

**GROWTH, STRUCTURE AND LABOUR MARKET OUTCOMES:
A STUDY OF INDIA'S TEA PLANTATION SECTOR**

*Dissertation submitted in partial fulfillment of the requirements for the
award of the Degree of Master of Philosophy in Applied Economics of the
Jawaharlal Nehru University*

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I hereby affirm that the work for this dissertation, *Growth, Structure and Labour Market Outcomes: A Study of India's Tea Plantation Sector* being submitted as part of the requirements of the MPhil Programme in Applied Economics of the Jawaharlal Nehru University, was carried out entirely by myself. I also affirm that it was not part of any other programme of study and has not been submitted to any other university for award of any degree.

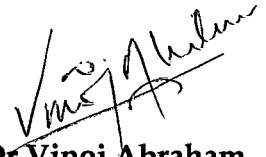
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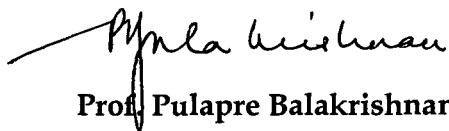

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ABSTRACT OF THE DISSERTATION

GROWTH, STRUCTURE AND LABOUR MARKET OUTCOMES: A STUDY OF INDIA'S TEA PLANTATION SECTOR NAMRATA THAPA

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The experience of impressive growth performance in the wake of economic reforms raised the concern of trickle down effects of growth; across all sectors, regions and population of the country. It has been much debated in the recent past that growth has not been spread across all sections of the society. The studies thus far have been confined to effects of growth at macro level, leaving out the micro process of understanding inclusion. In order to understand the process of inclusive growth there is need for sector specific studies as each sector varies in their ability to bring about inclusion/exclusion. In this context, the present study attempts to understand the nature and process of inclusive growth by taking tea plantation sector. This sector has distinct features in terms of largest workforce and population dependence, half of the workforce being women, major segment of the workforce being tribals, marginalised and vulnerable; a major source of livelihood for the increasing number of small growers and being located in backward and rural regions of few states in the country. Therefore, the present study attempts to analyse the growth performance of the tea sector and relate it to the two dimensions of inclusive growth such as employment and human development, which includes education, health and basic amenities.

The study has been carried out using three different data sources; from Tea Board, Labour Bureau and primary survey. The analysis of the evolution and growth of the Indian tea sector over the period of 1950 to 2007 showed that it has undergone three fundamental structural changes. These were change from foreign to domestic ownership, shift from export to domestic market and shift from large estates to small growers. Given these changes, there was an increase in the growth rate of area, production and productivity of tea over the years except for the period from 1980 to 2000. However, from 1980s onwards, gradual loss of India's domination in the global tea market and growing importance of the domestic market was observed. These changes had its effect on the labour market in the form of increased casualisation and feminisation of the workforce, stagnation of real wages and earnings, increased use of piece-rated workers and lower absorption of labour. This was indicative of the various cost cutting strategies adopted by the sector to maintain its competitiveness and in the process leading to immiserisation of the workers. Micro level evidence on the employment position and human development status of the plantation households classified as permanent, casual and small growers from the Darjeeling District of West Bengal lends support to this hypothesis. Within plantation workers, the casual workers occupied the lowermost order in the employment position hierarchy. Contrary to the notion of permanent workers in an organised industry being better off in terms of employment position, asset position and hence better standard of living; it was observed that despite their employment position being relatively better than the casual workers and small growers, their asset ownership position and hence living standard was relatively poorer than the small growers. It indicated the human development of the wage worker households, irrespective of permanent or casual work status, being poorer than the self employed small growers' households. This showed the poor implementation of provisions under the Plantation Labour Act in the estate sector. Thus in this conflict between efficiency and equity, the already disadvantaged and vulnerable groups which characterises the plantation sector are observed to be, further, excluded from the growth process.

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CHAPTER I

INTRODUCTION

1.1 Introduction

Indian economy has been experiencing remarkable economic growth since the onset of economic reforms in the 1990s. However, the benefits of this growth process seem to have not reached all sectors, regions and segments of population in the country (Dev, 2007; Thorat, 2011 among others). Hence, the focus of the 11th Five Year Plan has been on fostering inclusive growth. Most of the studies on inclusive growth have looked at macro aggregates to explore the issue of inclusion. Nevertheless macro aggregates does not contribute much towards understanding the micro process of inclusion/ exclusion (Joseph, 2010). Further, given the sectoral variations in the ability to bring about inclusion/exclusion, there is need for sector specific studies that highlight the nature and processes of exclusion/inclusion.

The sector that has been considered for studying the nature and process of inclusion is the plantation sector. This sector has been taken due to the following reasons: it is located in the backward and rural regions of few states in the country; is a highly labour intensive sector with a high concentration of women workers (54 percent in tea and coffee; and 42 percent in rubber) (Occupational Wage Survey, 2006); comprises of labourers who have remained less developed, isolated, marginalised and vulnerable (Choudhary and Tayal, 2010); is a source of livelihood for small holders whose numbers are rising over the years. Though the plantation sector accounts for only 5 percent of the net sown area (NSA), contributes to 10 percent of agricultural income and 13 percent of agricultural exports; the estate sector alone provides 2.5 million days of employment¹. As such it can be seen that this sector is also a major source of livelihood and employment for the population of the regional economies (Joseph and George, 2010). For our study, tea sector has been selected as it is a highly labour intensive

¹ National Research Programme on Plantation Development, 2005

sector among the other plantation crops; it is the oldest constituents of the organised manufacturing sector (Sarkar, 2008) and engages nearly one out of seven workers employed in this sector (Thamarajakshi, 2002). But the tea workers are considered to be among the poorest and most deprived section of organised labour in India (Bhowmik, 1994; Sankrityayana, 2006). Further, a large section of workers pre-dominantly belong to scheduled tribe communities (Bhowmik, 1994). Thus growth dynamics in the tea plantation sector can be considered for understanding the nature and process of inclusive growth among the plantation workers.

1.2 Concepts and Definitions

Coming to the definition of inclusive growth, it has been pointed out that there are several variations in its definition and characterisation (Birdsall, 2007). The simple definition of inclusive growth is that growth is said to be inclusive when it allows all members of the society to participate in and contribute to the growth process on an equal footing regardless of their individual circumstances (Ali, 2007). It has been emphasized that equalizing opportunity which emphasizes on eliminating individual circumstance related inequality should be at the core of inclusiveness and a major focus of inclusive growth strategy. Here individual circumstances refer to his/her culture, religious belief, family background, parental education, gender and geographical location which are outside the control of the individual and he/she should not be held responsible for them (Roemer 2006, as cited in Zhuang and Ali 2010). Scholars have differentiated inequality due to individual circumstance from inequality due to individual effort. The former often reflects market policy and institutional and governance failures and social exclusion. By contrast, the latter reflects and reinforces the market based incentives needed to foster innovation, entrepreneurship and growth (Chaudhuri and Ravallion 2007, as cited in Zhuang and Ali 2010). Individual effort is under the individual's control and he/she should be held responsible for them. The distinction between two inequalities; one related to circumstance and the other related to effort, had led to an important distinction between inequality of opportunity and inequality of outcome (Zhuang and Ali,

2010). Inequality in opportunity has been argued to arise largely from differences in individual circumstances whereas inequality of outcome such as income is said to reflect some combination of differences in effort and in circumstances (Zhuang and Ali, 2010). Hence individual circumstances have been identified to be the main impediment to promotion of inclusive growth.

In the literature several approaches to inclusive growth has been followed. Various factors such as broad-based sectoral growth, agriculture, infrastructure, redistributive public expenditure and social protection, human capital and job creation, capacity building, creating opportunities and equalising access to opportunities, etc. have been considered for promoting inclusive growth (Ali, 2007; Mckay, 2008; Rauniyar and Kanbur, 2009). For the purpose of our study, we would be focussing on the dimension of inclusive growth in terms of employment and human development indicators. Employment has been considered to be a critical instrumentality for inclusion (Kannan, 2007). Here employment refers to productive employment with reasonable earnings to overcome poverty and improve the standard of living of the majority of the population. To ensure that the high rate of growth of the economy is translated into productive employment, there is a need to examine the quantum of employment and also see that whether such employment generation will be of a productive kind with reasonable kind of earnings and minimum protection (Kannan, 2007). Regarding the human development indicators such as education, health and basic amenities, it has been pointed out that the improvements in access to education and health could facilitate participation of poor in employment and growth opportunities (Ianchovichina and Lundstrom, 2009). The Planning Commission (2006) has also noted the following statements regarding employment and human development indicators which clearly emphasises the importance of these factors; "Employment is an area which shows up where our growth process is failing on inclusiveness. The number of workers is growing, particularly in non-agricultural employment, but weaknesses appear in unemployment, the quality of employment, and in large and increasing differentials in productivity and wages" (Planning Commission, 2006: 72) and "Along with sectoral policies aimed at improving livelihood support and

increasing employment, a strategy of inclusiveness also calls for new emphasis on education, health, and other basic public facilities. Inadequate access to these essential services directly limits the welfare of large sections of our population, and also denies them the opportunity to share fully in the benefits of growth. Indeed, inadequate attention to human resource development limits the growth process itself" (Planning Commission, 2006: 62).

1.3 Review of Literature

Various aspects of plantation sector mainly agronomic, trade and labour has received immense attention of the scholars. However, when study on tea plantations are considered, focus has mainly remained on the former two while labour which is an important aspect of such a labour intensive sector, there are very few literature on it. The existing studies on tea plantation labour have mainly explored the historical and sociological dimensions; with an exception of few studies, an economic analysis of tea plantation labour has been seriously lacking. It also needs to be mentioned here that the tea plantations having a considerably long history of over 150 years as compared to that of other plantation crops, there has been historical studies focusing on the condition of labour as existed during the pre-independence period which brings out the exploitation faced by the labour in the hands of the colonial masters and their resultant exclusion from the main stream economy (Behal and Mohapatra, 1992; Gupta, 1992; Raman, 1997). In the following review of literature, attempt has been made to draw as much insights as possible from the existing literature based on labour related issues of not only the tea plantations but also from plantation sector in general in India and elsewhere. Further, only post independence studies on plantation labour has been reviewed here, to get an understanding of the conditions of labour as is existent in the time after the end of the colonial era².

It has already been mentioned that our focus is on two aspects of inclusive growth- employment and human development. The earlier literature on

²Though in the following chapters, wherever necessary the historical aspect of tea plantation labour has been discussed.

plantation sector has not explicitly dealt with these issues under the term of inclusive growth but they have definitely dealt broadly with two aspects of labour, namely structural changes and employment patterns and; human development and welfare provisions. Studies on the first category have dwelt upon the changes in production and the employment patterns overtime in the plantations. Then there have been studies focussing on the human development of the workers in the estate sector.

1.3.1 Structural Changes and Employment Patterns

The plantation sector at present broadly consists of the estate sector and the small grower sector³. The emergence of small grower sector being a recent phenomenon in the tea plantations, the main focus of study related to plantations in the earlier years was solely the estate sector. The studies have mainly attempted to explore the relationship between employment and wages.

Bhanja (1969) examined the changes in the volume of employment and the level of wages of labour in relation to the growth of the tea plantation industry as shown by the growth in area and productivity during the first three plan periods. His analysis points out that despite the steady increase in acreage, production and yield per unit of land, the volume of employment has been falling absolutely and relatively during over the periods. This increase in yield per hectare might have been due to more intensive cultivation of the existing estates through increased application of manures and fertilizers and even through coarser plucking; the coming into bearing of newly planted holdings; replanting of previous years; or the introduction of high yielding varieties of plants. But study points out that as these practices requires no downward adjustment in labour intensity, this increase in yield with significant decrease in labour-land ratio tends to suggest that the improvement in yield had not wholly been due to these practices rather it might have partly been due to the introduction of labour saving tools and machineries. The increase in total investment in plants and machineries are found to be higher than the increase in the total wage bill. By

³ Estate sector defined as area of above 10.12 hectare of land under cultivation; small grower sector- as area of less than 10.12 hectare of land under cultivation.

assuming that the price of capital equipments did not increase at a faster rate than the increase in wage rates, this is taken as an evidence of an increase in capital intensity in plantations. Examining the state wise trends, study further argues that the increase in productivity per worker in most of the tea growing states was largely achieved by techniques which were labour saving except for Tripura where a rise in productivity per labour was found to be associated with an increase in the number of labour employed per hectare.

Further in the light of the changes seen in yield and employment of labour per unit of land, Bhanja (1969) observes a high percentage increase in wages in those states where an increase in productivity per worker was mainly achieved through a high rate of labour displacement per hectare. Similarly, the low percentage increase in wage rate coincided with regions where increase in productivity per worker was achieved through a low percentage displacement of labour. On similar lines, the wages and employment relationship in tea plantations of West Bengal has been explored by Misra (1985). It is hypothesised that absorption of labour is inversely related to changes in real wage cost. But analysis suggests that a slow growth of real wage cost is not a sufficient factor to increase employment. Employment growth does not depend exclusively on the real wage cost but also on the productivity of labour and profitability of plantations. However, the study points out that 'productivity of labour in tea plantations is a complex phenomenon in which aside from labour, various other factors are inextricable intertwined: e.g. topography, presence of peculiarities like age of the bushes, weather and so on' (Misra, 1985: 370).

The other explanation for lower labour absorption in the tea plantations can be drawn from the study by Savur (1973). Savur (1973) argues that labour, particularly female labour, is made to create surplus value in the tea industry by using unfair techniques to raise the productivity of labour and by underpayment of wages. In a labour intensive industry such as tea, the most effective way of reducing the cost of production is by increasing the productivity of labour and simultaneously reducing the labour force or wage rate. The minimum labour force required in the lean season is registered on the rolls and during the peak

season when a large labour force is needed for plucking the leaves, the existing labour force are made to over work by applying the incentive wage system. Under this system, the women workers who are mainly engaged in plucking can earn extra money by plucking over and above the stipulated quantity. But even after putting three days of work in a single day, they get only 1.7 days wages instead of that for three days. This system raises the productivity of the worker and provides a saving on the wage bill at the expense of the workers.

Then there are recent studies on plantation which bring out the changing characteristics of the plantation sector in terms of production and employment pattern focusing on the shift towards small grower sector. Studies by Viswanathan et al (2003), Sarkar (2008), Hayami and Damodaran (2004) comes under this category.

The implications of the proliferation of small and marginal holdings on employment, earnings and future availability of rubber tappers is highlighted by Viswanathan et al. (2003) in their study. They explained the dynamics of labour market in the context of structural changes in the rubber small holding sector in Kerala, where there exists labour shortage in the midst of labour abundance. They point out that a major consequence of the declining size of operational holdings has been the non-availability of adequate tapping task from a single grower, leading to multiple grower dependence among tappers. However, due to highly dispersed structure of small holdings and uneconomic size, tappers are unable to get adequate tapping task despite their dependence on multiple growers. Hence they are deprived of adequate earnings and are unable to earn comparable wages vis-à-vis their counterparts in general agriculture or in large organized rubber estates. This is further leading to withdrawal of skilled and experienced tappers from the market and also increasing the preference among younger generation to abstain from tapping.

Sarkar (2008) explores the nature of changes in production relation in tea plantations in India after liberalisation, focussing on the state of West Bengal. In order to achieve flexibility in the deployment of labour, the mode of production

is shifting from the estate sector to the emerging smallholder-BLF⁴ sector. Such reorganisation of the production process would lead to changes in the nature of the labour market prevailing in the tea plantations. The labour market would reorient itself from permanent to casual and organised labour being replaced by the informal labour market. His analysis points out that the reasons for the higher cost of production in the estate sector were the existence of a permanent labour force, applicability of statutory welfare provisions, high cost of supervision, low bush productivity due to old age of majority of the bushes and a higher interest burden. Though the average revenue per kg of tea was comparatively higher for the estate sector, the difference was not as large as that of the cost per kg. So their average profitability was significantly lower than that of the smallholder-BLF sector.

The higher cost of production incurred by the estate sector and hence its adverse effect on competitiveness as compared to small growers' sector is brought out by the study of Hayami and Damodaran (2004). In the context of the crisis in the tea sector in South India mainly due to fall in international prices, they argue for a major restructuring of the plantation sector especially the estate sector through a process of labour empowerment based on contract farming.

Hayami and Damodaran (2004) point out that the most serious concern is the basic structural deficiency in the organisation of large corporate plantations that will progressively weaken the competitive position of the plantations in the south in comparison to both the overseas producers and domestic producers in the other regions in India. The structural deficiencies were created through agrarian reforms in the post-independence era. The agrarian reforms related to the transfer of property right on farmland from non-cultivating owners to actual cultivators of the land. Due to various reasons plantations were exempted from this redistributive land reform. Instead labour protection codes and legislations were enacted for the plantation sector. The enforcement of these regulations has been exceptionally strong in South India compared to other regions. The wage

⁴ Bought Leaf Factories (BLF) are engaged in the processing of the green tea leaves purchased from the small tea growers engaged in the cultivation of tea.

rates of the plantation workers in states like Tamil Nadu and Kerala being higher than that of states such as Assam, they incur higher labour costs and are losing out to competition both internationally and domestically. They also bring out the viability of the small growers over plantation holdings and suggest that the latter can be reorganised to approximate that of the small holder system.

To bring about coordination between the small growers and BLFs, Hayami and Damodaran (2004) propose for undertaking contract farming system which would prevent plantations from getting ruined and help them transform into a viable system capable of withstanding international competition. Thus they can continue to play an important role in poverty alleviation and environmental conservation in unfavourable mountainous areas.

From these studies it can be understood that growth of the plantation sector has been taking place but employment and wages has not kept pace with growth. This has been attributed to the adoption of labour saving tools and incentive wage system; reorganisation of production process from large growers to small growers; higher cost of production leading to informalisation of the workforce; and increased competition both internationally and domestically. In the light of the structural changes and employment patterns as was understood from the above review, insights on the impact of such changes on the workers in the estate could be drawn from the studies related to human development and welfare provisions of the workers.

1.3.2 Human development and Welfare Provisions

Studies on human development aspect and welfare of the workers were mainly related to the estate sector. In their study, Sarkar and Bhowmik (1988), Ramachandran and Shanmugam (1995); Chaudhury and Tayal (2010), highlights the human development of the plantation workers focusing on their education and health; the other welfare provisions that the estate workers are entitled to receive.

Sarkar and Bhowmik (1988) examined the reasons for low level of participation of women in trade unions despite forming half the labour force in the tea plantations. The level of literacy of the women workers was found to be very low than the overall literacy rate for women in West Bengal. They argue that the reasons for the low level of literacy among them are the general apathy of the employers and the government towards the educational needs of the workers and their families despite the provision to provide for primary education to the children of the workers under the Plantation Labour Act, 1951 (PLA). Also the girls did not go to school or had to drop out to take care of the younger children indicating the lack of crèches which is supposed to be provided in all the plantations employing more than 30 or more women workers under the PLA. This low level of literacy as well additional burden of taking care of the needs of the family limited the involvement of women in the trade union movement.

In the context of development planning in Malaysia, Ramachandran and Shanmugam (1995) discuss the relatively backward and impoverished situation of plantation workers in rubber and oil palm plantations. They argue that their poor conditions are mainly due to the relative neglect of development planners, by plantation management and poor enforcement of labour laws. They point to the appalling condition of the plantation workers in terms of basic needs and amenities, wages, housing, and health facilities. They trace the reason for such a situation of workers to the lack of enforcement of employers' obligations in combination with the exclusion of plantations from the rural development schemes which have left the workers economically and socially isolated on the fringes of national life.

