

	ORIGINAL RESEARCH PAPER SUGARCANE FARMERS OF BELAGAVI DISTRICT IN KARNATAKA: A SOCIOLOGICAL ANALYSIS	Sociology KEY WORDS: Sugarcane Farmers, Livelihood Security
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ABSTRACT	Agriculture remains a vital sector of the Indian economy, with sugarcane serving as one of the country's most important commercial crops due to its contribution to rural livelihoods, agro-industrial development, and employment generation. Karnataka, particularly Belagavi district, is a major sugarcane-producing region with favourable agro-climatic conditions, extensive irrigation, and a well-established sugar industry. Despite these advantages, sugarcane farmers continue to face several socio-economic and livelihood challenges. This paper examines the livelihood security, social well-being, and policy support available to sugarcane farmers in Belagavi district from a sociological perspective. The study is based entirely on secondary data obtained from government reports, national surveys, and peer-reviewed literature. This study is particular Belagavi District in Karnataka.	
INTRODUCTION	Sources of Secondary Data The secondary data will be collect from Census Reports, Books, Journal Articles and etc., Method of Data Analysis The collected data were analysed using descriptive statistical techniques, including percentages, trend analysis, and comparative analysis. Published reports and empirical studies were critically interpreted through the lens of rural sociology to understand the interaction between agricultural production, livelihood security, social well-being, and institutional support. The findings are presented in a systematic manner to highlight key socio-economic patterns and policy implications. Review of Literature Hanji et al. (2024) examined sugarcane agriculture in North Karnataka and discovered that increasing productivity and planted area led to higher production. However, the study paid little attention to the socioeconomic aspects of farmers' livelihoods and instead concentrated on production trends, emphasizing the necessity for climate-resilient cultivars. Meena et al. (2024) examined production and marketing constraints faced by sugarcane farmers and identified rising input costs, labour shortages, delayed harvesting, and price fluctuations as major challenges. The study mainly focused on economic issues and provided limited analysis of farmers' social well-being. Sadhana et al. (2024) The examined the effects of drip irrigation on Karnataka sugarcane farming and found increases in production, farm income, and water-use efficiency. The impact of education, institutional support, and socioeconomic factors on technology adoption, however, was not sufficiently examined in this study. Production and Marketing of Sugarcane in Karnataka (2024) The emphasized advancements in sugarcane production while pointing out obstacles such expensive farming, limited irrigation, and ineffective marketing. Without considering their effects on farmers' health, education, and livelihood security, the study mainly focused on production and marketing concerns. Smallholder Sugarcane Farmers: A Review (2024) highlighted how market access, technical help, and farmers' livelihoods may all be enhanced by contract farming and institutional support. Although there was little consideration of the larger sociological aspects of rural well-being, the assessment emphasized the significance of efficient government and policy support.	
Despite its economic importance, sugarcane farmers still have to deal with a number of socioeconomic and livelihood issues, such as growing cultivation costs, labor shortages, delayed payments from sugar factories, climate variability, debt, risks to their occupational health, and restricted access to institutional support and high-quality education. Sociologically speaking, these issues affect farmers' livelihood security and general social well-being in addition to their financial circumstances. Disparities still exist in the awareness, accessibility, and efficient use of the welfare programs and agricultural assistance schemes that the Central and Karnataka governments have implemented to enhance farmers' livelihoods. In light of this, the current study uses secondary data from government reports, national surveys, and academic literature to investigate the livelihood security, social well-being, and policy support available to sugarcane farmers in Belagavi district. The goal is to provide a sociological understanding of the factors influencing farmers' livelihoods and to offer policy recommendations for sustainable rural development.		
Objectives of the Study	The study has the following objectives:	
	➤ To examine the livelihood security and socio-economic conditions of sugarcane farmers in Belagavi district, Karnataka. ➤ To analyse the social well-being of sugarcane farmers with special reference to health, education, and livelihood challenges. ➤ To assess the role of government policies and welfare programmes in promoting the sustainable development of sugarcane farmers.	
Research Methodology		
Research Design	The study adopts a descriptive and analytical research design to examine the livelihood security, social well-being, and policy support available to sugarcane farmers.	
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Sugarcane Cultivation in India
 Sugarcane is one of India's most important commercial crops because of its contribution to agricultural production, employment generation, rural industrialisation, and national economic development. It supplies raw materials to the sugar, ethanol, jaggery, paper, and bio-energy industries while providing livelihood opportunities to millions of farming households. According to the latest Agricultural Statistics, India remains one of the world's largest sugarcane-producing countries.

