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INDUSTRY OUTLOOK

INDIAN SUGAR INDUSTRY: OUTLOOK AND CHALLENGES

01 March 2021

Industry Outlook

India's sugar industry is the second largest Agro-based industry.¹ This industry is the key generator of employment and contributes towards economic development through forward and backward linkages. According to the March 2020 Niti Aayog report,² sugar industry generates direct employment to over 5 lakh workers through sugar mills and about 10 lakh workers through indirect means, which in turn has impacted the livelihood of about 5 crores farmers and their dependents. In India there are more than 700 sugar factories installed with the crushing capacity of about 340 Lakh Metric Tonnes (hereafter LMT) and annual turnover of about ₹ 80,000 crores. Sugar production depends on many factors e.g. number of sugarcane cutters available, number of sugar mills, production technique, recovery rate, i.e., the amount of sugar extracted from sugarcane etc. The sugar industry is more climate-sensitive in nature and thus farmer's worry is more about the weather, which is why this crop is often referred to as 'Lazy man's crop'.³



As per the December 2020 monthly report⁴ issued by the Department of Food & Public Distribution, certain facts concerning the sugar industry emerge as follows:

1) The production of sugar from sugarcane including domestic raw sugar for the sugar season 2020-2021 is provisionally estimated around 104.11 lakh tonnes as compared 89.39 lakh tonnes for the sugar season 2019-20.

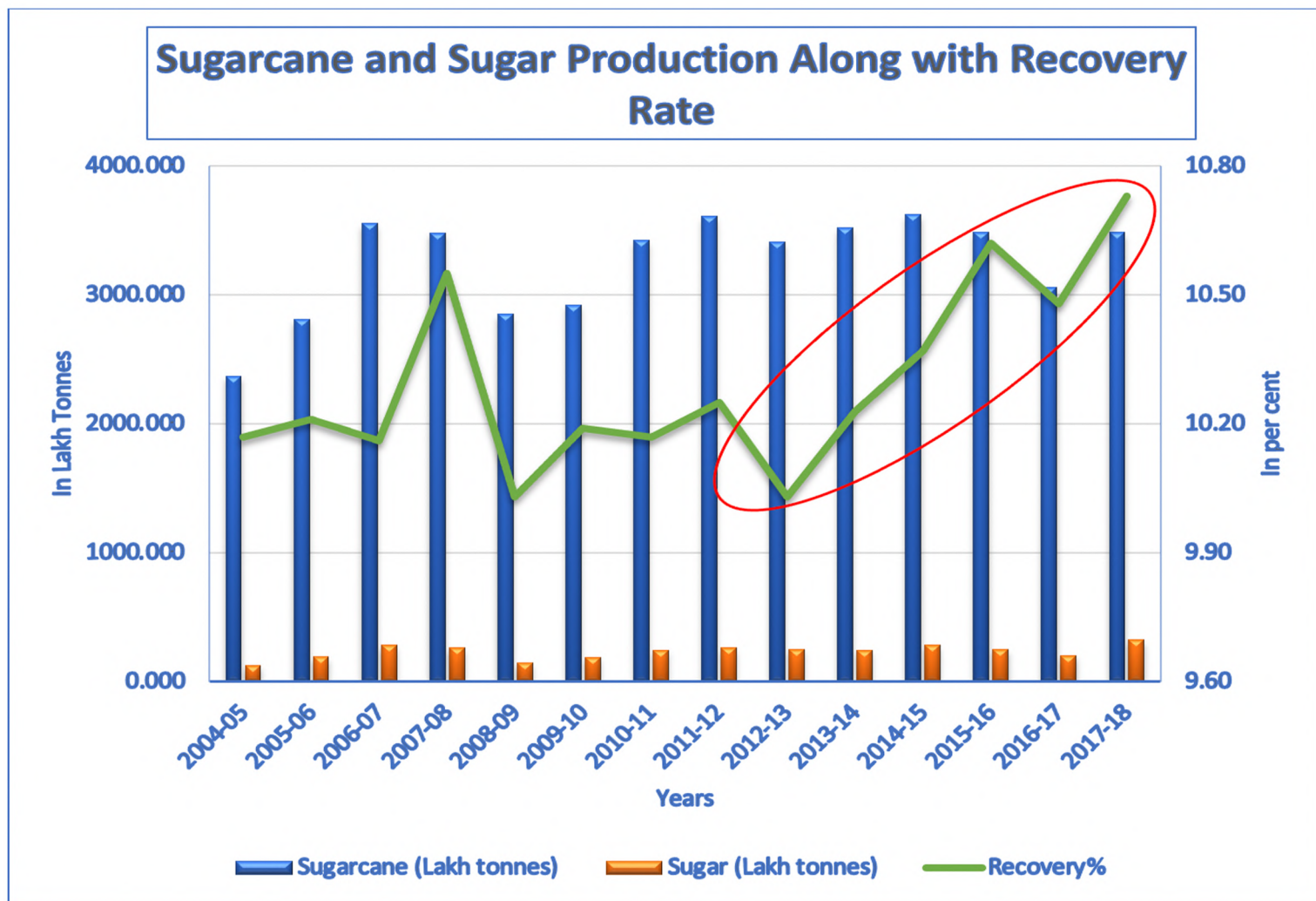
2) For the sugar season 2020-21, out of the total payable cane price of ₹ 21675 crore, the total cane price arrears are ₹ 6166 crore. This increased further to ₹16,883 crore as on 31 January 2021 (of the current marketing year). Sugar mills of Uttar Pradesh owed ₹7,555.09 crore, followed by Karnataka at ₹ 3,585.18 crore and Maharashtra at ₹ 2,030.31 crore.⁵

