Original Research Paper

Volume - 14 | Issue - 06 | June - 2024 | PRINT ISSN No. 2249 - 555X | DOI : 10.36106/ijar

Economics

ECONOMIC CONSTRAINTS OF SUGARCANE FARMERS

Subhashini Chintalapudi — Research Scholar, Department of Economics, Acharya Nagarjuna University, Andhra Pradesh

Dr. A. Bharathi Devi — Associate Professor, Department of Economics, Acharya Nagarjuna University, Andhra Pradesh

ABSTRACT Sugarcane farming plays a significant role in both the global and Indian agricultural landscapes, serving as a vital crop for various industries and livelihoods. The study investigates the primary challenges faced by sugarcane farmers in Krishna District, Andhra Pradesh, with a focus on high input costs, inadequate returns on investment, and access to financial resources. Using Stratified Random Sampling, the research collected data from 640 sugarcane farmers across four mandals, each representing various farm sizes. The study found that high costs of insecticides, fertilizers, labor, and machinery are significant concerns, with 89.70 per cent of respondents highlighting insecticides as a major financial burden. Additionally, 86.30 per cent reported high fertilizer costs, 85.40 per cent noted labor costs, and over 83 per cent cited machinery expenses as problematic. Low crop prices and delays in loan sanctions also emerged as notable issues, affecting 84.40 per cent and 14.90 per cent of respondents respectively. Furthermore, 91.80 per cent of farmers expressed dissatisfaction with returns on agricultural investments. The findings suggest the need for policy interventions, including subsidies for essential inputs, improved labor efficiency, and enhanced market access, to improve the economic viability and sustainability of sugarcane farming in the region.

KEYWORDS : Sugarcane farming, agricultural challenges, input costs, returns on investment

India holds a prominent position as the world's largest consumer of sugar, with its sugar industry being a crucial component of the agricultural sector. This industry significantly impacts the lives of approximately 50 million farmers and their families, while also directly employing 500,000 individuals in sugar mills. The country is home to over 700 sugar factories, boasting a crushing capacity exceeding 340 million metric tons annually and generating an output valued at around Rs 80,000 crore. However, despite its significance, the industry faces challenges such as declining sugar prices coupled with rising sugarcane costs, resulting in liquidity issues. While the Central Government has introduced measures to address these challenges, there remains a persistent call for further assistance.

The sugar industry holds paramount importance in India's agricultural landscape, serving as a cornerstone of trade and sustenance. It stands as the second-largest agro-based sector, following only cotton. Directly or indirectly, it supports the livelihoods of over 50 million farmers engaged in sugarcane cultivation across nearly 5 million hectares. Additionally, it provides employment to 500,000 individuals within sugar mills and supports an additional 1 million workers indirectly, highlighting its integral role in rural development.

However, despite its significant contribution to India's GDP and employment, the sugarcane industry faces numerous challenges that threaten both farmers' livelihoods and the sector's sustainability. Sugarcane farmers in India encounter various issues, including high input costs, low market prices, irrigation constraints, pest infestations, and inadequate government support. These challenges not only undermine the economic viability of sugarcane cultivation but also exacerbate social disparities and environmental degradation within farming communities.

Review of Literature

Abnave (2015) conducted an examination of sugarcane production patterns and financial viability across Maharashtra, Karnataka, and Uttar Pradesh. The findings indicated favorable upticks in cultivation area, output, and yield overall, though Maharashtra displayed some deviations. Karnataka stood out with enhanced profitability attributed to governmental initiatives, contrasting with Maharashtra's challenges related to elevated operational expenses.

Kant & Chandra (2016) sought to pinpoint the determinants affecting the efficiency of input utilization in sugarcane farming. Their research uncovered diverse cost and revenue structures. Notably, operational costs, land rental fees, and material expenditures emerged as prominent factors influencing overall cultivation costs. The distribution of sugarcane supply to mills varied between 84.26 percent and 98.59 percent, with the remaining portion allocated for household consumption or crushing.

Patil & Mahajanashetti (2017) carried out research in Karnataka aimed at comprehending the difficulties encountered by sugarcane cultivators and sugar processing plants. Their study brought to light a multitude of challenges, encompassing insufficient prices offered by sugar factories, payment delays, extended waiting periods at factory entrances, untimely harvesting directives, power shortages for irrigation, scarcities in labor, insufficient capital, elevated production expenses, pest infestations, and subpar road connectivity for transporting sugarcane to processing facilities.

Raju & Mathur (2018) investigated the effectiveness of sugarcane cultivation in the Satara district of Maharashtra. Their analysis, employing both Data Envelopment Analysis (DEA) and Stochastic Frontier Analysis (SFA), indicated notable inefficiencies. The analysis identified the greatest input slack in repairs, machinery, fertilizers, and labor. Additionally, Tobit analysis highlighted farm size and income from non-farming activities as significant factors influencing efficiency levels.

