Issues and Concerns of Sugarcane in Uttar Pradesh

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Abstract - Recently, the Union government approved an Rs. 6,000-crore interest-free loan to the sugar industry to clear cane arrears to farmers at Rs. 21,000 crores. Sugar mills will prepare a list of farmers whose dues they must clear, and banks will transfer the amount to the Jan Dhan accounts of cane growers. The Cabinet Committee on Economic Affairs also decided that the loans be given to units that cleared at least 50 per cent of their arrears before June 30. This is the Centre's second time issuing an interest-free loan to millers to clear arrears. In December 2013, the government gave an interest-free loan of Rs. 6,600 crore.

The Indian Sugar Mills Association said this did not address the basic problem of surplus sugar and depressed prices. The industry, which is demanding the creation of a two million-tonne buffer stock of sugar on government account to reduce stocks, a government agency like the FCI or MMTC, STC or APEDA could instead buy out 2.5-3 million tonnes of surplus sugar from the industry to help it reduce stocks and pay up the farmers.

Union Minister told journalists after the Cabinet meeting that the Centre had already taken several measures, including an increase in sugar import duty to 40 per cent, raising export subsidy on raw sugar and an increase in ethanol prices to promote its blending with petrol.

There are diverse views of the Union government and the sugar industry, and both are correct in their sense. But the issue is that problems faced by farmers/growers of sugarcane are not ending. One should have to look deeply into this concern. The present report analyses the issues and concerns related to sugarcane in Uttar Pradesh, where there is a significant potential to produce sugarcane and sugar. The report contains the whole scenario of sugarcane in India, especially in Uttar Pradesh and its related problems. Uttar Pradesh, the largest producer of sugarcane, should be deeply examined in case of increasing sugar surplus with rising cane arrears and their problems so that policy making could be made more effective and help the farmers and mill owners get rid of their problems.

Keywords - Sugar industry, Cane arrears, Surplus sugar, Sugarcane farming, policy making

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1. INTRODUCTION

Sugarcane is the world's largest crop by production quantity. The world demand for sugar is the primary driver of sugarcane agriculture. Other than sugar, products derived from sugarcane include molasses, bagasse, ethanol and some other by products. In India, between the sixth and fourth centuries BC, the Persians, followed by the Greeks, discovered the famous "*reeds that produce honey without bees*". They adopted and then spread sugar and sugarcane agriculture.

Brazil is the leading producer of sugarcane followed by India. Other major producers of sugarcane are China, Thailand, Pakistan and Mexico. Agro-climatic regions for sugarcane cultivation in India can be divided into two distinct regions viz., tropical and subtropical. Sub-tropical states includes U.P., Punjab, Haryana, Bihar etc. and tropical states are Andhra Pradesh, Karnataka, Maharashtra etc. Uttar Pradesh is the largest producer of sugarcane and second largest producer of sugar after Maharashtra. Sugarcane production achieved a record of 128.8 million tonnes in 2011-12 after that 132.4 million tonnes in 2012-13 and then increased to 134.6 million tonnes in 2013-14. But instead of increasing sugar and sugarcane production in the state, there has been continuous distress among farmers and sugar industry mill owners.

The reasons for the problem faced by farmers/growers of sugarcane in Uttar Pradesh may be due to delay in arrival of monsoon, delay in cane

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crushing operations, non-payment of sugarcane arrears to farmers (may be due to high SAP), high cost of production- inefficient technology, uneconomic process of production, unable to pay loans or indebtedness, small and fragmented land, negligence of state government towards farmer's needs, absence of risk-management prices and many more.

1.1 Overview

Sugarcane accounted for 6.0 percent of the total value of agriculture output and occupied about 2.5 percent of India's gross cropped area in 2013-14. It provides raw material for the second largest agro-based industry of sugar. India is self-sufficient in sugarcane and sugar production.

