



AN OVERVIEW ON SUGARCANE INDUSTRY IN INDIA

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ABSTRACT

Sugarcane is an important industrial and cash crop. It is grown in almost in all areas in India, But commercial basis sugarcane is produced in tropical and sub tropical states. Because of available of raw materials, most of the sugar mills are located in these areas. Sugarcane production in India has been attributes to lack of rainfall, reduction in cultivation area. Also production of sugarcane affects due to drought and decrease in soil health, high level input cost. This paper presents an overview of sugar industries, state wise area of cultivation, production, productivity. This paper is descriptive in nature and completely based on the data and information available from secondary sources. Time frame of the study is ten years from 1st April, 2012 to 31st March, 2022.

KEYWORDS – Production of Sugarcane, sugarcane cultivation, export & import of Sugar, fair and remunerative price of Sugar

I. INTRODUCTION

Sugarcane is a perennial grass reaching 2 to 6 meters in height and comprised by jointed. Though it was started to cultivate around 327 BC in the Indian subcontinent, it way to the rest of the world via trade routes through Middle East as well as other routes. Later, it reached and flourished as an industry. It was originally cultivated to warm tropical and sub tropical regions of Asian continent. After early civilizations found out about its usefulness of sugarcane and it quickly spread throughout the world. This improves the sugar production with crossbreeding. All over the world, Sugarcane is one of the important commercial crops. It is the important principle sources of sugar but also ethanol and jaggery. It's by-products are used as fodder to feed livestock in many countries. Brazil, India, China, Thailand and Pakistan, United States, Mexico, Russia, Germany are the top ten countries that produces large amount of sugarcane. It is the second largest agro based business in India after cotton industry. 50 lakh hectares or 2.57 of total planted are taken up by the crop. Around 50 million farmers grow sugarcane and 5 lakh workers in sugar mills.

II. REVIEW OF LITERATURES

A study carried out by Deshmukh (1983) pointed out that the instability of the prices of sugarcane and Jaggery has created on rest among the sugarcane cultivators and sugarcane growing regions of Kolhapur District of Maharashtra. Moreover, the price of the inputs has increased while there is no corresponding increase in the price of Jaggery. In order to reduce the instability of the Jaggery industry and to make it's come stable. Intercropping was suggested Jaggery industry is an important economic activity in the Kolhapur Region, but it does not earn ever reasonable profits due to increase in the cost of sugarcane cultivation. Consequently, the supply of Jaggery has been

decreasing.

Problem of Sugar Industry by M.P Gandhi: This book is an in-depth analysis of prospects of re-organization an interesting insight into the state and influence of India's Sugar Industry. The Chapter i.e "The Indian Sugar Industry in World perspective" are detailed elaborated about the sugar industry.

History of Sugar Industry In India by S. Pruthi: This book elaborated widely about the sugar industry in India. Prosperity of sugar industry is mention in depth analysis in the books

Co-operative sugar industry of India by Dr. Kishor Barad & Prof. V K Sapavadia: It is one of the major agro based industries in India. And it has been instrumental in resource mobilization, employment generation, income generation and creating social infrastructure in rural area.

III. STATEMENT OF THE PROBLEM

Sugarcane is a crop that requires a lot of water. The amount of economic output produced per cubic metre of extracted fresh water is referred to as water productivity. Sugarcane uses over 70% of the nation's irrigation resources. Since groundwater provides the majority of this, it has had a significant negative impact on the water table in many areas. Sugar mills find it difficult to buy sugarcane from farmers because of the high Fair and Remunerative Price (FRP) and limitations imposed by the Cane Reservation Area (CRA). In our nation, the level of mechanization in sugarcane cultivation is often less than 40%. Due to labor shortage and high production costs, the sector is now vulnerable



IV. OBJECTIVES OF STUDY

The following specific objectives are set as mentioned below:

- a) To measure and compare the area of production, no. of production and productive.
- b) To analyze the roll of sugarcane industry in foreign trade of India.
- c) To comparative study of FRP for ten years.

V. RESEARCH METHODOLOGY

Research methodology has many dimension . This study is fully based on secondary data. The data collected from various sources like books, journal, websites etc. Collection source are department of agriculture service,

Indian sugar miils accociation, department of cooperation & farmers welfare, various annuals reports etc.

VI. DATA ANALYSIS AND INTERPRETATION

In World

The position of India in production of Sugarcane is highest in the year of 2021-12. Sugarcane is a verities type of production, used in making sugar, jiggery, khan sari etc. Top ten countries of sugarcane production for the year of 2021-22 are shown in the following table.

