

“PROBLEMS AND PROSPECTS OF SUGARCANE MILLS & FARMERS IN KARNATAKA: AN EMPIRICAL STUDY”

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Abstract: Sugarcane cultivation is one of the organized farming sectors, which is directly linked to the sugar industry and plays an important role in the economic development of our country. The sugarcane farmers have more significance to the agricultural and industrial economy of the rural territory of nation. The study aims to highlight the problems faced by sugarcane mills and farmers in Karnataka and also to know the relationship between area and production of sugarcane. For this purpose the data collected from secondary sources and Karl Pearson's coefficient of correlation tool is used to measure the percentage of change and relationship between two variables i.e. Area & Production. The study found that there is a positive correlation between two variables. It is concluded that an increase or decrease in area leads to increase or decrease in production. The government need to focus more to take measures to overcome the problems faced by sugarcane mills and farmers.

Key Words: Sugarcane policy, Sugar mills, Sugarcane farmers, FRP.

1. INTRODUCTION:

The sugar industry is the second largest industry after the textile industry and plays an important role in Indian economic development. The sugar industry is very important to the agricultural economy. The sugar industry is an agricultural industry in rural areas. Industry serves as a tool for promoting progressive trends in rural areas. The most striking feature of this industry is the relationship between the factory and the farmer, whose interests and welfare are interdependent. The sugar industry is seasonal and depends directly on the rainy season to provide sufficient sugarcane. India is the world's largest consumer of sugar and the second largest sugar producer, accounting for over 15% of global sugar production from more than 500 sugar factories across the country. The sugar industry also produces valuable by-products such as molasses and sludge. The presence of these by-products has stimulated the creation of alcohol / ethanol, electrical and organic fertilizer plants. The Sugar industry in India plays a vital role in the socio- economic development in the rural areas by mobilizing rural resources and generating higher income and employment opportunities. Over 5 Crore farmers and their families besides a large mass of agriculture labour are involved in sugarcane cultivation and its harvesting operations. The sugar industry accelerates rural development through agricultural employment and business opportunities in the transport and telecommunications sectors.

Domestic sugarcane production fell sharply. As a result, the price of sugar fell to unprecedented lows so that most of the better lines of sugar factories were blushing and they could not even pay the Statutory Minimum Price (SMP) of most agricultural goods. As a result, sugarcane farmers switched to other crops and sugarcane production decreased. Although sugar losses are higher due to processing of Gur and Khandsari, there is no state control over prices and distribution. With the increasing demand for sugar due to population growth, increasing people's purchasing power, and the increasing demand for sugar from the confectionary, beverage and other fast food industries, sugarcane production needs to be significantly increased. This can only be achieved by increasing the yield and recovery of sugarcane and thus the production of sugarcane per hectare.

In almost all of the world's main sugar producing countries, the price of sugar cane paid to farmers depends on the sale of sugar. Therefore, the central government must pay serious attention to the issue of sugarcane prices which must be linked to the price of sugar, and state government intervention must be abandoned. The government is taking the appropriate steps to declare the Council of Ministers and state government intervention has been effectively lifted, making them accountable for fixing prices above the Council of Ministers. However, under political pressure, such a move failed. Bhargana's well-designed formula states that wherever there is an additional transition to SMP, it must be divided equally between the farmer and the mill.

Much of the problems facing India's sugarcane industry today are due to the fact that it is the only industry cracking down on the country's liberal economic policies. Various controls, particularly on pricing, permits, packaging, etc., which are the targets of the sugar industry, hinder industrial growth. As a result of this control, the price of sugar was largely below the cost of production. Liberalized economies need a competitive environment and

this is only possible when industry closes completely. Decontrol can provide industry with much-needed freedom to explore the market and sell sugar, ethanol, combined heat and electricity, compressed sludge and other downstream products according to market needs and financial gain. This will allow the sugar mill to survive a regular basis rather than a period of sporadic instability. The main problem for farmers is responding to the high costs of planting. This problem is exacerbated by the unreasonable price of sugarcane. The high cost of cultivation and the low cost of procuring are not the only problems for sugarcane farmers. Marketing and financial problems also became very acute.

