



Coffee Cultivation in Kerala: Some Economic Aspects

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Abstract

Coffee production in India is mostly done in Karnataka, Kerala and Tamilnadu. It is one of the important commercial crops of Kerala and is the main source of income and employment to the people of three districts in Kerala. Coffee cultivation is not an easy business and is adversely affected by various factors at present. Small coffee growers fail to acquire technological improvement to compensate labour scarcity and climate change and have limited access to technologies promoted by the Coffee Board of India due to high cost and mode of payment of subsidies. This study reveals that problems like scarcity of labour, pests and diseases, the high cost of production, low price for coffee, marketing difficulties and unusual climate changes often hurt coffee cultivators. However, the schemes and programmes of the coffee board benefited the growers. The analysis of the profitability of the crop shows that coffee cultivation is profitable in Kerala.

Keywords: Coffee cultivation, Coffee board, Profitability, Kerala

Introduction

Coffee is grown mainly in the agrarian countries of the tropical and sub-tropical regions of the world. There are 70 major commercial coffee producing countries mostly in South America, Asia and Africa (Harris *et al.*, 2013). Top coffee producing countries include

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Brazil, Columbia, Indonesia, India, Costa-Rica, Guatemala, Ivory Coast, Kenya, Tanzania, Uganda, Ethiopia, Zimbabwe and Vietnam. Brazil is the world-leader in the production of coffee, followed by Vietnam. India holds the sixth position in coffee production (Karunakaran and Vineesh, 2015).

In India, coffee is majorly produced in the southern states of India Karnataka contributing 71 percent, Kerala 21 percent and Tamil Nadu 5 percent of production. Coffee producing regions are of two types: traditional and non-traditional. While states like Karnataka, Kerala and Tamil Nadu are considered as traditional coffee producers, areas of Andhra Pradesh and Orissa in the eastern coast and states of Assam, Manipur, Meghalaya, Mizoram, Tripura, Nagaland and Arunachal Pradesh of the northeastern part are classified as non-traditional coffee producers (Karunakaran, 2015). The two well-known species of coffee grown in the country are Arabica and Robusta. Arabica is the most common variety of coffee grown in the country (Gholam and Indira, 2013). Indian coffee is the finest grown in the shade than direct sunlight anywhere in the world. More than 250000 coffee growers are in India, and 98 percent of them are small farmers. About 80 percent of the production is exported to Germany, Russia, Spain, Belgium, Slovenia, United States, Japan, Greece, Netherlands, France and Italy (Prasad, 2010).

Coffee, a popular crop in Kerala, is not an easy business and, at present, it is adversely affected by various factors. A sharp decline in the price of produce, increasing input cost, scarcity of workers, lack of support from the Coffee Board and increasing price of fertilizers are the major concerns of the farmers. Small coffee growers can't stock coffee for a long time and are hence forced to sell their produce, even if they only get a low price in the market, because of their financial needs (Karthigaiselvan and Maran, 2013). Traders exploit this opportunity and make a profit. Labour scarcity is another such severe problem; in the case of coffee, it usually requires women labourers. Small coffee growers fail to acquire technological improvement to compensate the labour scarcity and climate change. They are also affected by their limited access to new technology promoted by the Coffee Board of India and mode of payment of subsidies. Naturally, there are certain determinants

in the cultivation of this crop. Any change in its cultivation either in terms of area, production or productivity would seriously affect the weaker sections of the agricultural population. The cost of production and returns are very important for this crop (Pushpa and Madhava, 2011). Hence in this paper, an attempt is made to examine some economic aspects such as area, production, productivity, problems and prospects, cost of production and profitability of coffee cultivation in Kerala.

Methodology and Materials

The methodology adopted in this study is to analyse the data collected from secondary and primary sources. Primary data were collected using questionnaire and informal discussions with select coffee growers from Wayanad district, Kerala. Secondary data were collected from the office of the Coffee Board of India and the Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare, Government of India. Profitability is analysed using the Net Present Value (NPV) and Benefit Cost Ratio (BCR).

(i) Net Present Value (NPV): The Net Present Value (NPV) is the current value of net benefits of all projects. Net benefits are simply the sum of benefits minus costs. The sum is discounted at the discount rate. Using this method, if the project has an NPV greater than zero, it appears to be a good venture (If the calculated NPV > 0, the project is profitable). The NPV is calculated using the formulae:

$$NPV = \sum_{t=1}^T \frac{(Benefit_t - Cost_t)}{(1+r)^t}$$

(ii) Benefit-Cost Ratio (BCR): The Benefit-Cost Ratio (BCR) is calculated as the NPV of benefits divided by the NPV of costs:

$$BCR = \frac{\sum_{t=1}^r \frac{B_t}{(1+r)^t}}{\sum_{t=1}^r \frac{C_t}{(1+r)^t}}$$

(Where, B_t is the benefit in time t and C_t is the cost in time t). If the calculated $BCR > 1$, the project is profitable and is a good activity for acceptance.

