

**CONTRIBUTION OF NON-ESTATE TEA GROWERS TO DOMESTIC PRODUCT  
AND EMPLOYMENT GENERATION: A STUDY OF SIVASAGAR AND  
LAKHIMPUR DISTRICT OF ASSAM**

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**Abstract:** Non-estate tea growers i.e. small tea growers in Assam has shown a substantial growth with a continuous increase in number, area of plantation and production. They are making addition to the state domestic product and generation of income. The income of the small tea growers reflects the capability and the quantum of contribution to the GDDP of respective districts and to the GSDP of Assam. As a labour intensive endeavour, the small tea plantation has direct impact on employment generation as well as providing livelihood to rural poor people where the plantations take place. From the establishment phase to operational phase labour is the indispensable part of tea plantation which generates employment in both the phases. The share of tea smallholdings in the total production has been increasing every year. The contribution by the small tea growers to the total tea production of India and Assam stood at 44.01% and 40.02% respectively in the year 2016-17 (TBI-2017). The increase in the contribution of small tea growers to the total tea production of Assam reflects the growing demand for the variety of produce of STGs which led to expansion in the plantation area by STGs. The increase in the number of small tea growers and growth in the area of plantation is raising the demand for labour and generating employment opportunities for the rural unemployed youths of Assam. Thus, the growth of small tea growers is playing an important role in the economy of Assam by contributing to the State Domestic Product and in the generation of employment.

**Keywords:** Non-estate, domestic product, employment generation, smallholding.

### **Introduction**

Tea plantation in small scale is very ancient. Tea plantation in small scale is considered to be a usual practice in some major tea producing countries like China, Japan, Indonesia, Kenya, and Sri Lanka etc. In China, tea was cultivated in family holdings from ancient past

(Goswami, 2006). The practice of STGs is also adopted in some other countries like Malawi, Turkey, Vietnam, Tanzania, Bangladesh, Pakistan, Nepal etc. Though the practice of tea cultivation in small scale was very ancient, it was mainly popularized by Kenya in 1950's by taking the decision to produce large quantity in small scale for export. The success of Kenyan experiment had created a model of small tea growers in developing and underdeveloped countries (Borah, K 2013). Now-a-days, small tea growers are contributing a considerable share to the total tea production and thereby to the economy of respective tea producing countries. Smallholders globally constitute 70% in area and 60% in production (FAO, 2016).

Cultivation of tea in smallholding was an old practice in India. Tea growing in smallholding started in Nilgiris of Tamil Nadu in 1920's. At that time large estates were granted a specified area of land by government thus, they were unable to expand their area of plantation. Because of that some of large plantation encouraged small farmers in Nilgiris to take up tea cultivation to supply green leaves to them. Small growers were further induced in 1933 due to introduction of export quota system by the government as a repercussion of the Great Depression in 1931. Both, big growers and small growers were entitled to this quota system. Since, small growers did not have processing factories; hence they had to sell their green leaves and their export quota to large planters. Small growers were therefore a help to the large plantations and both were dependent on each other (Reddy and Bhowmik, 1989). However, some of the reports and studies of various committees constituted by the government from time to time suggest that tea smallholdings emerged in early 1960's in India and they were mainly concentrated in Tamil Nadu, Karnataka and Kerala. The concept of small tea growers emerged in Assam and other north eastern states, West Bengal and others in the late 1980's or early 1990's only. Though, tea cultivation in small scale in India took its pace very recently but within a very short span of time it has shown a phenomenal growth in terms of growers, area and production. Estimated data provided by North Eastern Development Finance Corporation (NEDFI-2015) shows that there were about 2,00,000 STGs cultivating tea in around 1,60,000 hectares of land and contributed 374.910 million KGs of made tea to the total production of India.