3) During Sugar Season 2020-21, about 2.35 LMT of sugar was also delivered from sugar mills for export under Open General License (OGL). However about 58.56 LMT was exported during sugar season 2019-20.

As per the press release on 15th February 2021 by the Indian Sugar Mills Association (ISMA),⁶ as on 15th February 2021, 208.89 lac tons of sugar have been produced by the mills, as compared to 170.01 lac tons produced on the corresponding date of last year. Altogether 497 sugar mills were in operation in the country until 15 February 2021. The ISMA has pegged the overall sugar capacity of the country to 302 lakh tonnes for the 2020-21 marketing season, higher than the actual production of 274.2 lakh tonnes achieved in the 2019-20 marketing season.⁷

Production Trend:

Graph-1: Sugarcane and Sugar Production Along with Recovery Rate (in Lakh Tonnes)



Source: ICAR-Sugarcane Breeding Institute, Coimbatore (Co-operative Sugar Vol.51 February 2020, No.6)

From the above line graph (Graph-1), we can see that sugarcane production meets the cyclical upward pattern with the first advance estimate of around 3990 lakh tonnes for 2017-18 (latest data provided by the ICAR), which is, to some degree, the highest in all years. The upward production movement can be partly explained due to the higher rate of return compared to other crops with guaranteed demand and pre-decided rates by government (Fair and Remunerative prices and State advisory prices).

According to the United States Department of Agriculture (USDA) November 2020 report 8, India's out-year centrifugal sugar production is forecasted at 33.7 million metric tons (MMT) in marketing year (MY) 2020/2021 (October-September), an increase of 17 percent above the previous season. This forecast includes 590,000 metric tons (MT) of khandsari 9 and 33.1 MMT of mill sugar (equivalent to 31 MMT of crystal white sugar).

Sr No.	State	2018-19 (Revised)	2019-20 (Revised)	2020-21 (Forecast)
1	Andhra Pradesh	7.6	6	5
2	Bihar	6.6	6	7
3	Gujarat	11.6	9	10
4	Haryana	4.5	7	7
5	Karnataka	41	33	42
6	Maharashtra	107.2	62	90
7	Punjab	5.5	8	7
8	Tamil Nadu	7	8	9
9	Uttar Pradesh	118.2	121	123
10	Others	11	9.7	10
Total		320.21	270	310

Source: MYs 2018/19 and 2019/20 –FAS New Delhi estimate. MY 2020/21- FASNew Delhi forecasts.

Reproduced in USDA report (November 2020)

http://www.agriexchange.apeda.gov.in/MarketReport/Reports/Sugar_Semi-annual_New_Delhi_India_10-01-2020.pdf

