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Assessment of constraints and suggestions expressed by sugarcane growers in Vijayapura district of Karnataka

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Abstract

Sugarcane cultivation plays a major role in sustaining rural livelihoods and supporting the agro-based economy of Karnataka. Despite its significance, growers still encounter a number of obstacles that limit their output and financial success. This investigation was carried out in Vijayapura district, one of the leading sugarcane growing regions of the state. The district was chosen purposively and from the five taluks, Indi and Sindagi were identified due to their extensive sugarcane acreage. A total of six villages with high sugarcane potential were selected and from each village, 10 small and 10 big growers were randomly chosen, resulting in a sample size of 120 respondents. Data were gathered through a pre-tested personal interview method using an ex-post facto research design. The study highlighted critical constraints faced by sugarcane growers, including low prices, delayed factory payments, escalating input costs, labor shortages and untimely access to agricultural inputs. These challenges not only imposed financial stress but also disrupted effective farm planning and productivity. To address these issues, farmers emphasized timely clearance of payments by factories, provision of subsidies on essential inputs and strengthening of local input delivery systems. The findings underscore the urgent need for institutional support, policy interventions and greater industry responsiveness to enhance the economic viability, resilience and long-term sustainability of sugarcane farming households.

Keywords: Sugarcane growers, constraints, suggestions

Introduction

Sugarcane (*Saccharum officinarum*), a member of the Gramineae (Poaceae) family. One of the oldest crops to be cultivated and also the world's major commercial crops (Ganeshprasad, 2010) [4]. Sugarcane, which was believed to have originated in New Guinea, spread widely throughout tropical and subtropical regions and became an important source of income for millions of farmers because of its assured market demand and many commercial uses. More than 110 nations grow sugarcane worldwide, with Brazil, India, China, Thailand, Mexico and Pakistan. Sugarcane accounts for 86% of global sugar production, with Brazil being the largest producer and exporter, closely followed by India. After cotton, sugarcane is the second-largest agro-based sector in India, contributing significantly to both the national economy and rural development. (Karpagam *et al.*, 2019) [5]. More than 50 million farmers and their families rely on this for both direct and indirect income. With an average annual production of about 35.5 crore metric tonnes of sugarcane, India is the world's largest consumer and second-largest producer of sugar. The crop is cultivated on approximately 5.09 million hectares with a production of 430.50 million metric tonnes and an average productivity of 82.5 tonnes per hectare (Commission for agricultural cost and price, 2021). The states of Uttar Pradesh, Maharashtra, Karnataka, Tamil Nadu, and Bihar are the main producers of

sugarcane. Karnataka ranks third in area and production after Uttar Pradesh and Maharashtra, with about 4.23 lakh hectares under sugarcane and a productivity level of 96 tonnes per hectare (Directorate of economics and statistics, 2020). Within Karnataka, districts such as Belagavi, Bagalkot, Vijayapura, Mandya and Mysuru are the major sugarcane belts.

Despite the growing trend in productivity, a considerable gap persists between the potential and realized yield of sugarcane. This gap can be attributed to a combination of environmental conditions, cropping systems, varietal performance, nutrient management, pest and disease pressure, socio-economic limitations and marketing challenges. Although several improved technologies and production practices have been developed, their adoption by farmers has remained uneven. Many innovations continue to remain confined to research institutions, while farmers face persistent challenges such as low prices for cane, delayed payments by factories, high input costs, non-availability of quality planting material, labor scarcity and lack of timely technical guidance (Patel, & Vyas, 2014). Understanding the obstacles faced by sugarcane growers and the potential techniques they suggest to overcome them is essential to addressing this gap. Designing feasible interventions that can raise farmers' incomes, increase sugarcane productivity, and support the sector's overall sustainability requires this kind of assessment.

