सत्यमेव जयते

NITI Aayog

FINAL REPORT OF THE TASK FORCE

SUGARCANE AND SUGAR INDUSTRY

MARCH 2020

Foreword

India is the largest consumer of sugar in the world. The sugar industry is amongst the most important agro-based industries in the country that impact livelihood of about 5 crore farmers and their family members and 5 lakh workers directly employed with the sugar mills. There are more than 700 installed sugar factories in the country with crushing capacity of about 340 lakh MT of sugar and annual turnover of about Rs 80,000 crore. These numbers reflect the important role the sugar industry plays in India's economy. However, with sugar prices falling for a couple of years in a row while sugarcane prices moving up over the last few years, has put the industry in serious problems, including that of liquidity. Despite series of measures announced by the Central Government to address these problems, the demand for more assistance has not subsided.

Therefore, a need was felt by NITI Aayog to explore long-term solutions for the sugarcane and sugar industry, so as to rationalise their dependence on state assistance and encourage farm diversification to reduce adverse impact of sugarcane cultivation on the water sector. Accordingly, a task force was constituted by NITI Aayog under my chairmanship, which included secretaries of D/o Food and Public Distribution (D/o F&PD), D/o Expenditure (DoE), D/o Agriculture Cooperation and Farmers' Welfare (D/o AC&FW), Department of Commerce (DoC), Ministry of Petroleum and Natural Gas (M/o P&NG), Ministry of Environment, Forest and Climate Change (M/o EF&CC), Pr. Secretary (Sugar Industry and Cane Development, Department of Government of UP), Secretary (Co-operation, Textile and Marketing Department, Government of Maharashtra), Dr N.R. Bhanumurthy (Professor, NIPFP), Special Secretary (KIH, NITI Aayog), Additional Secretary (Energy, NITI Aayog) and Senior Adviser (Governance & Research, NITI Aayog). The technical support to the task force was provided by the Department of Food and Public Distribution. The task force also interacted with representatives of the Indian Sugar Mills Association, National Federation of Cooperative Sugar Factories, Confederation of Indian Industries, sugarcane farmers from Maharashtra and Uttar Pradesh, etc., in its meetings.

The task force broadly deliberated on (i) long-term solutions to the problems faced by sugarcane farmers and sugar industry; (ii) measures for rationalising the sugar economy; (iii) measures to make the sugar industry less state dependent and align it with global markets; and (iv) encourage farm diversification so as to reduce adverse impact on the water sector. The task force has prepared this report based on its deliberations that comprehensively cover the above-mentioned aspects and has suggested a policy roadmap both for the sugarcane sector and sugar industry.

I would like to extend my gratitude to the members of the task force for their valuable inputs and providing domain expertise. I would like to particularly acknowledge the

contributions of industry bodies, namely Indian Sugar Mills Association, All Indian Sugar Trade Association and National Federation of Cooperative Sugar Factories Ltd. for their inputs and providing industry perspective. In addition, I wish to place on record my appreciation of inputs provided by Shri S.K. Vashishth, Joint Secretary, Department of Food & Public Distribution, Shri Sandeep Poundrik, Joint Secretary, Ministry of Petroleum & Natural Gas as well as Shri Sanjay R. Bhoosreddy, Pr. Secretary (Sugar Industry & Cane Development Department of Government of Uttar Pradesh). I would also like to thank Government officials and farmer-cooperative representatives from Maharashtra and Uttar Pradesh for taking part in the deliberations of the task force.

I wish to extend my deepest gratitude to Dr Yogesh Suri, Senior Adviser (G&R), NITI Aayog (convener of the task force), and his team for organising the task-force meetings and facilitating the preparation of this report. I would also like to thank other officials of NITI Aayog: Shri Neeraj Singhal, Director (G&R); Shri Desh Gaurav Sekhri, OSD; Dr S.K. Srivastava, Agriculture Economist; Shri Ankush Das, former Young Professional; Shri Satwik Mishra, Young Professional; and Dr Jaspal Singh, Consultant, for their inputs.

The report is expected to provide useful insights to policymakers to resolve the issues faced by sugarcane farmers and sugar industry. The task force is hopeful that its suggestions and recommendations will be useful in finding resolution of the recurring problems of the sector on sustainable basis and keep balance between interests of various stakeholders.

New Delhi
March 30, 2020

Ramesh Chand,
Member (Agriculture),
NITI Aayog,
Chairman of the Task Force

List of Abbreviations

Abbreviation	Meaning
A2 + FL	Actual paid-out expenses incurred by farmers and imputed value of unpaid family labour
AAY	Antodaya Anna Yojana
BIS	Bureau of India Standards
CACP	Commission for Agricultural Costs and Prices
CCEA	Cabinet Committee on Economic Affairs
CO2eq	Carbon Dioxide equivalent
CPCB	Central Pollution Control Board
DAC&FW	Department of Agriculture Cooperation and Farmers' Welfare
DBT	Direct Benefit Transfer
DFPD	Department of Food and Public Distribution
EAC-PM	Economic Advisory Council to Prime Minister
EBP	Ethanol Blended Petrol
FCI	Food Corporation of India
FFM	Flex Fuel Motorcycles
FFV	Flex Fuel Vehicles
FRP	Fair and Remunerative Price
GST	Goods and Services Tax
I (D&R) Act, 1951	Industries (Development and Regulation) Act, 1951
ISMA	Indian Sugar Mills Association
LMT	Lakh Metric Tonne
MIEQ	Minimum Indicative Export Quota
MoP&NG	Ministry of Petroleum and Natural Gas
MSP	Minimum Support Price
MSP of sugar	Minimum Selling Price of sugar
MT	Metric Tonne
NITI	National Institution for Transforming India
OMC	Oil Marketing Company
PDS	Public Distribution System
PSF	Price Stabilisation Fund
PSU	Public Sector Undertaking
RoR	Rate of Return
RSF	Revenue Sharing Formula
SAP	State Advised Price
SDF	Sugar Development Fund
SEFASU	Scheme for Extending Financial Assistance to Sugar Undertakings
SMP	Statutory Minimum Price
SS	Sugar Season
UP	Uttar Pradesh
WTO	World Trade Organisation
ZLD	Zero Liquid Discharge

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National Institution for Transforming India

Report of the Task Force on Sugarcane and Sugar Industry

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Executive Summary

Sugarcane and sugar play significant role in economy of India, trade and livelihood. Sugar is country's second largest agro-based industry, next to cotton. Sugarcane and sugar industry together impact the livelihood of over 5 crore farmers and their dependents involved in cultivating sugarcane in an area of almost 50 lakh hectares. India is the largest consumer and the second-largest producer of sugar in the world. Average annual production of sugarcane is around 35.5 crore tonnes which is used to produce around 3 crore tonnes of sugar. The domestic consumption is estimated to be around 2.6 crore tonnes in the current financial year.

Over the years, the Fair and Remunerative Price (FRP) fixed by the Government for sugarcane on the basis of the recommendations of Commission on Agricultural Costs and Prices (CACP) has been fairly remunerative for farmers compared to other competing crops. The returns from sugarcane cultivation are generally 60%–70% higher than most other crops. Additionally, sugar mills that buy sugarcane are mandated to purchase crops from farmers within a specified radius known as the Cane Reservation Area at the FRP. In this way, sugarcane farmers are fairly insured and protected by Government schemes and policies against any price risk. Remunerative and assured prices along with improvement in yield and recovery continue to attract farmers to growing sugarcane despite ample supply and lower prices of sugar in the market. It would not be an exaggeration to say that India has structurally become a sugar-surplus nation.

The industry has an annual turnover of about ₹1 lakh crore and generates revenue of ₹12,000 crore for the Government exchequer. However, the sector has been facing serious issues related to profitability as well as liquidity in the last few years due to depressed sugar prices inadequately covering cane prices and mismatch between sugarcane prices and sugar prices. In addition to Fair and Remunerative Price (FRP) announced by the Central Government, some States fix State Advised Price (SAP) at higher levels, causing strain on the financial position of the mills. The sugar mills in turn started making lower payment as compared to the payment at SAP/FRP. This in turn led to the accumulation of the sugarcane arrears that crossed Rs 20,000 crore for many months during the previous two sugar seasons. The Government of India has taken several measures to help the sugarcane producers and sugar industry; however, the problem persists.

The basic factors in export competitiveness of sugar are the difference between the cost of cane to sugar mills and cost of producing sugar itasn India vis-a-vis other major sugar-producing countries of the world. The other factor is the quality of sugar being exported from India in comparison to quality of sugar in the international markets.

Sugarcane is known to be a water-guzzling crop. On average, 1 kg of sugar requires about 1500–2000 kg of water. Most of the country's irrigation facilities are utilised by paddy and sugarcane, depleting water availability for other crops. Pressure on water due to

sugarcane cultivation in States like Maharashtra has become a serious concern, calling for more efficient and sustainable water use through alternative cropping pattern. This is especially important in regions where groundwater use has reached a critical and overexploited stage or where more than 50% surface water is used for irrigating sugarcane alone.

One of the main problems that the sugar sector faces is delay in payments by sugar mills to sugarcane farmers. If sugar prices in the market do not correspond to sugarcane FRP, then sugar mills are left in a distressed state, unable to make adequate profits. The Minimum Selling Price of sugar at ₹31/kg, even though recently hiked by ₹2, does not even cover the cost of manufacture, given the FRP that is currently ₹275 per quintal (SAPs even higher). ISMA has represented that in 2017–18, the production cost for sugar was ₹3,580 per quintal. At the same time, the comparable international prices were averaging ₹2,080 per quintal.

A large number committees were set up in the past to address issues confronting sugarcane growers and sugar manufacturers. The broad recommendations of the committees covered areas such as: (a) price determination and distribution mechanisms for sugar; (b) setting up of new factories; (c) amendments in various laws with regard to the sugar industry; (d) increasing productivity of sugar industry; (e) issues with regard to cane area reservation; (f) decontrol of sugar; (g) pollution mitigation; (h) improving efficiency of the industry in terms of power consumption; (i) alternate uses of sugarcane for ethanol; (j) enhancing exports; (k) support needed for sugar mills to be more profitable, etc. What is particularly relevant to this report are the recommendations of the committee under the chairmanship of Dr C. Rangarajan, the then chairman, EAC-PM, in 2012. Developments since 2012 indicate that States have been generally reluctant to undertake reforms in the context of abolition of cane area reservation, minimum distance norms, etc.

In 2003, the Government launched the Ethanol Blended Petrol (EBP) programme primarily to promote environment-friendly fuels (by increasing the usage of ethanol) and reduce energy imports. The EBP programme injects liquidity into the sugarcane sector by providing sustained demand for ethanol. This helps in the reduction of accumulated arrears for cane farmers and permits timely payment to them. The 2018 National Policy on Biofuels broadens the scope for the raw material procurement for ethanol production. The policy targets a 20% blending percentage by 2029–30. Presently, the Ministry of Petroleum and Natural Gas is undertaking the EBP programme to achieve 10% ethanol blending percentage in petrol by 2021–22. With ethanol production capacities being set up expeditiously, creation of another 200 crore litres in 2 years is expected, which would conceivably drive the production of ethanol to 450–500 crore liters by 2020–21. With India currently possessing over 70 lakh tonnes of surplus sugar, there is large scope for diverting surplus cane towards ethanol production without affecting sugar supply needed to meet domestic demand. As per information available in the Sugarcane

(Control) Order, 1966, 1 tonne of sugarcane yields 70 litres of ethanol, while producing one tonne of sugar is equivalent to producing 600 litres of ethanol.

Keeping sugar Industry healthy needs major reforms, which have been analyzed and assessed in this report. This report has been organized into 7 Chapters. Chapter 1 pertains to the constitution of the task force for analysing the issues and drafting this report. Chapter 2 provides a detailed overview of the sugarcane sector and sugar industry, along with a background of the historical context to challenges faced by the sector and industry. Chapter 3 discuss the reforms and recommendations made by various committees in the past for the sector and industry, including those of the C. Rangarajan Committee. Chapter 4 provides a detailed analysis, context and future plans for the Ethanol Blending Programme. Chapter 5 presents analysis of alternatives to divert area under the cultivation of sugarcane in regions where there is water scarcity, towards crops that are less water intensive and have been traditionally grown successfully in the specific regions. Chapter 6 presents a summary of the observations of the task force. Chapter 7 contain detailed recommendations of the task force in furtherance of reforms in sugarcane and sugar.

While preparing the report, the task force referred to inputs received from various Departments/Ministries, reports of the Commission for Agricultural Costs and Prices, D/o Agriculture Cooperation and Farmers' Welfare, Indian Sugar Mills Association (ISMA), and other industry representatives. The task force also referred to the Rangarajan Committee's observations and recommendations, and also had detailed deliberations with representatives of the Brazilian sugar and ethanol industry.

Based on the detailed analysis of the sugarcane and sugar sectors, deliberations held in the task force, consultations with industry representatives and other stakeholders, the major recommendations of the task force are as follows:

1. **Pricing of Sugarcane:** The falling/stagnant price of sugar in the recent years in the backdrop of continuous rise in sugarcane prices is the main source of troubles faced by the sugar industry in the last few years. The task force feels that to prevent the problem of arrears for sugarcane farmers and to keep the sugar industry in sound financial health, sugarcane prices must be linked to sugar prices. The Revenue Sharing Formula (RSF) needs to be introduced, with a Price Stabilisation Fund to protect farmers from receiving prices below the FRP. While the scientific formula suggested by the Rangarajan Committee could be considered, the prices of sugarcane may need to be adjusted slightly upwards keeping in view the improvement in recovery rates in the last few years i.e. between the reference period of Rangarajan Committee recommendations and the current period. Thus, in place of 70% price of sugar and byproducts and 75% price of sugar only, the pricing formula can be 75% of sugar and byproducts and 80% of sugar price. This formula can be implemented prospectively say from sugar season 2020–21 or 2021–22. Future increases in FRP should be kept moderate. The States that have been announcing State Advised Price, should be urged

to desist from doing so unless they are willing to bear additional costs of SAP upon themselves and not forcing the mills to bear the load of sugarcane price above FRP.

2. **Payment of Sugarcane Price to Farmers:** Sugarcane is a fairly remunerative crop. As against A2+FL cost of Rs 155 per quintal in 2018–19, the FRP fixed by the Central Government was Rs 275 per quintal, providing a return of 77% (over A2+FL cost), which is higher than most other competing crops. If farmers are paid 60% of the sugarcane FRP upfront, it will cover their entire A2+FL cost and provide a little margin over the same. It is recommended that mills should be allowed to stagger the payment for sugarcane in following manner: 60% payment within 14 days of delivery of sugarcane to mills; another 20% within next two weeks and balance 20% within another one month (or upon sale of sugar whichever is earlier), so that the entire dues for sugarcane to farmers are cleared within 2 months.

3. **Diversification towards Less Water-intensive Crops**: Keeping in view the urgent need for conservation of water, the task force recommends shifting of some area under sugarcane cultivation to less water-intensive crops, by providing suitable incentive to farmers. The Government should target moving about 3 lakh ha area under sugarcane, which yields about 20 lakh tonnes of sugarcane, to other crops through this mechanism. The task force feels that a compensation of Rs.6,000 per ha could be given as additional incentive to farmers for alternate cultivation patterns that are less water intensive than sugarcane. The task force recommends that a new scheme for such compensation should be launched by DAC&FW in coordination with Ministry of Jal Shakti and can be implemented for a period of three years initially. Besides, an alternative way of reducing supplies can also be by restricting the sale slip to the extent of 85% of the area of the sugarcane farmers so that they are encouraged to diversify their production on the remaining 15% to other crops. However, this 85% limit may also not remain fixed; it should rather remain flexible depending upon sugar demand–supply situation and export possibility going forward. Such a mechanism could be considered for sugar season 2020–21 onwards as there is already some decline in area under sugarcane during 2019–20.

4. **Sugar and Sugarcane Development Fund:** Due to stagnation and/or declining sugar prices, the liquidity position of the mills has remained a major cause for concern, prompting the Government to come out with various liquidity support measures from time to time. The task force recommends a long-term solution that requires fund of a reasonable size to provide liquidity support to the mills if such situations emerge. It is proposed to levy cess on sugar at Rs 50 per quintal for a period of 3 years, during which about Rs 4,500 crore would be added to the fund, which will help provide bridge funding or act as a comfort for banks providing soft loans to mills for improving technologies and paying dues to their farmers. Industry also needs to be encouraged to set aside some proportion of sales/profit in the years of high prices of sugar that can be used in times of low sugar prices when liquidity becomes a constraint for the mills. Once the demand and supply balance is restored, the cess on sugar should be reduced or removed and sugar mills may be asked to contribute to the SDF a certain percentage of sugar sales, which would be decided by the Government of India. The

task force feels that levy of cess reduces the competitiveness of exports whenever international prices of sugar are lower than domestic price, as is the case at present. It is, therefore, recommended that this cess should be exempted (or refunded) for the sugar that is earmarked for exports, in order to ensure that it does not become uncompetitive for mills who export their mandated quota. Since the focus of the fund expands from sugar industry to sugarcane farmers, it may be renamed as "Sugar and Sugarcane Development Fund".

5. **Ethanol Blending Programme:** The task force's recommendation is to support and enhance the technology and adoption of ethanol blending in line with the target of achieving 10% by 2021–22 and 20% by 2029–30 and further recommends an interim medium-term blending target of 15% by 2024–25. Required support should be extended to help upgrade and integrate technology and learn from Brazilian experience of diverting raw sugarcane juice towards ethanol blending. In order to promote ethanol production, additional measures could be considered in line with suggestions spelt out in the National Biofuels Policy 2018. These include classification clarity about raw material usage and extension of appropriate financial and fiscal incentives for each category, establishment of biofuel development boards in states, establishing updated BIS standards and a National Biomass Repository. Suitable supply chain mechanisms, feedstock collection centres and fair price mechanisms for the engaged community would also need to be developed in coordination with Local Bodies, States and concerned stakeholders. Besides, on the lines of Karnataka, other state governments should also consider removing unnecessary restrictions on the movement of ethanol used for the blending programme.

6. **Trade Policy:** While there is a need to continue to incentivize sugar for exports at present, the task force recommends redesigning of export incentives so as to rule out their being challenged at WTO. The Department of Food and Public Distribution should coordinate with the Department of Commerce and work out suitable incentive mechanism for export of sugar while keeping the implications for exchequer to the minimum possible extent.

7. **Raising the MSP of Sugar to ₹33 Per Kilogram:** The task force recommends a one-time increase in minimum sugar price to Rs 33 per kilo; as it would help sugar mills to cover the cost of production, including interest, maintenance costs etc. Keeping in view the emerging developments, the MSP for sugar should be reviewed after six months of the notification.

8. **Implementing Recommendations of Earlier Committees:** The task force has observed that despite major reforms recommended by the C. Rangarajan Committee in 2012, almost none of the states implemented them. The task force recommends that the Department of Food and Public Distribution take up the matter with State Governments, and come out with specific steps that may be required towards the liberalisation of the sugar sector. However, levy/quota system on sugar need not be abolished for the present as past experiences have indicated a sudden glut in supply resulting in further subdued prices upon removal of the quota system.

9. **Expansion of Drip Irrigation in Sugarcane Cultivation:** As per the CACP's analysis there is a stark difference in water consumption for growing sugarcane between Uttar Pradesh and Maharashtra and South India. The task force recommends that all efforts should be made for adoption of drip irrigation in place of flood irrigation in Maharashtra and States in South India. This would save almost 40%–50% of water, which in turn could be used for other purposes. In order to promote drip irrigation, in addition to sustained sensitization campaign, some incentive mechanisms in form of concessional access to infrastructure could also be considered for farmers. Various schemes for agriculture sector promoting drip irrigation should be leveraged for the purpose. Drip irrigation will gain popularity if power supply for irrigation is appropriately priced to discourage flood irrigation.

10. **Eliminate Buffer Stock for Sugar:** The buffer stock is essentially to improve the liquidity position of the mills and does not serve much purpose in the context of food security of the people as is the case with buffer stock of wheat and rice. If measures proposed in this report are taken the need for having a buffer stock will disappear.

11. **Recycling Bagasse:** The task force recommends that incentives be provided to sugarcane mills to recycle bagasse. In addition to being used as a biofuel, bagasse has multiple other uses. If bagasse is not burned in high-pressure boilers it will lead to uncontrolled burning and environmental air pollution. The funding should be procured through soft loans from the SDF. In addition, to tackle falling prices, a complete rethink of cogen pricing needs to happen to incentivise this industry to use bagasse and the other biomass.

12. **Promotion of Jaggery:** The task force proposes that the Department of Food and Public Distribution, in consultation with the National Sugar Institute, Kanpur, and other stakeholders, including BIS, should develop a suitable mechanism for adoption of advanced technology for jaggery manufacturers and set quality standards thereof.

13. **Financial Assistance to Distressed Sugar Mills:** Due to various administrative impediments, many distressed sugar mills are unable to receive loans under the soft loans scheme of the Government of India. While the task force recognises the need for autonomy to banks in taking decisions regarding loans in line with RBI guidelines, there is a felt need for some flexibility in providing loans to mills that are ailing for various reasons. The Department of Financial Services may call a meeting of relevant stakeholders and find an amicable solution to the problems of the distressed sugar mills in availing loans from the banking sector.

14. **Long-Term Pricing Formula for Ethanol:** Industry has been demanding a long-term pricing formula for ethanol to encourage setting up or capacity enhancement of ethanol. The task force recommends that the Ministry of Petroleum and Natural Gas should examine the suggestion in a holistic manner keeping in view the need for providing some indication for the pricing formula for ethanol so as to reduce uncertainties of return on the investments being made for ethanol production.

15. **Complete Restructuring of Industry**: The Task force has given a range of suggestions that are expected to go a long way towards improving the economic

viability of the industry. However, given the sensitivity of the subject, and the criticality of reliance on sugarcane as a primary crop by nearly 5 crore farmers and their dependents, a moderate and balanced approach has been adopted in this report. However, serious policy distortions in sugar sector are continuing to result into excess sugar production over domestic demand and rendered domestic prices highly uncompetitive for trade. The fiscal and natural resource cost of interventions in sugarcane and sugar industry are enormous and rising. Therefore, there is a need for complete restructuring of sugar industry in a phased manner.

Report of the Task Force on Sugarcane and Sugar Industry

Chapter I

Constitution of the Task Force

1.1 India is the largest consumer of sugar in the world. The sugar industry in India is amongst the most important agro-based industries, which impact the livelihood of about 5 crore farmers and their family members, and 5 lakh workers that are directly employed with the mills. There are more than 700 installed sugar factories in the countries with crushing capacity of about 340 lakh MT of sugar and an annual output of about Rs 80,000 crore. However, with sugar prices falling and sugarcane prices moving up over the last few years, the industry has been facing various problems, including that of liquidity. While the Central Government has announced a series of measures to alleviate these problems, yet the demand for more assistance has not subsided.

