

# ***MINIMISING THE RISK AND MAXIMISING THE RETURN FOR THE SUGAR CANE GROWER***

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## **Abstract**

*If the problems faced by sugar cane growers are effectively and efficiently addressed, a big chunk of the problems faced by the sugar industry as a whole will have been addressed. Unfortunately some of the said problems remain unaddressed till date although remedies have always been at hand. Yet some problems remain unaddressed since finding a solution acceptable to all stakeholders of the sugar industry is not easy. Be that as it may, nothing prevents the government from helping the cane growers improve their bottom lines by accessing new strains of cane or for that matter from exposing the growers to superior cane harvesting technology. The researcher also concludes that cane pricing reforms cannot drag on for years. The reforms have to be finalised promptly and implemented effectively. Otherwise, the reforms will defeat the very purpose they are supposed to serve. Until the reforms are fully implemented, the government and the regulator will have to periodically initiate stop-gap measures perhaps to be replaced by another set of reforms. Completion of the sugar cane-pricing reforms will address the cyclical downturn in sugar prices. The most vital reform has to be the computation of sugar cane price in line with a revenue-linked formula. Announcement of state-advised price or SAP should precede the crushing operations. Unfortunately, the opposite happens most of the time, giving rise to avoidable uncertainties. Often Karnataka's state-advised price (SAP) is far ahead of the fair and remunerative price (FRP) prescribed by the government of India. If the SAP differs widely from the FRP, one of the two must be true: either SAP has been computed erroneously or FRP has been computed unfairly.*

*Given that FRP is worked out by a better equipped team – better equipped in terms of the inputs required for computing the price, it is obvious that the government of Karnataka has gone overboard in pricing the sugar cane in order to remain politically correct. Further, its stipulation that the price be paid upfront rubs salt into the sugar millers' wound. A slight difference between SAP and FRP is understandable but a conspicuous difference is indicative of biased pricing on the part of the state government. It is necessary to reduce the idling sugar inventory by moderating sugar production without at the same time affecting the livelihood of the sugar cane growers. This can be ensured by actively promoting and incentivising the export of raw sugar.*

**Keywords:** *Corporate Level Strategies, Apple Inc., Vision, Mission, Diversification, Mergers & Acquisition, iPods, Beats, Strategic Management.*

## **I. INTRODUCTION**

Sugar year 2016-17 has not been good for the country in general and the various stakeholders associated with the sugar industry, like cane growers, sugar millers and consumers, to name only a few, in particular. According to the sugar industry body, the Indian Sugar Mills Association (ISMA), relative to the previous year, production will be down by at least 15 percent. Production in Maharashtra and Karnataka, two of the major sugar-producing states has been hobbled by drought, leading to sugar mills closing down their crushing operations rather prematurely. The lower production volumes

notwithstanding, imports will not be necessary, with mills boasting of inventories carried over from the previous year. According to ISMA, the 2016-17 sugar season will close in September with 4.85 million tonnes of surplus stocks. India's domestic consumption of sugar is estimated at over 25 million tonnes per year. In fact, some unsold stocks of sugar will have to be carried over the next sugar year 2017-18. While production fell in Karnataka and Maharashtra, the northern state of Uttar Pradesh emerged as the top producer, thanks to growers raising a high-yielding cane variety, called Co0238. In sugar year 2017-18, the mills are likely to produce even more of sugar, leading to a rise in surplus, courtesy higher cane planting numbers, comfortable water levels in reservoirs and production in Maharashtra and Karnataka all set to normalise.

### 1.2 statement of the Problem

A big chunk of the sugar industry's problems can be addressed by ascertaining the problems that the sugar cane growers face and helping them minimise the risk and maximise the return associated with sugar cane-farming. The identified problems have to be addressed in a time-bound manner effectively. Additionally, measures have to be initiated to help the sugar cane growers minimise the risk and maximise the return from sugar cane farming.

### 1.3 Review of Literature

1. Sugar price in UP is likely to go up by INR 1 to INR 2 per Kg in the coming months with the Centre mulling to allow export of raw sugar (Shah, 2014). The proposal is under consideration of the Union food ministry. Sources in government as well as Indian Sugar Mills Association (ISMA) have confirmed that the export will have a cascading effect on sugar prices in UP, the second biggest sugar producer in the country. Sources in the government said the export will stop supply of sugar from Maharashtra and Karnataka. As a result, the supply

