

# Financial Management In Sericulture: A Study In Erode District Of Tamil Nadu

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## INTRODUCTION

Agriculture is the largest sector in many developing countries. Most of the developing countries have to depend much upon the development of agriculture for their economic development in order to meet the demand for food and agricultural raw-materials, earn foreign exchange for overhead investment and expansion of industries, stimulate industry expansion etc. Even in the case of developed countries, history reveals the importance of agriculture in the process of economic development.

India is a predominantly peasant economy and agriculture forms the back bone of the Indian economy. Despite concerted industrialization in the recent past, agriculture continues to occupy a place of importance. All the other sectors of the economy are also impacted by the performance of the agricultural sector.

Sericulture means cultivation of silkworms which finally produces silk. The word silk has the connotations of luxury and class. Till today, no other fabric can match it in luster and elegance. As long as human desire for silk garments continues, the demand for sericulture activity remains. Silk is the queen of textile and the naturally produced animal fiber. Today sericulture shows a picture of well-knit agro-based, labour intensive activity which plays a significant role in the development of the rural economy. Although agriculture remains the main source of income, directly or indirectly, for a majority of the people in rural areas, most of the rural agricultural farmers are small and marginal. It is realized that these small and marginal farmers constitute a resource base for major agricultural programmes so that increase in productivity for them can provide a significant boost to the national income distribution.

Sericulture being an agro-based rural industry is highly suitable and provides employment to the farmers and landless labourers. It is mainly a rural and labour intensive industry requiring relatively low investment and having high potential for profit and foreign exchange earnings. As an agro-based industry, sericulture has two main aspects. The first is an agricultural aspect in which mulberry is cultivated and silkworms are reared and the second is an industrial aspect in which the cocoons are reeled, silk processed, woven into fabric, dyed and printed. So, the final product of sericulture is silk which always has demand in the global market.

Farmers are interested to cultivate the mulberry crops because it is a perennial crop. It continuously and consistently yields leaves for 15- 20 years and yields leaf within four or five months after plantation under irrigated conditions.

The Central Silk Board functions at the Central level and assists the states in the formulation of the programmes and policies governing the development of the industry. Sericulture is a state subject; schemes for the development of the silk industry are formulated and implemented by the state governments. Allocation for the development of the industry in the states is made on the basis of annual plans approved by the Central Silk Board.

Sericulture occupies a unique position in the Indian economy. It is an important and highly rewarding occupation among the developing countries. India enjoys a very favourable position in the production of mulberry raw silk. Its inherent qualities like high profit and labour intensity have motivated the policy-makers, administrators and scientists to propagate the sericulture enterprise throughout the country as a suitable answer to rural unemployment and low per capita income.

## FINANCIAL MANAGEMENT IN FARM ACTIVITIES

Decisions such as acquisition and use of credit are vital in financial management. This is a study concerning the financial analysis. Financial analysis deals with analyzing requisite information and financial records in order to evaluate the past, present and future financial position of the business. Farm financial management mainly deals with the capital acquisition and capital use in the farm business. Capital acquisition and capital use are important in every phase of farm management.

Farm Financial Management Decisions are as follows:

- Decisions regarding requisite capital.
- Decisions regarding source of capital.
- Decisions regarding allocation of capital among alternatives.

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- Decisions-Strategies to be adopted to counter risk and uncertainty, and
- Decisions on the legal problems relating to farm organization and operations.

Once a decision has been taken up to solve a problem, the farmer cannot remain complacent, for the decision problems are cyclical in nature and solutions are to be sought as and when they arise. This shows how crucial the decisions are for financial management in the farm business.

Three basic economic activities constitute the managerial process of the farm. They are production activities, financing activities and marketing activities. Production activities comprise of decisions like what products to be produced, method of production and how much of each product should be produced. Financial activities relate to decisions of obtaining and use of credit. Marketing activities involve managerial decisions related to procurement of inputs and distribution and sale of output. Financial decisions more often than not overlap the production and marketing decisions. For example, nature of enterprises and the quantum of the product determine the amount of capital that should be used in the farm business. Evaluation and involvement of alternatives among enterprises is linked with the decisions of how products are produced. The decisions on the use of finance on the farms are profitably made by applying economic principles. Each principle has a bearing on the nature of financial management decisions taken by the farmers. A direct application of these principles is the principle of combining enterprises which provide the framework needed for deciding upon the exact combination of enterprises that the farmers can take up so that the financial use on the selected enterprises brings in the maximum profit.

### **STATEMENT OF THE PROBLEM**

A balanced mix of borrowed and equity capital is necessary to increase the stake and involvement of the borrower in the business. It also reduces the risk of the loaning institution. There is evidence to show that most of the entrepreneurs prefer to do their business more with borrowed funds from the institutions rather than using their own money. They also insist on reducing the margins against different limits obtained from the banking institutions. This approach can result in diversion of funds into speculative activities.

