Analysis of Cost and Returns of Coffee Plantation in TamilNadu

C.Soundarapandian*

Abstract

This study intends to analyze the cost and return of coffee plantation by variety and size. The data have been collected from 120 coffee growers, 60each from Arabica and Robusta variety of farmers were randomly selected. The proportionate random sample technique has been adopted to select from the coffee growers of Nilgiris, Shervorayen, Pulani and Aanamalai hills. The findings of the study shows that the average cost spent for preparation of nursery was high in the case of Robusta. The farm size wise data shows thatthere was a high cost for large growers than small growers.The farmers cultivating Robusta variety have realized higher yield and returns compared Arabica variety of coffee. Further, the small farmers producing both varieties have higher yield and returns.

Keywords: Coffee Plantation, Cost, Return, Variety, Size of plantation.

INTRODUCION

Coffee is one of the leading commodities in the international trade and it is considered as world's most important agricultural export product. Coffee is the second largest traded commodity in the world, next only to petroleum. The stimulating beverage crop is currently grown in over 80 countries across the globewhich are considered to be its major producers. Out of these 24 countries produce more than 50000 MT of coffee and India is one among them. In India, coffee is mainly cultivated in the hilly tracts of Karnataka, Kerala and Tamil Nadu and Southern states forming the traditional areas and to a small extent in non-traditional areas such as Andhra Pradesh, Orissa, West Bengal, Maharastra and North-Eastern states. Being an agricultural commodity, it is exposed to the vagaries of weather which affect its prices. Coffee industry contributes significantly to the Indian economy by earning foreign exchange of about 1500 crores annually, besides in the area of rural development, employment generation and environment presentation.

There are two important commercial species namely coffea arabica (Arabica coffee) and coffee canephora (robusta coffee). Coffea arabica, a high quality mild coffee, is the most common species representing nearly 80 per cent of the world production. Arabica is the fruit of coffea arabica, one of two great sorts of coffee trees. Native from Ethiopia, Arabica is a plant growing only in height especially between 800 and 2000 meters. All the great plantation is Arabicas, coming especially from East Africa and from Latin America, with a content little raised in caffeine. They provide aromatic pleasures, varying according to regions. Some are spicy, others slightly acid or even rather sweet. Robusta the fruit of coffeacanphora, produces 25 per cent of the world coffee. The robusta is a plant cultivated from sea level up to 500 metres mainly in Africa (center and west) Brazil and Indonesia. The fruits give a coffee of inferior quality, little aromatic very strong and very caffeinated.

There are three important varieties of coffee known to be world viz., Arabica coffee, Robusta coffee and Liberica that are grown in South India. Arabica coffee is the source of 90 per cent of the world supply.

* Research Scholar, School of Economics, Madurai Kamaraj University, Madurai-21, TamilNadu

The plant, a native of Abyssinia is a beautiful shrub or small tree from 15 to 30 feet in height. The smooth evergreen leaves are brown in pairs, when only one seed develops the fruit is known as "peaberry" and commands a higher price. The plant is very susceptible to diseases. At present arabica coffee accounts for 62 per cent of the planted area under arabica. Robusta coffee was introduced into India from Java in 1910. It is a larger and more vigorous plant, with thick leaves. The quality of Robusta coffee is not so good as that of arabican coffee. At present Robusta coffee accounts for 38 per cent of the total acreage. Liberica coffee was introduced into India from the west coast of Africa. The plant is more vigorous and less susceptible to disease. This coffee is used chiefly in blends for the flavour and aroma are inferior. **USES OF COFFEE**

Coffee is certainly the anytime drink for health and energy, Caffeine are used world over for their stimulating and refreshing qualities, Caffeine has definite medicinal values, acting as a direct and indirect stimulant, The average adult experiences no ill effects from their moderate use of coffee, The waste products, the pulp and parchment are used for fertilizer and fuel, Coffee gives moderate relief to asthmatic patients, A couple of cups of coffee a day might just be the best way to guard against heart attacks, Coffee drinking and heart conditions, Coffee drinking and blood pressure, cholesterol, cancer, Caffeine and painful limps and tenderness in the breast. And Caffeine, sleep and wakefulness and better performance.

