all aspects of sugar and sugarcane production.

Accordingly the Government has been endeavouring to achieve the same by various methods such as regulation of levy and free sale quota, sugar release policy, fixation of cane price, sugar pricing policy, buffer stock, export quota, sugar cess, licensing of new sugar factories and expansion of existing ones, delimitation of factory zones through State Government and control of molasses and pricing policy.

Several Acts, and Rules have been enacted and rules have been issued from time to time by the Parliament and by State assembly in pursuance of the policies.

The following are such Acts, Rules and Orders governing the sugar industry.

I. Legislative Enactment

1. The Industries (Development & Regulation) Act, 1951.
4. Sugar Undertakings (taking over of Management) Act, 1978
5. Sugar Export Promotion Act, 1958.
6. The Central Excise and Salt Act, 1944 (1 of 1944)

II. Statutory Rules

(a) The Registration and Licensing of Industrial Undertakings Rules, 1952.

(b) Levy Sugar Equalization Fund Rules, 1976.

(c) Sugar Export Promotion Rules, 1973.


(e) The Central Excise and Salt Rules, 1944.

III. Control Orders

(i) Sugarcane (Control) Order, 1966.


(iii) Levy Sugar (Price Determination) Order (Annual).

(iv) Sugar (Packing and Marking) Order, 1976.

(v) Sugar (Restriction on Movement) Order, 1979.


Sugar being an essential commodity under the Indian law has been subject to a number of controls regulating its production, supply and prices. Most of these controls and regulations were imposed in a situation of scarcity.

The present position of the sugar industry in India is such that there were 436 factories by the year end 2001. They produced 185.11 lakhs tones of sugar by crushing 1766.60 lakhs tones of sugarcane. The area under cultivation was 42.97 lakh hectares with a production of sugarcane of 2,992.12 lakhs tones.

Table 2.04 shows the details of the present position of the sugar industry in India.
TABLE 2.04
PROGRESS OF SUGAR INDUSTRY (1998-2001)

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of factories in operation</th>
<th>Production of Sugarcane ('000 tonnes)</th>
<th>Area under Sugarcane ('000 hectares)</th>
<th>Total cane crushed (000 tonnes)</th>
<th>Total sugar produced ('000 tonnes)</th>
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<td>299,212</td>
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</table>


Sugarcane Area

Sugarcane is an important commercial crop of the country. It was grown in an area of 42.97 lakh hectares in the year 2000-2001. The state-wise analysis reveals that Uttar Pradesh occupied first position in terms of highest hectarage under sugarcane cultivation in India. It means the area under sugarcane was 19.47 lakhs hectares representing 45.31 per cent to total area under sugarcane cultivation in India.
Maharashtra occupied second place representing 5.95 lakhs hectares of area under sugarcane cultivation. In other words 13.85 per cent to total area was under sugarcane cultivation in India. In Karnataka the area under sugarcane was 4.21 lakhs hectares occupying third position and Andhra Pradesh ranks fourth in terms of area under sugarcane accounting 2.17 lakhs hectares.

State-wise and year-wise area under sugarcane cultivation figures in India are depicted in Table 2.05.

**Sugarcane Production**

The figures relating to production of sugarcane in India State-wise and year-wise are indicated in Table 2.06.

The table shows the quantity of sugarcane production in India. It was 2539.95 lakhs tones in the year 1991-92. The production increased to 2811.00 lakhs stones in the year 1995-96. The production trend of sugarcane has been showing an increasing trend during the period of 10 years under study.

The year 2000-2001 recorded a total production of sugarcane in India to the extent of 2992.12 lakhs stones. The State-wise analysis reveals that Uttar Pradesh accounted highest sugarcane production of
**TABLE 2.05**

STATE-WISE AREA UNDER SUGARCANE IN INDIA

(in '000 hectares)

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</tbody>
</table>

Note: * Provisional.
A: Included in Bihar
B: Included in Uttar Pradesh
C: Included in Madhya Pradesh

### TABLE 2.06

**STATE-WISE PRODUCTION OF SUGARCANE IN INDIA**

(in '000 tonnes)