1.1.1. Production of Sugarcane and sugar in India

Sugar and cane production over the years can be seen in Table 1 as follows:

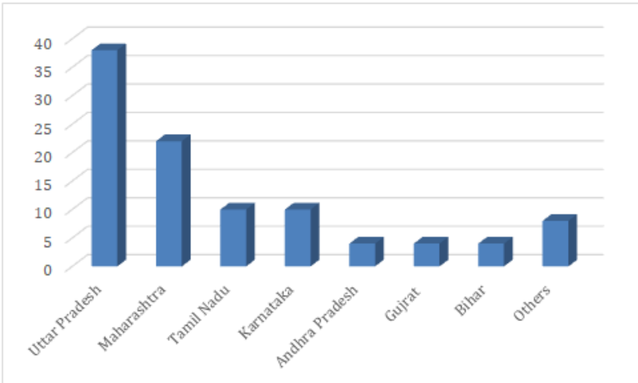
Year	Sugarcane (million tonnes)	Sugar (million tonnes)
2000-01	296	19
2001-02	297	18
2002-03	287	20
2003-04	234	14
2004-05	237	13
2005-06	281	19
2006-07	356	28
2007-08	348	26
2008-09	285	15
2009-10	292	19
2010-11	342	24
2011-12	361	26
2012-13	341	25
2013-14	348	24

Sources: DES and Directorate of Sugar, DFPD

Sugarcane production achieved a record of 361.0 million tonnes in 2011-12 after which it declined to 341.2 million tonnes in 2012-13 and then increased to 348.4 million tonnes in 2013-14. Sugar production at 26.3 million tonnes in 2011-12 ebbed to 25.1 million tonnes in 2012-13 and 24.4 million tonnes in 2013-14.

1.1.2. State-wise Shares in Production of Sugarcane (2014-15)

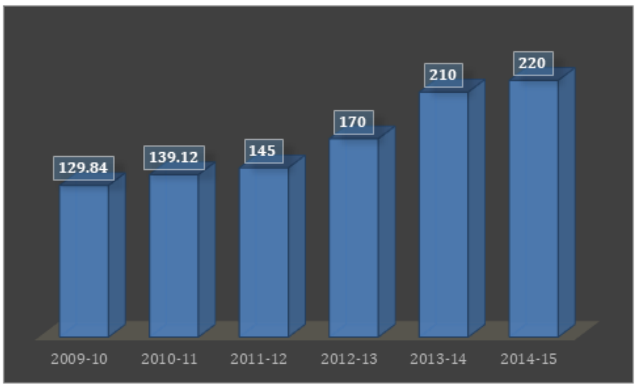
There are two distinct agro-climatic regions of sugarcane cultivation in India, viz., tropical and subtropical. The sub-tropical sugarcane region includes the states of Bihar, Haryana, Punjab, Uttar Pradesh (UP) and Uttarkhand which accounted for 55 percent of the total area under cultivation and 47 percent of the total production. Major cane producing states in the tropical region are Andhra Pradesh, Gujarat, Karnataka, Maharashtra, Tamil Nadu, accounted for around 42 percent of total area under cultivation of sugarcane and 51 percent of the total production. State-wise sugarcane production can be seen in the following chart:



Sources: DES and Directorate of Sugar, DFPD

1.1.3. Sugarcane pricing

The pricing of sugarcane is governed by the statutory provisions of the Sugarcane (Control) Order, 1966 issued under the Essential Commodities Act (ECA), 1955 through Fair and remunerative price. The FRP per quintal has increased from Rs. 129.84 in the 2009-10 sugar season to Rs. 220 in the 2014-15 sugar season. This can be seen in the chart



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Sources: DES and Directorate of Sugar, DFP

1.1.4. Yield and Area under sugarcane

The area under sugarcane has shown an increasing trend overtime whereas yield before 2011-12 has increased with the passing years but after that it has decreased in 2012-13 and then increased in 2013-14. But the increase in 2013-14 is less than the yield in 2011-12.