Among all the tea producing states Assam alone contribute more than 50% to the total tea production in India. Tea industry in Assam has a long history of more than 180 years, but tea plantation in smallholding is comparatively a recent development in Assam and its neighbouring states. The concept of tea plantation in small scale was not heard till 1975 in Assam and other north eastern states. The first commercial tea plantation in small scale in

Assam was started in Golaghat district in 1978 (Borah and Das, 2015). In the year 1978, there were 16 small tea growers with 60.836 hectares of plantation area. Since then tea smallholding in Assam has shown a phenomenal growth with a continuous increase in number, area of plantation and production. The growth is further boosted during 1990's due to the good prices for green leaves prevailed in years 1996-98 (Hannan, 2013). Started with 16 STGs in 1978, the tea smallholding continues to increase every year and reached to 118832 Nos. of STGs which are operating with plantation area of 83880 hectares of land (AASTGA, 2015). The suitable weather condition and availability of highlands in Assam encouraged the young generation to start tea plantation in smallholding as a source of self employment. It provides a sustainable income for a long term with comparatively less investment. As estate sector of Assam was already developed thus, the availability of existing infrastructures like technology, processing facilities, skilled manpower and market for the produce highly induced the rapid growth of small tea gardens.

Tea plantation in the non-estate sector i.e. small tea growers sector is now a day transforming the rural subsistence economy in to a modern self sustained economy which is providing sufficient income and employment to educated unemployed youths of Assam. Large numbers of STGs are coming in to existence with developing new area of plantation in the recent past years. With the increase in number and area of plantation production of green leaves by the STGs of Assam is also increasing every year. While a production cost is rising day by day, the more or less static price of green leaves over the years is a major concern for the growers.

In this paper an attempt has been made to study the economic contribution of STGs in terms of income and employment generation.

## **1. Review of literature**

For getting intellectual and practical answer to the queries raised by any research problem require a comprehensive review of relevant literature. Some of the study relevant directly or indirectly were reviewed and presented below.

To get an overview of the contribution of small tea plantations to income and employment generation the study on cost of production of green leaves and selling price become inevitable. Hannan (2007) conducted an extensive study on the cost of production and pricing of green leaf in India. The study observed that, per acre green leaf productivity was highest in Assam with 5023 kilograms and it was lowest in Himachal Pradesh with 2376

kilograms. The average cost of production of per kilogram green tea leaf in India was ranging from Rs. 5.02/- to Rs. 7.62/- and it was lowest in Bihar and highest in Himachal Pradesh. The average cost of production in Assam was found to be Rs. 6.29/- per kilogram and the average selling price was Rs. 7.99/- per kilogram in the year 2007. Ganguli (2000) studied productivity and marketing of green leaves, cost of tea cultivation and income from tea and future prospect of small tea growers with reference to Dibrugarh district Assam. It is observed from the study that profitability in tea cultivation is higher than raising other field crops. Ganguli (2000) found that during the year 1997-98 the average cost of production of per Bigha of tea plantation for a grower was Rs. 4935.62/- whereas the average sales proceed from one Bigha was Rs. 25640.56/- . Thus a grower in Assam gained 216.8% return on their investment in small tea plantation during 1997-98. Goswami (2006) studied the commercial viability of small tea cultivation in Assam by applying breakeven point analysis. The study found the average production cost per hectare of Rs. 62510/- and the average productivity per hectare of 10736.4 kilograms. The breakeven price of per kg green leaf production was found to be Rs.5.82/-. At the same period the average selling price of per kg green leaf was Rs. 7.63/-. Thus the growers in Assam were able to earn a slender margin of profit though that was not lucrative as it was during 1990s. Kakati (2012), attempted to study on income generation by small tea growers of Assam. He studied the various stages of tea plantation and income received by a small tea grower. To him a farmer realises his/her expenditures spent on planting after 3 years. If a farmer maintain the plantation efficiently and harvest 7000 kgs green leaf per acre then the grower can earn a profit margin of over and above 50% of the production cost. As the income from tea plantation is high and it is profitable so the author suggested to increase number of small tea growers and to expand area under tea cultivation. Sen and Nath (2012) highlighted the role of small tea growers in the socio economic development. They have highlighted that the small tea plantation is labour oriented and so it can provide employment to many people. By raising the income of the people, small tea growers can be able to raise the standard of living of the people and poverty can also be reduced. Moreover, the anti social elements of the society can be brought to the mainstream line and different social problems can be solved to a great extent. Borah (2013) studied the growth of entrepreneurship in small tea plantation in Assam. The study focused on increasing trend of entrepreneurship in small tea plantation and its problems and prospects. By discussing various problems relating to small tea plantation like land ownership, financial, marketing, technical and unregulated growth of small tea planters the study concludes with the suggestion to encourage emergence of small tea growers as it can provide fruitful

