ABSTRACT

Tea is one of the oldest organized industries in India and it continues to have overwhelming importance for the national economy of the country. In all aspects of tea production, consumption and export, the role of Indian tea industry are significant in global context. One important reason why tea industry in India holds a unique position is its commendable contribution towards employment generation, especially of women labour force. Notably, it is the single largest employer of women in the country and significantly 50 percent workforce in tea plantations are women. Among several states producing tea in India, West Bengal holds a very prominent position and accounts for nearly 20 percent of the total area under tea plantation and contributes about 24 percent of the total production. As per estimate made by Indian Tea Association (ITA) in 2012-13, the industry provides employment to 262749 numbers of workers directly. In addition, several lakh of persons derive their livelihood indirectly from the industry through its forward and backward linkage effects. Moreover, the industry contributes appreciably towards the central and state Governments' exchequers.

Historically, tea plantations developed in this region following a vertically integrated estate model of production which could appropriately be described as the '*vent-for-surplus-development*" model. However, for a very long time, the growth rate of production under this system has continuously been lagging behind the growth of demand for tea. This shortfall of supply coupling with other economic factors like availability of resources –land and manpower- necessitate a structural change in a traditional production system. Since the early 1990s, the mode of production in tea plantations had been continually experiencing a major structural shift from the century-old centralized estate sector system to the emerging small tea growers (STGs) −bought leaf factory (BLF) system which largely represents a flexible and decentralized system of production in terms of separation of plantation agriculture from factory operation. Following this structural transformation, the tea economy of the region has assumed a dualistic character which gets reflected through the co-existence of large corporate and medium proprietary holdings with tea smallholdings. At present, 74% of the total area under tea cultivation and 67% of the total production comes from the organized estate sector. The remaining 26% of the area and 33% of the production is accounted for by the small growers-BLF sector. The Tea Board of India has defined a person as an STG who is having tea plantation area up to 10.12 hectares (or 25 acres) without any processing facility. The STGs had made their first appearance in Chopra Block in Uttar Dinajpur District during the early 1980s. In the subsequent years, they were spread over the other areas of the region− Jalpaiguri, Coochbehar and the Terai (the foothills of Darjeeling).

As far as the proliferation of the smallholding tea sector of the regional tea economy is concerned, it is possible to identify a host of emerging issues for research studies. The principal research problem of the study is the measurement of resource use efficiency of STGs and to identify the sources of inefficiencies. The study intends to estimate two measures of efficiency at the plantation level─ the technical and scale efficiency. Both non-parametric DEA and parametric Stochastic Frontier Regression methods have been used for efficiency measurement. This investigation is necessary in order to assess the relative effects of various productivity parameters vis-à-vis the scale of operation on tea production and productivity so that the relative importance of each parameter could be better understood. This analysis would also help to identify the nature of returns-to-scale and its impact on production and cost structures of tea smallholdings. In addition, we could also gain insight into the causes of the inefficiency of resource use leading to the wasteful use of scarce resources. This apart, the study tries to probe into the interdependencies between the '*estate system'* and 'small grower system' using the ordinary regression technique. If the dependencies between these two sectors are a bi-directional phenomenon, then the present economic state of affairs of the large tea estate sector is to be understood with respect to the commercial relationship with small tea gardens. The other dimensions of the research study include investigations into some contested issues concerning land and labour economics of small tea growing operation. These investigations assume importance in order to gain insights into the causes of land-use change and crop transfer as well as the potential of this newly emerged sector towards employment generation and the opportunity of alternative gainful options of occupational choices.

This study is both analytical and exploratory work based on both primary and secondary data. The area of sample-study consisted of nine regions spread over four districts of North Bengal. The method of sample drawing for the collection of data is designed to be cluster sampling where clusters consist of sample study locations of tea smallholders.

The results of the DEA study reveal that the overall resource use efficiency level of small tea growing operation is significantly high. This finding is further substantiated by the decomposition analysis of overall efficiency into the components of pure technical efficiency and scale efficiency. The zone-wise analysis of mean technical efficiency scores also corroborates this result. This provides ample justification for the extension of tea plantation periphery into non-traditional areas comprising mostly of farmlands. The study finds that farmers have replaced low yield fallow highlands with tea. The major economic implication to be drawn from efficiency analysis is that tea growing on small landholdings has emerged as an efficient model of commercial farming replacing traditional agricultural farming in a phased manner in different areas of the region. The result of stochastic frontier regression analysis reveals that the optimum size of plantation should be of 12 acres or more to achieve a maximum gain of efficiency. The analys is

further indicates that tea smallholding sector has a considerable potential for generating rural employment. It is found that not only self-employment but a sizeable proportion of additional employment opportunities are being created. This is certainly a positive development for thel abour surplus regional agrarian economy of North Bengal. The examination of the economics of small tea plantations from different perspectives reveals that the proliferation process has been driven by economic factors like higher productivity and efficiency gains and better utilization of land and labour resources. This emerging phenomenon of the tea industry has also the added beneficial effect of increasing the aggregate tea output on a sizeable scale thereby gradually redressing the supply shortfall problem in the domestic tea market.