



Case Study

Problems and Prospects of Sugar Industry in India: Case Study of Bijnor District; Uttar Pradesh

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Abstract

The sugar industry is the most vital industry in India as well as in Uttar Pradesh. Its importance in the state can also be known from the fact that Uttar Pradesh is called the sugar bowl of India. The processing of sugar production is done by co-operative sugar mills and private sugar mills and both the mills are equally important for the bright future of the sugar industry in Uttar Pradesh. In this study, we have attempted to compare and contrast private and cooperative sugar mills. For this, we selected the largest sugarcane-producing area in western Uttar Pradesh, the Bijnor district. This paper is based on both primary data collection and secondary data collection. Primary data was collected through field survey which was undertaken to Dhampur Chini Mill, a privately owned mill with the maximum capacity for crushing sugarcane, and Snehroad Najibabad Mill, a cooperative sugar mill with the lowest capacity. Comparing both the mills it was found that private mill Dhampur is superior in terms of infrastructure, cane crushing capacity, sugar output, and ethanol production. It is more conscious of its corporate social and environmental responsibilities. The cooperative sugar mill doesn't have power cogeneration unit, which should be established, and it makes less revenue than the Dhampur sugar mill generates. The paper concludes with specific policy suggestions to improve condition of cooperative mills.

Introduction

After the cotton industry, sugar is the second-largest industry in India. It has the ability to facilitate trade and support farmers' livelihoods while playing a significant role in the Indian economy. The average annual production of sugarcane is about 355 million tonnes (mt) which are

utilized to produce about 30 mt of sugar in a year. It has about 60-70 percent higher returns as compared to other crops; has an annual turnover of around one lakh crore, and has an impact on the livelihoods of about 5 crore farmers with their families and also 5 lakh people who are directly

engaged in mills (Niti Aayog, 2020). With the maximum number of sugar mills, Maharashtra is the largest sugar-producing state in India followed by Uttar Pradesh. Since the sugar industry is well-known in Uttar Pradesh, the state is frequently referred to as the "sugar bowl of India." The Uttar Pradesh government has given farmers a better price for their sugarcane through the State Advisory Price (SAP), which is always higher than the Fair and Remunerative Price (FRP) of sugarcane set by the Central Government. This acts as a motivating factor for the farmers to cultivate sugarcane. The processing of sugar production is done both by the co-operative sugar mills and private sugar mills, which are important to the future success of the sugar industry in Uttar Pradesh. The first cooperative sugar mill in Uttar Pradesh was established in the year 1957 in Nainital (the undivided Uttar Pradesh), while the first sugar mill in the private sector was established in Pratappur in the year 1903 (Tiwari, 2017). In Uttar Pradesh, there are currently 120 sugar mills in operation, 65 of which are located solely in the western region of the state. With an output of 3837 thousand tonnes of sugar, the western region has secured second place after the central region. The largest sugarcane-producing area of the western region is Bijnor with sugarcane production of 55 percent as percentage of the total crop production, 210269 hectares (ha) area is engaged in sugarcane production and an average production of sugarcane is 859.52 quintals per ha (Krishi Vigyan Kendra, Bijnor). There are total nine sugar mills in Bijnor out of which only one is cooperative sugar mill and the rest are private sugar mills.

Problems of Sugarcane Industry:

India has 506 functioning sugar mills, of which 204 are cooperative and 292 are privately owned. (Annual Report DF&PD 2021-22). In 2020–2021, 310 lakh tonnes (t) of sugar were produced. Low sugarcane yields, continuous drought conditions in tropical and subtropical regions, and swings in output owing to insufficient irrigation infrastructure are the major issues facing India's sugar sector.

Sugarcane producers must contend with low productivity as well as low sugarcane yield. India's yield in 2022 is just 82.5 t/ha, compared to 90 t/ha in Java and 121 t in Hawaii. Consequently, less sugar is produced, which also affects the availability of sugarcane. Production is subject to the condition of cyclicity, which means that the sugar cycle in our nation produces well for 3 consecutive years before producing poorly for the next years. This makes the formulation of policy more challenging (Gaikwad and Jadhav, 2017). In addition, cooperative sugar companies must follow a number of rules and procedures imposed by the state and federal governments. The government uses a variety of methods, including licensing, zoning, the sale of sugar through a competitive process, a prohibition on the

sale of by-products, price of completed goods, and absence of a defined marketing plan, export limits, unscheduled imports, and others. These limitations have had a significant influence on cooperative sugar mill management and its ability to continue operating (Annasaheb, 2020). Since the sugar industry is one of India's oldest sectors and was developed throughout the Five Year Plans, several sugar mills continue to use antiquated machinery and outdated manufacturing techniques. The productivity of sugarcane varies from state to state for a variety of causes and circumstances, and there are several issues with sugar production as well.

