

Full Length Research Article

Exploring Small-Scale Coffee Farms in Kodagu: Reflections on Recent Coffee Economies in Kodagu District, Karnataka State, India

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Abstract

The present investigation was carried out to study the costs and returns of small coffee growers (< 2ha) on the basis of different cost concepts. The study was conducted in Kodagu district of Karnataka state that stands first in terms of area (24 per cent of total area) and production (36.69 per cent of total production). The primary data was collected from 50 Arabica and 50 Robusta growers using snow ball sampling technique during March-June, 2020. The small growers spent about ₹121333 and ₹97768 per ha on Arabica and Robusta varieties of coffee respectively. The Total Revenue worked out to be ₹158096 in Arabica and ₹171000 per ha in Robusta. The Net Income turned out to be ₹36762 per ha in Arabica and ₹73231 per ha in Robusta, while the returns per rupee investment were found to be 1.30 and 1.75 in Arabica and Robusta respectively. Overall, it can be concluded that coffee cultivation was profitable among the small coffee growers below 2 ha. The study suggests linking MNREGA with major coffee operations and skill development training for small growers to enhance their income and coffee quality.

Key words: Coffee, Economies, Costs, Returns, Profitability

The small growers are the backbones of India's coffee sector. One cannot ignore their contribution to nation's coffee supply and agricultural GDP. While, the growers below 2 ha constitute for about 80.87 per cent of total coffee holdings in India and account for 37 per cent of total coffee production (Table 1). Among the traditional coffee growing regions in India, Kerala has the highest number of small holdings (64358), followed by Karnataka (39046) and Tamil Nadu (12737) [1]. When it comes to coffee production, it is considered as a highly labor-intensive process [2-3]. Given, the limited income and less access to technologies used by small coffee growers, the family members are mainly being involved in the cultivation practices as labourers with the main objective of reducing labour costs and for maximization of profits. Nevertheless, the cost of cultivation of coffee has been steadily increasing by 12-15 per cent every year [4]. While, the small growers also face several challenges owing to non-availability of quality inputs, technological constraints, price fluctuations and lack of assured markets.

Added to the above problems faced by small growers, the earlier studies by [5] have noted the incidences of pests and diseases adversely affecting coffee cultivation. While, Upendranath *et al.* [6] noted higher production and marketing risks faced by the small growers. The recent studies by Ganashruthy [7] noted rising operational costs (65 per cent) over the years. Meanwhile, the small growers are worst affected

by severe price fluctuations [6]. Given the above conditions, the livelihoods of small growers mainly depend on coffee cultivation. Under such circumstances are the small growers making profits or incurring losses is the key question we attempt to investigate. Thereby, the study analyses the economics of coffee cultivation among the small growers in both Arabica and Robusta varieties, which have relevant implications for strengthening the livelihoods, enhancing equity and sustainability of incomes of small coffee growers both at micro and macro level.

Table 1 Size of coffee holdings in India

Size of holdings	Number of holdings	Area under coffee (ha)
< 2 ha	178585 (80.87)	144196 (37.10)
2-4 ha	27731 (12.56)	71905 (18.50)
4-10 ha	11800 (5.34)	73642 (19.00)
10-25 ha	1789 (0.81)	29829 (7.70)
> 5 ha	920 (0.42)	68623 (17.70)

Source: Indian Coffee Board [1]

Figures in parentheses indicate percentage to total number of holdings

MATERIALS AND METHODS

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The present study was carried out in Kodagu district of Karnataka state. Kodagu district stands first in the country in terms of area and production of coffee. The district alone contributed for 24 per cent of total planted area and 36.69 per cent of country's total production. The primary data was collected using snow ball sampling technique. The study employed both qualitative (telephonic interviews and review of documents) and quantitative data collected during March-June, 2020. The data pertains to the reference period of 2018-19 agricultural year. The study covered about 100 small coffee growers (50 Arabica and 50 Robusta growers) below 2ha. The secondary data pertaining to the study was collected from the Coffee Board of India and earlier literature related to the field.

The following cost concepts were used in the study.
 Cost A₁ = Actual expenses in cash + amortized establishment cost and depreciation of fixed assets.
 Cost A₂ = Cost A₁ + rent for leased-in land
 Cost B₁ = Cost A₁ + interest on value of owned capital assets (excluding land)
 Cost B₂ = Cost B₁ + rental value of owned land and rent paid for leased-in land
 Cost C₁ = Cost B₁ + imputed value of family labour
 Cost C₂ = Cost B₂ + imputed value of family labour
 Cost C₃ = Cost C₂ + 10 percent of C₂ on account of managerial functions performed by the growers.