will dip significantly in UP leading to a rise in sugar prices. According to sources, around six lakh quintal sugar is offloaded on the borders of east UP from Maharashtra and distributed in the region. According to ISMA Director General Abinash Verma, around 40 lakh tonnes of surplus raw sugar will be exported. According to estimate, the total sugar production in the country till January 2014 was around 128 lakh tonnes. The export will thus bring down the stock considerably leading to rise in prices. But the government needs to match the export prices with the domestic prices through enough subsidy, according to Verma. The association has been demanding a subsidy of around INR 3,500 per tonne, which was agreed to by the group of ministers (GoM). The proposal will now be put before cabinet committee on economic affairs (CCEA). Despite low demand, UP continues to get large supplies of sugar from Maharashtra and Karnataka where the quality of sugarcane is considerably high. This has led to glut in UP markets. The Uttar Pradesh Sugar Mills Association (UPSMA) has been demanding incentives for the industry to keep it going. The dip in recovery cost forced the mills to stop operations in the state even as the UP government announced the state advisory price of INR 280 per month. This forced many farmers to sell off their produce to local jaggery units at much lower prices.

2. Vijayan Nair N, Director, Sugarcane Breeding Institute, Coimbatore, says that it is important to know the status of technology adopted by the farmers and the reasons for either accepting it or rejecting it (The Hindu, 2013). This will help scientists reorient their research. There are issues related to climate change and it is pertinent to know if the farmers and the scientist community are prepared to deal with it. Underlining the importance of intercropping in sugarcane cultivation, he says that intercropping should be a major initiative at the farm-level. Contrary to popular belief, sugarcane yield has

increased wherever it was taken up. Farmers in the region should be convinced to take up intercropping. Though nothing much has changed as far as the use of drip irrigation is concerned, the ground situation has changed dramatically in recent years with drought, labour shortage and so on, while the cost of sugarcane cultivation has increased. This is compounded by a decline in production. Though south Karnataka has been inching towards the highest productivity per hectare it has declined in the last couple of years. Comparison of yield of a particular variety when it was introduced with its current yield indicates a decline and this could be attributed to disease. He suggests tissue culture based solutions for the purpose. Sugar mills should establish soil testing laboratories. As to the increase in cost of sugarcane cultivation, he says mechanisation of production can alleviate the problem.

3. Vijayan Nair N, Director, Sugarcane Breeding Institute, Coimbatore, says that it is important to know the status of technology adopted by the farmers and the reasons for either accepting it or rejecting it (The Hindu, 2013). This will help scientists reorient their research. There are issues related to climate change and it is pertinent to know if the farmers and the scientist community are prepared to deal with it. Underlining the importance of intercropping in sugarcane cultivation, he says that intercropping should be a major initiative at the farm-level. Contrary to popular belief, sugarcane yield has increased wherever it was taken up. Farmers in the region should be convinced to take up intercropping. Though nothing much has changed as far as the use of drip irrigation is concerned, the ground situation has changed dramatically in recent years with drought, labour shortage and so on, while the cost of sugarcane cultivation has increased. This is compounded by a decline in production. Though south Karnataka has been inching towards the highest productivity per hectare it has declined in the last

couple of years. Comparison of yield of a particular variety when it was introduced with its current yield indicates a decline and this could be attributed to disease. He suggests tissue culture based solutions for the purpose. Sugar mills should establish soil testing laboratories. As to the increase in cost of sugarcane cultivation, he says mechanisation of production can alleviate the problem.

4. Ajay Modi in "Sickly sweet: Many sugar companies are in the red, with some seeking financial restructuring. Partial decontrol is a glass half empty" says a flawed policy regime has taken its toll on the producers of the sweetener (Ajay, 2013). Quoting the Indian Sugar Mills Association (ISMA), he states that the cost of producing a tonne of sugar in UP is INR 35,500 while the mills are selling it at an average realisation of INR 31,000. UP is the country's biggest sugarcane producing state with 36 per cent of the national output. It accounts for about 30 per cent of the sugar production in India. Most of the sugar companies are now in the sick bay. The Kushagra Bajaj-led Bajaj Hindusthan, which owns 14 mills in UP and is the biggest domestic player, reported a loss of INR 234 crore in 2011/12. The smaller companies too are in trouble. For instance, Shakumbari Sugar, another UP-based company with one mill, has recently been declared sick while Sakthi Sugars, with three mills in Tamil Nadu and one in Orissa, has reported a combined loss of INR 147 crore in the two financial years 2010/11 and 2011/12.

