

## AN EMPIRICAL STUDY OF INCOME AND PERFORMANCE OF COOPERATIVE AND NON-COOPERATIVE SUGARCANE FARMER

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**Abstract-** The study conducted a comparative analysis of the cost and profit of cooperative and non-cooperative sugarcane farmers. The study also looked into the government schemes available to sugarcane farmers and found that only cooperative farmers received the benefits, leaving non-cooperative sugarcane farmers and jaggery producers with fewer economic benefits. Additionally, a comparison was made between the per quintal sugarcane price received by cooperative and non-cooperative farmers. Primary data was collected through personal interviews and questionnaires using multistage sampling methods. In the study, the hypothesis was tested by Student t-test. In the study, the problems of cooperative and non-cooperative farmers have been studied and suggestions have been given. To analyze the data obtained in the study, the hypothesis has been tested through Microsoft Excel.

**Keywords:-** Sugarcane co-operative farmer, non-cooperative farmer, Sugarcane farmer, co-operative Sugar factory,

**Introduction:-** India is the second-largest producer of sugarcane in the world, producing almost the same amount as Brazil. Sugarcane is cultivated among commercial crops in large quantities and is an important crop among cash crops. Sugarcane is an annual crop and is cultivated once a year. Farmers cultivate sugarcane thrice if the seeds are sown once in the sugarcane crop. Compared to other agricultural crops, sugarcane farming has a lower cost per quintal. In India, sugarcane and sugar beet are used as raw materials for sugar production. Along with making sugar from sugarcane, electricity, fertilizers, and other materials are produced from sugarcane peel. Sugarcane cultivation has led to the establishment of cottage and small-scale industries in the country. In the state of Chhattisgarh, sugarcane is cultivated in large quantities in the plains and purchased by the government through cooperative sugar factories. There are four cooperative sugar factories in Chhattisgarh state, of which 3 are in Durg division. Sugarcane farmers of the Bemetara district sell sugarcane in the cooperative sugar factory of the Durg division. When farmers' sugarcane is not sold in cooperative sugar factories, farmers' sugarcane is used to make jaggery. Due to a lack of sugar factories in the district, farmers have to face many problems. Agriculture is the means of livelihood for more than 90 percent of the population of Bemetara district. Farmers in the district produce

sugarcane and make jaggery through crushers. Due to a lack of sugar factories, farmers sell sugarcane in other districts, which leads to higher transportation costs and lower economic benefit. Mainly paddy along with sugarcane and other crops are being cultivated in the district. However, most of the farmers in the district do not get the right price for their crops, which leads to financial problems.

**Rajiv Gandhi KisanNyayYojana:-**21 May 2020 Former Prime Minister Late. It started on the death anniversary of Rajiv Gandhi, the objective of which was to increase crop area coverage, production, and productivity. To increase the net income of farmers by compensating crop costs. To increase the participation of the agriculture sector in GDP by establishing agriculture as a profitable business. To provide farmers the right price for their produce. For the sale of sugarcane, the fixed fair and remunerative price of the crop of the year 2019 is Rs 261.25 per quintal and the incentive and input assistance amount is Rs 93.75 per quintal to the sugarcane growers. Payment was made through additional amount is provided if sugarcane is purchased at the rate of Rs 355 per quintal and the recovery rate of sugar is more than the standard rate. Only those farmers can avail the benefit of this scheme who sell their sugarcane through cooperative sugar factories. Rajiv Gandhi KisanNyayYojana has not only increased the agricultural area but has also seen changes in cropping patterns. Due to the Rajiv Gandhi KisanNyayYojana, the area under paddy in the district increased but there was no increase in the area under sugarcane cultivation.

**Objective:-** The objective of the research study is as follows-

1. To study the problems of sugarcane farmers in Bemetara district.
2. To conduct a comparative study of the costs and profits of cooperative sugarcane farmers and non-cooperative sugarcane farmers.
3. To conduct a comparative study of the per quintal price of sugarcane received by cooperative sugarcane farmers and non-cooperative sugarcane farmers.

