



# **Challenges and Solutions in Coffee Cultivation: A Case Study of Growers in Chikkamagaluru and Kodagu Districts, Karnataka, India**

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## **Authors' contributions**

*This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.*

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## ABSTRACT

Coffee plays a crucial role in various aspects of daily life and industry, offering nutritional and economic benefits to many countries. Consequently, ensuring its production becomes a prime consideration. The current study aims to know the important constraints faced and suggestions by coffee growers at Chikkamagaluru and Kodagu District of Karnataka. These study converse details on extent of adoption practices of coffee growers in above regions. Random sampling method was used to select 120 respondents. The primary data was collected from respondents using pre-tested interview schedule. For this purpose, an ex-post facto research design was employed. The study revealed that, several significant constraints encountered during the adoption of improved cultivation practices in coffee. These included Exploitation by middlemen (I), non-availability of labour (II), high cost of fertilizers and plant protection chemicals (III), fluctuation in market price (IV), problems of pest and diseases (V), indeterminate rainfall (VI), Lack of market information (VII) and High cost of transportation (VIII) were some of the problems faced by the Coffee growers respectively. In response, growers offered valuable suggestions, such as standardized price for the produce (I), eliminating middlemen (II), standardized weighing scales (III), providing access to market information (IV), frame cooperative for collective marketing (V) and the Coffee board should conduct more extensive market research (VI) were the suggestions given by Coffee growers respectively. The findings of this paper explains different challenges faced by the Coffee growers of Chikkamagaluru and Kodagu Districts, Karnataka. If these challenges were solved by the policy makers by making informed decisions to enhance the production and sustainability of coffee farming, then this will contribute to the nation's growth.

**Keywords:** Coffee growers; constraints; suggestions; profile characteristics; labor.

## 1. INTRODUCTION

The importance of horticultural sector in Indian economy can be visualized from the fact that it accounts for 30 per cent of India's agricultural GDP from only 8.5 per cent of the cropped area. The major horticultural crops exported from India are mango, grapes, orange, apple, banana, coffee, tea, arecanut, sweet lime, onion, potato, tomato and pumpkin. Coffee is the world's second most traded commodity. Indian coffee is known to be "The world's best shade-grown 'mild' coffees". Coffee belongs to the genus *Coffea* of the family Rubiaceae (Anonymous, 2021 and Anonymous, 2023). There are over 70 commercially cultivated species under the genus *Coffea*, most of which are native to Africa including two species in India viz., *Coffea arabica* and *Coffea canephora*. Coffee is cultivated as a silvi-horti cropping system under a tree cover for better yield. The development of any nation depends primarily on the role played by entrepreneurs. An entrepreneur organizes the economic ventures for producing goods and services at lower cost with setting up new business. Entrepreneurship is the capacity for innovation and caliber to introduce innovative techniques in business operations. Entrepreneurship behavior components include viz., innovativeness, decision making ability and achievement motivation, knowledge of farming enterprise, risk orientation, information seeking

behavior and ability to co-ordinate farm activities, economic motivation, leadership ability, scientific orientation and management orientation. Since coffee crop is one of the major horticultural exports crop the coffee growers are looking the coffee cultivation has an enterprise/industry and also for the reason that huge amount of finance, manpower, land, input is involved in coffee production (Kumar & Sharma, 2018). Subsequently, there is an involvement of much entrepreneurial behavior in the production of the coffee. As coffee production involves more of energy, huge financial and human involvement there is an adoption of good and improved production practices by coffee growers to get good yield and income. Hence, in this process the coffee growers encounter many problems while managing the crop through entrepreneurship mode by adopting improved cultivation practices. Therefore the study is to document the problem being faced by the coffee growers and the suggestions given by the growers to overcome these problems along with their socio economic profile characteristics.

## 2. METHODOLOGY

The study was conducted in Kodagu and Chikkamagaluru district of Karnataka during the year 2023-24. These districts were selected purposively because it had large area under coffee. Considering maximum area under coffee

cultivation as criteria, two taluks were selected from each district namely Virajpet and Ponnampet from Kodagu district and Chikkamagaluru and Mudigere taluks in Chikkamagaluru district were selected for conducting the study. Three villages having maximum area under coffee cultivation were selected from each taluk and from each village 10 farmers growing coffee were selected by simple random sampling procedure. Thus, sample from each taluk was 30 making a total sample size of 120 respondents. Personal interview method was followed to collect the information in the light of objectives of the study. A schedule was developed and pretested in non-sample area was considered for the study. For this purpose, an ex-post facto research design was employed. The data collected were coded, analyzed and tabulated by using statistical tools such as frequency, percentage, mean, standard deviation, ranking and chi-square test.