Farmers in the Marathwada district of **Maharashtra**, a well-known base of sugar production, are killing themselves out of despair as a result of the low cane crushing issue. The Marathwada area has 1.5 mt of sugarcane that wasn't crushed in 2020–21. Because sugarcane is a perishable product, it must be gathered and crushed within specific time constraints. Due to farmers' refusal to take their sugarcane to be crushed, they faced significant financial losses (India today, 1 June 2022.) At the same time, the Maharashtra sugar sector struggled to reach its monthly sales target in 2021. Sugar was sold for around 50–60% less than the total amount sold, while the industry sold its sugar below the minimum selling price which was ₹ 3100/quintal (Indian Express, June 2021).

Tamil Nadu is one of the largest sugar producing states and contributes about 9 per cent of India's total sugar production. There is a dearth of different varieties of sugarcane as it is known that in Tamil Nadu only one or two varieties are fruitful. Also the state is grappling with the lack of production and distribution of better seeds. Low productivity and high labor and input costs are also found in the state. (Doubling Farmer's Income Section III, 2017)

In **Uttar Pradesh** farmers use additional fertilizers including NPK, urea in their fields and there is also lack of awareness about soil testing which affects the productivity of sugarcane crop. Despite this, sowing sugarcane in summer also reduces crop yield as sugarcane is harvested after wheat, which covers about 40 per cent of sugarcane area and also shortens the time period of sugarcane crop. The sugar mills of Uttar Pradesh are comparatively smaller in size and give less output than the mills of Maharashtra (Chand, 2022).

The government's stance was challenged in the **Karnataka** High Court on the issue of sugar mills. At the state advised price of ₹ 2,750 per mt set by the Karnataka government last season, companies were required to purchase sugarcane from farmers. For factories with greater rates of recovery, this can increase to 2,900. This is more expensive than the Fair and Remunerative Price (FRP) of 2,550 per mt that the Center recommends. The industries assert that the Center steps in to regulate prices anytime the price of sugar in the

wholesale market crosses ₹ 35 per kg. Currently, the price of sugar in the retail market fluctuates from ₹ 32 to ₹ 40 per kg. Factory managers claimed they are being harmed by a system that makes them "buy high and sell low" (Indian kanoon.org, 2007). Led by the Karnataka Sugarcane Farmers' Association, farmers from Mysore and surrounding areas protested demanding redressal of their grievances and the apathy of the authorities in resolving the problems. The agitators criticized the government for the delay in the announcement of the State Advisory Price (SAP) and said that this attitude of the government was creating financial uncertainty for the farmers. Some private sugar mills are paying ₹ 3500 per t less than last year's purchase price (chinimandi, Aug 2022).

Looking into the issues of sugar industry across different states of the country, the Indian sugar industry suffers from structural problems. In a large number of units, mechanical breakdowns are more than normal, fuel consumption much higher, while extraction rates are well below 10 percent. Thus, in order to modernize and upgrade technology, the Government created the Sugar Development Fund (SDF) in 1982, financed through a cess levied on the sugar mills and also funding for various cane development schemes. Government has been focusing on the issues related to this industry, there have been technological changes also in recent years such as; Bagasse drier unit, moisture control unit, high pressure boilers, automation, water management and molasses cooling system etc. yet industry faces various problems in present time. The major problem which has become the current issue of the discussion is the determination of cane price. The farmers are continuously demanding for high cane price but government has not been approving this demand. As in the session 2021-22 central government had fixed Fair and Remunerative Price (FRP)

at ₹ 290 per quintal and also announced to ₹ 15 per quintal raise in the next sugar season. If we look at the state level, then Uttar Pradesh fixes cane price on its own which is called Statutory Advisory Price (SAP). This was fixed at ₹ 325 per quintal in 2017-18 cane session and has remained constant for the 2018-19 session and there is no change in the year 2019-20 session (Department of food and Price Distribution, Annual report 2021). But for the session of 2021-22 it has a rise of ₹ 25 and now the price of purchasing sugar is ₹ 350 per quintal. This price has become a boon for farmers but on the other side the cane price makes a huge financial burden on sugar mills as it increased their cost of production while being a necessity goods the selling price of sugar has been always less which results in losses of sugar mills. The FRP and SAP of Uttar Pradesh government has been shown in Fig. 1.

Apart from Uttar Pradesh, some other states also pay sugarcane in SAP. In which Punjab, Haryana, Uttarakhand are prominent. Punjab's SAP price in 2021 was ₹ 360 per quintal, while Haryana bought sugarcane at ₹ 362 per quintal, which was ₹ 2 more than Punjab. Similarly, in Uttarakhand also, a purchase of ₹ 355 per quintal was done. The SAP price of neighboring states of Uttar Pradesh proves that the purchase price of sugarcane (SAP, ₹ 350/quintal) in Uttar Pradesh is less than these states. Moreover, sugar mills also make delay in the payment of arrears to the farmers. According to ISMA report of December 2018, all over India, ₹ 24000 crore payment has been pending out of which Uttar Pradesh has maximum arrear pending at ₹ 10000 crore followed by Maharashtra at ₹ 4700 crore, Karnataka and Tamil Nadu which have respectively ₹ 3990 crore and ₹ 1854 crore of arrears pending. The state wise detail of pending arrears (2020-21) has been shown in Table 1.