**Research Techniques:-**

Study Area- For the study, the economic benefits and problems of sugarcane farmers of the Bemetara district of Chhattisgarh have been studied. Bemetara district is located in the center of Chhattisgarh state. Bemetara district extends from 21<sup>0</sup>7' north latitude to 81<sup>0</sup>31' east longitude. The geographical area of Bemetara district is 285481 hectares in which agriculture is done in 225965 hectares of land. Bemetara district is a landlocked district, that is, it is not connected to any other state or sea. The total population in the district is 795759 and the literacy rate is 70.58, which is higher than the literacy rate of the state. There are total of 702 villages in the Bemetara district. 80 percent of the population of the district is engaged in agriculture. Despite abundant natural resources being available in the district for sugarcane cultivation, sugarcane cultivation is done in only 1 percent hectare of land in the district i.e. 2290 hectares of land. The productivity of sugarcane per hectare in Bemetara district is the highest in the state. Irrigation means like canals, tube wells, ponds, wells, etc. are available in sufficient quantity in the district. Due to the favorable environment for sugarcane farming in the district, farmers cultivate sugarcane but there is a lack of marketing system and sugarcane farming schemes for the produce. Due to lack of sugar factories in the Bemetara district, farmers get discouraged and cultivate other crops. In the district, 4 blocks are Berla, Bemetara, Navagarh, and Saja respectively and 5 tehsils are Berla, Thankamharia, Saja, Navagarh, and Bemetara

respectively. Paddy is cultivated in more than 90 percent of the total agricultural area in the district because the minimum support price is given to this crop by the government. Along with paddy, sugarcane, pulses, oilseeds, etc. are also cultivated in the district. Most of the sugarcane farmers of the Berla and Bemetara development blocks of the Bemetara district produce jaggery from sugarcane.

**Collection of data:**-Primary and secondary data have been collected for the study.

**Primary Data:** In the presented research study, Primary data was collected from sugar factories, jaggery producing farmers, and cooperative and non-cooperative sugarcane farmers through personal interviews, questionnaire observations, etc.

**Secondary data:** For secondary data, the data of the statistical department of Bemetara district for the year 2016-17 to 2022-23 and the data of sugar factory of Durg division and Chhattisgarh Economic Survey 2022-23 have been compiled. For information about sugarcane farmers, data has been collected from the District Agriculture Department and Sub-Divisional Senior Agriculture Offices Berla and Bemetara. For information about government schemes, data has been collected through Janman Patrika and sugarcane price reports of Agricultural Cost and Price Commission.

**Research Hypothesis:** The hypotheses of the presented research study are as follows-

1. **H<sub>0</sub>:** There is no significant difference between the income of cooperative sugarcane farmers and non-cooperative sugarcane farmers.

**H<sub>1</sub>:** There is a significant difference between the income of cooperative sugarcane farmers and non-cooperative sugarcane farmers.

2. **H<sub>0</sub>:** There is no significant difference between the per acre production cost of cooperative sugarcane farmers and non-cooperative sugarcane farmers.

**H<sub>1</sub>:** There is a significant difference between the per acre production cost of cooperative sugarcane farmers and non-cooperative sugarcane farmers.

3. **H<sub>0</sub>:** There is no significant difference between the per quintal sugarcane price received by cooperative sugarcane farmers and the per quintal sugarcane price received by non-cooperative farmers.

**H<sub>1</sub>:** There is a significant difference between the per quintal sugarcane price received by cooperative sugarcane farmers and the per quintal sugarcane price received by non-cooperative farmers.

## Review of literature

Verma, L. K., & Solanki, A. (2020). Cost and Returns Analysis of Sugarcane Production in Baghapat district of Western Uttar Pradesh, India. In the presented research paper, the researcher has studied the cost of production of sugarcane agriculture. In the study, the per hectare agricultural cost of sugarcane farming has been classified into fixed cost, variable material cost, labor cost, interest on capital, etc. and its contribution to the total cost has been studied. The researcher has said that due to the large size of the agricultural land of sugarcane, the cost is higher and the cost of agriculture remains favorable in marginal agricultural land. The study found that labor costs are higher in sugarcane farming.

**Upreti, P., & Singh, A. (2017).** An Economic Analysis of Sugarcane Cultivation and its Productivity in Major Sugar Producing States of Uttar Pradesh and Maharashtra. A comparative study of the productivity and production of sugarcane farmers of Maharashtra and Uttar Pradesh has been done by the researcher. The researcher has used Cobb-Douglas' production function. In the presented research, the production, productivity, cost, and profitability of sugarcane agriculture have been studied. In the analysis of the study, it was seen that the cost in Maharashtra is twice as much as in Uttar Pradesh, due to which the farmers of Uttar Pradesh get more profit. The production and productivity per hectare of agricultural land are higher in Maharashtra than in Uttar Pradesh.