1.2 Therefore, a need was felt by NITI Aayog to find long-term solutions for the sugarcane and sugar industry, so as to rationalise their dependence on state assistance and encourage farm diversification to reduce adverse impact of sugarcane cultivation on the water sector. Accordingly, a task force was constituted by NITI Aayog vide OM no. 7(11)/2018-G&R dated 10.12.2018 under the chairmanship of Prof. Ramesh Chand, Member, NITI Aayog. The composition of the task force is as under:-

i.	Prof. Ramesh Chand, Member, NITI Aayog	Chairman
ii.	Secretary, Department Food and Public Distribution,	Member
iii.	Secretary, Department of Expenditure,	Member
iv.	Secretary, Department of Agriculture Cooperation and Farmers Welfare,	Member
v.	Secretary, Department of Commerce,	Member
vi.	Secretary, Ministry of Petroleum and Natural Gas,	Member
vii.	Secretary, Ministry of Environment, Forest and Climate Change,	Member
viii.	Shri Yaduvendra Mathur, Additional Secretary (KIH), NITI Aayog,	Member
ix.	Shri R.P. Gupta, Additional Secretary (Energy), NITI Aayog,	Member
x.	Principal Secretary, Sugar Industry and Cane Development Department, Government of UP	Member
xi.	Secretary, Co-operation, Textile and Marketing Department, Government of Maharashtra,	Member
xii.	Dr N.R. Bhanumurthy, Professor, NIPFP,	Member
xiii.	Dr Yogesh Suri, Senior Adviser, NITI Aayog,	Member/ Convener

The Terms of Reference of the task force were:

a) To suggest long-term solutions to the problems faced by sugarcane farmers and sugar industry
b) Measures for rationalising the sugar economy
c) Measures to make sugar industry less state dependent and align it with global markets.
d) Encourage farm diversification so as to reduce adverse impact on the water sector.

The technical support to the task force was provided by the Department of Food and Public Distribution. The task force also invited representatives of Indian Sugar Mills Association, National Federation of Cooperative Sugar Factories, etc., in its meetings.

The task force had three regular meetings on 21 January 2019, 30 August 2019 and 27 November 2019. Besides, smaller group discussions were held with various stakeholders from time to time.

Chapter II

Background and Overview

Sugarcane and sugar are both vital for Indian economy as livelihoods of over 5 crore cane farmers and their family members, depend on these sectors.

2. Sugarcane and Sugar: A Major Crop and Industry

2.1 The sugar industry plays a significant role in India's agricultural economy—sugarcane and sugar have been and continue to be important commodities of trade and livelihood. Today, the industry is a vital cog in India's rural development as the country's second largest agro-based industry, next only to cotton. It directly or indirectly impacts the livelihoods of over 5 crore farmers and their dependents, involved in cultivating sugarcane in an area of almost 50 lakh hectares. In addition, 5 lakh workers in sugar mills and another 10 lakh workers, through indirect means, draw their livelihoods from the sugar industry.

2.2 India is the largest consumer and the second largest producer of sugar in the world. Brazil has historically led the world in sugar production. However, of late, Brazil has been diverting a large proportion of its sugarcane to the production of ethanol, and soon India will take over the position as the world's leading sugar producer. India's average annual production of sugarcane is 35.5 crore tonnes, with sugar production of around 3 crore tonnes. Being the largest consumer of sugar, the domestic consumption of India is estimated to be at around 2.6 crore tonnes in the current financial year. However, the per-capita consumption of India is still slightly lower than in Europe, etc., at 20 kg as opposed to the latter's average of 50–65 kg. In India, 35% of sugar is used in household consumption and 65% goes for industrial uses, including beverages and food manufacturing.

Table 1: Production of Sugarcane and Sugar in the World (2015–16)

Sl. No.	Country	Area (Lakh ha)	% to World	Production (Crore tonnes)	% to World	Yield (Tonne/ ha)	Sugar Production (Lakh tonnes)
1	Brazil	98.3	37.06	73.93	39.38	75.17	358.0
2	India	50.6	19.07	34.12	18.17	67.43	272.5
3	China	18.2	6.86	12.55	6.68	69.01	133.0
4	Thailand	13.2	4.98	10.01	5.33	75.74	102.0
5	Pakistan	11.3	4.26	6.38	3.39	56.48	47.0
6	Mexico	7.8	2.94	6.19	3.26	78.16	65.1
	World	*265.2*	-	*187.71*	-	*70.77*	*1723.6*

Source: https://sugarcane.dac.gov.in/StatisticsAPY.pdf

2.3 Sugarcane cultivation and sugar manufacturing are marred by a complex system of pricing, procurement, supply and regulation. The complexity is further aggravated by state-level intervention in sugarcane pricing through the system of State Advised Prices

(SAP). Because of the relatively high minimum price for sugarcane—the Fair and Remunerative Price (FRP)—set by the Central Government, farmers prefer to sugarcane despite poor competitiveness and an ample supply of the crop. Additionally, sugar mills that buy sugarcane are mandated to purchase crops from farmers within a specified radius known as the Cane Reservation Area at the FRP. In this way, sugarcane farmers are fairly insured and protected by Government schemes and policies.

2.4 Both sugarcane and sugar are essential commodities and thus subject to control through various provisions of the Essential Commodities Act, 1955. This means that the industry is strictly regulated in terms of land demarcation for cultivation, sugarcane price, sugarcane procurement, sugar production and sale of sugar by mills in domestic and international markets. However, there is a debate on whether food commodities still need to be treated as essential commodities, considering the industry's resilience to uncertainties.

2.5 Sugarcane cultivation trend has been varying for each state between 2014–15 and 2016–17, with some states showing an increasing rate of declining cultivation such as Andhra Pradesh, Bihar, Karnataka, Maharashtra, Tamil Nadu and Uttarakhand. The rest of India too has shown significant decline in sugarcane cultivation. However, states such as Haryana and Uttar Pradesh (UP) have shown increasing or steady sugarcane cultivation (Table 2).

Table 2: State-Wise Area under Sugarcane Cultivation ('000 Hectares)

States	2014–15	2015–16	2016–17
Andhra Pradesh	139.0	122.0	103.0
Bihar	254.3	244.0	239.6
Haryana	97.0	93.0	102.0
Karnataka	480.0	450.0	397.0
Maharashtra	1030.0	987.0	633.3
Punjab	94.0	90.0	88.0
Tamil Nadu	263.1	252.3	218.3
Uttar Pradesh	2140.8	2169.0	2160.0
Uttarakhand	101.7	96.9	93.0
Rest of India	*455.9*	*423.0*	*401.6*
All India	***5055.8***	***4927.1***	***4435.7***

Source: Directorate of Economics and Statistics, Ministry of Agriculture and Farmers' Welfare

2.6 In line with the cultivation area, during the periods 2014–15 and 2016–17, states like Andhra Pradesh, Bihar, Karnataka, Maharashtra, and Tamil Nadu showed lower production of sugarcane, in line with the rest of India output. States like Haryana, UP and Uttarakhand showed increased output (Table 3).

Table 3: State-Wise Production of Sugarcane ('000 Tonnes)

States	2014–15	2015–16	2016–17
Andhra Pradesh	9987.0	9353.0	7830.0
Bihar	14034.1	12649.3	13036.0
Haryana	7169.0	6692.0	8223.0
Karnataka	43776.0	37833.8	27378.0
Maharashtra	84699.0	73679.6	52262.4
Punjab	7039.0	6607.0	7152.0
Tamil Nadu	28092.8	25494.1	18987.6
Uttar Pradesh	133061.4	145385.0	140169.2
Uttarakhand	6165.1	5885.8	6477.0
Rest of India	*28309.4*	*24868.9*	*24553.8*
All India	***362332.8***	***348448.4***	***306069.0***

Source: Directorate of Economics and Statistics, Ministry of Agriculture and Farmers' Welfare

2.7 Interestingly, despite a reduction in cultivation and production, states like Andhra Pradesh, Maharashtra and Punjab have shown increasing or steady yields while states like Karnataka and Tamil Nadu have seen declining yields. Haryana, Uttarakhand and UP have seen increasing yields varying in degree (Table 4).

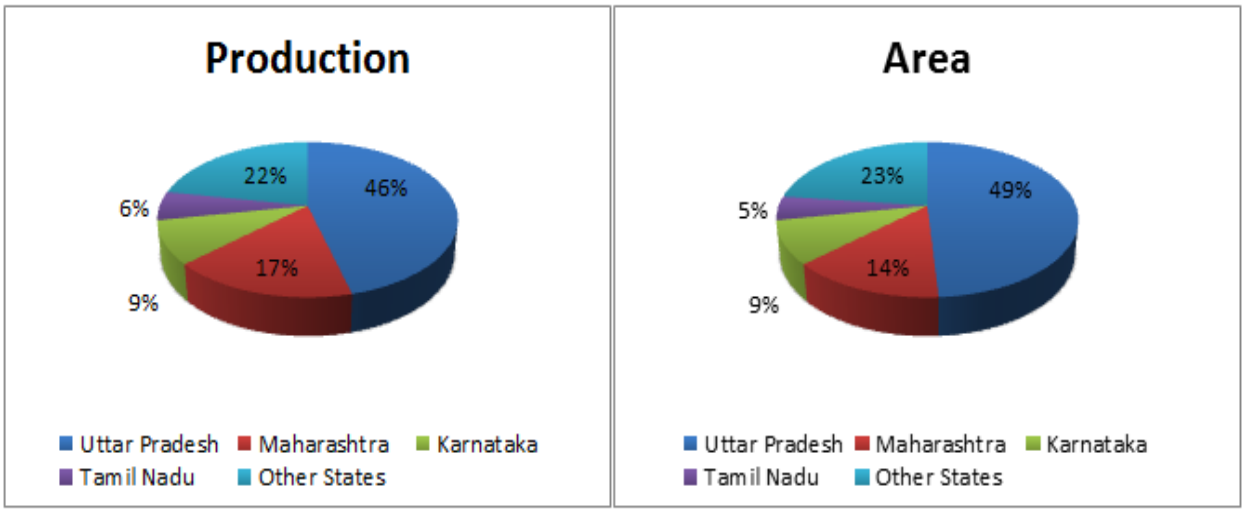
Table 4: State-Wise Yield of Sugarcane (Kgs/Ha)

States	2014–15	2015–16	2016–17
Andhra Pradesh	71849	76664	76019
Bihar	55179	51837	54415
Haryana	73907	71957	80618
Karnataka	91200	84075	68962
Maharashtra	82232	74650	82524
Punjab	74883	73411	81273
Tamil Nadu	106788	101059	86995
Uttar Pradesh	62155	67029	64893
Uttarakhand	60608	60772	69645
Rest of India	*62100*	*58798*	*61144*
All India	***71511.0***	***70720.0***	***69001***

Source: Directorate of Economics and Statistics, Ministry of Agriculture and Farmers' Welfare

2.8 The top 4 sugarcane-cultivating States of India are UP, Maharashtra, Karnataka and Tamil Nadu—in that order, with Bihar ranking fifth. Figures 1 and 2 below provide data on sugarcane production and the area under cultivation, respectively, for 2016–17, where the top four sugarcane-producing states accounted for almost 80% of the country's production. In relation to this, it is unsurprising that almost 80% of the gross-cropped area under sugarcane in India fell within the top four States. UP is by far the largest sugarcane producer, producing 46% of the country's total cane output. In comparison, this is almost three times the second-largest sugarcane-producing state.

Figure 1: State Share in Production of and Area under Sugarcane in India during 2016–17



Source: Directorate of Economics and Statistics, Ministry of Agriculture

2.9 In total there are about 530 functioning sugar mills across the country, two-thirds of which are privately owned entities. Private sugar mill ownership is widespread in UP. The remaining sugar mills run as cooperatives, whereby the farmers are collective owners of those mills. This kind of sugar-mill ownership is prevalent in Maharashtra.

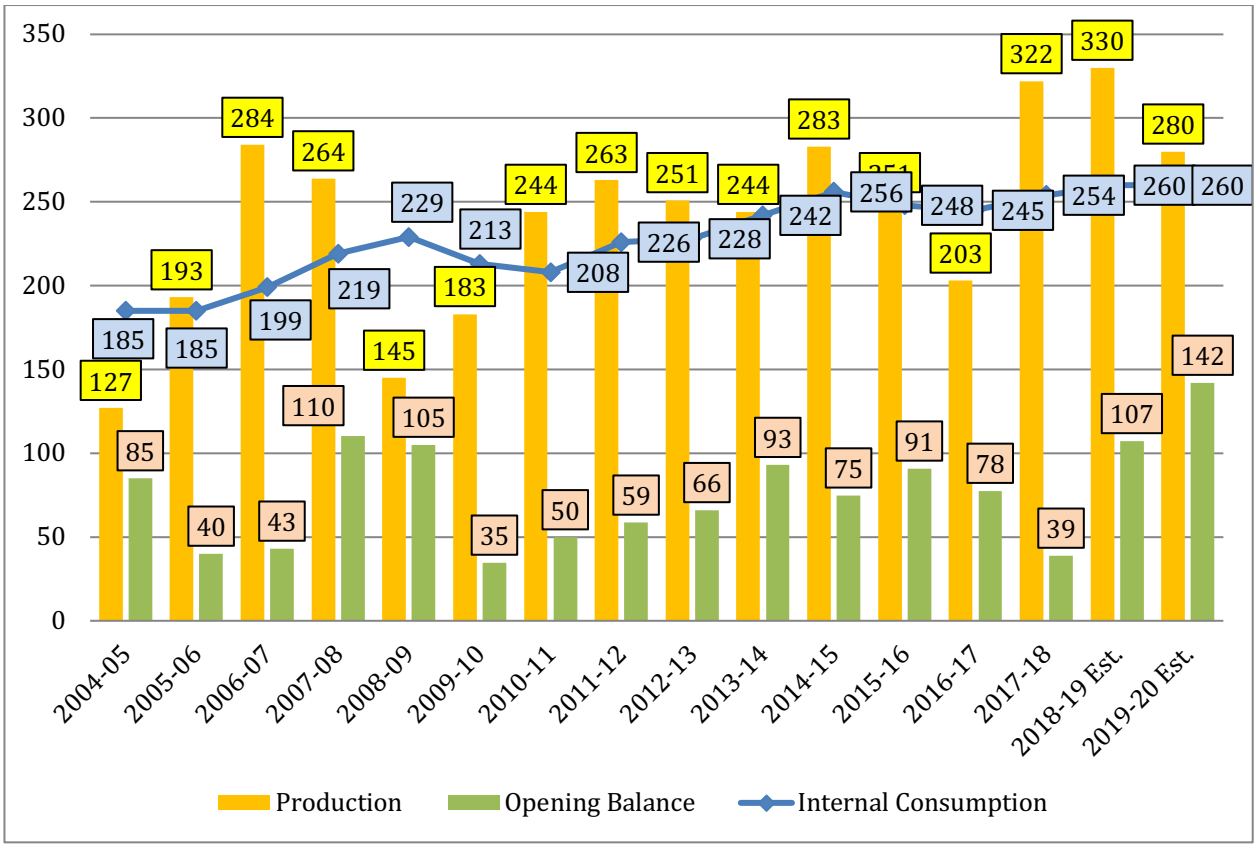
2.10 The sugar industry has been successful by commercially utilising the crop for economic purposes and creating immense value in the rural economy. The industry has an annual turnover of about ₹1 lakh crore and generates revenue of ₹12,000 crore for the Government exchequer.

The current scenario of the sugar industry

2.11 Sugarcane and sugar production in India have moved on a cyclical upward trend. In a sugar cycle of roughly 5 years, the industry usually experiences over-production for 3 to 4 years followed by low production for a year or two. Until a few years ago, the crop exhibited strong cobweb behavior. The industry experiences such surpluses in production because farmers prefer to cultivate this crop. This preference arises from the high rate of return (RoR) received by sugarcane farmers as well as the certainty of finding an assured buyer for their produce. The returns on cultivating sugarcane are 60%–70% more than most other crops. Sugarcane farmers also get the full promised price that has been fixed by the Government, which is not the case for most other crops and since there is no middleman between a sugar mill and sugarcane farmer, the sugarcane farmers continue to be keenly interested in growing sugarcane, even though payments due to them by the ex-mills get delayed. Despite payment delays, in most cases, sugarcane farmers receive at least two thirds the amount for their produce in a timely manner. It is also important to note that the sugarcane crop is sturdy and can withstand fluctuations in weather. Compared to many other crops, cane farmers have to put in little effort by way of inputs and manhours in growing their crops and therefore, it is often considered the 'lazy crop'.

2.12 During a typical sugar cycle (1 October to 30 September), the one or two years of slump in the production are a result of falling prices due to excess supply of sugar in the market during peak seasons. In these years of slump, payments that are due from sugar mills to sugarcane farmers start to accumulate as arrears due to decreased demand. This leads to farmers shifting their cultivation to other crops, which is usually just for a year or two. When the demand for sugar picks up again, resulting in increase in sugar prices due to lesser supply, sugarcane farmers are prompted to return to cultivating sugarcane the following year. In this regard, the surplus of sugar produced during the boom years usually gets used up in the shortage year(s). This reflects a self-correcting mechanism of the industry. In other years, shortages in sugar supply may result due to droughts or other natural or economic reasons. In 2016–17, Maharashtra and Karnataka experienced critical droughts that resulted in a national decline of sugar production.

Figure 2: Demand and Supply of Sugar



Source: ISMA (figures in lakh tonnes)

2.13 The balance sheet of sugar over the last five seasons and current season (October 2019–September 2020) is given in the Table 5. It can be seen that the opening balance of sugar during 2019–20 is significantly high at 142 lakh tonnes and despite a lower production estimate at 280 lakh tonnes (compared to 331 lakh tonnes in the previous year), the year is expected to end at a closing stock level of around 102 lakh tonnes. This is expected to continue to put pressure on domestic prices in the near term.

Table 5: Sugar Balance Sheet for the Last 5 Seasons and Current Season (Qty in Lakh Tonnes)						
Particulars	2014–15	2015–16	2016–17	2017–18	2018–19 (estimated)	2019–20
Carry-over stocks with sugar mills from previous season	72. 13	90.00	77.10	39.62	107	142
Production of sugar	284.63	251.21	202.27	322	331.33	280
Imports	-	-	5.00	2.5	-	
Estimated total availability	356.76	341.21	284.37	364.12	438.3	422
Estimated releases/dispatches for internal consumption	256.00	247.61	245.00	250	260	260
Exports against ALS/AAS obligation and OGL	12.00	16.50	-	10	37(MIEQ)	60 (estimated)
Total estimated releases/dispatches	268.00	264.11	244.75	260	298	320
Estimated closing stocks with sugar mills at the end of season	88.76	77.10	39.62	107	140.3	102
Source: Department of Food and Public Distribution						

2.14 Regardless of the few shortage years now and then, India structurally has become a sugar-surplus nation. Sugarcane farmers are getting more and more attracted to growing sugarcane with higher assured prices (which has nearly doubled since 2009) as well as assured marketing. Consequently, sugarcane production is on a growth trajectory for the last ten years, ever since the concept of FRP for sugarcane was introduced. This in itself has become a major concern, resulting in surplus stocks in warehouses time and again.

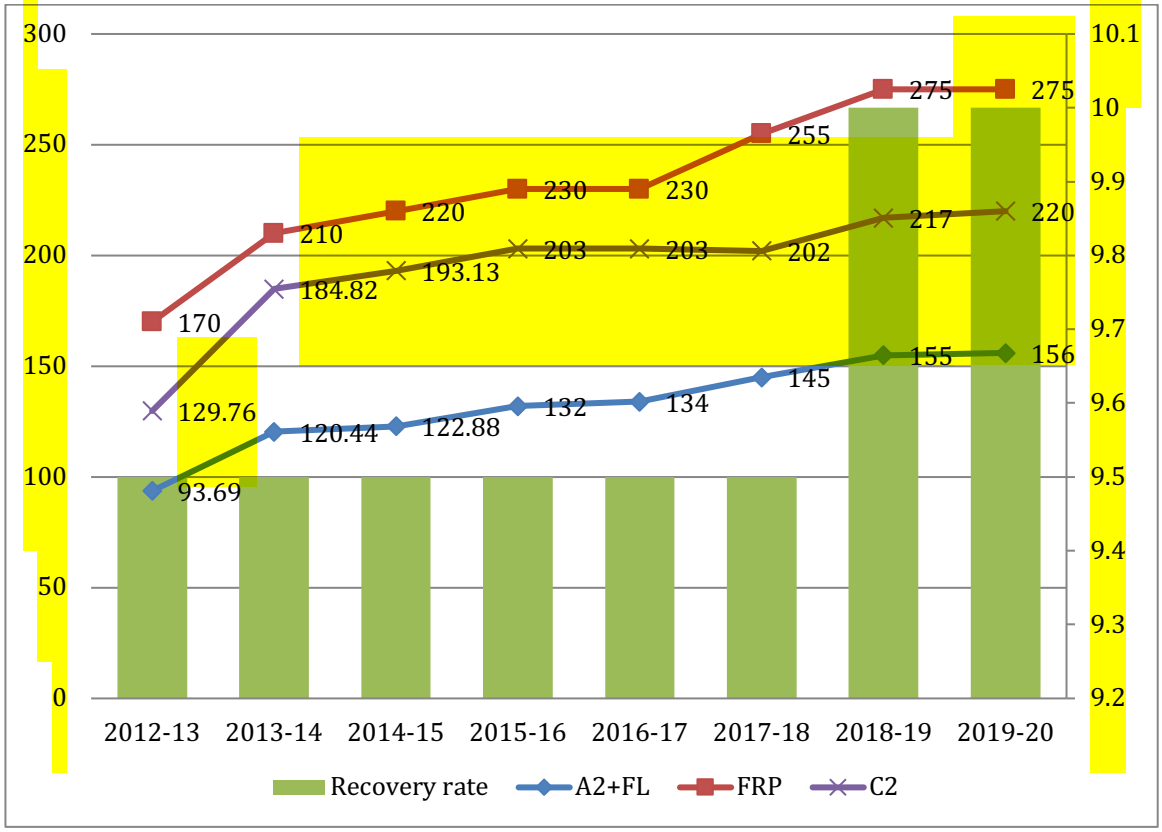
Sugarcane Pricing Policy

2.15 The Sugarcane (Control) Order, 1966, issued under Section 3 of the Essential Commodities Act, 1955, empowers the Central Government to fix cane prices payable by mills to sugarcane farmers. Under this provision, the Central Government fixed a Statutory Minimum Price (SMP) for sugarcane, the basis of which was similar to that of the Minimum Support Price (MSP) for 24 other commodities. In 2009–10, the Government switched to the FRP model for the pricing of sugarcane, which considers additional cost factors that were not earlier considered. This gives growers a substantial-enough incentive to cultivate sugarcane. The FRP is currently based on recovery of 10% sugar from the sugarcane, having gone up from 8.5% in 2009–10 in line with varietal improvement in the crop. Currently, the FRP of sugarcane is Rs 275 per quintal, which is 80%–90% more than the A2+FL cost of cultivation.

2.16 The present FRP, which is fixed at Rs 275 per quintal at 10% recovery, is subject to a premium of Rs 2.75 for every 0.1% increase in the recovery, over and above 10% recovery. Further, a reduction in FRP at the same rate for each 0.1% decrease in the recovery rate till 9.5% is also built into the pricing mechanism. For mills where the recovery rate is 9.5% or below, the FRP is fixed at Rs 261.25 per quintal, in order to

protect farmers and their families, on account that one of the reasons for low recovery, along with quality of cane, may also be due to efficiency of mills.