2. REVIEW OF LITERATURE:

- **Masud Karim and M. Delwar Hossain(1993)** “Analysis of Farmers' Agricultural Knowledge in Sugarcane Cultivation” In this study to assess farmers’ agricultural knowledge in sugarcane cultivation. The specific objectives of the study were to i) describe the selected characteristics of the farmers, ii) determine the extent of farmers agricultural knowledge in sugarcane cultivation, and iii) determine the relationships between the selected characteristics of the farmers and their agricultural knowledge in sugarcane cultivation. Data were collected from a randomly selected 140 farmers through interview schedule.
- **R. Jagadeswaran (2004):** In his article, he explained that the sugar industry is one of the most important agro-based industries in India. Adjacent to textiles, it is the largest industry employing 3.7 lakh ware workers and supporting an estimated 3.9 million farmers involved in sugarcane production. Some sugarcane companies need to be identified on the basis of reliable production quality and proper packaging standards, and all of their production needs to be used for export.
- **Suresh Kumar (2006):** His article pointed out that the sugar industry, with strong rural connections, provided direct and indirect employment to more than five low-skilled and unskilled workers in rural areas. This sector also contributed 53 projected Rs. 16,000 cores per year for central and state treasury.
- **P. Datta(2008):** In his article stated that the government's proposal to abolish sugar and the decision to abolish the exemption rule were convincing because a timely decision effectively limited freedom to receive compensation. An important rule determining the state of the industry is the government setting minimum prices for sugarcane supply and location policies, with sugar producers and sugar mills obliging each other to sell and buy reeds.
- **M. R. Subramani (2008):** He says in the article that "farmers have switched to other crops due to lower sugar prices and delays in payments". Soybeans and maize are the crops that have benefited from this shift. Although statistics show that the sugar acreage increased to 51.04 hectares per hectare last year from 48.3 hectares per hectare last year, losses were observed from the point of view of some farmers selling sugarcane for animal feed.

3. OBJECTIVES OF THE STUDY:

- To investigate the problems faced by Sugarcane Mills and Farmers.
- To assess the percentage change in Area and Production of Sugarcane.
- To examine the relationship between Area and Production of Sugarcane.

4. RESEARCH HYPOTHESIS:

- **H₀:** There is no relationship between Area and Production of Sugarcane.
- **H₁:** There is a relationship between Area and Production of Sugarcane.

5. RESEARCH METHODOLOGY:

Research Design: This study is conducted on Empirical research method.

Sources of Data: The research is mainly depends on secondary data collected from department of food distribution of GOI, Economic survey of Karnataka, Indian Sugar Mill Association, etc.,

Statistical Tool: The Karl Pearson’s Co-efficient of Correlation is used to find out the relationship between Area and Production of Sugarcane. If the result signifies “+1” is termed as Positive relationship between two variables, whereas “-1” represents Negative relationship between two variables (i.e. Area and Production of Sugarcane).

Scope of the study: This study is confined to the Area & Production of Sugarcane in Karnataka. For this purpose, the data collected from the year 2014-15 to 2019-20.

5.1 PROBLEMS FACED BY SUGARCANE MILLS:

- **Low Yield of Sugarcane:** Although India has the largest sugarcane area, the yield per hectare is very low compared to some of the largest sugarcane producers in the world. This results in low overall production and a shortage of sugarcane for sugar mills. Efforts are being made to address this problem by introducing high

yielding sugarcane varieties, early ripening, frost-resistant and high sucrose treatment, and controlling diseases and pests that are harmful to sugarcane.

- **Short crushing season:** Sugar production is a seasonal phenomenon with a short harvest season usually between 4 and 7 months per year. The factory and its workers lost their jobs as the years went on, which created financial problems for the entire industry. One possible way to extend the sugarcane harvest season is by sowing and harvesting sugarcane at appropriate intervals in various areas next to the sugar factory. This will extend the duration of delivery of sugarcane to the sugar factory.
- **Fluctuating Production Trends:** Sugarcane has to compete with several other foods and pastures such as cotton, vegetable oil, rice and others. Therefore, the land where sugarcane is planted is not the same and the total sugarcane production varies. This has an impact on the supply of sugarcane to the factory, and sugar production also varies from year to year.
- **Low rate of recovery:** India's recovery rate is under 10 percent, quite low compared to other highest sugar producing countries.
- **High cost of production:** High sugarcane prices, inefficient technology, inefficient production processes and high consumption taxes result in high production costs. Sugar production costs in India are among the highest in the world. Intensive research is needed to increase sugarcane production in agriculture and introduce new technologies for production efficiency in sugar mills. Production costs can also be reduced through the appropriate use of industrial by-products.
- **Old and obsolete machinery:** Most of the machinery used in Indian sugar mills, particularly those of Uttar Pradesh and Bihar is old and obsolete, being 50-60 years old and needs rehabilitation.
- **Competition with Khandsari and Gur:** Khandsari and Gur were created in the organized sector in rural India long before the sugar industry emerged. Because the industry was practically exempt from customs, it was able to offer sugarcane farmers higher prices for reeds. In India about a third of sugarcane production is used for pumpkin and hand production. This causes the lack of raw materials for sugar factories.
- **Regional imbalances in distribution:** More than half of the sugar factories are located in Maharashtra and Uttar Pradesh, and about 60% of their production comes from these two states. On the other hand, there are several states in the northeast, Jammu and Kashmir and Orissa, where there is no real growth in this industry. This results in regional imbalances which have consequences.