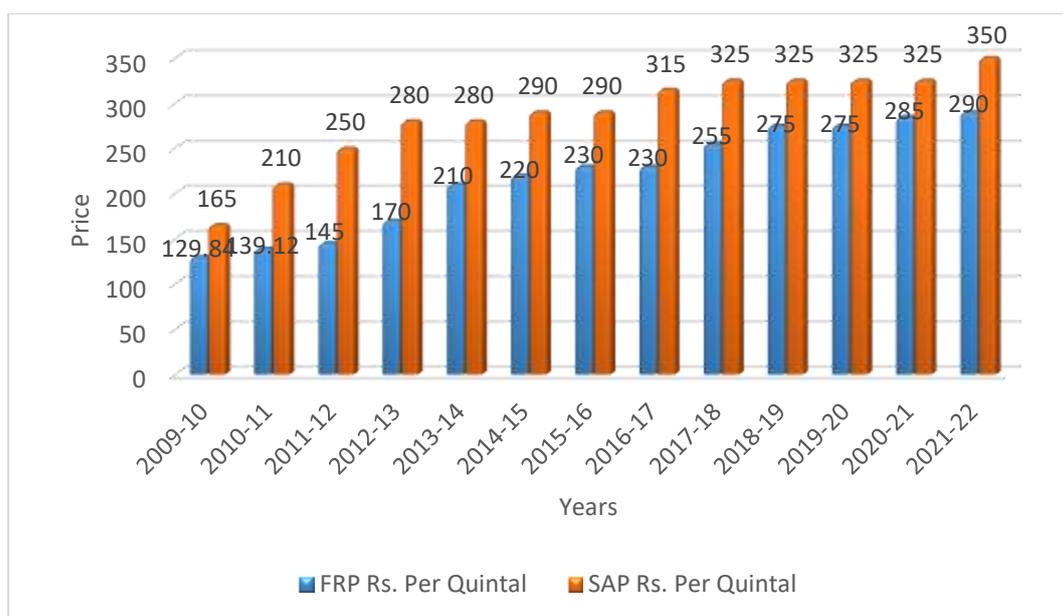


Fig. 1: A Comparison of SAP in U.P and FRP
 Source: General policy/DFPD

Table1: Pending Arrears of Major States in 2020-21

S.N	State	Arrears (Crore)
1	Uttar Pradesh	3752
2	Maharashtra	394
3	Andhra Pradesh	37
4	Tamilnadu	25
5	Karnataka	0

Source: Press Information Bureau 2020-21

It is evident from table 1 that Uttar Pradesh has the highest pending arrears and Karnataka has no pending arrears. Some of the reasons behind the delay in payment to farmers are fluctuations in market price for sugar from year to year; while the input cost is fixed by the government; the cost of output is left to the market forces and Inefficiency in production of sugar at mill's level. Average annual production of sugarcane is around 35.5 crore t which is used to produce around 3 crore t of sugar. The domestic consumption is estimated to be around 2.6 crore t in 2020-21 (Economic Survey, 2021-22). Another problem is of low crushing of sugarcane in mills and sugar recovery below than the national average. Along with this there is also lack of awareness of the farmer regarding alternative cane market, trench methods of farming, low productivity of land, low irrigational facilities, traditional technique of farming, natural calamities like; draught, flood, hail storm, etc. The main reason for failing of the policies designed for the betterment of the sugarcane industry has been the lack of proper implementation of the policies. The primary source of biofuels or green fuels presently is the manufacturing of ethanol, however there aren't many plants with equipment. India recently completed the 2020–21 fuel year with the highest ethanol blend of 8.1% ever (Business Standard, 8 Dec 2021). The Hon'ble Prime Minister further unveiled a "Roadmap for Ethanol Blending in India 2020-25" in June 2021, which outlines a comprehensive plan for reaching a 20 percent ethanol mix. Also included in this roadmap was temporary goal of 10% blending, which was to be accomplished by November 2022. (Press information Bureau, 5 June 2022).

Objective

Going through the review of the literature it was noticed that there have been studies related to the issues encountered by sugarcane farmers in Bijnor, but not much work pertaining to sugarcane mills could be found. Therefore, the objective of this paper is to make a comparative analysis of cooperative sugar mills and private sugar mills of Bijnor so as to give an insight into problems and prospects of both the mills and also to understand why private mills generate more profit than cooperative mills.