Agricultural financing has its unique problems as it has to deal with the special characteristics of the agriculture industry. Sericulture industry enables the farmers to develop farming as a business. It engages them throughout the year and provides full employment and sufficient margin on cultivation. In the study area, a number of crops are being grown. Presently; the cultivation of mulberry crops is in mushrooming growth. To cultivate this crop, farmers are facing more problems.

It is observed that mulberry growers are not getting satisfactory level of return on mulberry cultivation. Against this background, the present study is an attempt to examine the significance of financial management in mulberry cultivation with the help of return on investment. It is an attempt to evaluate the efficiency of investment in sericulture. It is believed that findings of the study would bring into light the techniques of effective management of farm capital.

### **OBJECTIVES OF THE STUDY**

The specific objectives are:

- To examine the financial management in mulberry cultivation.
- To offer suggestions to improve the application of financial management techniques in the cultivation of mulberry crops.

### **METHODOLOGY**

In Tamil Nadu, sericulture is being grown in 29 districts. Of them, Erode district is in the third place. In this district, mulberry crops are cultivated only in Gobichettipalayam taluk. Hence, this taluk has been purposively selected as the area of study. In Gobichettipalayam taluk, sericulture is practiced approximately by 576 farmers covering 1074.00 acres of mulberry. In Gobichettipalayam taluk, there are three blocks viz., Gobichettipalayam, Thooka Naickan Palayam and Nambiyur. From each block, 50 mulberry growers have been selected by using simple random method as sample. Thus, the size of the sample is 150. The personal interview method is adopted for collection of primary data. Collected primary data like cash inflow and outlays have been averaged according to the requirement of the study.

Required secondary data have been collected from the records of the Commissioner of Sericulture, Salem, Regional sericulture Centre, Erode and Department of Sericulture and Research Extension Centre, Gobichettipalayam.

### **FRAMEWORK OF ANALYSIS**

The collected data has been processed both manually and with the help of computers. Tools like Pay-Back Period, Net Present Value, and Return on Investment have been used to frame a constructive conclusion.

## PERIOD OF THE STUDY

The present study was conducted during the period of November, 2008.

## LIMITATIONS OF THE STUDY

The study is conducted in the Gobichettipalayam taluk of Erode District. Hence, findings of the present study cannot be generalized to other similar districts in the state as the environmental and social conditions vary from region to region. Suggestions offered in the study are based on some financial management tools. These tools have some limitations.

## FINANCIAL MANAGEMENT IN MULBERRY CULTIVATION

It is a known fact that financial management is applicable to every type of organisation, irrespective of its size, kind and nature. Hence, financial management is an indispensable tool in agriculture too.

### (i) PAY BACK PERIOD

The 'pay back' some time called as payout or pay off period method represents the period in which the total investment in permanent assets pays back itself. This method is based on the principle that every Capital expenditure pays itself back within a certain period out of the additional earnings generated from the capital assets. Thus, it measures the period of time for the original cost of project to be recovered from the additional earnings of the project itself. Under this method, various investments with a shorter pay back period are preferred to the one which has a longer period. It is decided to compute the Pay Back period on the basis of the size of the farmers. In this regard, mulberry growers have been classified into three categories on the basis of land holdings. The findings are shown in Table 1.

The Pay Back Period is calculated by using the following formula:

Pay Back Period = Cash outlay of the Project ÷ Annual Cash Inflows.

**TABLE 1 : COST AND RETURN DETAILS-PAY BACK PERIOD**  
(Rs.in '000)/Acre/per annum

Particulars	Small Farmers	Medium Farmers	Large Farmers
(A)MULBERRY CULTIVATION			
Establishment	16.78	28.11	60.35
Maintenance	196.02	211.42	331.37
(B)SILKWORM REARING			
Building & equipment	182.71	227.04	574.47
Rearing cost	76.58	89.30	153.79
(C) TOTAL CASH OUTLAY			
D) Income	472.09	555.87	1,119.98
Silk cocoon	573.89	623.90	1224.78
Total Cash Inflow	573.89	623.90	1,224.78
Net Returns	101.80	68.03	104.80
Pay Back Period	0.82 year	0.89 year	0.91 year

Source: Primary data.

Table 1 shows that there is no difference in the aspect of pay back period for all the three types of farmers. Anyhow, Pay Back Period in the case of small farmers is less than medium and large farmers. Hence, it can be concluded that small farmers are able to get back their investments earlier than other farmers.