opportunities for self expression and can increase material well being of the local rural youths. The economic revolution brought about by the small tea growers in rural Assam is helping in reducing unemployment and it utilising unused lands in an environment friendly manner. Biswas (2016) observed that establishment of small business or small manufacturing units are very important in developing country like India and entrepreneurship in small tea would provide opportunities of self expression to the unemployed youth. Small tea plantations in a region provide employment opportunities to the unskilled manual workers throughout the year. Besides unemployment, tea cultivation in small form is relevant to overcome many other issues like poverty, illiteracy, poor health etc. Borah and Das (2015) states that small tea plantation provides employment, generates income, wealth and act as a key force for economic growth of the region. There is an ample scope for self-employment for the rural educated unemployed youths. Along with self employment and engagement of family members the small tea plantations in Assam provides direct employment to 2.40 lakh people out of which 1.45 lakh is either ex-tea garden labour or excess number of workers from the nearby large tea estates, specially women pluckers.

## 2. Objectives of the study

- i. To study the contribution of the non-estate tea production to domestic product of the sample districts.
- ii. To study the contribution of the non-estate tea production in employment generation.

## 3. Data and methodology

- a. Data: The present study uses primary data to fulfil the undertaken objectives. The study covers only the year 2016 as reference year.
- b. Population: All the small tea growers of Assam registered with All Assam Small Tea Growers' Association (AASTGA) up to 2016-17.
- c. Sampling: Sample is drawn by using simple population proportion method from the small tea growers of two districts of Assam viz. Sivasagar and Lakhimpur. The two districts were selected purposively- Sivasagar district as traditional tract of small tea plantation and Lakhimpur district as non-traditional tract of small tea plantation. The formula used to determine the sample size is-  $n = (N \times X) / (X + N - 1)$   
Where,  $X = Z^2 \alpha/2 \times p \times (1 - p) / MOE^2$  and  $Z_{\alpha/2}$  is the critical value of the normal distribution at  $\alpha/2$ .

The total number of sample derived for the two districts at 95% confidence level is 180. The same method was used to determine the individual sample size for

the two districts which provided sample size of 160 for Sivasagar district and 20 for Lakhimpur district.

- d. Tools: The present study uses simple mathematical tools to analyse the contribution to income and employment generation by small tea plantation in the sampled districts as follows-

Gross Value of Output (GVO) = Total production of green leaves per hectare  
 $\times$  Farm gate price per Kg.

Net Value of Output (NVO) = GVO – Input costs – Depreciation of fixed assets

Net Income Generation = NVO  $\times$  Area of tea plantation under STGs.

The employment generation was measured in terms of man-days requirement per hectare during a year. Thus,

Man Days (per hectare) =  $\frac{\text{Total Cost on Labour Per Hectare}}{\text{Wage Rate}}$

#### 4. Results and discussions

##### A. Contribution to income generation

The income of the small tea growers reflects the ability and the quantum of contribution to the GDDP of respective districts as well as to the GSDP of Assam. The contribution of small tea plantation to the GDDP of the respective districts is measured by the net value addition and gross value addition from the tea plantation of one hectare. In the economic analysis of any commercial crop the productivity or yield is very important element to be calculated. From the primary data gathered from sampled districts during 2016, the yield per hectare found to be 19587 Kgs. and 10248 Kgs for Sivasagar and Lakhimpur district respectively. The average yield per hectare found in the sampled two districts is 18555 Kg. In the same year the average productivity of green tea leaves in Assam was 15248 Kg per hectare (AASTGA-2016), which shows that the productivity of green tea leaves in the sample districts is higher than the all Assam average.