<table>
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<tr>
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<td>Maharashtra</td>
<td>36187</td>
<td>30853</td>
<td>27892</td>
<td>44260</td>
<td>46656</td>
<td>41805</td>
<td>38174</td>
<td>47151</td>
<td>53143</td>
<td>50222</td>
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<tr>
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<td>Orissa</td>
<td>2745</td>
<td>754</td>
<td>781</td>
<td>1199</td>
<td>1594</td>
<td>1332</td>
<td>1144</td>
<td>1470</td>
<td>1080</td>
<td>964</td>
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<td>13</td>
<td>Punjab</td>
<td>6920</td>
<td>6369</td>
<td>4710</td>
<td>5160</td>
<td>8620</td>
<td>11040</td>
<td>7150</td>
<td>6130</td>
<td>6770</td>
<td>7770</td>
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<td>14</td>
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<td>1361</td>
<td>1129</td>
<td>1020</td>
<td>987</td>
<td>1411</td>
<td>1290</td>
<td>1159</td>
<td>1079</td>
<td>787</td>
<td>561</td>
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<td>Tamil Nadu</td>
<td>24887</td>
<td>23064</td>
<td>25992</td>
<td>36456</td>
<td>32944</td>
<td>25919</td>
<td>30183</td>
<td>33765</td>
<td>34285</td>
<td>34063</td>
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<td>16</td>
<td>Uttar Pradesh</td>
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<td>102929</td>
<td>104082</td>
<td>110239</td>
<td>119830</td>
<td>125349</td>
<td>129267</td>
<td>116483</td>
<td>115419</td>
<td>106588</td>
</tr>
<tr>
<td>17</td>
<td>Uttaranchal</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>7349</td>
</tr>
<tr>
<td>18</td>
<td>West Bengal</td>
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<td>889</td>
<td>542</td>
<td>649</td>
<td>1312</td>
<td>1810</td>
<td>1826</td>
<td>2002</td>
<td>1763</td>
<td>1466</td>
</tr>
<tr>
<td>19</td>
<td>Others</td>
<td>692</td>
<td>649</td>
<td>608</td>
<td>633</td>
<td>562</td>
<td>544</td>
<td>537</td>
<td>552</td>
<td>482</td>
<td>536</td>
</tr>
</tbody>
</table>

Note: * Estimated.

A: Included in Bihar
B: Included in Uttar Pradesh
C: Included in Madhya Pradesh

SHARE OF MAJOR SUGAR PRODUCING STATES (in '000 tonnes)

- Andhra Pradesh
- Gujarat
- Karnataka
- Maharashtra
- Uttar Pradesh

Figure 2.01
1065.88 lakhs tones in 2000-2001. Maharashtra holds second rank by producing sugarcane to the tune of 502.22 lakhs tones in the same year.

Utilization of Sugarcane

The sugarcane in India is used mainly for production of white sugar, seed, feed, chewing, gur and khandsari sugar. Data relating to production of sugarcane and utilization of sugarcane for different purposes are shown in Table 2.07.

The table reveals that the percentage of sugarcane utilized for production of white sugar was 52.7 per cent in the year 1991-92, which raised to 62.2 per cent in 1995-96. The quantity of sugarcane used for production of white sugar marginally fell down in the year 2000-2001 representing 59 per cent to total sugarcane production.

The percentage of sugarcane utilized for seed, feed and chewing had been almost constant ranging between 10 per cent to 11.9 per cent.

There had been wide fluctuations in the percentages of sugarcane utilization for making gur and khand sugar. It may be mentioned that in the year 1991-92 the percentage of sugarcane utilized for making gur and khand sugar was 36.8 which increased to 42.9 per cent in 1992-93, further increased to 45.4 per cent in 1993-94. The cane utilization for
### TABLE 2.07