The living and working conditions of the labourers in the plantation sector in India and Sri Lanka are examined by Choudhary and Tayal (2010). They bring out the fact that even the high level of unionisation and legislation in the plantation sector in these countries has not been effective enough to improve the conditions of the plantation workers. They point out that despite the plantation sector being an organised sector; the condition of workers in both the countries is

similar to those of informal agricultural workers and they face a high degree of vulnerability.

These studies, thus, exposed the vulnerability that the plantation workers are subjected to and highlighted the ineffectiveness of the existing legislations in improving their working and living conditions.

1.4 Research Gap

It is understood from the review of literature that all these studies have looked at isolated instances of employment and wages; and the living conditions of the workers, without much regard to the inherent growth pattern and the structural changes as had taken place in the sector over the years and the consequences thereof for the plantation workers. The plausible exception in this regard being the study by Sarkar (2008) and Bhanja (1969), but these studies have not engaged in the exploration of the living conditions of the plantation workers. Further, it needs to be pointed out that except for few studies; there is lack of economic analysis of the tea plantations in India which have distinct features in terms of having largest workforce and population dependence, half of the workforce being women, major segment of the workforce being tribals (Viswanathan and Shah, 2010). This study is an attempt to address this gap in the literature.

Given the immense relevance of the tea plantations for the employment of workers and livelihood of the growing number of small tea growers in the regional economies of the country, our study will try to understand the nature of inclusion/ exclusion of the plantation workers⁵ not only in the estate sector but also in the small holder sector. In this regard the study will attempt to explore the growth pattern of the sector, the various structural changes that had been undergone and the implications of these changes for life and work of the workers.

⁵ Throughout the study plantation workers pertains to workers in the estate sector as well as small tea growers in the small tea grower sector.

1.5 Research Questions

In the light of the literature review, this study seeks answer to the following broad set of questions: what is the nature and terms of employment, wages, earnings, working and living conditions; how is their life at work and how are they faring in terms of human development indicators. These questions are important to be explored for the fact that historically the plantation sector in India, as in other developing countries, was promoted as a means of foreign exchange earner to overcome acute shortage of foreign exchange. Over the years there has been an improvement in the condition of the external sector and the pressure on these primary commodities to earn foreign exchange have eased considerably (Joseph and George, 2010). So in recent years, its role as an earner of foreign exchange has declined while its role in fostering inclusive growth has gained prominence. Also it is important to keep in view the increasing competition faced by the Indian tea sector in recent years and the pressure to maintain its competitiveness due to the burden of higher social costs and the resultant initiative by the government to share 50 percent of the social costs⁶ under the Plantation Labour Act, 1951. Hence the need to assess the effectiveness of the PLA in promoting inclusive growth among the tea plantation workers (estate workers) by focussing on the provisions of these facilities such as education, health and basic amenities for the workers.

1.6 Objectives of the Study

Keeping in view of these questions, the specific objectives of the study are the following:

1. To understand the growth performance and structural changes in the tea sector over the years.
2. To examine the structure of employment in the tea plantations in terms of employment, and wages and earnings.

⁶ Report of Committee on Legislation Plantation Sector, 17th September, 2007

3. To analyse the employment position and its bearing on the living standards of tea plantation workers in terms of education, health and basic amenities to highlight their human development status.

1.7 Data Sources and its Limitations

This study is based on both secondary and primary data. Various issues of tea statistics and tea digest (1950-2007), Tea Board of India; and various rounds of Occupational Wage Survey (1958, 1963, 1974, 1985, 1993, and 2006), Labour Bureau of India have been used to fulfil the first and second objective. Since these secondary sources did not provide any data on the livelihood of the small tea growers and also on the human development of the plantation workers, a primary survey was undertaken to gather data to accomplish the third objective of the study.

1.8 Method of Analysis

This study analysed some of the issues through descriptive statistical analysis. But when it came to issues that necessitated testing of hypothesis, econometric models such as binomial logit, multinomial logit and ordinary least square regression were employed. The method used for the selection of sample in the case of field survey has been discussed in detail in section 4.2 of chapter 4.

1.9 Chapter Outline

The study has been organized in six chapters including this introductory chapter and the conclusion chapter. The second chapter examines the growth performance of the tea sector against the backdrop of the observed structural changes over the years; in terms of ownership structure, size structure and market orientation; and then identifies the possible implications of these structural changes on the labour market

In the light of the growth pattern of the tea industry, the third chapter examines the trends in employment; and wages and earnings of the workers and then discusses the implications of the three fundamental structural changes on the

labour market in greater detail. The various cost cutting strategies adopted by the sector to maintain its competitiveness and its impact on workers mainly in terms of increased casualisation, increased use of female and unpaid family labour, stagnation of real wages and increased piece rate work was observed. These were indeed reflective of the three structural shifts that had occurred post independence which had affected the viability of the sector. It raised the question as to whether in the present globalised economy, the pressure to maintain the competitiveness of the tea industry has gone hand in hand with labour welfare or has it led to immiserising growth among the plantation workforce?

This question is probed in the fourth chapter and fifth chapter which are based on micro-level empirical study in the Darjeeling district of West Bengal. The fourth chapter examines the determinants of the employment position of the plantation workers classified as permanent estate worker, casual estate worker and self employed small grower. The consequent impact of the employment position of the workers on their economic status as shown by asset ownership position and hence on their living standard in terms of education, health and basic amenities has been discussed in the fifth chapter. The sixth chapter summarises the study and gives concluding remarks.

1.10 Limitations of the Study

It needs to be pointed out that this study is not free from limitations.

The time period considered for the study is from the post independence period to recent years i.e. 1950 to 2007. However, for certain variables there does not exist data corresponding to the said time period. Hence, the available time period has been considered to make it as representative as possible of the above said time period. Having said this, it needs to be mentioned that despite this constraint, the trends witnessed from the available data used are more or less consistent with the story that emerges from the analysis.

Ideally along with growers in the small tea sector, the hired workers under these growers also had to be captured. However, the study was not able to do so. From

the field it was realized that the small growers in Darjeeling were mainly reliant on family labour and depended very less on hired workers. This was because though they were willing to pay higher wages to the workers, they were found to be not willing to work in the farms; as such they faced shortage of labour. It was also found that these hired workers were also mainly the small tea growers themselves. The reason behind that was a very interesting phenomenon of maintaining a continuous supply of labour without incurring any labour cost. In order to carry out the farm operations mainly during the peak season of plucking, the small growers formed a group of 5 to 6 people who on the basis of mutual cooperation exchanged their labour without involving any wage payments (the farmer on whose farm they worked had to provide only meal to them once a day). This practice ensured supply of 5 to 6 labour to the small growers without incurring much of labour cost and hence helped them overcome the problem of labour shortage.

Another constraint of the study is that the institutional interventions, such as trade unions, producers' association etc, has not been dealt with due to paucity of time, though their role in the plantations labour market cannot be ignored.

CHAPTER II

EVOLUTION, STRUCTURE AND GROWTH OF THE INDIAN TEA SECTOR

2.1 Introduction

This chapter seeks to examine the broad trends in the growth performance of the tea plantation sector against the backdrop of the structural changes it had undergone over the years; and then identify the possible implications of these structural changes on the labour market in the tea plantations.

The chapter has been organised as follows. The second section examines the structural changes in the sector over the years. The evolution of the sector has been traced in the discussions on these fundamental structural shifts. In the light of these changes, the performance of the sector has been examined in the third section. Here the trends in area, production and productivity of tea as well as the trends in exports and domestic consumption from 1950 to 2007 have been analysed. The last section gives the conclusion where the possible implications of these structural changes on the labour market in the tea plantations have been identified.

2.2 Structural Shifts in the Indian Tea Sector

Since its inception over 150 years ago, the tea industry has undergone structural shifts several times in the past (Sarkar, 2008).

As has been recounted by several scholars, the tea plantations in India commenced after large scale colonial acquisitions and annexations of territory in the 19th century (George and Tharakan, 1985; Raman, 1997; Behal and Mohapatra, 1992; Sankrityayana, 2006). It began with land as their primary unit of physical capital. During that time, labour was cheap and land plentiful and transfer of land did not come under the restraints of law. They undertook rapid expansion of tea cultivation in Assam (1832), followed by the establishment of plantations in

Darjeeling (1839), Terai (1862) and Dooars regions (1874) of North Bengal. Around the same time, tea cultivation spread to the Nilgiris and Coimbatore in Tamil Nadu and later to Idduki and Waynad districts of Kerala (George and Tharakan, 1985; Mitra, 1991; Thamarajakshi, 2002). These tea plantations were mainly large holdings. Like most plantation crops in British colonies, in the early years tea has been an export-oriented industry that was developed mainly to meet U.K's domestic demand or for re-export by that country (Mitra, 1991). All these features that characterized the Indian tea sector have, however, undergone a change over time. These changes have been discussed here in terms of the shift in ownership pattern (from foreign to domestic), market orientation (from export to domestic market) and size structure (from estates to small holdings).

2.2.1 Change in Ownership - Foreign to Domestic¹; Phase I (Pre Independence to 1970)

Initially the principal form of ownership in the tea plantations was proprietary which lasted till the early 1880s. From the eighties onwards the ownership structure began to change and individual proprietary concerns started giving way to partnership firms and public limited companies. This led to better financial resources and more stable and eventually more professional management of plantation enterprises. The British managing agencies played an important role in this process. Many of the early companies started consolidating with the managing agencies that had access to the developed capital market of London. As such the combination of agency house capital with the managerial experience of proprietary planters provided the main foundation for the growth of corporate capital in the Indian tea industry (George and Tharakan, 1985).

However, after independence various policy measures were undertaken by the Government of India and the state governments concerned in the form of rigorous taxation, restraints on export of capital and efforts to build up Indian auctions. Along with this, the notable one being the emergence of the trade union

¹ The discussion is related to only the estate sector and not the small grower sector, as all the producing units in the small grower sector are proprietary concerns and other forms of ownership is not present.

movement. In the pre-independence period, trade unions were not legal. But after independence workers were granted trade union rights and the movement became strong. This resulted in an increase in wages and the enactment of various welfare legislations, which led to a rise in the cost of production (Sarkar, 2008). The activities of the British managing agencies were also restricted to a great extent with the abolition of the managing agency system by the Government of India in 1970. The state governments too imposed higher rate of tax on the agricultural income of the British controlled companies and land ceiling restrictions were imposed to restrict the reserve area that could be held near the existing area under the crop.

To all these events the British companies reacted in two ways. One was by slowly withdrawing their capital from India and migrating to East Africa where the political climate was more favourable. These companies considered their tea estates in India as wastage of assets from which they tried to repatriate maximum possible funds and this led to a deterioration of the Indian tea industry. Another way was to adapt themselves to the new condition. Many erstwhile foreign companies reorganized themselves by collaborating with Indian capital (George and Tharakan, 1985). Further with the introduction of the Foreign Exchange Regulation Act (FERA), 1973, large-scale changes in ownership occurred within the tea industry. Thereon several diversified Indian corporate houses made an entry into the tea industry and many of them have expanded their interests in the tea sector by setting up semi-independent tea divisions and affiliates (Sankrityayana, 2006).

Thus after independence, the ownership of the tea plantations has moved from foreign to national hands. At present there exist various corporate structures in ownership such as the FERA companies, public and private limited companies, and companies presently controlled by the government. There are intrinsic differences in their size, production scale and operating efficiency. The FERA companies which are the ex-sterling companies generally control larger estate areas even though they are fewer in number and they employ larger number of tea workers. These variations between plantation size and the scale of labour

deployment also results in significant differences in the level of land and labour productivity. After FERA companies, the estates controlled by public limited companies come in next on the efficiency scale followed by the private limited companies. While the tea estates managed by government companies show the lowest levels of labour and land productivity (Sankrityayana, 2006).

With the widening of their corporate presence by several tea majors, consolidation along these lines within the Indian tea industry has developed fairly recently over the last 15 to 20 years. Where considerable buyer consolidation has also occurred on the one hand, consolidation of ownership is also an organizational response to changes that have occurred in the tea trade. To smoothen the seasonalities in tea production that would otherwise create fluctuations in trade, major corporate own cross-holdings in tea estates located across the tea growing regions in India. This also enables them to market a range of tea and thus take advantage of price differentials. However, due to large part of earned profits being drawn into the financing of corporate mergers and acquisitions and into dividend payments, capital availability for plantation operations is correspondingly squeezed. Further, the growing corporatization has affected the plantation sector through resulting changes in market dominance. As the supply side of the tea trade is characterized by competition between very large and small producers, the capital margins of the two are also affected. While the large corporate players could survive at least partly the commodity price shocks, the latter are severely affected by it. With market integration, similar concentration has also occurred on the buyer side. Thus market trading is vitiated by the oligopolistic and oligopsonistic tendencies as witnessed in many other global commodity markets. These changes which originate within the tea trade also tell upon the ultimate viability of plantation operations and thus on the ultimate deal offered to the tea workers (Sankrityayana, 2006).

From the above discussions it can be understood that with the shift from foreign ownership to domestic ownership, withdrawal of foreign capital has occurred and the capital availability for plantation operations seems to have squeezed.

This change has, further, seemed to have put a pressure on the plantation sector to maintain the viability of its plantation operations.

2.2.2 Shift from Export Market to Domestic Market: Phase II (1970s onwards)

A regular feature of the world commodity markets have been periodic booms followed by long slacks. This phenomenon is not an exception for the Indian tea trade as well. It has witnessed severe historical slacks in the 1890s during First World War, in the late-1920s and during Second World War. During these phases, the Indian tea industry was closely integrated with the international tea trade through the London auctions and the domestic consumption of tea was low (Sankrityayana, 2006).

However, over the years, the market orientation of the sector has been moving away from export market to domestic market. This is evident from Table 2.1. There has been a continuous fall in India's share in the total world exports of tea from 50.32 percent in 1950 to 11.35 percent in 2007. From 1970 onwards, the share of domestic consumption in total production exceeded the share of exports in total production. In 1951, the share of consumption in total production was 25.51 percent which steadily rose to 79.68 percent in 2007; whereas the share of exports in total production has continuously declined from 72.17 percent in 1951 to 18.21 percent in 2007.

Table 2.1: Share of Indian Tea in World Exports and Share of Domestic Consumption and Exports of tea in Total Tea Production

Year	Share of India's Exports in World Tea Exports	Share of Domestic Consumption of Tea in Total Tea Production	Share of Tea Exports in Total Tea Production
1950	50.32	25.51*	72.17
1960	36.43	39.49	60.13
1970	31.08	50.89	48.35
1980	26.17	60.79	39.49
1990	18.51	69.41	29.16
2000	15.53	77.10	24.42
2007	11.35	79.68	18.12

Source: computed from various issues of Tea Statistics

Note: ** figure '25.51' is for the year 1951 as data for consumption was not available for 1950.

The main export markets to the Indian tea are Commonwealth of Independent States (CIS)² countries, Britain, Germany, Holland, Iran, Poland and Australia. In the world market for tea, the major competitors are Sri Lanka, Kenya, China and Indonesia. While China is the major producer of green tea, Sri Lanka and Indonesia produces mainly orthodox varieties of tea and Kenya is basically a CTC (crush, tear and curl) tea producing country. This decline in the share of the Indian tea in the world market has been attributed to the increased competition faced from low-cost competitors and exporting countries like Sri Lanka, China, Indonesia, Kenya and also of late from Vietnam; various tariff and non-tariff measures imposed by some of the tea importing countries like Russia, Egypt and Iran; lower offtake by Russia due to change in consumer preferences; and higher price of tea due to high cost of production³. Also because of the presence of substantial domestic market, export of tea has not been a primary concern for the tea sector. The focus was on the domestic market rather than on creation of a competitive product to meet global demand. The domestic consumption of tea is significant in relation to total world exports of tea. However, besides these reasons, this shift from export market to domestic market can also be a reflection of the resultant effect of shift of the ownership pattern. Previously during the period of foreign ownership, tea sector must have enjoyed the advantage from colonial informal cultural linkages. But with the change to domestic ownership, the sector seems to be losing this linkage that it previously used to enjoy. It is now exposed to open market competition and is indeed seen to be losing out to other tea exporting countries.

Primarily due to the growth of the large domestic market, there has been a change in the catering of the demand for tea by the tea majors. The product tea may be classified generally into two: CTC tea and Orthodox tea⁴. While the domestic demand for CTC tea is high, there exists a high demand for orthodox

² CIS includes Russia, Kazakhstan, Ukraine and Uzbekistan

³ Report of the Task Force on Plantation Sector 2006, Ministry of Commerce and Industry, Government of India

⁴ CTC tea and Orthodox tea pertains to two different methods of processing of black tea. The CTC method is said to be highly efficient as opposed to the orthodox method that is very labour intensive. <http://ezinearticles.com/?Production-of-Tea---Orthodox-Tea-vs-CTC-%28Crush,-Tear,-Curl%29-Tea.&id=963762> (accessed on 8th of June, 2011)

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tea in the export market. To cater to the growing domestic market, the tea majors are switching from the production of quality orthodox tea for export market to the production of cheaper and plainer grades of CTC tea for the price conscious Indian consumers (Sankrityayana, 2006). In India, the ratio of CTC to orthodox is now 85:15, largely reflecting a growing domestic market and shrinking exports.

This is evident from Table 2.2. There has been a declining trend in the production of orthodox tea. In 1971, production of CTC tea exceeded that of orthodox tea. This trend has continued even in recent years. It also needs to be noticed that it was from 1970 onwards that the share of consumption in total production exceeded the share of exports in total production (as seen in Table 2.1).

Table 2.2: Production of Tea in India by Method of Manufacture (in million kgs)

Year	CTC Tea	Orthodox Tea
1961	122.1	191.3
1971	240.0	164.6
1981	375.5	183.1
1991	603.6	126.9
2001	759.5	79.2
2007	887.9	78.6

Source: Tea Board of India, 2007

These trends points out that with the growing domestic market, the Indian tea industry is partially insulated from the extremes of the commodity market fluctuations but it also reflects the gradual loss of India's domination in the global tea markets.

2.2.3 Shift from Large Growers to Small Growers⁵: Phase III (1980s onwards)

Earlier estates (large growers) were synonymous with the tea sector, but in recent years the increasing advent of small tea growers has made both estates and small growers important components of the tea sector.

The traditional estate model was established during the colonial period. It was characterized by large holdings, corporate ownership, high capital base, monoculture, a hierarchical labour management system and a large workforce

⁵ Small growers are those with an area of up to 10.12 hectares while large growers are those having above 10.12 hectares of land.

employed as hired wage labour. Due to the need for close coordination between farm-level production and processing, tea was preferentially cultivated in large estates. These estates were vertically integrated system with their own processing facilities (Herath and Weersink, 2009). The establishment of estates are said to be guided by not just the principle of economies of scale but also “because it was the most effective organization for extracting economic benefits accruing from the exploitation of sparsely populated virgin areas, which typically required for a development process that was based on the exploitation of unused natural resources” (Hayami and Damodaran, 2004: 3993). Developing these virgin lands required large capital outlays- land had to be cleared, and developed and physical infrastructure such as roads, irrigation systems, bridges and docking facilities had to be constructed. With the initial land opening stage being over and infrastructure being decently established, the small growers have been said to venture into tea production (Hayami and Damodaran, 2004). Further the emergence of small growers has been attributed to state interventions such as small farm support programs, land reforms; and to increased transaction, production and management costs in the estates (Barlow, 1997; Hayami and Damodaran, 2004; Herath and Weersink, 2009; Halayya, 1969).

