ITJ | The International Tax Journal

Economic feasibility of tobacco cultivation in the Karnataka Light Soil Region: A socio-economic and demographic analysis

Veeresha K. M [1] and **Dr. S. Muralidhar** [2]

[1] Research Scholar (22PHRCM018), Jain (Deemed to be University) Bengaluru, Karnataka, India
veereshamcom.km@gmail.com
[2] Associate Professor, Jain (Deemed to be University) Bengaluru, Karnataka, India
s.muralidhar@jainuniversity.ac.in
Correspondence: veereshamcom.km@gmail.com /Veeresha K. M

Abstract---Tobacco cultivation plays a vital role in the KLS region. However, its economic feasibility and socio-economic and demographic conditions remain unexplored. This study evaluates the economic feasibility of tobacco cultivation and its relationship with socio-economic and demographic factors and also assesses the major costs involved in tobacco cultivation in the KLS region. To achieve the objectives of the present study, primary data was collected through a semi-structured questionnaire from the licensed tobacco growers of the region. In total, 221 responses were collected by using a purposive sampling method. By using SPSS, frequencies, percentages, mean, and standard deviation are computed. To test the null hypothesis, one-sample t-tests were used. The important results of the study reflect that KLS region farmers strongly agree with the high economic feasibility perception towards tobacco cultivation. This study provides evidence on the importance of tobacco cultivation in the KLS region; it informs policy formulation by highlighting socio-economic and demographic factors.

Keywords---Economic feasibility, Tobacco cultivation, Socio-economic factors, Demographic factors, Karnataka Light Soil region.

Introduction

Tobacco (Nicotiana tabacum), despite many years of public health campaigns and regulatory efforts, continues to be farmed across the world, indicating a significant commercial crop with composite socio-

How to Cite:
Veeresha, K. M., & Muralidhar, S. (2026). Economic feasibility of tobacco cultivation in the Karnataka Light Soil Region: A socio-economic and demographic analysis. *The International Tax Journal*, *53*(2), 823–829. Retrieved from https://internationaltaxjournal.online/index.php/itj/article/view/572

The International tax journal ISSN: 0097-7314 E-ISSN: 3066-2370 © 2026

Submitted: 27 January 2026 | Revised: 18 February 2026 | Accepted: 09 March 2026

economic and environmental implications. The tobacco crop is grown in over 120 nations, with Asia and Africa being the major producers for the globe. Reflecting a noticeable shift from high-income regions to middle- and low-income regions. Global tobacco leaf production is estimated at approximately seven billion kilograms. China is the largest producer of tobacco in the globe. It produces 2.35 billion kilograms of tobacco leaf every year. 750 million kilograms of tobacco leaf were produced by India, utilizing 0.45 million hectares of land. Annually 3.5 million hectares of land are cleared for tobacco cultivation (Bhavya Padmini & Vijayalakshmi, 2024). Other major tobacco producers in Asia are Indonesia, Bangladesh, DPR Korea, Thailand, Myanmar, and Sri Lanka. Mozambique is the major producer of tobacco in Africa. Tobacco is an economically significant crop in Mozambique. The United Nations have their own historical importance in tobacco production; due to international trade competition and policies and regulations, it reduces their importance in the global market. (Morris, 2024) Tobacco cultivation creates employment opportunities for more than 46 million people in India directly and indirectly. It generated ₹12,005.89 crore of foreign exchange for the Indian government. India is the next largest producer of tobacco globally after China and Brizil, ranked fifth in value and second in quantity for exporting unmanufactured tobacco to the globe. In 2023-24, India exported $1,449.59 million of tobacco worldwide, a 19% increase over 2022-23. FCV tobacco production in India in the last six years had fluctuated. These fluctuations were happening due to weather impact; it directly impacts the yields and supply of tobacco. FCV tobacco production has registered a CAGR of 2.87% from 2018-19 to 2022-23, and it was 6.44% including the year 2023-24 (Tobacco Board Annual Report 2023-24). In India FCV tobacco was farmed in four soil regions. TBS, NLS, SLS, and KLS. Each region produces a different variety and quality of tobacco. The tobacco crop is the important commercial crop cultivated in India. It creates rural employment, export earnings, and revenue for the government. India secured the third rank globally for producing tobacco after China and Brazil (Indian Express, 2025). The tobacco crop is highly cultivated in the states of Andhra Pradesh, Karnataka, Gujarat, and Tamil Nadu. Karnataka secured second position to produce FCV tobacco (tobacco board 2023-24). Flue-cured Virginia (FCV) tobacco was produced majorly in the KLS region. 70,698.60 hectares were registered for tobacco cultivation in the KLS region for growing FCV tobacco. It was the major source of income for these region farmers. Tobacco cultivation in the Karnataka light soil region is majorly a labor-intensive crop. From nursery preparation to curing and allocating leaf on its standard, which requires huge labour, it involves a major portion of the total cost. Despite this, many of the licensed farmers continued to grow tobacco due to its assured market through well-established auction platforms. However, profit margin is narrowing due to high production costs. In the KLS region, tobacco farming remains economically profitable due to its climate suitability, assured and auction-based marketing, comparatively high gross return compared to other crops, and strong auction board support. Farmers of the KLS region are ready to grow tobacco regularly because of income security, easy and reliable market access, and limited economically viable alternative crops. All these factors are declining the environmental concerns and long-term sustainability. Many of the research studies in India have examined the viability of tobacco cultivation, but most of these studies focused on the national and state levels without addressing regional-level variations. Moreover, only a few studies are available on the KLS region; these regions special soil characteristics and irrigation patterns influence production economics. Micro-level economic analysis provides actual insight regarding agricultural cost composition, profitability, and efficiency at the farm level. In this context, the present study titled "Tobacco Cultivation in the Karnataka Light Soil Region: Socio-economic Characteristics, Demographic Profile, and Economic Feasibility" has been conducted with the following objectives:

- To study the present socio-demographic profile of the tobacco growers in the KLS region.
- To estimate the cost of cultivation of the tobacco crop using standard cost concepts.
- To analyse the important factors influencing cost structure.
- To analyse the economic feasibility of the tobacco farming in the KLS region.

Review of Literature

Tobacco cultivation has been studied in India for its economic benefits as well as its environmental cost and its sustainability. Few previous studies examine the cultivation cost, inputs patterns, yield and profitability across India. These studies majorly influenced on soil type, technology usage, and market structures.

Rohindra Kumar et al., (2019) examine the FCV tobacco cultivation practices in west Godavari, Andra Pradesh, by comparing general village and model village cultivation lands. They found that FCV tobacco cultivation cost for each hectare in model villages is Rs 20,906.59 and in general villages 228,749.84. their study remarkably noted that labour, fertilizers and curing cost are major portion in total cost in tobacco cultivation. Adoption efficient management practices are helping the growers to maintain profitability in this tobacco cultivation.

Baliwada et al.,(2018) the researcher explore the socio economic impact of FCV tobacco in NLS region of Andra Pradesh. Their study shows that tobacco cultivation generates higher profit per acre compare to other cultivated alternative crops in this region. But tobacco cultivation requires high input cost and more labourers. It also evaluates the potential income benefits and cost burden for growers.

Prasad et al., (2021) few other studies on tobacco cultivation have focused on soil fertility and nutrient management but this study assessed the soil fertility in NLS tobacco cultivation region of Andra Pradesh. They found that soils of this region are moderately acidic, with low organic carbon and nitrogen. And highlighted that proper input management is only thing to maintain productivity and control cost.

Nayanatara et al., (2010) the researcher highlighted that 700,000 tons of fuelwood are used yearly for curing tobacco leaf in Karnataka. They showed that by adopting fuel saving technology in curing of tobacco is reduce fuelwood use by 12%, and also noted environmental damage from wood curing method of tobacco.

Those type of investigation noted that cultivation of tobacco is economically viable, but due to rising input cost, soil fertility issues, and environmental causes, the crop is under pressure. However, there is a lack of studies on focusing KLS region in micro level. Different soil structure, rainfall and availability of irrigation facility in the land are likely affects the total cost and profitability of tobacco cultivation.

Reddy and Rao (2019) evaluated the profitability of tobacco cultivation under different farm size and found that larger tobacco producers earn higher net return per hectare due low input cost and usage of machinery in cultivation process. Similarly, Patel and Singh (2020) reported the importance of cultivation area size and proper labour usage in determining the profitability among the tobacco producers in Black Soil Region of Gujarat.