**Ramarao, I. V. Y. (2011).** An Economic Appraisal of Manufacturing and Marketing of Jaggery in Andhra Pradesh state, India. In the present study, jaggery production and marketing in Andhra Pradesh have been evaluated. In the study, the production and marketing system of jaggery has been analyzed through the moss scar test and bake test at the breakeven point. In the study, efforts should be made to reduce labor costs and reduce middlemen in the cost of jaggery manufacturing so that profitability can be increased.

**Verma, L. K., & Solanki, A. (2020).** Cost and returns of sugarcane production at different size groups of farms in district Meerut (U. P.), India. In the present study, the production cost and profit of ratoon crop and planted crop has been studied by collecting data from Daurola and Hastinapur development block of Meerut district from the year 2009 to 2011 using the survey method and convenient general sampling method. In the study, the production cost and profit per hectare of sugarcane have been studied. The per quintal cost and profit of the Ratoon crop and plantation of sugarcane has been compared and it was observed that farmers get more profit in Ratoon crop. It was concluded in the study that by investing less in sugarcane crops and making optimum use of sugarcane resources, more profits can be earned.

**Table -1 Per acer Cost and profit of sugarcane cultivation (non co-operative farmers)**

sn	Particular	Smallfarmers	Medium farmers	Large farmers	Overall
1	Irrigation cost	3890	3765	4050	3901.67
2	Seed	9926.25	9419.38	8637.5	9327.71
3	Fertilizer	10275	9875	9000	9716.67
4	Weges	10775	9950	9450	10058.33
6	Harvesting/Threshing	25110	24985	24950	25015
7	Total cultivation cost	70551.25	68331.88	67537.5	68806.88
8	Jaggery making cost	31195.5	31584	32789.4	31856.3
9	Total cost of jaggery	101746.75	99915.88	100326.9	100663.18
10	Sales	129238.5	130848	135841.18	131976.1
11	Profit	27491.75	30932.12	35514.28	31312.92

12	Jaggery production in quintals	44.565	45.12	46.842	45.509
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In table number-1, the average per acre agricultural cost and profit of jaggery-producing farmers is given. In which an average of 45.509 quintals of jaggery is made from the sugarcane produced per acre, the total cost of making jaggery is Rs 700 per quintal.

Thus the total manufacturing cost of jaggery comes to Rs 100663.18 for 45.509 quintals of jaggery. The total market price of jaggery from sugarcane produced per acre was Rs 1,31,976.1. The net profit of farmers making jaggery is Rs 31312.92 per acre. The main reason for low income of jaggery-producing farmers is that they do not get the benefits of the schemes provided by the government, due to which they have to face financial problems. If the cooperative sugarcane farmers are provided a bonus in the form of an additional amount, then their profit increases, but non-cooperative sugarcane farmers are not provided a bonus in any way by the government. When farmers make jaggery from sugarcane and sell it in the open market, they are not able to get a fair price for the jaggery. Farmers sell jaggery in the market at the rate of Rs 2900 per quintal, while the average manufacturing cost per quintal is Rs 2211.94. Farmers get a profit of Rs 688.06 per quintal by making and selling jaggery, which is very low.

**Table 2 –Average cost and profit of sugarcane cultivation**

Sn	Particular	Small	medium	Large	Overall
1	Irrigation cost	3825	4080	4130	4011.67
2	Seed	9356.88	9225.5	9825	9469.12
3	Fertilizer	10250	9987.5	10225	10154.17
4	Weges	9975	10050	10500	10175
5	Trans	10575	10337.5	11450	10787.5
6	Harvesting/Threshing	25200	25175	25075	25150
7	Total cultivation cost	69181.88	68855.5	71205	69747.46
10	Sales	126480.47	128578.58	125866.87	126975.28
11	MSP and bonus	113422.5	115304	112872.25	113866.25
12	Additional FRP	13057.97	13274.58	12994.62	13109.05
13	Profit	57298.59	59723.08	54661.87	57227.82
14	Production in quintals	319.5	324.8	317.95	320.75

**Source: co-operative sugarcane farmers, sugar factories balod and reports of Agricultural Cost and Price Commission.**

In Table 2, the total production cost of sugarcane is Rs 58959.96 per acre and the transportation cost to the factory is Rs 10787.5. Thus, the total production cost of farmers including transportation is Rs 69747.46. Comes per acre. The average total income of sugarcane farmers is 320.75 quintals, with fair and remunerative price and a total of Rs 126975.28 as a bonus under Rajiv Gandhi