5. The union government has made an effort to restore the industry to health with partial decontrol of the highly regulated sector in April. It did away with the levy system under which all the mills were required to sell one-tenth of the sugar produced to the government at a regulated price that was always lower than the market price. The annual burden on the industry because of this stipulation ranged from INR 1,800 crore to INR 2,500 crore. This sugar was sold to the beneficiaries of the public distribution

system. Under the new system, the Centre will provide cash subsidy to all state governments which will now procure sugar from the open market and supply to beneficiaries at the same price of INR 13.50 a kilogram. It also scrapped the release mechanism that decided the quantity of sugar a mill could sell in a month or a quarter. These two reform measures were part of the suggestions made by a committee headed by C. Rangarajan, Chairman of the Prime Minister's Economic Advisory Council. However, the disconnect between sugarcane and sugar prices continues to weigh heavily on the sector. The Centre works out a price for sugarcane every year. States, though, are free to fix their own price, known as the state advised price - it is mandatory for the mills to buy at this price from farmers. States like UP continue to use sugarcane price as a political trump card. Since October 2010, the UP government has raised sugarcane price by 36 per cent to INR 280 a quintal while sugar prices have gone up by only 11 per cent to INR 3,100 a quintal. Some other states such as Tamil Nadu, Haryana and Punjab also announce their own sugarcane prices though these tend to be much lower than the UP price. But this forces mills to buy sugarcane at a fixed price in a season irrespective of the highly volatile sugar prices.

#### 1.4 Research Gap

Any research into the plight of the country's sugar industry ought to be valid only for a short period of time given the impact of the administrative measures announced by the various state governments and the central government every sugar year (Oct 1 – Sep 30). In the circumstances, the problems faced by the cane growers remain unresolved as usual, year after year. Further, the reviewed literature has not said much about minimising the risks the sugar cane growers face and maximising the return from raising the sugar cane crop. It is these gaps that the present study seeks to bridge.

#### 1.5 Scope of the Present Study

The study confines itself to sugar cane growers from Mandya and Mysore districts and sugar millers operating in Mandya and Mysore districts.

#### 1.6 Objectives of the Study

The objectives of the study are to:

1. Identify and examine the problems the sugar cane growers face
2. Identify measures that minimise risk and maximise return for sugar cane borrowers

#### 1.7 Hypotheses Proposed to be Tested

The study proposes to test the following hypothesis:

“SAP has to be announced before crushing begins”

#### 1.8 Research Design

##### 1.8.1 Research Methodology

This is a descriptive study, involving investigations and adequate interpretation. Since it is a fact-finding study, data has been collected directly from the sample respondents. Respondents were interviewed for the purpose. Information so collected from the respondents was recorded in the structured interview schedules specially designed for the study.

##### 1.8.2 Sources of data

Data required for the study was collected from primary as well as secondary sources.

Primary data was collected from the respondents, viz., sugar millers and sugar cane growers. Secondary data was collected from reputed journals, magazines, newspapers and the web sites of the government of India, the government of Karnataka and the Indian Sugar Mills Association (ISMA)

##### 1.8.3 Sampling plan

Sugar millers and sugar cane growers represent the sampling universe.

Sugar cane growers: Simple random sampling under the probability sampling method was deployed to select the sugar cane growers since it gives each element an equal and independent chance of being

selected. Accordingly, interview schedules were administered to 100 sugar cane growers. Interview schedules, duly completed and received from the first 50 sugar cane growers were selected for the study.

Sugar millers: Given the limited number of functional sugar factories in Mandya and Mysore districts, purposive or judgement sampling under the non-probability method has been deployed. The Researcher selected 30 sugar factories from the said districts. This criterion, according to the Researcher, is the most appropriate one for the present study. What is important is the typicality and the relevance of the sampling units to the study and not their overall representativeness to the population. Thus it guarantees inclusion of the relevant elements in the sample. Probability sampling plans cannot give such a guarantee.

#### 1.8.4 Data Collection Instruments

Structured interview schedules were drafted and pre-tested in order to identify the possible weaknesses in them. Upon receipt of feedback, they were suitably amended and finalised for administration to the respondents for collection of primary data.

The interview schedules featured open questions and closed questions. Open questions were included to identify opinions, ascertain the level of knowledge and seek suggestions.

#### 1.8.5 Data Processing and Analysis Plan

Non-parametric statistical units were used to test the association between qualitative characters. Conclusions were arrived at on the basis of formation of Ho and H1. To be specific, chi-square test was applied to test the association.

#### 1.8.6 Limitations of the Study

Primary data has at times been inferred through constant topic-oriented discussions with the respondents. This may have influenced the findings of the study. Being insignificant, the Researcher is confident that it will have no bearing whatsoever on the accuracy of the findings of the study.

### 1.9 Data Analysis – Sugar Millers

In the following paragraphs, the primary data collected from the 30 sugar millers is analysed.