RESULTS AND DISCUSSION

Socio-economic profile of surveyed coffee growers

The socio-economic profiles that were likely to affect the income generating capacities of the respondents are provided in (Table 2). The average size of holdings were found to be higher in Arabica (1.25 ha) compared to Robusta (1.02 ha). The average household size in Arabica and Robusta were found to be 5.12 and 4.91 respectively. Majority of the respondents (58 per cent of Arabica and 61 per cent of Robusta) belonged to working group between 16-60 years. About 40 per cent of small growers belonged to general and other backward communities (OBC), while the rest 20 per cent belonged to minorities. About 48 and 36 per cent of Arabica and Robusta respondents were graduates.

Table 2 Socio-economic profile of coffee growers

Details	Arabica (N=50)	Robusta (N=50)
Average size of holdings (ha)	1.25	1.02
Average household size (numbers)	5.12	4.91
Age group of members (%)		
< 16 years	19.42	22.88
16-60 years	58.25	61.02
>60 years	22.33	16.1
Caste (% of households)		
Other backward community (OBC)	40	40
Minority	20	20
General category	40	40
Education status of members (%)		
Upper primary	8	8
High school	16	20
Pre-university college	16	16
Graduation	48	36
Post-graduation	12	20

Data depicted in (Table 3) indicates break-up of costs and returns incurred by the small holders in Arabica and Robusta varieties of coffee. The costs and returns in both the varieties varied significantly in both the varieties. In case of

small growers, the overall total costs in Arabica per ha was 1.24 times higher than Robusta.

Table 3 Net returns per ha from Arabica and Robusta small scale growers (₹/ha)

Items	Arabica	Robusta
1. Total operational cost (TOC)	79207.47 (65.28)*	62701.52 (64.13)*
A. Labor costs		
A ₁ . Hired	10165	11338
A ₂ . Family	35499	27759
Sub total	45664 (57.65)**	39097 (62.35)**
B. Input costs		
1. Manures and fertilizers	16699	11850
2. Liming and dolomite	0	300
3. Irrigation	2190	5200
4. Weeding	212	620
5. Pesticides	5011	927
Sub total	24112 (30.44)**	18897 (30.14)**
C. Maintenance costs		
1. Transplanting and gap filling	1213	142
2. Fence keeping	124	235
Sub total	1337 (1.69)**	377 (0.60)**
D. Processing costs		
1. Processing costs	1055	578
2. Costs of materials	898	72
Sub total	1953 (2.47)**	650 (1.04)**
E. Marketing costs		
1. Transportation charges	536	60.85
2. Storage charges	0	0
3. Labor charges	220	0
4. Value of bags	1054	156.38
Sub total	1810 (2.29)**	217.23 (0.35)**
F. Working capital of growers (₹)		
Total Working Capital (A+B+C+D+E-A ₂)	39377	31479.55
G. Interest on working capital at 11%	4331.47	3462.7505
II. Total fixed costs	42126 (34.72)*	35066.64 (35.87)*
A. Rent on owned land	25318 (60.10)***	23597 (67.29)***
B. Land revenue, cesses and taxes	37.5 (0.09)***	37.5 (0.11)***
C. Depreciation on implements and farm implement buildings	1679 (3.99)***	1711 (4.88)***
D. Interest on fixed capital @12%	4514 (11)***	3757 (11)***
Amortized establishment costs	10578 (25.11)***	5964 (17.01)***
Total cost (TC)	121333	97768
Output (kg/ha)	964	3000
Price received / kg	164	57
Total Revenue (TR) (₹/ha)	158096	171000
TR-TC	36762	73231
TR-TOC	78888	108298

*, ** and ***Figures in parenthesis indicates to total cost of cultivation, total operational costs and fixed costs respectively

The average total cost of cultivation of Arabica was found to be ₹1.21 lakhs per ha out of which 65.28 per cent was operational cost, that comprised of labour costs (57.65%), input costs (30.44%), processing costs (2.47%), maintenance costs (1.69%) and marketing costs (2.29%), while remaining constituted by interest on working capital (5.47%). The fixed cost was around 34.72 per cent of total cost; in which rental value of owned land (60.10%) and amortized cost of establishment (25.11%) were the major component, interest on fixed capital (11%), depreciation on farm implements and buildings (3.99%), and land revenue and cesses constituted for 0.09% of total fixed costs.