Data and Methods

This paper is grounded in the qualitative analysis methodology, though we have used secondary data as well to corroborate our findings. The study is based on the primary survey of Bijnor district, situated in Western Uttar Pradesh. This district has been chosen because it has the highest sugarcane cultivating area. In Bijnor, the sugar mills were selected which had the maximum and minimum crushing sugarcane capacities amongst all other mills, located in the district. In this manner the privately owned Dhampur Sugar Mills limited Unit, Dhampur with maximum crushing capacity and the cooperative sugar mill Snehroad, Najibabad with minimum crushing capacity were selected. In this manner, the primary information was compiled through visits to the aforementioned sugar mills. Furthermore, with the help of structured questionnaire schedule, interviews were conducted with the managerial staff members in both the mills. The secondary data was collected from various government reports.

Analysis and Findings

This section is divided into three parts. The first and second part discusses the cooperative mill located in Najibabad and private mill in Dhampur. Third part discussed about the comparative analysis of both sugar mills.

Cooperative Sugar Mill

Our first visit was to Kisan Sahkari Chini mill, Snehroad Najibabad which was registered on 25 January 1988 at Snehroad, Najibabad. On April 9, 1990, it started its maiden crushing season with a 3,000 TCD crushing capacity. The sugar factory presently has 43,227 producer stockholders with 800 employees engaged in factory. We learned that the factory's location was chosen with the intention of developing the area and creating jobs after asking more questions regarding the rationale for the factory's establishment. In the present times, the sugar mill's crushing capacity has not seen any increase, but the quantity of sugarcane being crushed and the amount of sugar produced has increased. The factory employs sulphur technology for the manufacturing of sugar. Lime and sulphur dioxide gas are utilized in the purification of cane juice during this process which gives sugar a touch of whiteness. During our survey we were told that in 2019–20, the entire area of sugarcane under the sugar mill has been 19,995 ha, and the average yield per bigha was 80 to 90 quintals. The sugar factory crushed 6, 24,873 quintals of sugarcane, while producing 5,16,5817 quintals of sugar. In present time also there is no change in the crushing capacity of the mill which is a major problem for sugar mill as well as for sugarcane growers. Due to this, there is a heavy burden of farmers' arrears on the factory and the factory has not been able to recover from its losses and debts. Recently in 2018-19, this sugar factory has established a distillery unit to produce ethanol from C-heavy molasses only. When we enquired as

to why the mill did not produce ethanol from additional sources, we were informed that since the distillery unit has been established few years ago, there is no modern technology available to produce ethanol from B-heavy molasses, A-heavy molasses, or directly from sugarcane juice. Hence, in 2020–2021, it produced 67.37 lakh litres (l.) of ethanol. We learned throughout our survey that factory owners were aware of the different rulings made by the WTO body responsible for resolving disputes about the sugar trade, and as a result, the firm followed all export-related laws and regulations. The entire strategy for the forthcoming crushing season is decided in the factory's annual meeting, which is conducted every year in May or June. Additionally, it also provides land for sugarcane tissue culture cultivation and research & development facilities. There are other problematic issues like factory losses and payment delays with this mill. As per the order of the Central Government's Sugarcane (Control) 1966 the mill is required to clear the payments of sugarcane farmers within 14 days, but the factory selling price (₹ 3,100 per quintal) is less than its cost price (₹ 3,500 per quintal) hence, it is unable to pay the farmers within the stipulated time period and ends up in accumulating pending arrears.

One of the important reason for factory being in perpetual debt is high production which tends to lower the price. Along with this the cooperative mill rely on government funding and unlike private mills fail to attract investment through shareholders. Though Najibabad Kisan Mill was awarded third position in best performance among all cooperative sugar mills of Uttar Pradesh in the year 2021 by the National Federation of Government of India (source; upsugarfed.org.in) and the factory established an ETP plant, has an annual budget of approximately ₹ 6-7 lakhs to control pollution and protect the environment, yet it had an outstanding loan of ₹ 200 crore on the date of survey. When we asked about the export policy, we were told that mill does not export sugar as prices in international market are subject to fluctuations and so they prefer domestic market for trading. Regarding their expectations from the government, a member of the cane department's office staff responded that government support is required to increase exports and more subsidies should be provided to sugarcane industry.

Private Sugar Mill

Our next visit was to Dhampur Sugar Factory in Dhampur which was established in 1933 by Lala Ram Narain with a cane crushing capacity of 300 TCD. The first interaction was with the General Manager of the sugar mill's sugarcane department, who gave us detailed information about the factory. Dhampur Sugar Mills Limited Company has 5 units; which are set up at Asmoli, Dhampur, Mansoorpur, Meerganj and Rajpura in Uttar Pradesh and the Dhampur unit was the first and biggest unit of the sugar company. Making India self-sufficient in sugar production was the

inspiration for local leaders to set up a sugar factory. This Mill is located close to the railway, the reason for this location is that the condition of the roads was very poor at the time of its establishment; hence transportation was feasible only by railways. The sugarcane area of the Dhampur unit is 50,000 ha and the crushing capacity is 15,000 TCD. The average yield of the sugarcane area of the factory is 864.92 / ha. The factory produces raw sugar and the machines used for production are manufactured in India and also imported from abroad. The sugar factory crushed 23.16 lakh metric tons of sugarcane in the year 2019-20 and in the same year, the production of sugar was 25.44 lakh metric tons. Sugarcane is the most cultivated crop in the region as they believe it is a sustainable and low-risk crop. The field observations revealed that sugarcane unlike many other crops is not much affected by any climate change like rain, hail, drought, flood, cattle, etc. A distance of 120 cm is kept between each sugarcane. Farmers practice mixed cropping system and get benefit from potatoes, peas and other seasonal sowing vegetables since the process of crop cycle also helps in high yielding.

