



## A Study of Production and Consumption of Sugar and Gur-Khandsari in India: 2005-06 to 2014-15

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ABSTRACT

Sugar is one of the oldest commodities in the world and traces its origin in fourth century A.D in India and China. Sugarcane has been secured important place among the commercial crops of India. It provides raw materials for the second largest industry next to textiles in the country. It provides employment opportunity for skilled, semi-skilled and unskilled workers. It is the biggest producer of the world producing and consuming one-eighth of the world's sugar production. India is the largest consumer to sugar in the world with annual consumption of about 25.6 million tons in 2014-15. India is second largest of sugar next to Brazil with a production. Sugar is one of the dietary habits of the nation and domestic consumption of sugar is a function of rising of income. The per consumption and of sugar and Gur and Khandsari is increasing as today the industry is so prosperous and expanding the production of Gur and Khandsari is becoming a thing of the past. Thus, the present study is given to know about the production of sugarcane, and the comparison of per capita consumption of sugar with Gur and khansari.

### KEYWORDS

#### 1.1 Introduction

Sugarcane provides useful raw material to industries which utilize its different part to produce sugar, Jaggery (Gur), Khandsari and a number of agro-byproducts viz., alcohol, paper, chemical, ethanol, cattle feed and electricity for socio-economic development of rural masses and national economy by providing direct and indirect employment about 35 million people in our country.

Sugar being one of the oldest commodities in the world and traces its origin in 4<sup>th</sup> century AD in India and China. Primarily sugar was manufactured only from sugarcane. Later on they lose their initiatives to European, American and Oceanic countries, as the 18<sup>th</sup> century witnessed the development of new technology to manufacture sugar from sugar beet.

At present, 115 countries of the world cultivate sugarcane for sugar production and produce about 133 million of sugar which is three-fourth of percentage and total sugar production (169 million) of the world, remaining sugarcane for sugar beet. Sugar beet cultivation and processing is highly subsidized equal to the European Union which contributes nearly 21.5% of world sugar with WTO (World Trade Organization) agreement in place sugar beet cultivation may not remain a profitable propensities in European Union due to drastic reduction in subsidies on its production and processing. In this situation the shortfall in sugar may be compensated by sugarcane producing countries like Brazil, India, China, Pakistan, U.S.A, Australia, Thailand, Philippines.

India is rightly called homeland of sugar. But in ancient times, only Gur and Khandsari were made and modern sugar industry came on the India scene only in middle of the 19<sup>th</sup> century. India is the largest producer of sugar including traditional cane sugar sweeteners, Khandsari and Gur equivalent to 26 million tons raw value followed by Brazil in the second place at 14.68 million tons. Even in respect of white crystal sugar, India has ranked No.2 position in 7 out of last 10 years.

#### 1.2 Sugar in India

Sugarcane has been secured important place among the commercial crops of India. It provides raw materials for the second largest industry next to textiles in the country. It provides employment opportunity for skilled, unskilled workers and university educated men in the factories besides a large number of persons in sugar trade, transport and subsidiary industries.

These generated income and employment have multiplier effect and helps in overall development of the country. In the sugar map of the world, India stands first in respect of the area under cane 5.4 million acres. It is the biggest producer of the world producing and consuming one-eighth of the world's sugar production. 30 per cent of world's are in over 5 million acre. India is the largest consumer to sugar in the world with annual consumption of about 25.6 million tons in 2014-15. India is second largest of sugar next to Brazil with a production, the Government has allowed free import of sugar in this year. The per capita consumption is 24 kg per annum. However, India is presently dominant players in the global sugar industry along with Brazil in terms of production and nearly 50 million farmers are dependent on sugarcane cultivation.

#### 1.3 Gur

- Predominantly produced in UP, Maharashtra, Andhra Pradesh and Tamil Nadu.
- Initially produced to meet basic farmers' own need of sweetener.
- Direct consumption in household in winter season as a digestive sweet.
- Gur is commodity which is traded on futures - thus provides speculation.
- Gur has no controls - some commodity taxes such as Cane Purchase Tax, Trade Centre (Mandi) tax are also evaded.
- Thus gur manufacturers can pay more for sugar cane at the time of shortage, causing diversion.

#### 1.4 Khandsari

- Immediate substitute of sugar.
- It is sugar produced from unrefined juice.
- Competes directly with sugar due to excise duty difference.
- Good Khandsari sells at marginal discount to sugar.
- At times of low sugar cane production i.e. high molasses price, high sugar prices - Khandsari operation is profitable.
- Hence can pay for sugar cane - even more than sugar mills causing diversion.

#### 1.5 Need for the study

The sugarcane plays an important role in agriculture. The traditional sweeteners of India like Gur and Khandsari are consumed mostly by the rural population in the country. In the early 1930's

nearly 2/3<sup>rd</sup> of sugarcane production was used for the production of alternate sweeteners like Gur and Khadsari. As the standard of living and incomes increases the sweetener has shifted to white sugar. Currently 1/3<sup>rd</sup> of sugarcane production is used by the Gur and Khandsari sectors. India has a large consumer base, thus makes it in a weak position to international sugar market, in the event of surplus or deficit situation. Hence the present study has to know about the changing pattern of production and consumption of Gur and Khandsari in India.