While, in case of Robusta, the overall total cost incurred by small scale farms was found to be ₹97768 per ha. The total operational and fixed costs worked out to be ₹ 62701 (64.13%) and ₹35066 (35.87%) respectively. In this case, labour costs constituted for about 62.35%, Input costs (30.14%), processing costs (1.04%), maintenance costs (0.60%), marketing costs (0.35%) and interest on working capital (5.52%). When it comes to fixed costs, the rental value of owned land constituted for 67 per cent of total fixed costs, followed by amortized establishment costs (17%), interest on fixed capital (11%), depreciation on implements and buildings (4.88%), land revenue and cesses (0.11%).

Table 4 Cost of cultivation and production based on different cost concepts

	Arabica	Robusta
Cost of cultivation (₹/ha)		
Cost A ₁	56003	42655
Cost A ₂	56003	42655
A ₂ + Family labor	91502	70414
B ₁	60517	46412
B ₂	85835	70009
C ₁	96016	74172
C ₂	121334	97769
Cost of production (₹/qtl)		
A ₁	5809	4424.82
A ₂	5809	4424.82
A ₂ + Family labor	9492	2347.14
B ₁	6278	1547.07
B ₂	8904	2333.64
C ₁	9960	2472.38
C ₂	12587	3258.95
C ₃	16400	5700

The cost of cultivation (₹/ha) and cost of production (₹/quintal) of Arabica and Robusta varieties of coffee are provided in (Table 4). The overall Cost A₁ in Arabica and Robusta were found to be ₹56003 and ₹42655 per ha. The overall Cost B₁ were found to be ₹60517 and ₹46412 per ha in Arabica and Robusta respectively. While the Cost B₂ was found to be ₹85835 per ha in Arabica and ₹70009 per ha in Robusta.

The Cost C₁ and Cost C₂ were found to be ₹96016 per ha and ₹121334 per ha in Arabica and Robusta respectively. Whereas in case of Robusta it was found to be ₹74172 and ₹97769 per ha respectively.

The cost of production of Arabica and Robusta varieties of coffee among the small growers are provided in (Table 4). It was revealed that on an average about ₹12587 and ₹3258 per quintal was spent on producing Arabica parchment and Robusta cherry respectively. The overall cost of production on cost C₃ basis in Arabica parchment was ₹16400 per quintal. While on Cost A₁, Cost A₂, Cost B₁, Cost B₂ basis; it was found to be ₹5809, ₹5809, ₹6278 and ₹8904 per quintal respectively. The cost of production on Cost C₃ basis in Robusta cherry was ₹16400 per quintal, whereas Cost A₁, Cost A₂, Cost B₁, Cost B₂ was found to be ₹4424, ₹4424, ₹1547 and ₹2333 per quintal respectively.

Table 5 Returns from coffee cultivation on small farms (₹/ha)

Particulars	Arabica (₹/ha)	Robusta (₹/ha)
Returns over variable cost	102093	128345
Farm business income	102093	128345
Family labor income	72261	100991
Net income	36762	73231
Returns per rupee	1.30	1.75

As seen from the (Table 5), the overall net income was found to be ₹36762 and ₹73231 per ha among the Arabica and Robusta small growers respectively. The returns over variable cost were found to be ₹ 102093 and ₹ 128345 per ha among Arabica and Robusta growers respectively. The returns per rupee were found to be higher among the Robusta growers (1.75), than the Arabica growers (1.30).

CONCLUSION

The cost of cultivation of small coffee growers varied according to varieties of coffee. The overall costs per ha in Arabica was 1.24 times higher than that of Robusta, while the Total Revenue in Robusta was 1.08 times higher than Arabica variety. The overall net income turned out to be higher in Robusta (₹73231 per ha) than Arabica (₹36762 per ha). The returns per rupee investment was higher in Robusta (1.75) than Arabica (1.30). Overall, it can be concluded that coffee cultivation was more profitable among the Robusta small coffee growers than Arabica growers below 2 ha. Further, since labour costs accounted for about 59 per cent of total operational costs, the study suggests to link MNREGA with the major coffee cultivation operations and thereby providing wage subsidy to the growers. Secondly, since coffee production is a labour-intensive process the coffee institutions should provide necessary training to small growers for improving quality of labour as well as in enhancing productivity of coffee.

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