It is in the place to mention that the minimum distance criterion is a central government scheme in which the distance between two sugar mills was reduced from 25 km to 15 km. When asked about this scheme, the general manager of the cane department said that there is no adverse effect of this scheme on the availability of sugarcane to the sugar mills. Although when this scheme came into force it affected the production of the factory to some extent, now everything is under control. The factory also keeps an eye on the farmers' use of fertilisers on the fields and encourage them to practise organic farming by giving them free press mud which is extracted after the crushing of cane which can be used as fertilizer on the farm.

We were told that cane is not purchased directly from cane growers, instead, it is purchased through a cooperative society. There are 8 cooperative societies in their area. About bank loans, he said that banks provide loans after verifying the income source and return performance of the sugar factory. We were informed that the price of sugarcane was the cause of the disagreement between the government and the sugar factory. The prices of sugarcane were ₹ 325, ₹ 315 and ₹ 310 per quintal respectively for the early, general, and rejected variety of sugarcane in the year 2020-21. Further, we were informed that to promote R&D, the factory has also a farm in Afzalgarh where their scientists and a team develop new varieties of sugarcane. They also try to provide training to the farmers in the best sugarcane institute and help farmers who are interested in acquiring knowledge of new varieties, new techniques, and new methods of sugarcane cultivation.

The Dhampur unit installed its distillery unit in 1995 with a 100 KLPD capacity that was upgraded to 300 KLPD in 2020–21. In each season, the plant produces 2, 50,000 l. of ethanol per day and sells it to oil manufacturing companies

(OMCs). They use heavy molasses B and C to make ethanol. In 2007, it also built a cogeneration facility with a 65 MW capacity. One of the by-products of sugarcane, bagasse, is used to produce power which is used in plant and is not available outside the plant for commercial purpose. An interesting information which was revealed during our interaction was that due to shortage of sugarcane, in the winter of 2006–2007, there was a cane war at the factory. This was because the Uttar Pradesh government was constructing additional sugar mills for the expansion of the industrial sector. As a result, each sugar mill's quantity of sugarcane was reduced, which led to losses. Sugar factories managed this crisis by regulating prices of sugarcane. We were also informed that since the online payment gets delayed therefore, many a times factories purchase sugarcane from the farmers at lower prices and pay them in cash. Farmers those who are in need of cash also prefer this arrangement though they receive less price for the cane. Like the farmers associated with cooperative mill, farmers here were also aware of the 14-day payment rule, but they get payment in a month's time. When we asked the reason for delay in payment, we were told there was always delay in the subsidy provided by the government. The rising cost of production, the burden of SAP, and low sugar prices made the factory helpless in giving timely payments to sugarcane growers. The plant exports sugar and wants the government's subsidy to be received quickly so that factory can pay farmers on time. They consider that the international sugar market is highly risky and uncertain as they are unaware of the overseas shipments. For Instance; Brazil, the largest sugar producer in the world, produces sugar from sugarcane in one year and uses sugarcane juice to produce ethanol the next year. In this manner the uncertainty erupts in Indian market because when sugar is produced in international market demand for Indian sugar decreases. But when ethanol is produced by juice of sugarcane the demand for Indian sugar again increases. That's why they want to increase the amount the government provides for export subsidies. We further enquired about the exports then the factory manager elaborated that last year he exported 15,58,000 lakh quintals of sugar at the rate of ₹ 27 per kg in the international market and the government paid ₹ 6 / kg as subsidy to each factory.

Table 2: Comparative Analysis of Both the Sugar Mills

S. No.	Parameters	Kisan Sahkari Chini Mill Snehrod Najibabad, Bijnor	Dhampur Sugar Mill-Dhampur, Bijnor
1	Sugarcane Area (Ha)	16995	50000
2	Crushing Capacity TCD	3000	15000
3	Cane Crushed (Lakh Ton)	6.29	25.52
4	Sugar Production (Lakh Quintal)	5.27	25.49
5	Sugar Recovery (%)	12.10	10.66
6	Ethanol production (KL)	67.35 lakh	6297.47
7	Cogeneration plant (MW)	None	65
8	Payment To Cane Growers	6 month-1 year	Within one Month
9	Number of Man in a days	800	2000

Source: Field Survey

The factory also had to pay an export cost of ₹ 2.25 per kg, hence the net income from exports was not profitable for the sugar factory. Therefore, they demand to increase in the export subsidy. When we inquired about the lockdown and pandemic phase, they informed us that the lockdown had no impact on the sugar market because demand had soared at that time. After visiting both the mills a comparison has been done to understand the reasons which are responsible for profit or loss in both the mills which are different in their nature of establishment.