**UTILIZATION OF SUGARCANE FOR DIFFERENT PURPOSES**

<table>
<thead>
<tr>
<th>Year</th>
<th>Production of Sugarcane ('000 tonnes)</th>
<th>Cane used for ('000 tonnes)</th>
<th>Percentage of sugarcane utilized for Gur and Khandsari</th>
<th>Gur and Khandsari</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Production of White Sugar</td>
<td>Seed, Feed &amp; Chewing etc.</td>
<td>Production of White Sugar</td>
</tr>
<tr>
<td></td>
<td></td>
<td>133,950</td>
<td>27,098</td>
<td>93,416</td>
</tr>
<tr>
<td>1991-92</td>
<td>253,995</td>
<td>26,629</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1992-93</td>
<td>228,033</td>
<td>103,008</td>
<td>27,106</td>
<td>104,215</td>
</tr>
<tr>
<td>1993-94</td>
<td>229,659</td>
<td>98,338</td>
<td>27,649</td>
<td>100,248</td>
</tr>
<tr>
<td>1994-95</td>
<td>275,540</td>
<td>147,643</td>
<td>33,001</td>
<td>73,373</td>
</tr>
<tr>
<td>1995-96</td>
<td>281,100</td>
<td>174,726</td>
<td>33,009</td>
<td>114,172</td>
</tr>
<tr>
<td>1996-97</td>
<td>277,560</td>
<td>130,379</td>
<td>33,009</td>
<td>114,172</td>
</tr>
<tr>
<td>1997-98</td>
<td>279,542</td>
<td>129,135</td>
<td>33,186</td>
<td>117,221</td>
</tr>
<tr>
<td>1998-99</td>
<td>288,722</td>
<td>157,561</td>
<td>33,469</td>
<td>97,692</td>
</tr>
<tr>
<td>1999-00</td>
<td>299,324</td>
<td>178,494</td>
<td>34,380</td>
<td>86,450</td>
</tr>
<tr>
<td>2000-01</td>
<td>299,212</td>
<td>176,660</td>
<td>34,291</td>
<td>88,261</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>11.5</td>
</tr>
</tbody>
</table>

gur and khand sugar making drastically fell down to 26.1 per cent in 1995-96 and gradually increased to 29.5 per cent in the year 2000-2001.

State-wise Utilization

The State-wise utilization of sugarcane for production of white sugar, gur and khand sugar in important states reveals some interesting features.

Top six States are selected to analyse the trend.

The Table 2.08 reveals that in Haryana 72.7 per cent of sugarcane was utilized for making white sugar and 14.8 per cent for making gur and khand sugar in the year 2000-2001. Punjab ranked second in utilizing cane to the extent of 65.8 per cent for making white sugar and 21.7 per cent for making gur and khandsari sugar.

The table reveals year-wise trend of utilization of sugarcane for production of white sugar, gur and khandsari.

Sugar Consumption

Normally 70-75 per cent of the sugar produced all over the country on an average all over the world is consumed locally where it is made. Some countries however do not enter the world market at all.
The quantity of sugarcane utilised for gur has been reduced in case of Karnataka which is reported to have been diverted for manufacture of white sugar in the State of Maharashtra.

<table>
<thead>
<tr>
<th>Year</th>
<th>Total available Supply</th>
<th>Consumption</th>
<th>% to Total</th>
<th>Exports</th>
<th>% to Total</th>
<th>Closing Stock of Sugar</th>
</tr>
</thead>
<tbody>
<tr>
<td>1991-92</td>
<td>167.14</td>
<td>112.25</td>
<td>(67.16)</td>
<td>5.83</td>
<td>(3.49)</td>
<td>49.06 (29.35)</td>
</tr>
<tr>
<td>1992-93</td>
<td>155.15</td>
<td>120.05</td>
<td>(77.38)</td>
<td>3.97</td>
<td>(2.56)</td>
<td>31.13 (20.06)</td>
</tr>
<tr>
<td>1993-94</td>
<td>134.06</td>
<td>111.29</td>
<td>(83.02)</td>
<td>0.75</td>
<td>(0.56)</td>
<td>22.02 (16.42)</td>
</tr>
<tr>
<td>1994-95</td>
<td>175.19</td>
<td>131.72</td>
<td>(75.88)</td>
<td>8.87</td>
<td>(4.03)</td>
<td>79.4 (36.09)</td>
</tr>
<tr>
<td>1995-96</td>
<td>219.99</td>
<td>136.75</td>
<td>(65.60)</td>
<td>5.36</td>
<td>(2.57)</td>
<td>66.34 (31.83)</td>
</tr>
<tr>
<td>1996-97</td>
<td>208.45</td>
<td>139.78</td>
<td>(71.73)</td>
<td>0.97</td>
<td>(0.50)</td>
<td>54.11 (27.77)</td>
</tr>
<tr>
<td>1997-98</td>
<td>194.86</td>
<td>141.35</td>
<td>(67.47)</td>
<td>0.09</td>
<td>(0.04)</td>
<td>68.06 (32.49)</td>
</tr>
<tr>
<td>1998-99</td>
<td>209.5</td>
<td>155.36</td>
<td>(62.13)</td>
<td>0.54</td>
<td>(0.22)</td>
<td>94.16 (37.65)</td>
</tr>
<tr>
<td>2000-01</td>
<td>279.27</td>
<td>151.32</td>
<td>(54.18)</td>
<td>12.87</td>
<td>(4.61)</td>
<td>115.08 (41.21)</td>
</tr>
</tbody>
</table>

Note: @ Internal consumption include one lakh tonne of imported sugar. However, quantity imported by private traders is not included in consumption. Figures in parentheses indicates percentage to total.