Table 1 Share of major countries in coffee production

Sl. No.	Countries	Share in global production (in percent)
1	Brazil	35.0
2	Vietnam	15.2
3	Indonesia	8.8
4	Colombia	7.1
5	Ethiopia	4.4
6	India	3.7
7	Honduras	3.1
8	Peru	3.1
9	Mexico	3.0
10	Guatemala	2.6

Source: Karunakaran and Vineesh(2015), "Problems and prospects of small coffee growers of Wayanad district, Kerala", *Asian Economic Review*, 57 (3): 115.

Analysis and Discussion

Coffee production in the global context: Coffee as a commercial crop is grown in several countries of South America, Asia and Africa. Table 1 shows the percentage share of important countries in the world in total coffee production. The important varieties of coffee produced in the world are Arabica and Robusta.

Area and production of coffee in India and Kerala: Coffee occupies a place of pride among plantation crops in India. The area under coffee is around 4.35 lakh hectare; of which Arabica accounts for 2.21 lakh hectare and Robusta is cultivated in the rest (Table 2). The annual average production is around 3.48 lakh million tonne. Annually, Coffee contributes nearly Rs 4600 crores of foreign exchange to the nation. The production area of coffee is distributed in a total of 2.91 lakh holdings of which only 2658 belongs to larger grower sector (Karunakaran, 2015).

Table 2 Area and production of coffee in India

Year	Area (in hectare)					Production (in million tonne)				
	Arabica	%	Robusta	%	Total	Arabica	%	Robusta	%	Total
1950-51	67613	73	24910	27	92523	15511	82	3382	18	18893
1960-61	70650	59	49670	41	120320	39526	58	28643	42	68169
1970-71	80433	59	55030	41	135463	58348	53	51883	47	110231
1980-81	109454	53	98815	47	208269	61262	52	57384	48	118646
1990-91	127934	47	142887	53	270821	78311	46	91415	54	169726
2000-01	167679	48	179037	52	346716	104400	35	196800	65	301200
2010-11	197930	49	206715	51	404645	94140	32	207860	69	302000
2015-16	221379	51	213057	49	434436	103500	30	244500	70	348000

Source: www.indiacoffee.org

As an agro-based rural activity, it is a source of employment for over one million people in cultivation, processing and trade sectors. Coffee cultivation is also instrumental in preserving the precious forest eco-system in traditional areas while in non-traditional areas it was introduced to check the shift in cultivation and prevent soil erosion. As a perennial crop, coffee is one of the main plantation crops grown in the southern states of India and the real backbone of coffee cultivation in India is the small growers (Shalima *et al.*, 2008). There were 138 thousand registered cultivators in the country; among them, 98 percent were small growers who hold less than 10 hectares of land each and produce 35 percent of total output (Prapulla and Indira, 2014).

Table 3 Area and production of coffee in India by states (2015-16)

Items	Karnatak a	Keral a	Tamilnad u	Total for Tradition al states	Non Tradition al states	North Easter n states	Total
Area (in hectare)							
Arabic a	111225	4217	29062	144504	71280	5595	221379
%	25.6	1.0	6.7	33.3	16.4	1.3	51.0
Robust a	124213	81284	5870	211367	267	1423	213057
%	28.6	18.7	1.4	48.7	0.1	0.3	49.0
Total	235438	85501	34932	355871	71547	7018	434436
%	54.2	19.7	8.0	81.9	16.5	1.6	100
Production (in million tonne)							
Arabica	78650	2200	12810	93660	9750	90	103500
%	22.6	0.6	3.7	26.9	2.8	0	29.7
Robust a	172870	67030	4485	244385	50	65	244500
%	49.7	19.3	1.3	70.2	0	0	70.3
Total	251520	69230	17295	338045	9800	155	348000
%	72.3	19.9	5.0	97.1	2.8	0	100

Source: www.indiacoffee.org

Kerala is the second largest producer of coffee in India. As on 2015-16, coffee is grown in an area of 85501 hectares comprising of 81284 hectares of Robusta and 4217 hectares of Arabica (Table 3). A major percentage of coffee cultivation in Kerala is done in Wayanad and a considerable area is in Palakkad and Idukki districts (Table 4). The average annual production of coffee is 69230 million tonnes comprising of 67030 million tonnes of Robusta and 2200 million tonnes of Arabica. The average productivity of Robusta holdings is 850 kg per hectare and that of Arabica is 420 kg per hectare (Karunakaran, 2015).