Figure 3: FRP (₹ Per Quintal), **A_2+FL costs [at Recovery Rate]** (₹ Per Quintal), **C_2 costs [at Recovery Rate]** (₹ Per Quintal) and **Recovery Rate** (%)



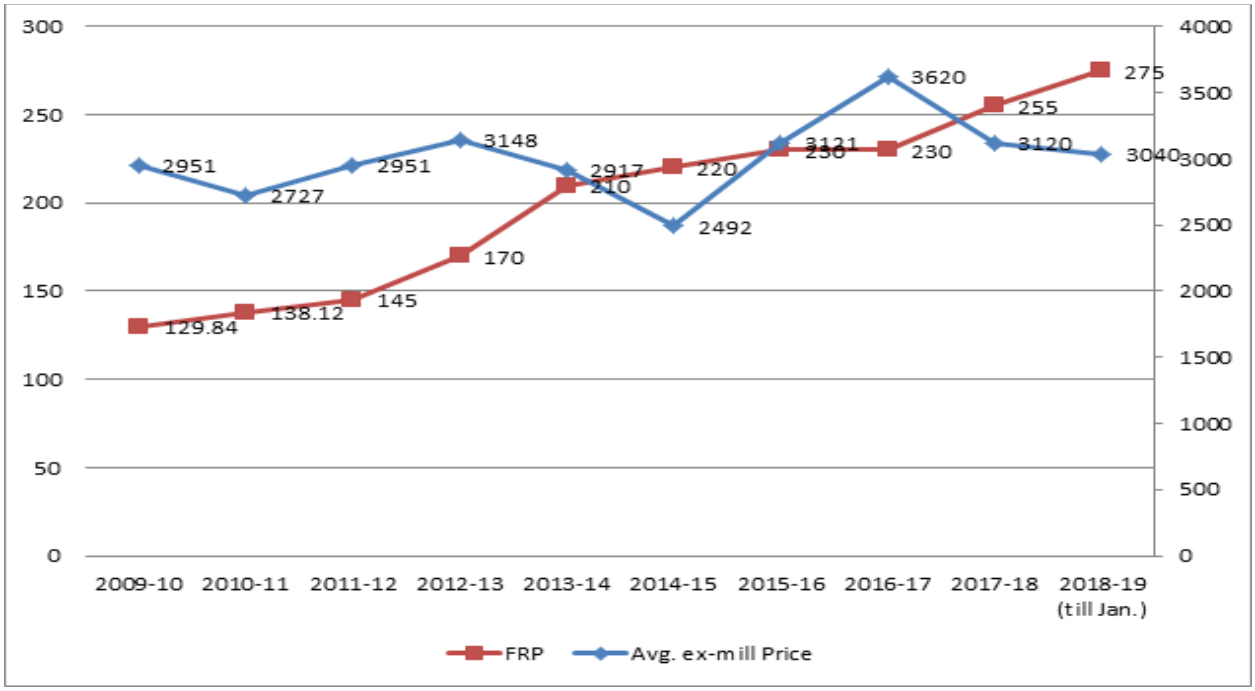
Source: Sugarcane Price Policy Reports, CACP, Ministry of Agriculture and Farmers' Welfare

2.17 It is important to note that the FRP of sugarcane accounts for around 80%–90% price of sugar of equivalent quantity. Since 2009–10, the FRP has increased by about 111% (in 10 years). The Commission for Agricultural Costs and Prices (CACP), in their sugarcane pricing policy report, also stated that the net return on cultivating sugarcane is 200%–250% higher than cotton and wheat. Even if the two crops are added, sugarcane profitability rule is much higher.

2.18 On the other hand, the Central Government has of late started Minimum Selling Price (MSP) for sugar. Currently, the MSP of white/refined sugar is at ₹31/kg considering the components of FRP of sugarcane and minimum-cash-conversion cost of the most efficient mills. This was increased from ₹29/kg on 14 February 2019 by the Department of Food and Public Distribution following representations from mills regarding inability to make reasonable returns on this cost and to pay cane dues to cultivators timely. The cost of sugarcane, as mentioned earlier, accounts for a high proportion of the price of sugar, as the price of sugar has remained depressed for many years in a row. Until June 2018, the problem of inability to pay had become so grave that the sugarcane arrears rose to a whopping ₹22,000 crore. Adding to this, State Governments are also at liberty to fix their own prices for sugarcane. In States such as UP, Bihar, Haryana, Punjab and Tamil

Nadu, the SAP has been fixed at a level higher than the central FRP, creating further problems for mills to financially sustain themselves in these SAP-regime States. Tamil Nadu has discontinued announcing SAPs whereas for other States viz. UP, Bihar, Haryana and Punjab, FRPs range between Rs 300 to Rs 325 per quintal compared to Central FRP of Rs 275 per quintal (Table 5).

Figure 4: Comparison between FRP and Ex-Mill Prices (₹ Per Quintal)



Source: ISMA

Table 6: SAP Provided for Sugarcane in Different States of India (in ₹/qtl)

Name of State	SAP for Sugar Season					
	2013–14	**2014–15**	**2015–16**	**2016–17**	**2017–18**	**2018–19**
Uttar Pradesh	280	280	280	305	315	315
Haryana	295	305	305	315	325	335
Punjab	280	295	295	290	300	300
Uttarakhand	285	280	280	307	315	317
Tamil Nadu	240	240	285	285	285	As per Revenue Sharing Formula
All India FRP	**210**	**220**	**230**	**230**	**255**	**275**

Source: ISMA

2.19 Since sugarcane has a very short shelf life, the responsibility of procurement of cane is on the sugar mills that are mandatorily expected to pay the FRP on purchase upfront. Additionally, other crops that are under the MSP can be sold at prices higher than the MSP itself. However, with regard to sugarcane, the absence of shelf life prompts them to sell their produce at any price prevailing in the cane-crushing season irrespective of demand and supply forces.

Table 7: Cost of Production of Sugarcane in Comparison to FRP/ SAP (in ₹/qtl)

States	2018–19			2019–20		
	A_2 + FL	C_2	FRP/ SAP	A_2 + FL	C_2	FRP/ SAP
Andhra Pradesh	184	268	275	192	277	275
Haryana			*335*			
Karnataka	122	170	275	126	179	275
Maharashtra	136	176	275	146	191	275
Punjab			*300*			
Tamil Nadu	199	241	275	214	262	275
Uttar Pradesh	165	243	*315*	157	231	*315*
Uttarakhand	134	217	*317*	139	234	
India	155	217	275	156	220	275

Source: Sugarcane Price Policy Reports, CACP, Ministry of Agriculture and Farmers' Welfare

2.20 These measures of excess FRP and even higher SAP has rendered the sugarcane/ sugar industry out of sync with many other agri-commodities in the Indian market. The high price of sugarcane promotes the production of sugar far in excess of national requirement. More often than not, the sugar industry gets saddled with high inventories, leading to fall in prices below the cost of production and high carrying costs and spoilage of sugar stocks, thus driving the industry to sickness. The sugarcane farmer, rather than benefiting from the high administered prices of sugarcane, suffers distress caused by resource crunches with ex-mills as they are unable to make timely payments for the crop. While the recovery remains reasonably high, the pressure on the mills and the delays in payments to the farmers make this situation untenable in the long run. The problem of arrears started occurring from 2010–11 and became a cause for major concern in 2014–15 and subsequently from 2017–18 onwards.

Sugar as an Export Commodity

2.21 India, in a typical sugar cycle, produces excess sugarcane/ sugar every 3 to 4 years. Exports can be a viable option for disposal of this excess production. However, many a time it becomes difficult for the Indian sugar industry to compete in the international markets because most of the overseas markets are already captured by other sugar-surplus-producing countries. For Indian sugar to be competitive enough, a thorough analysis and understanding of international market is needed. The basic factors in export competitiveness of sugar are the difference between the cost of cane and cost of producing sugar in India vis a vis other major sugar-producing countries of the world. The other factor is the quality of sugar being exported from India in comparison to the quality of sugar in the international markets.

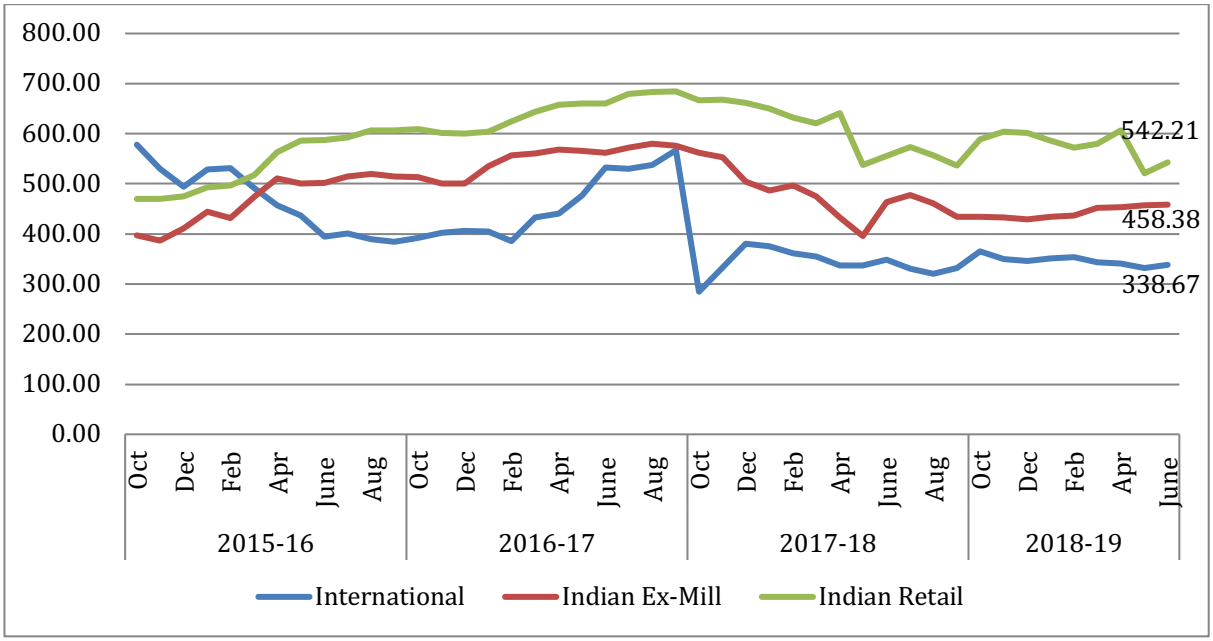
2.22 As per the details provided by the Indian sugar industry, cane prices on average account for about 70%–75% of the cost of sugar. In Brazil, Thailand and Australia, the cane price per ton was USD 25.11, 27.45 and 24.05, respectively, while in India it was USD 42.30 (in 2017–18 sugar season). This makes nearly a 65% difference in cost price. As a result, the total cost of producing sugar in India turns out to be ₹36 per kilo as compared to ₹18.50 globally. Additionally, as mentioned earlier, the global sugar industry is mostly a captured market. Brazil is the leading exporter to the Americas while China, Thailand

and Australia have conquered the markets of Asia and Africa. For India to enter such a competitive market will be a mammoth task considering its high prices. As seen in Figure 4, while the FRP has doubled since 2009–10, the average ex-mill price of sugar has barely changed in the last decade.

2.23 As a result, the export of sugar to dispose excess sugar stocks in the country is not a viable solution in the short term. Certain solutions to boost exports as recommended by the industry include provision of Government support in terms of subsidy/assistance and providing mandatory quota for exports. However, the task force feels that the sugar exports of India can only be competitive once the internal problems of the Indian sugar industry are resolved. This is with respect to overall production cost, pricing policy, alternative uses of cane, returns to mills, etc. These points will be further discussed later in the report.

2.24 Figure 5 below illustrates India's white sugar prices in comparison to that of international prices. As of June 2019, white sugar prices in India were 60% higher than comparable international prices. This resulted in Indian sugar being uncompetitive internationally. Owing to India's high cost of sugarcane and eventual production of sugar, ex-mill sugar prices are higher even than international retail prices. Basis this, it has been difficult for Indian sugar to compete in the international market without Government support. The Government has been providing export subsidies in order to export sugar. In 2018–19, almost 40 lakh tonnes of sugar were exported valued at US$ 1.36 billion. The present year's target is at 50 lakh tonnes. However, representatives of the sugar industry have requested the Government to set a higher target. Export subsidies for sugar have benefitted Indian exporters to an extent, but this has resulted in other sugar-exporting countries like Brazil voicing their concerns to the World Trade Organisation (WTO) against excessive Government support being provided to boost sugar shipment from India. Australia and Guatemala have also shared their concerns. For improving sugar exports, support by the Government to India's sugar industry will have to be innovatively designed so that it does not affect exports on ground of WTO norms.

Figure 5: International vs. Domestic Prices of White Sugar—October 2015 to June 2019 (in US$/MT)



Source: Department of Food and Public Distribution

Sugarcane, Its Cultivation and Climatic and Water Requirements

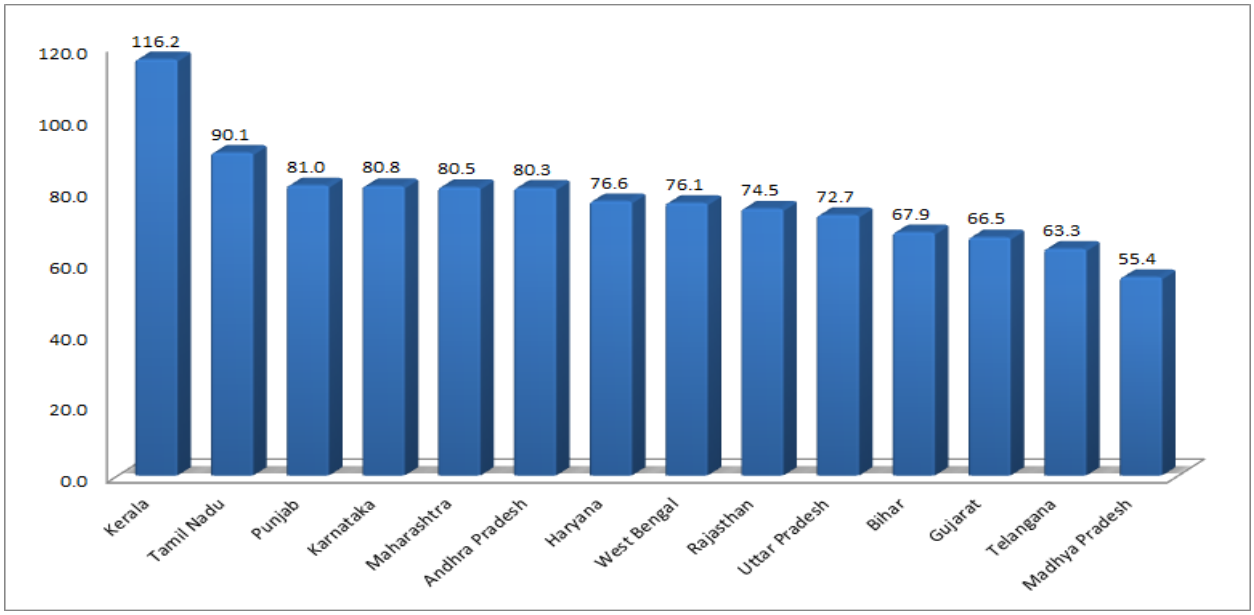
2.25 Sugarcane in India is produced in two distinct agro-climatic regions: tropical and subtropical. The former includes Northern States like UP, Bihar, Haryana and Punjab and the latter includes Western, Southern and Central states Maharashtra, Andhra Pradesh, Tamil Nadu, Karnataka, Gujarat, Madhya Pradesh, Goa, Pondicherry and Kerala. Sugarcane is ideal for the Indian climate and requires temperatures between 20 to 40 degrees Celsius to grow.

2.26 Sugarcane is planted in three distinct seasons, i.e. autumn (September to October), spring/Eksali (January to March) and summer/Adsali (July to August). In tropical regions, the crop is cultivated all year round as these regions do not experience many extremes in weather conditions. However, in subtropical regions, where winters are very cold and summers are very hot, the most productive months for sugarcane cultivation span only 4–5 months in a year. In this region the crop is planted either in the spring or autumn months. In tropical regions such as Maharashtra and Karnataka it can also and is usually cultivated in July–August (Adsali). The duration of the sugarcane crop in India ranges between 10 and 18 months, however, the 12-month crop is most common. The Eksali crops usually take 12 months to be harvested, the autumn crops take 13–15 months, while Adsali crops take 15–18 months.

2.27 The two agro-climatic regions on account of differences in soil, weather and other environmental conditions also experience differences in sugarcane productivity and water requirement for the crop. The state with the highest productivity of sugarcane is Kerala at 116.2 tonnes/ha, followed by Tamil Nadu at 90.1 tonnes/ha, both of which fall in tropical regions. In contrast, the productivity of sugarcane in subtropical regions like UP, Bihar and Punjab are only 72.7, 67.9 and 81.0 tonnes/ha respectively.

Figure 6: State-Wise Productivity of Sugarcane (2017–18)

Unit: metric ton/hectare



3rd advance estimates for sugar season 2017–18. March 2018; Vol. 49, No.7

Source: Issued by the Department of Agriculture and Farmers' Welfare via Directorate of Sugar Development

2.28 Sugarcane is known to be a water-guzzling crop. It requires anywhere between 1500–3500mm of rainfall depending on the region. In subtropical regions sugarcane requires around 2000 mm of rainfall while in tropical regions it requires up to 3500 mm. On average, 1 kg of sugar requires about 1500–2000 kgs of water. This shows that, like paddy, sugarcane is a water-intensive crop. About 70% of the country's irrigation facilities are utilised by paddy and sugarcane, depleting water availability for other crops.

The water requirements of sugarcane are mostly met through irrigation, mainly groundwater. Even then, water requirements of sugarcane are different for different states as can be seen in the table below.

Table 8: 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

Sugarcane Arrears

2.29 One of the main problems that the industry faces is delay in payments by sugar mills to sugarcane farmers. Sugarcane FRP accounts for about 70% of the price of sugar, sugar mills are left in a distressed state and unable to make adequate profits when sugar prices are low. This leaves them with little to no resources to purchase sugarcane in succeeding years.

Table 9: Arrears at the End of January/ February/ March during last 5 Sugar Seasons

Months	2013–14	2014–15	2015–16	2016–17	2017–18	2018–19
As on 31 January	12249	12285	5447	9403	13932	22164
As on 28 February	17516	16364	13768	10015	16490	20159 (as on 22.02.2019)
As on 31 March	18648	20099	13530	9526	19780	N.A.

Source: DFPD

2.30 The table above indicates that the problem has become so stark that cane arrears have crossed the ₹20,000 crore. In February, the Cabinet Committee on Economic Affairs (CCEA) announced soft loans for sugar mills to be given by banks up to ₹10,540 crores to facilitate clearing of sugarcane arrears along with interest subvention, up from 7%–10%, for a year that will be borne by the Centre.

Buffer Stocks for Sugar

2.31 In order to alleviate the problem of the industry on account of surplus production and depressed sugar prices, one of the important measures taken by the Government is the creation of a buffer stock for sugar. Unlike the buffer stocks of wheat and rice, which are maintained by the Government (through FCI), the buffer stock of sugar is collectively maintained by the mills themselves. The Government reimburses the mills for the maintenance of this buffer stock on the basis of interest and storage/insurance expenses at 12% and 1.5% per annum, respectively, on the value of actual sugar or actual expenditure, whichever is lower.

2.32 The scheme was launched in June 2018 with a buffer stock of 30 LMT of sugar for the period 1 July 2018 to 30 June 2019 for 2017–18 SS. Cabinet has recently approved a buffer stock of 40 LMT from 1 August 2019 to 31 July 2020 for 2018–19 SS. The total cost amounted to Rs 1175 crore for 2017–18 SS and is expected to cost Rs 1674 crore in 2018–19 SS, considering the cost of production of sugar at Rs 31,000/MT on 40 LMT of buffer stock.

2.33 This reimbursement is termed as buffer subsidy, which is paid on a quarterly basis and transferred directly to farmers on behalf of mills against cane price dues. Any balance amount is credited to the mills. The scheme, inter alia, helps to improve the liquidity

position of sugar mills and enable them to clear their cane-price arrears. However, the Department of Food and Public Distribution is authorised to withdraw or make changes in the scheme if deemed necessary.

Efforts Made by the Government of India in Recent Years

2.34 Over the past several years, the Government of India has taken numerous measures to help the sugarcane producers and sugar industry. These include the following:

i) Extended working capital loans with interest subvention under the Scheme for Extending Financial Assistance to Sugar Undertakings (SEFASU 2014) as well as the soft loan scheme.

ii) Provided incentive for exporting raw sugar in the sugar years 2013–14 and 2014–15.

iii) Facilitated supply of ethanol under Ethanol Blended Petrol (EBP) programme by fixing the remunerative price.

iv) Provided performance-based production subsidies at Rs 4.50 per quintal of cane crushed for sugar season 2015–16 payable to farmers against their cane dues contingent on mills undertaking export and supplying of ethanol.

v) Aided sugar mills at Rs 5.50/quintal of cane crushed for sugar season 2017–18 to offset the cost of cane amounting to about Rs 1540 crore. In 2018–19 SS further assistance to sugar mills was provided at Rs 13.88/quintal amounting to a total of Rs 4163 crore.

vi) Created buffer stock of 30 LMT in the 2017–18 sugar season for which the Government will reimburse the carrying cost of Rs 1175 crore towards maintenance of buffer stock. For 2018–19 sugar season, the buffer stock is to be increased to 40 LMT at a reimbursement cost of Rs 1674 crore.

vii) Extended soft loans of Rs 6,139 crore in 2017–18 SS through banks to the mills for setting up new distilleries and installation of incineration boilers to augment ethanol production capacity for which the Government will bear interest subvention of ₹1332 crore. A further extension of soft loans in 2018–19 SS of about Rs 10,540 crore was provided for which interest subvention was at 7% for one year, amounting to Rs 738 crore.

viii) To prevent cash loss and to facilitate sugar mills to clear cane dues of farmers in time, the Government has fixed a minimum selling price of sugar at Rs 29/kg for sale at factory gate in domestic market, below which no sugar mill can sell sugar (since raised to Rs 31/kg).

ix) Notified the new National Policy on Biofuels, 2018, under which sugarcane juice has been allowed for the production of ethanol. Further, the Government has fixed the remunerative price of ethanol produced from C-Heavy molasses and B-Heavy molasses/sugarcane juice separately for supply under EBP during ensuing ethanol season 2018–19.

x) Every year export targets were fixed by allocating mill-wise Minimum Indicative Export Quota (MIEQ). For 2018–19 SS, the MIEQ is 50 lakh tonnes.

xi) Assistance to sugar mills was extended for defraying expenditure towards internal transport, freight, freight and other charges to facilitate export of sugar. In 2018–19 SS this assistance amount to Rs 1375 crore.

xii) Increase in customs duty on import of sugar from 50% to 100%.

2.35 Further, the Government has also taken numerous policy measures to address the problems of the sugar sector from time to time. These have helped keep the losses and arrears to a minimum. However, there is a need to address the fundamental problems faced by the industry so that the repeated and piece meal interventions are not deemed necessary in the long run. Some of these recommendations are discussed later in this report.

Chapter III
Reforms in the Sugarcane and Sugar Industry

Sugarcane and sugar have been analyzed closely several times from a reform perspective. With the understanding that the entire sector required significant changes to avoid a situation similar to the current challenges, several committees had been appointed that made a variety of recommendations that have only been occasionally and varyingly implemented.

3. Past Committees to Tackle the Problems of Sugar of the Government of India

3.1 There are several problems faced by the sugar industry today. To tackle these problems, the Government of India had taken several steps to ensure that the sugar industry functions smoothly. The Central Government had also constituted various committees/working groups from time to time for studying the problems of the sugar industry and making appropriate recommendations to address their difficulties. In the past 25 years, the following committees/groups had been set up:

Table 10: Past Sugar Committees

Sl. No.	Committee/Group	Year	Name of the Chairman
1	The High-Powered Committee on Sugar Industry	1996	Shri. B.B. Mahajan, the retired Food Secretary
2	Committee on Revitalisation of Sugar Industry	2004	Shri. S.K. Tuteja, the then Food Secretary
3	Groups of Experts on Sugar	2007	Dr. Y.S.P. Thorat, retired Chairman, NABARD
4	High-Powered Committee on Cooperatives	2009	Shri. Shivajirao G. Patil
5	Committee on Regulation of Sugar in India	2012	Dr. C. Rangarajan, the then Chairman, EAC-PM
6	Working Group on Sugarcane Productivity and Sugar Recovery in the Country	2013	Shri. T. Jacob, the then JS-Food

Source: https://www.researchgate.net

3.2 The broad recommendations of all the committees in general include (a) price determination and distribution mechanisms for sugar; (b) setting up of new factories; (c) amendments in various laws with regard to the sugar industry; (d) increasing productivity of the sugar industry; (e) issues with regard to cane-area reservation; (f) decontrol of sugar; (g) pollution mitigation; (h) improving the efficiency of the industry in terms of power consumption; (i) alternate uses of sugarcane for ethanol; (j) improvement of exports; (k) support needed for sugar mills to be more profitable, etc.