Year	Area	Yield
2004-05	3662	64752
2005-06	4202	66919
2006-07	5151	69022
2007-08	5055	68877
2008-09	4415	64553
2009-10	4175	70020
2010-11	4885	70091
2011-12	5038	71667
2012-13	4999	68254
2013-14	5017	69442

2. SUGARCANE IN UTTAR PRADESH

2.1. Current scenario

As per the new policy, in the event of establishment of new sugar mills, expansion of the capacity of existing sugar mills, setting up of cogeneration plants and distilleries, the unit/company will be allowed the following exemptions and concessions for a maximum period of five years :-

i. Re-imbursement at the rate of five percent on the interest payable on the loans obtained from banks/ financial institutions/SDF on account of plant and machinery.

ii. Exemption from purchase tax on sugarcane.

iii. Exemption from reservation of molasses for country liquor.

iv. From the date of the first sale of molasses, an amount equivalent to the VAT deposited over five years along with the Central Sales Tax or 10 percent of the annual sales revenue whichever is less will be provided as interest-free loan payable after five years from the date of distribution of the loan.

v. Exemption from administrative charge on molasses.

vi. Exemption from stamp duty and land registration fee.

vii. Re-imbursement of society commission to the extent of 75 per-cent.

2.2. Area (thousand ha), Production (thousand tonnes), Yield (kg/ha) of sugarcane crop in Uttar Pradesh

Sugarcane take generally one year to mature in sub-tropical states (U.P., Punjab, Haryana, Bihar etc.) called “Eksali” however in some tropical states it matures in 18 months (Andhra Pradesh, Karnataka, Maharashtra etc.) called “Adsali”. In India planting Seasons of Sugarcane in subtropical regions are September to October (autumn) and February to March (spring), whereas in tropical regions it is June to August (Adsali) and January to February and October to November (Eksali). Apart from this in some states like Karnataka and Tamil Nadu sugarcane planting continue throughout the year except few months.

Uttar Pradesh is the largest producer of sugarcane and second largest producer of sugar after Maharashtra. Sugarcane production achieved a record of 128.8 million tonnes in 2011-12 after that 132.4 million tonnes in 2012-13 and then increased to 134.6 million tonnes in 2013-14. The area under sugarcane production as well as yield has also shown an increasing trend after 2010-11.

Year	Area	Production	Yield
2004-05	1955	118716	60733
2005-06	2156	125470	58201
2006-07	2247	133549	59626
2007-08	2179	124665	57212
2008-09	2084	109048	52326
2009-10	1977	117140	59251
2010-11	2125	120545	56727
2011-12	2162	128819	59583
2012-13	2212	132428	59868
2013-14	2228	134689	60453

Source: Directorate of Economics & Statistics (DES), Ministry of Agriculture

3. PRICE POLICY

3.1. Fair and Remunerative Price

The concept of Statutory Minimum Price (SMP) of sugarcane was replaced with the ‘Fair and Remunerative Price (FRP)’ of sugarcane for 2009-10 and subsequent sugar seasons. The cane price announced by the Central Government is decided on the basis of the recommendations of the Commission for Agricultural Costs and Prices (CACP) after consulting the State Governments and associations of sugar industry.

3.2. The Sugarcane Control (Amendment) Order, 2009

On October 22, the central government issued an Order to amend the Sugarcane Control Order, 1966. The Sugarcane Control Order, 1966, among other provisions, specified the method of computing the price to be paid by sugar mills to sugarcane farmers. It specified that the central government shall fix a minimum price for sugarcane (SMP). The minimum price had six factors:

(a) Cost of production of sugarcane.

(b) Return to growers of alternative crops.

(c) Availability of sugar at a fair price to consumers.

(d) Price of sugar sold by consumers.

(e) Recovery of sugar from sugarcane; an

(f) Realization from by-products such as molasses, bagasse.

It also said that an additional price above the SMP shall be paid based on a formula that provides for sharing of profits of the sugar mills with sugarcane producers. This formula is popularly called the Bhargava formula*.

The Amendment stated that the central government, while procuring levy sugar, would not pay any price in excess of that calculated on the basis of the Minimum Price (SMP) for sugarcane set by the central government. The Amendment order replaced the “minimum price” by “fair and remunerative price”. It included a seventh factor (g) reasonable margin to the growers of sugarcane on account of risk and profits. . It specified that the price of sugar will be based on the “Fair and Remunerative Price” (FRP) fixed for sugarcane, and will include the manufacturing cost, duties, taxes and reasonable rate of return. It also added that sugar mills shall not pay an additional price based on the Bhargava formula*.

