"Cost Benefit Analysis of Small Tea Growers in Padumani Development Block of Golaghat District of Assam"

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Abstract

Small scale tea plantation has become a significant trend in Assam. The growers having less than 10.12 hectare of land on which plantation is carried out is termed as small tea growers (stg). As per government record till 2015 stg are contributing around twenty six percentage of total production of the state. The study focuses on the stg's of Padumani Development block. The growers are stratified on the basis of land of plantation on which they do plantation. Appropriate tools were used to analyze the data collected from the growers with the help of schedule. It was found from the Cost Benefit Ratio (CBR) that plantation in all the strata is profitable. More and more youth are attracted towards tea plantation as it has emerged as a promising sector. Due to less risk of crop failure and high return for longer period of time as compared to other crops it has become popular among youth and farmers.

Keywords: *tea, small growers, CBR, profitability,*

1. Introduction

Tea is a daily drink for many. Many are familiar with its taste. Tea (camellia sinesis) is an evergreen shrub whose "two leaves and a bud" is used to prepare tea. The common name which most Indian used to hear for beverage is "Chai". The tea shrub yields a perennial crop and flourishes only in areas which have well drained high lands and contains slightly acidic content in the soil. It grows in the region where there is no extremely cold season it mainly prevails in tropical and sub tropical region. The ideal temperature for tea growth ranges from 21^0 Celsius to 29^0 Celsius. As the tea shrub needs moisture; it requires humid air and ample rainfall throughout the growing season. It need 150-250 cm of rainfall. Tea bush were planted for its leaf from where tea is made. The shrub is pruned to three to five feet height, so that it will be ideal for plucking. If the bushes are not pruned it can grow up to 15 metre tall. As the young leaves grow two leaves and buds are plucked during the active growing season. There are different types of teas viz. Black tea, Green tea, Oolong tea, Fermented tea, White Tea. In the history, it is ascribed the Chinese emperor Shennung (or Shin Nong) in about 2737 B.C discovered the properties of the leaves by drinking it unknowingly. It is used in china for medicinal purposes in the 3rd or 4th century B.C[1]. The cultivation was carried out about 3,000 years ago in south-East china at first[2]. The word "Tea" is derived from 't'e' of the Chinese Fukien dialect. In Cantonese tea is known as 'ch'a'. The exact origin of tea is a matter of speculation and it is yet to be finalized. China tea was first introduced into England in the United States by the initiative of the East India Company[3]. Till the second half of the eighteenth century tea-drinking didn't become much popular. In the mean time, the enactment of the Tea Act of 1773 for perpetuating the Easy India Company's monopoly in tea trade had caused the "Boston Tea Party" and had helped precipitate the American War of Independence.[4]

2. Review of Literature

Pratap Bhuyan. R (2004)[5] "Economic Analysis of Green Leaf Production-The Case of Small Tea Growers of Assam" The researcher uses Cobb-Douglas production function. He concluded that labour cost plays a major role in overall cost. Scarcities of labour during peak plucking season, dearth of working capital for regular payment of wage are some of major constrains.

D. Rymbai et.al. (2012)[6] "Benefit-Cost Ratio Analysis of Pineapple Orchard in Meghalaya" researcher concludes that in the targeted region the cultivation is economically feasible and it is helping the social empowerment of the tribal people of the region. Researcher suggests that it should be promoted and marketed through various means so it derives more benefit for the farmers.

Ghosh.A (2015)[7] "Studies on Small Tea Growers in North Bengal-Prospects and Perspectives" researcher finds that due to high returns compared to other crops and low risk of crop failure it's becoming popular among the youth small and marginal farmer. The high profitability and prospects of getting regular income with less effort contributed to the growth of tea Industry.

Mudoi, D. & Dutta, S. (2016)[8].Carried out study on "Potential Factors Behind The Rapid Growth Of Small Tea Growers (Stgs) In Golaghat District Of Assam- An Analysis" For studying they employed interview schedule in the form of questionnaire, primary and secondary data were used. The researcher concludes that the growers were able to earn good and sustainable source of income. And also generated self-employment opportunities like tea agents, supplier of fertilizers, garden equipment, agencies for logistic support that is the reason for which farmers have taken tea cultivation as primary occupation.

3. Objectives of the Study

- To determine the cost benefit ratio.

- To determine per Acre fixed and variable cost of small tea growers.