The total production of green leaves per hectare or yield was used to calculate the gross value of output and net value of output of sample districts. The contribution of small tea plantation to the GDDP of the respective districts is calculated by the gross value addition and net value addition from the tea plantation of one hectare during the year 2016. The results are presented in the table-1 and table-2.

Table-1: Value addition from tea in non-estate sector in Sivasagar district (Year: 2016)

Sl. No.	Items	Amount (in Rs.)
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A	Gross value of output (Per hectare)	3,24,014.09
B	Material cost (Per hectare)	17,640.03
C	Depreciation(Per hectare)	1,480
D	Net value of output (A-B-C)	3,04,894.06
E	Income generation from small tea plantation in the district (D× Total small tea plantation area of the district)	319,34,60,369.73

Source: *Field analysis*.

From the table-1 it is found that in the year 2016 the gross value of output per hectare of small tea plantation in Sivasagar district was Rs. 324014.09. The material costs and depreciation cost per hectare were Rs.17640.03 and Rs. 1480.00 respectively. After deducting the material cost and depreciation cost of fixed assets from the gross value of output, the net value of output in Sivasagar district in the year 2016 was found to be Rs. 304894.73 per hectare. The contribution of small tea plantation to the Net District Domestic Product (NDDP) can be obtained by multiplying the net value addition with the total area of small tea plantation in the district. In the year 2016 the total area of small tea plantation in Sivasagar district was 10474.16 hectares and thus the contribution of small tea plantation to NDDP of Sivasagar district was found to be Rs. 319,34,60,369.73.

Table-2: Value addition from tea in non-estate sector in Lakhimpur district (Year: 2016)

Sl. No.	Items	Amount (in Rs.)
A	Gross value of output (Per hectare)	2,41,110.36
B	Material cost (Per hectare)	31,131.00
C	Depreciation (Per hectare)	1,480
D	Net value of output (A-B-C)	2,08,499.36
E	Income generation from small tea plantation in the district (D× Total small tea plantation area of the district)	37,23,13,135.56

Source: *Field analysis*.

The table-2 shows the value addition from tea in the non-estate sector in Lakhimpur district in the year 2016. From the table-2, it is observed that the gross value of output per hectare is Rs. 241110.36. The gross value of output of Lakhimpur district was found less in comparison to Sivasagar district as the per hectare productivity of small tea plantation in

Lakhimpur district is less than that of Sivasagar district. The material cost in Lakhimpur district was found to be Rs. 31131.00 per hectare. The material cost per hectare was found higher in Lakhimpur district in comparison to Sivasagar district. It is due to the higher cost of fertilizers and pesticides and other plantation materials. After deducting the material cost and depreciation cost of fixed assets from the gross value of output, the net value of output in Lakhimpur district was found to be Rs 208499.36 per hectare. In the year 2016 total area of small tea plantation in Lakhimpur district was 1785.68 hectares and multiplying the net value of output per hectare with the total small tea plantation area the contribution of small tea plantation to NDDP of Lakhimpur district was calculated at Rs. 37,23,13,135.28.

### **B. Contribution to employment generation**

As a labour intensive endeavour, the small tea plantation has direct impact on employment generation as well as providing livelihood to rural poor people where the plantations take place. In tea plantation, growers have to incur majority of costs on labour than on any other inputs. From the establishment phase to operational phase labour is the indispensable part of tea plantation. During the first two years of establishment phase of tea plantation, labour are required for various activities like- land preparation, lining and pitting, filling and planting, shade tree plantation, fertilizer and pesticides application, boundary and drainage construction, tipping, watch and ward etc. Again during the operational phase, labour are required throughout the year for different activities like cleaning, pruning, fertilizers and pesticides application and most importantly plucking of tea leaves. Thus, tea plantation in small scale generates employment both in the establishment and operational phases. The total employment generation in small tea plantation in the two sample districts is estimated in terms of man-days required per hectare in the establishment phase is shown in the table-3.