3.3. Implications of the Ordinance and the Amendment Order

1. Now, the central government shall not pay any price for levy sugar higher than that based on MSP. This is expected to save Rs. 14,000 crore that the central government would have to pay sugar mills otherwise.

2. The central government shall pay a price for levy sugar based solely on the FRP that it sets for sugarcane. It will not take into account any higher price paid or payable for sugarcane by sugar mills.

3. The FRP will include a reasonable margin to the sugarcane grower for risk and profit.

4. If a state government fix a price for sugarcane (such as SAP) which is higher than FRP, it will have to pay the difference between SAP and FRP to the sugarcane grower.

5. The sugar mills will not share its excess profits with the sugarcane growers, as mandated by the Bhargava Formula*.

The mill owners must compensate the farmers according to 2 different norms for giving them the sugarcane – FRP and SAP. The FRP and SAP are prices set by the different governments at which the mill owners will reimburse the farmers.

3.4. State Advised Price (SAP)

5 States fix another State Advised Price (SAP) of cane for mills in their State, which is usually substantially higher. SAP then becomes the minimum price for sugarcane that mills in that State are obligated to pay to farmers, thereby demolishing the FRP fixed by the Central Government. Based on the FRP, state governments work out the State Advised Price (SAP), which is decided after talks with sugar mill owners and sugarcane growers. Sugar mills will have to pay the higher of FRP or SAP.

Unfortunately, SAP is not based on any transparent, laid down economic criteria like the FRP. It has no linkage or relationship with sugar price realization of mills. SAP is set to fulfill the vote bank issues as sugarcane farmers form a large vote bank.

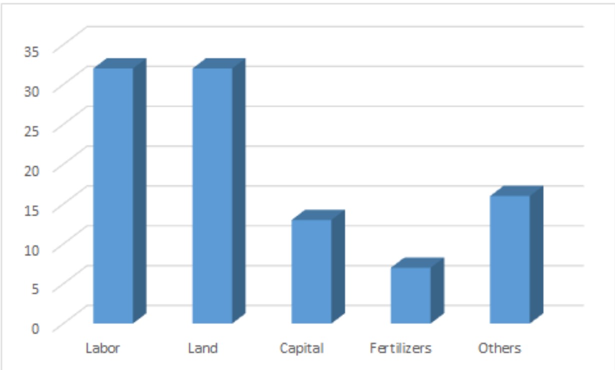
3.5. Comparison of FRP and SAP

Year	FRP for Sugarcane (Rs/Quintal)	SAP for sugarcane (Rs/Quintal)	Difference	Difference (in percent)
2009-10	129.84	165	35.16	21.30
2010-11	139.12	205	65.88	32.13
2011-12	145	240	95	39.58
2012-13	170	280	110	39.28
2013-14	210	280	70	25
2014-15	220	280	60	21.42

Source: U.P. Sugarcane development department

3.6. Share of Major Inputs in Total Cost of Production (C2)

Out of various factors of production and other inputs, labour and land accounted for 32 percent each in the total C2 cost of production. Given that wage rates, have been increasing rapidly in the recent years coupled with significantly high share in the total cost of production, it is imperative to ramp up farm mechanization in a big way so as to improve productivity. Land and labor have almost equal share in the cost of production, capital and fertilizers are as well important in production of sugarcane.



3.7. Sugar Policy

Sugar is an essential commodity under the Essential Commodities Act, 1955. The Central Government has been following a policy of partial control and dual pricing for sugar. Under this policy, a certain percentage of sugar produced by sugar factories is requisitioned by the Government as compulsory levy at a price fixed by the Central Government in every sugar season. Levy sugar is distributed under the Public Distribution System (PDS) at a uniform retail issue price throughout the country. The non-levy (free sale) sugar is allowed to be sold as per the quantity released by the Central Government under the regulated release mechanism.