Table 4 Change in the Cultivated area of Coffee in Kerala (Percentage of Total Cropped Area)

Sl. No.	Districts	1960-61	1970-71	1980-81	1990-91	2000-01	2015-16
1	Idukki	-	-	3.0	5.6	4.0	3.9
2	Palakkad	0.6	0.9	0.7	0.7	1.5	1.4
3	Wayanad	-	-	-	37.6	32.3	31.4
4	State	0.7	1.1	2.0	2.5	2.8	3.2

Source: Computed from Economic Review (various issues), State Planning Board, Govt. of Kerala, Thiruvananthapuram

Coffee cultivation and profitability: The problems of coffee growers and profitability are analysed by studying BCR and NPV and are shown in table 5. The time element of costs and returns were worked out. The discount rate is used, and it varies from 8 to 12 percentage; these measures were calculated separately for two discount rates, viz., 8.75 and 9 percentage. Table 5 results of NPV at 8.75 and 9 percentage were positive and quite high indicating profitability of this cultivation. The BCR at 9 percentage of discount rate ranged from 1.141 percent to 1.341 percent. Even at a low rate of discount of 8.75 percentage, it ranged from 1.101 percent to 1.302 percent. In all size groups, it was greater than unity, showing the profitability of cultivation.

Table 5 Coffee Cultivation and profitability in Kerala

Particulars		Size of farm		
		Small	Medium	Large
NPV (in Rs)	9 %	577664 (II)	594590 (I)	555744 (III)
	8.75 %	571069 (II)	586480 (I)	554292 (III)
BCR (in %)	9 %	1.232 (II)	1.341 (I)	1.141 (III)
	8.75 %	1.231 (II)	1.302 (I)	1.101 (III)

Figures in bracket indicate rank.

Labour shortage problem: From the study, it is revealed that there is a high shortage of labour in the coffee sector. Introduction of NREGA, diversification of labour to high wage sector, unsatisfactory attitudes of youth towards agriculture, low wage rates are the major reasons for this. From figure 1, the majority of the producers revealed that NREGA is the main reason for the shortage of labour. Migration of labour from agriculture sector to

other sectors, the unsatisfactory attitude of youth towards agriculture are other reasons for this shortage.

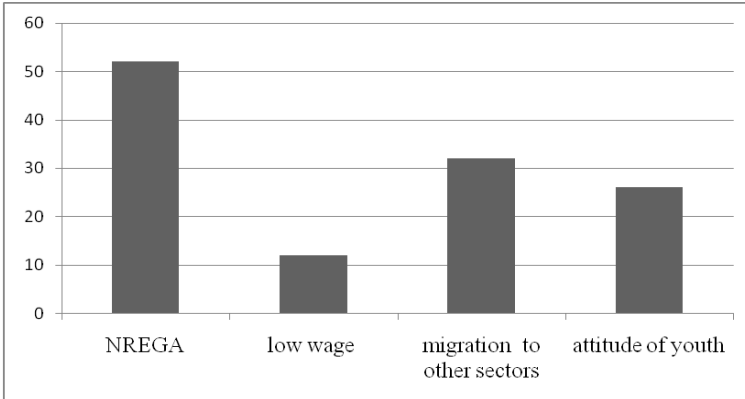


Fig 1 Reasons for Shortage of Labour

Assistance from Coffee Board and its effectiveness: The important assistance from the board includes research, financial assistance to growers, programmes to labourers and sale of a surplus pool of unsold coffee. Among these, financial assistance to small coffee growers and safeguarding the working conditions of labourers are very important. This assistance also includes various subsidies to farmers, providing equipment and high yielding seeds and plants, irrigation promotion, insurance protection (rainfall insurance scheme for coffee), training to farmers and scholarship to students of coffee growers and workers. Table 6 shows that 43 percent of the farmers received support from the Board. Among this, 37 percent have subsidies, 27 percent received equipment, 18 percent benefited support for irrigation, 22 percent of farmers received support for high yielding coffee seeds and plants, and 23 percent received various scholarships.