5.2 PROBLEMS FACED BY SUGARCANE GROWERS:

Operational problems

A) On the fields:

- **Soil Fertility:** When it comes to poor soil fertility, some farmers can be blamed. Soil fertility declines because it grows continuously and more plants grow over time. It can be replenished by following the crop rotation principle and leaving alternate lands so that the soil remains dormant for at least one season. Soil fertility can also be restored over a long period of time by adding additional manure and chemical fertility. But now this is not happening. The average Indian farmer cannot allocate his land because his farm is small. Moreover, farmers earn a living without surplus. soil fertility cannot be improved.
- **Lack of quality seeds:** With regard to this issue, it is known that the use of quality seeds will inevitably lead to an interruption in the harvest. Ironically, despite the fact that many state and local agencies supply seeds; farmers do not receive high quality seeds. Using the best seeds, best farming methods and other agricultural raw materials can increase yields. Many farmers usually use their own cane as seed. Often the emperor was of poor quality and the seeds were of poor quality. As a result, crops are also damaged.
- **Lack of experienced labours:** Labour availability is also a major issue. Planting an imperial at harvest time requires skilled workers to complete various tasks, and such skilled workers do not exist. In recent years, abnormal labour movements have occurred in rural areas. Most of the workforce has moved to a nearby town or other farm, where working on a farm is not as difficult as working on a reed farm in search of a better livelihood. Land reform made some agricultural workers landowners. The abolition of the genetic system of labour costs and the abolition of forced labour also lead to a change in the attitude of workers, since they are somewhat freer than in everyday work. Not only are skilled workers available to some extent, but wages for the labour force available are high and often outside the range of the average farmer. Given the rapid rise in the cost of living and the rapid increase in basic necessities, workers' wages do not seem high.
- **Lack of adequate Manures and Fertilizers:** Farmers often face shortages of manure and fertilizers. This is due to the fact that chemical fertilizers cannot be used on time and their purchasing power is low.
- **Absence of continuous water supply:** Growing sugarcane requires regular water throughout the harvest season. It can only grow under the conditions of the provided irrigation system. Irrigation can be in the form

of canals, reservoirs or wells. Many farmers lack basic knowledge about proper water management, especially water use and water protection for the next harvest. This is due to the principles of scientific agriculture.

- **Absence of improved agricultural practices:** Despite the green revolution and the government's strong interest in major investments in agriculture and its development, agricultural development, and the diffusion of technological knowledge in rural areas through education, expansion still plays a large role. Agriculture in India is traditional and based on agriculture for livelihoods. More than 75% of the country's population still lives in rural areas and depends on agriculture. For many farmers; agriculture is not a job, but a way of life. In this way, they are gradually transforming traditional agriculture into scientific agriculture and subsistence agriculture into commercial agriculture.

B) Off the fields:

1. Low rate for sugarcane.
2. Waiting in a long queue.
3. Dishonest in weighing at weigh bridge.
4. Unnecessary deductions in the name of toll charges, etc.
5. Delay in payment of instalments.
6. Shortages of sugarcane buyers

Marketing Problems:

- **Delay in harvesting:** After planting crops during the harvest season, farmers face harvest and marketing challenges. Break the sticks to make a fixture and assemble the sticks as you like. In this case, there may be no problems with harvesting. However, he has problems launching the gadget. However, in most cases, farmers have contracts with sugarcane factories. The problem here is that the farmer cannot harvest as much as he wants. He can only do this according to the manufacturer's instructions.
- **Absence of marketing facilities:** As an agricultural product, sugarcane has a limited market and many buyers. The demand for golf clubs has not been universal for many years. There are basically two marketing channels.
 - a) Delivered once to the factory and
 - b) Supply of grinders for the manufacture of gadgets.

The small channels are seeds and are used to make drinks by chewing or extracting sugarcane juice. According to statistics, 85 to 90% of all cane is used for the production of sugar and jaggery. This demonstrates the importance of using sugar cane for sugar and jaggery production.