The price of the levy sugar (up to sugar season 2008-09) is required to be determined by the Central Government. However, after the amendment order the determination of price of levy sugar has changed from 2009-10 sugar season. The prices are determined having regard to:-

a. The minimum price, if any, fixed for sugarcane by the Central Government up to sugar season 2008-09 and Fair and Remunerative Price (FRP) from 2009-10 sugar season onwards under this section.

b. The manufacturing cost of sugar.

c. The duty or tax, if any, paid or payable thereon.

d. The reasonable return on the capital employed in the business of manufacturing sugar.

4. INTER-STATE COMPARISON

4.1. Types of sugar mills

According to the Department of Food and Public Distribution, the sector-wise break-up of sugar mills in the country is as: public, private and co-operative. In 2011-12, 529 sugar mills were there. Public mills account for around 9 percent, private mills approximately 40 percent and the co-operative mills around 50 percent. In the recent past, the number of operational private mills and their share of sugar production has been increasing, while the number of co-operative mills has remained stagnant.

State	No of Sugar mills
Uttar Pradesh	124
Maharashtra	170
Karnataka	58
Tamil Nadu	43
India	529

Source: U.P. Sugarcane development department

4.2. Recovery rates

Recovery rates are average recovery of sugar from sugarcane. Other than sugar, products derived from sugarcane include falernum, molasses, rum, bagasse and ethanol.
State wise different recovery rates are shown overtime in the Table

State	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Andhra Pradesh	10.3	10.7	10.1	9.7	10.1	9.9	9.3	9.8	9.8	9.6
Bihar	9.3	9.6	9.5	8.7	9.2	9.3	9.5	9.3	9.1	8.9
Gujarat	10.9	10.9	10.8	10.7	10.9	9.5	10.5	10	10.6	10.8
Haryana	10.5	10.5	10.2	9.7	9.9	9.1	9.4	9	9.1	9.7
Karnataka	10.2	10.2	10.1	10.7	10.1	10.3	10.7	10.9	11.2	10.4
Maharashtra	10.9	10.9	11.4	11.4	11.8	11.5	11.5	11.3	11.7	11.4
Punjab	9.7	9.7	9.8	9.5	9.3	9.3	8.6	8.8	9.1	9.1
Tamil Nadu	9.9	9.9	9.6	9.3	9.3	9.6	8.9	9.1	9.4	9
Uttar Pradesh	9.8	9.8	9.8	9.5	9.3	8.9	9.1	9.2	9.1	9.2
Uttarakhand	9.8	9.8	9.6	9.5	9.8	9.2	9.2	9.3	9.1	9.2
All India	10.2	10.2	10.2	10.2	10.3	10.1	10.2	10.2	10.3	10.1

Source: Directorate of Sugar, DFPD

Highest recovery rates are seen in Maharashtra, which could be the reason for highest production of sugar in that state.

4.3. Gross and net returns

Profitability can be seen from two perspectives. The first is gross returns which are defined as gross value of output less costs A2+FL and the second is net returns which represents gross value of output over costs C2. The state-wise and All-India average returns (both gross and net) during 2010-11 to 2012-13 for sugarcane are presented in Table.

State	Cost A2+FL	Cost C2	Gross Value of Output	Gross Returns	Net Returns
Andhra Pradesh	72154	114551	146668	74514	32117
Haryana	51224	102140	152361	101137	50221
Karnataka	54094	92372	167199	113105	74827
Maharashtra	101115	147229	216373	115258	69144
Tamil Nadu	106167	135073	212273	106106	77200
Uttar Pradesh	44168	78000	130367	86199	52367
Uttarakhand	42918	73587	129391	86473	55804
All India	63986	101224	160437	96451	59213

Source: Comprehensive Scheme (CS) for studying the Cost of Cultivation of Principal Crops, DES

A2+FL cost includes all expenses in cash and kind on account of hired human labor, bullock labor, machine labor, seed, insecticides and pesticides, manure, fertilizers, irrigation charges and miscellaneous expenses including family labour.