### (ii) NET PRESENT VALUE (NPV)

This is simply the present worth of the cash flow stream. Sometimes, it is referred to as the net present value (NPV). The selection criterion of the project depends upon the positive value of the net present worth, when discounted at the opportunity cost of capital. This could be satisfactorily done, provided that the opportunity cost of capital is correctly estimated. The net present value is calculated by using the following formula:

$$\text{Net present value} = \sum_{t=1}^n \frac{B_t}{(1+\delta)^t} - \sum_{t=1}^n \frac{C_t}{(1+\delta)^t}$$

Where,  $B_t$  is the benefit obtained in the year  $t$ ,  
 $C_t$  is the cost incurred during in the year  $t$ ,  
 $\delta$  is the discount rate,  
 $t$  is the age of the crop

It is decided to compute NPV at the rate of 10%, 12% and 15% for Small, Medium and Large farmers. Findings are shown in Table 2-4.

[PV @ 10% Discount rate:

Year	1	2	3	4	5	6	7	8	9	10
	0.909	0.826	0.751	0.683	0.621	0.564	0.513	0.467	0.424	0.384

PV @12% Discount rate:

	0.892	0.797	0.712	0.636	0.567	0.507	0.453	0.404	0.361	0.322
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PV @ 15% Discount rate

	0.870	0.756	0.658	0.572	0.497	0.432	0.376	0.327	0.284	0.247]
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**TABLE 2 : NET PRESENT VALUE OF FARMERS @10%PV**

Year	Cash inflow			Present Value		
	Small farmers	Medium farmers	Large farmers	Small farmers	Medium farmers	Large farmers
1	573.00	623.90	1,224.78	520.86	567.13	1,113.33
2	573.89	623.90	1,224.78	474.03	515.34	1,011.67
3	573.89	623.90	1,224.78	430.99	468.55	919.81
4	35,922.00	50,632.88	1,01,147.07	24,534.73	34,582.26	69,083.45
5	1,42,231.00	11,1376.00	2,59,571.28	88,325.45	69,164.50	1,61,193.77
6	21,7507.00	1,83,948.17	4,50,719	1,22,673.95	1,03,746.77	2,54,205.52
7	2,67,826.80	2,91,537.19	5,60,011.7	1,37,395.15	1,49,558.58	2,87,286.00
8	1,68,118.00	2,18,848.16	3,94,478.5	78,511.11	1,02,202.09	1,84,221.46
9	57,865.21	1,63,123.8	2,71,553	24,534.85	69,164.49	1,15,138.48
10	34,757.71	11,975.00	2,01,866.03	13,346.96	4,598.40	77,516.56
<b>Total</b>				<b>4,90,748.08</b>	<b>5,34,568.11</b>	<b>11,51,690.05</b>

Net Present Value = Present value of inflow–Cost of the investment.

Table 2 reveals that Net present value @ 10 PV

In the case of small farmers, NPV is  $4,90,748.08 - 4,72,090^{\Psi} = 18,658.08$

In the case of medium farmers, NPV is  $5,34,568.11 - 5,55,870^{\Psi} = -21,301.89$

In the case of large farmers, NPV is  $11,51,690.05 - 11,19,980^{\Psi} = 31,710.05.00$

The above result clearly shows that the NPV of large farmers is better than that of small and medium farmers. Particularly, medium farmers are getting returns in negative. Hence, it is decided to find out the NPV @ 12%. Findings are shown in Table 3.

**TABLE 3 : NET PRESENT VALUE OF FARMERS @12%PV**

Year	Cash inflow			Present Value		
	Small farmers	Medium farmers	Large farmers	Small farmers	Medium farmers	Large farmers
1	573.00	623.90	1,224.78	511.19	556.52	1,092.50
2	573.89	623.90	1,224.78	457.39	497.25	976.15
3	573.89	623.90	1,224.78	408.61	444.22	872.04
4	35,922.00	50,632.88	1,01,147.07	22,846.39	32,202.51	64,329.54
5	1,42,231.00	11,1376.00	2,59,571.28	80,644.98	63,150.19	1,47,176.90
6	21,7507.00	1,83,948.17	4,50,719.00	1,10,276.05	93,261.72	2,28,514.53
7	2,67,826.80	2,91,537.19	5,60,011.70	1,21,325.54	1,32,066.35	2,53,685.30
8	1,68,118.00	2,18,848.16	3,94,478.50	67,919.67	88,414.66	15,93,693.00
9	57,865.21	1,63,123.80	2,71,553.00	20,889.34	58,887.69	98,030.63
10	34,757.71	11,975.00	2,01,866.03	11,191.98	3,855.95	65,000.86
<b>Total</b>				<b>4,36,471.07</b>	<b>4,73,337.06</b>	<b>24,53,371.45</b>

Table 3 reveals that Net present value @ 12%PV

In the case of small farmers, NPV is  $4,36,471.07 - 4,72,090^{\Psi} = 35,618.93$

In the case of medium farmers, NPV is  $4,73,337.06 - 5,55,870^{\Psi} = -82,532.94$

In the case of large farmers, NPV is  $24,53,371.45 - 11,19,980^{\Psi} = 13,33,391.45$

The above result clearly shows that the NPV of large farmers is better than that of other small and medium farmers. At 12% discount rate also, medium farmers are getting returns in negative.