KisanNyayYojana and due to the good recovery rate of sugarcane i.e. more than 9.5 percent recovery rate 30.5 additional amount is provided on per percentage increase. In the year 2022-23, an additional amount of Rs 40.87 per quintal of sugarcane has been given to Maa Danteshwari Cooperative Sugar Factory. The total income from the sale of sugarcane in cooperative sugar factories was Rs 1,49,251 per acre and the net profit was Rs 67,890 per acre. The net profit of jaggery-producing farmers is Rs 46,067 per acre which is less than selling it in a sugar factory. With the establishment of a sugar factory in Bemetara district, farmers will not have to bear much transportation expenses and there will be an additional increase in the income of the farmers. With the establishment of a sugar factory in the district, the number and area of sugarcane farmers will increase because the natural resources in the district are suitable for sugarcane agriculture.

**testing of Hypothesis:** In the study, a t test has been used at a 05 percent significance level to test the hypothesis and a definite result has been obtained by comparing the t-table value and the calculated value.

**Table 3: Per acre cost of cultivation sugarcane (cooperative and non-cooperative farmers)**

Variable	Mean of cultivation cost in rupees	Standard deviation of cultivation cost in rupees	number of farmers
cooperative sugarcane farmers	88707.35	7905.24	100
non-cooperative sugarcane farmers	82868.68	7013.13	100
T table value- 1.97	T calculated value – 1.1423	Significance level -05	

In Research Hypothesis Experiment 2, there is no significant difference between the cost of production per acre of cooperative sugarcane farmers and the cost of production per acre of non-cooperative sugarcane farmers. The mean of both the groups was Rs 82,868.68 respectively through data analysis and statistical methods. And Rs 88,707.35. And the standard deviation is 7,013.13 and 7,905.24. The value of t has been calculated to test both groups, the value of which is 1.1423. At a 0.05 percent significance level and the number of independent ranks is 198, the t table value is 1.97 which is more than the calculated value. That is, the calculated value is less than the table value. Therefore, the null hypothesis is accepted, that is, there is no significant difference between the per acre production cost of cooperative sugarcane farmers and the per acre production cost of non-cooperative sugarcane farmers. There is a difference in the cost of production per acre between cooperative sugarcane farmers and non-cooperative sugarcane farmers. The difference in the cost of sugarcane is due to the difference in transportation cost and the cost of making jaggery. T-test has revealed that the difference between the cost of cooperative sugarcane farming and the cost of non-cooperative sugarcane farmers is insignificant.

**Table No. 4: Income of farmers producing jaggery and T value of income of farmers selling sugarcane in sugar factories.**

Variable	average income of farmers	Standard deviation of farmers income	number of farmers
cooperative sugarcane farmers	60543	13199.2	100
non-cooperative sugarcane farmers	46072	10037.87	100
t calculated value – 3.6354	significance level – 0.05		
t table value- 1.97			

In Table -3: 100 farmers producing jaggery and 100 farmers selling sugarcane in sugar factories have been studied using the t-test method. It is known from Table 3 that the mean value of income of farmers producing jaggery is 24630 and standard deviation is 4215 and the mean value of income of farmers selling sugarcane in sugar factories is 47541 and standard deviation is 6123. The hypothesis has been tested on the number of 198 independent variables at 5 percent significance level. In the test, the t-value was found to be 1.97 and the calculated value is 3.6354. The calculated value of the T value is more than the T table value, hence the null hypothesis is rejected because the T calculated value of farmers' income is more than the Student T table value, thus the alternative hypothesis is accepted i.e. the difference between non-cooperative sugarcane farmers and cooperative sugarcane farmers. The difference in income is significant. The net profit of cooperative sugarcane farmers is more than that of non-cooperative sugarcane farmers and this difference is significant in income at the test 5 percent significance level. In this way, selling sugarcane in a cooperative sugar factory increases the profit due to getting minimum support price, bonus, and additional recovery.