Methodology

The present research study was conducted in the Vijayapura district, which is located in the Northern Dry Zone of Karnataka state. The district's prominence in sugarcane cultivation attributed to its purposeful selection. Among the five taluks Indi and Sindagi were specifically selected. Three villages with significant land under sugarcane crop were selected from each taluk, for a total of six villages. 10 small and 10 big sugarcane growers, were chosen from each village, making a total sample size of 120 respondents. The study used an ex-post facto research design, and to guarantee the accuracy and dependability of the responses, data were gathered using a pre-tested and structured personal interview schedule. (Shanthy *et al*, 2019) ^[8] referencing previous research, a systematic list of frequently reported constraints was created. A three-point scale was used to ask the respondents how much they were subject to each constraint: not at all (score 1), less than that (score 2) and more than that (score 3). Likewise, the farmers were shown a list of typical suggestions and asked to rank them as least important (score 1), important (score 2), and very important (score 3). Based on response rank was allotted to the both constraints and suggestions (Sravani, 2014) ^[9]. The collected data were subjected to suitable statistical tools for meaningful analysis. Frequency and percentage were used to describe the distribution of respondents across different categories and to enable simple comparisons. Mean scores were computed to represent the average rating of constraints and suggestions.

Results and Discussion

Constraints faced by small farm sugarcane growers

Small farm sugarcane growers were facing many constraints

in sugarcane production and the same has been ranked based on the response received from them. Low price for sugarcane ranked first followed by delay in payment by sugarcane factories (Rank II), non-availability of credit on time (Rank III), non-availability of credit on time (Rank IV), high cost of plant protection chemicals, fertilizers and equipments (Rank V), Lack of knowledge and skill in identifying diseases and pest (Rank VI), Lack of continuous power supply (Rank VII), Lack of training on scientific sugarcane technologies (Rank VIII), Non-availability of labour at right time (Rank IX), Non-availability of quality setts (Rank X), Problem of Transportation (Rank XI) and Lack of knowledge about market information (Rank XII). The study found that small farmers face multiple challenges that hinder productivity and profitability. Low price for sugarcane was the most serious problem, as it failed to cover the rising cost of cultivation and reduced farmers' income security. Delay in payment by sugar factories creating financial stress and forcing farmers to depend on high-interest borrowings. Another significant issue that hindered farmers' ability to buy inputs and implement better practices was the lack of timely credit. Effective crop management was hampered by a lack of knowledge and expertise in identifying pests and diseases, and production costs were further increased by the high cost of fertilisers, plant protection chemicals and equipment. Farmers complained about a lack of consistent power, a labour shortage during busy times and a lack of high-quality setts (Chavhan *et al* 2018) ^[1]. Additionally, post-harvest handling and marketing bottlenecks were caused by transportation issues and limited access to market information.

Table 1: Constraints faced by small farm sugarcane growers (n=60)

Sr. No.	Constraints	Greater Extent		Lesser Extent		Not at all		%	Rank
		No.	%	No.	%	No.	%		
1	Low price for sugarcane	49	81.67	11	18.33	00	0.00	93.89	I
2	Delay in payment by sugarcane factories	48	80.00	12	20.00	00	0.00	93.33	II
3	Non-availability of credit on time	40	66.66	15	25.00	05	8.34	84.44	III
4	High cost of plant protection chemicals, fertilizers and equipments	32	53.34	28	46.66	00	0.00	85.56	IV
5	High cost of sugarcane setts	25	41.67	28	46.67	07	11.66	76.67	V
6	Lack of knowledge and skill in identifying diseases and pest	23	38.34	29	48.33	08	13.33	75.00	VI
7	Lack of continuous power supply	20	33.33	32	53.33	08	13.34	73.33	VII
8	Lack of training on scientific sugarcane technologies	17	28.33	36	60.00	07	11.64	72.20	VIII
9	Non-availability of labour at right time	14	23.33	41	68.33	05	8.34	71.67	IX
10	Non-availability of quality setts	17	28.33	25	41.67	18	30.00	66.11	X
11	Problem of Transportation	06	10.00	34	56.66	20	33.34	58.89	XI
12	Lack of knowledge about market information	06	10.00	26	43.34	28	46.66	54.44	XII