Thus this system of production gradually gave way to small grower sector. The small grower sector comprises of farms growing plantation crops together with other crops and is mainly reliant on family labour (Hayami and Damodaran, 2004). These small farms grow the green tea leaves but they do not have their own processing facilities (Sivaram, 2002). Independent tea processors outsource their green leaf tea from these small growers (Herath and Weersink, 2009).

The trend of increasing importance of the small holders in tea plantations in terms of their number and their contribution to area and production of tea is evident from Table 2.3 and Table 2.4⁶. Table 2.3 shows that the number of small growers has been increasing over the period of 1960 to 1990 but their share in

⁶ Tea Board provides data on the number, area and production classified according to the size of the land holdings from 1956 onwards. However, it needs to be mentioned here that there was no uniform categorization of the holdings. It was only after 1998, that a uniform classification of the size of the land holdings has been used to differentiate between small growers and large growers. As such the figures in the two tables may not be strictly comparable but since our purpose is to show the growing importance of small growers over the years, the two tables have been put up to convey the same.

area and share in total tea production was negligible. It needs to be pointed out that the prevalence of small growers was greater during that period in the South Indian states than in the North Indian states. The growth of small holders is a recent phenomenon for the North Indian tea plantations. The proliferation of small tea-growing operations in North India had occurred around mid 1980s (Sarkar, 2008).

Table 2.3: Number, Share in Area and Share in Production of Tea for Small and Large Growers (1960-1990)

Year	Small Growers				Large Growers			
	Size of Land Holding	Number	Share in Total Area (%)	Share in Total Production (%)	Size of Land Holding	Number	Share in Total Area (%)	Share in Total Production (%)
1960	Up to 4.05 ha	7443	2.1	0.01	Above 4.05 ha	2056	97.91	99.99
1970	Up to 5 ha	8415	2.1	0.01	Above 5 ha	1803	97.92	99.99
1980	Up to 8.09 ha	10408	2.6	0.02	Above 8.09 ha	1597	97.42	99.98
1990	Up to 8.09 ha	10517	2.8	0.06	Above 8.09 ha	1458	97.23	99.94

Source: Various issues of Tea Statistics, Tea Board

However, Table 2.4 shows that there has been a phenomenal increase in the number, area and production under small growers from 1998 onwards. The extent of the growth of the small grower sector in the early years did not become visible because the Tea Board began to include them in its statistical estimates mainly from 1998 onwards (Sarkar, 2008).

From Table 2.4, it can be observed that the number of small growers have been growing at the rate of 6.88 percent while the large growers grew at 0.60 percent from 1998 to 2007. Thus indicating a higher proliferation of small growers compared to the large growers over the years. From 1998 to 2007, area under tea cultivation for the small growers grew at the rate of 10.05 percent while for large growers, it grew at the rate of 0.29 percent. The share of the area under small growers was 14.5 percent in 1998 which steadily increased to 28.1 percent in 2007. For the large growers, the share in area has been declining from 85.5 percent in 1998 to 71.9 percent in 2007. While the average size of holdings under small

growers increased from 0.79 hectare in 1998 to 1.03 hectare in 2007; that for the large growers declined from 253 hectares in 1998 to 246 hectares in 2007.

Table 2.4: Number, Area and Production of Tea for Small and Large Growers (1998- 2007) (Area in hectares and Production in million kg)

Year	Small Growers (Up to 10.12 ha)			Large Growers (Above 10.12 ha)		
	Number	Area	Production	Number	Area	Production
1998	86517	68598 (14.5)	97.46 (11.15)	1598	405428 (85.5)	776.65 (88.85)
1999	97267	83152 (17.0)	133.94 (16.22)	1600	407048 (83.0)	691.99 (83.78)
2000	110396	97598 (19.4)	154.21 (18.21)	1614	406768 (80.6)	692.71 (81.79)
2001	115025	101345 (19.9)	163.59 (19.16)	1634	408461 (80.1)	690.34 (80.84)
2002	126167	106154 (20.6)	178.09 (21.24)	1634	409678 (79.4)	660.39 (78.76)
2003	127366	109198 (21.0)	180.66 (20.57)	1661	410400 (79.0)	697.47 (79.43)
2004	127366	110787 (21.2)	201.96 (22.62)	1661	410616 (78.8)	691.01 (77.38)
2005	139041	142985 (25.7)	231.29 (24.45)	1672	412626 (74.3)	714.68 (75.55)
2006	141544	154099 (27.2)	249.71 (25.43)	1673	412921 (72.8)	732.09 (74.57)
2007	157504	162431 (28.1)	257.46 (26.10)	1686	416027 (71.9)	728.97 (73.90)
Compound Annual Growth Rate (%)	6.88	10.05	11.40	0.60	0.29	-0.70

Source: Various issues of Tea Statistics, Tea Board

Note: Figures in brackets indicates the shares of small and large growers in the total area and production of tea

Regarding the production of tea, the growth rate was 11.40 percent for the small growers whereas for large growers, production has witnessed a negative growth rate of 0.70 percent from 1998 to 2007. There has been a steady rise in the share of small growers in total production from 11.15 percent in 1998 to 26.10 percent in 2007. No doubt the contribution of large growers in total production is higher than that for the small growers but the share of large growers in total production shows a declining trend from 88.85 percent in 1998 to 73.90 percent in 2007. Nevertheless, the Indian tea industry can be said to be still estate oriented with closely supervised labour-intensive modes of tea production.

In the earlier part of this period, the expansion in plantation areas beyond the peripheries of the estate sector was accompanied by increased outsourcing of

green leaf purchases by the established estate factories, this showed up in the enhanced productivity figures without equivalent increase in labour deployment (Sankrityayana, 2006). Then there was the emergence of privately owned bought leaf factories⁷ and government sponsored cooperative factories.

Table 2.5 shows the changes in the number and estimated production of Co-operative⁸ and Bought Leaf Factories in India for 1998 and 2004. In 1998, a total of 246 BLFs and 22 cooperative factories were collectively producing 10.45 percent of total tea produced in the country as a whole. At that time the distribution of the BLFs (163) and cooperatives (18) was more concentrated in South India and they together contributed to 7 percent of made tea. While the BLFs (83) and cooperatives (4) in North India contributed to 30.41 million kg of tea (3 percent) and there were no cooperative tea factories in either Assam or West Bengal during that time. This situation has changed dramatically in the course of six years. By 2004, in North India there were 264 BLFs and 5 cooperatives together producing 127.99 million kg of tea (14 percent) whereas in South India, there were 179 BLFs and 17 cooperatives collectively producing 94.73 million kg of tea (11 percent). Together, they contributed about 25 percent of total tea production in the country.

⁷ Bought Leaf Factory is a tea factory which buys from small growers either its entire requirements of green leaves or a part of its requirement. Many of the BLFs do not own even an acre of tea land. Some of them own estates but they are too small to feed the factories fully.

⁸ Co-operative tea factories were started with a view to buying the green leaves of small units. They are sponsored and subsidized by the Tea Board.

Table 2.5: Number and Estimated Production of Co-operative Factories and Bought Leaf Factories

States	Cooperative Factory (CF)/ Bought Leaf Factory (BLF)	1998		2004	
		Number	Production (million kg)	Number	Production (million kg)
Assam	BLF	61	21.43	178	74.89
	CF	-	-	1	0.05
West Bengal	BLF	22	7.43	80	50.88
	CF	-	-	-	-
North India Total	BLF	83	28.86	264	127.43
	CF	4	1.55	5	0.56
Tamil Nadu	BLF	151	48.14	165	78.52
	CF	17	11.16	15	14.12
Kerala	BLF	12	1.41	12	1.12
	CF	1	0.24	2	0.85
South India Total	BLF	163	49.55	179	79.76
	CF	18	11.4	17	14.97
All India Total	BLF	246	78.41	443	207.19
	CF	22	12.95	22	15.53

Source: Compiled from Tea Digest 2005, Tea Board of India

Note: North India here comprises Assam, West Bengal, Tripura and Himachal Pradesh while South India comprises Tamil Nadu, Kerala and Karnataka

Having looked at the trends in changes in the size of holdings at an aggregate level, now to understand the regional variations in the trends in the area under small growers and large growers, the geographical distribution of the small holdings and estate sector in India for 1998 and 2004 has been analysed.

Table 2.6 shows, in 2004 the percentage share of area under the small growers is highest for Tamil Nadu (57.62 percent), followed by other states (45.35 percent), Assam (15.18 percent), Kerala (13.34) and West Bengal (9.29). In all the states, the trend of increase in the share of area under small growers and decrease in the share of area under large growers is noticeable. The share of area under small growers have shown a sharp increase for the 'other states' perhaps indicating the success of the promotional measures undertaken by the Tea Board of India to encourage small tea sector. These promotional measures might have been influenced by factors such as land reforms, increased costs of the large holdings and due to the benefits of the infrastructure reaching the remote production zones (Hayami and Damodaran, 2004).

Table 2.6: Trends in State-wise Distribution of Area under Small and Large Growers for 1998 and 2004
(Area in hectares)

State	1998		2004	
	Small Grower (up to 10.12 ha)	Large Grower (Above 10.12 ha)	Small Grower (up to 10.12 ha)	Large Grower (Above 10.12 ha)
Assam	25923 (10.3)	225702 (89.7)	41249 (15.18)	230519 (84.82)
West Bengal	2996 (2.84)	102628 (97.16)	10590 (9.29)	103413 (90.71)
Tamil Nadu	31276 (49.22)	32267 (50.78)	43774 (57.62)	32204 (42.38)
Kerala	4796 (13.05)	31952 (86.95)	4950 (13.34)	32157 (86.66)
Others	3607 (5.26)	12880 (3.18)	10224 (45.35)	12323 (54.65)
All India	68598	405429	110787	410616

Source: Various issues of Tea Statistics, Tea Board

Note: Figure in brackets indicates the share of respective states in the total area under tea

Others include the states of Tripura, Karnataka, Himachal Pradesh, Uttaranchal, Mizoram, Manipur, Nagaland, Orissa, Arunachal Pradesh, Meghalaya, Sikkim, Mizoram, and Bihar.

In some states the emergence of small growers can be attributed to the state policies related to land redistribution. For instance, in West Bengal the state policy of land redistribution was followed aggressively after 1970's under which ceiling surplus land vested with the state were progressively assigned to landless farmers, both for cultivation and homestead purposes, thus leaving less land for new tea leases. The tea industry also appreciated that the vested land available with the state Government may not be released to the corporate sector. Instead, the tea industry proposed the settlement of such lands with small tea growers, preferably ex-tea workers and others living in the vicinity of the tea estates. These growers were supposed to sell green leaf to the nucleus factories at prices determined on the basis of green tea quality and the prices of made tea. This process started by the tea industry led to the birth of several 'project tea gardens' in the traditional and non-traditional tea growing areas of West Bengal during the late 1980s and the early 1990s. As these project gardens initially came up in the periphery of the existing tea estates and sold their green leaf to existing tea factories, their growth was invisible then. But later their formal registration with the government and the setting up of several new BLFs drew considerable

attention to them. While in case of Assam, the industry noted that the resumed tea estate lands that had been allocated to the local farming populations by the Government of Assam were not being used as such because of their unsuitability for paddy cultivation. As legal problems existed in the reversion of the land back to tea, so the idea of parceling out the land to small growers for the cultivation of tea was conceived (Sankrityayana, 2006). While in south India mainly Nilgiris, the small farmers ventured into tea plantations in the early 1930s after the British planters had opened up the area by building up the basic infrastructure (Hayami and Damodaran, 2004)

The increased growth of small growers in recent years can also, perhaps, be the result of shift from export to domestic market. As has already been pointed out that the growing domestic market has led to switching over from quality orthodox to cheaper CTC tea for the price conscious Indian customers. Since the domestic market is price conscious, the effort of the producers will be to restrict cost at the production stage. Further, production of quality tea is not a major concern for the producers in case of CTC tea. All these factors, *inter alia*, must have led to reliance on the small growers for the supply of green leaves instead of the producers incurring a high cost of maintaining more labour force in its rolls.

Thus the tea sector at present has evolved through *inter alia*, three main phases over the years. These phases relates to the three fundamental structural shifts. The sector was established with British capital mainly with the purpose of export orientation and cultivation was undertaken in large holdings. This has given way to national ownership, decline in the export market and increasing importance of the domestic market and growing proliferation of the small holder sector. In the light of these changes, the performance of the tea sector has been examined in the following section.

2.3 Performance of the Indian Tea Sector

Mitra (1991) has pointed out that for analysing the working of the tea sector, two major aspects that are required to be considered are production and marketing.

Where the two important components of tea production are area under cultivation and yield (production per hectare), marketing is concerned with both sales in domestic markets and exports. Keeping in view these two important aspects, to assess the performance of the tea industry over the years, an analysis of the trends in the growth rates of variables such as area, production, yield, exports, and domestic consumption is conducted.

2.3.1 Trends in Area, Production and Yield

Unlike annual crops, tea is a tree crop with a long gestation period between planting and harvesting. Undeniably the production function of tea depends on several factors such as the existing number of tea bushes, their age structure, extension, replanting and replacement activities, agro-climatic conditions and not just on the area under cultivation and yield. But here the analysis has focused on only two important aspect of production, namely area under cultivation and yield.

The trends in area, production and yield of tea from 1950 to 2007 have been examined below. Table 2.7 shows an increase in the growth rate of area under tea cultivation over the years. In 1950, the area under tea was 3.15 lakh hectares which increased to 5.78 lakh hectares in 2007. After 1990 there was a sharp rise in area mainly reflecting the cultivation of tea being taken up by small growers in the non-traditional⁹ areas as was seen in the previous section. Tea being an agro-based commodity is undoubtedly subjected to the vagaries of nature. Despite experiencing adverse agro-climatic condition in tea growing areas in many years, the Indian tea sector has been able to maintain substantial growth in relation to volume of tea production over the years (Tea Board, 2004). In 1950, the production of tea was 278.21 million kg and in 2007, it stood at 986.43 million kg. The growth rate of production shows an increasing trend from 1950 to 1980, and there is a deceleration in the 1990s; and an increase in 2007. The trend in the

⁹ Major tea growing states such as Assam, West Bengal, Tripura, Tamil Nadu, Kerala, Karnataka, Himachal Pradesh and Uttaranchal are also the traditional tea growing areas. Tea plantation has come up recently in states like Arunachal Pradesh, Nagaland, Meghalaya, Bihar, Orissa which are the non-traditional areas.

growth rate of yield shows a similar pattern wherein the growth rate was increasing from 1950 to 1980, and then it was followed by a deceleration in 1990 and a decline in 2000 and an increase in the year 2007. So it can be said that from 1950 to 1980, growth rate of area, production and yield showed an increasing trend. In the 1980s and 1990s, though area under tea was growing, there was deceleration and even a decline in the growth rate of production and yield. However, during the last phase, there was an increase in the growth rate of area, production and yield.

Table 2.7: Annual Compound Growth Rates of Area, Production and Yield (1950-2007)

Variables	1950	1950 /1960	1960 /1970	1970 /1980	1980 /1990	1990 /2000	2000 /2007	Growth Rate (1950- 2007)
Area under Tea (hectares)	315656	330738 (0.47)	354133 (0.69)	381086 (0.74)	416269 (0.89)	504366 (1.94)	578458 (1.98)	1.07
Production (million kg)	278.21	321 (1.44)	419 (2.69)	569 (3.12)	720 (2.38)	847 (1.63)	986 (2.20)	2.25
Yield (kg/hectare)	881	971 (0.98)	1182 (1.99)	1494 (2.37)	1730 (1.48)	1679 (-0.30)	1705 (0.22)	1.17

Source: Computed from the data given in the various issues of Tea Digest.

Note: The Figures in the brackets indicates the annual average compound growth rates.

In order to get an idea of the trends in the regional variations¹⁰ of these above discussed variables and examine the relative contribution of tea growing regions to the overall growth, region wise trends have been analysed in Table 2.8.

But before getting into the analysis, it is important to discuss in brief the location of the tea plantations in the country. Tea plantations are mainly situated in the remote hilly areas of North-Eastern and Southern states of India. The main tea growing regions are located in the states of Assam and West Bengal in the north; and Tamil Nadu and Kerala in the south. Besides these regions, tea is cultivated to a small extent in Tripura, Karnataka, Himachal Pradesh, Uttaranchal,

¹⁰ District wise data showing the shares of the states in total area, production and labour employed; and number of estates is given in Table 2A.1.1 and Table 2A.1.2 respectively in Appendix.

Mizoram, Manipur, Nagaland, Orissa, Arunachal Pradesh, Meghalaya, Sikkim, Mizoram, and Bihar.

Table 2.8 shows that the area under tea has been recording positive growth throughout the years and same trend is visible for all the tea growing states except Kerala. While Tamil Nadu had a remarkable growth in area (6.78 percent) during 1990s, the growth rate has decreased in the last phase. The growth rate in production has steadily increased for both Assam and West Bengal from 1950 to 1980. Despite a decrease in growth rate in 1980s, West Bengal have registered higher growth rate in production from 1990s to 2007. While for Assam, there was a continuous fall in growth rate in production in 1980s and 1990s with only a marginal increase in 2000 to 2007. For Kerala, the growth rate in production has fallen throughout the period except for 1970s. Tamil Nadu experienced a decrease in the growth rate in production from 1950 to 1980, with an increase in 1980s, a drastic fall in 1990s and a marginal increase during 2000 to 2007. Regarding yield, the growth rate had increased for Assam from 1950s to 1970s but thereafter it has continuously decreased and even declined in 2000 to 2007. Except for a decrease in the 1950s and 1980s, the growth rate of yield has increased for West Bengal throughout the period. For Tamil Nadu, the growth rate in yield decreased from 1950 to 1980, increased in 1980s but again sharply declined in 1990s followed by an increase in the last phase. While Kerala experienced increase in the growth rate in yield in the early years of 1950s and 1960s, it is seen to decline during 1970s, with an increase in 1980s and a further decline after 1990s till recent years.

What emerges from the above analysis is that West Bengal seemed to be doing comparatively better than the other states over the years in terms of growth rate in area, production and yield except for a fall in the growth rate of latter two variables in 1980s. Also in the last phase (2000 to 2007), among all other states West Bengal is seen to maintain positive growth in not only area but also in production and yield.