- To determine per Acre revenue of small tea growers.

- To determine net profit per Acre of small tea growers.

4. Research Methodology

The present area of study is Golaghat. It is the name of a district and a town in upper Assam. The district is a harmonious place surrounded by large and small tea garden. The economy of Golaghat is mostly dependent on agriculture, particularly on tea cultivation. Small scale tea cultivation movement was started in the district. The research is sought to be carried out in Padumani development block of Golaghat sub division of Golaghat District. The researcher has taken the growers data from All Assam Small Tea Growers Association to fulfill the requirements of the study. The number of grower's number of growers in Padumani block who have bio metric card is 233. Under Padumani Development block the growers have been pooled in different strata. The first strata having less than 1 acre of land and in this strata the number of small growers is 72. The second strata having those cultivators whose plantation area ranges between 1 acre upto 3 acre and such numbers of planter are 94. In the last strata 67

growers are there who have land area having more than 3 acre upto 10 hectare.

4.1 Sample Size

The size of sample is determined after conducting pilot survey. The pilot survey schedule uses nominal and interval scale in the form of 5 point Likert scale. The number of statement used in Likert scale is 15.

Table No: 1.1
Calculation of Variance

	N	Range	Mean	Std. Deviation	Variance
Value	15	1.50	.6756	.39530	.156
Valid N	15				

Source: Pilot Survey

Larger the variance; larger will be the sample size and smaller the variance smaller will be sample size. The formula to be used in determining the sample size is as follows:

$$n= \frac{Z_{\alpha/2}^2 \, N \, \delta^2}{(N-1)e^2 + Z_{\alpha/2}^2}$$

This formula is used in the calculation because population is finite. The calculation is done at 5% level of significance and 95% level of confidence.

$$n= \frac{(1.96)^2 * 233 * .156}{(233-1)(0.05)^2 + (1.96)^2}$$

$$n= \frac{3.84 * 36.34}{232 * 0.0025 + 3.84}$$

$$n= \frac{139.54}{0.58 + 3.84}$$

$$n= 31.57$$

$$n \approx 32$$

After the calculation the sample size turns out to be 31.57. So, 32 respondents were taken as sample size.

4.2 Sampling Method

Stratified random sampling is used in the present study. It pool up the population of tea growers on their land holding pattern. The tea cultivation land is not homogeneous among the growers. As having large areas of land have more economies of scale.

4.3 Data Collection

For the study data has been collected from both primary and secondary sources. Data from the primary sources is collected from targeted respondents of the selected areas through Schedule. Secondary sources of data collected from books, journals, periodicals, magazines, internet, annual report of tea board, tea file of tea board, press release of tea board, modalities and guidelines for tea development promotion schemes for midterm framework 2017-2020 website of tea board, website of agricultural university, the Tocklai Tea Research Institute, website like www.jstor.org and library of Dibrugarh University.

5. Cost Components and Analysis

Table No: 1.2
Components of Fixed Cost

Fixed Cost per Acre/ Year			
Particulars	Amount in Rs.		
	Strata I	Strata II	Strata III
Land Revenue	700	700	700
Sprayer	1,200	1,237	1,500
Tea Plant & Plantation	2,068	2,025	2,008
Fertilizers/Insecticide	170	122	131
Weighting Scale	840	1,400	1,400
Spade	113	830	662
Hand held cart	1,400	260	250
Total	6,491	6,574	6,651

Source: Field Survey

Table No: 1.3
Components of Variable Cost

Variable Cost per Acre/ Year			
Particulars	Amount in Rs.		
	Strata I	Strata II	Strata III
Wage for Spraying chemical	3,631	3,834	3,970
Wage for leaf plucking	96,824	1,04,272	1,10,152
Fertilizers/Insecticide	52,500	52,500	53,170
Wage for pruning tea bushes	4,200	4,725	4,650
Bamboo Basket	300	14,350	12,383
Bamboo Fences	12,831	490	480
Tarpaulin	493	760	800
Nylon Bag	666	750	600
Pruning Knife	1,000	1,250	750
Total	1,72,445	1,82,931	1,84,955

Source: Field Survey

Table No: 1.4
Strata Wise Total Cost, Output and Selling Price

Strata	Total Cost in Rs	Output in k.g	Selling Price in Rs	Amount in Rs.
I	1,78,936	24,206	15.32	3,70,835
II	1,89,505	26,068	15.38	4,00,925
III	1,91,606	26,950	15.31	4,12,604