Methodology

The KLS region is located in the central and southern areas of Karnataka state, covering parts that transition between the Eastern Ghats and the Deccan Plateau. It lies approximately between **11°30' N to 16°00' N latitude** and **74°30' E to 78°00' E longitude**. This KLS region forms part of the Central Dry Zone, Southern Transition Zone, and Eastern Dry Zone as classified by the University of Agricultural Sciences, Bengaluru (Raghavi & Nayaka, 2021, *KrishiKosh Repository*). In the KLS region, the Mysore and Hassan districts are producing the majority of the FCV tobacco, divided into five auction platforms chosen purposively for the present study. Considering a population size of 221 tobacco growers. 54 farmers from Chilkunda, 36 from HD Kote, 49 from Hunsur, 21 from Ramnathpura, and 61 from Periyaptna were selected at random. The data were collected through issuing questionnaires

and personal interviews during 2025 through the survey method. Data analysis of the present study involved percentage, standard deviation, and one-sample t-tests to explore whether the tobacco growers' perceived economic feasibility of tobacco farming differs significantly from a test value. The study maintained ethical standards, such as informed consent and confidentiality.

Results and Discussion

Table 1
Descriptive statistics of Socio- Economic and Demographic Factors of Tobacco Growers in KLS region

		n	%	mean	SD
	Below 20	-	-		
	20-40	53	24		
	41-60	154	69.7		
Age	above 61	14	6.3	2.82	0.52
	Male	193	87.3		
Gender	Female	28	12.7	1.13	0.3
	illiterate	67	30.3		
	Primary Education	48	21.7		
	Secondary Education	69	31.2		
Education Qualification	College Education	37	16.7	2.34	1.08
	Married	204	92.3		
	Unmarried	8	3.6		
Marital Status	Widowed	9	4.1	1.16	0.62
	APL	15	6.8		
Ration Card Type	BPL	206	93.5	1.93	0.25
	Rented	1	0.5		
Ownership of the house	Owned	220	99.5	2	0.07
	Hut	0	0		
	Pot tiled roof	25	11.3		
	Manglore tiled roof	133	60.2		
	Tin sheet roof	19	8.6		
Type of House	concrete	44	19.9	3.37	0.93
	Agriculturist	118	53.4		
	Agricultural Labour	0	0		
Occupation	Both	103	46.6	1.93	1
	Nuclear	153	69.2		
Nature of the Family	Joint	68	30.8	1.31	0.46
	below 10	0	0		
Experience in Tobacco	11 - 15 years	1	0.5		
Cultivation	above 15 years	220	99.5	4	0.07
	Channel and Rain	3	14		
	Borewell and Rain	150	67.9		
	Pond and Rain	6	2.7		
Sources of Irrigation	Only Rain	62	28.1	3.57	0.92
	Kanchana	9	4.1		
	FCH222	10	4.5		
	CH3	169	76.5		
Variety	Rathna	0	0	3.39	1.4

		n	%	mean	SD
	ERT	9	4.1		
	2222	0	0		
	Other	24	10.9		
	below1	4	1.6		
	1.-2	30	13.6		
Land Used for Tobacco cultivation	2.1 - 4	113	51.1		
	above 4	74	33.5	3.16	0.72
	much Better	126	57		
	Better	90	40.7		
	Same	3	1.4		
profitability compares to	Worst	2	0.9		
another Crop	Much Worst	0	0	1.46	0.58

Source : Field survey, SPSS Output

Table 1 shows the socio-economic and demographic profile of the tobacco growers in the KLS region. This table reflects the economic feasibility and cultivation dynamics of tobacco growing in the KLS region. The results indicate that tobacco cultivation is largely done by middle-aged and elderly farmers. Nearly 70% of the sample respondents belong to the 41-60 years age group, and only a small portion of the respondents are above 61 years. Respondents below 20 years of age were not considered for the study because they did not own a license for tobacco cultivation in this region. Gender composition indicates a clear male dominance (87.3%), proving that tobacco cultivation decisions, land management, marketing, and other financial decisions are largely managed by the men. Female participation is very high in supportive or labour-intensive activities of tobacco farming. These types of patterns have been seen in cash crop-oriented agriculture systems. Educational fulfillment among the sample respondents was relatively moderate, with the majority having secondary or primary education. This education has very important consequences for adopting technology and awareness. Limited education may reduce the farmers' ability to diversify crops, adopt advanced curing methods, and shift towards environmentally sustainable alternatives. Marital status shows that tobacco farming is primarily a family-based livelihood. This income plays a crucial role in the economic security of this region. The dominance of BPL ration card holders indicates the economic vulnerability of tobacco farmers, in spite of growing tobacco. This reflects that while tobacco is profitable compared to other crops, it may not be sufficient to lift farmers out of poverty due to high input costs and price changes. The majority of the respondents lived in Mangalore tiled houses due to this house structure being relatively helpful for tobacco activities. Experience in tobacco cultivation was high, with nearly all the sample respondents having more than 15 years of experience. This explains the strong dependency and crop loyalty. Irrigation patterns disclose a heavy dependency on borewells and rainfall. Finally, profitability perception strongly favoured tobacco farming, with nearly 98% of the sample respondents agreeing it is better compared to other crops. This economic advantage explains continued dependence on tobacco farming despite environmental concerns and policy pressures.