Table 2.8: Region-wise Annual Compound Growth Rates of Area, Production, Yield (1950-2007)

States		1950	1950/ 1960	1960/ 1970	1970/ 1980	1980/ 1990	1990/ 2000	2000/ 2007	Growth rate % (1950/ 2007)
Assam	A	155671	162013 (0.40)	180065 (1.06)	200569 (1.08)	230363 (1.39)	266512 (1.47)	321319 (2.71)	1.28
	P	148	158 (0.66)	212 (2.98)	301 (3.57)	388 (2.57)	449 (1.48)	512 (1.89)	2.20
	Y	951	972 (0.22)	1178 (1.94)	1449 (2.09)	1685 (1.52)	1686 (0.01)	1593 (-0.81)	0.91
West Bengal	A	79578	82358 (0.34)	87989 (0.66)	93497 (0.61)	101170 (0.79)	107479 (0.61)	115095 (0.98)	0.65
	P	82	82 (0.00)	101 (2.11)	133 (2.79)	150 (1.21)	182 (1.93)	236 (3.84)	1.87
	Y	1030	990 (-0.40)	1150 (1.51)	1424 (2.16)	1480 (0.39)	1689 (1.33)	2035 (2.70)	1.20
Tamil Nadu	A	33374	32518 (-0.26)	34587 (0.62)	37030 (0.68)	38603 (0.42)	74398 (6.78)	80462 (1.13)	1.56
	P	21	38 (6.11)	56 (3.95)	74 (2.83)	111 (4.14)	132 (1.73)	161 (2.86)	3.63
	Y	629	1160 (6.31)	1606 (3.31)	1999 (2.21)	2864 (3.66)	1772 (-4.69)	1995 (1.71)	2.05
Kerala	A	33348	39672 (1.75)	37554 (-0.55)	36130 (-0.39)	34686 (-0.41)	36940 (0.63)	37137 (0.08)	0.19
	P	22	38 (5.62)	43 (1.24)	54 (2.30)	61 (1.23)	69 (1.23)	56 (-2.94)	1.65
	Y	660	967 (3.89)	1526 (4.67)	1484 (-0.28)	1749 (1.66)	1866 (0.65)	1507 (-3.01)	1.46

Source: Various issues of Tea Statistics,

Note: 1) A=Area (hectares); P=Production (million kg); Y=Yield (kg/ha)

2) The Figures in the brackets indicates the annual compound growth rates.

2.2.2 Trends in Exports and Domestic Consumption

Since the critical issues confronting plantation labour in the tea sector are closely connected with the form and nature of the Indian tea trade (Sankrityayana, 2006), so in this section we will examine the trends in the exports of tea, share in world exports and domestic consumption from 1950 to 2007.

As can be seen from Table 2.9, export of tea have averaged around 200 million kg over the year from 1951¹¹ to 2007. There was a decline in the growth rate of export of tea from 1951 to 1960 followed by an increase from 1960 to 1980 but the growth rate has been declining since 1980 onwards to 2007. The growth rate in

¹¹ The year 1951 is taken here instead of 1950 because the data for domestic consumption of tea was not available for 1950.

production shows an increasing trend from 1951 up till 1980, followed by deceleration in the 1990s; and an increase from 2000 to 2007. While there has been an increase in the magnitude of domestic consumption from around 73 million kgs in 1951 to 786 million kgs in 2007, there has been a continuous fall in its growth rate from 6.35 percent in 1951-1960 to 2.68 percent in 2000-2007. This may perhaps reflect the increasing competition faced by tea from other beverages¹². The average annual compound growth rate of export, production, and domestic consumption of tea from 1951 to 2007 were: -0.25, 2.24 and 4.34 percent, respectively. These trends are indicative of the fact that the market orientation of tea has been shifting from the export market to the domestic market.

Table 2.9: Compound Annual Growth Rates of Export, Production, and Domestic Consumption of Tea (1951-2007)

Variables	1951	1951/ 1960	1960/ 1970	1970/ 1980	1980/1 990	1990/ 2000	2000/ 2007	Growth Rate % (1951/ 2007)
Export (million kg)	206	193 (-0.72)	202 (0.47)	225 (1.06)	210 (-0.68)	207 (-0.15)	179 (-2.06)	-0.25
Production (million kg)	285	321 (1.32)	419 (2.69)	569 (3.12)	720 (2.38)	847 (1.63)	986 (2.20)	2.24
Domestic Consumption (million kg)	73	127 (6.35)	213 (5.32)	346 (4.97)	500 (3.75)	653 (2.71)	786 (2.68)	4.34

Source: computed from the data given in the various issues of Tea Digest.

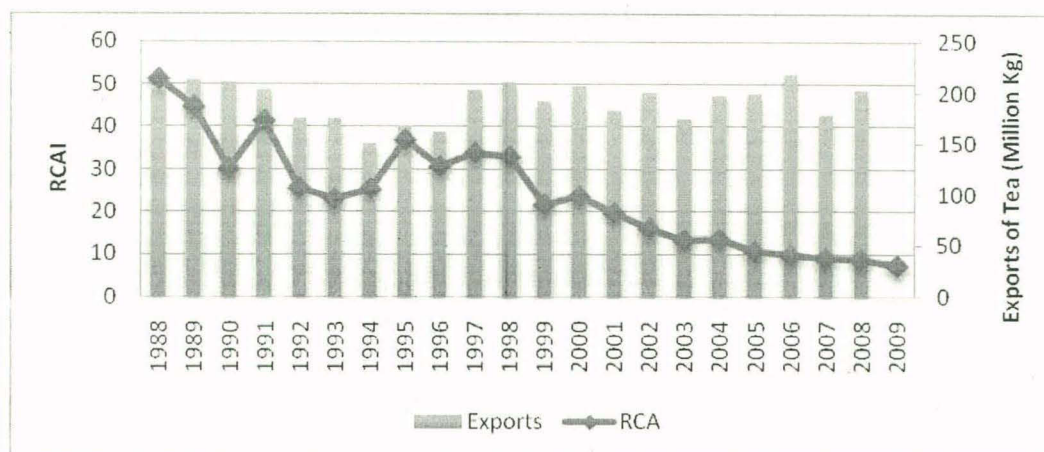
Note: Figures in the bracket indicates the annual average compound growth rates.

Given the fall in India's tea export, in order to examine the competitiveness of the Indian tea sector, Revealed Comparative Advantage Index was calculated for 1988 to 2009¹³ (see Figure 2.1). A value of less than unity implies that the country has a revealed comparative disadvantage in the product. Similarly, if the index exceeds unity, the country is said to have a revealed comparative advantage in the product. RCAI is seen to be falling over the years; however, its value has been greater than unity which suggests that India still do have a revealed comparative advantage in tea. In 2009, the RCA was 7.35.

¹² Report of the Taskforce on the Plantation Sector, 2006

¹³ The data has been taken from 1988 onwards as earlier years data was not available. The calculation of RCAI is given in Table 2A.1.1 in the appendix.

Figure 2.1: Revealed Comparative Advantage of Indian Tea Sector and Total Exports of Tea (1988-2009)



Source: Computed from UN Comtrade data

From the preceding analysis, it can be understood that the performance of the tea sector has been impressive in terms of growth in area, production and productivity over the years, the exception being the period of 1980s to 2000 where even though area under tea was growing; there was a deceleration in the growth rate of production and even a decline in the growth rate of yield. Considering the regional variations in the growth rate of these variables over the years, area has been steadily increasing for Assam and West Bengal; it has decreased for Tamil Nadu except for the period of 1990s and for Kerala there has been a steady decline. Between 1980 and 2000, except for West Bengal, all other states experienced deceleration in the growth rate of production and yield. However, from 2000 onwards there seems to be improvement in Tamil Nadu and Assam, though growth rate in yield is seen to decline in latter. While Kerala is still experiencing decline in growth rate of both production and yield. Thus it can be said that the period of 1980s and 1990s had been crucial for the tea sector and among all other states, West Bengal is seen to be performing relatively better not only in terms of an increase in the growth rate of area but also of production and productivity.

While that was about the performance in terms of production of tea, on the trade front the sector seems to have suffered a setback since 1980s onwards. The share

of Indian tea in world exports is showing a declining trend. The change in market orientation of tea from the export to the domestic market is seen. Such a trend shows that the Indian tea industry is partially insulated from the extremes of the commodity market fluctuations but it also reflects the gradual loss of India's domination in the global tea market. However, the Indian tea sector is found to be competitive with value of RCAI greater than unity but the fact remains that like any other sectors, plantations too is exposed to global economic trends which had evolved since the mid-1980s.

2.4 Conclusion and Implications for Labour Market

It is a known fact that the demand for labour is a derived demand, so the observed three major structural changes in the tea sector over the years, namely, change from foreign to domestic ownership, shift from foreign to domestic market and shift from large growers to small growers is bound to have their effect on the labour market in the plantations. In the light of the previous discussions, the possible implications of each of these major changes on the labour market can be outlined as follows.

As foreign ownership that existed during the pre-independence period gave way to domestic ownership of the sector, it can be expected to have a change in the recruitment practices of labour. Several studies have indeed recounted the exploitative recruitment practices that used to be followed during the colonial regime and the various legislations undertaken to improve the conditions of workers in the post-independence period (Behal and Mohaptra, 1992; Gupta, 1992). With the change in ownership, the domestic players are seen to be losing their export market and domestic market is seen to be gaining importance. To cater to the growing domestic market, the tea majors are switching from the production of quality orthodox tea for export market to the production of cheaper and plainer grades of CTC tea. It is important to note that, because of the relatively continuous process which CTC entails, the factory labour requirement is just about half that necessary for orthodox production. This trend of lower labour absorption in tea processing is expected to continue with the growing

importance of the domestic market (Sivaram, 2002). Further, along with these changes, it was seen that on the one hand there is the traditional estate sector or large growers and on the other hand there is gradual emergence of the small holder sector. A study of the cost of production structure¹⁴ of these two modes of production (Sarkar, 2008) has pointed out that while the former is characterised by low bush productivity due to old age of bushes, existence of a permanent labour force; applicability of statutory labour provisions, high cost of supervision, high interest burden, and hence higher cost of production; the latter is characterized by higher productivity of young plants, no permanent workforce, but greater reliance on unpaid family labour, not constrained by labour legislations, hence lower cost of production (Sarkar, 2008). Hence the emergence of small growers and their comparatively flexible cost and production structure can be expected to lead to a rise in the use of unpaid family workers, who are invisible; and it might also lead to lower labour absorption and casualisation of the labour force in the estate sector.

The analysis of the fundamental structural shifts and the performance of the sector enabled to identify the various labour issues related to the tea plantations. Given these issues at hand, it is necessary to understand the structure of employment of the tea plantation workers and then dwell on these issues in greater detail. This has been undertaken in the next chapter.

¹⁴ There exists no secondary data on the cost structure of the estate sector and small holder sector; hence the arguments are based on given literature where information on this aspect has been collected through field survey.

Appendix 2A.1

Table 2A.1.1: District wise Share of Major Tea Growing Regions in Total Area under Tea Cultivation, in Total Tea Production and in Total Employment (2007)

District/ States	Area (in Hectares)	% Share in Total Planted Area	Production (million kgs)	% Share in total Tea Prod.	Average Daily Number of Labour Employed*	% Share in Total Employment
Darrang	41710	13	85	17	117719	19
Goalpara	4451	1	7	1	9987	2
Kamrup	3953	1	4	1	9527	2
Lakhimpore	6757	2	9	2	204186	33
Dibrugarh	122514	38	225	44	13578	2
Nowgong	8758	3	12	2	19054	3
Sibsagar	94611	29	119	23	160077	26
Cachar	32312	10	44	9	69824	11
Karbi Anlog	2185	1	2	0	4954	1
North Cachar	4069	1	5	1	10837	2
Total Assam	321319	56	512	52	619743	49
Darjeeling	17818	15	10	4	53492	20
Terai	24359	21	88	37	39680	15
Dooars	72918	63	139	59	168867	64
Total West Bengal	115095	20	236	24	262039	21
Kanyakumari	310	0	0	0	208	0
Tirunelveli	818	1	1	1	2098	1
Madurai	550	1	2	1	3365	1
Coimbatore	12628	16	32	20	30067	11
Nilgiris	66156	82	125	78	230647	87
Total Tamil Nadu	80462	14	161	16	266385	21
Palghat	860	2	2	4	2492	3
Trichur	530	1	2	3	1995	2
Trivandrum	433	1	0	0	1024	1
Quilon	1149	3	0	0	699	1
Ernakulam	827	2	0	0		0
Idukki	27692	75	38	69	68119	75
Wayanad	5470	15	13	24	14877	16
Total Kerala	37137	6	56	6	90575	7
Total All India	578458		986		1259500	

Source: Tea Statistics, Tea Board of India

Note: ** Figures for the average daily number of labour employed is given for the year 2006, as the figures were not available district wise for the year 2007

Table 2A.1.2: Distribution of Tea Estates across India in 2004

Districts/States	Number of Tea Estates
Darrang	1540
Goalpara	263
Kamrup	54
Lakhimpur	461
Dibrugarh	22855
Nowgong	364
Sibsagar	17149
Cachar	206
North Cachar	8
Karbi Anglong	393
Total Assam	43293
Darjeeling	85
Dooars	2985
Terai	5639
Total West Bengal	8709
Tripura	1567
Bihar	981
Uttaranchal	80
Himachal Pradesh	3719
Manipur	433
Sikkim	4
Arunachal Pradesh	63
Nagaland	1458
Orissa	1
Meghalaya	45
Mizoram	276
North India Total	60629
Kanyakumari	7
Tirunelveli	4
Madurai	5
Coimbatore	52
Nilgiris	62145
Total Tamil Nadu	62213
Palghat	33
Malapuram	1
Trichur	1
Trivandrum	6
Quilon	103
Ernakulam	2
Kottayam	954
Idduki	4956
Wynaad	97
Total Kerala	6153
Chikmagalur	29
Coorg	2
Hasan	1
Total Karnataka	32
Total South India	68398
Total All India	129027

Source: Tea Statistics, Tea Board of India

Appendix 2A.2: Revealed Comparative Advantage Index

Revealed Comparative Advantage Index shows how competitive is a product in countries' export compared to the products share in world trade. A product with high RCA is competitive and can be exported to countries with low RCA. The RCA index of country 'i' for product 'j' is often measured by the product's share in the country's exports in relation to its share in world trade:

$$RCA_{ij} = \frac{(x_{ij}/X_{it})}{(x_{wj}/X_{wt})}$$

Where x_{ij} and x_{wj} are the values of country 'i's exports of product j and world exports of product j and where X_{it} and X_{wt} refer to the country's total exports and world total exports. A value of less than unity implies that the country has a revealed comparative disadvantage in the product. Similarly, if the index exceeds unity, the country is said to have a revealed comparative advantage in the product.

The RCAI has been calculated by using data on exports from UN COMTRADE. 4 digit HS classification has been used.

Table 2A.2.1: Revealed Comparative Advantage Index of Tea (1988 to 2009)

Year	Share of Tea in India's Export	Share of Tea in World Trade	RCA
1988	0.0298	0.0006	51.17
1989	0.0327	0.0007	44.86
1990	0.0326	0.0011	30.11
1991	0.0272	0.0007	41.49
1992	0.0177	0.0007	25.54
1993	0.0149	0.0006	23.09
1994	0.0117	0.0005	25.23
1995	0.0109	0.0003	36.85
1996	0.0085	0.0003	30.79
1997	0.0142	0.0004	33.80
1998	0.0155	0.0005	32.95
1999	0.0110	0.0005	21.56
2000	0.0084	0.0004	23.64
2001	0.0096	0.0005	19.57
2002	0.0065	0.0004	16.05
2003	0.0053	0.0004	13.18
2004	0.0050	0.0004	13.39
2005	0.0038	0.0004	10.65
2006	0.0034	0.0003	9.81
2007	0.0030	0.0003	8.82
2008	0.0031	0.0004	8.69
2009	0.0031	0.0004	7.35

Source: Computed from UNComtrade

CHAPTER III

EMPLOYMENT STRUCTURE OF THE TEA PLANTATION WORKERS

3.1 Introduction

In the previous chapter, the fundamental structural changes that had occurred in the sector were outlined and its possible implications on labour were identified. This chapter, in the light of the observed growth pattern of the tea sector in the earlier chapter, seeks to examine its implications on the labour market in the plantations¹ in greater detail. An integral part of the objective of inclusive growth has been to provide employment for the continuing increase in the labour force (Rangarajan, 2006). Further, the issue of employment has been considered to be important not merely in itself but also because of its critical link with poverty (Reddy, 1995).

This chapter has been organised as follows. In the second section, the trends in the employment, composition of the workforce; and nature of work and casualisation along with the wage structure has been analysed from 1950 to 2007². In this section, to show regional variations, wherever possible the regional patterns in these variables have been attempted to be analysed based on the availability of the region wise data. The third section then discusses the implications of the growth pattern of the sector, as was observed from the previous chapter, for the labour market in greater detail. The last section attempts to identify the strategies adopted by the sector to cope with these changes and concludes.

¹ Here it needs to be mentioned that the analysis is with respect to the plantation workers in the estate sector as secondary data is not available on the employment and livelihood aspect of small tea growers.

² The time period is considered here according to the availability of the data on employment. Data is patchy for certain variables; however attempt has been made to make the best use of the available secondary data source. Trends from the data used are more or less in line with the story that emerges from the analysis.

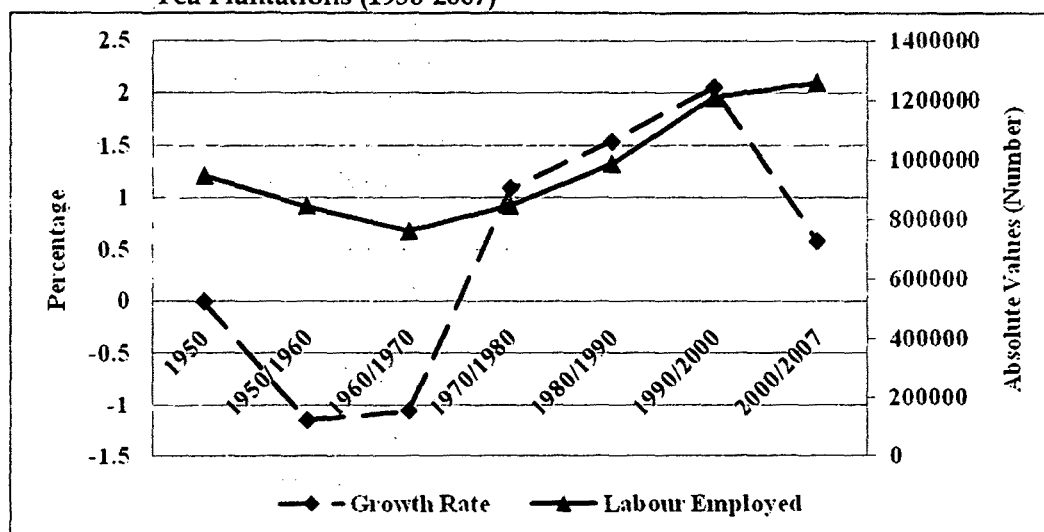
3.2 Employment Performance of the Tea Plantations

In this section the employment performance of the tea plantations has been discussed in terms of the trends in average number of labour employed; the composition of work force; and wages and earnings. The analysis is based on data from various issues of Tea Statistics published by the Tea Board of India.

3.2.1 Trends in Labour Employed in Tea Plantations

At an all India level, there was a decline in the growth rate of labour employed during 1950s and 1960s. However from 1970s, the growth rate increased and reached its peak in 1990s. But from 2000 to 2007, there is seen a sharp fall in the growth rate of labour (see Figure 3.1) despite an increase in the growth rate of area, production and productivity in the very period (as seen from Table 2.7 in previous chapter).

Figure 3.1: Number and Compound Annual Growth Rate of Labour Employed in Tea Plantations (1950-2007)



Source: Computed from the data given in the various issues of Tea Digest

Table 3.1 shows the region wise trends. For Assam, Kerala and West Bengal except Tamil Nadu, the annual compound growth rate of employment from 1950 to 2007 has been lower than the all India figure. The growth rate was negative for West Bengal and 'Other' regions while it was marginal for Assam and Kerala.

Tamil Nadu, however, registered relatively higher growth rate. These trends indicate that the tea industry which is highly labour intensive sector has not been able to generate employment for the increasing workforce in recent years.