3.3 What is particularly relevant to this report are the recommendations of the committee under the chairmanship of Dr. C. Rangarajan, the then chairman, EAC-PM. It

was constituted in 2011 to look into all issues of deregulation in the sugar industry. The Rangarajan Committee submitted its report to the Government in October 2012 with 8 broad recommendations. They were (1) removal of levy sugar, (2) dispensing of regulated release mechanism of non-levy sugar, (3) abolition of cane-area reservation system and bonding, (4) doing away with minimum distance norms for sugar mills, (5) liberalisation of sugar trade, (6) market determination of prices of byproducts with no earmarked end-use allocations, (7) rationalisation of sugarcane pricing, and (8) taking out sugar from the purview of Jute Packaging Materials Act, 1987. The details of the recommendations and the status of implementation are given in the following table:

Table 11: Rangarajan Committee Recommendations and Status

Sl. No.	Issue	Recommendation	Status
1	**Cane-Area Reservation**	Over a period of time, states should encourage development of market-based long-term contractual arrangements, and phase out cane reservation area and bonding. In the interim, the current system may continue.	States have been requested to consider the recommendations for implementation as deemed fit. So far, none of the States have taken action, current system continues. There is no reservation of area in Maharashtra
2	**Minimum Distance Criteria**	It is not in the interest of development of sugarcane farmers or the sugar sector, and may be dispensed with as and when a state does away with cane reservation area and bonding.	States have been requested to consider the recommendations for implementation as deemed fit. So far, none of the States have taken action, current system continues
3	**Sugarcane Price Revenue Sharing**	Based on an analysis of the data available for the byproducts (molasses and bagasse/cogeneration), the revenue sharing ratio has been estimated to amount to roughly 75% of the ex-mill sugar price alone.	States have been requested to consider the recommendations as deemed fit. So far only Karnataka and Maharashtra have passed state Acts to implement this recommendation.
4	**Levy Sugar**	Levy sugar may be dispensed with. The states which want to provide sugar under PDS may henceforth procure it from the market directly according to their requirement and may also fix the issue price. However, since currently there us an implicit cross-subsidy on account of the levy, some level of Central support to help states meet the cost to be incurred on this account may be provided for transitory period.	Central Government has abolished levy on sugar produce after 1st October, 2012. Procurement for PDS operation is being made from the open market by the states/UTs and Government is providing a fixed subsidy @ ₹18.50 per kg for restricted coverage to AAY families only who will be provided 1 kg sugar per family per month.
5	**Regulated Release Mechanism**	This mechanism is not serving any useful purpose, and may be dispensed with.	Release mechanism has been dispensed with.

Sl. No.	Issue	Recommendation	Status
6	**Trade Policy**	As per the Committee, trade policies on sugar should be stable. Appropriate tariff instruments like a moderate export duty not exceeding 5 per cent ordinarily, as opposed to quantitative restrictions, should be used to meet domestic requirements of sugar in an economically efficient manner.	Import and export of sugar is free without quantitative restrictions, but subject to prevailing rate of custom duty. Import duty has been enhanced from 25% to 40% w.e.f. 29.4.2015; which has now been enhanced to 50% w.e.f. 10.07.2017. Custom duty @ 20% has been imposed on export of sugar vide Department of Revenue's notification no. 37/2016 dated 16.06.2016.
7	**Byproducts**	There should be no quantitative or movement restrictions on by products like molasses and ethanol. The prices of the byproducts should be market-determined with no earmarked enduse allocations. There should be no regulatory hurdles preventing sugar mills from selling their surplus power to any consumer.	Excise duty on potable alcohol/ liquor is a major source of revenue for the State Govts. Restriction on movement of ethanol and levying of taxes and duties on it by State Governments continue to be an impediment in successful implementation of EBP. The Department of Industrial Policy and promotion has now amended the I(D&R) Act, 1951 vide notification No. 27 of 2016 dated 14.5.2016. With this amendment, the States can legislate, control and/or levy taxes and duties on liquor meant for human consumption only. Other than that i.e. denatured ethanol, which is not meant for human consumption, will be controlled by the Central Government only. With the amendment of I(D&R) Act, 1951 not only the movement of fuel grade ethanol will become smoother but the industry will be encouraged to produce more ethanol thereby increasing the blending percentage with petrol further.
8	**Compulsory Jute Packing**	May be dispensed with.	The compulsory packaging of sugar in jute bags has been relaxed further. Only 20% of the production is to be mandatorily packed in jute bags.

Source: Department of Food and Public Distribution Annual Report 2018–19

3.4 It can be seen that while some of the major recommendations of the Rangarajan Committee have been implemented, some others were left to the State Governments to decide. Developments since 2012 indicate that States have been generally reluctant to undertake reforms in the context of abolition of cane-area reservation, minimum distance norms, etc. Besides, not all States have done away with the concept of SAP. Also, a major recommendation regarding the pricing of sugarcane linked to 70% of the value of sugar and byproducts or 75% of ex-mill price of sugar has also not been implemented. There is a need for a continuous dialogue with the State Governments that are yet to implement major reform measures.

Chapter IV
Ethanol Blending

Encouraging the production of ethanol and the early implementation of Ethanol Blending Programme can be quite encouraging for the sugar industry and Brazil's experiences testifies the same.

4. Ethanol Blending

4.1 With the production of sugarcane and the stock of sugar growing every year, strategies to divert excess cane production have been sought. One prime strategy that is being implemented is of using sugarcane for the production of ethanol and diverting it away from sugar production. Ethanol, which is an agro-based product and an important renewable fuel, is naturally obtained from the fermentation of sugarcane molasses (a byproduct of sugar production). Ethanol being an eco-friendly fuel source can be mixed with gasoline to create different blends of fuel and, when the blend is used to run machines, emits lesser environmental pollution. Harnessing the excess sugarcane for ethanol production will not only help divert excess stocks but also benefit the sugar industry and the economy in several other ways.

4.2 In 2003, the Government launched the Ethanol Blended Petrol (EBP) programme primarily to promote environment-friendly fuels (by increasing the usage of ethanol) and reduce energy imports. The programme, in general, was conceptualised with multiple objectives in mind. By increasing the usage of biofuels, it aims to control carbon emissions while also conserving foreign exchange and reducing import dependency. More specifically, the EBP programme injects liquidity into the sugarcane sector by providing a sustained demand for ethanol. Thus, it helps in the reduction of accumulated arrears and permits timely compensation for cane farmers. Beginning in 2003 as a pilot project, the EBP programme has now been extended to the entire country (with the exception of the Union Territories of Lakshadweep and Andaman and Nicobar Islands). It is implemented through a network of 186 depots of Oil Marketing Companies (OMCs), drawing ethanol from 179 distilleries with an installed ethanol-producing capacity of 305 crore litres.

4.3 The erstwhile National Policy on Biofuels (2009) permitted the procurement of non-food feedstock like molasses, celluloses and lignocellulosis. Until 2017–18 ethanol for EBP programme came from molasses, allowing utilisation of a byproduct of the sugar industry. The present outputs of molasses allow for the production of approximately 300 crore litres of alcohol/ethanol, which is targeted at 10% blending. However, the actual is only 5%–6%. Of this, EBP currently uses between 120–50 crore litres and requires purity levels of 99.6%. The 2018 National Policy on Biofuels broadens the scope for the raw material procurement for ethanol production. The policy targets a 20% blending percentage by 2029–30.

4.4 Various measures have been undertaken by the Government of India to encourage the domestic production of ethanol. These include amendments to the Industries (Development and Regulation) Act, 1951, to legislate exclusive Central control over denatured alcohol, reduction of the Goods and Services Tax (GST) levied on ethanol for EBP to 5%, reintroduction of the administered price mechanism, expansion of the programme and opening up alternate production routes. The government has also adopted different pricing methods to boost the supplies of ethanol for the EBP programme. However, the level of ethanol blending has remained low. The table below shows the quantities of ethanol supplied and the blending percentages subsequently achieved by OMCs.

Table 12: Details of Ethanol Supplied and Blending Percentages

Ethanol Supply Year	Tendered Qty (crore Lit)	Qty Allocated (crore Lit)	Qty Supplied (crore Lit)	Blending %age PSU OMCs
2012–13	103.0	32.0	15.4	0.67%
2013–14	115.0	70.4	38.0	1.53%
2014–15	128.0	86.5	67.4	2.33%
2015–16	266.0	130.5	111.4	3.51%
2016–17	280.0	80.7	66.5	2.07%
2017–18	313.0	161.04	150.5	4.22%
2018–19*	329.0	268.6#	94.1 (*30.04.19)	6.10%

Source: Ministry of Petroleum and Natural Gas
Out of this contracted quantity is 237.6 crore litres

4.5 As is evident from the table above, the quantity of ethanol supplied has been significantly lower than the tendered quantity. This is largely due to supply-side constraints, which include limited distillation capacity and availability of molasses.

4.6 The 2018 National Policy on Biofuels seeks to address these issues. A National Biofuel Coordination Committee has been set up under the policy. It hopes to resolve the lack of raw material availability by expanding the base of raw materials to include B molasses, sugarcane juice and damaged foodgrains unfit for human consumption. This measure aims to help OMCs achieve higher blending targets. Presently, the Ministry of Petroleum and Natural Gas (MoP&NG) is undertaking the EBP programme to achieve 10% ethanol blending percentage in petrol by 2021–22. A differential pricing mechanism for ethanol based on its source material has been introduced, as shown below. Public sector OMCs follow an order of priority for ethanol procurement: from 100% sugarcane juice, B heavy molasses/ partial sugarcane juice, C heavy molasses, and damaged foodgrains, in this particular order.

Table 13: Differential Pricing Mechanism for Ethanol

Source Material for Ethanol Production	Price Paid to Suppliers (Ex-Mill)
100% sugarcane juice	Rs. 59.19*
B heavy molasses/partial sugarcane juice	Rs. 52.43
C heavy molasses	Rs. 43.46
Damaged food grains / Other sources	Rs. 47.13

*This price will be paid only to those sugar mills that divert 100% sugarcane juice for production of ethanol thereby not producing any sugar
Source: Ministry of Petroleum and Natural Gas

4.7 Public sector OMCs follow an order of priority for ethanol procurement: from 100% sugarcane juice, B heavy molasses/ partial sugarcane juice, C heavy molasses, and damaged foodgrains, in this particular order. Until April 2019, OMCs have allocated 268.6 crore litres of ethanol procurement via EOI/tenders. The allocation of tenders from different feedstocks is as shown below and supplies of given quantities have started for the Ethanol Supply Year 2018–19. The task force feels there is significant scope to enhance allocation of ethanol produced through 100% sugarcane juice route.

Table 14: Allocation Tenders of Ethanol

Raw Material for Ethanol Production	Allocated Quantity (Crore litres)
100% sugarcane juice	2.10
B heavy molasses/partial sugarcane juice	49.67
C heavy molasses	194.85
Damaged foodgrains/Other sources	22.01
Total	**268.63**

Source: Ministry of Petroleum and Natural Gas

4.8 Attempts to incentivise ethanol production have been made via an interest subvention scheme, namely: the scheme for augmenting and enhancing ethanol production capacity. The scheme is jointly monitored by MoP&NG and the Department of Food and Public Distribution (DFPD). So far, the DFPD has approved (in-principal) 114 proposals for a maximum loan amount of ₹6,139.08 crore, for granting interest subvention. The Government of India has also allocated additional funds for the scheme. These proposals are estimated to add another 200 crore litres of ethanol production capacity. The procurement of ethanol from grain surplus projected by the Ministry of Agriculture and Farmers' Welfare has also been approved.

4.9 The amendment of the IDR Act also aims to smoothen inter- and intra-state movement of ethanol by giving the Central Government exclusive control over it. The possibility of higher blending, beyond 10%, in ethanol-surplus states of Uttar Pradesh and Maharashtra is also being explored to avoid the movement of ethanol across the country. For this, the Bureau of Indian Standards has already notified E-20 Standards. The targets of ethanol blend percentage and estimates of the quantity of ethanol required for blending in petrol is as under:

Table 15: Ethanol Blending Targets

Ethanol Supply Year	Targeted Ethanol Blend %age	Estimated Required Quantity of Ethanol in crore lit
2018–19	6.0%	225
2019–20	7.0%	280
2020–21	8.5%	360
2021–22	10.0%	450

Source: Ministry of Petroleum and Natural Gas

4.10 By mandating OMCs to procure ethanol under the EBP programme at fixed prices, the Government has effectively been subsidising the sugar industry. This is due to the higher price of domestically produced ethanol vis-a-vis the price in the international market.

4.11 Despite the above measures, a major challenge for the successful implementation of the EBP programme remains ensuring the cooperation of its multiple stakeholders. So far, only 11 states have implemented the amendments to the IDR Act. Several important states like Delhi, Uttar Pradesh, Haryana, Rajasthan, and West Bengal, etc., continue to levy excise controls and trade duties that hinder the smooth implementation of the EBP programme. While participation of ethanol suppliers and OMCs is being facilitated, automobile manufacturers have expressed concerns over material compatibility and drivability performance of higher ethanol blends when used in vehicles. The task force recommends that modalities need to be worked out at the earliest between MoP&NG and the different State Governments where the implementation of amendments of IDR Act can begin. It is very important for Uttar Pradesh to be on board as it is a state prominent in sugar and ethanol production. For states such as Uttar Pradesh and Maharashtra that witness excess production, higher blending target can be fixed.

4.12 The Cabinet approved the National Policy on Biofuels, 2018 which seeks to expand the scope of raw material for ethanol production by allowing the use of sugarcane juice during surplus sugar production phase. The EBP programme as mentioned above is an important component of the policy as ethanol is a major biofuel, which is renewable in nature, non-polluting and an indigenous energy source.

4.13 In a Cabinet Committee on Economic Affairs (CCEA) meeting held on 6 June 2018, it was inter alia decided to extend financial assistance to sugar mills for enhancement and augmentation of ethanol-production capacity. This was in an effort to check the already-mentioned excess sugar production that is witnessed two to three times every sugar cycle. Under this new scheme, there would be no maximum cap on loan given by banks to sugar mills to enhance their ethanol production by way of installation of incineration boilers to existing distilleries, installation of new distilleries and any other method approved by the Central Pollution Control Board (CPCB) to achieve Zero Liquid Discharge (ZLD). Expansion of the ethanol production capacity of existing distilleries would be allowed. The preference of sugar mills having no distillery was removed. The basis of this scheme is the EBP programme.

4.14 Sugar mills, under this scheme, were asked to submit proposals on how they plan to enhance and augment their ethanol production. Proposals were to be submitted to the Department of Food and Public Distribution (DFPD) and these proposals would be reviewed on the basis of (1) performance of ethanol supply under EBP programme, (2) payment of cane price dues to farmers, (3) timely filing of monthly online return in proforma II as prescribed by the directorate of sugar and vegetable oils, (4) compliance

of various directives issued by DFPD after 6 June 2018 and (5) availability of molasses for the project, to name a few.

4.15 A total of 268 proposals were received, out of which 114 had no pending Government dues attached. Interest subvention totaling ₹1,332 crore was approved for these 114 proposals, for approved loan amount of ₹6,139 crore. Out of those proposals that were yet to be approved, 20 were green-field projects where concerned sugar mills were yet to commence sugar production while most of the remaining had pending Government dues.

4.16 On 7 March 2019 the CCEA chaired by the Prime Minister approved interest subvention for all 268 proposals, which amounted to ₹2,790 for a total approved loan amount of ₹12,900 crore. In addition, ₹1,332 crore was already approved by CCEA in June 2018. It was also decided to extend soft loans by banks to further optimise the ethanol production capacity amounting to ₹2,600 crore. These are primarily for molasses-based stand-alone distilleries to augment capacity through installation of incineration boilers and other methods in the existing distilleries for achieving Zero Liquid Discharge. In addition, interest subvention of ₹565 crore for additional equipment as well as for setting up of new stand-alone distilleries for ethanol production will be covered by the Government.

4.17 This decision of the Government will not only help in reaching the target objectives of the National Policy on Biofuels but will also help in reducing excess sugar inventories by diverting molasses and sugarcane juice for ethanol production. This will greatly help the sugar industry during surplus years and improve liquidity of sugar mills by way of revenue through ethanol supply under EBP. It will thereby facilitate them to clear cane price dues of farmers. The expected impact of the decision by the Government is to:

- improve liquidity of sugar mills by way of value addition to their revenues from supply of ethanol
- reduce sugar inventories
- facilitate timely clearance of cane price dues of farmers
- achieve 10% blending target of EBP
- generate employment through the setting up of new distilleries, including expansion of existing distilleries

4.18 Reforms that have taken place in this area include the Government having fixed ethanol blend standards at 20%. With ethanol production capacities being set up expeditiously, creation of another 200 crore litres in 2 years is expected, which would conceivably drive the production of ethanol to 450–500 crore liters by 2020–21. In 2017–18 (December–November), it has been estimated that approximately 4.5% blending had been achieved. For 2018–19, it has been estimated that 10% blending requires 330 crore litres of ethanol, with contracts entered into for 260 crore litres (almost 8% blend levels), including 50 crore liters from cane juice/B-molasses, for the first time. With India

currently possessing over 70 lakh tonnes of surplus sugar, there is significant potential for diverting surplus cane towards ethanol production. As per Sugarcane (Control) Order, 1966, 1 tonne of sugarcane yields 70 litres of ethanol, while producing one tonne of sugar is equivalent to producing 600 litres of ethanol.

4.19 Accordingly, the task force recommends that the target of 20% blending be achieved expeditiously. Any impediments to this process be looked at seriously by the Government and rectified to make it seamless. A mid-term target of 15% blending may also be considered for 2024–25 in addition to 10% target for 2021–22 and 20% for the year 2029–30.

The Brazil experience

4.20 As mentioned earlier, Brazil has focused more on diverting a large proportion of its sugarcane produce towards ethanol production. Brazil has found a viable solution to meet its energy requirements through ethanol as its cost of production is very low and reduces dependence on imports of oil and natural gas. This section will briefly discuss Brazil's experience in diverting sugarcane to ethanol production and what India can learn and take back from this experience.

4.21 Brazil is the largest producer of sugar with over 70,000 sugarcane growers and 376 sugar mills providing employment to about 7.73 lakh citizens and indirect employment to about 20.3 lakh. In 2018–19, approximately 62 crore tonnes of sugarcane was crushed. The total sugar value chain generated revenue worth US$ 40 billion, which was approximately 2% of the country's GDP. In 2018, foreign revenue from the industry came to US$ 7.4 billion, which partly came from exports of sugar of 2.9 crore tonnes.

4.22 Brazil has taken great leaps in the utilisation of its sugarcane to produce ethanol in a profitable manner. The main reasons for Brazil's venture into the ethanol economy are to (1) generate income and diversify the rural economy, (2) diversify fuel mix to create market balance, (3) mitigate climate change and reduce air pollution, (4) enhance energy security through reduction of oil dependence, and (5) create value for the industry. It produces approximately 3,300 crore litres of ethanol, making it the world's second largest producer of ethanol (only falling behind United States). The bio-electricity generated through ethanol came to around 2.6 crore megawatt-hours, supplying electricity to about 1.2 crore households. The energy provided by sugarcane products represented 17% of Brazil's energy matrix. It helped cut down nearly 52 crore tonnes of carbon dioxide–equivalent (**CO2eq**) emissions.

4.23 The country has also taken great strides in promoting the use of ethanol in vehicles. In 2003, Brazil launched Flex Fuel Vehicles (FFV) which have the ability to run on more than one type of fuel, for example gasoline blended with ethanol or methanol. FFVs are designed in such a way that both fuels can be stored in the same tank. Brazil is the largest market for FFVs followed by USA, Canada and Sweden. A large proportion of its cars run on hydrous ethanol. The anhydrous ethanol is blended with gasoline. Since

2015, it is mandated that 27% of ethanol be blended with gasoline. In 2009 Flex Fuel Motorcycles (FFM) were launched. As of now, 19 automakers produce more than 200 FFV models while 14 models of FFMs are produced. 97% of vehicles produced in Brazil are FFVs while 32% of FFMs contribute to the motorcycle fleet. In total 74% of all vehicles in Brazil are run on Flex Fuels while 24% run on gasoline and the remaining 2% on ethanol.

4.24 In the coming years, Toyota and Nissan have announced plans to launch Hybrid Flex Fuel and e-Biofuel Cell Vehicles, respectively. The former has an FFV engine as well as a combustion engine with an electric powertrain. The latter is a battery-powered vehicle which uses bioethanol as a fuel cell. Both companies are planning to launch their models in Brazil, which is a popular market for low emission cars, which is without a doubt targeting for the future.

4.25 In order to control fuel prices, the Brazilian Government switches to alternatives between gasoline and ethanol. At times when gasoline prices go up, people opt for ethanol and vice versa, thereby creating a self-correcting mechanism. Brazil, however, has the ability to lower its ethanol prices to affordable rates because its sugarcane industry is run through the market mechanism. This means that there is no minimum price at which sugarcane has to be purchased. In India's case, the Government cannot reduce ethanol prices, because sugarcane has an FRP, which is reasonably priced high. In this case, the price of ethanol has to cover the cost by ex-mills in purchasing the sugarcane from farmers.

4.26 To emulate Brazil's best practices as such in the ethanol economy is not feasible for India as the context is completely different. India can, however, learn from Brazil in terms of making mandatory blending and utilising this blended fuel in vehicles. Launching FFVs in India could be a wise move, which could run parallel to the promotion of electric vehicles considering the potential market that is available for automobile companies. Additionally, India instead of fixing a mandatory blending rate for ethanol should have a flexible system wherein the rate of blending can change as per the excess stock of sugar of any particular year. In this way, the volatility in the prices of sugar can be kept in control.

Chapter V

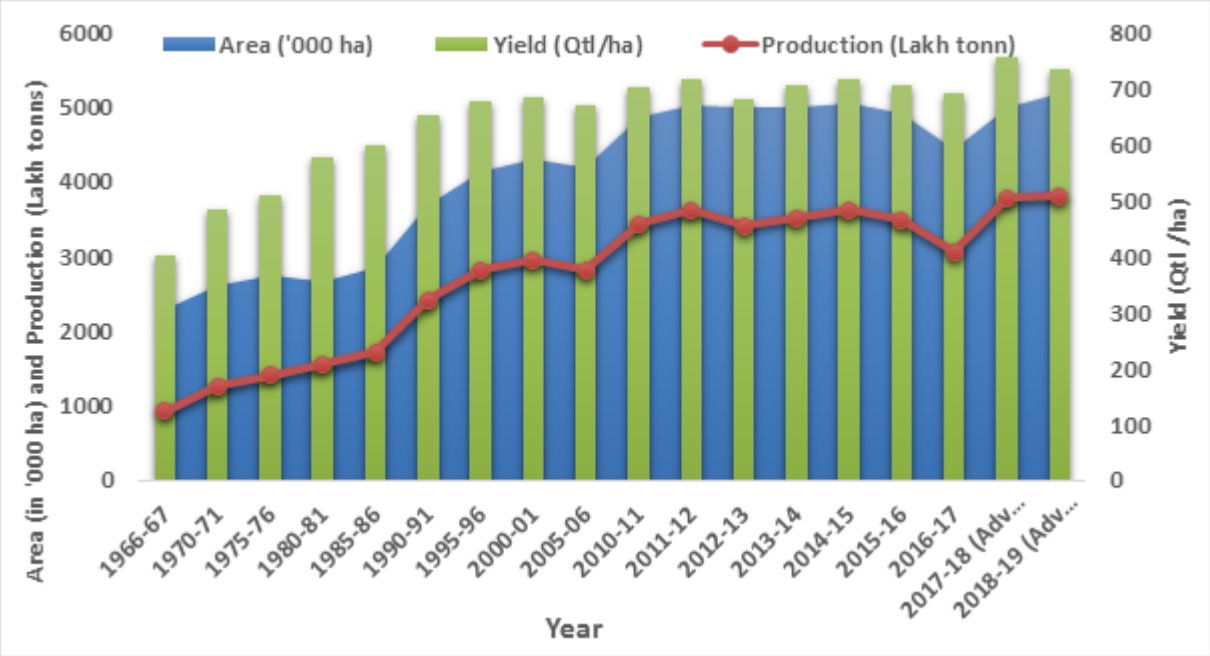
Saving Water by Shifting Area under Sugarcane Cultivation to other Crops

The task force feels there is a significant scope for encouraging sugarcane farmers to diversify away from sugarcane plantation, which will be extremely beneficial for sugar as well as water economy in the long run.