Figure 2.02

TREND OF TOTAL AVAILABLE SUPPLY CONSUMPTION EXPORTS

Exports (in lakh tonnes)

0 50 100 150 200 250 300

Years


- Total available supply
- Consumption
- Exports
India is one of the largest producers of sugarcane and sugar with surplus stocks and potentials to produce more.

Table 2.09 shows total available supply of sugar consumption and export of sugar.

The table reveals that total available supply of sugar in the year 1991-92 was 167.14 lakhs tones. Of which 112.25 lakhs tones recorded for consumption representing 67.16 per cent to total available supply of sugar. The percentage of export to total constituted 3.49 per cent to total. The closing stock of sugar accounted for 49.06 lakhs tones accounting for 29.35 per cent to total.

In the year 2000-2001 the quantity of closing stock of sugar was 115.08 lakhs tonnes, constituting 41.21 per cent to total available sugar supply. The percentage of consumption was 54.18 per cent to total while percentage of exports was 4.6 per cent to total.

**Per Capita Consumption Trend**

Table 2.10 shows trend of consumption of sugar, gur and khand sari.

In the year 1991-92 the quantity of sugar consumption was 112.25 lakhs tonnes, gur and khand sari 93.95 lakhs tones. The per capita
<table>
<thead>
<tr>
<th>Year</th>
<th>Population in Million (as on 1st March)</th>
<th>Consumption (Lakh tonnes)</th>
<th>Per capita consumption (Kg per annum)</th>
<th>Total per capita consumption of sugar, gur &amp; khandsari (Kg per annum)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Sugar</td>
<td>Gur &amp; Khandsari</td>
<td>Sugar</td>
</tr>
<tr>
<td>1991-92</td>
<td>846 (P)</td>
<td>112.25</td>
<td>93.95</td>
<td>13.3</td>
</tr>
<tr>
<td>1992-93</td>
<td>860 (P)</td>
<td>120.05</td>
<td>98.62</td>
<td>14.0</td>
</tr>
<tr>
<td>1993-94</td>
<td>875 (P)</td>
<td>111.29@</td>
<td>105.26</td>
<td>12.7</td>
</tr>
<tr>
<td>1994-95</td>
<td>890 (P)</td>
<td>119.74</td>
<td>100.97</td>
<td>13.5</td>
</tr>
<tr>
<td>1995-96</td>
<td>905 (P)</td>
<td>131.72</td>
<td>74.45</td>
<td>14.6</td>
</tr>
<tr>
<td>1996-97</td>
<td>920 (P)</td>
<td>136.75</td>
<td>115.61</td>
<td>14.9</td>
</tr>
<tr>
<td>1997-98</td>
<td>935 (P)</td>
<td>139.78</td>
<td>117.98</td>
<td>14.9</td>
</tr>
<tr>
<td>1998-99</td>
<td>950 (P)</td>
<td>141.35</td>
<td>99.09</td>
<td>14.9</td>
</tr>
<tr>
<td>1999-00</td>
<td>965 (P)</td>
<td>155.36</td>
<td>86.50</td>
<td>16.1</td>
</tr>
<tr>
<td>2000-01</td>
<td>980 (P)</td>
<td>151.32</td>
<td>87.93</td>
<td>15.4</td>
</tr>
</tbody>
</table>

Note: @ Include consumption of imported sugar.
(P) Projected on the basis of 9th Plan document
Figure 2.03

TREND IN PER CAPITA CONSUMPTION OF SUGAR

Figure 2.03
consumption of sugar was 13.3 kg per annum and gur and khandsari 11.1 kg per annum. Thus the total per capita consumption of sugar, gur and khandsari was 24.4 kg per annum.

In the year 2000-2001 the quantity of sugar consumption was 151.32 lakhs tones while consumption of gur and khandsari was 87.93 lakhs tones. In the same year the per capita consumption of sugar increased to 15.4 kg per annum from 13.3 kg per annum in 1991-92. It is interesting to note the per capita consumption of gur and khandsari fell down from 11.1 kg per annum in 1991-92 to 10.4 kg per annum in 1998-99 and further fell down marginally to 9 kg per annum in 2000-2001.