### 3. RESULTS AND DISCUSSION

#### 3.1 Distribution of the Coffee Growers According to Socio-Personal Characteristics

The results obtained from the study were performed on the socio-personal, economic and communicational characteristics of the Coffee growers such as age, education, family size, occupation, land holding, farming experience, annual income, extension participation, extension contact, credit orientation and market orientation. The data in Table 1 revealed that 61.67 per cent of selected Coffee growers are from the middle

age group (36 years to 55 years), while 20.00 per cent and 18.33 per cent from the old age group (above 55 years) and young age group (up to 35 years) respectively. It indicates that the majority of Coffee growers belong to the middle age group. In case of education, the study revealed that 40.00 per cent of the respondents were educated up to high school. However, 0.83 per cent respondents were illiterate, 2.50 per cent were educated up to the primary school, 24.17 per cent were educated up to middle school, 19.16 per cent were educated up to PUC and remaining 13.34 per cent were educated up to graduate and none of them were postgraduate and above. The result from Table 1 could be indicated that more than half of the Coffee growers (52.50 %) were from medium-sized families, preceded by 39.16 per cent and 8.34 per cent of the respondents belonging to small and big families, respectively. The results are in line with the Manjunath, *et. al.*, (1997), Ghadge, *et. al.*, (2010), Darshan, *et. al.*, (2019) and Rajendran, (2016).

#### 3.2 Distribution of the Coffee Growers According to Economic and Communicational Characteristics

Table 2 shows that the majority (74.16%) of the respondents had agriculture as their main occupation and 17.50 per cent of the respondents engaged in agriculture along with subsidiary enterprises. Whereas, only 8.34 per cent of them engaged in business along with agriculture and subsidiary enterprises. It indicated that majority (39.16 %) of the Coffee growers were medium size of land holdings.

**Table 1. Distribution of the coffee growers according to socio-personal characteristics (n=120)**

Characteristics	Category	Respondents	
		Frequency	Percentage
Age	Young (up to 35 years)	22	18.33
	Middle (36 years - 55 years)	74	61.67
	Old (above 55 years)	24	20.00
Education	Illiterate (Cannot read and write)	1	0.83
	Primary school (I - IV Standard)	3	2.50
	Middle School (V - VII Standard)	29	24.17
	High School (VIII - X Standard)	48	40.00
	PUC (XI-XII Standard)	23	19.16
	Graduate (Degree)	16	13.34
	Post-graduation (Master's degree or above)	0	0
Family size	Small sized Family (up to 5 Members)	47	39.16
	Medium sized Family (5 - 8 Members)	63	52.50
	Big sized Family (above 8 Members)	10	8.34

Whereas, 26.67 per cent were having small size of land holdings, whereas 20.00 per cent of respondents were big size of land holdings and about 14.17 per cent are of marginal size of land holdings, respectively. Annual income was recorded and the data indicated that the majority (46.66 %) of the respondents belonged to a medium level of annual income (9,33,000Rs - 20,68,000 Rs) while 27.50 per cent belonged high annual income group (>20,68,000 Rs) and only 25.84 per cent belonged to the low annual income group (<9,33,000 Rs). Table 2 pertaining to the overall farming experience of Coffee growers showed that 39.16 per cent of the respondents had medium farming experience (18 years to 28 years). Whereas, 33.34 per cent of the respondents had high farming experience (above 28 years) and 27.50 per cent of them had low farming experience (less than 18 years). 40 per cent of the respondents belonged to medium market orientation. Whereas, 36.66 per cent and 23.34 per cent of the respondents belonged to high and low market orientation. The finding

indicates that the majority (44.16 %) of the respondents belonged to medium mass media exposure. Whereas, 35.84 per cent of the respondents belonged to high mass media exposure and 20.00 per cent of them belonged to low mass media exposure. It is apparent that nearly half (48.34 %) of the respondents had medium extension participation, followed by 29.16 per cent of the respondents had low extension participation and 22.50 per cent had high extension participation. It is clear that, majority (45.00 %) of the respondents belonged to medium extension contact. Whereas, 27.50 per cent of the respondents each belonged to low and high extension contact. Majority (47.50 %) of the respondents had high credit orientation, followed by 42.50 per cent of the respondents who had medium credit orientation and 10.00 per cent of them had low credit orientation. The results are in concordance with the Manjunatha, *et. al.*, (1999), Prajapathi, *et. al.*, (2002), Madhuprasad *et. al.*, (2008).