5. Saving Water by Encouraging Farmers to Diversify to other Crops

5.1 Keeping in view that the sugarcane industry needs major reforms and radical solutions, this task force is proposing a solution that involves incentivising farmers in specific regions to divert cultivation away from sugarcane to other crops that require less water and are suitable for the proposed areas. This will positively impact the economy by reducing excess supply of sugarcane and the burden on sugar mills, and save water. This would require the Central or State Governments to incentivize and subsidise the diversification away from sugarcane. A detailed analysis of the proposal is set out below.

Figure 7: Trends of Area, Production and Yield of Sugarcane in India



5.2 Figure 7 gives an overview of trends in sugarcane area, yield and production since 1966. It can be observed that area and production of sugarcane increased sharply during mid1980s to 2000 and again after 2005–06. The sharpest increase in trends is observed after 2016–17, after a steep decline in area and production from 2015–16.

Table 16: Growth Rate of Area Production and Yield of Sugarcane in India

Time Period	Growth Rate (%)		
	Area	Production	Yield
1999-2000 to 2008-09	1.22	0.94	-0.28
2009-10 to 2018-19	0.89	1.42	0.52
1999-2000 to 2018-19	1.07	1.62	0.55

5.3 Table 15 shows that from 1999–2008, sugarcane yield follow small decline, however, at the same time, production grew at 0.94 per cent per annum due to an increase in area (1.22 per cent) of sugarcane. Since 2000 both the yield as well as the area has been growing, which accelerated growth in sugarcane production to 1.62 per cent per year.

Table 17: Decomposition of Change in Sugarcane Production

Time Period	Production Change (000 ton)	Yield effect (%)	Area effect (%)	Interaction (%)
1999-2000 to 2008-09	-29838	90.2	10.7	-1.0
2009-10 to 2018-19	111352	32.9	59.1	8.0
1999-2000 to 2018-19	81514	15.2	87.6	2.9

5.4 Table 16 gives us a broad overview on how the production of sugarcane is impacted by yield, area and interaction. From 1999–2000 to 2008–09 a decline of sugarcane production had been witnessed. This decline in production is mainly attributed to the yield effect as noticed in Table 1, wherein the yield of the crop had slumped in that decade. The next decade production had risen considerably with a vast increase in the crop's yield and the area under cultivation. The area under cultivation seems to have had the highest impact on sugarcane production this particular decade. The overall increase in production from 1999–2000 to 2018–19 can be predominantly attributed to the increase in land under cultivation of sugarcane. With an assurance of promising returns from the cultivation of the crop scores of farmers over the years began to abandon their traditional crops in an attempt to shift to something more lucrative, and therefore began cultivating sugarcane. As mentioned in the preceding chapters, despite the arrears to farmers being a critical issue of the sector, there is a high level of assurance that these farmers would eventually be paid their dues over time.

Figure 8.1: Sugarcane Cropped Area Density and Stage of Groundwater Development across Districts of Uttar Pradesh during 2016–17

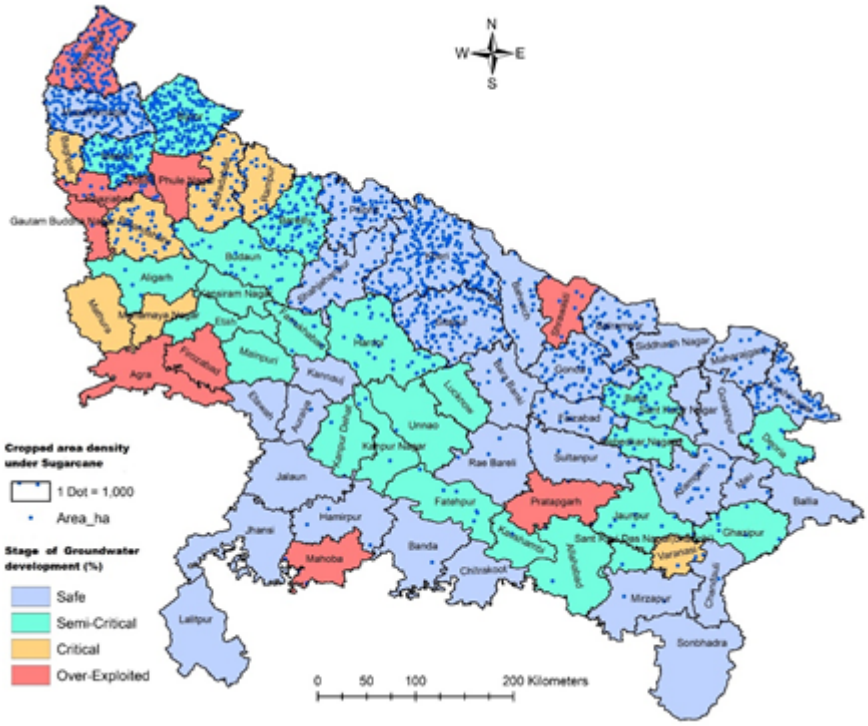


Figure 8.2: Sugarcane Cropped Area Density and Stage of Groundwater Development across Districts of Tamil Nadu during 2016–17

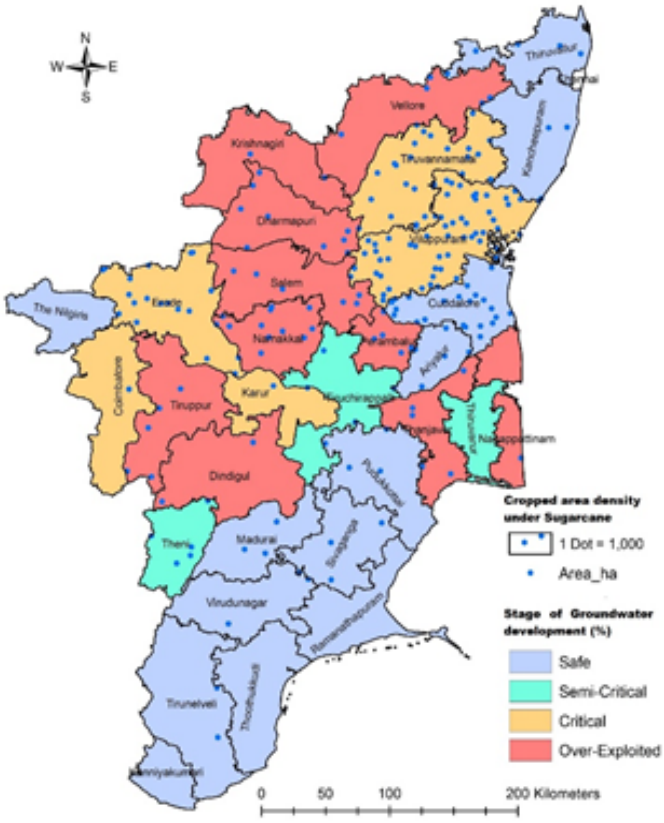


Figure 8.3: Sugarcane Cropped Area Density and Stage of Groundwater Development across Districts of Maharashtra during 2016–17

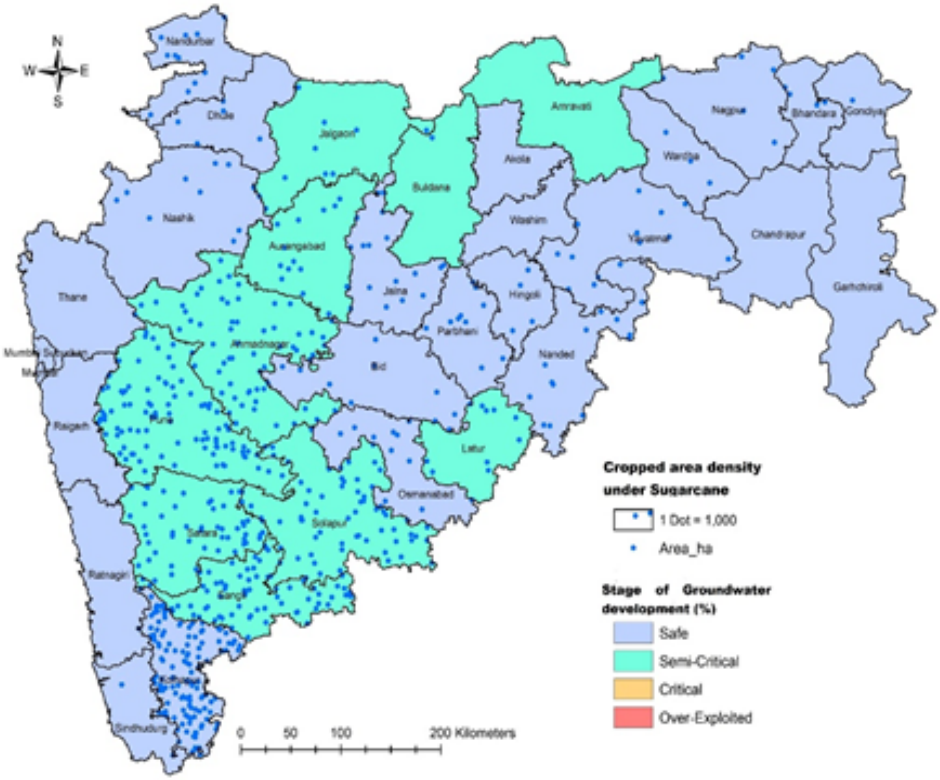
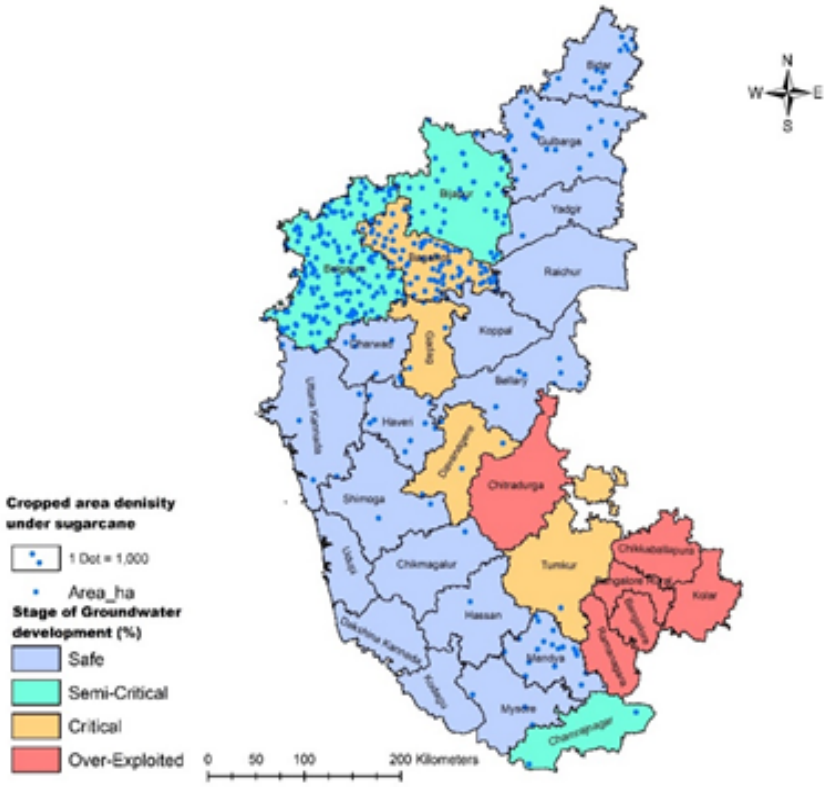


Figure 8.4: Sugarcane Cropped Area Density and Stage of Groundwater Development across Districts of Karnataka during 2016–17



5.5 Sugarcane cultivation may continue in districts where groundwater exploitation is at a safe level. Diverting around 10% sugarcane area in semi critical, 15% in critical and 20% in overexploited districts to other less water-intensive crops through appropriate incentives and disincentives will make significant effect on water resources.

5.6 In Figure 8.1, which shows sugar cultivation and groundwater exploitation in UP, we can see that there is a predominant sugar belt in the northern reaches of the State. The District of Saharanpur is a prime sugar producer; however, its groundwater is overexploited. Similar such districts in the State include Ghaziabad and Shravasti, which are also prime sugar producers but experience groundwater exploitation. A substantial shift in area under sugarcane cultivation to other less-intensive water-consuming crops is needed in these districts.

5.7 Similar change is needed in Tamil Nadu (Figure 8.2), wherein a large proportion of sugarcane cultivators are in districts where the groundwater is overexploited such as Krishnagiri, Vellore, Dharmapuri, Salem, Namakkal, Perambalur, Thanjavur, Tiruppur and Dindigul.

5.8 Maharashtra, which is the second largest producer of sugarcane in the country, does not rely significantly on groundwater but on other sources like rainfall and canal irrigation from reservoirs and dams for sugarcane cultivation. For cultivation of sugarcane in Maharashtra about 3500mm of rainfall are required due to differences in yield compared to other states. Therefore, the Figure 8.3 does not fully explain regions where, in Maharashtra, sugarcane cultivation is to be diverted. However, through literature, it is a well-known fact that large portions of central and western Maharashtra experience drought and water shortage. In Figure 8.3, areas with the highest concentration of sugarcane cultivation are in the southern reaches of Maharashtra region or Pune Division. The climate and water conditions are fairly better here compared to other regions of Maharashtra for sugarcane as a result of regular rainfall along with several other sources of water for sugarcane cultivation such as rivers and canal irrigation. However, for the Marathwada and Vidharba regions (Aurangabad, Amaravati and Nagpur Divisions), which have a sizeable number of sugarcane farmers, the water availability is critically low. For many months in a year, these regions experience drought and critical water shortages. However, farmers continue to grow sugarcane as it fetches them an assured price unlike other crops. Sugarcane in drought seasons fetches higher returns than other crops such as cotton. Therefore, many farmers here grow sugarcane as insurance and for the fact that it requires minimal inputs. Additionally, a number of sugar mills have also been set up in the Marathwada region in the past few years adding to more reason for a farmer to cultivate sugarcane. This water-guzzling crop almost accounts for 70% of the water consumed for agriculture in Marathwada and Vidharba. The State has, however, already taken action with regard to curbing the development of new sugar mills in the regions to discourage farmers from growing sugarcane. The task force recommends further steps with regard to improvement of water-management techniques and drip irrigation in these regions, not only to improve the availability of

water for sugarcane but also to ensure that water is available to cultivate other crops. The sugarcane issue in Maharashtra is complex and will have to be dealt with in a comprehensive and multi-faceted manner. It is important to note that considering the level of rainfall required for the cultivation of sugarcane, most areas of Marathwada and Vidharba would not be conducive to sugarcane cultivation had the Government policies not incentivized it.

5.9 Karnataka is another State that experiences extreme droughts in some parts and also has a complex sugarcane problem. Much like Maharashtra, sugarcane cultivation is also concentrated in a few specific areas, that is, the northwestern region of the state, in districts such as Belgaum, Bagalkot, Bijapur and Gulbarga and also in southern districts of Mandya and Mysore. The remaining sugarcane cultivators are scattered sparsely in the drought-prone areas across the State. Ironically, districts that cultivate sugarcane on a large scale also experience droughts and problems of payment of arrears from mills. In this regard, it is recommended that the State Government strategically select sugarcane cultivators from those identified all over the State by the task force and encourage the cultivation of alternative crops.

5.10 The strategy to divert sugarcane cultivation to other crops may be difficult with regard to the rate of return that cane farmers receive. The per hectare net returns (over A2+FL cost) on sugarcane for UP, Karnataka, Maharashtra and Tamil Nadu are ₹81,090 (based on SAP), ₹1,13,590, ₹1,20,527 and ₹1,05,846 (based on SAP), respectively. In Uttar Pradesh, net returns per hectare on sugarcane are 3.3, 10.5, 3.1, 2.9 and 10.9 times the return from paddy, maize, bajra, wheat and gram respectively. As sugarcane occupies area throughout the year the proper comparison of net return should be done with crop rotation i.e. crop sequence followed in one year. Even this comparison shows that net return from sugarcane is much higher than the sum of net returns from rice and wheat or any other combination of kharif and rabi crop. In the remaining three states, the returns on sugarcane are higher compared to other crops/sequence. **[Annexure-2]**

5.11 The task force feels that a major reason for the problems of the sugar industry is the high production of sugarcane in the country relative to the current demand for sugar. It would be desirable that sugarcane farmers are incentivized to move to other crops at least in the water-stressed areas. Overall, the Government could target about 2 crore tonnes of sugarcane (current production 34 crore tonnes) into other crops.

5.12 Further, specific recommendations for diversion can be analyzed on the basis of yield and recovery rate on sugarcane, which is unique for every State. The task force suggests a combination of crops to be grown in order to replace sugarcane. For example, with regard to UP, diverting from sugarcane to paddy + potato would give as high returns as sugarcane does. The same is the case of some other combination that includes potato. However, the only issue is that potato and sugarcane do not grow in the same areas, as can be seen in Figure 9 and compared with Figure 7.1. It may be due to unfavorable climatic conditions or other factors that needs exploration. Another important factor that

put a great barrier in promoting area under potato cultivation is price. No minimum or ensured price is announced in case of potato. Most of the time prices have slumped for potato at the time of its harvesting season. As seen in the relevant Table, if farmers avail season price then they have very low net return. On the other hand, if they get a price of 1.5 times on cost A2+FL cost, the net return goes up and it mirrors approximately the sugarcane return in Uttar Pradesh.

Figure 9: Potato Cropped Area Density across Districts of U.P. during 2016–17

5.13 In this case an alternative crop combination will have to be worked out where there is some overlap in cultivation regions. Other options in UP which provide reasonable returns includes paddy + wheat and bajra + wheat as set out in Annexure-2 of this report. In Maharashtra sugarcane could be replaced by Tur + Onion, Cotton + Onion or Soybean + Onion combinations. With regard to Karnataka and Tamil Nadu, replacing sugarcane with any other crop is uneconomical and therefore entails that a higher compensation package would have to be given to farmers. The decision in diversion of choice of crop mix will have to be decided by the State Governments.

5.14 Based on the above analysis, a suitable combination of crops may be incentivised to promote the diversion from sugarcane, and consequently, sugar. As the stocks of sugar each year vary, the quantity of diversion of sugarcane required will have to be decided on the basis of the opening stock of sugar of any particular year. For example, let's assume that as per estimates of sugar for 2017–18 we have a production of 3.07 crore tonnes, opening stock of 1.07 crore tonnes and consumption of 2.6 crore tonnes. The opening balance for 2018–19 would be 1.54 crore tonnes. Assuming that consumption and production remain the same at 2.6 crore tonnes and 3.07 crore tonnes, the excess unused sugar would amount to 1.74 crore tonnes. The diversion of sugar will therefore need to be carried out as per these estimates each year, also keeping in mind that a minimal reserve stock as opening balance for the succeeding year will be required.

5.15 The task force feels that this mechanism may continue for the next 4–5 years till the sugar economy stabilises and significant proportion of EBP targets are achieved. However, if there is a sharp surge in sugar prices in the interregnum period (due to a steep fall in sugarcane production due to droughts or turning of sugar cycle), the scheme may be discontinued.

Chapter VI

Observations of the Task Force

The task force observed the numerous challenges facing the sugarcane and sugar sector, and within its remit make important observations and recommendations to help reform the sectors.

6. Easing the Liquidity Constraints on Farmers and Mills

6.1 One of the primary challenges that the sugar and sugarcane industry currently faces is that at the existing wholesale prices of sugar and FRP/ SAP of sugarcane, sugar mills are unable to generate enough liquidity to be able to make upfront payments to the farmers for sugarcane, and then recover the cost through sales of sugar. According to Industry sources market price of sugar is not in in sync with FRP/SAP to generate adequate profit for sugar mills to fully pay FRP/SAP. As per the guidelines, mills must make payments to the farmers within 15 days whereas their realisation of sugar sales is staggered through the year. An innovative solution is therefore required to allow the mills to have liquidity as well as support, and at the same time, the payments made to farmers will need to be staggered such that 60% may be paid up front, and the balance 40% will be paid in installments depending upon the sale of sugar. Meanwhile, to ensure that farmers are not inconvenienced due to the staggered payment of the remaining 40%, adequate arrangements through the banking sector may be made with some support from the Government through the Sugar Development Fund (SDF).

6.2 The SDF was established in 1982, through an act of Parliament. It is currently used to grant loans to the sugar mills for facilitating their rehabilitation and modernisation; Bagasse-based co-generation power projects; production of anhydrous alcohol or ethanol from alcohol; conversion of existing ethanol plant into ZLD plant; and development of sugarcane. The loans are provided at a concessional rate of 2% below the prevailing bank rate. Further, SDF also covers:

i. defraying expenditure for the purpose of building up and maintenance of a buffer stock of sugar
ii. internal transport and freight charges to the sugar factories on export shipments of sugar
iii. financial assistance to sugar factories towards interest on loan given in terms of any scheme approved by the Central government from time to time
iv. marketing and promotion service for raw production
v. interest subvention on scheme for extending soft loan to sugar mills
vi. production subsidy to sugar mills to offset cost of cane and facilitate timely payment of cane price dues to farmers

6.3 To ensure that the farmers and mills are not unduly burdened, the task force suggests that farmers may be paid 60% of the value of their sugarcane by the mills within 15 days of receipt of the sugarcane, which covers entire cost of sugarcane production and also provides small net income to producers. Remaining 40% payment should be

staggered in a way that balances the interests of farmers as well as sugar mills. However, it must be ensured that entire dues of farmers are cleared within a period of 2 months.

6.4 The Task Force observed that to ease the overall pressure on mills and farmers in the current scenario of the sugar industry, the primary focus of the SDF should be to bridge the gap and compensate the farmers in times of excess supply of sugar, at least until sugarcane season 2021–22 by when ethanol production is expected to ease the pressure of excess supply of sugar on its market prices.

6.5 To fund the SDF it is proposed that the Government of India levy a cess of ₹50 per quintal on sugar that is intended to be sold in the domestic market to help build a central fund of ₹1250 crore annually. This would provide bridge funding or act as a comfort for banks providing soft loans to mills in order to allow the mills to improve technologies and pay the farmers their due. Once the demand and supply balance is restored, the cess may be reduced or removed, and sugar mills may be asked to contribute to the SDF a certain percentage of sugar sales, which will be decided by the Government of India. It is recommended that this cess be exempted (or refunded) for the sugar that is earmarked for exports, in order to ensure that it does not become uncompetitive for mills who export their mandated quota. Under this mechanism cess should not be imposed when domestic prices are higher than international prices in order to ensure that this intervention doesn't lead to mills becoming uncompetitive for their export quota.