Table 2

Cost Structure of Tobacco Cultivation in Karnataka Light Soil Region

Sl.no	**Expenditures**	**Amount in Rs**	**% of total cost**
A1	Cost of seeds	200	0.285
A2	Land preparation	2500	3.561
A3	Nurseries maintenance	2000	2.849
A4	Trying	1500	2.137
A5	Planting	5500	7.835
A6	Cutting	8000	11.396

Sl.no	Expenditures	Amount in Rs	% of total cost
A7	Grading	4000	5.698
A8	Bailing	2000	2.849
A9	Cost of firewood's	20000	28.490
A10	Barn repair cost	1500	2.137
A11	Fertilizers and pesticides cost	16500	23.504
A12	Transportation charges	1500	2.137
A13	Other charges	5000	7.123
B	**Total cost per acre**	70200	100.000
C	**Tobacco grown per acre in kg's**	700	
D	**Average price per kg**	250	
E	**Total income generated per acre**	175000	
F	**Income / loss from the tobacco cultivation**	104800	

Source: Field survey

It can be revealed from Table 2 that the overall expenditure for tobacco cultivation in the KLS region worked out to ₹ 70,200 per acre. Firewood used for curing FCV tobacco accounts for the highest share at 28.49%, reflecting the energy-intensive nature of the FCV tobacco curing process. This largest proportion of firewood cost also indicates that adverse environmental impact due to the use of firewood's fertilizers and pesticides is another major portion of tobacco cultivation expenses at 23.50%, explaining that the tobacco crop is heavily dependent on chemical inputs to maintain leaf quality and manage pest incidence. Tobacco cultivation is a majorly labor-intensive activity, such as plucking leaves from plants (11.40%), planting (7.84%), grading (5.69%), and other operational charges (7.12%), which contributes to the overall cost structure of tobacco cultivation. It was observed that wages of human labor vary in different parts of the KLS region. In spite of all these high input costs, the economic aspects suggest strong financial viability. The average yield is 700 kg/acre, and at an average market price for the good quality of the tobacco of approximately ₹250/kg, farmers generate a gross income of approximately ₹175,000/acre, reflecting a high profit margin. Such profitability of the tobacco cultivation explains why farmers prefer tobacco cultivation in the KLS region.

Table 3

Results of One Sample T test of Economic Feasibility

One-Sample Statistics (Test value - 03)						
	N	Mean	Std. Deviation	t	df	Sig. (2-tailed)
Economic Score	221	4.59	0.23	104.64	220	< .001

Source : SPSS Output

A one-sample t-test was conducted to examine whether the mean economic feasibility score of tobacco farming significantly differed from the test value of 3.00. The table results show that the mean economic score (M = 4.59, SD = 0.23, N = 221) was higher than the neutral value. The t test gives a significant result($t(220) = 104.64$, $P < .001$), reflecting the rejection of the H_0 hypothesis. It agreed that tobacco growers of study area strongly believe tobacco farming as economically favourable. The t value indicates that it is not only statistically significant but also a practical difference between the observed mean and the test value.

Conclusion and Future Direction

The study clearly explores the socio-economic, demographic, and economic feasibility of tobacco cultivation in the KLS region. The study findings confirm that tobacco cultivation plays a dominant role

in this region. Primarily this activity is managed by middle-aged and experienced male farmers. The one-sample t-test results reflect that tobacco growers of the KLS region strongly perceive tobacco farming to be economically feasible compared to other crops. Despite its profitability, tobacco farming in the study area has many weaknesses. Heavy dependency on groundwater for irrigation, high dependency on a single commercial crop, and policy uncertainties. Future research should be a regional and comparative evaluation of how economic feasibility grows under changing environmental conditions and markets. Studies comparing tobacco with other viable alternative crops under similar climates. Provide critical evidence for diversification strategies.

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