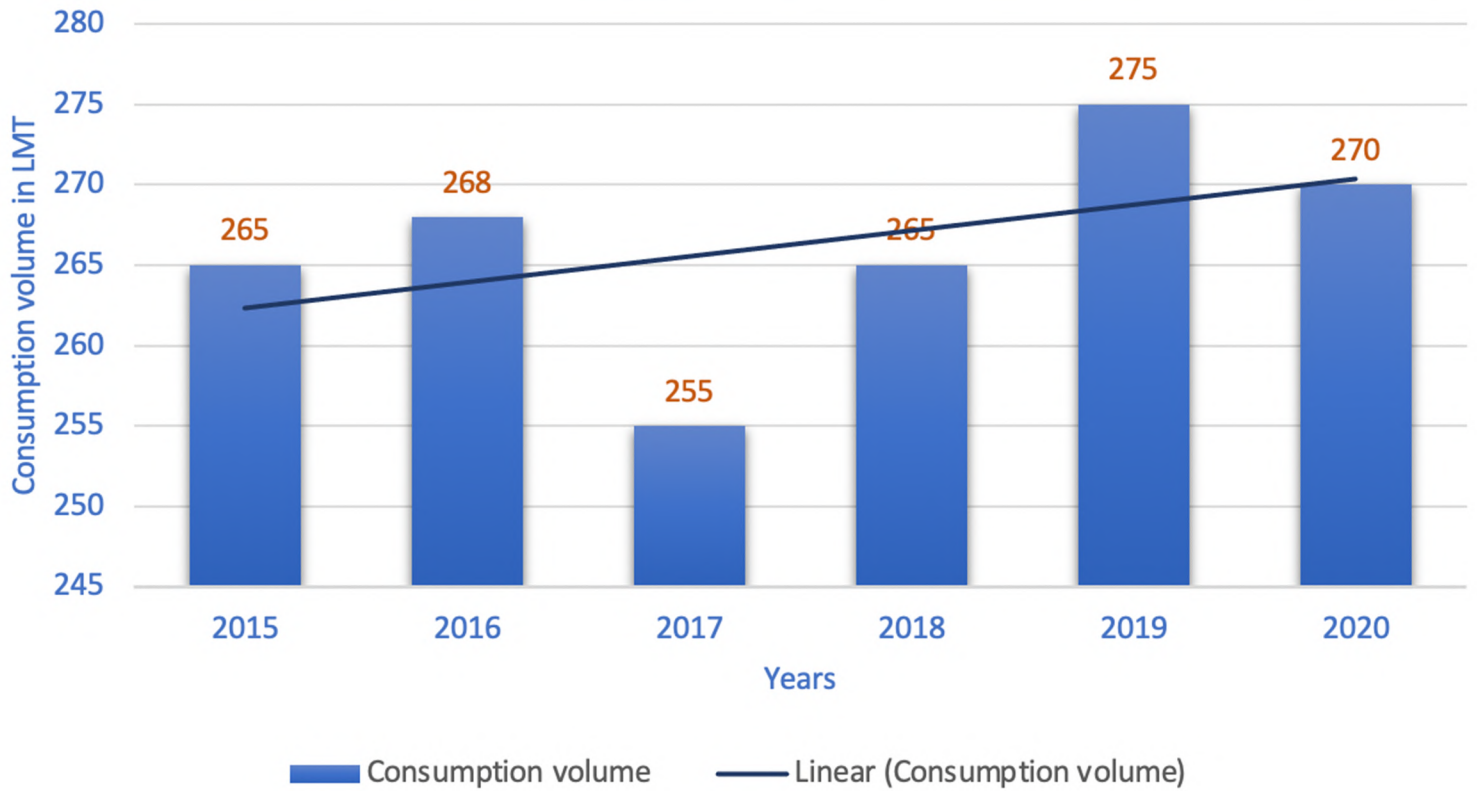
The state of Uttar Pradesh is India's largest sugar producer for the fourth consecutive year, followed by the states of Maharashtra and Karnataka. Sugarcane acreage is growing in Maharashtra and Karnataka in Marketing Year (MY) 2020/2021 compared to the previous season due to satisfactory monsoon rains and adequate reservoirs water levels. Due to Covid-19 pandemic induced lockdown, 'Gur' (jaggery or crude) production facilities was disrupted. The halt resulted an upward pressure on prices, gur production facilities will still need to improve to ensure adequate supplies.

Consumption pattern

Sugar consumption in India amounted to 270 LMT in 2020, down from the previous year. Sugar from sugar cane is an important cash or profit crop throughout the world. In addition, according to many studies, it carried higher revenues relative to wheat and paddy.¹⁰ Due to Covid-19 pandemic, bulk/institutional sugar demand was impacted adversely (accounts 2/3rd of overall consumption). Besides, ice cream, processed foods, and beverage manufacturers were worst hit during their peak demand period, and even as the country has opened gradually, skepticism remains with changing consumer habits.