**Table No. 5: Information about the amount received per quintal of sugarcane by the sugarcane farmers from Ma Danteshwari Cooperative Sugar factories**

Year	fair and remunerative price (A)	Rajiv Gandhi KisanNyayYojana (B)	Government determined price of sugarcane (A+B)	additional recovery amount	Recovery rate of sugar	recovery rate of jaggery
2018-19	275	50	325	-	9.12 %	11 %
2019-20	275	80	355	-	9.49 %	11.75 %
2020-21	285	70	355	26.65	10.40 %	11.25 %
2021-22	290	65	355	31.9	10.60 %	11.60 %
2022-23	305	50	355	40.87	10.84 %	12

In Table Number-5, the amount received by sugarcane farmers from MaaDanteshwari Cooperative Sugar is the fair and remunerative price determined by the Central Government, which is increasing every year from the year 2018-19 to 2022-23. To maintain the quality of sugarcane and improve it

in the future, recovery is given in addition to the fair and remunerative price to the farmers' income. The recovery rate of sugar of MaaDanteshwari Cooperative Sugar Factory is continuously increasing, due to which the income of the farmers selling sugarcane will be additional to the amount given by the government, which will be called surplus rate if the recovery rate is more than 9.5 percent. This amount is given on the basis. The additional recovery amount is continuously increasing from the year 2021-21. An additional amount of Rs 40.87 per quintal was given in the sugarcane crushing season 2022-23. The total amount per quintal of sugarcane sold in the sugar factory is increasing every year. In the year 2022-23, farmers received sugarcane at the rate of Rs 395.87 per quintal. Those farmers who do not sell sugarcane in the sugar factory do not receive this additional amount. Most of the farmers of Bemetara district do not sell sugarcane in the sugar factory. The price of sugarcane has been determined by the state government of Chhattisgarh and the amount over the fair and remunerative price is being paid in 4 different installments under the Rajiv Gandhi Kisan Nyay Yojana. It is known from the table that the price of sugarcane is continuously increasing every year. Farmers producing jaggery do not receive the amount provided by the government. It is clear from Table 5 that in every year from 2018-19 to 2022-23, the recovery rate of sugar is less than the recovery rate of jaggery, yet the farmers producing jaggery do not get an additional recovery amount. The net profit of farmers producing jaggery is less than the net profit of farmers selling sugarcane in sugar factories. The government purchases sugarcane from sugar factories so that the farmers get the right price for their sugarcane, but the jaggery manufacturers are not able to avail the benefits of the government schemes.

**Testing of hypothesis** - There is no significant difference between the per quintal sugarcane price received by non-cooperative farmers and the per quintal sugarcane price received by cooperative sugarcane farmers.

**Table - 6 per quintals sugarcane price in 2018-19 to 2022-23**

Year	Total amount received by cooperative sugarcane farmers	Total amount received by non-cooperative sugarcane farmers
2018- 19	325	302.50
2019-20	355	319.6
2020-21	381.65	315
2021-22	386.9	333.5
2022-23	395.87	342
Mean	340	328.5
Standard deviation	15	13.5

**Source reports of Agricultural Cost and Price Commission, economic survey 2021-21, by non-cooperative sugarcane farmers.**

The t table of degree of freedom number 8 at a 5 percent significance level is 2.3065 and the calculated value of t test is 0.003959. The table value of T is more than the calculated value of T, hence the null hypothesis is accepted i.e. there is no significant difference between the per quintal

sugarcane price received by non-cooperative farmers and the per quintal sugarcane price received by cooperative sugarcane farmers.

**Conclusion** - According to the study, the per-acre agricultural cost of cooperative sugarcane farmers was Rs 88707, while the total cost per acre of non-cooperative sugarcane farmers was Rs 82868. Even though cooperative sugarcane farmers have to bear more cost, the Student's t-test showed that there is no significant difference between the cost of agriculture per acre for both types of farmers at a 5 percent significance level. As per the study, the net profit per acre of cooperative sugarcane farmers is Rs 60543 which is significantly higher than the net profit per acre of non-cooperative sugarcane farmers, which is Rs 46072. The study also found that farmers are given minimum support prices and bonuses to ensure that they receive fair compensation for their produce. In the district, farmers cultivate paddy and other crops, but only cooperative sugarcane farmers receive benefits. Non-cooperative sugarcane farmers are given minimum support prices and bonuses on jaggery production by the government, as well as an additional amount for good recovery rates. Many non-cooperative sugarcane farmers face economic problems due to a lack of knowledge about the best practices and pricing. This is because the purchase of sugarcane crops is only done in the sugar factory, which means that not all sugarcane farmers are able to avail the benefit of minimum support price. If farmers are unable to sell sugarcane to sugar factories, then the sugarcane is often used to make jaggery. The government's lack of assistance to jaggery-producing farmers has resulted in high manufacturing costs, reducing the economic profit of farmers and impacting their standard of living. According to the results of a t-test conducted from 2018-19 to 2022-23, there was no significant difference in the price of sugarcane per quintal received by cooperative sugarcane farmers and non-cooperative sugarcane farmers. This means that the difference in price received by the two groups is not meaningful.