Table 1 Sugarcane Area, Production and Productivity in India (2023-24)

S.No	Particulars	Value
1.	Area under Sugarcane	5.74 million hectares
2.	Production	453.16 million tonnes
3.	Productivity	78.95 tonnes/hectare

Source: Ministry of Agriculture and Farmers' Welfare, *Agricultural Statistics at a Glance 2024*.

According to the data, sugarcane is one of India's most valuable commercial crops, covering 5.74 million hectares and producing over 453 million tons. The significance of irrigation, improved cultivars, and technological interventions is demonstrated by the average output of roughly 79 tons per hectare. However, labor shortages, growing cultivation expenses, and climatic variability are all having an increasing impact on national productivity, which directly affects farmers' lives.

Table 2 Major Sugarcane Producing States in India (2023-24)

S.No	State	Area (Million ha)	Production (Million tonnes)
1.	Uttar Pradesh	2.65	215.81
2.	Maharashtra	1.44	112.09
3.	Karnataka	0.54	41.81
4.	Gujarat	0.20	14.48
5.	Tamil Nadu	0.15	15.93
6.	Bihar	0.20	12.08

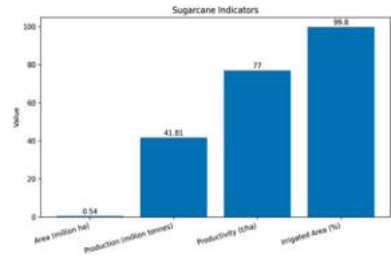
Source: Ministry of Agriculture and Farmers' Welfare, *Agricultural Statistics at a Glance 2024*.

Uttar Pradesh contributes nearly half of India's sugarcane production, followed by Maharashtra and Karnataka. Karnataka contributes approximately 9% of the country's total production, highlighting its importance in India's sugar economy. The state's high level of irrigation coverage and strong network of cooperative and private sugar mills have significantly contributed to this performance.

Sugarcane Cultivation in Karnataka

Karnataka is one of India's leading sugarcane-producing states. The crop is predominantly cultivated in Belagavi, Bagalkote, Mandya, Vijayapura, Haveri, and neighbouring districts. Canal irrigation, fertile black soils, favourable climatic conditions, and extensive sugar processing industries have encouraged farmers to adopt sugarcane cultivation on a large scale. The state also plays a significant role in India's ethanol blending programme because sugarcane serves as the primary raw material for ethanol production.

Figure: 1 Sugarcane Production Status of Karnataka (2023-24)



Source: Ministry of Agriculture and Farmers' Welfare, *Agricultural Statistics at a Glance 2024*.

Nearly the entire sugarcane area in Karnataka is irrigated, demonstrating the crop's heavy dependence on assured water supply. While irrigation contributes to higher productivity and stable production, it also increases farmers' dependence on water resources and exposes them to risks during periods of drought or water scarcity. Sustainable water management therefore remains essential for long-term sugarcane cultivation.

Importance of Belagavi District

Belagavi district is regarded as one of the most significant sugarcane-producing areas in the state and holds a special place in Karnataka's agrarian economy. The district boasts a large canal irrigation system, a large number of private and cooperative sugar factories, and rich black cotton soils that are ideal for growing commercial sugarcane. In addition to cultivators, the concentration of sugar industry has created jobs for laborers in agriculture, transportation, manufacturing, trading, and other rural service providers. As a result, sugarcane farming has emerged as a key factor in the district's industrial and rural development. At the state level, Belagavi's agricultural accomplishments have also been honored with several agriculture prizes.

Table 4 Socio-Economic Contributions of Sugarcane Cultivation

S.No	Dimension	Contribution
1.	Employment	Direct and indirect employment generation
2.	Household Income	Major source of cash income
3.	Rural Industries	Supports sugar mills, jaggery units and ethanol industries
4.	Women's Employment	Participation in planting, weeding and harvesting
5.	Government Revenue	Contribution through agro-industries
6.	Rural Infrastructure	Development of roads, transport and market facilities

Source: Compiled from Ministry of Agriculture, Karnataka Economic Survey, ICAR publications and published literature.

In addition to increasing agricultural output, sugarcane farming also helps to alter rural areas more broadly. It boosts local markets, supports cooperative organizations, promotes industrial development, and generates job possibilities. These advantages aren't shared equally, either. Due to their restricted access to modern technology, institutional credit, and irrigation, small and marginal farmers frequently face higher financial vulnerability.