Table 3.1: Region-wise Compound Annual Growth Rates of Labour Employed in Tea Plantations (1950-2006³)

Tea Growing Regions	1950	1950-1960	1960-1970	1970-1980	1980-1990	1990-2000	2000-2006	Growth rate (1950-2006)
Assam	515422	453761 (-1.27)	394410 (-1.39)	470467 (1.78)	513592 (0.88)	602531 (1.61)	619743 (0.47)	0.33
West Bengal	329034	197165 (-4.99)	200280 (0.16)	228705 (1.34)	248174 (0.82)	253459 (0.21)	262039 (0.56)	-0.41
Tamil Nadu	90462	78342 (-1.43)	71790 (-0.87)	108188 (4.19)	106205 (-0.18)	255780 (9.19)	266385 (0.68)	1.95
Kerala	70054	93762 (2.96)	71165 (-2.72)	85255 (1.82)	83085 (-0.26)	77086 (-0.75)	90575 (2.72)	0.46
Others	28118	22136 (-2.36)	13938 (-4.52)	19907 (3.63)	23888 (1.84)	20857 (-1.35)	20754 (-0.08)	-0.54
All India	948598	845166 (-1.15)	759646 (-1.06)	846659 (1.09)	986781 (1.54)	1210055 (2.06)	1259950 (0.58)	0.50

Source: Computed from the data given in the various issues of Tea Digest

Note: Figures in the bracket indicates the annual average compound growth rates.

3.2.2 Composition of the Workforce

When it comes to the composition of labour force, there were four categories of workers: male, female, adolescents and children⁴. However, now the employment of children below the age of 14 years has been prohibited in the industry under the Child Labour (Abolition & Regulation) Act of 1986, so there exists now only three categories of workers. Till 1990, the figures in Table 3.2 show the prevalence of child labour. Indeed children workers are seen to outnumber the adolescent workers. Female work participation in the plantation sector has traditionally been high as is also shown by the higher share of female workers in the average number of labour employed compared to the share of male workers. In 2007, proportion of female workers in the total workforce in the tea plantations was 50 percent. In a country where the work participation of

³ Year 2006 is considered instead of 2007 as region wise data on employment was available till 2006 only. The compound annual growth rate for labour employed at all India level is from 1950 to 2007.

⁴ Male and female workers are those above 18 years of age. Adolescents are workers between the age of 16 and 18 years. Children are workers between the age of 12 and 16 years. (Tea Board of India, 2004)

women is notably low, this proportion is comparatively much higher than the participation of women in other activities in the economy. Hence it indicates the presence of feminized labour in the tea plantations. Employers are also believed to prefer women workers as they can be easily controlled and supervised at the work place (Navamukundan, 2002). Their increasing presence can also be indicative of their substitution for male and non-adult workers. The annual compound growth rate of female workers from 1961 to 2007 is 1.19 which is higher than that of the male workers (0.89 percent). It can also be observed that in absolute terms the total number of workers employed in tea plantations is rising over the years from 9.4 lakhs in 1950 to 12.5 lakhs in 2007 but the annual compound growth rate in employment from 1950 to 2007 shows a very marginal increase of 0.75 percent.

Table 3.2: Trends in Average Number of Labour Employed in Tea Plantations, 1950-2007

Year	Category of Workers				Average No. of Labour Employed
	Male	Female	Adolescent	Children	
1950*	-	-	-	-	948598
1961	399907 (49)	368464 (45)	25677 (3)	22012 (3)	822834 (100)
1970	342871 (45)	337364 (44)	23098 (3)	36313 (5)	759646 (100)
1980	372285 (44)	384641 (45)	31351 (4)	58382 (7)	846659 (100)
1990	453001 (46)	458519 (46)	24148 (2)	51113 (5)	986781 (100)
2000	570267 (47)	593571 (49)	46217 (4)		1210055 (100)
2007	600549 (48)	634214 (50)	25187 (2)		1259950 (100)
CAGR (1950-2007) (%)	0.89	1.19	-0.04		0.75

Source: Various issues of Tea Statistics, Tea Board of India

Note: Figures in the brackets indicate the share of the different category of workers in the average number of labour employed in the tea plantations.

* For 1950, data on labour employed was not available by the given categories. The CAGR for male, female and adolescent workers is from 1961 to 2007.

3.2.3 Nature of Work and Casualisation

Since the tea plantation sector is a combination of both agriculture and industry, the workforce is composed of field and factory workers. The main field operations in a tea plantation consist of harvesting (plucking), applying fertilizer (manuring), weeding, chemical spraying, pruning and planting. These are essentially agricultural operations. Among the above operations, harvesting is considered as a day to day operation and needs more than 60 percent of the workforce. Since the quality of the manufactured tea depends upon care in the plucking of leaves, this task is considered a delicate operation to be handled carefully. For this reason maximum number of female workers is employed for this task (Jain, 1988). Thus women constitute the core of the field workforce.

Factory workers are engaged in the processing part of the tea leaves which comes under the industrial operation. Processing pertains to the converting of the plucked leaves into black tea. This part of the production process being more mechanized employs less labour force compared to the field work. The Table 3.3 shows that a major proportion of the workforce in the tea plantations is engaged in field operations⁵. In 2004, almost 90 percent of the workforce was engaged as field workers and the rest 10 percent as factory workers. The share of field and factory workers in the total labour force is seen to have remained more or less the same throughout the years. However, the growth rate of field workers from 1964-2004 was higher than that of the factory workers, perhaps indicating factory operations being more mechanised.

⁵ The period of analysis has been considered from 1964 to 2004 instead of 1950-2007, as Tea Board provides category wise data on labour from 1964 till 2004.

Table 3.3: Trends in the Category of Field and Factory Workers (1964 to 2004)

Year	Category of Workers	
	Field Workers	Factory Workers
1964	730992 (89)	87791 (11)
1972	676408 (89)	80500 (11)
1980	758987 (90)	87672 (10)
1992	892992 (90)	98712 (10)
2000	1094116 (90)	115953 (10)
2004	1137155 (90)	120455 (10)
CAGR (%)	1.11	0.79

Source: Various issues of Tea Statistics, Tea Board of India

Note: Figures in the brackets indicate the share of different category of workers in the average number of labour employed.

A general feature of estate sector is to provide workers with stable employment usually all year and sometimes for life (Sajhau and Muralt, 1987). During the colonial period, the estate sector was set up as self-sufficient enclave structure with very little integration into the national economy. Labour was confined within this structure thus creating "residential labour" which was totally dependent on management for all aspects of their life⁶. As such in tea plantations, there exist resident permanent workers who are compelled by tradition and circumstance to reside in the labour lines located within the plantations and they are available for work engagement around the year. Nevertheless the practice of employing temporary workers, particularly during the peak season is also common. There are temporary workers also who are drawn for seasonal engagement during periods of peak labour demand such as the plucking seasons from surplus population in the plantations. Besides the resident permanent workers and these temporary workers, the new work category of 'outside' workers, drawn from surrounding rural areas has gradually come into existence. Though seasonality is inbuilt in plantations, estates attempt to maintain more casual than registered labour (Sajhau and Muralt, 1987).

This trend is evident from Table 3.4 where the share of resident workers has been decreasing over the years while the share of outside workers shows an increasing trend. The annual compound growth rate of outside workers (2.80 percent) is higher than that of the resident workers (0.68 percent). Within the outside worker

⁶ Moving out of poverty in the Estate Sector in Sri Lanka: Understanding Growth and Freedom from the bottom up. Centre for Poverty Analysis, December 2005.

category, the proportion of temporary workers in the total workforce has been increasing over the years. It increased from 9 percent in 1972 to 24 percent in 2000 but fell to 18 percent in 2004. The annual compound growth rate of outside temporary workers (3.17) is higher than that of the outside permanent worker (2.02 percent). This phenomenon which enables the estates to carry smaller labour force on their permanent payroll is seen to have accelerated (Sajhau and Muralt, 1987). Thus an important trend visible in the structure of the tea plantations workforce is the increasing casualisation of the workforce.

Table 3.4: Trends in the Category of Resident and Outside Workers (1964 to 2004)

Year	Category of Workers ⁷			
	Resident Workers	Outside Workers		
		Permanent Worker	Temporary Worker	Total
1964	698749 (85)	NA	NA	120034 (15)
1972	744497 (86)	44165 (5)	77621 (9)	121786 (14)
1980	762147 (85)	44200 (5)	106175 (12)	150375 (16)
1992	832512 (82)	67907 (6)	145228 (14)	213135 (20)
2000	836227 (69)	85837 (7)	287659 (24)	373496 (31)
2004	943750 (75)	86492 (7)	227368 (18)	313860 (25)
CAGR (1968-2004) (%)	0.68	2.02	3.17	2.80

Source: Various issues of Tea Statistics, Tea Board of India

Note: Figure in bracket shows the share of resident workers and outside workers in the total workforce. NA-not available.

3.2.4 Wage Structure of the Tea Workers

Wages provide a major source of purchasing power and are therefore a fundamental determinant of workers' level of living (Islam and Kirkpatrick, 1986). Increase in wages is considered to be one of the major channels through which benefits of economic growth reaches the poor. Here the broad trends in the wages⁸ and earnings⁹ of workers in both money and real terms at all India level

⁷ It needs to be pointed out that though this categorization of workers is given by the Tea Board of India, the definition of these categories is not provided by the Board. Hence these categories have been defined here on the basis of the literature.

⁸ Wage rates has been defined as the sum of basic wage and dearness allowance in respect of workers who receive both these components (excludes overtime payments, bonuses, gratuities family pension allowances and other social security payments made by the employers).

have been examined. The analysis of the wage structure of the plantation workers is based on data from the various rounds of Occupational Wage Survey¹⁰ (henceforth OWS), Labour Bureau. The period of analysis is 1958, 1963, 1974, 1985, 1993 and 2006 which corresponds to the various rounds of OWS.

Before getting into the trends in the wages and earnings of workers, the process of wage determination has been briefly discussed. The estate sector being an organized sector, the wages of the workers are governed by the Minimum Wages Act, 1948. The statutory minimum wages for the tea plantation workers were fixed for the first time in 1952, subsequent to the decision of the Indian Labour Conference in 1951 to fix statutory minimum wages. The planters were to accept the concept of a living wage and any violation would attract the penal provision of the Minimum Wages Act of 1948. Wages are fixed through collective bargaining. The wage settlement mechanism varies from state to state. In West Bengal, wage settlement is a tripartite mechanism wherein representatives of the government, tea planters and the two formations of the plantation trade unions, namely the Co-ordination Committee of Tea Plantation Workers (CCTPW) and the Defence Committee of Tea Plantation Workers (DCPW) are involved. In Assam, wage is fixed on a bipartite basis involving Consultative Committee of Planters Association (CCPA) and Assam Cha Mazdoor Sangh (ACMS) for workers in Brahmaputra Valley and Cachar Cha Shramik Union (CCSU) for workers in the Barak Valley (John, 1999). In Kerala, the settlement wages are being fixed at minimum wage levels as stipulated under the Minimum Wages Act of the State¹¹.

⁹ Earnings refer to cash payments received by the workers from the employers. It includes remuneration paid to workers regularly in every wage period for normal working hours, overtime payment, bonus (production, incentive, attendance etc), dearness allowance allowance, remuneration for time not worked (public holidays, sick leave and other paid leave), other cash allowances of a regular nature and regular payments made in kind. Payments of irregular nature such as profit sharing bonus, ex-gratia payment etc are excluded from the scope of data on earnings (Occupational Wage Survey, 2006).

¹⁰ Details of coverage of OWS is given in the appendix 3A.2.

¹¹ Report of Committee on Legislation Plantation sector, 17th September, 2007, Department of Commerce and Industry.

3.2.4.1 Trends in Wages and Earnings of Workers

It can be observed from Table 3.5, that the average daily money wage rate of the tea workers by sex and age shows an increasing trend over the years from 1958. Till 1976, women wage workers were paid legally less than the male workers, so greater use of female workers in the plantations actually indicated the substitution of more expensive male workers by cheaper sources. But the imposition of the Equal Remuneration Act, 1976 had made the payment of differential adult wages illegal. This difference in the male and female wages since 1985 may be because the value given here is an average figure of the daily wage rates of different occupational categories¹² engaged in plantation.

Table 3.5: Trends in Average Daily Money Wage Rates by Sex and Age

Year	Average Daily Wage Rates of workers (Rs)				
	Male	Female	Adolescents	Children	Overall
1958	-	-	-	-	2.26
1963	3.16	1.81	2.02	2.06	3.05
1974	4.74	5.00	3.35	2.75	4.67
1985	13.65	14.22	9.83	7.26	13.33
1993	24.21	24.29	18.71	11.94	23.68
2006	55.76	53.62	32.45	-	54.27

Source: Occupational Wage Survey, 2006

However a comparison of the wage rates of workers in the tea plantations with that of other plantations such as rubber and coffee and also with agricultural labourers engaged in harvesting indicates that irrespective of age and sex, the tea workers are lowest paid with an average daily wage rate of Rs 54.27 (see Table 3.6).

¹² OWS provides data on four major occupations of tea plantation workers namely supervisor, watchman, driver and plantation labour. Where women are entirely engaged as plantation labour, males are engaged in all four categories and wages for plantation labour is lowest as compared to the other three occupational categories.

Table 3.6: Average Daily Money Wage Rates of Workers in Plantations and Agriculture by Sex and Age in 2006

Plantations/Agriculture	Average Daily Wage Rates (Rs)			
	Men	Women	Adolescents	Overall
Coffee Plantations	73.20	70.52	58.03	71.66
Rubber Plantations	91.43	87.50	-	89.77
Tea Plantations	55.76	53.62	32.45	54.27
All Plantation Industries	60.47	57.15	33.49	58.37
Agricultural labourers ¹³	68.45	55.69	-	-

Source: Occupational Wage Survey, 2006 and Wage Rates in Rural India, 2006-07

Table 3.7 shows the trends in the real average daily wage rate. It can be seen that the growth in real wage rate has been lower than the growth in money wage rates over the years. The growth rate in real wage declined from 1985-1993 to -2.15 percent but it increased to 1.19 percent from 1993-2006.

Table 3.7: Trends in the Real Average Daily Wage Rate of the Workers

Year	Money Wage Rate	CPIAL (1986-87=100)	Real Wage	Growth Rate in Money Wage Rate	Growth Rate in Real Wage
1958	2.26	-	-	-	-
1963	3.05	-	-	6.18	-
1974	4.67	63	7.37	3.95	-
1985	13.33	94	14.12	10.00	6.08
1993	23.68	199	11.87	7.45	-2.15
2006	54.27	392	13.84	6.59	1.19

Source: Data on money wage rate from various rounds of OWS and data on CPIAL from the CPIAL Report 2008-09.

Note: CPIAL- Consumer Price Index for Agricultural Labourers.

Table 3.8 shows the regional variation in the average daily wage rates of workers. The wages are seen to higher for the south Indian states of Tamil Nadu and Kerala compared to the north Indian states of Assam and West Bengal and the residual¹⁴ states. Indeed it is observed to be lowest for West Bengal. It has been pointed out that the lower level of wage rate in North India is because the employers in the region provides the workers with food grains at concessional prices and also free fuel¹⁵. However, studies have pointed out that even after adding the ration subsidy and value of fuel wood to the wages of tea plantation

¹³ The average daily wage rate for agricultural operations is with respect to harvesting for the year 2006-07. Here harvesting has been considered in order to make comparison with the plantation workers majority of whom are engaged in plucking.

¹⁴ Residual refers to other tea growing regions beside the four major tea growing regions mentioned here.

¹⁵ Report of Committee on Legislation Plantation sector, 17th September, 2007, Department of Commerce and Industry.

workers in North India; it would still be lesser than in the south Indian states (Bhowmik, 1994).

Table 3.8: Region-wise Average Daily Money Wage Rates of Workers by Sex and Age in 2006

State	Average Daily Wage Rates (Rs)			
	Men	Women	Adolescents	Overall
Assam	51.74	48.22	32.98	49.46
West Bengal	50.91	47.89	23.07	49.22
Tamil Nadu	74.40	69.61	-	71.38
Kerala	81.41	78.42	-	79.64
Residual	39.04	42.52	-	40.90
All India	55.76	53.62	32.45	54.27

Source: Occupational Wage Survey, 2006

Note: Residual includes other areas of the country with scattered plantations clubbed together.

From Table 3.9 it can be seen that the real earnings of the workers were higher than their money earnings during 1974 and 1985 but the trend has reversed in 1993 and 2006. The growth rate of real earnings and money earnings shows deceleration from 1974-1985 onwards. The real earnings was growing at a faster rate than money earnings from 1974-1985, but from 1985-1993 onwards there has been a sharp decline in the growth rate of real earnings. This might perhaps be a manifestation of the poor performance of the tea sector in terms of production, yield and exports during 1980s as was seen from the previous chapter.

Table 3.9: Trends in the Average Daily Real Earnings of Workers

Year	Earnings (Rs)	CPIAL (1986-87=100)	Real Earnings (Rs)	Growth Rate in Money Earnings (%)	Growth Rate in Real Earnings (%)
1958	1.66				
1963	2.15			5.31	
1974	5.51	63	8.70	8.93	
1985	15.86	94	16.80	10.09	14.07
1993	28.08	199	14.08	7.40	-2.19
2006	63.2	392	16.12	6.44	1.05

Source: Various rounds of OWS and the Consumer Price Index for Agricultural Workers Report, 2008-09

Note: CPIAL- Consumer Price Index for Agricultural Labourers.

The broad trends that emerge from the above analysis can be summarised as follows. The employment performance of the tea plantations in terms of quantity of employment has been sluggish. Also the trend towards casualisation of the workforce, as shown by the increasing proportion of the outside workers, has

been growing over the period of analysis. The analysis of the wage structure of the plantation workers shows that the growth rate in the real wages and earnings of the workers has remained more or less stagnant in recent years.

Given these changes in the employment structure of tea plantations, in order to relate employment growth to output growth, employment elasticity was estimated. Table 3.10 shows that the employment elasticity was negative in the 1950s and 60s. This was due to decline in the growth rate of labour. After 1970s, there was an increase in employment elasticity. During 1990-2000, there was a remarkable increase in employment elasticity and its value was greater than unity indicating that one percent growth in output led to more than one percent growth in employment. However, after 2000 there is seen to be a fall in the employment elasticity. For a labour intensive sector such as tea sector, output is seen to increase without commensurate increase in the employment.

Table 3.10: Employment Elasticity of the Tea Workers

Year	Growth Rate of Labour	Growth Rate of Output	Employment Elasticity
1950-60	-1.15	1.44	-0.80
1960-70	-1.06	2.69	-0.40
1970-80	1.09	3.12	0.35
1980-90	1.54	2.38	0.65
1990-2000	2.06	1.63	1.26
2000-07	0.58	2.20	0.26

Source: Computed from various issues of Tea Statistics

Note: Employment elasticity is calculated as the ratio of the growth rate of labour and growth rate of output.

The possible explanations for this can be drawn from the implications of the structural changes on the labour market, which will be elaborated in the following section.

3.3 Implications of the Structural Shifts on the Labour Market

The three broad shifts in the structure of the tea sector in India was identified as shift from foreign to domestic ownership, shift from export market to domestic market and shift from large to small growers. Corresponding to these three aspects, the implications on the labour market has been discussed below.

3.3.1 Implications of Change from Foreign to Domestic Ownership

The major implication of this shift can be discerned in terms of changes in labour recruitment practices.