Table 6 Assistance from Coffee Board of India

Sl. No.	Items	Percent of farmers benefited
1	Subsidy	37
2	Equipment	27
3	Irrigation	18
4	Seed and plant	22
5	Insurance	0
6	Training	5
7	Scholarship	23

Source: Primary data

Duration of the last service received by farmers is important to understand how effective the board influenced coffee cultivation. Among the farmers who received assistance, 23 percent of the farmers received it in the last year, 12 percent within 1 to 2 years and 15 percent between 2 to 3 years. Majority of the farmers (31 percent) benefited between 3 to 5 years and 19 percent received the service of the Coffee Board before five years (Table 7).

Table 7 Duration of the last service received from Coffee Board

Sl. No.	Time	Percent of farmers received
1	Within one year	23
2	Between 1 and 2 years	12
3	Between 2 and 3 years	15
4	Between 3 and 5 years	31
5	Before 5 years	19
	Total	100

Source: Primary data

The effectiveness of each service to farmers is presented in Table 8 and indicates that many services provided by the Coffee Board has benefited only a very limited number of farmers. Among these, subsidies, equipment for mechanization and scholarship for students are more effective. The other schemes like support for irrigation, high yielding coffee seeds and plants are helpful only to less than 20 percent of farmers.

Table 8 Effectiveness of the services of Coffee Board

Services		Level of effectiveness		
		Highly effective	Moderately effective	Low effective
Subsidy	Number	19	3	38
	Percentage	32	5	63
Equipment	Number	12	8	40
	Percentage	20	13	67
Irrigation	Number	8	3	49
	Percentage	13	5	82
Seed or plant	Number	11	7	42
	Percentage	18	12	70
Insurance	Number	0	0	60
	Percentage	0	0	100
Training	Number	3	4	53
	Percentage	5	7	88
Scholarship	Number	14	8	38
	Percentage	23	13	63

Source: Primary data

Figure 2 presents the satisfaction level of beneficiaries and shows that 37 percent are satisfied and the rest 63 percent not satisfied with the functioning of the Coffee Board. This is because the farmers are often not aware of the activities, benefits are limited and procedures to receive them are complicated.

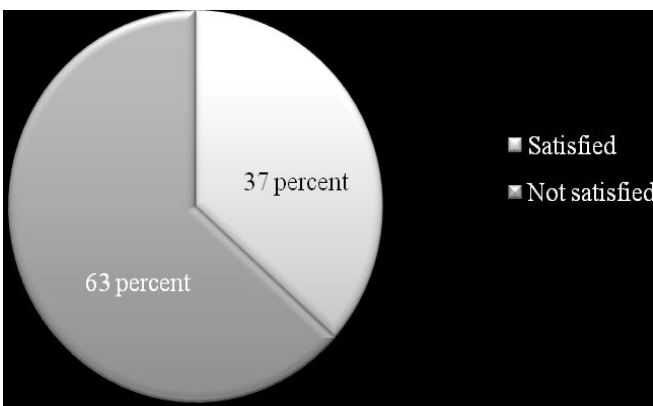


Fig 2 Satisfaction of farmers about the functioning of the Coffee Board

Conclusion

Indian coffee is said to be the finest coffee grown in the shade rather than direct sunlight anywhere in the world. Coffee production is mostly dominated in the hill tracts of south Indian states, with the state of Karnataka, Kerala and Tamilnadu. Kerala has the second position in the production of coffee which accounts 23 percent of the country's production. It is one important commercial crop and is the main source of income and employment to the people of Kerala, particularly in the three districts covered in the study.

Coffee cultivation is not an easy business and various factors are adversely affecting it at present. A sharp decline in the price of produce, increasing input cost, scarcity of workers, lack of support from the coffee board and increasing price of fertilizers are the major concern of the farmers.

Coffee Board of India has played an important role in promoting coffee cultivation. Financial support such as loan and subsidies are given to the farmers for preparing the coffee plantations, mechanization of the coffee gardens and irrigation. It also acts as an adviser, facilitator and the sole marketing channel for coffee. By the intervention of private market, the Board has reduced its functions to advice and support through subsidies and research. It has also reduced the functions of its marketing wing and thereby the financial loans provided to the farmers. At present, subsidies are the major tool used to promote coffee cultivation.

Even though the Coffee Board is providing various services, many growers remain out of its benefits. The analysis revealed that subsidies, equipment for mechanization and the scholarships for students are said to be more effective; other schemes like support for irrigation, provision of high yielding coffee seeds and plants are effective only to 20 percent of farmers. This is because of the unawareness regarding the functioning of the board. The system of pooling the resources of the Coffee Board to support small coffee growers to get better price should be restarted and the mode of payment of subsidies may be changed. The number of beneficiaries may be increased in proportion to the needy so as to make it more inclusive.

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