Graph-2: Consumption of Sugar across India from 2015 to 2020

Consumption of Sugar across India from 2015 to 2020 in LMT

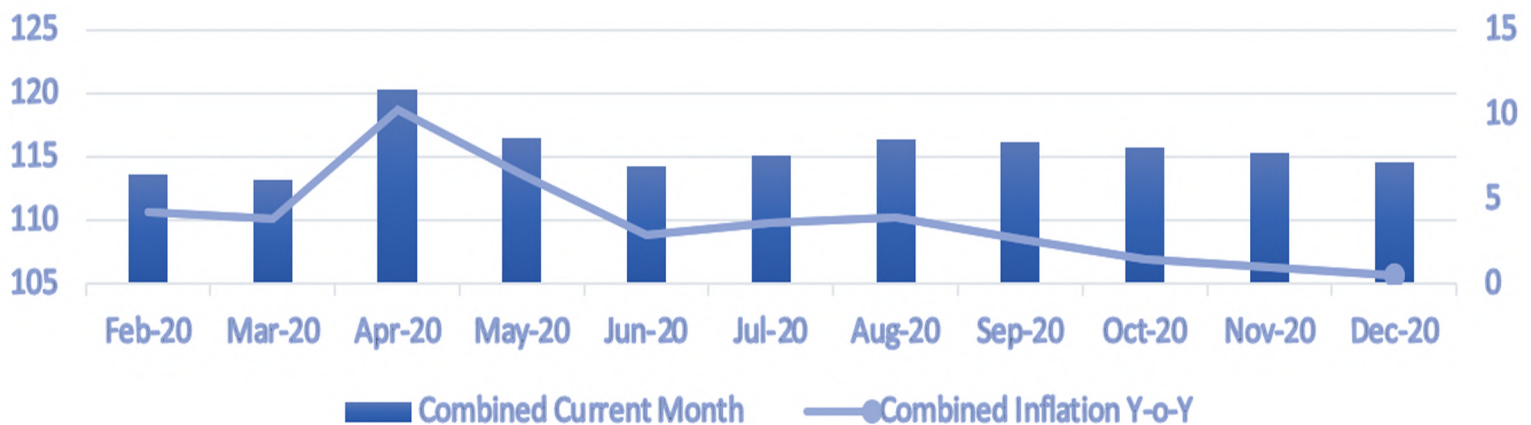


Source: Statista

Recent Price trends:

Graph-3: CPI component: Sugar and Confectionery

CPI component: Sugar and Confectionery



Source: Database of Reserve bank of India.

As India is a sugar surplus country, prices are unlikely to go beyond the current trend. Sugar and confectionery, with a weight of 1.39 per cent in the CPI and 3.49 per cent in the food index, had the second highest inflation rate after pulse in the year 2018¹¹, but several segments of the CPI are facing deflation due to the current pandemic. From the above graph (Graph-3), we can interpret that CPI of sugar and confectionery shoots up in the March 2020 and then gradually falls thereafter, one of the main reasons behind the above trend is COVID-19.¹² For the Agriculture sector as a whole, the lockdown and associated disruptions has affected agricultural activities and the necessary supply chains, i.e., harvesting, input distribution, procurement, transport hurdles, marketing and processing. Since behavior of this industry is allied with the Cobweb model¹³ in economics and thus faces serious issues related to profitability and liquidity.

Around 70 per cent of the country's irrigation facilities are used for paddy and sugarcane crops, restricting the availability of water for other crops. The water needs of sugarcane are mainly fulfilled through irrigation, primarily by groundwater. Even then, as can be seen in the Table below (Table-2), the water requirements of sugarcane for various states differ because of marked differences in agro-climatic conditions.

Table 2: Irrigation Water Requirement for and Water Productivity on Sugarcane

State	Irrigation Water Requirement (cm)	Physical Water Productivity (kg/cubic meter)
Bihar	37.5	7.74
Uttar Pradesh	57.2	9.6
Uttarakhand	57.2	9.6
Andhra Pradesh	202.5	2.91
Maharashtra	206.3 (pre-season)	5.94
	243.8(Adsali)	
Karnataka	256	4.53
Tamil Nadu	297	14.01

Source: NABARD/Taskforce report by Niti Aayog, March 2020

Industry Risk

The greatest challenge facing the Indian sugar industry is that it is one of the most politically sensitive commodities. Despite having a relatively small share of the monthly household budget, inflation in other goods can be caused by the smallest price spike. This sector is connected to several other significant economic activities, including use of jute bags in sugar packaging (jute industry), Molasses (livestock feeding and alcohol production), bagasse (mainly for paper industry), by-products, biofuels, Automobile Industry etc. Sugarcane has emerged as a multi-product crop used as a basic raw material for the manufacture of sugar, ethanol, paper and energy, as well as for the cogeneration of ancillary goods. Therefore, any influence on the sugar industry would have a direct or indirect impact on various other relevant industries and therefore on the nation's overall economic activity.

Issues Related to Export Subsidy:

Export subsidies are a crucial part of India's production of sugarcane because they are closely related to international demand. The issue of export subsidies has evoked considerable debates and discussions. To remain competitive in the foreign market, export subsidy is important because there is a significant gap between the market price of sugar in international market and the cost of production of the domestic producer faces. On 16 December 2020,¹⁴ the Cabinet Committee on Economic Affairs (CCEA) authorised a ~3,500-crore subsidy to export 6 million tonnes of sugars which will be directly passed on behalf of mills to the stakeholders, i.e., sugarcane growers. It is anticipated that the move will help clean up the pending debts of sugarcane growers. Indian exporters have benefited to some degree from export incentives for sugar, but this has resulted in other sugar exporting countries such as Brazil expressing their complaints to the World Trade Organization (WTO) against the allocation of undue government funding to raise sugar shipments from India.¹⁵



Could ethanol be the solution for sugar glut?