As has been recounted by several scholars, the tea plantations in India commenced after large scale colonial acquisitions and annexations of territory in the 19th century (George and Tharakan, 1985; Raman, 1997; Behal and Mohapatra, 1992, Sankrityayana, 2006). But they faced two major problems in the establishment of plantations. First, the areas suitable for tea cultivation were covered with thick unhealthy forest and second, there was inadequate supply of labour. Low wages and hazardous conditions of work acted as strong disincentives for the local population to join plantations (Bhowmik, 1981). Thus to convert and develop the vast tracts of land into plantations in their present form, huge armies of labour had to be recruited from elsewhere through various forms of labour contract ranging from coercion to indenture (Sanrityayana, 2006). For this, the imperial state devised a chain of pushes and pulls that resettled millions of persons into lives of perpetual servitude. These coercive and exploitative practices were compounded by the social and economic exclusion of its labour due to the migrant nature of its labour and social divisions amongst it (Raman, 1997).

One of the interesting features of the employment in the estate sector is that it is family-based and this was the result of the earlier colonial system of labour recruitment. In the earlier period, families rather than individuals were encouraged to migrate for work on plantations. Since the planters wanted cheap labour they required workers who would be permanently settled in the industry and who had no alternative source of employment. So by encouraging families to migrate they ensured that the workers were more or less cut off from their places of origin and were settled in the plantations which were isolated from the outside world. The entire family of the worker- male, female as well as children- was engaged in the plantations at wages determined by the planters. Also the family

migration ensured that labour would be reproduced thus solving to a large extent the problem of further future recruitment (Bhowmik, 1992).

During the colonial period, the estate sector was thus set up as self-sufficient enclave structure with very little integration into the national economy and secured a labour force composed of several segments originating from impoverished or small peasant households, landless agricultural labourers and displaced artisans belonging to tribal and low caste people. The use of unfree labour with a highly authoritarian structure of management of labour was the distinguishing feature of the colonial plantation system (Gupta, 1992).

After independence a series of progressive legislations were drawn by the State. These legislations were intended to preserve the efficiency, scale and organisational structure of the tea plantations while offering a better deal to the workers. A key step to this effort was the reformulation of the master-servant relationship that has characterised the colonial plantation (Sankrityayana, 2006). Workers were granted trade union rights which were non-existent during the colonial rule. Further, the Minimum Wages Act, the Payment of Bonus Act, the Industrial Disputes Act of 1947 and the Factories Act of 1948 which were earlier ignored by the planters became enforceable. Labour Tribunals were also being set up to decide on disputes (Sivaram, 2002). Further, the Equal Remuneration Act came into effect from 1975 which abolished wage differences between male and female workers. The recruitment of children below the age of 14 years has also been prohibited under the Child Labour (Abolition & Regulation) Act of 1986.

Among the legislations affecting plantation workers, the most important is the Plantation Labour Act, 1951 (henceforth PLA) which provides for the welfare of plantation labour and regulates the conditions of work in plantations. It has been enacted by the central government but administered by the state governments through rules framed by them based on a model provided by the union government (Sivaram, 2002). It is unique in the fact that while the Indian labour legislation in general restricts itself to wages and working conditions at the place of work, the PLA is the only Act that seeks to raise the living standards of

plantation workers (Bhowmik, 2002; Bharali, 2004). The act contains several provisions related to housing conditions, health and hygiene, education and social welfare which the employers are required to provide to the workers and it also imposed restrictions on working hours. It provides for compulsory housing, sanitary facilities and water supply in the labour residences, medical facilities; crèches for infants and primary school for children. It is important to note that this Act is applicable only to the organised estate sector¹⁶, while the small tea growers sector being an unorganised sector is not governed by it.

Another important institutional intervention in the tea sector has been through the labour welfare schemes of the Tea Board of India. The Tea Board of India is a statutory organisation established in 1954 under the Tea Act, 1953 by the Government of India and it functions under the ministry of commerce. Labour welfare is one among the various broad functions carried out by the Tea Board. The labour welfare activities are funded through the Human Resource Development (HRD) scheme of the Board as approved under the 11th Plan¹⁷. These schemes undertaken by the Tea Board which are in fact supplemental in nature and it covers those areas not covered by the PLA and the rules framed there under¹⁸. The HRD Scheme aims at achieving improvements in the life and living conditions of the tea plantation labourers and their dependants on the following three broad areas: (a) improving the health of the workers; (b) education of wards of the workers; (c) imparting training to improve skills for growers/workers and plantation managerial staff etc (details of HRD scheme given in the appendix table 3A.1.1).

These existing institutional interventions in the labour market in the tea plantations can be said to be the result of an attempt on the part of the government to reformulate the master-servant relationship that existed during the colonial period to that of employer-employee relationship. The beneficiaries

¹⁶ The estate sector are those with a tea area of above 10.12 ha and are governed by government rules and regulations, hence they are a part of the organised sector in India unlike the small growers.

¹⁷ Annual Report 2009-10, Ministry of Commerce, Commodity Boards and Other Development Authorities.

¹⁸ Tea Board India, Performance budget for 2007-08.

of these interventions are the descendants of these original settlers who continue to live and work on these tea plantations long after the imperial masters have left and the nation-state has taken over.

But studies have questioned the effectiveness of these interventions especially PLA by pointing out that it has not been able to achieve its objective of promoting the welfare of the plantation workers (Bhowmik, 2002; Chaudhury and Tayal, 2010). It was pointed out from the analysis of the different categories of workers that beside the resident workers (see Table 3.4); there has been the emergence of new category of workers- outside workers- in the plantation work force. These outside workers can be expected to be the result of the enactment of the Plantation labour Act, 1951 which sought to secure statutory welfare provisions for the resident worker and his family. While the permanent resident workers and their bonafide dependents are entitled to the welfare benefits under PLA, the outside workers are entitled only to engagement at the prevailing money wage and not to any of the provisions. As such the latter category of worker is available as low-cost labour option to the estate. Further within the outside workers, there are permanent and temporary workers. The engagement of the temporary outside workers was the lowest cost option to the estate as they performed the same tasks as the resident workers but without any non-wage benefits. This significantly reduced the wage costs to the tea estates and also since they were not entitled to regular work engagement, they became a floating labour reserve that can be engaged and laid off at will. Thus there was the creation of labour categories of different descriptions among plantation workers which encouraged the development of a highly segmented labour market (Sankrityayana, 2006) and led to casualisation of labour and greater labour flexibility.

3.3.2 Implications of Shift from Export Market to Domestic Market

The shift from export to domestic market was found to have led to a shift in the method of production from orthodox to CTC tea. This change in the method of manufacture has been argued to lead to a lower labour absorption in tea

processing. This is due to the fact that the CTC production entails relatively continuous process and hence the factory labour requirement is just about half that required for orthodox production (Sivaram, 2002). The production of CTC tea is said to be dominated largely by mechanical operation as such the labour component for handling is low¹⁹. Thus switching over to CTC production can be expected to lead to greater mechanisation of the factory operation and hence lower absorption of labour. The higher rate of growth of field workers compared to factory workers (as was noticed from Table 3.3) can also be indicative of this trend of increasing mechanisation of the factory operations. Further, since CTC tea mainly caters to the domestic demand of tea by price conscious consumers, its production does not demand fine plucking of quality leaves, the estates can thus resort to outsourcing the green tea leaves from the small growers. This increased outsourcing of green leaf purchases by the established estate factories has been said to have shown up in enhanced productivity figures without equivalent increases in labour deployment (Sankrityayana, 2006).

3.3.3 Implications of Shift from Large Growers to Small Growers

A proliferation of small growers in recent years has led to the emergence of self employed employment status in the plantations. Unlike the large estates which have higher reliance on hired labour for its operations, the small growers are mainly reliant on unpaid family members, mainly women and children, who remain invisible but make substantial contribution to production in the small grower sector. With the growth in the small holder sector, this invisible labour force can be expected to increase further.

Beside this difference between the estate sector and small holder sector, studies have pointed out other major differences between these two modes of production. While the former is characterised by low bush productivity due to old age of bushes, existence of a permanent labour force; applicability of statutory labour provisions, high cost of supervision, high interest burden, and

¹⁹ Commodity Value Chains Mapping for Tea, United States Agency for International Development (USAID), 2006.

hence higher cost of production; the latter is characterized by higher productivity of young plants, no permanent workforce, reliance on unpaid family labour, not constrained by labour legislations, hence lower cost of production (Sarkar, 2008). Hence the small holder sector seems to have a comparatively flexible cost and production structure. Of all the factors mentioned above, it has been pointed out that the prime deficiency of the estate mode of production lies in incurring high labour costs which is an important item in the cost of production structure (Sarkar, 2008; Hayami and Damodaran 2004). In such a situation, to keep its labour cost low, the option available with the estate sector may perhaps be to go for labour saving mechanisms. But so far mechanization of the tea plantations has achieved little success. Though there was mechanisation of the factory process, the field operations remained labour intensive (Misra, 1985). The major labour intensive work among field operations is the plucking of tea leaves. In a majority of cases, plucking is still done by hands; mechanization of tea plucking is still very rare. Exceptions exist such as in the case of few tea gardens in south India that have adopted machines for harvesting the tea leaves due to labour shortages (Sivaram, 2002). Given this situation, it can be argued that the former are undertaking readjustments within the plantation workforce to keep its cost low and maintain its competitiveness. From the previous analysis, one such adjustment was witnessed in terms of creation of various labour categories and a growing share of temporary workers. Another major adjustment was evident in terms of system of payment which has been discussed in detail below.

The two forms of payment systems that are commonly employed in an agrarian setting to which tea plantation is no exception are time rate and piece rate (Bhowmik, 1994). In the time-rated payment, the employees are paid according to the time spent on a task, regardless of the actual amount of output produced while the latter pays labour strictly on the basis of output produced regardless of time spent on the task. Before considering the wages by system of payments in detail, the trends in the distribution of workers as piece rated and time rated workers has been discussed.

Table 3.11 shows that the tea garden payments are generally based upon piece rates. The proportion of piece rated workers has increased while that of the time-rated workers has declined over the years. In 1958, the proportion of piece-rated workers was 84.6 percent which increased to 90.43 percent in 2006. However, in 1985 there had been a sharp decline in the proportion of piece rated worker to 77.65 percent.

Table 3.11: Trends in the Percentage Distribution of Workers by Sex and System of Payment

Year	Men		Women		Adolescents		Total	
	T	P	T	P	T	P	T	P
1958	22.9	77.1	9.8	90.2	41	59	15.4	84.6
1963	24.1	75.9	8.5	91.5	30.6	69.4	15	85
1974	-	-	-	-	-	-	9.43	90.57
1985	28.12	71.88	20.78	79.22	11.18	88.82	22.35	77.65
1993	19.5	80.5	4.12	95.88	-	100	10.77	89.23
2006	15.06	84.96	5.34	94.64	-	100	9.57	90.43

Source: Computed from different rounds of Occupational Wage Survey

Note: T=time-rated; P=piece-rated. For the third round of OWS, 1974, the data was not available according to sex and age; hence it has been left blank.

The time rated workers in all the three categories of male, female and adolescent workers have been decreasing while the piece rated workers in all these three categories have been increasing over the years, except for 1985. In 2006, 94.64 percent of the total women workers were piece rated and 84.96 percent of the total male workers were piece rated. Regarding the proportion of adolescents engaged as time-rated workers, it was as high as 41 percent in 1958 but since 1985, they are no longer engaged as time-rated workers. The trend seen for the adolescent piece-rated worker is that their proportion increased from 59 percent in 1958 to the adolescent workers being entirely engaged as piece rated workers in 1993 and 2006.

The plantation wage system which is seen to be overwhelmingly based on piece rate has been argued to be evidently designed to extract the maximum contributions from workers in terms of time (Bhowmik, 1994). With respect to plucking operation, incentive wage system exist in the plantations under which incentive is the extra leaf allowance that a worker is entitled to if he/she plucks

more than the assigned task. Given that mainly women workers are engaged in plucking, this type of wage system is said to increase the time contribution made by women to plantation activity without meaningfully compensating them for their additional work time contribution (Savur, 1973; Roy Mukherjee, 2007).

Table 3.12 shows that time-rated payments are higher than piece-rated payment over the years. Thus given the trend of increasing piece rated workers in all the three categories of men, women and adolescent workers as seen in Table 3.11 and the piece rated payment being higher than the time rated payment, these two trends points to the reliance of the estate sector on more piece rated workers than the time-rated workers so as to keep the wage cost low.

Table 3.12: Trends in Average Daily Money Wage Rates of Time-rated and Piece-rated Workers

Year	Average Daily Wage Rates of Workers (Rs)		
	Time-rated	Piece-rated	Overall
1958	-	-	2.26
1963	-	-	3.05
1974	5.9	4.54	4.67
1985	15.85	12.6	13.33
1993	30.7	22.83	23.68
2006	67.59	52.86	54.27

Source: Various rounds of Occupational Wage Survey

Table 3.13 shows, among the piece-rated workers, the average daily wage rate of women workers is higher than that of the male workers which might be due to implementation of the incentive wage system in plucking. While in case of the time-rated workers, average daily wage rate of male workers is higher than that of the women workers.

Table 3.13: Trends in Average Daily Time-rated and Piece-rated Wage Rates by Sex & Age

Year	Average Daily Wage Rates (Piece-rate) Rs				Average Daily Wage Rates (Time-rate) Rs			
	Men	Women	Adolescent	Overall	Men	Women	Adolescent	Overall
1958	-	-	-	-	-	-	-	-
1963	-	-	-	-	-	-	-	-
1974	-	-	-	4.54	-	-	-	5.9
1985	12.46	13.9	9.6	12.6	16.68	15.45	11.69	15.85
1993	22.41	24.14	18.71	22.83	31.63	27.80	-	30.70
2006	52.52	53.67	32.45	52.86	74.02	52.76	-	67.59

Source: Various rounds of Occupational Wage Survey

3.4 Conclusion

From the above discussions, the various strategies adopted by the sector to reduce cost can be identified. The major strategies, inter alia, that can be identified from our analysis are subcontracting between small tea growers and estates, the growing feminisation of labour accompanied by casualisation of the labour force, mechanisation of plantation operations (mainly factory operations), use of more female labour, emergence of unpaid invisible family labour, incentive wage system, increase in the use of piece rated system of wage payment. The reason for these cost cutting strategies can be traced back to the various structural shifts that occurred in the tea sector after independence. These shifts have affected the viability of the sector, which is facing heightened competition not only in the export market but also in the domestic market (Kumar et al, 2008) and hence to maintain their efficiency, the sector seems to be opting for these strategies. But the brunt of these strategies can be seen to be ultimately borne by the workers in this sector. In this context, the question that arises is: in the present globalised economy has the pressure to maintain the competitiveness of the tea industry gone hand in hand with labour welfare or has it led to immiserising growth among the plantation workforce.

It needs to be pointed out that though the available secondary data source does provide insight into the employment patterns of the plantation workforce; their wages and earnings, but at the macro level and also it does not shed adequate

light on the welfare aspect of the workers and also on the livelihood of the small growers. Therefore, it calls for a detailed household survey of the plantation workers and small growers in order to get deeper insight into this issue. This will be dealt with in the next chapter.

Appendix 3A.1

Table 3A.1.1 Schemes under Tea Board Oriented towards Human Resource Development

I. For improving the health of workers	
Activity Supported	Rate of Subsidy
1. Drinking water (one water point source with hand pump and platform)/ Ring well for every 200 workers	Rs 12000 per unit
2. Sanitation (one unit of sanitary latrine for every 100 workers)	Rs 15000 per unit
3. Capital grant for extension of medical facilities and purchase of medical equipments and accessories	70% of the cost or Rs 8 lakh whichever is lower
4. Capital grant for construction of clinics and hospitals	70% of the cost or Rs 12 lakh whichever is lower
5. Assistance to disabled persons dependent on tea garden workers	@ Rs 2500 per disabled person
II. For education of wards of workers	
1. Educational stipend for the wards of workers for pursuing higher studies	Actual tuition fees and 2/3 rd of hostel fees
2. Capital grant for extension of school buildings and construction of hostels	70% of the cost or Rs 8 lakh whichever is lower
3. Capital cost for construction of schools	70% of the cost or Rs 12 lakh whichever is lower
4. Book and school uniform grant	@ Rs 1000 per student
5. Assistance to scouts and guides & sports activities	Actual

Source: Tea Board of India

Appendix 3A.2: Brief Note on Occupational Wage Survey Data

Occupation-wise wage data are collected from only those persons who conformed to the definition of workers defined under the Plantations Labour Acts, 1951 as described below:

- a. 'Worker' means a person employed in a plantation for hire or reward, whether directly or through any agency, to do any work, skilled, unskilled, manual or clerical, but does not include - medical officer, managerial staff and temporary workers employed in any work relating to construction, repair, maintenance of roads, bridge, etc.
- b. 'Adolescent Worker' means a worker between the age of fourteen and eighteen.
- c. 'Child Worker' means a worker who has not completed his 14th year.

The managerial, technical and clerical staff, though may be covered by the Act as workers, are excluded from the scope of the survey. However, the supervisory personnel, whose duties, besides supervision, generally involve considerable element of manual work are covered under the survey. Similarly, regular *badli* and casual workers who have worked continuously for a period of at least one-month preceding the reference date have also been covered under the survey. Contract workers working in the premises of the unit are also taken into consideration. As per recommendations of the Study Group on Labour Statistics, part-time workers and apprentices have also been included in the survey.

CHAPTER IV

OCCUPATIONAL CHOICE AND EMPLOYMENT STATUS: AN ECONOMETRIC ANALYSIS USING PRIMARY DATA

4.1 Introduction

From the analysis in the previous chapters, the issue regarding whether the pressure to maintain competitiveness of the tea industry is going hand in hand with labour welfare or is it leading to immiserisation of the labour was raised. This chapter attempts to probe further into this issue by exploring the employment position and well being of the tea plantation workers classified as permanent worker, casual worker and small growers. In this respect, the determinants of the employment position of the plantation workers and how they are faring in terms of human development indicators such as education, health and basic amenities has been examined.

To understand what determines the employment position of a plantation worker, first it would be of interest to examine the determinants of the intra-household occupational choice of an individual between plantation work and other occupation; and then to see, if an individual engages him/herself in plantation work, what determines his/her employment status as permanent, casual and self-employed worker in the plantations? Further the different employment position of the worker can be expected to have varying effect on their living standard. Hence, it has been argued in this regard that if a plantation worker belongs to any of these three employment statuses then their economic status in terms of asset ownership position will vary; and their varying asset position can be expected to be accordingly translated into their varying living standard in terms of education, health and basic amenities. As has already been mentioned that there exists no data on these aspects of workers, this issue has been explored on the basis of evidences from the field data. Here the analysis is based on the survey results of the plantation workers in the Darjeeling district of West Bengal.

This chapter will attempt to highlight the issue of employment position of the plantation worker while the aspect on living standard will be taken up in the next chapter.

The chapter has been organized as follows. With introduction of the chapter in the first section, methodology has been discussed in the second section. To get an understanding of the profile of the sample before proceeding with the analysis, sample characteristics has been discussed in the third section. The fourth section is on the econometric modelling of the intra-household occupational choice of an individual between plantation and non-plantation work. The fifth section is on the econometric modelling of choice of an individual engaged in plantation work between three employment statuses namely permanent, casual and self-employment. The last section gives the conclusion.

4.2 Methodology

This section first gives the description of the study area with respect to its tea economy and then discusses the methodology by explaining the sampling framework, the survey instrument used and the method of analysis employed.