- **Lack of Transport Facility:** If there is no proper facility of transportation is available, the movement of goods to the sales outlet is restricted and thus normal marketing activities are hindered. This problem is exacerbated when the product is volatile. Such items require fast vehicles. Although cold storage systems have emerged in recent years to support the marketing of agricultural raw materials, we have yet to develop cold storage systems for sugarcane. This may not be possible due to the nature of the product and the size of the sugarcane production. Sometimes farmers also rent trucks to transport their products. In both cases, he had to wait on the farm. The truck may not arrive on time. You can get there on time but the roads are sticky.
- **Loss due to dry-age:** due to "Dry-age" reduction in the juice and sucrose content of the reeds due to delayed transport and crushing. The drying results are available in more than one stage, namely: at the farm, at transporting from plant to factory and at factory outlet Drying in the yard is a result of slow transportation. Often sticks were cut and trucks or carts awaited their arrival. Delays in census can be caused by various other reasons, such as: Machine failure, worker strike or system failure. This situation can force the factory authorities not to accept the arrival of sugarcane in the sugarcane plantation. This also results in losses for farmers. If systems could be developed for better harvests, fast transport and instant destruction, much of the losses suffered by farmers could be avoided.

Financial Problems:

Financial matters can be very critical. If the farmer is financially rich, some of the problems discussed earlier can be solved effectively. However, as is well known, the average financial strength of Indian farmers is low. Hence, he would not be able to solve some problems effectively. Three dimensions of financial problems are as follows.

- **Inadequate finance:** Growing reeds costs a lot of money. If the farmer lacks liquidity, his farm is not without problems. Working capital is required to purchase seeds, fertilizers and fertilizers, as well as other agricultural commodities, pay wages, and meet daily supervision and management costs. If these payments are not made immediately, the farm will be difficult to operate. It is known that Indian farmers do not have their own finances because of their limited savings. There is no doubt that farmers can get quick funding from private

sources. But it can be expensive for more than one number. Efforts by the government, cooperatives, and commercial banks to provide financial assistance to farmers have been unsuccessful and as a result farmers are still short of funds.

- **Absence of quick payment by the purchaser:** Many farmers who sold their produce to private factories and crushers did not receive immediate payments and their financial viability suffered greatly. It can also add to their marketing costs in the sense that they may be forced to make more than one trip to the factory to get paid, which adds to the costs. Often farmers only harvest and sell crops to fulfil part of the family's financial obligations, waiting for a quick return. But that rarely happens. There may be no coordination between farmer and mill owners. As a result, only the peasants suffered. The net result of all these factors is that farmers' cash and cash equivalents are depleted and private lenders cannot borrow at increased rates.
- **Price fluctuation:** Price fluctuation is widespread in India's agricultural marketing structure and therefore is a major problem for farmers. Sugarcane prices at a certain replacement level are determined by the Indian government from season to season for different zones based on the recommendations of the Agricultural Pricing Committee set. This happened from time to time with changes to the Sugar Cane Control Regulation Act, 1966. The farmer was not sure what price he was going to get. This throws the farmer's financial plan into the wind. The price set by the government does not take into account the cost of growth. Price fluctuations also depend on the supply and demand of impartation. The higher or lower the impartation supply depending on the season conditions, water availability, crop rotation, diversification of the Impartation used to make the tools, etc.
- **Statutory Minimum Price (SMP) of sugarcane in India:** Under the Sugar and Gur Control Act (1950), the government set a minimum price for sugarcane that must be paid to producers to ensure a fair price. In November 1962, a system was introduced to link minimum prices to use of cane sugar. The minimum price for sugar cane is set by the government based on the Commission's recommendations regarding costs and prices for agriculture. In addition to the Statuary Minimum Price (SMP) set by the central government, the Sugar Directorate of each country sets the price of sugarcane that must be paid to sugarcane producers based on the performance of each sugar factory. Mandatory central government (SMP) statutory minimum prices and state advisory prices (SAP) are announced annually after the end of the fragmentation season.

6. DATA ANALYSIS AND INTERPRETAION:

Table No.1:Year-wise Increase / Decrease of Area and Production of Sugarcane in Karnataka

Year	Area (In Lakh Hectares)	Production (In Lakh Tonnes)	Increase/ Decrease in Area (%)	Increase/ Decrease in Production (%)
2014-15	6.91	437.76	Nil	Nil
2015-16	6.34	405	-8.99%	-8.09%
2016-17	3.97	273.78	-59.70%	-47.93%
2017-18	4.4	315	9.77%	13.09%
2018-19	7.94	424.11	44.58%	25.73%
2019-20	6.84	396	-16.08%	-7.10%

(Source: Economic Survey of Karnataka from 2014 to 2020)

Karl Pearson’s Coefficient of Correlation is 0.9447 for two variables.