C2 cost includes A2+FL cost, rental value of owned land and interest on own fixed capital.

Gross returns as percent of cost A2+FL is maximum for Karnataka at 209 percent. The rate of return over C2 cost during this period stands at 58 percent at all India level, and ranges from 28 percent in Andhra Pradesh to 81 percent in Karnataka.

5. CANE ARREARS

Of late, various state Governments have been announcing their own State Advised Prices (SAP, as in states like UP) which are usually way above the FRP. This, in turn, has led to mounting cane arrears over the last two years. The cane arrears were Rs. 9635 crores in July, 2014.

Uttar Pradesh, the largest producer of sugarcane, alone accounts for more than 60 percent of the total arrears. This is indicative of increasing inability of the sugar mills to pay the cane farmers leading to brewing discontent among the industry and farmers alike. This clearly signals that the pricing mechanism of SAP is unsustainable.

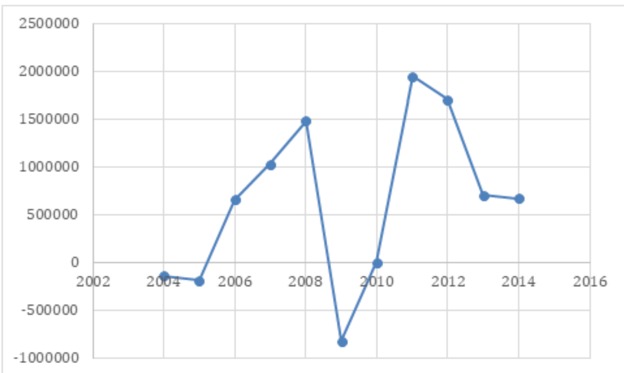
Year	Position as on	Arrears
2008-09	30.04.2009	709
2009-10	30.04.2010	2084
2010-11	30.04.2011	3172
2011-12	30.04.2012	7407
2012-13	30.04.2013	10990
2013-14	31.05.2014	15209
2013-14	31.07.2014	9635

Sources: DES and Directorate of Sugar, DFPD

6. COMPETITIVENESS

As we have seen in the above prospects, sugar mills have been producing more than what they sell and prices of sugar have shown a decreasing trend when compared to international price, clearly shows that there is surplus of sugar. It represents that; in this case, India should be the exporter of sugar, which is true, in fact. This can be explained with the help of trade flow taken for last 10 years, shown in the table and chart

6.1. Net Exports of sugar in India



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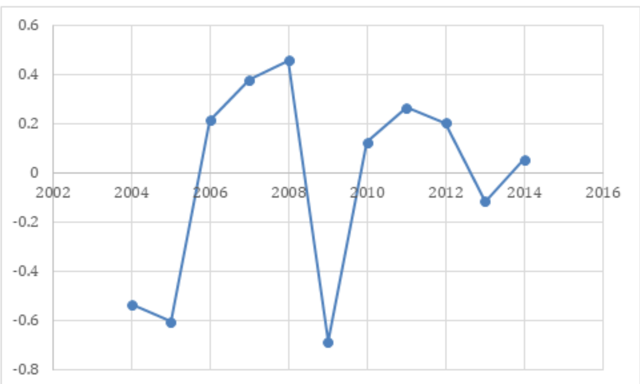
The above chart clearly shows that India; except few years, is an exporter of sugar. Being the net exporter of sugar, it can also be checked for revealed comparative advantage.

6.2. Revealed comparative advantage (RCA)

Year	Gross exports	Gross imports	Net exports
2004	74750.058	213329.733	-138579.675
2005	77661.962	267974.3	-190312.338
2006	680052.657	22567.586	657485.071
2007	1071322.078	40621.249	1030700.829
2008	1556295.06	69651.661	1486643.399
2009	95903.027	918489.57	-822586.543
2010	1039857.472	1036277.128	3580.344
2011	2075112.603	124127.523	1950985.08
2012	2185227.922	476471.774	1708756.148
2013	1161674.802	452313.277	709361.525
2014	1306197.906	632286.621	673911.285