4.2.1 Description of the Study Area¹

From the analysis in the previous chapter it was found that among all the major tea growing regions West Bengal's growth performance was relatively better throughout the period of analysis but the wages of the workers were the lowest of all. This raises an important issue of the distributional aspect of the growth in the sector. Hence West Bengal has been selected for the study.

In the state of West Bengal, there are three major tea growing regions namely, the Darjeeling Hills, the Terai and the Jalpaiguri Dooars. These three regions are located in North Bengal region. For our study, the Darjeeling Hills have been selected. This selection is based on the researcher's convenience of the access to the data. Further, India produces some of the world's finest tea and one among

¹ The details on demographic features of the study area are given Table 4A.1.4 in Appendix.

them is the Darjeeling tea². Darjeeling tea has been considered as a geographical indication³. The Tea Board of India has stated that a Geographical Indication registration and protection would ultimately benefit the plantation worker as better protection would lead to better prices, better economic health of the industry, sustainable educational and health systems resulting in a better quality of life. In the context of the changing organisational pattern of tea plantation from big growers to small growers in the recent years as was pointed out from the previous chapters, it will be worthwhile to see whether the pressure to maintain competitiveness and labour welfare is going hand in hand with each other or not in the Darjeeling tea industry. Labour welfare has been studied in terms of two important dimensions of inclusive growth: employment and human development indicators such as health, education and basic amenities.

The tea industry that is synonymous with the name of Darjeeling was established in the mid-19th century as a colonial enterprise, based on the plantation labour system which employed the cheap labour of the entire plantation family. The tea industry is the mainstay of the people of Darjeeling and also a backbone of the hill economy (Sarkar and Lama, 1986). Apart from tourism, tea is the biggest industrial activity in Darjeeling, providing the largest employment in the hills. The turnover of the Darjeeling tea industry has been estimated to be nearly USD 7.5 million which is acknowledged to be more than the money generated by tourism. At present, there are 87 tea estates in Darjeeling covering an area of 17818 hectares producing around 10.01 million kg of tea annually. It accounts for 15.48 percent of tea area and 4.23 percent of tea production in West Bengal. The Darjeeling tea industry employs over 53,000 people on a permanent basis while further 15,000 people are engaged during the plucking season. More than 60 percent of the workforce is women (Tea Board of India, 2007). Despite being among the oldest tea-growing regions in the country, however, the presence of

² Techno-Economic Survey of Darjeeling Tea Industry, Tea Board of India, 2001.

³ "Due to the unique and complex combination of agro-climatic conditions prevailing in the region and the production regulations imposed, such tea has a distinctive and naturally-occurring quality and flavour which has won the patronage and recognition of discerning consumers all over the world for well over a century. The quality, reputation and characteristics of the tea is essentially attributable to its geographical origin and cannot be replicated elsewhere resulting in Darjeeling Tea being considered a geographical indication" (Tea Board of India, 2003).

small tea growers is relatively new in the northern districts of West Bengal. The transfer of farmland for small tea growing operations in West Bengal occurred intermittently throughout the 1990s. Initially, the increase in small grower operations was linked to the factories at the nodal tea estates. The enumeration study conducted for the Tea Board identified 877 new tea plantations in the tea growing districts in West Bengal, 97 percent of which were unregistered and their average size was 4.88 hectares (Sankrityana, 2006).

4.2.2 Sampling Framework

It has already been pointed out from the analysis of the secondary data that in tea plantations, broadly, there is the estate sector and the small tea grower sector. In the estate sector, there exist mainly two categories of workers: resident workers who have permanent work status and outside workers who have casual work status⁴ (henceforth the terms casual and temporary outside worker will be used interchangeably). In the small tea grower sector, the small tea farmers have 'self-employed' employment status and they themselves as well as their family members are engaged in tea growing. The survey had tried to capture the employment position and living standard of these different categories of plantation workers namely the permanent resident workers and the outside temporary (casual) workers in the estate sector and the self-employed small tea growers. For this purpose, a total sample size of 200 households was taken. Accordingly these 200 households have been broken up into 110 households from the estate and 90 households from small tea growers. Keeping in view the need to capture the resident and outside workers engaged in the estate sector, out of the 110 households in the estate, 80 households of permanent workers and 30 households of the outside workers was considered. This sample size is selected in

⁴ Though from the secondary data analysis on the categories of workers in the estate sector (Table 3.4) it was found that there exist resident workers, permanent outside workers and temporary workers. But from the pilot survey in the field it was understood that there are resident workers who are permanent and also their family members are drawn for casual work at times; and outside workers who had casual employment status. The difference between the casual worker residing within the estate and the outside casual worker was that the latter was entitled to only wages and no other provisions while the former being a member of the permanent worker households enjoyed certain other provisions besides wages.

accordance to the proportion to these categories of tea plantation workers to the total labour force in tea plantations.

For the purpose of our study, Longview Tea Estate situated in Kurseong subdivision of Darjeeling district has been selected as the representative of the estate sector in Darjeeling. It is the one of the largest tea estate of Darjeeling both in terms of area and production⁵. It is a public limited company with 506 hectares of area under tea cultivation and produces on an average 7 lakh kg of processed tea annually. The estate employs 1252 permanent workers and 800 casual workers. It claims to be the world's single largest Darjeeling Tea producing estate contributing to nearly 10 percent of the world acclaimed Darjeeling Tea.

The workers in the estate reside in labour lines which are scattered all over the tea garden (Bhowmik, 1981). Longview Tea Estate has 19 such labour lines (see Table 4A.1.1 in Appendix). The total number of households is 627. First a list of the number of households in these labour lines was collected from the estate. Out of the 19 labour lines, 4 were randomly selected. These four labour lines have in total 186 households. Of the 186 households, a random sample of 80 households was proportionately selected from the households in these four lines (see Table 4A.1.2 in Appendix). As far as the outside workers were concerned, the management did not maintain any list of these workers as they were employed only during peak seasons. However, they gave us information about the regions from where usually outside people come to work in the estate. Hence the casual outside workers have been purposively selected irrespective of the region they reside. For the selection of 30 households of outside workers from there, snowball sampling technique was adopted. With the help of a permanent worker who had idea about the location of one of the outside worker, this outside worker was visited first. Thereafter, the households of other outside workers were identified from the information gathered from this outside worker and these households were taken up for survey.

⁵ This information was obtained from Darjeeling Tea Association which is the sole producers' forum for Darjeeling tea and is affiliated to the Indian Tea Association.

Regarding the selection of small tea growers, the Darjeeling Tea Association provided details on the small growers in the hills. From the discussion it was gathered that the small tea growers in the Darjeeling hills are mainly formed into two co-operative societies. One is the Organic Ekta and the other one is the Sanjukta Vikas Co-operative. The latter is the older co-operative among the two and it has been selling certified organic, fair trade labelled small farmers tea since 2001 in the international market. The tea is sold internationally as Mineral Spring Small Farmers Tea⁶.

For the purpose of getting information on the small tea growers in Darjeeling, Mineral Spring Small Tea Growers was selected. These small growers are located in Lebong, Darjeeling. The small growers have an interesting history of rising up from mere tea wage workers who were in the verge of poverty to successful agricultural entrepreneurs. Initially, this region happened to be a tea estate known as Lebong and Mineral Spring tea estate of approximately 1500 hectares of land with 500 ha rich forest. However, due to reasons such as political turmoil, mismanagement and unionism, there were closures on a regular basis and the estate was completely abandoned by the end of 1960. After the closure, there occurred wide spread unemployment among the workers and lack of educational institutes and health centres, further worsened the situation. In the wake of such a crisis, the workers took to felling of trees for sale and also selling of tea leaves to neighbouring tea estates as a source of earning. Post 1965, workers started grabbing land and began to uproot the tea bushes and started cultivating other crops. As they had limited knowledge of cultivation and the soil was also not very fertile, the production was low. In a bid to look for alternative sources of income, the workers bought cows on loan but at high rate of interest to get additional income from sale of milk. However, there occurred a marked improvement in their economic situation with the intervention of civil society. In 1973, Hayden Hall (an NGO) and National Service Scheme, St Joseph's College started relief and rehabilitation work in the region. With their joint initiative, a

⁶ This information has been obtained from an NGO called Darjeeling Ladenla Road (DLR) Prerna who was associated with the Darjeeling Tea Association and Small Farmers' Cooperative.

dairy union was established which provided a source of livelihood for the workers. In 1996, NGO DLR Prerna also joined with them for the upliftment of the condition of the workers. Finally in 1997, these external interventions enabled to establish a farmer's society named 'Sanjukta Vikas Sanstha'. The objective of the society was to enable the workers to move out of poverty by making them self reliant and capacitating them on organic farming of agri-products such as tea, vegetables, cardamom, ginger, turmeric etc. Thus community based organisation and civil society has enabled to give the farmers a better life.

At present, the growers are spread over 10 small hamlets with 521 households. A list of the households in each of these hamlets was obtained from the Cooperative society and a random sample of 90 households was proportionately selected from each of these hamlets (see Table 4A.1.3 in appendix).

4.2.3 Survey Instrument

A survey instrument in the form of a questionnaire was designed such that it could be canvassed on permanent worker households, casual worker households and small tea growers' households. The survey was undertaken over a period of two months (January and February, 2010) with initial pilot rounds to incorporate revisions to make the instrument better suited for the task. Household is the unit of study. It needs to be mentioned here that mostly all the respondents interviewed are workers themselves. The questionnaire was broadly divided into general details of the household, employment status of household members, employment and working conditions, household consumer expenditure, education and health; and living conditions. Detailed information was sought about all members of each of the 200 households; as such information about 957 individuals spread across these 200 households was able to be gathered.

4.2.4 Method of Analysis

To understand the employment position and living standard of the plantation workers, four questions have been explored: what determines the intra-household occupational choice of an individual between plantation work and

other occupation? ; If an individual opts for plantation work, then what determines the employment status of a plantation worker as permanent, casual and self-employed worker in the plantations? ; If a plantation worker happens to belong to any of these three employment status then what was their asset position? ; Given their asset position, how was their living standard in terms of education, health and other basic amenities. While the first two questions related to the employment position of the individual is addressed in this chapter; the other two questions related to their living standard are explored in the next chapter.

The study has explored the issues amenable for descriptive analysis using simple statistical tools such as Chi square test and Cramer's V. But there are a set of issues for which hypothesis testing is involved, for which econometric models have been employed. The determinants of the intra-household occupational choice were estimated by using binomial logit model which is a useful tool to employ when the dependent variable has binary outcomes. Here occupation of the individual is the dependent variable with two categories namely plantation work and non-plantation work. Then the econometric analysis of a plantation worker's employment status was conducted by using the multinomial logit model wherein the dependent variable consists of three categories of employment namely permanent, casual and self-employed. Ordinary least squares regression was applied to understand the effect of asset ownership position on the living standard of the households.

4.3 Sample Characteristics

Since it is important to get an understanding of the profile of the sample before proceeding with the analysis, the sample characteristics are discussed broadly with respect to all 957 members of the 200 households. Statistical tests such as chi square test and Cramer's V which gives the measure of significance and degree of association between the variables have also been undertaken to check whether the three different categories of plantation households had any association with the other socio-economic variables being considered. The sample has been

profiled according to the demographic, socio-economic and household characteristics.

Table 4.1 shows the number of individuals spread across the three category of households. In 200 sample households, there were 957 individuals. Sample households of 80 permanent estate workers consisted of 403 individuals. 30 temporary outside estate worker households consisted of 122 individuals. Sample households of 90 small tea growers had 432 individuals.

Table 4.1: Distribution of Number of Individuals in the Sample by Household Category

Categories of Plantation Households	Sample Size	No. of Individuals
Permanent Estate Worker Households	80	403
Temporary Outside Estate Worker Households	30	122
Small Tea Grower Households	90	432
Total	200	957

Gender

Out of the 957 individuals in the 200 sample households, 51 percent were male and 49 percent were females (see Table 4.2). In the permanent worker households (henceforth PWH) and casual outside worker households (henceforth CWH), there are approximately 50 percent males and 50 percent females. While in the small tea grower households (henceforth SGH), there are 53 percent males and 47 percent females. The relationship between the gender and category of households is however found to be statistically insignificant.

Table 4.2: Distribution of the Members of the Households by Category of Households and Gender

Categories of Plantation Households	Gender		Total
	Male	Female	
Permanent Estate Worker Households	201 (49.9)	202 (50.1)	403 (100)
Casual Outside Estate Worker Households	62 (50.8)	60 (49.2)	122 (100)
Small Tea Growers' Households	227 (52.5)	205 (47.5)	432 (100)
Total	490 (51.2)	467 (48.8)	957 (100)

Pearson chi2 (2) = .603, Pr = 0.740; Cramer's V = .025

Note: The figures in parentheses are percentages of total members in different household categories

Social Group

The relationship between social group and category of households is found statistically significant at 1 percent level (See Table 4.3). Out of the total 200 plantation households, 56 percent belonged to the general category, 34 percent were ST and 10 percent were SC. However, when the distribution of social group is considered with respect to the three categories of plantation households, it is found that there is higher percentage of "ST" in the permanent worker households (69 percent); higher percentage of "SC" (45 percent) in the permanent worker and casual outside worker households while a higher percentage of "General" in the small tea grower households (68 percent).

Table 4.3: Distribution of the Households by Household Category and Social Group

Categories of Plantation Households	Social Group			Total Households
	ST	SC	General	
PWH	47 (69)	9 (45)	24 (21.6)	80
CWH	8 (12)	9 (45)	13 (11.7)	30
SGH	13 (19)	2 (10)	75 (67.6)	90
Total	68 (34)	20 (10)	111 (56)	200 (100)

Pearson chi2 (4) = 65.1039, Pr = 0.000; Cramer's V = .403

Note: The figures in parentheses are percentages of total households

The household characteristics have been discussed below in terms of household size, number of earning members, number of members engaged in plantation work and non-plantation work.

Household Size

The average size of the plantation households was 4.78 (See Table 4.4). Considering the household size for the different categories of households, average household size was higher for the permanent worker households (5.04), than for casual worker households (4.07) and small tea grower households (4.79).

Table 4.4: Average Household Size

Category of Households	Average Household Size
PWH	5.04
CWH	4.07
SGH	4.79
Total	4.78

Activity Status

The activity status of the members of the plantation households has been given in Table 4.5. Out of 957 individuals in 200 households, 51 percent were employed, 12 percent were unemployed, 27 percent were studying and 11 percent were not in the labour force. In the permanent worker households, 44 percent individuals were employed. While in casual outside worker and small tea growers' households, 53 percent and 57 percent were respectively employed. The percentage of economically active population is higher for the small grower household, followed by casual worker household and then permanent worker household.

Table 4.5: Distribution of Individuals in Different Household Category by Activity Status

Activity Status	Members of Sample Households			
	PWH	CWH	SGH	Total
Employed	176 (43.7)	65 (53.3)	247 (57.2)	488 (51.0)
Unemployed	75 (18.6)	11 (9)	22 (5.1)	108 (11.3)
Studying	109 (27)	33 (27)	113 (26.2)	255 (26.6)
Not in the labour force	43 (10.7)	13 (10.7)	50 (11.6)	105 (11.1)
Total	403 (100)	122 (100)	432 (100)	957 (100)

Pearson chi2 (6) = 44.244, Pr = 0.000; Cramer's V = .149

Note: The figures in the parentheses are percentages of the total households

Earning Members in a Household

As seen from Table 4.6 the average number of income earners per household in the sample was 2.45. For the three categories of households, average number of earning members was 2.21 for permanent worker households, 2.17 for casual worker households and 2.74 for small grower households.

Table 4.6: Average Number of Earning Members in a Household

Category of Households	Average Number of Earning Members
PWH	2.21
CWH	2.17
SGH	2.74
Total	2.45

Dependency Ratio

The dependency ratio⁷ is found to be 1.25 in the plantation households indicating that every earning member in a household has to take care of one and a fourth of the non-earning member. Among the category of households, permanent worker households have the highest dependency ratio of 1.63 followed by casual worker households (1.00) and small grower households (0.97).

Table 4.7: Dependency Ratio in Plantation Households

Category of Households	Average Dependency Ratio
PWH	1.63
CWH	1.00
SGH	0.97
Total	1.25

The number of income earners per plantation household included members who were engaged in plantation as well as non-plantation work. The presence of individuals engaged in non-plantation work in a plantation household, such as casual worker household and small grower household is not surprising. However, as was discussed in the previous chapter, employment in the estate sector was family based and this system of employment is seen to be breaking down in case of permanent estate worker households. Within these earning members, to get idea about how many of them were in plantation work and how many were in non-plantation work, the descriptive statistics of number of plantation workers and number of non-plantation workers in a household are given below.

Members in a Household Engaged in Plantation Work

Table 4.8 shows that the average number of members in a household engaged in plantation work was 1.91. For permanent worker household and small tea grower household, average number of members engaged in plantation work was 1.75 and 2.24 respectively while for casual worker household, it was 1.30. The casual worker household and the permanent worker household have at the most

⁷ Dependency ratio is defined as the ratio of non-earning members and earning members in a household.

3 members engaged in plantation unlike the small grower household wherein at the most 5 members were engaged in plantation work (see Table 4A.1.5 in appendix). The higher number of members engaged as plantation worker in a small tea grower household than the other two category of household indeed reflects the use of unpaid family labour.

Table 4.8: Average Number of Members in a Household Engaged in Plantation Work

Category of Households	Average Number of Members in a Household Engaged in Plantation Work
PWH	1.75
CWH	1.30
SGH	2.24
Total	1.91

Members in a Household engaged in Non-Plantation Work⁸

Table 4.9 shows that on an average less than one member (0.68) in a plantation household was engaged in non-plantation work. Same was found for the permanent worker household and small tea grower household while for the casual worker household average number of member engaged in non-plantation work was 1.07. This indicates that there is higher dependence on plantation work in the permanent and small tea grower household unlike the casual worker household where they are engaged in other income earning activities besides plantation work.

Table 4.9: Average Number of Members in a Household Engaged in Non-Plantation Work

Category of Households	Average Number of Household Members Engaged in Non-Plantation Work
PWH	0.44
CWH	1.07
SGH	0.77
Total	0.68

Table 4.10 shows 53 percent of the overall plantation households were engaged only in plantation work whereas rest 47 percent were involved in both plantation

⁸ Plantation work includes workers engaged as permanent estate worker, casual estate worker and small tea growers. Besides plantation work, individuals were found to be engaged as carpenter, mason, shop keeper, cook, security guard and government employee. So they are broadly clubbed under non-plantation work.

and non-plantation work for their livelihood. Considering the categories of households, 71 percent of the permanent worker households fully relied on plantation work for their livelihood while remaining 29 percent of them were engaged in both plantation and non-plantation work. For the casual worker households, 23 percent of them were solely dependent on plantation work while 77 percent of them were dependant on both plantation and non-plantation work. Regarding the small tea growers' households, 47 percent of them were engaged only in plantation work and 53 percent of them were engaged in both plantation and non-plantation work. This pattern points to the diversification of economic activity of a plantation household between plantation and non-plantation work. It also indicates that the permanent workers are relatively more vulnerable to any adverse changes occurring in the tea sector due to their higher reliance on plantation work for livelihood compared to casual and small tea growers.