Abnave (2019) undertook a research endeavor focused on sugarcane farming in Maharashtra. The investigation uncovered that male dominance and land ownership significantly impacted women's involvement in the sector. A notable observation was the lack of awareness regarding support institutions, while pivotal factors driving sustainable practices encompassed willingness to invest and the availability of natural resources.

Nisha et al. (2020) conducted a comprehensive study aimed at examining the trajectory of sugarcane cultivation concerning area, production, and productivity in India, juxtaposed with the specific case of Haryana. The results divulged an upward trajectory in sugarcane cultivation area, production, and productivity at the national level, exhibiting Compound Annual Growth Rates (CAGRs) of 1.52 percent, 0.84 percent, and 2.37 percent, respectively. Conversely, Haryana exhibited a declining trend (-0.79 percent) in sugarcane cultivation area, but conversely, demonstrated upward trends in production and productivity, with CAGRs of 0.74 percent and 1.55 percent, respectively.

Prasad et al. (2021) conducted an investigation in the Nadogo district of Vanua Levu, Fiji, focusing on the integration of farm mechanization in sugarcane farming. Their findings revealed that farmers were embracing diverse mechanization techniques to enhance productivity and curtail cultivation expenses. These strategies encompassed various stages such as land preparation, planting, intercultural activities, weed control, harvesting, ratoon management, and transportation.

Bey et al. (2022) delved into an analysis of the expenses and returns

associated with sugarcane cultivation, alongside the efficiency of input utilization, within the Karbi Anglong district of Assam. Their examination revealed that tenant-operated farms yielded lower profits compared to those owned by farmers, primarily due to rent payments for leased land, which did not factor into the costs for owner-operated farms. Additionally, the overall cost of cultivation was notably higher for tenant-operated farms.

Bhatt et al. (2023) conducted an assessment of harvesting and transportation expenses across significant sugarcane-producing states. Their findings showcased a range of costs contingent upon operational methods, with mechanized transportation emerging as the prevailing mode.

Objectives and Methodology

The objectives of this study are multifaceted, aiming to comprehensively investigate and address the primary challenges confronting farmers in the agricultural sector. These objectives include identifying and analyzing the challenges related to input costs, returns on investment, and access to financial resources. Specifically, the study seeks to assess the magnitude of issues such as high costs of essential agricultural inputs like insecticides, fertilizers, labor, and machinery, as well as concerns regarding inadequate returns on agricultural investments and low crop prices. Furthermore, the study aims to evaluate the efficiency of loan sanctioning processes by banks.

This study employs a primary data collection approach, focusing on direct interactions with sugarcane farmers to gain insights into their specific conditions and challenges. The methodology begins with the utilization of the Stratified Random Sampling method to ensure that the sample accurately represents the diverse farming population. The sample comprises 640 sugarcane farmers from Krishna District, Andhra Pradesh, chosen for its significant sugarcane cultivation and because it is the native district of the scholar conducting the study. The study targets four mandals within Krishna District, selected based on the extent of sugarcane cultivation. Within each mandal, four villages are randomly selected, ensuring a diverse sample. From each village, 40 farmers are chosen, representing different categories of farm size: marginal farmers, small farmers, semi-medium farmers, and medium and large farmers. Each category includes 10 farmers, totaling 40 farmers per village and 160 farmers per mandal. The data collected through direct interactions with farmers are analyzed using percentages to examine the prevalence and significance of various challenges faced by sugarcane farmers in Krishna District, Andhra Pradesh.

RESULTS AND DISCUSSION

Problem of High Costs of Insecticides

Table - 1 displays respondents' opinions concerning the high costs of insecticides, revealing that a significant majority either strongly agree (49.20 per cent) or agree (40.50 per cent) with the issue, totaling 89.70 per cent. Only a minority (10.30 per cent) expressed a neutral stance. These findings underscore widespread acknowledgment of the financial burden imposed by expensive insecticides in agricultural practices.

Problem Of High Costs Of Fertilizers

Table – 1 also presents respondents' opinions regarding the high costs of fertilizers, indicating a diverse range of perspectives. A significant majority, comprising 78.00 per cent, strongly agree with the issue, suggesting widespread recognition of the financial challenges associated with fertilizer expenses in agricultural operations. Additionally, a smaller proportion, 8.30 per cent, expressed agreement, further emphasizing the prevalence of concerns regarding fertilizer costs. Conversely, a minority of respondents held neutral (5.20 per cent), disagree (4.50 per cent), or strongly disagree (4.10 per cent) stances. These findings suggest varying degrees of awareness and agreement among respondents regarding the problem of high fertilizer costs.