Constraints faced by big farm sugarcane growers

Major challenges faced by big farmers were low price for sugarcane ranked first followed by delay in payment by sugarcane factories (Rank II), High cost of plant protection chemicals, fertilizers and equipments (Rank III), Non-availability of labour at right time (Rank IV), Non-availability of credit on time (Rank V), Lack of continuous power supply (Rank VI), Lack of knowledge and skill in identifying diseases and pest (Rank VII), Lack of training on

scientific sugarcane technologies (Rank VIII), High cost of sugarcane setts (Rank IX), Non-availability of quality setts (Rank X), Non-availability of quality setts (Rank XI) and Lack of knowledge about market information (Rank XII). The findings suggest that the main barriers to sugarcane farming are financial reasons.

The most serious issue was the low price of sugarcane and factories' delayed payments were directly affecting farmers' financial stability. Profitability was further strained by rising

input costs for equipment, fertilisers and plant protection chemicals. Meanwhile, timely labour shortages and delayed credit availability hindered efficient farm operations. These challenges were exacerbated by issues with knowledge and infrastructure. Farmers complained about erratic power supplies, a lack of knowledge about identifying pests and

diseases and insufficient instruction in scientific farming methods. Productivity was further limited by the high price and limited supply of high-quality setts. Lastly, farmers' decision-making and bargaining power were undermined by a lack of market knowledge.

Table 2: Constraints faced by the big farm sugarcane farmers (n=60)

Sr. No.	Constraints	Greater Extent		Lesser Extent		Not at all		%	Rank
		No.	%	No.	%	No.	%		
1	Low price for sugarcane	59	98.33	01	01.67	00	0.00	99.44	I
2	Delay in payment by sugarcane factories	51	85.00	09	15.00	00	0.00	95.00	II
3	High cost of plant protection chemicals, fertilizers and equipments	35	58.33	25	41.67	00	0.00	86.11	III
4	Non-availability of labour at right time	37	61.67	17	28.33	06	10.00	83.89	IV
5	Non-availability of credit on time	29	48.33	31	51.67	00	0.00	82.78	V
6	Lack of continuous power supply	31	51.67	25	41.67	04	06.66	81.67	VI
7	Lack of knowledge and skill in identifying diseases and pest	35	58.33	16	26.67	09	15.00	81.11	VII
8	Lack of training on scientific sugarcane technologies	25	41.67	32	53.33	03	05.00	78.89	VIII
9	High cost of sugarcane setts	08	13.33	42	70.00	10	16.67	65.56	IX
10	Non-availability of quality setts	14	23.34	23	38.33	23	38.33	61.67	X
11	Problem of Transportation	00	0.00	43	71.67	17	28.33	57.22	XI
12	Lack of knowledge about market information	06	5.00	65	54.16	49	40.84	55.00	XII

Suggestions as expressed by small farm sugarcane growers

It can be clearly noted from Table 3 that, Timely payment by sugarcane factories (Rank I), Providing subsidies for purchase of plant protection chemicals fertilizers and equipments (Rank II), Timely availability of credit and increase the loan repayment period (Rank III), Availability of required quantity of agricultural inputs on time at nearby the villages (Rank IV), Remunerative price as fixed by government should be given by factories (Rank V), Regular and uninterrupted supply of electricity during day time (Rank VI), Knowledge of sugarcane growers should be strengthened through training demonstrations field visit etc. (Rank VII), Easy and timely access to market information through different media (Rank VIII). Were the suggestions given by small farm sugarcane growers. Small farmers' priorities for institutional support and economic stability are evident in their recommendations. First place went to sugar factories that made payments on time, highlighting the vital

need for assured cash flow to cover household and agricultural costs. Because growing input costs were a major obstacle to their profitability, farmers also emphasized the importance of subsidies on equipment, fertilizers, and chemicals used in plant protection. Rural credit systems need to be strengthened, as evidenced by the third-ranked demand for timely, easily accessible credit with adjustable repayment terms. The prompt delivery of agricultural inputs to neighboring locations was equally crucial since it would cut down on crop management delays. Farmers also emphasised that in order to ensure fair returns for their produce, factories must follow government-set remunerative prices. Further suggestions focused on enhancing knowledge and infrastructure. Farmers requested for training, field trips and demonstrations to bolster their technical knowledge, as well as a consistent supply of electricity during the day to increase irrigation efficiency. In addition, quick access to market information is considered to be vital to improving profitability and making better marketing choices.