The table-3 shows operation-wise requirement of man-days required during the establishment period of one hectare small tea plantation. From the table-3 it can be seen that, a grower uses total of 744.51 man-days during the two years of establishment phase of per hectare small tea plantation. Of the total man-days growers use 88.36% in the first year of plantation itself while the utilisation of man-days in the second year is 11.64% only.

Table-3: Number of Man-Days creation during establishment of one hectare of small tea plantation.

Sl. No.	Particulars	No. Of Man-Days		Total	Percentage to total
		Year-I	Year-II		
1	Land Preparation	290	0	290	38.93
2	Lining & Pitting	107	0	107	14.41
3	Filling & Planting	158	6	164	21.98
4	Fertilizer and pesticides application	14	27	41	5.48
5	Boundary, Drain, Footpath etc.	77	3	80	10.71
6	Shade tree plantation	9	2	11	1.49
7	Tipping/ pruning	0	46	46	6.19
8	Watch, ward & Misc.	3	3	6	0.74
Total		658	87	745	100
Percentage to total		88.36	11.64	100	

Source: Field survey analysis

Again, operation-wise land preparation for plantation requires highest labour service. Land preparation is the first year activity which requires 38.93% of the total man-days that to be required for the establishment of one hectare of small tea garden. Lining and pitting activity require 14.41% of the total man-days while filling and planting requires 21.98% of the total man-days during establishment phase. Of the all activities watch/ward require only 0.74% of the total requirement of workforce of establishment phase because, only a few small tea growers keep employees to look after their plantations.

During the operational phase labour is the main factor that is required throughout the year for different activities like cultural operations, application of fertilizers and pesticides, and most importantly plucking of tea leaves. Plucking of leaves is the main productive activity in tea plantation and which require labour throughout the leaf plucking period in a year. During establishment phase a tea grower can use both skilled and semi-skilled labourers whereas during the operational phase growers mainly search for labourers skilled in tea leave plucking. In the operational phase though labour is employed for different activities but a grower does not maintain proper record of payments to labourers on different heads. They only keep records of aggregate payments to labourers for all activities. Thus, on the basis of aggregate payments to labourers during the operational phase the total man days of work generated in year 2016 is calculated and presented in the table-4.

Table-4: Number of Man-Days requirement at operational phase in small tea plantation in the sample districts (Year 2016).

Sl. No	Expenditure on	Average	Man-days	Total
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	wages and salaries (per hectare)	wage rate (per day)	generated (per hectare)	man-days generated
1	118980	160	744	9120815

Source: Field data analysis

The table-4 shows the estimated employment generated in terms of man days in small tea plantation in Sivasagar and Lakhimpur district in the year 2016. For calculation of total man-days generation in one hectare of tea plantation in the operational phase, the aggregate expenditures on labour on account of wages and salaries during the year was divided by the average wage rate of tea labour prevailed in the sample districts. The obtained man-days generated per hectare were then multiplied with the total area of small tea plantation of the sample districts to get the total man-days generated in the year 2016. From the table-4 it has been observed that during the leave plucking season of the year 2016 a total of 744 man-days per hectare were required in the sample districts and thus it created 9120815 man-days in the sampled districts.

## 5. Conclusion

Tea production in the non-estate sector in India is now a day not only a source of livelihood for the tea growers but it is becoming a significant contributor to the tea industry of India. The share of tea smallholdings in the total production has been increasing every year. It can be understood from the contribution by the small tea growers to the total tea production of India and Assam which stood at 44.01% and 40.02% respectively in the year 2016-17 (TBI-2017). The increase in the contribution of small tea growers to the total tea production of Assam reflects the growing demand for the variety of produce of STGs which led to expansion in the plantation area by STGs. The increase in the number of small tea growers and thereby growth in the area of plantation is raising the demand for labour and creating employment opportunities for the rural unemployed youths of Assam. Thus, the growth of small tea growers is playing an important role in the economy of Assam by contributing to the State Domestic Product and in the generation of employment.

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