**1.6 Objectives**

- To study the Area, Production and Productivity of Sugarcane in India.
- To know about the production and consumption of Sugar in India.
- To examine the per-capita consumption of Sugar and Gur and Khandsari in India.

**1.7 Data Source and Methodology**

The study aims to know about the Area of Cultivation, Production and Productivity of Sugarcane in India from 2005-06 to 2014-2015. This study consists of secondary data related to Area of Cultivation, Production and consumption of Gur and Khandsari published in statistical reports. The study covers the period of 10 years from 2005-2006 to 2014-2015. The period has been selected on the basis of availability of data. To make statistical tools of analysis like the collected data will be analyzed with the help of simple statistical tools like Annual Growth Rate (AGR) and Compound Growth Rate (CGR) are used in the study.

**1.8 Area, Production and Productivity of sugarcane in India**

The total area of cultivation of Sugarcane in India has increased from 4201 thousand hectares in 2005-06 to a maximum of 5060 thousand hectares in 2012-2013 and the subsequent years the area of cultivation has been declining. The Annual Growth Rate of Area of Cultivation of floriculture in India has been fluctuating over the years. The growth rate registered maximum of 22.61 per cent in 2006-2007 and the minimum has registered a negative growth of -12.66 per cent in 2008-2009. The Compound Growth Rate of Area of Cultivation in India has recorded only 2 per cent growth during the study period.

The total production of sugarcane has increased from 281.17 million tons in 2005-2006 to a maximum of 361.04 million tons in 2011-2012. It shows that production of sugarcane in terms of million tons and it shown a fluctuating during the year of study period. The Annual Growth Rate of sugarcane production in India has registering a maximum of 26 per cent growth in the year of the study period. The growth rate has registered a fluctuating trend during the period of reference. The Compound Growth Rate of sugarcane production in India has registering nearly 3 per cent of growth in terms of million tons during the study period.

**Table 1**  
**Area, Production and Productivity of Sugarcane in India: 2005-06 to 2014-15**

| Year    | Area ('000 ha) | AGR    | Production     |        | Productivity |       |
|---------|----------------|--------|----------------|--------|--------------|-------|
|         |                |        | (million tons) | AGR    | (t/ha)       | AGR   |
| 2005-06 | 4202           | -      | 281.17         | -      | 66.9         | -     |
| 2006-07 | 5151           | 22.58  | 355.52         | 26.44  | 69.0         | 3.14  |
| 2007-08 | 5055           | -1.86  | 348.18         | -2.06  | 68.9         | -0.14 |
| 2008-09 | 4415           | -12.66 | 285.02         | -18.14 | 64.6         | -6.24 |
| 2009-10 | 4175           | -5.44  | 292.30         | 2.55   | 70.0         | 8.36  |
| 2010-11 | 4885           | 17.01  | 342.38         | 17.13  | 70.1         | 0.14  |
| 2011-12 | 5106           | 4.52   | 353.76         | 3.32   | 69.3         | -1.14 |
| 2012-13 | 5279           | 3.39   | 354.40         | 0.18   | 67.1         | -3.17 |
| 2013-14 | 5341           | 1.17   | 345.60         | -2.48  | 64.7         | -3.58 |
| 2014-15 | 5307           | -0.64  | 366.80         | 6.13   | 69.1         | 6.80  |
| CGR     | 2.36           |        | 2.69           |        | 0.32         |       |

Source: Indian Sugar Mills Association

The productivity of sugarcane has increased from 66.9 tons per hectare in 2005-2006 to a maximum of 71.6 tons per hectare in 2011-2012. It shows that productivity of sugarcane in India has a fluctuating trend during the year of study period. The Annual Growth Rate of sugarcane productivity in India has registering a maximum of 9 per cent growth in the year of the study period. The Compound Growth Rate of sugarcane production in India has not registering 1 per cent of growth in terms of tons per hectare during the study period.

**1.9 White Sugar and Gur and Khandsari**

**Table 2**  
**Production of White Sugar and Gur and Khandsari in India: 2005-2006 to 2014-2015**

| Year    | Production of Sugarcane | Production of White Sugar | AGR    | Consumption of Sugar | AGR   |
|---------|-------------------------|---------------------------|--------|----------------------|-------|
|         | (million tons)          | (lakh MTs)                |        | (lakh MTs)           |       |
| 2005-06 | 281.17                  | 189.59                    |        | 183.21               |       |
| 2006-07 | 355.52                  | 282.00                    | 48.74  | 191.00               | 4.25  |
| 2007-08 | 348.18                  | 263.00                    | -6.74  | 205.00               | 7.33  |
| 208-09  | 285.02                  | 147.00                    | -44.11 | 220.00               | 7.32  |
| 2009-10 | 292.30                  | 160.00                    | 8.84   | 230.00               | 4.55  |
| 2010-11 | 342.38                  | 217.00                    | 35.63  | 220.00               | -4.35 |
| 2011-12 | 353.76                  | 245.00                    | 12.90  | 230.00               | 4.55  |
| 2012-13 | 354.40                  | 251.83                    | 2.79   | 230.00               | 0.00  |
| 2013-14 | 345.60                  | 245.54                    | -2.50  | 243.00               | 5.65  |
| 2014-15 | 366.80                  | 284.63                    | 15.92  | 256.00               | 5.35  |
| CGR     |                         | 4.15                      |        | 3.40                 |       |