Problem Of High Costs Of Labour

Table – 1 further highlights respondents' perceptions concerning the issue of high labor costs within agricultural practices. The data illustrates a significant portion of respondents acknowledging the problem, with 40.90 per cent strongly agreeing and 44.50 per cent agreeing, totaling 85.40 per cent. This indicates a widespread recognition of the financial challenges associated with labor expenses in agriculture. Additionally, a minority expressed a neutral stance (12.00 per cent), while a small percentage disagreed (2.50 per cent) or strongly disagreed (2.50 per cent) with the notion of high labor costs being problematic. These findings underscore the importance of addressing labor cost issues within agricultural policies and practices to ensure the sustainability and profitability of farming operations.

Problem Of High Costs Of Farm Machinery

Table-1 also presents respondents' opinions on the issue of high costs associated with farm machinery, revealing significant perceptions among the surveyed population. A majority, comprising 53.40 per cent, strongly agree that high machinery costs pose a problem in agriculture, indicating a widespread recognition of this issue. Additionally, 30.20 per cent of respondents agree with this notion, further emphasizing the prevalence of concerns regarding machinery expenses. A smaller proportion expressed a neutral stance (13.80 per cent), while only a minority disagreed (2.70 per cent) with the problem of high machinery costs. These findings underscore the financial challenges farmers face in acquiring and maintaining agricultural machinery, which plays a crucial role in farm operations.

Problem Of Low Prices Of Sugarcane

Table – 1 further illustrates respondents' opinions regarding the problem of low sugarcane prices, showing a significant majority acknowledging this issue. A substantial 59.20 per cent of respondents strongly agree that low prices for sugarcane are problematic, highlighting a prevalent concern among farmers. Additionally, 25.20 per cent agree with this sentiment, further underscoring the widespread nature of this issue. A smaller proportion of respondents are neutral (14.10 per cent), and only a minor fraction (1.60 per cent) disagree with the notion of low sugarcane prices being problematic. These findings indicate a pervasive perception of financial distress among sugarcane growers due to inadequate pricing, which could impact their economic stability and sustainability.

Problem Of Delays In Sanction Of Crop Loan By The Banks

Table-1 also presents respondents' opinions on the issue of delays in the sanctioning of crop loans by banks. The data reveals that the majority of respondents perceive this as a significant problem, with 42.50 per cent disagreeing and 14.70 per cent strongly disagreeing that delays are an issue, indicating a general satisfaction with the timeliness of loan approvals. However, a notable portion remains neutral (28.00 per cent), possibly reflecting uncertainty or mixed experiences regarding the loan sanction process. On the other hand, a smaller percentage of respondents agree (14.40 per cent) or strongly agree (0.50 per cent) that delays are problematic, suggesting that for some, the loan process is indeed a concern. These findings highlight a diverse range of experiences and perceptions regarding the efficiency of crop loan sanctions by banks.

Problem Of Inadequate Returns On Investment

Table-1 also highlights respondents' opinions on the problem of inadequate returns on investment in agriculture. A significant majority, 61.20 per cent, strongly agree that returns on agricultural investments are inadequate, and an additional 30.60 per cent agree, totaling 91.80 per cent of respondents recognizing this issue. This overwhelming majority indicates a pervasive concern among farmers regarding the profitability of their agricultural activities. A smaller proportion of respondents are neutral (7.50 per cent), suggesting some uncertainty or variability in experiences, while only 0.60 per cent disagree, showing minimal dissent against the notion of inadequate returns. These findings underscore a critical challenge faced by the agricultural sector, emphasizing the need for policy interventions aimed at improving the economic viability of farming.

Table – 1 Opinions Of The Sample Sugarcane Farmers On The Problems Faced By Them

Problem	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Total
High costs of insecticides	315 (49.20)	259 (40.50)	66 (10.30)	-	-	640 (100.00)
High costs of fertilizers	499 (78.00)	53 (8.30)	33 (5.20)	29 (4.50)	26 (4.10)	640 (100.00)
High costs of labour	262 (40.90)	285 (44.50)	77 (12.00)	-	16 (2.50)	640 (100.00)
High costs of farm machinery	342 (53.40)	193 (30.20)	88 (13.80)	17 (2.70)	-	640 (100.00)
Low prices of sugarcane	379 (59.20)	161 (25.20)	90 (14.10)	10 (1.60)	-	640 (100.00)

Delays in sanction of crop loan by the banks	3 (0.50)	92 (14.40)	179 (28.00)	272 (42.50)	94 (14.70)	640 (100.00)
Inadequate returns on investment	392 (61.20)	196 (30.60)	48 (7.50)	4 (0.60)	-	640 (100.00)

Note: Figures in the parenthesis represent percentages to row total.
Source: Computed from the Primary Data.