Table 1: Major countries production of sugarcane in the World- 2021-22

Sl. No	Country	Production in last year (MT)
1	India	36880.00
2	Brazil	35450.00
3	European Union	16479.00
4	Thailand	10157.00
5	China	9600.00
6	United States	8287.00
7	Pakistan	7140.00
8	Russia	6000.00
9	Mexico	6556.00
10	Australia	4120.00

Source: <https://www.statista.com/statistics/495973/sugar-production-worldwide/>

Interpretation: From the above table it is observed that, India tops the list of sugarcane production with the production of 36880MT and Australia with the production of 4120 MT.

In India

India is one of the most important agrarian economies in the world. India is the home to almost every kindof crop grown in globally. Majority of the Indian population’s occupation is agriculture. Sugarcane is one of the most popular crops in India More than 60% of India’s land area is under cultivation. Sugarcane is one of the most important crops in rural economy of India. About 50 million farmers’ families are dependent on sugarcane cultivation and our country produces approximately

30 to 33 million tons of sugar annually which makes as one of the largest producers of the world,

- A. In fiscal year 2021-22, the area of cultivation for sugarcane in India was estimated to be approximately five million hectares. Sugarcane is an important commercial crop that is indigenous to India. The western India was the leading area of production for sugarcane. The western part of India forms the core of sugarcane production in the country along with the Ganges and Yamuna. Major states for producing area in India are shown in following table for last ten years.

Table 2: Major production area in the country state wise from 2012-13 to 2021-22.

(Lakh per ha)

Sl.No	States / UT	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22*	Average	Rank
1	Uttar Pradesh	22.12	22.28	21.41	21.69	21.60	22.34	22.24	22.08	21.80	21.77	21.69	1st
2	Maharashtra	9.33	9.37	10.30	9.87	6.33	9.02	11.63	8.22	11.43	12.32	9.63	2nd
3	Karnataka	4.25	4.20	4.80	4.50	3.97	3.70	4.71	4.29	4.43	5.88	4.36	3rd
4	Bihar	2.50	2.58	2.54	2.44	2.40	2.34	2.26	2.24	2.19	2.11	2.26	5th
5	Gujarat	1.76	1.74	2.08	1.57	1.69	1.82	1.55	1.61	2.15	2.23	1.82	6th
6	Tamil Nadu	3.47	3.13	2.63	2.52	2.18	1.72	1.66	1.31	1.25	1.45	2.37	4th
7	Madhya Pradesh	0.59	0.73	1.11	1.03	0.92	0.98	1.08	1.25	1.10	0.94	0.90	9th
8	Haryana	0.10	1.02	0.97	0.93	1.02	1.14	1.09	0.96	0.99	1.08	0.91	8th
9	Punjab	0.83	0.89	0.94	0.90	0.88	0.96	0.95	0.91	0.89	0.88	0.86	10th
10	Andhra Pradesh	1.96	1.53	1.39	1.22	1.03	0.99	1.02	0.86	0.55	0.47	1.27	7th



Interpretation: From the above table it is observed that, Uttar Pradesh tops the list of production area in the country with the average area of production is 21.69 lakh per ha.

B. Sugarcane (*Saccharum officinarum*) family Gramineae (Poaceae) is widely grown crop in India. Broadly there are two distinct agro-climatic regions of sugarcane cultivation

in India, i.e. tropical and subtropical. Tropical region shared about 45% and 55% of total sugarcane area and production in the country. Sub-tropical region accounted for about 55% and 45% of total sugarcane area and production in the country. State wise major production of sugar cane is shown in following table.

Table 3: State wise major production of Sugarcane in the country from 2012-13 to 2021-22