**Consumption Trends of Sugar**

There has been a significant annual growth in internal consumption during the last decade.

Thus the rise in consumption has been spectacular during the last decade and this phenomena is perhaps due to easy availability of sugar at a reasonably low price compared to other dietary articles.

There has been a distinct increase in sugar consumption in rural areas due to availability of sugar at subsidized price through public 

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distribution system. Besides there has also been a steep increase in per
kapita intake in urban centres also.

The co-operative sector of the sugar industry has therefore to gear
up to a steady annual production level over and above the present level
to avoid violent fluctuations in the market and to prevent imports.

**Export Potential**

India was importing sugar mainly from Java till 1932. For the
first time in the year 1932 the tariff protection was accorded to the sugar
industry by the Government. Since then India became self sufficient in
sugar production.

For the first time India entered the world market in 1957 as an
exporter. The exports from India are mainly governed by:

1. The US Sugar Act, 1948 for exports to USA.
2. The commonwealth Sugar Agreement for Export to the UK
   and other Commonwealth countries.
3. International Sugar Agreement of Export to other markets.
4. EEC Agreements.

Generally excess over local requirements is exported to other
countries under bilateral agreements.

It was in 1977 a new international agreement was reached under
which India was assigned a basic quota of 8.25 lakh tones and was to be
in force from 1st January 1978 for 5 years, with a provision for renewal of quota after the first 2 years. The exports fluctuated between 1.0 and 4.78 lakh tones till 1973 and rose up in subsequent years. There was a boom for exports between 1974 and 1977 when they reached a new high of 13 lakh tones in 1975 earning precious foreign exchange to the tune of Rs.475 crores.

However during 1979-80 and 1980-81, the country had to import 1.81 lakh tones and 2.14 lakh tones respectively and had to forego the export quota under international agreement. This was however revived and India exported nearly 6.4 lakh tones during the sugar year of 1983-84. The export quotas are governed by the International Sugar Organization which had fixed 6.5 lakh tones for India for the year 1983. The State Trading Corporation is the canalizing agency for export as also import of sugar.11

The EXIM policy 2002-2007 announced by the Commerce Ministry on March 31st, 2002 purports to boost exports. But the slashing of the Duty Entitlement Pass Book (DEPB) Scheme on plantation white sugar from 5 per cent to 4 per cent and no provision for DEPB on raw sugar, will adversely affect sugar exports.
The Export Promotion Act, 1958 was withdrawn with effect from January 15, 1997.

The reduction of DEPB on white sugar to 4 per cent from the earlier 5 per cent would mean exporters will earn $ 2-3 less on every tonne of sugar exported at current international price levels.

India is a member of the International Sugar Agreement (ISA) 1992 and India is continued to be a member of the ISA which has been extended till December 2003. The reason is, being the world’s largest producer and consumer of sugar, India intends not only to remain visible in the International Sugar Scenario, but also to increase its share in the global trade.

India has been a member of this agreement since its inception in 1937, first as an importer of sugar till 1942, and then as an exporter from 1958 onwards. In this present form, the ISA was negotiated under the UN Conference on Trade and Development in Geneva in 1992 and came into force from January 1993. It has since been extended regularly for a period of two years each time.

The International Sugar Council (SC), which oversees the implementation of this agreement, has also been designated as an international commodity body with access to the Common Fund of
Commodities (CFC). India’s membership of the ISA will enable it to have access to the resources of the CFC for undertaking development projects for sugar and sugarcane. Besides, the ISC acts as a centre for collection and dissemination of statistical information on world sugar production and trade, by product utilization and production of molasses and bagasse based items.

**WTO – Sugar Industry**

The Indian sugar industry is now coming under World Trade Organization (WTO) Regime. The main feature of the WTO Agreement on agriculture is the opening up of the world market for agricultural products. Under this competition is bound to increase.

The Global Alliance for Sugar Trade Reforms under liberalization was established in 1999 by 13 countries who wanted sugar to be included as an important element of the agricultural trade agenda. The main aims of the Global Alliance for Sugar Trade Reforms and Liberalization are to remove the distortions in world sugar trade by phasing out export subsidies, check on domestic support, distorting trade and improving market access. The alliance represents more than 50 per cent of the world sugar production and more than 85 per cent of the world raw sugar exports. So it can build pressure to bring transparency
in the functioning of the WTO and safeguard its own economic interest by working in tandem with other developing countries.

India is an active member of the global alliance for sugar trade reform and liberalization.
REFERENCES


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