One-Time Increase in Minimum Selling Price (MSP) of Sugar

6.6 Beside liquidity being a constraint for mills, the Minimum Selling Price of Sugar at ₹31/kg, even though recently hiked by ₹2, does not even cover the cost of manufacture, given the FRP, which is at a reasonably high floor of ₹275 per quintal (SAPs even higher). In 2017–18, the production cost for sugar was ₹3,580 per quintal (ISMA data). At the same time, the comparable international prices were averaging ₹2,080 per quintal. Thus, there is limited scope for alleviating the problems by way of exports. One way of improving the liquidity situation of mills is to further raise the Minimum Selling Price of sugar to Rs 33 per kg. Since the average consumption of sugar per household per month is about 3.5 kg, the monthly impact on a household budget shall be marginal and can easily be absorbed. In any case the Department of Food and Public Distribution already has a scheme for providing subsidised sugar through PDS system. The marginal increase in price shall not impact the demand for sugar as it is less price elastic. At the same time, this can significantly help mitigate the stress on sugar mills.

Reducing the Stress on Water Resources through Crop Diversion

6.7 India is facing serious water shortages affecting millions of people. Currently, 600 million Indians face high to extreme water stress and about two lakh people die every year due to inadequate access to safe water. By 2030, the country's water demand is projected to be twice the available supply, implying severe water scarcity for hundreds of millions of people and an eventual 6% loss in the country's GDP. As per the report of the National Commission for Integrated Water Resource Development of the Ministry of

Water Resources, the water requirement by 2050 in high use scenario is likely to be a milder 1,180 BCM, whereas the present-day availability is 695 BCM. The total availability of water in the country is predicted to be lower than the projected demand.

6.8 The task force examined interventions that make India's water use in growing sugarcane more efficient and sustainable through alternative acreage allocation. This is especially important in regions where groundwater use has reached critical and overexploited stage or where more than 50% surface water is used for irrigating only sugarcane. Chapter 5 provide a detailed analysis of scope and need for improving sustainable use of water by shifting some area from sugarcane cultivation to other crops. This wil require appropriate action from Central and State Governments.

6.9 The task force feels that policy instruments like procurement of sugarcane at FRP and other crops at MSP can also be potentially utilised for encouraging sugarcane farmers to diversify into alternate crops, especially in water-stressed areas. An additional incentive of ₹6,000 per hectare per year for three years can be considered for farmers provided they reduce cultivation of sugarcane and divert their plantation to a crop that is less water intensive.

6.10 One method to reduce area under sugarcane is to restrict cane purchase slips by mills to farmers up to a total of 85% of farm area of current year from the next year. This would likely ensure that farmers grow some other crops in the 15% area currently under sugarcane cultivation. This could be more feasible for farmers cultivating in larger land parcels. However, the 85% limit may also have to remain flexible keeping in view the changing developments on demand–supply front and export possibility. Some guidelines, including enforcement mechanism, may have to be developed for the same.

Ethanol Blending

6.11 The report include a detailed chapter on ethanol blending that provide in depth analysis of ethanol blending and draws recommendations of this task force. EBP is broadly a major reform to help reduce the pressure on mills saddled with excess production of sugar while leading to a product that will help reduce oil import demand. Currently, India imports approximately 82% of its crude oil requirements and this dependence needs to be reduced. This is also critical to reduce the current account deficit. The lessons from Brazil are that ethanol blending may help divert the sugar surplus while at the same time reduce dependence on crude oil imports. The Government of India has set a 10% ethanol-blending target by 2022, and 20% by 2029–30. The SDF is being utilised to help upgrade and update technology for mills to be able to manufacture ethanol. Care should be taken to ensure that ethanol technology considers not just manufacture from molasses, but also from raw sugarcane juice to enhance efficiency and not waste time and resources in two levels of manufacture: from sugarcane to sugar byproducts (molasses) and then to ethanol. A premium has also been declared for ethanol produce from sugarcane/sugar. Over 90-crore liters of ethanol making capacity is

expected in the country by 2020. Brazil is reported to be ated to be utilising 65% of its sugarcane directly for ethanol production.

6.12 Sugar industry has been demanding to prepone 20% ethanol blending target and also have a higher targets (in excess of 10%) for the near future. However, the automobile industry has expressed concern regarding increase in blending without requiring some re-engineering of vehicles. A balance is, therefore, required between the interests of sugar and automobile industry.

Implementation of Recommendations of the Rangarajan Committee

6.13 The task force observed that despite major reforms recommended by the C. Rangarajan Committee in 2012, in terms of the Cane Area Reservation, minimum distance between mills, cane pricing, and others, almost none of the States have implemented these reforms. A detailed analysis and status report on the various committees' recommendations, including that of the C. Rangarajan Committee, were discussed in an earlier chapter. The Department of Food and Public Distribution may ascertain the reasons for not implementing the same in consultation with State Governments.

Pricing of Sugarcane

6.14 Internationally, cane price ranges from 60%–66% of revenue from sugar and/or byproducts, in countries such as Brazil, Kenya, Thailand, as per a presentation made by ISMA to the task force. Further, the Rangarajan Committee had recommended a Revenue Sharing Formula (RSF) for the sugar sector. It has been stated that based on historical data in India and international practices, cane price should be pegged at 70% of revenue from sugar and primary byproducts or at 75% of revenue from sugar alone (giving 5% weightage to byproducts). CACP, in its report of the price policy for sugarcane for 2019-20 sugar season, also favoured pricing sugarcane as per RSF recommended by the Rangarajan Committee. CACP has indicated that only two states viz. Maharashtra and Karnataka have implemented RSF. CACP has further indicated that based on RSF, it is possible that cane price payable to the farmers becomes lower than FRP. In such cases, the difference between FRP and RSF determined price may be reimbursed to farmers through a Price Stabilisation Fund (PSF). PSF, on the other hand, may be created by imposing sugar tax on soft drinks/beverages as has been done in many developed and some developing countries. In periods of high sugar price, part of the surplus generated under RSF can be retained and deposited in the PSF. Other option can be dual pricing of sugar for industrial and household sector. With discontinuation of levy obligation for sugar, sugar mills may also be asked to contribute to PSF. For creating and managing PSF, CACP has suggested setting up a separate committee.

Buffer Stocks on Sugar

6.15 To reduce problems related to excessive production of sugar and its effect on prices, the Government of India has launched a buffer stock scheme so as to improve the liquidity position of sugar mills and reduce uncertainties of demand and supply of sugar. From 1 July 2018 to 30 June 2019, the Government had created a buffer stock of 30 LMT

costing Rs 1175 crore for its maintenance. For sugar season 2018–19, the Government has accepted the creation of a new buffer stock of 40 LMT from 1 August 2019 to 31 July 2020, which would cost Rs 1674 crore.

6.16 Reimbursement to sugar mills for maintenance of buffer stocks has helped provide liquidity to them and reduce cane arrears. However, the task force feels that the buffer stocks of sugar are only notional in nature and not in sync with Government policies regarding food security (as in case of wheat and rice).

6.17 Though reimbursement to sugar mills for maintenance of sugar stocks reduce cane arrears, it acts as an incentive for over-production in the long run. In addition to the above, the maintenance charges given to mills act as an additional expense on the Government exchequer as these stocks are usually resold in the market the following year by the mills. There is need to take a holistic view of these stocks and mechanism for continuation of this scheme.

Making Use of Sugarcane Bagasse

6.18 A high proportion of bagasse obtained as a byproduct of producing sugar is used as captive power by generating heat in sugar mills. This reduces external energy dependence of these sugar mills. The task force has observed that a large proportion of bagasse from the sugar industry is poorly recycled. Efforts need to be made in better utilising this in more productive ways. For every 10 tonnes of sugarcane crushed, 3 tonnes of *wet* bagasse is collected. Wet bagasse is called so as it contains moisture content between the range of 48%–52%. Once dried, the *dry* bagasse has higher value to the industry and the economy in terms of net calorific value.

6.19 The power purchase rates for Co-gen are determined by States and have been steadily declining to worrying levels. The current revision of PPA unit price of electricity has eliminated any new bagasse power plant in the country. Existing power plants will have to continuously suffer as they have to operate to feed steam and power to the sugar plant. This industry has also suffered due to significantly late payments in the past for power that has been produced and sold. The positive environmental impact of bagasse and other biomass-based plants must be considered in policy setting and the Central government must exercise influence over States in this regard.

Greater Thrust on Jaggery

6.20 With changing lifestyles, it has been observed that people's preference for white sugar is stagnating or even marginally declining. At the same time jaggery is emerging as an important alternative item whose demand is increasing. This is also visible in the fact that jaggery demands higher prices in the market compared to white sugar. However, the production of jaggery is not done in a scientific manner as in the case of sugar. There are no proper standards in place for the production and quality of jaggery. The task force feels an urgent need to promote jaggery, including by improving technology for the production and specification of quality standards.

Chapter VII
Recommendations of the Task Force

A. Pricing of Sugarcane

7.1 The falling/stagnant price of sugar in the recent years in the backdrop of a continuous rise in sugarcane prices is the biggest problem faced by the industry. In the last ten years, the prices of sugarcane have almost doubled whereas the price of sugar has hardly risen much. As a result, the industry has been facing problems of financial viability, accumulation of unsold stock and liquidity constraints prompting them to approach the Government for help time and again. The Government too, in the interest of sugarcane farmers, has been announcing various packages from time to time. However, the fundamental problem remains unaddressed. With sugarcane having a fairly stable yield, quite remunerative returns and assured market, farmers remain attracted to plant sugarcane notwithstanding the fact that there is hardly any growth in the demand for sugar in the country or any major scope for exports. On the contrary, being a water-intensive crop, the social costs of planting sugarcane are even higher, resulting in reduced water availability for other crops or human consumption.

7.2 While fixing the FRP of sugarcane, domestic supply and demand and the international price of sugar should also be factored in. Going forward increases in sugarcane prices are hardly justified in the prevailing domestic and international market scenario. This is also important to bring in some parity in profitability of sugarcane with other competing crops.

7.3 The States that have been announcing State Advised Price above FRP, may be requested to desist from doing so unless they are willing to bear additional costs upon themselves and not forcing the mills to bear the enhanced price.

7.4 It has been stated that internationally, cane price is determined as per a formula which considers percentage of revenue realized from sugar and/or byproducts. This ranges on average from 60% to 66%. The Rangarajan Committee had also recommended a Revenue Sharing Formula (RSF) for the sector. The Committee had recommended based on historical data in India and international practices, that cane price should be pegged at 70% of revenue from sugar and primary byproducts or at 75% of revenue from sugar alone (giving 5% weightage to byproducts). CACP, for the last 4 years, also recommended RSF, in a manner whereby- FRP will be the minimum price the farmers will get, so that the cane price payable by mills is at or above RSF. If the price is below FRP, then the gap is to be filled up through the revamped SDF created by the Government.

7.5 Due to the cyclical nature of sugar production and prices thereof, some mechanism is required to ensure stability in returns from cultivation. At the same time, it needs to be ensured that the industry is not subjected to major losses that would harm the interests of farmers in the long run. The task force feels that to prevent the problem of arrears for

sugarcane farmers and to keep the sugar industry in good health, sugarcane prices must be linked to sugar prices. Keeping cane prices at 70% of revenue realised from sugar and its byproducts or 75% of the revenue realised from sugar alone, as per the Rangarajan Committee, can be a way out to address the woes of the sugar industry. However, given the low ex-mill prices of sugar at present, switching over to that formula involves a steep decline in sugarcane prices, which may not be feasible.

7.6 The task force suggests adoption of the Rangarajan formula for pricing of sugarcane, which is considered a scientific way of sugarcane pricing based on the recovery rate linked to the prices of sugar and its byproducts. However, the prices of sugarcane may need to be adjusted slightly upwards keeping in view the improvement in recovery rates in the last few years i.e. between the reference period of Rangarajan Committee recommendations and the current period. Thus, in place of 70% price of sugar and byproducts and 75% price of sugar only, the pricing formula can be 75% of sugar and byproducts and 80% of sugar price. This formula can be implemented prospectively, say from sugar season 2020–21 or 2021–22.

7.7 In the years of high sugar prices, adopting the RSF formula for pricing of sugarcane would be a big boost for sugarcane farmers. However, given the present low level of sugar prices, RSF is expected to result in sugarcane prices going below FRP. The task force feels that this can be addressed by creating a Price Stabilisation Fund to compensate farmers in the years of low prices of sugar. The difference in RSF-based price and FRP should be transferred directly into the bank accounts of farmers through the DBT mode. The modalities of this fund should be worked out by NITI Aayog in consultation with the Department of Food and Public Distribution.

7.8 It may be mentioned that currently, the adoption of RSF has been left to the States to implement and most have not accepted the same so far, except Tamil Nadu. The task force feels that the Department of Food and Public Distribution may take the initiative to facilitate implementation of the Rangarajan Committee formula for pricing of sugarcane across all States.

B. Payment for Sugarcane to Farmers

7.9 As stated earlier, sugarcane is a fairly remunerative crop. As against A2+FL cost of Rs 155 per quintal in 2018–19, the FRP fixed by the Government was Rs 275 per quintal providing a return of 77% (over A2+FL cost), which is higher than most other competing crops. As per quick calculations, at ex-mill sugar price of Rs 31 per kg, assuming 10% recovery, FRP of Rs 210 per quintal can only be supported. The task force feels that if farmers are paid 60% of the sugarcane price upfront, it will cover their entire A2+FL cost and provide a little margin over the same.

7.10 The task force, therefore, recommends that mills should be allowed to stagger the payment for sugarcane in following manner: 60% payment within 14 days; another 20%

within next two weeks and balance 20% within another one month (or upon sale of sugar, whichever is earlier), so that the entire dues are cleared within 2 months.

C. Diversification towards Less Water-Intensive Crops

7.11 In accordance with the analysis presented in Chapter 5 of this report, the task force recommends shift in some area under sugarcane cultivation, to less water-intensive crops. As per estimates, 1 kg of sugar requires about 1500–2000 kgs of water. About 70% of the country's irrigation water is are utilised by paddy and sugarcane, depleting water availability for other crops. The task force feels that the Government should target moving of about 3 lakh ha under sugarcane into other crops. This will correspond to about 20 lakh tonnes of sugarcane (total production around 310 lakh tonnes). Different crop combinations have been suggested in Chapter 5 and these should be considered for implementation in water-stressed areas. In order to encourage farmers to diversify into other crops, suitable financial incentives should be provided to them to compensate for reduction in income due to change in cropping pattern from sugarcane to some other crop(s). Further, it is important to consider modern agronomic practices that, amongst other things, ensure efficient use of water. Hence, wide row spacing like trench planning, spaced row planning, single bud planting, pit planting may also be encouraged.

7.12 To begin with, an amount of Rs 6,000 per ha per year could be considered as the incentive for such compensation. For an area of 3 lakh hectares the budgetary requirement will not be very high. However, there would be significant gains for the sugar economy as sugar production will go down by around 20 lakh tonnes, improving demand–supply balance. At the same time, this move would be a significantly beneficial in water conservation, especially in the stressed areas. The task force recommends that a new scheme for such compensation should be launched by DAC&FW in coordination with Ministry of Jal Shakti and can be implemented for a period of three years initially. A greater thrust should also be made on organic farming techniques to cultivate sugarcane by analyzing best practice models.

7.13 An alternative way of reducing supplies can also be by providing sale slip to the extent of 85% of the area of the sugarcane farmers so that they are encouraged to diversify their production on remaining 15% area to other crops. However, this 85% limit should not remain fixed; it should rather remain flexible depending upon sugar demand-supply situation and export possibility going forward. Such a mechanism could be considered for sugar season 2020–21 onwards as there is already downward pressure in terms of sugarcane production during 2019–20.

D. Sugar and Sugarcane Development Fund

7.14 Due to stagnant and/or declining sugar prices, the liquidity and financial position of the mills has remained a major cause for concern, prompting the Government to come out with various support measures from time to time. The task force feels that the piecemeal approach in addressing these issues is not desirable. There is a need for a fund

of a reasonable size to provide liquidity support to the mills in such situations of emergency.

7.15 Though the original mandate of the Sugar Development Fund (SDF) was to provide loans for modernisation of mills, over a period of time the scope of the fund has been expanded to provide general liquidity support to mills in the wake of sharp fall in sugar prices. These include defraying expenditure for maintenance of buffer stock of sugar, reimbursement of internal transport/freight charges on exports, interest subvention scheme, and production subsidy and so on. The fund has served a useful purpose and avoided formal budgetary support from the exchequer. In this backdrop, it is also noted that sugar is a cyclical industry and there will always be years of surplus and shortfalls with prices of sugar downwards or upwards with sharp swings in certain situations. In this backdrop, it would be desirable to have a fund of fairly large size, which can support these initiatives from time to time.

7.16 With the introduction of GST, the levy of cess on sugar was withdrawn as a result of which fresh accretions to the Sugar Development Fund declined. In order to continue to encourage sugar mills to modernise, including diversification to produce more ethanol, there is a need to continue SDF with a larger mandate. At the same time to improve accretions to the fund, it is proposed to levy cess on sugar @ Rs 50 per quintal for a period of 3 years, during which about Rs 4,500 crore would be added to the fund that will help provide bridge funding or act as a comfort for banks providing soft loans to mills in order to allow the mills to improve technologies and pay the farmers their due. At the same time, the industry also needs to be encouraged to set aside some proportion of sales/ profit in the years of high prices of sugar which can be used in times of low sugar prices when liquidity becomes a constraint for the mills. Once the demand and supply balance is restored, the cess on sugar should be reduced or removed and sugar mills be asked to contribute to the SDF a certain percentage of sugar sales, such percentage to be decided by the Government of India. Since the focus of the fund expands from sugar industry to sugarcane farmers, it may be renamed as "Sugar and Sugarcane Development Fund".

E. Ethanol Blending Programme

7.17 The task force's recommendation is to support and enhance the technology and adoption of ethanol blending in line with the target of achieving 10% by 2021–22 and 20% by 2029–30. The task force further recommends an interim medium-term blending target of 15% by 2024–25. Every possible support mechanism be enabled to help upgrade and integrate technology, including through learning from best practices in Brazil, to progress towards diverting raw sugarcane juice towards ethanol blending. This will also help reduce the oil deficit for India and save precious foreign exchange. Therefore, the recommendations of Chapter 4 may be adopted to ensure progress towards 20% blending in an enhanced and expeditious manner for long-term supply of sugarcane to ethanol production. Any impediments to this process be addressed by the Government at the earliest. In order to promote ethanol production, additional measures could be considered in line with suggestions spelt out in the National Biofuels Policy

2018. These include classification clarity about raw material usage and extension of appropriate financial and fiscal incentives for each category, establishment of biofuel development boards in states, establishing updated BIS standards and a National Biomass Repository. Suitable supply chain mechanisms, feedstock collection centres and fair price mechanisms for the engaged community would also need to be developed in coordination with Local Bodies, States and concerned stakeholders. The task force also proposes to curtail unnecessary restrictions that prevent the movement of ethanol between states. Following Karnataka's decision, all the State Governments should also consider removing unnecessary restrictions on the movement of ethanol used for the blending programme, which will significantly benefit the sector.

F. Trade Policy

7.18 As per WTO commitments, India does not have any scheduled export subsidy entitlements and can benefit only under special and differential treatment provision. This means that, as per Nairobi Ministerial Declaration of the WTO, India cannot provide export subsidies and any export promotion measures of equivalent effect on agricultural products. However, under special and differential treatment provision of the Uruguay Round Agreement on Agriculture, India can provide reductionist export subsidies in a way to gradually phase them out by 2023.

7.19 While there is a need to continue to incentivize sugar exports at present, the task force recommends redesigning of export incentives so as to rule out their being challenged at WTO. The Department of Food and Public Distribution may coordinate with the Department of Commerce and work out a suitable incentive mechanism for the export of sugar while keeping the implications for the exchequer to the minimum possible extent.

G. Raising the MSP of Sugar to ₹33 Per Kilogram

7.20 The task force recommends a one-time increase in Minimum Sugar Price to Rs 33 per kilo, as it would help sugar mills to cover the cost of production, including interest, maintenance costs, etc. Further, it will allow sugar valuation to increase by a further Rs 2 per kilo, giving additional liquidity to sugar mills from the current stocks and further production. The impact on retail prices of sugar shall be marginal that can be absorbed by the consumers. With this, the task force feels there should be a minimal need to extend the applicability of smaller schemes for production subsidy, interest subvention and so on. A review of MSP should be made after six months of its notification.

H. Implementing Recommendations of Earlier Committees

7.21 The task force has observed that despite major reforms recommended by the C. Rangarajan Committee in 2012, which included the Cane Area Reservation, minimum distance between mills, cane pricing, and others, almost none of the states have implemented these reforms. The task force recommends the Department of Food and Public Distribution should take up this matter with State Governments, to ascertain the reasons for not implementing the recommendations and come out with specific steps

required towards liberalisation of the sugar sector. However, levy/quota system on sugar need not be abolished for the present as past experiences have indicated a sudden glut in supply resulting in further subdued prices upon removal of quota system.

I. Expansion in Use of Drip Irrigation in Sugarcane Cultivation

7.22 Sugar cane being a very water water-intensive crop require lot of irrigation in areas where rainfall is not high. As per CACP's analysis there is a stark difference in water consumption for growing sugarcane between Uttar Pradesh and Maharashtra and South India. For instance, one kg for sugarcane cultivation in UP consumes 1044 liters while in Maharashtra it consumes 2086 liters. In South Indian states, the water consumption for sugarcane cultivation is similar to that of Maharashtra. Therefore, the task force recommends that all efforts be made to ensure that farmers in Maharashtra and South India use the drip irrigation method for the cultivation of sugarcane. This would save almost 40%–50% of water, which in turn could be used for other crops and increase sugarcane yield by 30%. In order to promote drip irrigation, in addition to sustained sensitization campaign, some incentive mechanisms in form of concessional access to infrastructure could also be considered for farmers. Various schemes for agriculture sector promoting drip irrigation could be leveraged for the purpose. Drip irrigation will gain popularity if power supply for irrigation is appropriately priced to discourage flood irrigation.

J. Eliminate Buffer Stock for Sugar

7.22 The buffer stock is essentially to improve liquidity position of the mills and does not serve much purpose in the context of food security of the people as in the case of maintenance of buffer stock of wheat and rice by the Government. If the Minimum Selling Price of sugar is enhanced to Rs 33 per kg in addition to other measures taken by the Government and those proposed in this report, the task force feels there is no major justification for continuation of this scheme in its current form.

K. Recycling Bagasse

7.23 The task force recommends that incentives be provided to sugarcane mills to recycle bagasse. In addition to being used as a biofuel, bagasse has multiple other uses. Since bagasse is a valuable and cheap source of captive energy to a sugar mill, they need to install state-of-the-art dryers to ensure that they extract maximum energy from bagasse. If bagasse is not burned in high-pressure boilers it will lead to uncontrolled burning and environmental air pollution. This funding may be procured through soft loans from the SDF. Thus a complete rethink of cogen pricing is needed needs to incentivise this industry to use bagasse and other biomass of cane. Positive incentives will assist in reducing the massive air population problem we face as a nation.

L. Promotion of Jaggery

7.24 With increased incidences of diabetes and a reduced preference in people for white sugar, there is a case for greater encouragement to the *gur* industry. On one side, industry needs to adopt better technology for the production of *gur*, on the other, there

is a need for adopting proper standards. The task force proposes that the Department of Food and Public Distribution, in consultation with the National Sugar Institute, Kanpur, and other stakeholders, including BIS, develop a suitable mechanism for adoption of advanced technology by *gur* manufacturers and quality standards thereof. Manufacturers of this alternative of sugar should also be brought under the formal sector so as to have access to credit. This would allow these manufacturers to gradually expand and create a shift in demand from sugar to a healthy and more organic commodity such as gur. This alternative also has immense potential to be exported.