Sl No	States / UT	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22*	Average	Rank
1	Uttar Pradesh	132.43	134.70	133.06	145.39	140.17	177.03	179.71	179.54	177.67	177.43	157.71	1st
2	Maharashtra	69.65	76.90	84.70	73.68	52.26	82.98	89.77	69.31	101.60	113.37	81.42	2nd
3	Karnataka	35.73	37.91	43.78	37.83	27.38	31.14	42.41	38.18	42.09	56.45	39.29	3rd
4	Tamil Nadu	33.92	32.45	28.09	25.49	18.99	17.15	17.14	14.12	12.80	14.53	21.47	4th
5	Bihar	12.74	12.88	14.03	12.65	13.04	13.83	20.12	13.58	10.71	13.97	13.76	5th
6	Gujarat	12.69	12.55	14.33	11.12	11.95	12.07	11.33	11.57	15.85	17.44	13.09	6th
7	Haryana	7.44	7.50	7.17	6.69	8.22	9.63	8.51	7.73	8.53	8.75	8.02	8th
8	Punjab	5.92	6.68	7.04	6.61	7.15	8.02	7.77	7.30	7.49	7.51	7.15	9th
9	Andhra Pradesh	15.57	12.01	9.99	9.35	7.83	7.80	8.09	6.72	4.12	3.65	8.51	7th
10	Madhya Pradesh	2.64	3.17	4.57	5.28	4.73	5.43	5.28	7.43	5.88	5.45	4.99	10th

Interpretation: From the above table it is observed that Uttar Pradesh tops the list of production of sugarcane in the country with the production of average 157.71 MT.

C. In tropical zone Maharashtra is the major sugarcane growing state covering about 9.4 lakh hectare area with production of 61.32 million ton, whereas the productivity

of Tamil Nadu is highest in tropical zones. Uttar Pradesh is the highest sugarcane producing state in the sub tropical zone having area about 22.77 lakh hectare with the production of 135.64 million ton cane whereas Haryana has highest productivity of sugarcane in sub tropical zones. States wise productivity of sugarcane from 2012-13 to 2021-22 are shown in the following table.

Table 4: State wise productivity of Sugarcane in the country during 2012-13 to 2021-22 (Tonnes/ha)

S.No	States / UT	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22*	Average	Rank
1	Tamil Nadu	97.70	103.70	106.80	101.06	87.00	99.81	103.00	107.62	102.73	100.00	100.94	1 st
2	Karnataka	84.10	90.30	91.20	84.08	68.96	84.08	90.00	89.00	95.00	96.00	87.27	2 nd
3	Maharashtra	74.60	82.10	82.20	71.65	82.52	92.00	77.20	84.28	88.90	92.00	82.75	3 rd
4	Punjab	71.30	75.00	74.90	73.41	81.27	83.58	81.82	80.24	83.82	85.34	79.07	4 th
5	Haryana	73.60	73.50	73.90	71.96	80.62	84.50	78.24	80.27	86.18	81.23	78.40	5 th
6	Uttar Pradesh	59.90	60.50	62.10	67.03	64.89	79.25	80.81	81.31	81.50	81.50	71.88	6 th
7	Andhra Pradesh	79.40	78.50	71.80	76.66	76.02	78.68	79.36	78.19	74.88	77.75	77.12	8 th
8	Gujarat	72.10	72.10	68.90	70.83	70.71	66.33	73.17	71.89	73.69	78.31	71.80	7 th
9	Bihar	51.00	49.90	55.30	51.84	54.42	59.14	89.01	60.65	48.92	66.25	58.64	9 th
10	Madhya Pradesh	44.78	43.47	41.14	51.27	51.41	55.41	48.90	59.47	53.45	58.00	50.73	10 th

Interpretation: From the above table it is observed that Tamil Nadu tops the list of productivity of sugarcane in the country with the average productivity is 100.94 tonnes/ha Whereas Uttar Pradesh tops the list of production area and production of sugarcane.

D. In financial year 2021-22, the yield of sugarcane produced across the India was estimated to be approximately 84

metric ton per hectare. This was an increase from previous fiscal year's yield around 80 metric ton per hectare. Sugarcane is an important cash crop in the country. Uttar Pradesh produced the highest volume of sugarcane that year, followed by Maharashtra, Tamil Nadu and Orissa. Year wise area, production and yield of sugarcane of top ten states are shown in following table.



Table 5: Area, Production and Yield of Sugarcane in India

Sl. No	Year	Area (Lack Ha)	Production (MT)	Yield (kg/hectare)
1	2012-13	47.97	329.67	68725
2	2013-14	49.93	352.14	70522
3	2014-15	51.44	359.33	69857
4	2015-16	49.27	348.45	70720
5	2016-17	44.36	306.07	69001
6	2017-18	47.32	376.9	79650
7	2018-19	50.61	405.42	80106
8	2019-20	46.03	370.50	80490
9	2020-21	48.57	399.26	82203
10	2021-22	50.98	430.50	84444

Interpretation: From the above table it is observed that the year of 2014-15 tops the list of area of production with 51.44 lack hectars. And the year of 2021-22 tops the list of production of sugarcane in India with 430.50 MT. And the year of 2021-22 tops the list of yield (kg/hectare) with 84444 kg/hectare)

sugar mills. Employment is also generated in various ancillary activities relating to transport, trade serving of machinery and supply of agriculture inputs. The value of sugar exports from India amounted to over five billion US dollars in fiscal year 2022. This was a significant increase from the previous fiscal year. A consistent increase in value of exports of sugar was seen form fiscal year 2018. Last 10 year’s data of India’s export and imports are shown in following table.