#### 1.9.1 Problems the Sugar Cane Growers Face

Sugar cane growers claim that they face a host of problems which by and large remain unaddressed. Hence the Researcher requested the respondents to cite the problems the sugar cane growers face. Their replies to the query appear in the following Table.

**Table-1**

**Problems the sugar cane growers face**

| Problems   | Number of respondents |
|--|-----------------------|
| Farmers unable to access new strains of cane that assure higher productivity                         | 26                    |
| Delay in completion of cane pricing reforms  | 25                    |
| Frequent hike in fertiliser prices reduces realisation for the farmers                               | 24                    |
| Announcing SAP after crushing begins poses a problem; SAP has to be announced before crushing begins | 23                    |

According to 26 respondents, farmers are unable to access new strains of cane that assure higher productivity. 25 cite delay in completion of cane pricing reforms. According to 24 respondents, frequent hike in fertiliser prices reduces realisation for the farmers. According to 23 respondents, SAP is announced after crushing begins.

#### 1.9.2 Minimising the risk and maximising the return for the grower

With the respondents revealing the problems the cane growers face, the researcher requested them to suggest measures to minimise risk and maximise return for the growers. Their replies to the query appear in the following Table.

Table-2

**Minimising the risk and maximising the return for the grower**

| Measures  | Number of respondents |
|---|-----------------------|
| Providing superior cane planting technology will maximise return for the farmer   | 26                    |
| Providing superior cane harvesting technology will maximise return for the farmer | 25                    |
| A hike in duty on imported sugar will maximise return for the farmer              | 23                    |

Providing superior cane planting technology will maximise return for the farmer, according to 26

| Measures   | Number of respondents |
|--|-----------------------|
| Apply a revenue-linked formula to price the cane | 46                    |
| SAP has to be announced before crushing begins   | 45                    |
| Incentivise production of raw sugar              | 44                    |
| Promote export of raw sugar                      | 44                    |
| Enlarge the market for ethanol                   | 42                    |

respondents. Providing superior cane harvesting technology will maximise return for the farmer according to 25 respondents. A hike in duty on imported sugar will maximise return for the farmer, according to 23 respondents.

**1.10 Data Analysis – Sugar cane growers**

In the following paragraphs, the primary data collected from the 50 sugar cane growers is analysed.

**1.10.1 Problems the sugar cane growers face**

Sugar cane growers claim that they face a host of problems which by and large remain unaddressed. Hence the Researcher requested the respondents to cite the problems the sugar cane growers face. Their replies to the query appear in the following Table.

Table-3

**Problems the sugar cane growers face**

| Problems  | Number of respondents |
|---|-----------------------|
| Arrears not promptly settled  | 47                    |
| Grower has no freedom to choose the buyer   | 46                    |
| Factories delay lifting the cane leading to the farm remaining un-harvested                     | 45                    |
| Irregular crushing forces growers to sell their produce to local jaggery units at lower prices. | 44                    |
| Factories reluctant to implement FRP  | 43                    |
| Delay in lifting exposes the cane to the elements denting realisation for the farmer            | 41                    |

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With the respondents revealing the problems the cane growers face, the researcher requested them to suggest measures to minimise risk and maximise return for the growers. Their replies to the query appear in the following Table.

**1.11 Findings of the study**

The following are the findings of the study:

**1.11.1 Sugar millers**

- According to 26 respondents, farmers are unable to access new strains of cane that assure higher productivity. 25 cite delay in completion of cane pricing reforms. According to 24 respondents, frequent hike in fertiliser prices reduces realisation for the farmers. According to 23 respondents, SAP is announced after crushing begins.
- Providing superior cane planting technology will maximise return for the farmer, according to 26 respondents. Providing superior cane harvesting technology will maximise return for the farmer according to 25 respondents. A hike in duty on imported sugar will maximise return for the farmer, according to 23 respondents.

### 1.11.2 Sugar cane growers

- According to 47 respondents, arrears are not promptly settled. According to 46 respondents, the grower has no freedom to choose the buyer. According to 45 respondents, factories delay lifting the cane, leading to the farm remaining un-harvested. According to 44 respondents, irregular crushing forces growers to sell their produce to local jaggery units at lower prices. According to 43 respondents, factories are reluctant to implement FRP. According to 41 respondents, delay in lifting exposes the cane to the elements denting realisation for the farmer
- 46 respondents suggest application of a revenue-linked formula to price the cane. 45 want SAP to be announced before the crushing season begins. 44 want incentivisation of production of raw sugar. 44 want promotion of export of raw sugar. 42 want an enlarged market for ethanol.