CONCLUSION

The data from the study reveal significant challenges faced by farmers, primarily related to high costs and inadequate returns across various aspects of agricultural operations. The issue of high costs of insecticides is a major concern among the surveyed farmers, with 89.70 per cent of respondents either strongly agreeing or agreeing that these costs are a significant problem. This high percentage indicates the financial burden that insecticides impose on farmers, necessitating interventions such as subsidies or alternative pest control methods to alleviate these expenses. Similarly, the high costs of fertilizers are a widespread concern, with 86.30 per cent of respondents strongly agreeing or agreeing with this issue. Labor costs also pose a significant challenge, as indicated by 85.40 per cent of respondents who strongly agree or agree that labor expenses are problematic. The high costs of farm machinery are another major issue, with over 83 per cent of respondents strongly agreeing or agreeing that these expenses are too high. Low prices of sugarcane are a concern for 84.40 per cent of respondents, who strongly agree or agree that the prices are too low. This reflects the challenges farmers face in achieving profitability and sustainability in sugarcane farming, suggesting the need for price support mechanisms or market diversification strategies to ensure fair returns for their produce. The issue of delays in the sanctioning of crop loans by banks shows mixed experiences among respondents. An overwhelming majority of respondents (91.80 per cent) strongly agree or agree that returns on agricultural investments are inadequate. In summary, these findings collectively indicate that high costs (of insecticides, fertilizers, labor, and machinery) and inadequate returns on investment are major concerns for farmers. Additionally, issues such as low crop prices and loan sanction delays, though less universally acknowledged, also present significant challenges. Addressing these concerns through targeted policy interventions, financial support, and efficiency improvements is crucial for enhancing the sustainability and profitability of agricultural operations.

Government shall consider providing subsidies or financial assistance programs to alleviate the high costs of essential agricultural inputs such as insecticides, fertilizers, and farm machinery. These subsidies can help reduce the financial burden on farmers and improve their access to critical resources needed for successful farming operations. Policies aimed at enhancing labor efficiency and promoting mechanization can help address the high costs of labor and farm machinery. This may involve providing training programs for farmers on efficient farming practices and facilitating access to affordable mechanization technologies through subsidies or financing options. Supporting initiatives to improve market access for farmers and promote diversification of agricultural products can help mitigate the impact of low crop prices. This could involve infrastructure development, market linkages, and value-added processing to tap into niche markets and increase farmers' bargaining power.

REFERENCES

1. Abnave, V. B. (2015). Growth pattern and profitability of sugarcane cultivation in India: An analysis of Maharashtra, Karnataka, and Uttar Pradesh states. Agricultural Situation in India, LXXII(8), 16-24.
2. Kant, K., & Chandra, S. (2016). A study on sugarcane production and marketing in Meerut district of Western Uttar Pradesh. Agricultural Situation in India, LXXIII(6), 11-22.
3. Patil, G. I., & Mahajanashetti, S. B. (2017). Problems of sugarcane growers and sugar factories. Indian Farming, 67(08), 32-35.
4. Raju, S., & Mathur, R. (2018). Efficiency among sugarcane farmers of Bhirdachiwadi, Maharashtra: A case study. Indian Journal of Agricultural Economics, 73(2), 195-206.
5. Abnave, V. B. (2019). Sustainability of Sugarcane Cultivation: A Study of Maharashtra State (Doctoral dissertation). University of Mysore, Mysore. Retrieved from Shodhganga: Online depository of Indian theses. [https://shodhganga.inflibnet.ac.in/]
6. Nisha, Malik, D. P., Mehta, V. P., & Ritu. (2020). Growth and trends in cultivation of sugarcane in Haryana vis-à-vis India. Journal of Pharmacognosy and Phytochemistry, 9(2), 772-776.
7. Prasad, R. R., Chand, V. V., Narayan, S. K., & Nadan, A. (2021). Mechanization of sugarcane cultivation in Fiji – status and way forward. Journal of Sugarcane Research, 11, 115-129. https://doi.org/10.37580/JSR.2021.2.11.115-129
8. Bey, B. S., Singh, R., Gogoi, J., Ahmed, R., Lapasam, R., Buragohain, R., & Deka, N. (2022). Resource use in sugarcane cultivation under tenant and owner farms of Assam: A comparative economic analysis. Indian Journal of Agricultural Economics, 77(2), 243-256.
9. Bhatt, Y., Vinit, P., Jain, V., Yadav, U., Sain, R., & Ji, P. (2023). Estimating Transportation and Harvesting Cost of Sugarcane. Agricultural Situation in India, 79(10), 26-35.