Comparative Analysis of Co-operative and Private Sugar Mill in Bijnor

Since the nature and working of the mills is different, we have attempted to present a comparative analysis of both the mills in this section. This will give us an overview of the difference in the area, production, crushing capacity and problems faced by both the mills.

Table 2 reveals that the Farmer's Cooperative Sugar Mills Snehroad command area, which is 16,995 ha is less than Dhampur Chini Mill, which has 50,000 ha of sugarcane area. The Snehroad Sahkari Mill's 3000 TCD crushing capacity is significantly less than the Dhampur Chini Mill's 15,000 TCD crushing capacity. Snehroad Sugar Mill had crushed roughly 6.29 lakh t of sugarcane at the time of the survey, whereas Dhampur Chini Mill had crushed 22.52 lakh t. The production of sugar at the Snehroad sugar mill was lower at 5.27 quintals than the production at the Dhampur sugar mill, which was 25.49 lakh quintals. If we look into the process of converting raw material into sugar then, the first phase in the production of sugar is the crushing of sugarcane. The amount of sugarcane that sugar mills have consistently crushed in a single crushing session demonstrates their crushing efficiency.

Looking at the Figure 2, it is evident that Kisan Sahkari Sugar Mill has consistently crushed less sugarcane than Dhampur Chini Mill. A difference of around 15.89 lakh t in crushing capacity of both the mills is obvious from the data given for the year 2016–17 which further increased to 21.51 lakh t in 2020–2021. This explains that private sugar mills have consistently performed better than cooperative sugar mills in Bijnor, the main cause being the cooperative sugar mills' inadequate crushing capacity.

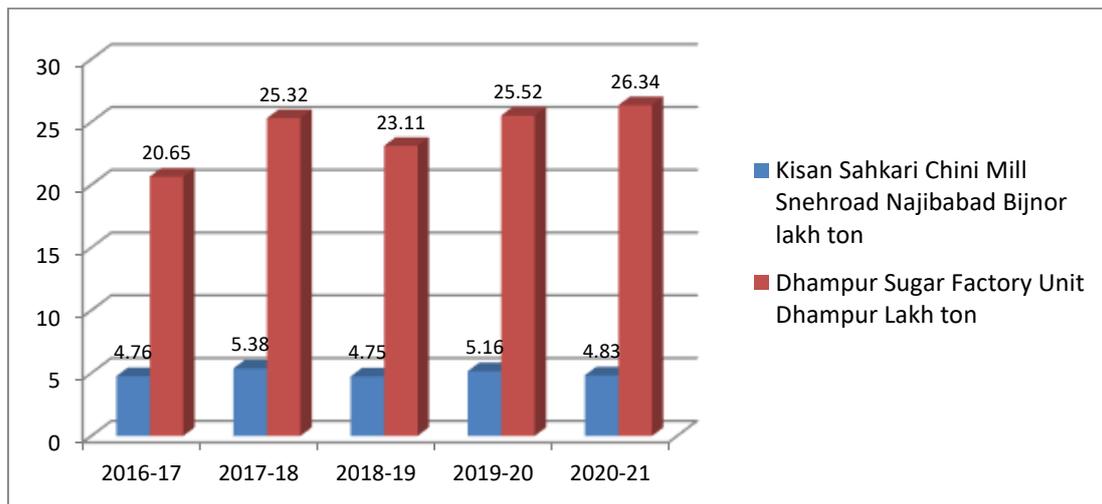


Fig. 2: Comparative Analysis of Sugarcane Crushed (in Lakh Tonnes)
Source: Annual Reports of the Mills for the year 2020-21