## II. CONCLUSION

Conclusions are inferences / generalisations drawn from the findings and relate to hypotheses. They are answers to the research questions or the statements of acceptance or rejection of hypotheses.

### Hypothesis

The hypothesis states as follows:

“SAP has to be announced before crushing begins”.

Hence H0 and H1 are as follows:

H0: SAP does not have to be announced before crushing begins

H1: SAP has to be announced before crushing begins.

On the basis of the primary data collected from the respondents, vide Tables: 1 and 4, a chi-square test was applied to ascertain the association, if any,

between the two variables. The following Table reveals the computation made using MS-Excel:

| <i>Category</i>    | <i>Observed Values</i> |                 |              |
|--------------------|------------------------|-----------------|--------------|
| Millers            | 23                     | 7               |              |
| Growers            | 45                     | 5               |              |
| <i>Total</i>       | 68                     | 12              |              |
| <i>Category</i>    | <i>Agree</i>           | <i>Disagree</i> | <i>Total</i> |
| Millers            | 25.5                   | 4.5             | 30           |
| Growers            | 42.5                   | 7.5             | 50           |
| <i>Total</i>       | 68                     | 12              | 80           |
|                    | <i>Agree</i>           | <i>Disagree</i> |              |
| <i>o-e</i>         | -2.5000                | 2.5000          |              |
|                    | 2.5000                 | -2.5000         |              |
| <i>(o-e)^2</i>     | 1.0000                 | 1.0000          |              |
|                    | 1.0000                 | 1.0000          |              |
| <i>((o-e)^2)/e</i> | 0.0392                 | 0.2222          |              |
|                    | 0.0235                 | 0.1333          |              |
| <i>CV</i>          | 0.0627                 | 0.3556          | 0.4183       |
| <i>TV</i>          |                        |                 | 3.8415       |
| <i>p</i>           |                        |                 | 0.6243       |

The calculated value of  $\chi^2$  is 0.4183, lower than the table value of 3.8415 for an alpha of 0.05 at one degree of freedom. Hence the null hypothesis is accepted.  $p=0.6243$  is the inverse of the one-tailed probability of the chi-squared distribution.

### 1.13 Researcher's recommendations

1. Government should ensure that farmers are in a position to access new strains of cane that assure higher productivity. Such a move will help all the stakeholders – the growers, in terms of higher output, higher price realisation and reduced inputs. The costs of externalities will come down and that should make the government and the people happy. The consumer will be happy too since price of sugar will come down.

2. Simultaneously, the government should expose the growers to state-of-the-art cane planting technology. It will reduce the overheads for the growers and improve their bottom lines. Sugar industry bodies and the various agencies set up by the government of India to promote the sugar industry should take initiative in the matter.

3. Cane pricing reforms cannot drag on for years. The reforms have to be finalised promptly and

implemented effectively. Otherwise, the reforms will defeat the very purpose they are supposed to serve. Until the reforms are fully implemented, the government and the regulator will have to periodically initiate stop-gap measures perhaps to be replaced by another set of reforms!

4. Announcement of SAP should precede the crushing operations. Unfortunately, the opposite happens most of the time, giving rise to avoidable uncertainties.

5. Often Karnataka's state-advised price (SAP) is far ahead of the fair and remunerative price (FRP) prescribed by the government of India . If the SAP differs widely from the FRP, one of the two must be true: either SAP has been computed erroneously or FRP has been computed unfairly. Given that FRP is worked out by a better equipped team – better equipped in terms of the inputs required for computing the price, it is obvious that the government of Karnataka has gone overboard in pricing the sugar cane in order to remain politically correct. Further, its stipulation that the price be paid upfront rubs salt into the sugar millers' wound. A slight difference between SAP and FRP is understandable but a conspicuous difference is indicative of biased pricing on the part of the state government. Hence, until such time as a revenue-linked formula is worked out, the government of India and the state governments should ensure that price conflicts do not aggravate the situation.

6. The government of India (GoI) should liberalise export of raw sugar. This will moderate the supply of sugar and lead to a rise in its domestic price, which is welcome. But there is a wide gulf between the export price and the domestic price. The government has to ensure that the gulf is bridged to the extent possible without resorting to the popular but ill-advised remedy, namely, subsidy. Subsidisation is at best a stop-gap arrangement and cannot be an effective substitute for a permanent

solution. Hence the government should create an ecosystem that will lead to a rise in sugar prices in the national market and a reduction in level of surplus sugar in the country in the manner explained. As said earlier, the government should incentivise production of raw sugar so it can be exported copiously.

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