**Table 2. Distribution of the coffee growers according to economic and communicational characteristics (n=120)**

Particulars	Category	Respondents	
		Frequency	Percentage
Occupation	Agriculture	89	74.16
	Agriculture+ Subsidiary occupation	21	17.50
	Agriculture+ Subsidiary occupation + Others	10	8.34
Land holding (ha)*	Marginal size of land holding (< 2.00 ha)	17	14.17
	Small size of land holding (2.00 – 4.00 ha)	32	26.67
	Medium size of landholding (4.00-10.00 ha)	47	39.16
	Big size of landholdings (>10.00 ha)	24	20.00
Annual income	Low (<9,33,000 Rs)	31	25.84
	Medium (9,33,000 Rs-20,68,000 Rs)	56	46.66
	High (>20,68,000 Rs)	33	27.50
Farming experience	Low (<17.91)	33	27.50
	Medium (17.91-27.12)	47	39.16
	High (>27.12)	40	33.34
Market orientation	Low(<6.55)	28	23.34
	Medium(6.55-7.99)	48	40.00
	High(>7.99)	44	36.66
Mass media exposure	Low (<7.75)	24	20.00
	Medium (7.75-9.36)	53	44.16
	High (>9.36)	43	35.84
Extension participation	Low(<11.59)	35	29.16
	Medium(11.59-13.32)	58	48.34
	High(>13.32)	27	22.50
Extension contact	Low(<4.46)	33	27.50
	Medium(4.46-5.60)	54	45.00
	High(>5.60)	33	27.50
Credit orientation	Low (<10.91)	12	10.00
	Medium(10.91-11.72)	51	42.50
	High(>11.72)	57	47.50

\*-Based on coffee growing area, growers are classified as small, medium and large growers

**Table 3. Constraints faced by coffee growers (n=120)**

Sl.No	Constraints	Frequency	Percentage	Rank
1	Non availability of labour	97	80.83	II
2	High cost of fertilizers and plant protection chemicals	88	73.33	III
3	Problem of pest and diseases	84	70.00	V
4	Indeterminate rainfall	71	59.16	VI
5	Exploitation by middlemen	98	81.66	I
6	Fluctuation in market price	85	70.83	IV
7	Lack of market information	27	22.50	VII
8	High cost of transportation	21	17.50	VIII

**Table 4. Suggestions by the coffee growers to overcome the problems (n=120)**

Sl.No	Suggestions	Frequency	Percentage	Rank
1	Standardized price for the produce	101	84.16	I
2	Frame cooperatives for collective marketing	35	29.16	V
3	Standardized weighing scales	72	60.00	III
4	Eliminate middlemen	98	81.66	II
5	Provide access to market information	50	41.66	IV
6	Coffee board should spend time on market research	23	19.16	VI

### 3.3 Constraints Faced by Coffee Growers

The results from Table 3 revealed that problems faced by the Coffee growers in Coffee cultivation practices were ranked based on frequency of response of respondents were as follows. Exploitation by middlemen (I), non-availability of labour (II), high cost of fertilizers and plant protection chemicals (III), fluctuation in market price (IV), problems of pest and diseases (V), indeterminate rainfall (VI), Lack of market information (VII) and High cost of transportation (VIII) were some of the problems faced by the Coffee growers respectively and the similar trends was observed with Ashok & Rajesh, (2015), Sumana, *et. al.*, (2018) and Ravi & Patil, (2019).

### 3.4 Suggestions by the Coffee Growers to Overcome the Problems

The results from Table 4 show the suggestions given by Coffee growers in Coffee cultivation and suggestions were ranked based on frequency of responses from the respondents. The major suggestions were standardized price for the produce (I), eliminating middlemen (II), standardized weighing scales (III), providing access to market information (IV), frame cooperative for collective marketing (V) and the Coffee board should spend time on market research (VI) were the suggestions given by Coffee growers respectively and the similar trends was observed in Sumana, *et. al.*, (2018).

### 4. CONCLUSION

In conclusion, this research sheds light on the significant constraints perceived by coffee growers in their pursuit of improved cultivation practices. The study's findings underscore the multifaceted challenges posed by factors such as the Non-availability of labour, High cost of fertilizers and plant protection chemicals, Problem of pest and diseases, Indeterminate rainfall, growers are not applying fertilizers based on soil test based nutrient management and few more. These constraints collectively hinder the whole adoption of improved practices and hinder the growth and sustainability of coffee farming. However, the study also showcases the valuable suggestions to address these challenges. The recommendations put forth by the coffee growers, including Standardized price for the produce, Frame cooperatives for collective marketing, Standardized weighing scales, eliminate middlemen *etc.*, By accepting the constraints and implementation the suggested solutions, stakeholders can collectively work towards the advancement of both the coffee sector and the overall socio-economic landscape of the growers. In conclusion, this study contributes valuable insights that can guide the formulation of policies aimed at boosting coffee cultivation which will pave the way for sustainable production.

## DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of this manuscript.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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