The two commercial significant species of coffee beans are coffee arabica and coffee Robusta. Arabica beans grow best at attitudes over 3000 feet. This species produces superior quality coffees, which possess the greatest flavor and aromatic characteristics. They typically contain half the caffeine of the Robusta beans. Arabica production represents 80 per cent of the world's coffee trade. However only 10 per cent of this meets specialty coffee standards. Robusta beans are usually grown at lower elevations, Robusta trees are easier to grow, produce higher yields, and are more disease resistant than the arabica species. Robusta beans usually possess a woody, astringent flavour. They are used when a lower price or additional caffeine is desired. A small percentage is typically added to many Italian epresso blends for the additional creams and complexity they contribute.

In addition to the species of the coffee, many other factors contribute to the overall quality of the green beans, seed stock, plantation location, soil composition, altitude, weather conditions, fertilization, cultivation, harvesting and processing methods will all have a dramatic influence on the finished product.

STATEMENT OF THE PROBLEM

In India, most of the plantation holdings are small and small coffee growers constitute about two–thirds of total area with an average holding size of 1-4 hectares. But the large growers constitute about 35 per cent of the total coffee plantation with an average size of 38.4 hectares and accounts for nearly 40 per cent of total production.During the year 1998-99 coffee was cultivated by 1,33,049 small growers and 2,984 large growers.

India produces both Arabica and Robusta in almost equal proportion though Robusta is shown in comparatively higher growth in production. Production has fluctuated between 3.75 million bags to 4.57 million in recent years, coffee production is affected by a strong biennial cycle. Hence, the present study is an attempt to analyse the cost and returns of coffee plantation for both variety-wise and size-wise.

OBJECTIVES OF THE STUDY

1. To study the cost and return of coffee plantation for variety-wise and size wise,

2. To offer Suitable suggestions based on the findings of the study.

SAMPLING DESIGN

In Tamil Nadu, coffee cultivation is found in Nilgiris, Shervorayen, Pulani and Aanamalai hills. In these areas, Arabica and Robusta variety of coffee are found in more than 90 per cent of total area under coffee plantation. For the purpose of analysis 120 coffee growers each 60 from Arabica and Robusta variety of farmers were randomly selected. In order to select the sample coffee growers, the list of farmers in each variety were obtained from the records of Coffee Board in respective places in Tamil Nadu. The proportionate random sample technique has been adopted to select sample coffee growers from Nilgiris, Shervorayen, Pulani and Aanamalai hills.

COLLECTION OF DATA

The primary data as well as secondary data are used for the present study in order to analyze the economics of coffee cultivation. The primary data were collected from selected respondents through well-structured interview schedule.

TABLE.1

AVERAGE COST FOR PREPARATION OF NURSERY IN ARABICA VARIETY OF COFFEE

(Amount in Rs./ Acre)

Sl. No.	Items	Small			Large		
		Material	Labour	Total	Material	Labour	Total
1.	Nursery Beds	780.15 (76.81)	435.21 (14.48)	1264.36 (31.16)	766.25 (73.51)	431.15 (12.65)	1487.40 (46.76)
2.	Watering	--	1439.52 (47.91)	1481.52 (36.51)	--	1421.41 (41.71)	252.41 (7.79)
3.	Pesticides	125.25 (12.33)	123.15 (4.09)	143.40 (3.53)	213.53 (20.48)	236.24 (6.93)	149.77 (4.70)
4.	Fertiliser	110.26 (10.85)	163.11 (5.59)	252.37 (6.22)	62.51 (5.59)	195.16 (5.69)	347.67 (10.93)
5.	Transport	--	189.24 (5.59)	269.24 (6.63)	--	271.24 (5.72)	271.24 (8.52)
6.	Intensive care expense (for last 3 months)	--	649.21 (21.60)	646.21 (15.92)	--	852.15 (22.50)	672.15 (20.50)
	Total	1015.66 (100.00)	3004.44 (100.00)	4051.10 (100.00)	1042.29 (100.00)	3407.35 (100.00)	318064 (100.00)

Source: Survey data.