M. Providing Financial Assistance to Distressed Sugar Mills

7.25 It has been reported in the past that various administrative impediments prevent many sugar mills from receiving loans under the soft loans scheme of the Government of India. This is resulting in friction and uneven growth of sugar mills and their inability to clear their dues to farmers. While the task force recognises the need for autonomy to banks in taking decisions regarding loans in line with the RBI guidelines, there is a felt need for some flexibility in providing loans to mills which are ailing for various reasons. It is suggested that the Department of Financial Services may call a meeting of relevant stakeholders and find a solution to the problems of the distressed sugar mills in availing loans from the banking sector.

N. Long-Term Pricing Formula for Ethanol

7.26 Industry has been requesting the Government to provide a long-term pricing formula for ethanol to encourage setting up or capacity enhancement of ethanol. The task force recommends that the Ministry of Petroleum and Natural Gas may examine the suggestion in a holistic manner keeping in view the need for providing some indication for pricing formula for ethanol so as to reduce uncertainties of investments being made.

O. Complete Restructuring of Industry

7.27 The Task force has given a range of suggestions that are expected to go a long way towards improving the outlook of the industry. However, given the sensitivity of the subject, and the criticality of reliance on sugarcane as a primary crop by nearly 5 crore farmers and their dependents, a moderate and balanced approach has been adopted in this report. However, serious policy distortions in sugar sector are resulting into excess sugar production over domestic demand and rendered domestic prices highly uncompetitive. The fiscal and natural resource cost of interventions in sugarcane and sugar industry are enormous and rising. Therefore, there is a need for complete restructuring of sugar industry in a phased manner.

Annexures

Annexure 1: Order for Constituting the Task Force

No. 7(11)/2018-G&R
Government of India
NITI Aayog
(Governance & Research Vertical)

Sansad Marg, New Delhi
Dated: 10th December, 2018

OFFICE MEMORANDUM

Subject: Constitution of Task Force on Sugarcane and Sugar Industry

The undersigned is directed to refer to the above subject and to say that a need has been felt to find long term solution for sugarcane and sugar industry so as to rationalise their dependence on state assistance while at the same time encourage farm diversification to reduce adverse impact on the water sector. The composition of the Task Force shall be as under:-

i.	Prof. Ramesh Chand, Member NITI Aayog	Chairman
ii.	Secretary, Department Food & Public Distribution	Member
iii.	Secretary, Department of Expenditure	Member
iv.	Secretary, Department of Agri. Cooperation and Farmers Welfare	Member
v.	Secretary, Department of Commerce	Member
vi.	Secretary, Ministry of Petroleum & Natural Gas	Member
vii.	Secretary, Ministry of Environment, Forest & Climate Change	Member
viii.	Shri Yaduvendra Mathur, Additional Secretary (KIH), NITI Aayog	Member
ix.	Shri R. P. Gupta, Additional Secretary (Energy), NITI Aayog	Member
x.	Principal Secretary, Sugar Industry & Cane Development Department, Govt. of UP	Member
xi.	Secretary, Co-operation, Textile and Marketing Department, Govt. of Maharashtra	Member
xii.	Dr. N R Bhanumurthy, Professor, NIPFP	Member
xiii.	Dr. Yogesh Suri, Adviser, NITI Aayog	Member Secretary

2. The Terms of Reference of the Task Force shall be as under:

a. To suggest Long-term solutions to the problems faced by sugarcane Farmers and sugar industry
b. Measures for rationalising the sugar economy
c. Measures to make sugar industry less state dependent and align it with global markets.
d. Encouraging farm diversification so as to reduce adverse impact on the water sector.

The technical support to the Task Force would be provided by the Department of Food and Public Distribution. The Task Force may also invite representatives of Indian Sugar Mills Association, National Federation of Cooperative Sugar Factories, etc. in the meetings as also co-opt additional members as may be deemed necessary.

This issues with the approval of the Vice Chairman, NITI Aayog.

-sd-
(Neeraj Singhal)
Director
Ph. No. 23096742

To,

Members of the Task Force

Copy to:

1. PS to Vice Chairman, NITI Aayog
2. PPS to Members (RC/VKS/VP), NITI Aayog
3. Sr. PPS to CEO, NITI Aayog
4. PPS to AS(KIH)/ AS(Energy), NITI Aayog
5. PA to Adviser (G&R), NITI Aayog

Annexure 2: Compatible return from another crop/crop combination with sugarcane in Uttar Pradesh during 2018-19

Crop	Cost of cultivation (Rs./ha.)			GVO (Rs./ha)	Net Return (Rs/ha)	Sugarcane Return over other crops/ crop combination	
	A2	A2+FL	C2			at FRP	at SAP
Sugarcane (FRP)	61607	84776	124794	144803	60027	-	-
Sugarcane (SAP)	61607	84776	124794	165865	81090	-	-
Paddy	31680	43022	58823	67282	24260	2.5	3.3
Maize	13198	23542	32561	31291	7749	7.7	10.5
Bajra	12084	18883	27404	45403	26520	2.3	3.1
Wheat	22096	28259	43205	56703	28444	2.1	2.9
R&M	16804	26700	41762	48440	21740	2.8	3.7
Gram	14796	19802	30599	27212	7410	8.1	10.9
Potato (A2+FL*1.5)	89868	101107	134700	151661	50554	1.2	1.6
Potato (FHP Season)	89868	101107	134700	93881	-7226	-	-
Potato (FHP annual)	89868	101107	134700	164733	63626	**0.9**	**1.3**
Paddy + Wheat					52704	**1.1**	1.5
Maize + Wheat					36193	1.7	2.2
Bajra + Wheat					54964	**1.1**	1.5
Paddy + R&M					46000	**1.3**	1.8
Maize + R&M					29490	2.0	2.7
Bajra + R&M					48260	**1.2**	1.7
Paddy + Gram					31669	1.9	2.6
Maize + Gram					15159	4.0	5.3
Bajra + Gram					33929	1.8	2.4
Paddy + Potato (A2+FL*1.5)					74813	**0.8**	**1.1**
Maize + Potato (A2+FL*1.5)					58303	**1.0**	1.4
Bajra + Potato (A2+FL*1.5)					77073	**0.8**	**1.1**
Paddy + Potato (FHP Season)					17034	3.5	4.8
Maize + Potato (FHP Season)					523	114.7	154.9
Bajra + Potato (FHP Season)					19294	3.1	4.2
Paddy + Potato (FHP annual)					87886	**0.7**	**0.9**
Maize + Potato (FHP annual)					71375	**0.8**	**1.1**
Bajra + Potato (FHP annual)					90145	**0.7**	**0.9**

Source: Estimates based on Cost of Cultivation Survey Data, Directorate of Economics & Statistics, M/o OF Agriculture & Farmers' Welfare

Annexure 3: Compatible return from another crop/crop combination with sugarcane in Karnataka during 2018-19

Crop	Cost of cultivation (Rs./ha.)			GVO (Rs./ha)	Net Return (Rs/ha)	Sugarcane Return over other crop/ crop combination
	A2	A2+FL	C2			
Sugarcane (FRP)	83615	103335	144354	216926	113590	
Paddy	45514	56633	75356	90510	33877	3.4
Maize	28215	33566	43835	56497	22931	5.0
Arhar (Tur)	21921	26142	36157	45287	19144	5.9
Ragi	26696	34131	42173	46226	12095	9.4
Jowar	13970	17405	23473	21846	4441	25.6
Gram	20229	22612	31099	34096	11483	9.9
Safflower	10984	12460	17552	30931	18471	6.1
Paddy + Jowar					38318	3.0
Maize + Jowar					27372	4.1
Arhar (Tur) + Jowar					23585	4.8
Ragi + Jowar					16536	6.9
Paddy + Gram					45360	2.5
Maize + Gram					34414	3.3
Arhar (Tur) + Gram					30627	3.7
Ragi + Gram					23578	4.8
Paddy + Safflower					52348	2.2
Maize + Safflower					41402	2.7
Arhar (Tur) + Safflower					37615	3.0
Ragi + Safflower					30566	3.7

Source: Estimates based on Cost of Cultivation Survey Data, Directorate of Economics & Statistics, M/o OF Agriculture & Farmers' Welfare

Annexure 4: Compatible return from another crop/crop combination with sugarcane in Maharashtra during 2018-19

Crop	Cost of cultivation (Rs./ha.)			GVO (Rs./ha)	Net Return (Rs/ha)	Sugarcane Return over other crop/ crop combination
	A2	A2+FL	C2			
Sugarcane (FRP)	132579	155680	200878	276207	120527	
Arhar (Tur)	41572	54693	77175	84047	29353	4.1
Cotton	54830	65875	83590	85027	19152	6.3
Soybean	25932	29769	37745	36437	6668	18.1
Wheat	34169	42667	55217	45724	3057	39.4
Gram	28272	32656	45310	51282	18626	6.5
Onion (A2+FL*1.5)	109436	129044	173700	193567	64522	1.9
Onion (FHP Season)	109436	129044	173700	104865	-24180	-5.0
Onion (FHP annual)	109436	129044	173700	235033	105989	1.1
Arhar (Tur) + Wheat					32410	3.7
Cotton + Wheat					22208	5.4
Soybean + Wheat					9724	12.4
Arhar (Tur) + Gram					47979	2.5
Cotton + Gram					37777	3.2
Soybean + Gram					25294	4.8
Arhar (Tur) + Onion (A2+FL*1.5)					93876	1.3
Cotton + Onion (A2+FL*1.5)					83674	1.4
Soybean + Onion (A2+FL*1.5)					71190	1.7
Arhar (Tur) + Onion (FHP Season)					5174	23.3
Cotton + Onion (FHP Season)					-5028	-24.0
Soybean + Onion (FHP Season)					-17512	-6.9
Arhar (Tur) + Onion (FHP annual)					135342	0.9
Cotton + Onion (FHP annual)					125141	1.0
Soybean + Onion (FHP annual)					112657	1.1

Source: Estimates based on Cost of Cultivation Survey Data, Directorate of Economics & Statistics, M/o OF Agriculture & Farmers' Welfare

Annexure 5: Compatible return from another crop/crop combination with sugarcane in Tamil Nadu during 2018-19

Crop	Cost of cultivation (Rs./ha.)			GVO (Rs./ha)	Net Return (Rs/ha)	Sugarcane Return over other crop/ crop combination	
	A2	A2+FL	C2			at FRP	at SAP
Sugarcane (FRP)	143718	170908	207808	267043	96136		
Sugarcane (SAP)	143718	170908	207808	276754	105846		
Paddy	49374	59330	76159	88439	29109	3.3	3.6
Maize	51476	62846	79533	96163	33318	2.9	3.2
Bajra	28137	33731	45189	66105	32375	3.0	3.3
Jowar	11032	14429	20989	24867	10438	9.2	10.1
Sesamum	20724	30232	39402	32432	2201	43.7	48.1
Cotton	62803	89908	109145	106639	16731	5.7	6.3
Groundnut	60159	76899	94546	88688	11789	8.2	9.0
Moong	18254	21722	28260	38642	16919	5.7	6.3
Ragi	22598	28905	35311	56926	28021	3.4	3.8
Urad	21020	25549	34649	34459	8910	10.8	11.9
Paddy + Paddy					58218	1.7	1.8
Paddy + Maize					62427	1.5	1.7
Paddy + Jowar					39547	2.4	2.7
Maize + Jowar					43756	2.2	2.4

Source: Estimates based on Cost of Cultivation Survey Data, Directorate of Economics & Statistics, M/o OF Agriculture & Farmers' Welfare

Annexure 6: Minutes of 1st meeting of the Task Force

F.No. 7(11)/2018-G&R
Government of India
National Institute for Transforming India
(Governance & Research Vertical)

Subject: Minutes of the first meeting on the Task Force on Sugarcane & Sugar Industry, held under the chairmanship of Prof. Ramesh Chand, Member, NITI Aayog on 21.1.2019 in Conference Room No. 228, NITI Aayog

A meeting of the Task Force on Sugarcane and Sugar Industry was held under the Chairmanship of Prof. Ramesh Chand, Member NITI Aayog on 21st January 2019 at 3.00 PM in Committee Room No. 228, NITI Aayog. The meeting was held to find long term solutions for sugarcane and sugar industry so as to rationalise their dependence on state assistance while at the same time encourage farm diversification to reduce adverse impact on the water sector. The list of participants is given in the **Annexure**.

1. **Dr. Yogesh Suri, Senior Adviser (G&R), NITI Aayog** welcomed the participants to the first meeting of the Task Force. After a quick round of introductions, he gave a brief background of the meeting and requested the chairman of the Task Force to make his opening remarks.

2. **Prof. Ramesh Chand, Member, NITI Aayog** highlighted that over the last few years, the sugar sector has been facing a number of challenges. In order to alleviate the problems of the industry especially in clearing sugarcane arrears, the Government has announced various packages in form of interest subvention, production assistance, export incentives, and so on. However, there is a need to have a long term solution for the sector so that the dependence on Government does not become a recurring feature. He observed that India has been producing 30% sugar in excess of the domestic demand. This can also be attributed to better recovery from sugarcane and introduction of new varieties of crop. Therefore, a plan to handle the issue of excess production need to be conceptualised. The first option is to consider exporting the surplus sugar. However, exports also have their limitations in the backdrop of declining global prices. Resultantly, there is build-up of stocks, farm distress and a host of other challenges for the sector. He added that second option is to divert the sugarcane for production of ethanol, for which steps are already being taken.

3. **The Chairman** added that sugarcane has much higher profitability of about 69% when compared to rice-wheat crop (in rotation during the year) and 62% compared to wheat-cotton rotation. This is one major reason why the area under sugarcane cultivation has been expanding. He suggested that one option before the Committee could be to look at a 'set aside' scheme wherein some incentive could be considered for farmers for not growing sugarcane. This would require advance planning and making proper estimates of the production and consumption pattern. He indicated that if 30% of sugarcane area is to be diverted, introduction of such a scheme could cost about ₹ 9,200 crore. However, the country would benefit from reduction in subsidy/ incentive outgo to the sugar/ sugarcane sector and large quantities of water can be saved as sugarcane is considered a water guzzling crop.

4. **Shri R. P. Gupta, AS (Energy), NITI Aayog** pointed out that the persistent rise in sugarcane support prices attract farmers and encourage them to increasingly engage in sugarcane cultivation. This may be one of the reasons for overproduction in the sugar sector. He

suggested that if the States decide to continue hiking the procurement price of sugarcane over and above the Central Government determined Fair & Remunerative Price (FRP), then the Central Government may not be held responsible for bailing out the sugar sector time and again.

5. **Shri Avinash Verma, Director General, Indian Sugar Mills Association**, in his presentation, gave a broad overview of the industry in terms of number of mills (530), production (31 million tonnes), consumption (26 million tonnes), annual turnover (₹ 1 lakh crore), area under cultivation (5 million ha), number of farmers (25-30 million) and employment (5 lakh workers). He pointed out that about 65% of production goes to bulk consumers and only 35% goes directly to households. He added that the sugar industry in India is experiencing a bumper production, and the closing balance on 30th September 2019 is expected to be around 124.2 lakh tonnes, the highest ever seen in the sector in India. Except in 4 financial years (due to drought in certain parts), sugarcane has always witnessed an excess production in the past 15 years. He thanked the Government for putting in place various measures for the sector and added that these may not be enough and more steps may still be required.

6. Highlighting the problems of the sector, DG, ISMA highlighted that the FRP of sugarcane has doubled since 2009-10. Thus, while the cost of inputs have gone up substantially, the ex-mill sugar prices have been fluctuating in line with the inventory and is often below the cost of production of sugar. He mentioned that sugar industry is paying 90-95% of its revenue to farmers in form of FRP/ SAP, whereas as per Rangarajan Committee recommendations, FRP should be around 70-75% of the revenue of the sugar industry. He reiterated that compared to competing crops such as paddy and wheat, the returns from sugarcane farming are substantially higher, thereby incentivising farmers to grow more sugarcane. This is resulting in major distortion in farm economics. Further, sugarcane is also attractive as it requires less efforts/ input costs, no middlemen and there is always an assured buyer in the form of the sugar mills. He indicated that if an international comparison is made with world leaders like Thailand, Brazil and Australia, it is found that India pays the highest cane price, making the industry uncompetitive. The cost of production in India is currently estimated at about USD 550 per tonne compared to Brazil's USD 345 per tonne. In addition to cane price, another issue faced by the sector is the associated inventory carrying costs and interest costs especially as production is undertaken in six months and sales take place throughout the year. He suggested that the short-term solution is to increase the ex-mill minimum selling price of sugar from ₹29/- to ₹36/per Kg. This would directly improve stock price valuation. It was also pointed out that the Sugar commodity was not price elastic, therefore, any increase in its pricing would not significantly affect its consumption. He added that while Government has announced quota for export of sugar with some incentive mechanism, there is no mechanism to ensure that these exports indeed take place. Thus, enforcement of these quotas may need to be accorded priority.

7. **Shri Yaduvendra Mathur, Additional Secretary, NITI Aayog** suggested that there is a need to have a relook at the cooperative model of sugarcane farming and re-examining whether FPO model may serve a more useful purpose.

8. In response to the Chairman's query regarding conversion costs of sugarcane to sugar, **Shri Suresh Kr. Vashishth, Joint Secretary, DFPD** clarified that out of ₹ 29/- (minimum selling price mandated by the Government to sugar industry), ₹ 26.84/- goes for paying FRP leaving only ₹2.16/- towards conversion cost. With regard to non-payment of sugarcane arrears, he

informed that the Sugarcane Control Order, 1966 has stipulated 14 days as the cut-off for payments to be made by the sugar mills to the farmers. If the same is not done, the due amount is considered as arrears. Therefore the payment of dues would have to be expedited and most of incentives given by the Government are aimed at clearing the dues of farmers.

9. **Shri Sanjay R. Bhoosreddy, Principal Secretary, Sugar Industry & Cane Development Department, Govt. of Uttar Pradesh** informed that currently there are four States that announce a State Advised Price (SAP) – UP, Uttarkhand, Haryana and Punjab. The others States follow the Central FRP. In respect of U.P., no increase in SAPs has been announced this year and increase in FRP is also moderate. He expressed that the quotas for export of sugar are desirable otherwise the prices of sugar may fall further. However, quotas need to be enforced as well. He added that while U.P. also came out with the soft loan scheme for mills, many of them could not avail due to non-cooperation from the banks, especially PNB, and stringent RBI guidelines. Another problem faced by sugar industry in U.P. is higher cost of exports as there is no direct access to ports. He added that there is lot of unrest amongst farmers due to rising arrears and the same need to be cleared at the earliest. He suggested that the prices of sugar in the market may be increased so as to shift a part of the burden on farmers, to the final consumers.

10. **Shri Sandeep Poundrik, Joint Secretary, MoPNG** mentioned that ethanol is being promoted by the Government as it will reduce import dependence on crude oil and is also considered as a cleaner fuel. He mentioned that about 330 crore litres of ethanol is required to achieve 10% blending under Ethanol Blending Project (EBP) and current level of achievement is around 4%. By 2022, the requirement may go to 450 crore litres indicating need for increasing distillation capacity. For increased distillation capacity DFPD has come up with the proposal which includes standalone distilleries also. He observed that with 700 million metric tonne of sugarcane, Brazil is able to produce about 28-30 billion litres of ethanol, while India with about 320 million metric tonne of sugarcane production is able to produce only 1.5 billion litres. Therefore, there is huge potential to increase ethanol production in the country. He also mentioned that deliberations with respect to 20% ethanol blending are underway, which is being resisted by some of the automobile companies.

11. DG, ISMA expressed that there is a need to increase the target from 10% blending to 20% at least in major States/ cities. Besides, there is need for longer term policy (3-5 years) for ethanol especially in terms of prices. Shri Bhoosreddy informed that in Ethanol Blending Programme, there were issues of State laws but now they have been streamlined. However, the issues of lifting of ethanol remains to be addressed especially as production is expected to increase significantly in U.P. by November 2019.

12. DG, ISMA stated that the Commission for Agricultural Costs & Prices (CACP) has been recommending a Revenue Sharing Formula (RSF) for sugar. However, the same has not been accepted by the Government and emphasis is more on fixing FRP as per the CACP recommendations. Under this new recommended system, farmers would get the FRP for their sugarcane and the mills would have to pay RSF. At times of difference between FRP and RSF, the Government would have to fill the gap through a special fund to be created.

13. Summing up the discussions, the Chairman indicated that there are a number of issues facing the sector. While discussions need to continue in the next round, he requested industry representatives to look at the issue from several perspectives including environmental factors as well, citing the case of jaggery production. Dr. Suri, requested the participants to

submit their representation in writing as well for consideration of the Task Force and to facilitate preparation of the report.

The meeting ended with a vote of thanks to the Chair and the participants.

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Annexure

Subject: Minutes of the first meeting on the Task Force on Sugarcane & Sugar Industry, held under the chairmanship of Prof. Ramesh Chand, Member, NITI Aayog on 21.1.2019 in Conference Room No. 228, NITI Aayog

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List of Participants

1. Prof. Ramesh Chand, Member, NITI Aayog - in Chair
2. Sh. Yaduvendra Mathur, Additional Secretary (KIH), NITI Aayog
3. Sh. R. P. Gupta, Additional Secretary (Energy), NITI Aayog
4. Shri Rajeev Ranjan, Additional Secretary, Department of Expenditure
5. Dr. Yogesh Suri, Sr. Adviser (G&R), NITI Aayog
6. Shri Sanjay R. Bhoosreddy, Principal Secretary, Sugar Industry & Cane Development Department, Govt. of Uttar Pradesh
7. Shri Santosh Sarangi, Jt. Secretary, Department of Commerce
8. Shri Suresh Kumar Vashishth, Jt. Secretary, Department of Food & Public Distribution
9. Shri Sandeep Poundrik, Jt. Secretary, Ministry of Petroleum & Natural Gas
10. Dr. N. R. Bhanumurthy, Professor, National Institute for Public Finance & Policy
11. Shri Suresh K. Malhotra, Agriculture Commissioner, Department of Agriculture Cooperation & Farmers Welfare
12. Sh. Neeraj Singhal, Director (G&R), NITI Aayog
13. Shri S. K. Srivastava, Additional Director, Ministry of Environment, Forests & Climate Change
14. Sh. Desh Gaurav Sekhri, Consultant, NITI Aayog
15. Shri Jitendra Juyal, Under Secretary, Department of Food & Public Distribution
16. Sh. Ankush Das, Young Professional, NITI Aayog
17. Ms. Phalasha Nagpal, Young Professional, NITI Aayog
18. Ms. Pallavi Seth, Young Professional, NITI Aayog

Representatives of Sugar Industry

19. Shri Avinash Verma, Director General, India Sugar Mills Association
20. Shri R. P. Bhagria, Chief Executive Officer, All Indian Sugar Trade Association (AISTA)
21. Shri Ravi Gupta, President, Shree Renuka Sugars [and member of AISTA]
22. Shri Prakash Naiknavare, Managing Director, National Federation of Cooperative Sugar Factories Ltd

Annexure 7: Minutes of 2nd meeting of the Task Force

F.No. 7(11)/2018-G&R
Government of India
National Institute for Transforming India
(Governance & Research Vertical)

Subject: **Minutes of the second meeting on the Task Force on Sugarcane & Sugar Industry, held under the Chairmanship of Prof. Ramesh Chand, Member, NITI Aayog on 30.08.2019 in Conference Room No. 134, NITI Aayog**

The second meeting of the Task Force on Sugarcane and Sugar Industry was held under the Chairmanship of Prof. Ramesh Chand, Member NITI Aayog on 30th August 2019 at 11.00 AM in Committee Room No. 134, NITI Aayog. The meeting was called to discuss the findings and recommendations contained in draft report of the Task Force circulated to the Members of the Task Force. The list of participants is given in the **Annexure**.