Source: Public Distribution, Government of India & Rajya Sabha.

The total production of sugarcane has increased from 281.17 million tons in 2005-2006 to a maximum of 366.80 million tons in 2014-2015. From the production of sugarcane, we can get many by-products for utilization. The most utilization of the by-product is Sugar and Gur and Khandsari. The Annual Growth Rate of sugar production in India has registering a maximum of 48.74 per cent in 2006-07 as a growth in the year of the study period. The growth rate has registered a fluctuating trend during the period of reference. The Compound Growth Rate of sugarcane production in India has registering nearly 4 per cent of growth in terms of lakh million tons during the study period.

The total consumption of sugar has increased from 183.21 lakh million tons in 2005-2006 to a maximum of 256 million tons in 2014-2015. The consumption of sugar has been increasing year by year but the production has shown an fluctuating trend. The Annual Growth Rate of sugar production in India has registering a maximum of 7.33 per cent in 2007-08 as a growth in the year of the study period. The growth rate has registered a fluctuating trend during the period of reference. The Compound Growth Rate of consumption of sugar in India has registering nearly 4 per cent of growth in terms of lakh million tons during the study period.

**Table 3**  
**Per capita Consumption of Sugar and Gur- Khandsari in India: 2005-2006 to 2014-2015 (kgs/Annum)**

| Year    | Per capita sugar | AGR   | Per capita Gur-Khandsari | AGR    |
|---------|------------------|-------|--------------------------|--------|
| 2005-06 | 16.70            | -     | 5.30                     | -      |
| 2006-07 | 18.70            | 11.98 | 3.00                     | -43.40 |

|         |       |        |       |        |
|---------|-------|--------|-------|--------|
| 2007-08 | 19.80 | 5.88   | 4.40  | 46.67  |
| 208-09  | 19.90 | 0.51   | 4.50  | 2.27   |
| 2009-10 | 17.90 | -10.05 | 5.10  | 13.33  |
| 2010-11 | 17.50 | -2.23  | 5.00  | -1.96  |
| 2011-12 | 18.30 | 4.57   | 5.00  | 0.00   |
| 2012-13 | 18.70 | 2.19   | 4.10  | -18.00 |
| 2013-14 | 19.60 | 4.81   | 4.20  | 2.44   |
| 2014-15 | 19.00 | -3.06  | 4.00  | -4.76  |
| CGR     | 1.30  |        | -2.77 |        |

**Source:** National Federation of Co-operative Sugar Factories (NFCFSF)

The per capita consumption of Sugar and Gur and Khandsari is measured in Kgs/Annum. In 2005-2006 the per capita consumption of sugar is at 16.70 and in 2014-2015 it shown a growth of 19.00. But in the year 2009-2010 and 2010-2011 and 2014-2015 it shown a negative growth due to the per capita consumption of Gur and Khandsari has increased with 13 per cent of growth. The per capita consumption of Gur and Khandsari has not shown a positive growth within the period of study. The consumption of Gur and Khandsari in last 10 years ie., from 2005-2006 has shown a negative growth with -2.77 Kgs/Annum of consumption.

Thus, the consumption of sugar has showing a growth rate of nearly 2 per cent and the Gur and Khandsari consumption has shown only a negative growth because of the sugar industry that today is so prosperous and expanding the production of Sugar.

### Conclusion

The total area of cultivation of Sugarcane in India has increased from 4201 thousand hectares in 2005-06 to a maximum of 5060 thousand hectares in 2012-2013 and the subsequent years the area of cultivation has been declining. The total production of sugarcane has increased from 281.17 million tons in 2005-2006 to a maximum of 361.04 million tons in 2011-2012. It shows that production of sugarcane in terms of million tons and it shown a fluctuating during the year of study period.

The total consumption of sugar has increased from 183.21 lakh million tons in 2005-2006 to a maximum of 256 million tons in 2014-2015. The consumption of sugar has been increasing year by year but the production has shown an fluctuating trend. The consumption of Gur and Khandsari in last 10 years ie., from 2005-2006 has shown a negative growth with -2.77 Kgs/Annum of consumption.

Thus, a major portion of sugarcane production cater to domestic consumption. The government must create awareness and health consciousness among domestic consumers and this will need to create a market for pesticide free products.

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