The above table no. 1 represents the year-wise Increase / Decrease of Area and Production of Sugarcane in Karnataka. The year 2018-19 is accounted for more Area of Sugarcane farming (7.94 Lakh hectares) as compared to remaining years, and 2016-17 year is witnessed for less Area of sugarcane farming (3.97 Lakh hectares). 2014-15 year was accounted for the highest production of sugarcane (437.76 lakh tonnes), and the lowest (273.78 lakh tonnes) in the year 2016-17. It is proved that there is a relationship between Area and Production of Sugarcane.

In the years 2017-18 & 2018-19 there is a positive change in Area of sugarcane farming i.e. 9.77% & 44.58% respectively, and negative changes in remaining years. The highest change (25.73%) in production of sugarcane in the year 2018-19 and lowest in the year 2016-17(-47.93%).

Area and production of sugarcane continuously changes because of many influencing factors like, Rainfall, Drought, Flood, Tsunami, availability labours, Irrigation etc, due to these many factors these is a less production of

sugarcane(424.11 lakh tonnes) in the year 2018-19 even so more Area (7.94 lakh hectares) was used for sugarcane farming.

According to the Karl Pearson’s Coefficient Correlation result is 0.9447,it is proven that there is a positive relationship between Area of farming and Production of sugarcane. Therefore, alternative hypothesis is accepted. The production of sugarcane increases due to increase in Area and it decreases as decrease in area.

Table No.2: FRP of Sugarcane in India during study period

Year	FRP (Rs. per Quintal)	Increase/ Decrease (%)
2014-15	220	Nil
2015-16	230	4.35%
2016-17	230	0.00%
2017-18	255	9.80%
2018-19	275	7.27%
2019-20	275	0.00%

(Source: Dept. of Food & Public distribution, GOI)

The fixed remunerative Price of sugarcane during the study period is presented in the Table No.2. The Fixed Remunerative Price (FRP) of sugarcane per quintal in India during 2014 to 2020 is not very encouraging. In the year 2014-15, FRP of sugarcane per quintal in India was Rs.220, which is slowly increased year by year and it is reached to Rs.275 in the year 2019-20.

7. FINDINGS:

- It is found that 2018-19 is accounted for the highest area of sugarcane farming (7.94 Lakh hectares).
- The area of sugarcane farming is lowest (3.97 Lakh hectares) in the year 2016-17.
- There is a positive relation between area and production of sugarcane in Karnataka.
- It is found thatthe highest production of sugarcane (437.76 lakh tonnes) in 2014-15, and the lowest (273.78 lakh tonnes) in 2016-17.
- A study shows that there is a positive change in Area of sugarcane farming i.e. 9.77% & 44.58% in 2017-18 & 2018-19 respectively.
- The highest change (25.73%) in production of sugarcane in the year 2018-19 and lowest in the year 2016-17(-47.93%)
- Sugarcane growers are shifting to grow other crops. It is because of high cost of production and lower FRP fixed by government.

8. SUGGESTIONS:

- Sugarcane growers need to be educating on recent techniques of cultivation like Israel model.
- Sugarcane factors are to be strictly instructed to purchase cane immediately after harvest without loss of weight.
- The most important recommendation is to proper review of government’s policy of FRP. This need to be increased.
- As per sugarcane Control Act 1966, every sugar mills should follow the FRP fixed by government and make payment within 15 days of harvested.
- The Sugarcane R&D centres should establish by government in every Taluka places to guide sugarcane growers.
- The government should establish jaggery manufacturing plants.

9. CONCLUSION:

This study concluded that ups and downs in sugarcane area and production in Karnataka. In sugarcane farming technologies are invented day by day so essential to adopt in the cultivation of sugarcane. There were sharp increases in FRP of sugarcane. Many problems are faced by sugarcane farmers which are highlight above therefore, the sugarcane growers shifted to cultivation of other remunerative crops same way sugarcane area production decreases. Then sugar mills are also facing the many problems. The most problem of the Sugar industry is there is no

relationship between the price of sugarcane and sugar. Major sugarcane producing countries of the world the price of sugarcane paid to the producers i.e. farmers depends on the realisation from sugar. Sugar mills and growers both of them should co-operate each other for mutual benefit because benefits are interrelated and progress is correlated. Therefore, sugar mills must take care of sugarcane farmers.

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