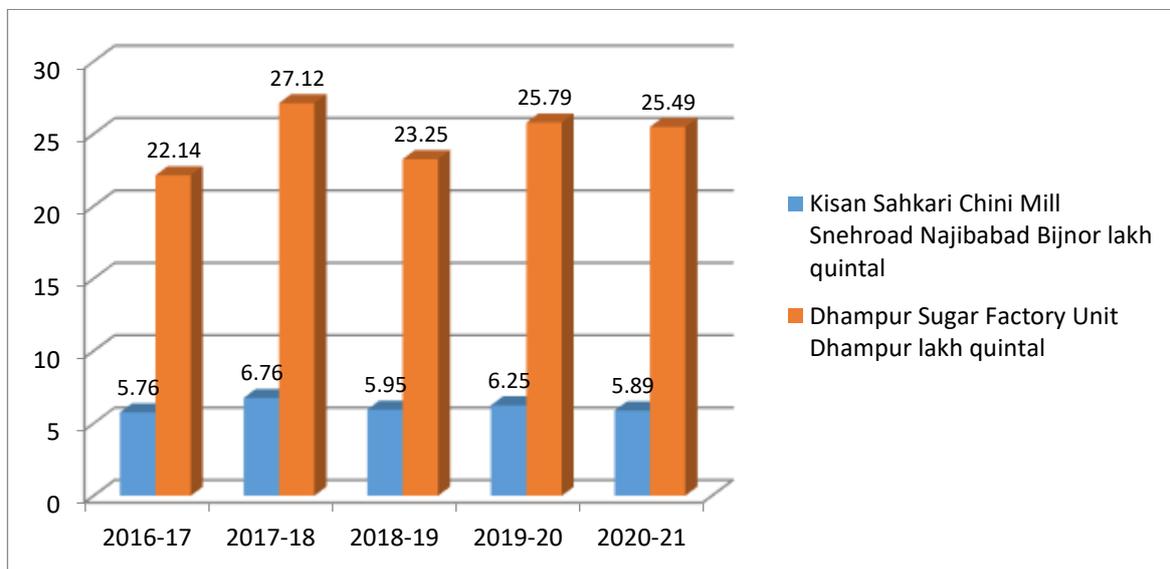


Fig. 3: Comparative Analysis of Sugar Production (in Lakh Quintal)
Source: Annual Reports of the Mills for the year 2020-21

Furthermore, in terms of sugar production, since the Cooperative Sugar Mill is smaller in scale hence, its sugar production is also lower than that of the Dhampur Chini Mill. This differential in sugar production is explained through Figure 3. A difference of 19.6 lakh quintal production is visible between both the mills for 2020–21 and this differential for the year 2017–18 with 20.36 lakh quintals of sugar, showed the greatest disparity in sugar output between both the mills.

In terms of branding the products, the Co-Operative Sugar Mill Snehroad has not engaged itself in using any e-commerce platform; rather, it sells through brokers in the wholesale market. This is the reason that they have no brand of their own, whereas Dhampur Chini Mill uses e-commerce to expand its market. The manufacturer sells sulphur-free sugar through Amazon, Flipkart, and other

online retailers in packets of 1kg and 5kg under the ‘Dhampure’ brand.

Regarding the procedure for paying sugarcane prices to sugarcane farmers it is known that the government fixes the price of sugarcane. The State Advisory Price is the amount given to sugarcane growers in Uttar Pradesh (SAP). The analysis of sugar production and sales at both sugar mills exhibit that, in the year 2020–21, the total cost of producing sugar in cooperative mill was approximately ₹ 2.06 billion, whereas the sugar mill's revenue from the free sale and export of sugar was approximately ₹ 1.80 billion, which was less than its cost. However, for Dhampur Sugar Mill, production of sugar costed ₹ 8.36 billion and income generated was ₹ 7.6 billion during 2020-21 indicating that both the sugar mills have experienced losses.

Welfare Initiatives

Both cooperative sugar mill and Dhampur Chini Factory have set up a Corporate Social Responsibility Committee with separate fund, which works in the areas of education, providing training courses to sugarcane growers, focussing on Healthcare in rural areas, Rural development, Sanitation and Preservation of environment. Dhampur Mill has built sewage treatment facilities, slope boilers, condensate process units, zero liquid discharge, waste management facilities, and water purification systems. In line with this philosophy, an ETP plant for environmental protection has been established by the cooperative sugar mill.

Conclusion

After understanding the working of both the mills it can be inferred that the private sugar mill in Dhampur has consistently produced more sugar than the cooperative sugar mill in Snehroad Najibabad. Since last five years, the technology and management of the private sugar mill in Dhampur has resulted in high production of sugar and crushing of more sugarcane than the cooperative mill in Snehroad. The Dhampur Chini Mill's distillery unit is in better shape than the Cooperative Sugar Mill Snehroad. Since Dhampur Chini Mill is a privately held sugar company and private entities always place a premium on their infrastructure and product quality, some of these actions set them apart from cooperative sugar mills. Along with these reasons there is lack of a power cogeneration unit in the cooperative sugar mill in Najibabad. It should be established so that cooperative sugar mills can produce their own electricity.

Even though the National Association of Government of India has already placed Co-operative Sugar Mill Snehroad third in its list of the best performances as these awards are given only to cooperative sugar mills, we can say that Snehroad has achieved a higher ranking amongst other cooperative sugar mills. But to compete with private sugar mills, government support is required for cooperative mills by making them more competitive so they can more effectively compete with private sugar mills. Increased government funding for cooperative sugar mills and further technological advancements are both necessary.

There has been a dichotomy regarding the price policy announced by the state and central government regarding the payment to sugarcane growers. As per the data available for the year 2021-22, the State Advisory Price (SAP) announced by the government of Uttar Pradesh was high at ₹ 350 per quintal whereas the Fair Remunerative Price (FRP) announced by the central government for the same year was ₹ 290 per quintal for the basic 10 percent of sugar recovery level. Although more SAP is in the best financial interest of sugarcane growers, but it puts a heavy financial burden on sugar mills. This burden falls more on cooperative sugar mills than private sugar mills. In this

context, the government should implement its policies in a way that benefits both sugarcane growers and sugar mills. To accomplish this, it should increase the subsidies and grants it provides to the mills, paying particular attention to cooperative sugar mills. The government should also pay attention on the modernization and improved management of cooperative sugar mills.