Ethanol made from sugarcane can be used to supplement fuel, which decreases CO₂ emissions by 90 per cent. Sugarcane ethanol is a competitive option to replace gasoline because it is the most environmentally friendly alternative to oil till date.¹⁶ Governments around the world, including the European Union and the United States, are promoting the use of biofuels as a method of diversifying their energy supplies and reducing CO₂ emissions.

The central government of India recently declared an increase of ₹ 1-3 per liter in the purchasing price of ethanol.¹⁷ This is the government's signal to the mills to divert cane to the production of ethanol rather than sugar. Also, Government has also proposed a 10 per cent boost in ethanol blending of petrol by the end of 2030. In year 2020, the central government proposed an interest subvention scheme to boost ethanol production for mills and this year the government declared that it would offer interest subvention for five years to give way to capital-building in this sector. But diversion to ethanol, while a much-needed step, would take time to materialize, to maximize capacity (building physical infrastructure) With the present capacity, the mills will generate 426 crore liters of ethanol, which will entail a diversion of 15-20 lakh tonnes of sugar.

In line with the 2003 Ethanol Blended Petrol (EBP) program¹⁸ - A scheme to improve and increase the production capacity of ethanol, the Indian government aims to manage import dependency as well as improve the carbon dioxide level (less emission) of the economy and to promote more use of eco-friendly resources rather than naturally scarce resources. However, one of the severe problems related to ethanol blending is that in India, the automobile industry is not modified to use ethanol blended fuel in car engines. Brazil has already overcome this issue, as almost all cars sold in Brazil today have flex fuel engines, enabling their owners to move from petrol to ethanol, depending on their price. ¹⁹

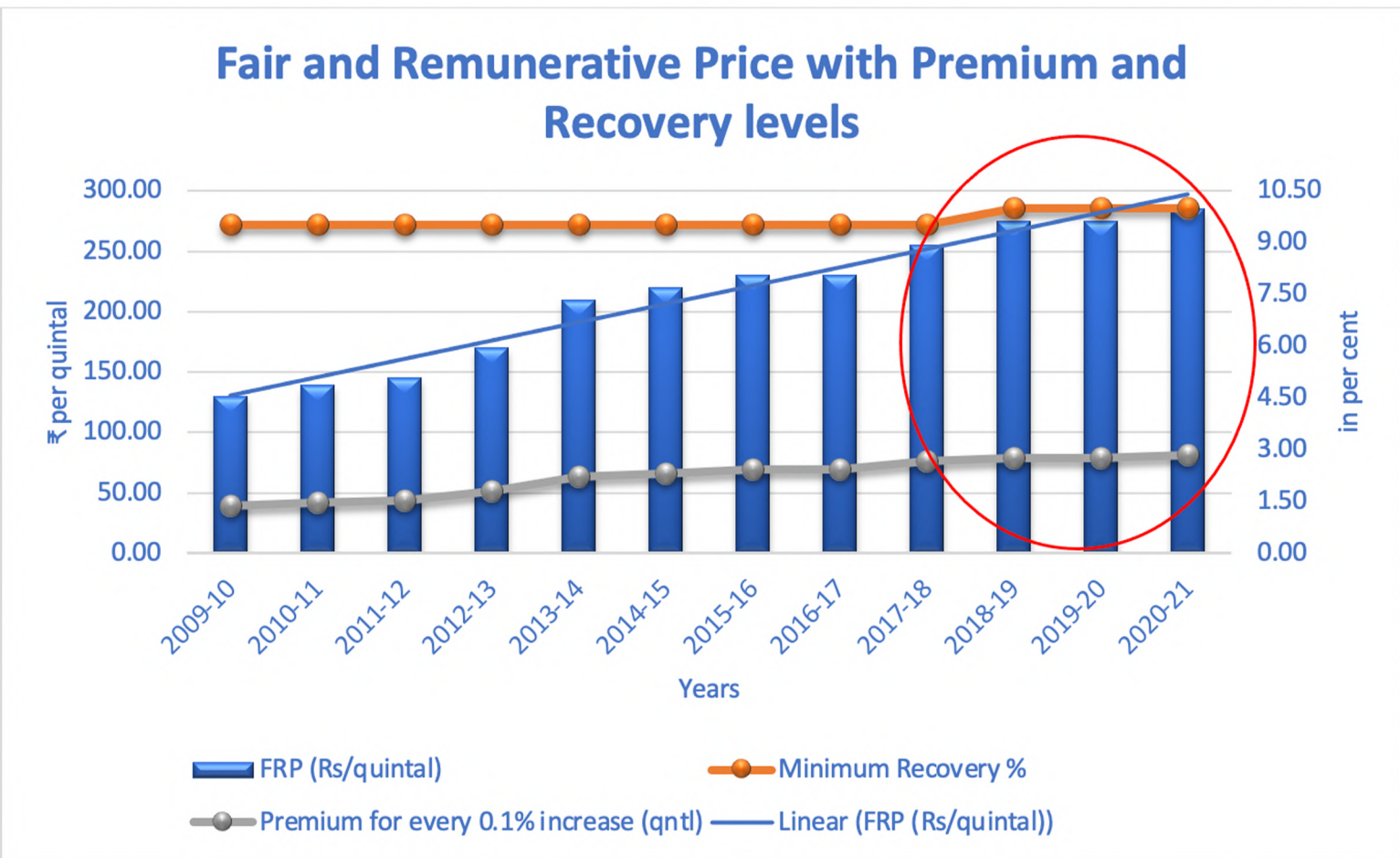
Dispute between the Producers (Sugarcane growers and mills) and Government:

Pricing policy is a crucial part of the decision-making matrix of any industry and, in particular, the sugar industry. The government may pursue the following objectives while framing pricing policy:

- A fair price for cane growers and timely payment to the sugarcane growers.
- Adequate return to industry.
- Supply of sugar to consumers at reasonable prices.

That is, domestic consumption, domestic production and foreign demand (and the element impacting them) to be exact. Sugarcane pricing is controlled by the regulatory provisions of the Sugarcane (Control) Order of 1966 issued pursuant to the Essential Commodities Act (ECA), 1955 and will be uniformly applicable to the entire country. Earlier, the price of the sugarcane was called the statutory minimum price, which in 2009 was replaced by the fair and remunerative price (FRP).

Graph-4: Fair and Remunerative Price, Premium and Recovery Rate



Source: ISMA Database, <https://www.indiansugar.com/Statics.aspx>

From the graph above (Graph-4), we can see that FRP has an upward trajectory, as shown by the linear blue line, which indicates that the FRP is increasing on annual basis. There is also a strong link between the recovery rate and the premium that is not present earlier since 2017-18.

Certain points related to FRP issued in public interest by the government :20

- a) Cabinet Committee on Economic Affairs (hereafter CCEA) has taken a decision regarding to increase the FRP by ₹ 10 per quintal to ₹ 285 per quintal. But this price is only applicable to those mills who has the recovery rate of 10 per cent and more.
- b) if the Recovery rate is below 10 per cent then the FRP will be reduced by ₹ 2.85 per quintal for 0.1 per cent in recovery till 9.5 per cent recovery rate.
- c) If the recovery rate is below 9.5 per cent, then the committee has decided FRP to be ₹ 270.75 per quintal.

Major sugarcane production states, such as, Uttar Pradesh, Punjab and Haryana set their own sugarcane prices called 'State Advisory Prices' (SAPs), which are typically higher than the Center's FRP. Also, this method of step wise incentive will eventually improve the efficiency of sugarcane and sugar production.

There is an inherent disagreement between cane growers and sugar producers as, according to farmers, their cost of production is far higher than the government-approved FRP, thereby reducing pressure on next year's production and avoiding credit and interest rate payment problems, and farmers are seeking higher FRPs or SAPs (according to states).

Although, sugar producers are seeking lower FRP and SAP since, according to them, they are functioning as price-celling not flooring, the two separate rates, i.e., SAP and FRP, would create a dilemma, because FRP is higher than SAP, thereby burdening producers with higher bills and, in turn, reducing their profit margin and productivity. Since producers will always demand lower FRP and farmers will always demand higher FRP, there is a need for a cost and benefit study to work out the modifications of a single price assessment process.



Concluding Remarks:

The need for a right balance between time, work and policy:

A coherent policy for existing and modified SAP on time to prevent chaos between sugarcane farmers and mills is the need of the hour, since any delay in this would lead to a liquidity burden on farmers. Recently, the Uttar Pradesh (UP) government has done the same thing as the UP government has not revised the SAPs in the last three years, which makes the issue of potential payments to the farmers complicated.²¹ The gap between FRP and SAP has to be addressed with a coherent a uniform policy to avoid mismatch in prices, or by an appropriate implementation of the much deliberated 'price stabilization fund.'

In accordance with the Dr. C. Rangarajan Committee (2012),²² the Government should follow the Revenue Share Approach to establish more liquidity-related accountability. According to this method, 70 to 75 per cent of the revenue generated by the mills from the sale of sugar and its by-products is shared with cane suppliers. It balances the interests of cane producers and the sugar industry. Many major sugar producing States like Maharashtra and Karnataka have already migrated to the progressive revenue-sharing formula.