Source: Field Survey

5.1 Cost Benefit Ratio

The prime focus of this study is on the cost benefit analysis of tea plantation. The researcher has applied the formula of cost benefit analysis. Cost benefit ratio is an indicator whether the project is acceptable or not. The higher the CBR the better is for the investment. Therefore all the project with a CBR higher than 1 are acceptable investment. The outcome so derived from the field survey is as follows

$$Cost\ Benefit\ Ratio = \frac{Total\ Revenue\ per\ Acre}{Total\ Cost\ per\ Acre}$$

a. CBR for strata I $= \frac{3,70,836}{1,78,936}$

$= 2.07$

b. CBR for strata II $= \frac{4,00,925}{1,89,505}$

$= 2.11$

c. CBR for strata III $= \frac{4,12,604}{1,91,606}$

$= 2.15$

5.2 Profits on Sale

It is used to determine the gross profit on sale, symbolically it is written as:

Profit on Sale/Kg = Selling price – TC/Kg

Where, TC = Fixed Cost + Variable Cost

a. Profit on sale/Kg for Strata I = 15.32 – 7.39

$= Rs. 7.93$

b. Profit on sale/Kg for Strata II = 15.38 – 7.26

$= Rs. 8.12$

c. Profit on sale/Kg for Strata III = 15.31 – 7.09

$= Rs. 8.22$

6. Results and Discussion

The CBR for strata I is 2.07, strata II is 2.11 and strata III is 2.15. In all the strata the CBR ratio is more than 1, which means for the entire strata of tea plantation is profitable.

The fixed cost for strata I, II & III are Rs 6,491, Rs 6,574, Rs 6,651 respectively.

The variable cost for strata I, II & III are Rs. 1,78,936, Rs. 1,89,505, Rs. 1,91,606 respectively

The sales price of leaves ranges from Rs. 23per kg to Rs. 11 per kg. As the plucking season starts the price per kg is highest and as the plucking season comes to an end the price decreases.

The manual plucking of leaf by the workers and their unavailability at peak plucking season implies the cost goes high and the quality of leaf degrades as it become mature till it's been plucked and the consequences for it that the growers don't get the price what they should get, so the planters have to bear the loss.

In the present study it has been found that the cultivation decision is profitable for all strata under study. The growers can earn a good profit if they start cultivation of tea leaf. They get return for a long period of time for initial investment of Rs. 1,29,000 per acre.

For stg the training should be conducted on regular basis on maintaining the quality of tea leaves. As most of the growers complaint about of fetching lower prices of their leaves at the time of sale. This happens because the growers are not able to maintain the quality of the leaves.

The individual grower's needs to be motivated to form SHG so that they can reap the benefits of financial assistance provided by tea board and also of economies of scale.

More tea leaf collection centre to be added in remote villages, so that they will be able to fetch better price and be safe from middleman exploitation.

Growers can get more profit if they replace manual plucking by mechanization process because in most of the strata it has been found that growers pay a large portion of variable cost towards wage payment. The government should make some policy on providing subsidy on purchasing the leaf plucking machine.

Government must fixed the lowest price which the tea factory or brought leaf factory have to pay depending upon the quality or grade of the leaf.

7. Conclusion

The outcome of the study signifies that tea plantation is a profitable investment. For the entire stratum under study have a positive outcome greater than one; indicating a favorable investment decision. The breakeven point also indicates the average equilibrium point at 8.72 percentage of sale which is fairly good. It can be an indicator for the farmer about the minimum level of output which needs to be produced to avoid loss. The farmers are using labour intensive work; it needs to be converted to capital intensive. The prime expenditure goes on plucking of leaf manually. It needs to be shifted to mechanize plucking. The government also needs to take measure on the transfer of land ownership and make necessary reforms, so that the growers will be able to get registered with promoting agencies and get the benefits from them. Those who are registered should be provided with regular training and workshop. The government must provide the necessary facility to the growers who are cultivating on their ancestral land without having land documents in their own name by some other mechanization of registration. Thus it will improve the quality and also enhances the productivity of total tea produced from Assam. Overall the tea cultivation is generating self employment among the rural people and it's becoming prime choice for many unemployed youth as it has good return for a long period of time.

8. Acknowledgement

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