**The problem of cooperative sugarcane farmers** - Sugarcane farmer MaaDanteshwari of Bemetara district sells sugarcane in the Cooperative Sugar Factory Karkarbhat. The basic problem of the farmers is that due to lack of sugar factories in the district, they have to sell sugarcane in the sugar factory of another district due to which they have to bear higher transportation costs. When the cost of cultivation of sugarcane is high, their profit is reduced because there is a negative relationship between cost and profit. When farmers do not have their means of transportation, they transport sugarcane to the factory in rented vehicles. Due to the long distance from the agricultural land to the factory, farmers have to bear higher fares. When the cost of cultivation of sugarcane is high, their profit is reduced because there is a negative relationship between cost and profit. When farmers do not have their means of transportation, they transport sugarcane to the factory in rented vehicles. Due to the long distance from the agricultural land to the factory, farmers have to bear higher fares. Tokens are provided to the farmers for selling sugarcane, but since sugarcane is not sold as per the token, the farmers have to bear the additional transport fare of the vehicle, as a result, the profits of the farmers are directly affected. In the factory, only 2 to 3 slips are given to the farmers for selling sugarcane, which means that the sugarcane farmers are not able to sell the entire sugarcane due to which the farmers are not able to recover their cost and proper profit. Only 60 to 70 percent of the sugarcane produced by the farmers is purchased by the sugar factory and the remaining sugarcane is used by the farmers for other purposes.

**The problem of non-cooperative sugarcane farmers:-**The main problem of non-cooperative sugarcane farmers is not getting the minimum support price for the sugarcane produced. There is not

a single cooperative institution for selling sugarcane in the Bemetara district, due to which farmers use sugarcane to make jaggery and sell it in the open market. Most of the farmers in the district produce jaggery by producing sugarcane, but they are not able to get a fair price for the jaggery due to which the farmers can recover only their agricultural costs and very little profit. Farmers can sell sugarcane in the sugar factory but due to the absence of a sugar factory in the district, farmers sell sugarcane in the sugar factory of other districts but in the sugar factory of Kawardha district they do not purchase sugarcane from the farmers of other districts because sugar Most of the sugarcane is supplied to the factory in Kawardha district itself. If farmers sell sugarcane in Danteshwari Cooperative Sugar Factory, they have to bear huge transportation costs. By selling sugarcane in the sugar factory, farmers get a recovery rate in addition to the minimum support price, which increases the income of the farmers. The main problem of the sugarcane farmers of the district is that they are not able to avail the benefits of grants, schemes, fair prices, bonuses, etc. provided by the government because the benefits of these government schemes are available only by selling sugar in the cooperative sugar factory.

**Suggestion** - It is important to maintain adaptation to the cropping pattern to ensure the sustainability of sugarcane farming. Currently, adverse changes are being observed in the crop pattern, and it is necessary to provide benefits like bonuses and minimum support price to sugarcane farming like other crops. This will enable the farmers to produce multiple crops instead of relying solely on sugarcane. Providing a minimum support price for the jaggery produced can also help increase the area, production, and productivity of sugarcane farming. It is suggested that the benefits of the Pradhan Mantri Bima crop should be extended to sugarcane agriculture as well. This would provide financial security to sugarcane farmers in case of crop failure or damage. Additionally, if minimum support prices were given for jaggery, it could encourage farmers of other crops to shift towards sugarcane farming, thereby increasing the production and economic benefits of the crop. Encouraging fair prices for jaggery could lead to the growth of small-scale industries and generate more income for farmers. It could also create job opportunities for many people. Bemetra district has favorable resources for sugar factories. If at least one sugar factory is established in the area, farmers will be motivated to cultivate sugarcane instead of other crops. This will increase their income and help improve their standard of living. While agricultural insurance is provided for many crops in the state, sugarcane farmers do not have access to it. This discourages them from cultivating sugarcane. It seems that the main problem faced by sugarcane farmers is the delay in selling their produce. To address this issue, the government could consider amending the sugarcane purchasing system by removing the quantity limitations and providing a better transportation system for purchasing sugarcane. In addition, the state government could offer bonuses on the products of other crops, such as jaggery, to incentivize farmers. Furthermore, providing additional incentives for achieving higher recovery rates could help increase the area and productivity of sugarcane farming.

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