Emerging Challenges Affecting Sugarcane Farmers

Despite high production levels, sugarcane farmers continue to encounter several structural challenges. Major challenges include:

- Increasing cultivation costs.
- Labour shortages during planting and harvesting.
- Delayed payments by sugar factories.
- Climate variability and irregular rainfall.
- High dependence on irrigation.
- Rising indebtedness.
- Market uncertainty.

These challenges influence farmers' income stability and overall livelihood security. Recent farmer agitations in Karnataka have also highlighted concerns regarding pricing and timely payments for sugarcane supplied to mills.

Table 5 Major Socio-Economic Characteristics of Sugarcane Farmers

S.No	Indicators	Status
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1.	Primary Occupation	Agriculture
2.	Major Source of Income	Sugarcane cultivation
3.	Secondary Occupation	Dairy, Livestock, Wage Labour
4.	Irrigation Source	Canal, Borewell
5.	Institutional Credit	Cooperative & Commercial Banks
6.	Social Security	Government Welfare Schemes

Source:Compiled from Karnataka Economic Survey (2024), Ministry of Agriculture and Farmers' Welfare, Government of India.

According to the table, the main source of income for farming households in the Belagavi district is still sugarcane agriculture. However, relying solely on one commercial crop makes farmers more vulnerable to price swings, market hazards, and unpredictable weather. A key tactic for boosting household income and lowering livelihood risk is diversification through dairy farming and related activities.

Health Status of Sugarcane Farmers

Health is one of the most neglected dimensions of agricultural development. Sugarcane cultivation requires continuous physical labour involving planting, irrigation, fertilizer application, pesticide spraying, harvesting, loading, and transportation. Consequently, farmers experience several occupational health risks.

Table 6 Major Occupational Health Problems

S.No	Health Problem	Causes
1.	Back Pain	Continuous bending during cultivation
2.	Joint Pain	Heavy manual work
3.	Heat Stress	Long working hours in high temperature
4.	Dehydration	Excessive physical labour
5.	Respiratory Disorders	Dust and agrochemical exposure
6.	Skin Diseases	Contact with pesticides and fertilizers
7.	Eye Irritation	Chemical spraying

Source: World Health Organization (WHO), Indian Council of Medical Research (ICMR), National Institute of Occupational Health (NIOH).

The evidence suggests that sugarcane cultivation involves significant occupational hazards. Long working hours under extreme climatic conditions contribute to musculoskeletal disorders and dehydration. Inadequate awareness regarding protective equipment further increases the risk of pesticide-related illnesses. These health problems directly reduce labour productivity and increase household medical expenditure.

Status of Education

The increasing agricultural output, encouraging the adoption of contemporary technologies, raising financial literacy, and boosting social mobility within rural areas are all made possible by education. Due to numerous government initiatives and social programs aiming at expanding access to school, farmers' children's educational standing has significantly improved in recent years. Children from economically challenged homes are less likely to drop out of school thanks to programs like the Right to Education, the Mid-Day Meal Scheme, and government subsidies. Additionally, the financial strain on rural households has been lessened by the provision of free textbooks, uniforms, and other educational support.

Children of farmers now have more options to pursue higher education and consider careers outside of agriculture thanks to the growth of schools, colleges, and other higher education

establishments. However, educational disparities among rural households still exist in spite of these advancements. Children's education is frequently interrupted by poverty, seasonal family mobility, poor educational infrastructure, restricted access to high quality education, and financial hardships. Children from economically and socially disadvantaged farming households are especially affected by these variables, which may limit their access to higher education and possibilities for upward social mobility.

Table 7 Major Livelihood Challenges

S.No	Challenge	Impact
1.	Rising Input Cost	Reduced Profitability
2.	Labour Shortage	Increased Cost of Production
3.	Delayed Factory Payments	Financial Stress
4.	Climate Change	Lower Productivity
5.	Water Scarcity	Irrigation Problems
6.	Indebtedness	Reduced Household Welfare

Source: Ministry of Agriculture, CACP Reports, Karnataka Economic Survey.

The above challenges are interrelated and collectively affect farmers' livelihood security. Rising production costs reduce profitability, while delayed payments weaken farmers' repayment capacity. Climate variability and labour shortages further aggravate economic uncertainty, particularly among small and marginal farmers.

Government Policies and Programmes

Recognizing these challenges, both the Central and Karnataka Governments have implemented several welfare programmes to improve farmers' livelihoods.