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References

- Annasaheb MG (2020) *A Study of Co-operative Sugar Factories in India in The Globalized World: Theory, Practice and Future Decisions*, Conference paper, Retrieved from: https://www.researchgate.net/publication/339738341_A_Study_of_Cooperative_Sugar_Factories_in_India_in_The_Globalized_World_Theory_Practice_and_Future_Decisions, viewed on 25 July 2022.
- Business Standard (2022) *India achieves highest-ever ethanol blend of 8.1% with petrol in 2020-21*. Retrieved from: https://www.business-standard.com/article/economy-policy/india-achieves-highest-ever-ethanol-blend-of-8-1-in-2020-21-121120700966_1.html. Viewed on 7 Aug 2022.
- Chand Smriti (2022) *Sugar Industry in India: Growth; Problems and Distribution*, Retrieved from: <https://www.yourarticlelibrary.com/industries/sugar-industry-in-india-growth-problems-and-distribution/14144>, viewed on 6 Aug. 2022.
- Chini Mandi (Aug 2022) *Sugar Producing State and Sugar Mills of India/ News*, Retrieved from: <https://www.chinimandi.com/karnataka-sugarcane-farmers-protest-in-hindi>, viewed on 4 Aug 2022.
- Cooperative Sugar Mills; Retrieved from: <http://Www.Upsugarfed.Org.In>, Viewed on 30 May 2022.
- Department of Food & Public Distribution (2021) *Annual Report from Ministry Of Consumer Affairs, Food & Public Distribution*, Retrieved from: <https://Dfpd.Gov.In/Ebook/Examples/Pdf/Annualreport.Html?Pth=/1sgbo2w68muluncgkmpnlf5whm/Pdf/Annualreport201819eng.Pdf#Book>, viewed on 20 December 2022.
- Dhampur Sugar Mills Limited (2019-20) *Annual Report titled Dhampur 2.0*.
- Doubling Farmers' Income Volume VIII (December 2017) *Production Enhancement through Productivity Gains*, Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture & Farmers' Welfare, Retrieved from: <https://agricoop.gov.in/sites/default/files/DFI%20Vol-8A.pdf>, viewed on 22 Dec 2019.

- Economic Survey (2021-22) *Agriculture and food management/ Sugar sector*, page no. 267; Retrieved from: indiabudget.gov.in/economicsurvey/ebook_es2022/files/basichtml/page267.html#:~:text=Average%20annual%20p,roduction%20of%20sugarcane,crore%20tonnes%20in%202020-21. Viewed on 5 Aug 2022.
- Gaikwad Chandrashila, Jadhav Shweta Feb (2017), Challenges faced by Sugarcane Mills and Farmers in India, *International Journal of Science Technology and Management* vol.6 issue 2 ISSN: 2394-1537.
- India today (1 June 2022) *Maharashtra's Bitter Sugarcane Season.*, Retrieved from: <https://www.indiatoday.in/india-today-insight/story/maharashtra-s-bitter-sugarcane-season-1957129-2022-06-01>, viewed on 25 July 2022.
- Indian Express (June 2021) *Maharashtra Sugar Industry loses sweetness as unsold stock comes to Haunt*, Retrieved from: <https://indianexpress.com/article/cities/pune/maharashtra-sugar-industry-sweetness-unsold-stock-7379804/>, viewed on 25 July 2022.
- Indian Kanoon (2007) *Buy high and sell low*, available on; <https://indiankanoon.org/doc/1814443>.
- Krishi Vigyan Kendra; Bijnor. Retrieved from: <https://bijnour.kvk4.in/collaboration.php>, viewed on 8 June 2022.
- Niti Aayog (2020) *Final Reports of The Task Force Sugarcane and Sugar Industry*, Retrieved From: <https://Www.Niti.Gov.In/Sites/Default/Files/2020-08/Sugarreport.Pdf>, viewed On 10 June 2022.
- Press Information Bureau (5 June 2022) *Ethanol blending Target*. Retrieved from: <https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1831289>, viewed on 6 June 2022.
- Press Information Bureau (6 Dec 2021) *Status of Pending Cane Dues of Farmers*, Retrieved from: <https://pib.gov.in/PressReleseDetail.aspx?PRID=1780088>, viewed on 6 Aug 2022.
- Statistical Data Government of Uttar Pradesh (2021) *Sugar Industry & Cane Development Department*, Retrieved from: <http://Upcane.Gov.In/Mediagallery/Crushing%20data%2017%20feb%202020.Pdf>, viewed on 07 December 2021.
- Tiwari AK (2017) *Indian Sugar Industry: Development, Sickness and Environment Problems*, R.K. Books, New Delhi