Though the Indian economy is a major producer and consumer of sugar, but at the same time the sugar recovery rate is considerably poor, which is why the cost of sugar production in India is one of the highest in the world. Intense research is needed to increase the production of sugarcane in the agricultural sector and to implement new production efficiency technologies in the sugar mills. According to CCEA, the FRP-based recovery will encourage the mills to improve and change the technology. This will improve both the effectiveness and quality of the industry in the long term. Further, issues like container shortages also need to be taken care of.

There is a debate on export subsidies in the WTO because export subsidies impede the sugar industry. To avoid this issue, cane juice to jaggery production can be redirected. This will help the Indian economy in following manner- First, the use of more jaggery than sugar would improve people's health and second, it would also address problems related to export subsidies in the WTO to some extent. Given that the use of subsidies is discredited and not in vogue in India as indeed in most countries of the world, we may explore the distinct possibility of effecting a paradigm shift from subsidies to incentives for wholesome development of the sector and the avowed objectives of growth and structural transformation of the country.



Annexure:

Table-A: Production of Sugarcane (in thousand tonnes)

Years		2015-16		2016-17		2017-18	
Sr No.	State	Production	Share (%)	Production	Share (%)	Production	Share (%)
1	Uttar Pradesh	1,45,390.0	41.28	1,40,170.0	45.8	1,77,060.0	46.98
2	Maharashtra	72,260.0	20.52	52,260.0	17.07	83,130.0	22.06
3	Karnataka	38,480.0	10.93	27,380.0	8.95	28,260.0	7.5
4	Tamil Nadu	26,500.0	7.52	18,990.0	6.2	16,540.0	4.39
5	Bihar	14,680.0	4.17	13,040.0	4.26	13,980.0	3.71
6	Gujarat	12,960.0	3.68	11,950.0	3.9	12,050.0	3.2
7	Haryana	6,510.0	1.85	8,220.0	2.69	9,630.0	2.56
8	Punjab	6,580.0	1.87	7,150.0	2.34	8,020.0	2.13
9	Andhra Pradesh	9,310.0	2.64	7,830.0	2.56	7,950.0	2.11
10	Uttarakhand	5,980.0	1.7	6,480.0	2.12	6,300.0	1.67
11	Madhya Pradesh	5,030.0	1.43	4,730.0	1.55	5,430.0	1.44
12	Telangana	2,420.0	0.69	2,060.0	0.67	2,560.0	0.68
13	West Bengal	2,080.0	0.59	0.0	0	0.0	0
14	Orissa	580.0	0.16	0.0	0	0.0	0
15	Assam	1,040.0	0.3	0.0	0	0.0	0
16	Others	2,400.0	0.68	5,810.0	1.9	5,980.0	1.59
	Grand Total	3,52,200.0		3,06,070.0		3,76,890.0	

**Latest data provided by National Horticulture Board (NHB)

Table-B: The number of sugar factories installed in following states in the year 2017-18

States	Private	Public	Cooperatives	Total
Punjab	8	-	16	24
Haryana	3	-	16	24
Rajasthan	1	1	1	3
Uttar Pradesh	116	14	28	158
Uttarakhand	4	2	4	10
Madhya Pradesh	18	2	5	25
Chhattisgarh	-	-	3	3
Gujarat	5*	-	23	28*
Maharashtra	77	-	169	246
Bihar	13	15	-	28
Assam	1	-	2	3
Orissa	4	-	4	8
West Bengal	2*	1	-	3*
Andhra Pradesh	19	1	13	33
Telangana	10	-	1	11
Karnataka	52	3	25	80
Tamil Nadu	27	3	16	46
Pondicherry	1	-	1	2
Kerala	1	-	1	2
Goa	-	-	1	1
Nagaland	-	1	-	1
Dadar & Nagar Haveli	-	-	1	1
All INDIA	362	43	328	732

* Includes Refineries in West Bengal And Gujarat

Source: Directorate of Sugar.

Table C: No. of Sugar mills in operation as on 15th Feb 2021, compared to last year.

State	No. of Mills in operation		Production in Lakh tonnes	
	As on 15th Feb 2020	As on 15th Feb 2021	As on 15th Feb 2020	As on 15th Feb 2021
Maharashtra	140	183	43.38	75.46
Uttar Pradesh	119	116	66.34	65.13
Karnataka	63	66	30.8	39.07
Gujarat	15	15	5.95	6.55
Tamil Nadu	21	25	2.63	2.25

Source: PIB and ICAR-Sugarcane Breeding Institute, Coimbatore (Co-operative Sugar Vol.51 February 2020, No.6)

Table D: Cane price payable/Paid and Arrear. (₹ in Crores.)