Table 8 Major Government Programmes for Sugarcane Farmers

S.No	Programme	Purpose
1.	PM-KISAN	Direct Income Support
2.	PMFBY	Crop Insurance
3.	Kisan Credit Card	Institutional Credit
4.	Soil Health Card	Soil Fertility Management
5.	PMKSY	Irrigation Development
6.	Micro Irrigation Scheme	Water Conservation
7.	Fair and Remunerative Price (FRP)	Assured Cane Price
8.	Rashtriya Krishi Vikas Yojana	Agricultural Development

Source: Ministry of Agriculture & Farmers' Welfare; Government of Karnataka.

Government welfare programs have greatly increased institutional support by facilitating sugarcane farmers' access to financial aid, irrigation infrastructure, crop insurance, agricultural inputs, and extension services. These programs have improved the productivity and security of farming households' sources of income. However, not all farmers can equally access or take use of the benefits of such schemes due to differences in awareness, accessibility, administrative procedures, and financial capacity. Small and marginal farmers in particular often find it difficult to get timely information and institutional help.

The above table demonstrate that, from a sociological perspective, livelihood security among sugarcane producers is a complicated phenomenon that extends beyond agricultural income. It is closely linked to opportunities for education, access to healthcare, institutional credit, social protection, irrigation facilities, and government assistance programs. Farmers with stronger institutional support, reliable irrigation systems, and higher educational credentials tend to enjoy greater socioeconomic stability and

better livelihood possibilities. However, small and marginal farmers are nonetheless more vulnerable to debt, health problems at work, climate change uncertainty, fluctuations in agricultural production, and changing market conditions.

The findings thus highlight the importance of putting into practice an integrated approach for rural development that goes beyond merely increasing agricultural output. Strengthening human development, offering social protection, expanding institutional credit, improving awareness of welfare programs, and ensuring their equitable and successful implementation are all necessary to reduce socioeconomic vulnerabilities among sugarcane growers. Such an integrated approach could lead to improved quality of life, increased social inclusion, and the development of stable and sustainable livelihoods for farming communities.

Analysis and Discussion

The socioeconomic structure and livelihood security of farming households in the Belagavi district are significantly impacted by sugarcane growing, according to an examination of the secondary data that is currently available. Because of the district's favorable agroclimatic conditions, fertile soils, irrigation systems, and sugar factories, sugarcane is a significant commercial crop and a significant source of agricultural revenue. However, the results show that reliance on sugarcane exposes farmers to a number of economic and social hazards, including increased input costs, labor shortages, delayed payments from sugar manufacturers, debt, water scarcity, and weather variations. Because small and marginal farmers have fewer landholdings, financial resources, and institutional support, they are less able to absorb agricultural risks, making these issues more severe for them.

The analysis also demonstrates that irrigation is essential to maintaining sugarcane production, but an over reliance on guaranteed water supplies might make a plant more vulnerable to droughts and other times of water scarcity. Another crucial aspect of farmers' well-being is their occupational health, since lengthy physical labor, exposure to heat, pesticides, and fertilizers can lead to respiratory issues, musculoskeletal disorders, dehydration, and other health hazards. Although access to scholarships, the Right to Education, the Mid-Day Meal Scheme, and other educational facilities has made education a significant factor in social mobility, vulnerable farming households' educational opportunities are still hampered by poverty, seasonal migration, poor infrastructure, and financial hardships. Institutional support has been bolstered by government initiatives like PM-KISAN, crop insurance, Kisan Credit Card, irrigation programs, and agricultural development schemes. However, due to disparities in awareness, documentation, administrative processes, and institutional accessibility, the benefits of these initiatives are not equally available. These results show that livelihood security is a multifaceted process incorporating income from a social point of view.

CONCLUSION

In the Belagavi district, sugarcane farming is a significant source of income for farming households and a significant contribution to Karnataka's agricultural economy. Farmers still confront issues such growing cultivation expenses, labor shortages, late payments, debt, climate variability, and restricted access to institutional support, healthcare, and education despite advancements in irrigation, technology, and the expansion of the sugar business. The report emphasizes that livelihood security depends on human growth, social well-being, and strong policy support in addition to agricultural income. Even while institutional aid has been strengthened by government measures, there are still gaps in understanding and implementation, especially among small and marginal farmers. Therefore, an integrated strategy that incorporates agricultural expansion with better healthcare, education, financial inclusion, climatic resilience,

and effective welfare program execution is necessary for sustainable rural development. Such actions will support equitable and sustainable agricultural development while enhancing the security of sugarcane farmers' livelihoods and general well-being.

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