14. **Dr. Yogesh Suri, Senior Adviser (G&R), NITI Aayog** welcomed the participants to the meeting. He gave a brief background about the meeting and then gave a detailed presentation on the draft report. The topics discussed in the presentation include the broad findings on the status of the sugarcane and sugar industry, the Task Force's observations and recommendations keeping in view the Terms of Reference of the Task Force.

15. **Prof. Ramesh Chand, Member, NITI Aayog and Chairman of the Task Force** expressed the need for finding long term solutions to the problems faced by the sugarcane and the sugar sector and any recommendations implemented today would have perceptible visibility on ground over the next 2-3 years. Various issues raised during the presentation and discussions thereon are given in the following paras.

Pricing Policy of Sugarcane and Sugar

16. The presentation highlighted that one of the main problems facing the industry was that the Fair & Remunerative Price (FRP) of sugarcane was well above the cost of cultivation of the crop. The Chairman opined that Commission for Agricultural Costs & Prices (CACP) has been fairly generous in the fixation of FRP of sugarcane over the last many years without meticulously linking them with the projected level of C_2 and A_2+FL costs of sugarcane or the market prices of sugar. As a result, year on year FRP has been increasing significantly while sugar prices have fluctuated. The Government's proposal of setting the minimum selling price of crops at 1.5 times the A_2+FL cost of cultivation was not meticulously observed due to historically high prices of sugarcane. The problems got compounded due to even higher levels of State Advised Prices (SAP) for sugarcane in States such as Uttar Pradesh (UP), Haryana, Punjab and Uttarakhand and Tamil Nadu (till recently). The Chairman suggested that there is a need to analyze correlation between State's SAP and its sugarcane arrears which is most likely to be positive. On the same note, it was suggested that States which prescribe SAP may be requested to bear the burden of additional prices themselves.

17. The Chairman expressed that historically sugar prices used to move in cycles but over the last few years excessive production continued year after year and one reason could be measures taken by Government for farmers and industry coupled with better yields/ recovery of sugarcane. Dr. Suri expressed that during the current sugar season (2019-20) there is a

possibility that sugar production may not be high on account of flooding in various parts and resultant impact on sugarcane crop. However, high opening balance of 142 MT in current season remains a concern which may curtail any upward pressure on prices arising out of lower sugarcane production. Moreover demand of sugar has remained stagnant over the last many years. With this backdrop, it would be desirable to explore alternate avenues and diverting a part of sugarcane production away from sugar.

18. The presentation further elaborated on the difference between international and domestic prices of sugar (both wholesale and retail); sugarcane arrears over the last few years; buffer stocks of sugar; and the need to further increase the Minimum Selling price (MSP) of sugar which was earlier hiked from ₹29/Kg to ₹31/Kg.

Rangarajan Committee

19. It was informed that a number of Committees were set up over the last few decades to reform the sugarcane and sugar industry. However, amongst the most important Committees set up in the recent period was the Committee set up in 2012 under the Chairmanship of Dr. C. Rangarajan, the then Chairman of EAC-PM. While a few recommendations of the Committee were implemented, many others have not been acted upon by states and therefore need to be addressed. It was noted that a prominent recommendation of the Rangarajan Committee is a need to implement the Revenue Sharing Formula. However, only Tamil Nadu has implemented this recommendation, the expenses of which are being borne by the State Government itself. While Karnataka and Maharashtra have also passed similar State Acts they are yet to implement the formula.

Government Control over the Industry

20. **Shri S.K. Vashishth, JS, DFPD** informed that a newly implemented quota system is being followed, wherein, each sugar mill is permitted to sell only a specified quantity of sugar each month. The idea is not to flood the market which is likely to depress domestic prices further. He added that recent introduction of MSP of sugar and its subsequent hike by ₹ 2 per kg has significantly improved realisation of the industry and resultant reduction in sugarcane price arrears. The Chairman expressed that in the production of sugar, both the input and output was controlled by the Government. No other industry is so highly regulated like sugarcane and sugar and there is a need to undertake reforms by removing some controls. The main problem with the industry is that the mills are mandated to pay an exceedingly high FRP for inputs which are not related to output prices which may need to be addressed. It was also pointed out that if price of sugar falls significantly, it would result in closure of many sugar mills, affecting farmers and future sugar production.

21. **Shri N. Ashok Kumar, Director, M/o Commerce** opined that India need not be worried about years of slump in production. In such cases, to fill the gap between demand and supply, India may rely on importing sugar from other producing nations (at low prices) whose climatic zones differ from that of India.

22. A proposal for setting up a sugarcane/sugar regulator was also discussed, with consideration to the fact that the industry faces problems year on year. However, this was dismissed citing that the concerned Government Ministries/ Departments are capable enough to oversee the problems of the industry.

Ethanol Blending and Brazil example

23. The practice by Brazil in utilising ethanol produced from sugarcane as vehicular fuel, which has been mentioned in the report, was discussed. **Shri Rohit Mathur, Director, MoPNG** opined that 10% ethanol blending target as at present is considered optimum for the vehicles. In case this is to be increased to 15% as proposed by the Task Force, there may be a need to do some re-engineering of the vehicles and for that it would be pertinent to hold discussions with the automobile manufacturers. Another issue for India to consider Brazil model of utilising ethanol for powering vehicles opined by **Prof. Bhanumurthy, NIPFP** is that, at the moment, India's focus is more on Electric Vehicles (EVs), and therefore utilising ethanol to power vehicles does not synchronise well with the overall thrust of the Government. Dr. Suri suggested that MoPNG may hold consultations with the automobile industry and chart out a roadmap for utilising ethanol and increasing its blending for powering vehicles. As regards EVs, Government has already clarified that there is no proposal to discontinue combustion engines and shift entire production capacity to EVs.

24. Director, MoPNG added that limited focus is being given on improving the capacity of ethanol production from sugarcane keeping in view large sugarcane production. These would require significant investments which are not happening in the scale required. While Government has already announced some incentives for increasing investment towards ethanol production, the mills are facing problems in availing the loans from the banking system for the same.

25. The Chairman opined that the purpose for cultivation of sugarcane should not be primarily for production of ethanol for the Ethanol Blending Petrol (EBP) programme. The primary and secondary purposes for cultivating the crop should be first for human consumption and then as animal feed and other purposes, respectively. It is to be noted that production of ethanol through sugarcane on its own consumes a lot of time and energy and therefore should purely be considered as a strategy for diversion of excess sugarcane.

Crop Diversion

26. With regard to diversion of sugarcane cultivation to other crops, it was recommended that a proper and thorough analysis should be made on what the feasible amount of area that needs to be diverted from sugarcane is from a demand perspective. **Shri Rajeev Ranjan, Addl. Secretary, DoE** suggested that under 15th Finance Commission recommendations water conservation should be incentivised. Besides, additional incentive to the farmer shifting to less water intensive crops proposed by Task Force may be linked with PM Kisan. **Shri Suresh K. Malhotra, Agriculture Commissioner, DAC&FW** informed that a scheme with regard to intercropping with pulses and millets under M/o Agriculture may also be considered under crop diversion strategy.

Recommendations of the Task Force

27. The recommendation of the Task Force on further increasing MSP of sugar to ₹33/Kg was deliberated upon. JS, DFPD opined that there was no firm rationale for calculation of proposed hike of ₹2/Kg in MSP. Member suggested that a comprehensive formula be conceptualised for assessing the sugar price as per the cost of cultivation of sugarcane, with consideration given to the present FRP and SAPs.

28. With regard to the Task Force's recommendation on payment of 60% of sugarcane price to farmers within the first 14 days, Dr. Suri explained that this amount fully covers the cost of cultivation of the crop. The remaining 40% is proposed to be paid in two instalments within a period of 3 months of purchase of sugarcane by the mills.

29. With regard to the recommendation on proposing to extend sugar under PDS similar to the mechanism of wheat and rice, JS, DPFD indicated that the proposal was earlier examined by the Department but was shelved since it did not add much value to the industry and only resulted in an additional burden to the Government exchequer. The Chairman opined that this recommendation may be retained for the time being.

30. AS, DoE recommended that the functions of the Sugar Division of DFPD may be segregated into two parts: the first part pertaining to cropping of sugarcane may be handled by the M/o Agriculture while the second part pertaining to matters relating to sugar policy may be handled by the DFPD. This was agreed to by the Chairman.

31. With regard to the recently drafted export policy of sugar, JS, DFPD informed that it was framed in compliance with WTO guidelines.

32. The proposed Price Stabilisation Fund could be considered as a sub-component of Sugar and Sugarcane Development Fund.

33. The recommendation on promotion of jaggery was based on the fact that a large section of the middle class and above was moving to healthier options for sweeteners. Jaggery in this regard needs to be standardised and its manufacturing be more scientifically oriented. DFPD, Bureau of Indian Standards (BIS) and National Institute of Sugar (NIS), Kanpur may take appropriate action on this recommendation.

Action Points

34. The Chairman suggested that the sugarcane and sugar industry is one such sector where policies should not be formulated without consulting the beneficiaries, i.e., the farmers. In this context a meeting may be scheduled with representatives of sugarcane farmers/ societies to seek their views and bring them on board with the recommendations of the Task Force. A suitable date to set the meeting may be fixed at the earliest.

35. An analysis on comparison between SAP of states and their sugarcane arrears is to be included in the report. Likewise a Table may also be considered giving minimum sugar price required for specific levels of FRP.

36. Members of the Task Force are requested to submit their feedback and views on the draft report for further revision. Based on inputs, the report may be finalised and submitted to the Government

The meeting ended with a vote of thanks to the Chair and the Members.

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Annexure

Subject: **Minutes of the second meeting on the Task Force on Sugarcane & Sugar Industry, held under the chairmanship of Prof. Ramesh Chand, Member, NITI Aayog on 30.08.2019 in Conference Room No. 134, NITI Aayog**

List of Participants

23. Prof. Ramesh Chand, Member, NITI Aayog - in Chair
24. Shri Rajeev Ranjan, Addl. Secretary (Exp), D/o Expenditure
25. Dr. Yogesh Suri, Sr. Adviser (G&R), NITI Aayog
26. Shri Suresh Kumar Vashishth, Jt. Secretary, Department of Food & Public Distribution
27. Dr. N. R. Bhanumurthy, Professor, National Institute for Public Finance & Policy
28. Shri Suresh K. Malhotra, Agriculture Commissioner, Department of Agriculture Cooperation & Farmers Welfare
29. Shri N. Ashok Kumar, Director, M/o Commerce
30. Shri N. Ramesh, Director, M/o Commerce
31. Shri Rohit Mathur, Director, M/o Petroleum & Natural Gas
32. Shri Neeraj Singhal, Director (G&R), NITI Aayog
33. Shri S. K. Srivastava, Additional Director, Ministry of Environment, Forests & Climate Change
34. Shri Desh Gaurav Sekhri, OSD, NITI Aayog
35. Shri Manoj Sharma, US (Sugar), D/o Food & Public Distribution
36. Shri Ankush Das, Young Professional, NITI Aayog
37. Shri Venkata Narayana Angina, RO (G&R), NITI Aayog

Annexure 8: Minutes of 3rd meeting of the Task Force with farmer representatives of Maharashtra and Uttar Pradesh

F. No. 7(11)/2018-G&R
Government of India
National Institute for Transforming India
(Governance & Research Vertical)

Subject: **Minutes of the third meeting on the Task Force on Sugarcane & Sugar Industry, held under the Chairmanship of Prof. Ramesh Chand, Member, NITI Aayog on 27.11.2019 in Conference Room No. 122, NITI Aayog**

The third meeting of the Task Force on Sugarcane and Sugar Industry was held under the Chairmanship of Prof. Ramesh Chand, Member, NITI Aayog on 27th November 2019 at 3.30 PM in Committee Room No. 122, NITI Aayog. The meeting was called in order to interact with farmer representatives of Uttar Pradesh and Maharashtra to understand their views on challenges faced in cultivation of sugarcane. The list of participants is given in the **Annexure**.

37. **Dr. Yogesh Suri, Senior Adviser (G&R), NITI Aayog** welcomed the participants to the meeting. He gave a brief background and said that before finalising the report of the Task Force, it is pertinent to take on board the perspectives of the farmers. He then requested the Chairman of the Task Force to make his opening remarks.

38. **Prof. Ramesh Chand, Member, NITI Aayog and Chairman of the Task Force** expressed the need for finding long term solutions to the problems faced by the sugarcane and the sugar sector. He informed that there have been a number of issues over pricing and other complexities related to sugar and sugarcane sectors. Due to technology improvement and also due to use of high yielding varieties, production of sugarcane and recovery has improved resulting in much higher supply than demand. The country is grappling with 40 lakh tonnes of surplus sugar production. This has resulted in a slump in the domestic sugar prices consecutively for the last few years. To tackle over-production of sugar, incentives to export sugar are considered; however, in order to adhere to India's commitments to WTO guidelines, export subsidy cannot be continued endlessly. Other sugar producing countries have complained against the support being provided by India to the sugar sector. The matter is currently before a dispute settlement panel and Government of India has also constituted a panel to deliberate the issues.

    He mentioned that there are 5 stakeholders of the sugarcane and sugar industry viz. farmers, consumers, industry, economy, and environment. It is therefore important to take the interests of all into account while drafting policies on the sector.

    Finally, he indicated that a draft report has been made which will further incorporate the suggestions given by the farmer representatives in this meeting. He then requested the farmer representatives to give their views on the industry.

39. The concerns raised by the **farmer representatives of Uttar Pradesh** were as under:
    a) It was suggested farmers be prompted to grow sugarcane in only 65% of area. Remaining 35% area may be utilised for growing other crops, thus promoting crop diversification.
    b) More quantities of sugarcane juice should be directly used for production of ethanol, inferring a need for technology improvement in this regard.

c) A concern was voiced with regard to increasing rate of FRP for sugarcane and near stagnant MSP for sugar over the years. This has resulted in sugar mills having significant outstanding dues to the farmers. In this regard, the Minimum Selling Price for sugar may be increased to ₹35/kg.
d) It was pointed out that the fixed price of sugar, for sales by mills is also a challenge. This leads them to buy from farmers at the lowest price to increase their profits. In light of this, and on an assumption that an average household consumes only 5-10 kgs of sugar per month, it was suggested to allow raising sugar prices by a nominal amount. This wouldn't affect end consumers adversely, although, it would help mills and sugarcane farmers to a great deal.

e) It was suggested that sugar mills in UP should not be allowed to function without tagging order, which is related to cash credit limit of the mills from the banks.
f) To conserve water, drip irrigation may be mandated where sugarcane plantation is done in over 3 hectares of land holding.
g) To deal with challenge of wildlife and stray animals destroying crops, use of solar fencing instead of barbed wire was suggested. Furthermore, it would also help end injuries to animals from barbed wires.
h) Given that sugarcane has a 12-14-month crop cycle, if payments are delayed it affects the capacity of sugarcane farmers to invest for the next cycle. Therefore, dealing with delayed payments is very crucial.
i) There are concerns over rising labour costs in the state which has reduced profitability of sugarcane farmers.
j) It was also brought to the Chairman's attention that there had been a near doubling of electricity bills in the state over the last few years which has increased the cost of production of sugarcane.
k) A request was made to provide 80% subsidy to farming equipment including small tractors as the small and marginal farmers find costs unaffordable. While there is a scheme operated by the State, subsidy is reimbursed after a delay of 3 months or more and small farmers are not in the position to take the benefit of these subsidy schemes which require 100% upfront payment to buy the equipment / machinery. Such subsidy would also help in intercropping.
l) Along with interests of consumers of sugar, those of sugarcane producers should also be taken into account.

40. On behalf of all 30-32 lakh sugarcane **farmers of Maharashtra**, representatives expressed great appreciation and gratitude towards NITI Aayog for being invited to share their concerns to a Government body. They made the following points:-
    a) The challenge of climate change in recent years when either drought or floods has dominated cropping cycle, restricts their ability to switch to alternate crops. This is because these weather conditions lead to poor forecasting and the risk of crop failure is higher with other crops. It is only paddy and sugarcane that are climate resilient.
    b) The suggestion made by their UP counterparts on drip irrigation for sugarcane cultivation was reiterated by them. It was opined that drip irrigation provides the dual benefit of higher productivity and water saving. It was argued that the money saved from lesser water use through drip irrigation could be used to provide relief to farmers. This would make it environmentally conducive and economically rational without affecting state's fiscal capacity adversely.
    c) The diversification of end use of sugarcane being facilitated by the Government was appreciated. A reference was made to the National Biofuels Policy 2018 which expands

the use of raw material for production of ethanol. The specific inclusion of sugarcane and its by products in this policy could be a game changer in mitigation of sugarcane farmer woes. A request was made to ensure its effective and timely implementation.

d) While sugar consumption might reduce in coming years given the shift towards healthy lifestyle in the country, it was acknowledged that, there is still significant scope for sugarcane production by switching to alternative end products which are relatively healthier such as jaggery.

e) It was also acknowledged that over 99% of their payment dues had been cleared in recent months. However, it was also brought to notice that, just a few months ago, up to 40% of their dues were unpaid. This severely constrained their farming activity.

f) The high cost of harvesting-and-transporting-plus-processing (H&T+P) in mills has led to reduction in final remuneration of farmers in Maharashtra. It was requested to review this pricing structure as well. The Maharashtra farmer representatives enquired if difficulty was faced by Uttar Pradesh farmers on taking on H&T+P activities themselves unlike in Maharashtra where it is undertaken by mills. The farmers from UP responded that in their State, the cost of H&T is borne by farmers and their bigger concern was that of high cost of labour.

g) There was a demand made to look into delayed payments of export subsidy to mills and farmers.

h) The need of diversification of crops in farm fields being made by the Government was agreed upon. However, like counterparts from Uttar Pradesh, Maharashtra farmers expressed concern that different crops require varied soil and weather conditions and it isn't conducive to experiment with different crops by farmers given the scale of majority of farming operations.

i) There was a suggestion to look at an opportunity to use organic farming within sugarcane sector to raise viability for farmers.

j) The end result of these discussions and deliberations around sugarcane farmers, it was pointed out, should lead to policies which ensure improvement of quality of life for farmers. There should be focus on relative improvement in a farmer's lifestyle as experienced by labour in different sectors of the economy.

41. Representative of **Government of Uttar Pradesh**, **Shri. Rajesh Mishra, Dy. Cane Commissioner (Meerut)** mentioned that there are a few mills whose accounts have become NPA with the banks and they are not able to issue tagging orders. Nevertheless, in U.P. about 85% of cane dues have been cleared already. He suggested that a mechanism for differential pricing for industry and consumers should be developed. Lastly, the concern on sugar export subsidy not being adequately received was raised.

42. Representative of **Government of Maharashtra, Shri Uttam S. Indalkar, Director, Sugar Cooperation Department** pointed out that jaggery, which is in need to be promoted is only grown in 3 to 4 districts of the state. Further promotion of this healthier alternative to white sugar is necessary.

43. **Shri Praveen Mahto, Economic Adviser, Department of Commerce** informed that India does have a provision to provide export subsidy in a phasing out manner up to the year 2023. After this date, as per WTO commitments, all subsidies given for agricultural export should be stopped. The concern on India's sugar being internationally uncompetitive as per pricing was raised.

44. **The Chairman** explained the mechanism of fixing Fair Remunerative Price (FRP) to farmer representatives. He expressed confidence in the comprehensive surveys carried out by Government bodies to work out approximate cost of production of sugarcane. He pointed out that Commission for Agriculture Costs and Prices (CACP) takes into account interest payments up to a year while recommending FRP to the Government. He also agreed to provide literature on mechanism of calculation of sugarcane price by CACP to farmer representatives. The Chairman explained that while some individual farmers might feel that cost of production approximation by Government is less, the cost fixed is an average which is fair for farmers in overall terms.

    It was remarked that farming is an economic activity which would be carried out only if it is profitable. Hence the objective of these deliberations should be to find ways to ensure farmers have fair conditions in sugarcane sector in order to ensure profitability. He informed that a lot of sugarcane sector challenges come from over production and a 10-15% reduction in overall production can mitigate most challenges in the sector.

    He asked farmer representatives to appreciate the efforts being taken by Government to stabilise farming activity. He gave the example of Government ensuring that the cost of urea was stable over the last 10-15 years helping containment of cost of production for farmers.

    The Chairman explained the overall fiscal concerns of Government to farmer representatives. He remarked that the combined tax to GDP percentage of the central and state government remains at only 16%. Hence, if the Government gives in to raising subsidy amounts to sugarcane farmers, they would be constrained on other fronts such as infrastructure expenditure which is also extremely essential for the nation.

    Lastly, he requested representatives of both state governments to look into concern of delayed export subsidy payments and provide details on the percentage of farmers who get delayed payments in the sugarcane sector.

The meeting ended with a vote of thanks to the Chair and the Members.

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Annexure

Subject: **Minutes of the third meeting on the Task Force on Sugarcane & Sugar Industry, held under the Chairmanship of Prof. Ramesh Chand, Member, NITI Aayog on 27.11.2019 in Conference Room No. 122, NITI Aayog**

List of Participants

38. Prof. Ramesh Chand, Member, NITI Aayog **- in Chair**
39. Shri R. P. Gupta, Additional Secretary, NITI Aayog
40. Dr. Yogesh Suri, Sr. Adviser (G&R), NITI Aayog
41. Shri Praveen Mahto, Economic Advisor, Department of Commerce
42. Shri Suresh K. Malhotra, Agriculture Commissioner, Department of Agriculture Cooperation & Farmers Welfare
43. Dr. N. R. Bhanumurthy, Professor, National Institute for Public Finance & Policy
44. Shri Manas Choudhury, Joint Advisor, NITI Aayog
45. Shri Makarand Phadke, Director, Department of Food & Public Distribution
46. Shri Neeraj Singhal, Director (G&R), NITI Aayog
47. Shri Rajesh Mishra, Deputy Cane Commissioner, Meerut, Govt. of Uttar Pradesh
48. Shri Uttam S. Indalkar, Director, Sugar, Govt. of Maharashtra
49. Shri Desh Gaurav Sekhri, OSD, NITI Aayog
50. Dr. R. B. Lal, Scientist 'E', Ministry of Environment, Forest & Climate Change
51. Shri. Sushil T. Williams, Deputy Secretary, Ministry of Petroleum & Natural Gas
52. Shri Nitesh Bhasin, Under Secretary, Department of Food & Public Distribution
53. Shri Ankush Das, Young Professional, NITI Aayog
54. Shri Satwik Mishra, Young Professional, NITI Aayog
55. Shri Venkata Narayana Angina, RO (G&R), NITI Aayog

Farmers' Representative

56. Shri Shyamvir Tyagi, Saharanpur, Uttar Pradesh
57. Shri Jaiveer Singh, Bulandshahar , Uttar Pradesh
58. Shri Kaushal Kumar Mishra, Saharanpur, Uttar Pradesh
59. Shri Lakshmi Pratap Mall, Kushinagar, Uttar Pradesh
60. Shri, Sanjiv Ganapatrao Mane, Sangli, Maharashtra
61. Shri Pandurang Balwant Thorat, Pune, Maharashtra
62. Shri Vittal Namdeo Pawar, Pune, Maharashtra
63. Shri Shivanand Nagnath Darekar, Solapur, Maharashtra
64. Shri Chandrakant Annaso Bhoje, Kolhapur, Maharashtra