Table 3: Suggestions as expressed by the small farm sugarcane farmers (n=60)

Sr. No.	Suggestions	Very Important		Important		Least Important		%	Rank
		No.	%	No.	%	No.	%		
1	Timely payment by sugarcane factories	44	73.33	16	26.67	00	0.00	91.11	I
2	Providing subsidies for purchase of plant protection chemicals fertilizers and equipments	33	55.00	27	45.00	00	0.00	85.00	II
3	Timely availability of credit and increase the loan repayment period	37	61.67	17	28.33	06	10.00	83.89	III
4	Availability of required quantity of agricultural inputs on time at nearby the villages	30	50.00	29	48.33	01	01.67	82.78	IV
5	Remunerative price as fixed by government should be given by factories	25	41.67	21	35.00	14	23.33	72.78	V
6	Regular and uninterrupted supply of electricity during day time	18	30.00	30	50.00	12	20.00	70.00	VI
7	Knowledge of sugarcane growers should be strengthened through training demonstrations field visit etc.	15	25.00	31	51.67	14	23.33	67.22	VII
8	Easy and timely access to market information through different media	05	08.33	34	56.67	21	35.00	57.78	VIII

Suggestions as expressed by the big farm sugarcane growers

It can be clearly noted from Table 4 that, timely payment by sugarcane factories (Rank I), providing subsidies for purchase of plant protection chemicals fertilizers and equipments (Rank II) followed by remunerative price as fixed by government should be given by factories (Rank III), availability of required quantity of agricultural inputs on time at nearby the villages (Rank V), regular and uninterrupted supply of electricity during day time (Rank VI), knowledge of sugarcane growers should be strengthened through training demonstrations field visit etc. (Rank VII) and easy and timely access to market information through different media (Rank VIII) were the suggestions given by big farm sugarcane growers.

Big farm sugarcane growers reveal their focus on strengthening both economic and infrastructural support systems. The major recommendation was for timely payment by sugar factories. Demand for subsidies on fertilizers, plant protection chemicals and equipment, which would ease the financial pressure caused by escalating input costs.

A key concern was that factories should mandatorily provide the remunerative price fixed by the government, ensuring fairness and profitable in sugarcane marketing and need for timely availability of agricultural inputs at nearby locations, as delays often disrupt large-scale farm management. Regarding infrastructure, the recommendation for a continuous power supply throughout the day emphasizes how crucial dependable irrigation and mechanization support are. The focus on capacity building through field visits, training, and demonstrations was equally important because it would aid farmers in more successfully implementing scientific practices. Last but not least, farmers emphasized the necessity of quick and simple access to market data via various media so they can make wise choices and enhance marketing results.

Conclusion

The study highlights that sugarcane farmers in Vijayapura district deal with a greater number of difficulties, including low prices, late payments, expensive inputs, a lack of workers and erratic power supplies. Farmers recommended realistic solutions, such as factories paying on time, subsidies, competitive pricing, guaranteed input availability, dependable electricity, training assistance and improved market knowledge. To improve the productivity, profitability and general sustainability of sugarcane farming in the area, legislators, the sugar industry and extension organisations must work together to address these problems.

Disclaimer (Artificial Intelligence)

The authors hereby declare that no generative AI tools, including text-to-image generators and large language models (ChatGPT, COPILOT, etc.), were used in the writing or editing of this work.

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Competing Interests

The authors affirm that they have no conflicting interests with regard to the publication of this study.

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