As seen above, India has positive net exports of sugar. It can, therefore be assumed that India must have revealed comparative advantage* in sugar. To check for this, we take normalized RCA. The normalization means the index is suitable for cross country, cross sector and cross time comparisons. The formula for normalized RCA is (RCA-1)/ (RCA+1). An index of greater than 0 suggests that there is revealed comparative advantage in the given product. Normalized revealed comparative advantage over last ten can be seen in the following chart:

Normalized RCA



From the above 2 charts, it is cleared that RCA graph had a fluctuating trend. In some years there is advantage, whereas in some years, there is disadvantage in sugar. In the present time, there is comparative advantage that shows it is beneficial for India if it export sugar, this will also of great help to sugarcane mills as well as sugarcane growers.

7. CONCLUSION

Unreasonably high SAPs, without any linkage with either cost of production of cane or sugar price realization to mills, causes havoc by putting the finances of mills under tremendous stress, thereby adversely affecting capacity of mills to pay adequate and timely payment to farmers. Sugar industry does not know from where they would be able to generate funds to pay this kind of price to the farmers.

On a comparison with the Fair & Remunerative Price (FRP) of cane fixed by the Central Government for almost every year sugar season, the SAP fixed by U.P is clearly seen to be totally unjustified. The mills have incurred substantial losses in the every season and most certainly do not have the financial strength to survive another loss year and that too by such a huge margin. The mills in Uttar Pradesh may simply get wiped off if they have to bear such a huge burden.

In years of surplus sugarcane, when sugar prices fall, mills are unable to pay cane price on time to farmers. Cane price arrears mount, especially from the latter part of the crushing season, and farmers shift out of sugarcane to other competing crops. Shortage of sugarcane thus, in following seasons, results in shortage of sugar forcing sugar imports at high prices. The consumers pay high price, which benefits the farmers of another country, at the cost of Indian farmers and Indian consumers.

It is therefore, very urgently required that the respective Governments take immediate initiatives to take control of the situation, which may get worse with mounting losses, buildup of cane price arrears, diversion of area away from sugarcane. Government intervention in the matter urgently needed to save the ailing sugar industry and sugarcane economy:

(i) Advise State Governments that since FRP is fixed after considering the cost of production of cane and including profit and covering the risk of farmers, they should refrain from fixing another price like SAP.

(ii) Obligation of supply of 10% of production as levy sugar at a subsidized price should be removed as it causes losses of about Rs. 2000 crore to sugar mills in general and Rs.500-600 crore to UP mills specifically.

(iii) Ex-mill prices should be allowed to improve. The Central Government should not push down the same by releasing high non-levy sugar quota etc.

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(iv) Immediate announcement of permission for exports as mills need more cash flow during peak period of crushing i.e. mid-November to mid-April.

These steps would reduce the burden of the high increase in cane prices, at least partially & ensure adequate cane price payments on time to farmers. Also, increase in exports will help the mill to ensure that they will have adequate return, as India have revealed comparative advantage in sugar.

APPENDIX

Bhargava formula

The amount to be paid on account of additional price (per quintal of sugarcane) by a producer of sugar shall be computed in accordance with the following formula namely;

$$X = \frac{R - L + A - B}{20}$$

Explanation in this formula:

1.'X' is the additional price in rupees per quintal sugarcane payable by the producer of sugar to the sugarcane grower.

*2.'R' is the amount in rupees of sugar produced during the sugar year excluding the excise duty paid or payable to the factory by the purchaser.

*3.'L is the value in rupee, of sugar produced xxxx the sugar year, as calculated on the basis of the unit cost per quintal ex-factory, exclusive of excise duty.

4.' A' is the amount found payable for the previous year but not actually paid.

5.'B' is the excess or shortfall in realization from actual sales of the unsold stocks of sugar produced during the sugar year, as on 30th day of September which is carried forward and adjusted in the sale realizations of the following year.

Formula for revealed comparative advantage

(India's exports of sugar/ India's total agricultural exports)/ (World's total sugar exports/ World's total agricultural exports)

Calculation of RCA for last ten years

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