Note : Figures in brackets represent percentage to total.

The above Table 1 reveals that in the Arabica variety of coffee in order to prepare nursery, every small grower spends 1015.66 as material cost per acre and 3004.44 as labour cost per acre. Among all the expenses, watering the nursery plant involves more money which comes around Rs. 1439.52 (47.91 per cent) per acre, followed by the preparation of nursery beds which requires Rs.1264.36 (31.16 per cent) per acre.

It is also understood from the above table in order to prepare nursery, every large grower spends Rs. 1042.29 as material cost per acre and Rs. 3407.35 as labour cost per acre. Among all the expenses, watering the nursery plant involves more money which comes around Rs. 1424.41 (41.71 per cent) per acre, next to preparation of nursery beds which requires Rs. 1487.40 (46.76 per cent) per acre.

TABLE. 2
AVERAGE COST FOR PREPARATION OF NURSERY IN ROBUSTA VARIETY OF COFFEE
(Amount in Rs./ Acre)

Sl. No.	Items	Small			Large		
		Material	Labour	Total	Material	Labour	Total
1.	Nursery Beds	757.15 (75.91)	452.15 (10.98)	1285.30 (29.80)	836.25 (66.51)	492.64 (13.19)	1321.88 (29.48)
2.	Watering	--	2532.14 (61.50)	1562.14 (36.22)	--	1919.41 (51.40)	1819.41 (40.57)
3.	Pesticides	112.00 (11.22)	2133.46 (5.67)	148.03 (3.43)	199.44 (15.86)	219.15 (5.87)	118.47 (2.64)
4.	Fertiliser	128.24 (12.85)	275.25 (6.68)	193.45 (4.48)	221.62 (17.62)	275.76 (7.38)	396.78 (8.85)
5.	Transport	--	271.24 (6.58)	271.24 (6.28)	--	273.62 (7.32)	273.62 (6.10)
6.	Intensive care expense (for last 3 months)	--	352.24 (8.52)	852.55 (19.76)	--	553.46 (14.82)	553.28 (12.34)
	Total	997.35 (100.00)	4116.48 (100.00)	4312.71 (100.00)	1251.31 (100.00)	3734.04 (100.00)	4483.04 (100.00)

Source: Survey data.

Note : Figures in brackets represent percentage to total.

The above Table 2 shows that average cost for preparation of nursery in Robusta variety of coffee, for every small grower is Rs. 997.35 as material cost per acre and Rs. 4116.48 as labour cost per acre. Out of the average overall expenses of Rs. 4 312.71 Rs. 2532.14 (61.50 per cent) costs per acre for watering the nursery plant followed by Rs. 1285.30 (29.89 per cent) per acre for preparation of nursery beds and Rs. 852.55 (19.76 per cent) per acre in the intensive care expenses respectively.

Whereas in the case of large growers Rs. 1257.31 is spent as material cost per acre and Rs. 3734.04 as labour cost per acre. Out of the average overall expenses of Rs. 4483.24 maximum of Rs. 1919.41 (52.40 per cent) per acre is spent in the watering the nursery plant followed by Rs. 1321.88 (29.48 per cent) per acre for the nursery beds and Rs. 553.28 (12.34 per cent) per acre for the intensive care expenses.

COMPARISON OF COST AND RETURNS PER ACRE

Inorder toanalyse and compare the cost and returns per acre of coffee for both variety-wise and size-wise of farmers. Table 3 depicts the details about the cost and returns per acre.