<sup>Ψ</sup> Vide Table 1

Further, NPV has been calculated at 15%. Findings are shown in Table 4.

**TABLE 4 : NET PRESENT VALUE OF FARMERS @15%PV**

Year	Cash inflow			Present Value		
	Small farmers	Medium farmers	Large farmers	Small farmers	Medium farmers	Large farmers
1	573.00	623.90	1224.78	498.51	542.793	1,065.56
2	573.89	623.90	1224.78	433.86	471.67	925.94
3	573.89	623.90	1224.78	377.62	410.53	805.91
4	35,922.00	50632.88	101147.07	20,547.38	28,962.01	57,856.12
5	1,42,231.00	111376	259571.28	70,688.81	55,353.87	1,29,006.79
6	21,7507.00	183948.17	450719	93,963.02	79,465.61	1,94,710.61
7	2,67,826.80	291537.19	560011.7	1,00,702.88	1,09,617.98	2,10,564.40
8	1,68,118.00	218848.16	394478.5	54,974.59	71,563.35	1,28,994.47
9	57,865.21	163123.8	271553	16,433.72	46,327.16	77,121.05
10	34,757.71	11975	201866.03	8,585.15	2,957.83	49,860.91
<b>Total</b>				<b>3,67,205.54</b>	<b>3,95,672.80</b>	<b>8,50,911.76</b>

Table 3 reveals that Net present value @ 15%PV

In the case of small farmers, NPV is  $3,67,205.54 - 4,72,090^{\Psi} = -1,04,884.46$

In the case of medium farmers, NPV is  $3,95,672.80 - 5,55,870^{\Psi} = -1,60,197.20$

In the case of large farmers, NPV is  $8,50,911.76 - 11,19,980^{\Psi} = -2,69,068.24$

The above result clearly shows that in the case of all the three groups of farmers, NPV is negative.

### (iii) RETURN ON INVESTMENT (ROI)

Sericulture is one of the promising enterprises supporting agriculture, which may substantiate the income of small and medium farmers. Against this background, an attempt has been made to analyze the return on investment in mulberry cultivation.

The items like cost of mulberry stem cuttings, land ploughing and preparatory cultivation expenses, fertilizer expenses, irrigation expenses, weeding and intercultural operation expenses, cost of rearing requirement, chawkie wooden stand, chawkie wooden trays, sheet rearing racks, plastic sheets, plastic basins, leaf chopping board and leaf chopping knife have been considered as an investment for the present study.

The Return on Investment (ROI) is a very useful technique to measure the profitability of all financial resources employed in the agriculture assets. ROI reveals a vital indication of the profitability in terms of employment of capital in the business. This will be measured with the earning power of the profit (output) with the capital (input). Thus, ROI denotes the relationship between net profit and assets of the agriculture.

This method takes into account the earnings expected from the investment covering the entire lifetime of an investor. It is known as accounting rate of return method for the reason that under this method, the accounting concept of profit is used rather than cash inflows.

Return on Investment is calculated by using the following formula:

$$ROI = (\text{Annual Profit} \div \text{Investments}) \times 100$$

In the case of Small farmers,  $(1,01,800 \div 4,72,090) \times 100 = 21.56\%$

In the case of Medium farmers  $(68,030 \div 5,55,870) \times 100 = 12.24\%$

In the case of Large farmers  $(1,04,800 \div 11,19,980) \times 100 = 9.35\%$

The Return on Investment is higher in the case of Small farmers.

### CONCLUSION AND SUGGESTIONS

In the present study, sericulture activities are considered to be well suited for peasants and small land holders to bring about economics transformations in the rural areas. It prevents not only rural migration but has also added advantages of low capital requirement with assured remunerative return within a short period.

In the present study, in Pay Back Period analysis, it is found that small farmers are able to get back their investments earlier than other farmers. In NPV analysis, it is found that the NPV of large farmers is better than small and medium farmers @10% and 12% discount factor. In 15% discount factor, though all the three groups farmers' NPV is negative, small farmers are some what better than the other two groups.

*(Contd. on page 54)*

<sup>Ψ</sup> Vide Table 1



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In ROI analysis, it is found that small farmers are getting more rates of returns than the other two groups. The present study reveals that due to mulberry cultivation, small farmers are more benefited. The same level of benefit can be extended to all farmers. In this regard, Government of India and Central Silk Board have to extend more training facilities to reduce the cost of cultivation. Further, it is suggested that marketing facilities should be expanded. By following the suggested practices, there is chance to get a favourable price for the growers.

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