- E. Sugar industry is an important agro- based industry that impacts rural livelihood of about 50 million sugarcane farmers and around 5 lakh workers directly employed in

Table 6: India’s Export, Import and of Sugar

Year	Export		Import		Stock (In lakh MT)
	Quantity (Ton)	Value (Rs./Crore)	Quantity (Ton)	Value (Rs./Crore)	
2012-13	2784489	8576.83	1122259	3094.38	91.09
2013-14	2473483	7152.17	880519	2279.21	72.12
2014-15	1950931	5296.53	1537830	3645.15	88.76
2015-16	3128275	9787.95	1600027	4011.03	77.10
2016-17	2538230	8621.61	2144429	6849.63	39.77
2017-18	1750724	5180.54	2401484	6017.22	106.73
2018-19	3977639	9451.57	1487677	3147.50	145.00
2019-20	5787322	13910.31	1114828	2441.95	110.00
2020-21	7506555	20577.09	1963233	4698.64	85.00

Interpretation: From the above table it is observed that India export sugar maximum in the year of 2020-21 with 7506555 ton. India import sugar maximum in the year 2017-18 with 2401484 ton.

from farmers. The FRP is fixed by Union Government (Cabinet Committee on Economic Affairs (CCEA)) on the basis of recommendation of Commission for Agriculture Costs and Prices (CACP). The FRP of sugarcane is determined under Sugarcane (Control) Order, 1966. Last 10 years FRP of sugar are shown in following table.

- F. Fair and Remunerative Price (FRP) is the minimum price at which rate sugarcane is to be purchased by sugar mills

Table 7: FRP of sugar in India from 2012-13 to 2021-22

Year	FRP (Rs. Per quintal)	Basic Recovery Level
2012-13	170	9.5%
2013-14	210	9.5%
2014-15	220	9.5%
2015-16	230	9.5%
2016-17	230	9.5%
2017-18	255	9.5%
2018-19	275	10%
2019-20	275	10%
2020-21	285	10%
2021-22	290	10%



Interpretation: The FRP on sugarcane has been on a steady increase, going from Rs. 170/ quintal in 2012-13 to Rs. 290/ quintal in 2021-22. The industry's financial struggle highlights the need for government intervention to balance the FRP and protect the interest of both farmers and sugar producers.

FINDINGS

- India tops the list of sugarcane production with the production of 36880MT.
- Uttar Pradesh tops the list of production area in India with the average area of production is 21.69 lakh per ha.
- Uttar Pradesh tops the list of production of sugarcane in India with the production of average 157.71 MT.
- Tamil Nadu tops the list of productivity of sugarcane with the average productivity is 100.94 tonnes/ha.
- The year of 2014-15 tops the list of area of production with 51.44 lakh hectares. And the year of 2021-22 tops the list of production of sugarcane in India with 430.50 MT. And the year of 2021-22 tops the list of yield (kg/hectare) with 84444 kg/hectare).
- India export sugar maximum in the year of 2020-21 with 7506555 ton. India import sugar maximum in the year 2017-18 with 2401484 ton.
- The FRP on sugarcane has been on a steady increase, going from Rs. 170/ quintal in 2012-13 to Rs. 290/ quintal in 2021-22.

VII. RECOMMENDATION & CONCLUSION

- Sugarcane has to compete with several other food and cash crops like cotton, oil seeds, rice etc.
- Sugar production is a seasonal industry with a short crushing season varying normally from 4 to 7 months in a year. It causes financial loss and

seasonal employment for workers and lack of full utilization of sugar mills.

- Most of the sugar mills in India are of small size with a capacity of 1000 to 1500 tonnes per day thus fail to take advantage of economies of scale. High cost of sugarcane, inefficient technology, uneconomic process of production and heavy excise duty result in high cost of manufacturing.

It is concluded from the research finding that although sugarcane is the main crop but farmers faced a lot of problems regarding sugarcane production. Its sector are facing major challenges are irrigational problems, decrease in soil health, high level input cost, sugarcane price is low level.

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