TABLE.3

AVERAGE COST AND RETURNS PER ACRE OF COFFEE

Sl. No	Particulars	Arabica			Robusta		
		Small	Large	Overall	Small	Large	Overall
1.	Cost per acre (in Rs.)	48565.48	54321.36	46543.22	29864.72	37965.20	18915.00
2.	Yield per acre (in kg.)	2535.42	2317.79	2362.57	1571.38	2447.28	2642.43
3.	Gross Returns per acre (in Rs.)	447151.42	410993.00	322854.76	339362.73	362845.40	352630.73
4.	Net Returns per acre (in Rs.)	364926.82	296691.90	306211.32	318368.50	325742.60	316242.23

Source: Computed data.

It is observed from 3 that the small cultivators produced 2535.42 kgs. of Arabica variety of coffee and gross returns earned Rs.447151.42 per acre, while their net returns per acre were Rs.364926.82. In case of large farmers, the yield per acre was2317.79 kgs. and they realized Rs.410993.00 per acre as gross returns while their net return per acre was Rs.296691.90. In overall yield per acre, gross returns and net returns earned were 2362.57 in kgs, Rs.322854.76 and Rs.306211.32 per acre respectively. It indicates that the small farmers were getting higher yield and thereby higher net income than large farmers in case of Arabica variety of coffee.

Further, it is inferred from Table 3 that in the case of Robusta variety of coffee, small farmers produced 1571.38 kgs. Of yield and gross return earned Rs.339362.73 per acre while their net returns per acre were Rs.318368.50. In the case of large farmers, the yield per acre was Rs.2447.28 kgs. and they realised Rs.362845.40 per acre as gross returns while their net return

per acre was Rs.325742.60 per acre respectively. In overall, yield per acre, gross returns and net returns earned were 2642.43 kgs., Rs.352630.73 and Rs.316242.23 per acre respectively. It indicates that the small farmers were getting higher yield and thereby higher net income than large farmers.

Thus it may be concluded from the analysis that small farmers cultivating coffee have realised higher yield and net returns per acre in the study area. Robusta variety was found to be more profit than Arabica as net return given in Table 3.

Summary and Findings

1. The average cost spent for preparation of nursery was found high in the case of Robusta than Arabica. Regarding Farm size wise, a high cost was recorded for large growers than small growers.
2. The farmers cultivating Robusta variety have realized higher yield and returns compared Arabica variety of coffee. Further, it is understood that small farmers producing both varieties have higher yield and returns.

Suggestions

It is suggested on the basis of the findings that the extension service officials may improve technical efficiency by advising the growers on input application at the proper time as recommended.

The growers in the study area were of the opinion that they could not achieve the maximum yield due to severity of disease and pest attacks. It is suggested that the growers should be educated properly to apply the pesticides at the prescribed level and this may be done through the agricultural department officer attached to the panchayat unions.

Non-availability of credit was the other constraint. It is suggested that financial institutions should revitalize and revamp the existing facilities in the study area so that the growers could get timely credit for undertaking improved growing practices.

Such measures shall certainly pave the way for the grower's greater success.**Conclusion**

Thus, it is concluded from the analysis that small growers are economically more efficient than large growers irrespective of varieties of coffee growing in the study area. This could be due to the better supervision and more efficient farm management favoured by the smaller size of operational holdings. This indicated that apart from efficient allocation of inputs, direct supervision and farm management are crucial determinants of yield of coffee.

References;

- Abraham, J.M. and Simha, K.L., "Coffee in World Economy***", Indian Coffee,*** January, 2003.

- Ansari, H.I. and Ahmed, S.M., "Time series analysis of the prices : An application of ARIMA modeling and co-integration analysis", ***The Indian Economic Journal,*** 48 (3), 2001.

- Ashok Palikh, "State-wise Growth Rate in Indian Agri-Output – An Economic Analysis", ***ArthaVijana***, Vol. 106 (8), 1966.

- Bandopadyaya, S., "Economic analysis of some critical problems of tea exports in India", ***Indian Journal of Agricultural Economics***, 37 (3), 1982.

- Bheemaiah, M.M., "Coffee and Its Management in South India", ***Indian Coffee***, January-February, 1993.

- Chacko, V.I., "Transition for the Better", ***The Hindu Survey Indian Agriculture***, 1994.