Sugar Season	Cane Price Payable	Cane Price Paid	Arrear
2017-18	85179	84928	251
2018- 19	86723	85539	1184
2019-20	51614	32282	19332

Source: PIB, Date- 20 March 2020

ENDNOTES:

1. See 'Final report of the task force Sugarcane and Sugar industry', March 2020.
<https://niti.gov.in/sites/default/files/2020-08/SugarReport.pdf>

2. Ibid.

3. "Shift Towards Profitable Crops Explains the Crisis in Marathwada" (8 October 2015) The Quint
<https://www.thequint.com/voices/opinion/shift-towards-profitable-crops-explains-the-crisis-in-marathwada>

4. <https://dfpd.gov.in/writereaddata/Portal/Magazine/EnglishMonthlysummary001.pdf>. Further, Sugarcane is regarded as a grain that is water-guzzling. Depending on the area, it takes somewhere from 1500-3500mm of rainfall. Sugarcane needs about 2000 mm of precipitation in subtropical regions, while up to 3500 mm is expected in tropical regions. On average, around 1500-2000kgs of water is needed for 1 kg of sugar.

5. "Sugarcane arrears at Rs 16,883 cr as on Jan 31 of 2020-21 marketing year"(9 February 2021) Business Standard
https://www.business-standard.com/article/economy-policy/sugarcane-arrears-at-rs-16-883-cr-as-on-jan-31-of-2020-21-marketing-year-121020901492_1.html

6. See press release <https://www.indiansugar.com/EventDetails.aspx?Nid=7279>

7. See 'Sugar output up 25.37% at 17.68 million tons during October-January ISMA' -Economic times (2 February 2021)
<https://economictimes.indiatimes.com/news/economy/agriculture/indias-october-january-sugar-output-jumps-25-to-17-7-million-tonnes-trade-body/articleshow/80647615.cms>
8. http://www.agriexchange.apeda.gov.in/MarketReport/Reports/Sugar_Semi-annual_New_Delhi_India_10-01-2020.pdf
9. Khandsari is a local type of low-recovery sugar prepared by open-pan evaporation.
10. See- M. Shahbandeh (June 2020), 'Sugar production worldwide 2010-2020'
<https://www.statista.com/statistics/249679/total-production-of-sugar-worldwide/>
11. See Chapter-4, Union budget, 2019-20 (Vol-2)
https://www.indiabudget.gov.in/budget2019-20/economicsurvey/doc/vol2chapter/echap04_vol2.pdf
12. Another reason could be the cyclicity in sugarcane production.
13. The cobweb theory is an economic model that describes why prices of some kinds of markets may be subject to periodic fluctuations. It defines cyclical supply and demand in a market where, before prices are observed, the quantity generated must be selected.
14. See Press Release - <https://pib.gov.in/PressReleaselframePage.aspx?PRID=1681049>
15. For more details see- Sachin Kumar Sharma et.al (Working paper- FCWS/WP/200/55)- "A BITTER PILL TO SWALLOW: INDIA'S SUGAR SECTOR UNDER SIEGE AT THE WTO"
<https://wtocentre.iift.ac.in/workingpaper/WorkingPaper55.pdf>
16. See the report by Solidaridad, <https://www.solidaridadnetwork.org/about>
17. "By 2023 We Are Planning To Have Zero Surplus Sugar By Diversion To Ethanol: Abinash Verma, DG, ISMA"-Business World (BW)-(11th February 2021)
<http://www.businessworld.in/article/By-2023-We-Are-Planning-To-Have-Zero-Surplus-Sugar-By-Diversion-To-Ethanol-Abinash-Verma-DG-ISMA/11-02-2021-376566/>
18. For more details see – PIB. <https://pib.gov.in/PressReleasePage.aspx?PRID=1668399>
19. "India Should Focus on Flex-Engine Vehicles to Promote Alternative Fuel: Nitin Gadkari"-News18 (5th September 2020) <https://www.news18.com/news/auto/india-should-focus-on-flex-engine-vehicles-to-promote-alternative-fuel-nitin-gadkari-2851739.html>
20. See "Cabinet okays increase in sugarcane FRP by Rs 10 to Rs 285/qtl for 2020-21"- Economic times(19th August 2020) <https://economictimes.indiatimes.com/news/economy/agriculture/cabinet-okays-increase-in-sugarcane-FRP-by-rs-10-to-rs-285/qtl-for-2020-21/articleshow/77636635.cms>
 For more details see- <https://economictimes.indiatimes.com/topic/sugarcane-FRP>
21. See "Rakesh Tikait flays U.P. govt. government for not increasing sugarcane SAP"- The Hindu-(16th February 2021)
<https://www.thehindu.com/news/national/other-states/rakesh-tikait-flays-up-govt-government-for-not-increasing-sugar-cane-sap/article33846251.ece>
22. For more details see- Table-11 'Final report of the task force Sugarcane and Sugar industry', March 2020.
<https://niti.gov.in/sites/default/files/2020-08/SugarReport.pdf>

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