Table 4.10: Distribution of Number of Members in a Household Engaged in Non-Plantation Work

Number of Members Engaged in Non-Plantation Work	Total Household		PWH		CWH		SGH	
	frequency	%	frequency	%	frequency	%	frequency	%
0	106	53.0	57	71.3	7	23.3	42	46.7
1	66	33.0	16	20.0	15	50.0	35	38.9
2	19	9.5	4	5.0	7	23.3	8	8.9
3	5	2.5	1	1.3	1	3.3	3	3.3
4	3	1.5	2	2.5	-	-	1	1.1
5	1	.5	-	-	-	-	1	1.1
Total	200	100.0	80	100	30	100	90	100.0

After getting an idea about the demographic, socio-economic and household characteristics, the following sections will examine the employment position of the workers in terms of intra-household occupational choice and employment status choice.

4.4 Intra-Household Occupational Choice: An Analysis using Binomial Logit Model

The choice of occupation has been considered to be very crucial as it determines the income of an individual and his/her place in a society and can enhance or limit one's growth opportunities (Singh and Vijverberg, 2007).

Economic theory has various explanations for the choice of different occupational status by an individual. Literature in this area has been drawn from Becker (1964) wherein he emphasises on the role of human capital in occupational choice. In the realm of theory of human capital and occupational choice, Boskin (1974) provides empirical evidence and argues that the level of education and wages plays a significant role in the occupational choice. Further Schmidt and Strauss (1975) have shown that the occupational choice of an individual is determined by an individual's education, experience, race and gender. In a recent study by Singh and Vijverberg (2007), they have taken occupation as a function of individual traits such as education, experience, individual's tastes and preferences; occupational attributes such as human capital requirement of an occupation, working conditions in an occupation; and wages. The strand of literature focussing on the livelihood strategy of households have considered factors such as age, education, land, household size and geographical location and have found these factors to be essential in understanding the occupational choice of the household members (Hatlebakk, 2009; Ellis and Freeman, 2005)

Drawing from the existing theories and empirical studies, variables such as age, sex, social group, educational level, geographical location and monthly income earned from the occupation are used in specifying the model for intra-household occupational choice (see appendix 4A.2 for details on the descriptive analysis of these variables). The appropriate specification in this context is binomial logit model. Here the dependent variable is occupation with two categories namely plantation work and non-plantation work. Occupation dummy takes value 1 for plantation work and 0 for non-plantation work.

Variables such as age, household size are taken in terms of their actual values while variables such as sex, social group, educational level and geographical location are taken as dummies.

4.4.1 Hypotheses

The following variables have been hypothesised to influence the occupational choice of an individual between plantation and non-plantation work.

Age: In their study, Viswanathan et al. (2003) have shown that there is increasing preference among the younger generation to abstain from plantation work. Hence age is taken here in order to account for the attractiveness of the plantation work over non-plantation work among the plantation population. It is hypothesised that age of an individual is positively related to participation in plantation work.

Gender: Traditionally more of female workforce is seen to be concentrated in plantations (Jain, 1988; Roy Mukherjee, 2007), therefore gender is also likely to influence the occupational choice of an individual. It is hypothesised that females are more likely to participate in plantation work than in non-plantation work. Gender dummy takes the value 1 for males and 0 for female.

Education: Several studies on occupational choice of an individual have found education to be an important determinant of occupational choice (Schmidt and Strauss, 1975; Dolton et al, 1989). In this case, higher education can be expected to enable the individual to look for jobs outside plantations. Here three categories of educational level have been considered namely illiterates, below secondary education⁹ and above higher secondary education. Two dummies for “up to secondary education” (up to secondary education =1, 0 otherwise) and “higher secondary education & above” (Higher second & above =1, 0 otherwise) is taken. Not literate has been considered to be the reference category. Higher education is hypothesized to be linked to a shift towards non-plantation work.

⁹ Individuals having primary and middle secondary level of education are clubbed into secondary education.

Geographical Location: Regional factors in the form of geographical location are said to play a role in the access to and availability of employment opportunities (Unni, 1996). Unlike the individuals in the casual worker households and small grower households who are located outside the estate, the individuals in the permanent worker households are descendants of the settlers who have worked as well as lived in the estate through ages. Regional factor in the form of different location might be expected to influence the choice between plantation and non-plantation work as far as the availability of employment opportunities is concerned. Geographical location has been divided into residing within the estate and residing outside the estate. A value of 1 is given to individual if located inside the estate and a value of 0 if located outside the estate. Here, geographical location in terms of residing within the estate is hypothesized to positively influence the joining of plantation work.

Social Group: The influence of social stratification is said to be manifested in terms of caste which was based on the traditional division of labour in the society (Kannan, 1990). Historically, a substantial proportion of plantation workers have been forthcoming from scheduled tribe communities (Bhowmik, 1981). As such the occupation in which an individual engages in can be expected to be influenced by the social group to which an individual belongs. It is hypothesised that individuals belonging to ST and SC category are more likely to join plantation work. Social group dummy takes value of 1 for ST and SC category and value of 0 for General category.

Household size: Household size is considered to have a decisive influence on labour supply by an individual (Nair, 1997). Household size can be hypothesized to be linked to shift to non-plantation work as an increase in household size can be expected to enable the members in the plantation households to diversify their income earning activity by participating in activities other than plantation work.

Monthly Wages: Occupational choice is said to be explained by a fully informed rational decision about wages (Boskin, 1974; Tascir, 2010). The individuals are believed to select occupations after assessing the future state of the labour market

and all the relevant information being fully revealed by wages and employment rates. Thus any observed lack of interest in certain occupations simply reflects the lack of employment opportunities or lower wages with respect to other options (Tascir, 2010). Wages earned from the two occupational categories can also be considered to be an important determinant of the individual's choice of joining plantation and non-plantation work.

The equation to be estimated can be written as

$$Y_i = \beta_0 + \beta_1 AGE + \beta_2 GEN + \beta_3 SG + \beta_4 HHS + \beta_5 E_2 + \beta_6 E_3 + \beta_7 GL + \beta_8 W + U_i \dots \dots \dots (1)$$

Where,

Y_i represents 1 if an individual joins plantation work and 0, if joins non-plantation work

AGE: Age of the employed member in a household

GEN: Gender of the employed individual

SG: Social Group to which the employed individual belongs

HHS: Household size

E_2 : Dummy for educational level of the individual which takes 1 if the individual is up to secondary level educated, 0 otherwise

E_3 : Dummy for educational level of the individual which takes 1 if the individual is higher secondary level educated and above, 0 otherwise.

GL: Dummy for Geographical Location which takes 1 if the individual is residing within the estate, 0 if residing outside

W: Monthly wages of the individual

4.4.2 Results of the Estimated Model

The results of the logistic regression of occupational choice of an individual between plantation and non-plantation work are given in Table 4.11. It needs to be mentioned that two sets of results are presented in the table, one with all the above mentioned variables excluding wage and the other including wages. This was done due to unavailability of data on the wages of the some individuals engaged in non-plantation work ¹⁰(wage data for around 14 individuals was missing). First the model was run by excluding the wage data, in order to avoid losing the 14 observations. Then the model was run again by incorporating the available wage data leaving out the missing observations.

Household size, age, sex, higher education level and social group of an individual are seen to be statistically significant. The coefficient of 'household size' is negative and significant at 5% level implying that with an increase in household size an individual is less likely to join plantation job over non-plantation work. Given the fact that if in case a permanent worker in an estate is not able to continue with his/her services in the plantations, they have to send a household member as his substitute for work; so smaller the household size there is more possibility of the member of the household to go for plantation work. Whereas if the household size is large, it can be expected that while one member can go as a substitute in plantation work, others have the choice to join other occupations if they want to.

There is seen to exist a positive relationship between age and occupation as a plantation worker indicating that individuals with higher age are more likely to get into plantation work than non-plantation. This reflected that younger aged individuals are moving away from plantation work into other occupations. Females are seen to have higher probability of joining plantations than males. Traditionally in the estate sector, more of women labour was demanded as they were easy to supervise and formed a cheap source of labour. The joining of more

¹⁰ The unavailability of data was mainly because these individuals were engaged in works outside plantations and the respondents did not have any idea about their wages.

of female in the plantations can also be due to the presence of more of women as unpaid family labour in small grower households, so the male member of the household have greater mobility in joining non-plantation work. Individuals having higher secondary level education and above are less likely to join plantations. This reflects that with increase in the level of schooling there is tendency for the members in the plantation households to look for other income earning activities rather than joining plantation work.

The coefficient of social group is negative and highly significant indicating that individuals belonging to the ST and SC category are more likely to join plantations than other occupations. The estate sector had historically relied on mainly the ST and SC workers for work in the plantations and the descendants of these workers are still living and working in the estates. As such they take up the job in the plantations as a legacy of their forefathers. It needs to be pointed out that while the estate sector has greater number of ST and SC workers, majority of growers in the small tea sector mainly belong to the general category. Contrary to the expectation, geographical location in terms of residing within the estate is seen to have a negative impact on taking up of plantation job as an occupation. An individual residing within the estate is less likely to join plantations than other non-plantation work. This might also be indicative of the tendency of the plantation population, mainly in the estate sector to move away from employment in plantations to other occupations.

In the model including wages, all other variables are found to have the same effect on choice of occupation as stated in the model excluding wages except that education is not found to be statistically significant. It can be seen that income earned from the two occupations has a negative effect on the joining of plantation work indicating that higher the income earned from an occupation lesser the probability to join plantation work. It indeed indicates that plantation work is less remunerative than non-plantation work.

Table 4.11: Logistic Regression of Occupational Choice of an Individual between Plantation and Non-Plantation Work

Dependent Variable: Plantation and Non-Plantation Work				
Explanatory Variables	Excluding Wages		Including Wages	
	Coefficient (Standard Error)	Odds Ratio ¹¹	Coefficient (Standard Error)	Odds Ratio
Constant	1.283*** (0.717)		1.871** (0.872)	
Household Size	-0.184* (0.064)	0.832	-0.157** (0.078)	0.854
Age	0.065* (0.013)	1.067	0.080* (0.016)	1.084
Gender	-1.805* (0.290)	0.164	-1.766* (0.351)	0.171
Social Group	0.569** (0.284)	1.767	0.872** (0.336)	2.392
Geographical Location	-1.109* (0.281)	0.330	-1.821* (0.357)	0.162
Up to Secondary Education	0.154 (0.333)	1.167	0.717 (0.390)	2.048
Higher Secondary & above	-1.844* (0.158)	0.158	-0.262 (0.639)	0.770
Monthly Wage	-	-	-0.001* (0.000)	1.000
Number of observations	488		474	
LR chi2	143.67 (7 d.f)		217.82 (8 d.f)	
Prob>chi2	0.000		0.000	
Log likelihood	-200.364		-136.060	
Pseudo R2	0.264		0.432	

Note: Figures in the parentheses indicates standard error. "*" indicates significant at 1 percent level of significance. "***" indicates significant at 5 percent level of significance, "****" indicates significant at 10 percent level of significance; d.f is degrees of freedom

From the above analysis it was observed that individual characteristics such as age, sex, educational level, and social group; geographical location as well as household size is found to be significant determinants of the intra-household occupational choice of an individual. It can be concluded from the above econometric analysis that plantation work is characterised by the presence of aged individuals, females, having less education, smaller household size, belonging to ST&SC category, and earning lower income. This point to the greater prevalence of sections of the society in plantation work who are particularly vulnerable to deprivation and poverty. Younger individuals and educated individuals moving away from plantation work is perhaps also an

¹¹ The odd is defined as the ratio between 'probability that an individual will join plantation work' and 'probability that an individual will join non-plantation work'.

indicator of the lesser attractiveness of plantation work among them. Possible explanation for this can be the lower work status and lower remuneration associated with plantation work. This trend can be expected to have serious implications for the availability of labour in future. At present though supply of labour for the estate management does not seem to be problem as they have access to casual workers who are available as lowest cost option to them. But this kind of strategy of the management to lower their labour cost by depending more on casual labour will further reinforce this trend of the choice pattern of the coming generation being in favour of non-plantation work over plantation work.

As has been already pointed out that there exist three types of employment statuses in plantation work namely, permanent worker and casual worker in the estate and self-employed workers pertaining to the small tea growers. Now given his/her constraints and opportunities, an individual makes a choice between plantation work and non-plantation work; and if that choice is for plantation work then that individual faces further choice between these three employment statuses. In the following section the question regarding what determines the employment status of a plantation worker as permanent, casual and self-employed worker in the plantations has been explored. Since here the discrete dependant variable takes three outcomes, a multinomial logit model which is a natural extension of the binomial logit model would be the appropriate specification.

4.5 Choice of Employment Status: An Analysis using Multinomial Logit Model

The employment status of the individuals in the plantation households can be broadly categorised into permanent, casual and self-employed workers. The permanent workers are the resident workers of the estate; casual workers are the outside non-resident workers of the estate and also the resident individuals in the

permanent worker households who work as casual workers¹²; and the self-employed workers are the small tea growers.

It has been pointed out that the employment decisions of an individual are not entirely determined by differences in market wages but personal preferences also play an important role (Hoyos, 2006). Personal preferences are said to be affected by individual characteristics, household characteristics and community characteristics (Arunatilake and Jayawardena, 2010). However, in the present study we confine to only individual and households characteristics due to paucity of information on the latter characteristics. For representing the individual characteristics, variables such as age, gender, social group has been taken. To capture the structure of the households, household level characteristics such as household size, occupation of the household head and dependency ratio have been taken. Besides these variables, educational level of the individuals have been taken.

The econometric analysis of a plantation worker's employment status choice is done by using multinomial logit model. The dependent variable is the employment status of a plantation worker with three categories namely permanent, casual and self-employed. The self-employed status is taken as the reference category. The independent variables are age, gender, social group, occupation of household head, household size, dependency ratio, education and monthly earnings of the individual (see appendix 4A.3 for details on descriptive analysis of these variables). Age, household size, dependency ratio are taken in terms of their actual values while other variables are taken in the form of dummies.

¹²It needs to be mentioned that the permanent worker households in the estate consisted of not only permanent workers but also some households had members who were engaged as casual workers in the estate during the peak season. As such permanent worker households can have both permanent and casual workers in the estate while casual outside workers household can have only casual workers in the estate. So here the individuals in the permanent resident worker households who are working as casual workers in the estate are also included in the casual worker status.

4.5.1 Hypotheses

The following variables have been hypothesised to influence the occupational choice of an individual between plantation and non-plantation work.

Age: Age profile of an individual is said to have an impact on the choice between the employment statuses. Studies have shown that age has a positive and significant effect on the probability to choose self-employment over wage employment (Destre and Henrard, 2004; Hasan and Jandoc, 2010). Here younger individuals are expected to be engaged as casual workers than as permanent and self-employed worker.

Gender: Khandker (1992) have shown in his study that choice of the employment status by an individual varies with gender. It is hypothesised that within plantation work, more of female would be engaged as casual worker in the organised estate sector and as self-employed worker in the unorganised small grower sector than as permanent worker. Here, gender dummy takes the value 1 for male and 0 for female.

Social group: In his study on rural employment Ranjan (2008) have suggested that there is caste wise distribution of workers across the various activity statuses such as self-employment, regular and casual mode of employment. Here, ST and SC workers are expected to be engaged in permanent and casual status in greater degree. Social group dummy takes value of 1 for ST and SC category and value of 0 for General category.

Education: Education as human capital variable is found to influence choice between permanent, casual and self-employment (Khandker, 1992). Here, education has been categorized into 'not literate', 'below secondary education'¹³ and 'above higher secondary education'. Two dummies for below secondary education (below secondary education =1, 0 otherwise) and above higher secondary education (Higher second & above =1, 0 otherwise) has been taken.

¹³ Individuals having primary and middle secondary level of education are clubbed into below secondary education.

'Not literate' is considered to be the reference category. Lower educational level can be expected to make an individual join casual work.

Household size: Household size is hypothesized to negatively influence joining as a permanent and casual worker over self-employed worker. As in case of self-employed small tea grower, higher the household size, higher the possibility of engaging their family members in tea growing in their farms as unpaid family labour.

Occupation of the Household Head: Empirical evidences suggest that parental status has a significant effect on the occupational outcomes of an individual. If an individual's father or mother achieves a high occupation status, then this social status can assist in the achievement of a higher occupation status for an individual (Constant and Zimmerman, 2003; Ham et al, 2009). Since no information was collected on the employment status of the parents of the workers, the occupation of the household head (who in most cases were the parents of the workers in our sample) has been taken to account for the effect of parental status on the individual's occupational choice. The occupational status of the household head is taken as a dummy variable with value of 1 for plantation work and value of 0 for non-plantation work.

Dependency ratio: allows one to measure the burden of non-working members on the workers in the household. It can be expected that higher the dependency ratio higher the likelihood of being forced into taking up casual work.

4.5.2 Results of the Estimated Model

Table 4.12 gives the results of the estimated model. Self-employed is the reference category in the estimated model. From the estimated results, age, social group, and dependency ratio are found to be statistically significant for the employment status of an individual. Younger individuals are less likely to join as permanent workers than as self-employed workers. Individuals belonging to the ST and SC social group have higher probability of joining as permanent worker in the estate than self-employed worker. This result is not surprising as historically most of

the estate workers have been ST and SC category (mostly ST) who were displaced from their original places to work in the plantations. Their descendants are still working and living in these estates for generations. With increase in dependency ratio, individuals are more likely to be in permanent status than self-employed status in plantations.

The choice of casual employment status by an individual over self-employment is influenced by occupation of the household head, household size, age, social group, dependency ratio, and level of education of the individuals. Coefficients of all the variables representing these factors turned out to be statistically significant in the estimated model.

Younger individuals have higher probability of joining as casual worker than as self-employed worker. The likelihood of becoming a casual worker as opposed to self-employed worker is higher for ST and SC category than the general category. Though negative relationship is found between gender and being a casual worker indicating that women are more likely to be in casual work than in self-employed work, the relationship is not found to be significant. However the descriptive analysis showed that among all three employment statuses, more of females than males are engaged in casual work (see Table 4A.3.5).

If the household to which an individual belongs has its head engaged as a plantation worker, then the individual is less likely to join as casual worker than as self-employed worker. This indicates that if the household head is a small grower then the members of the family are more likely to be drawn into plantation work as unpaid workers. However, if the household head is a casual plantation worker, then the members of the households are less likely to join as casual workers. Also it was understood from our field survey that the workers themselves did not want their children to work in the estates rather they preferred to educate them and wanted them to seek jobs outside the estate sector. Thus there seemed to be a marked preference for non-plantation work mainly in the estate sector.

With an increase in household size, an individual is less likely to join as casual worker than self-employed worker. This shows that higher the household size, the greater dependence of family members of self-employed small growers on plantation work. This is because they are drawn into farm work as unpaid family labour. Individuals with no education are more likely to join as casual worker than self-employed worker. Further, as was seen in the case of permanent workers, with an increase in dependency ratio an individual was likely to be engaged in casual work in the estate than as self-employed. This indicates that there is higher probability of joining wage work rather than self-employed plantation job, if the dependency ratio is higher. Individuals with no education are more likely to join as casual worker than self-employed worker.

Table 4.12: Estimates of Multinomial Logit Model for the Choice of Employment Status in Plantation Work

Explanatory variables	Permanent Worker		Casual Worker	
	Coefficient	Odds Ratio	Coefficient	Odds Ratio
<i>Individual Characteristics</i>				
Age	0.046** (0.014)	1.047	-0.054** (0.019)	0.948
Gender	0.270 (0.325)	1.310	-0.370 (0.380)	0.691
Social Group	2.841* (0.335)	17.133	2.212* (0.359)	9.133
<i>Household Characteristics</i>				
Occupation of the Household Head	-0.561 (0.564)	0.571	-1.113*** (0.473)	0.329
Household Size	-0.054 (0.088)	0.947	-0.267*** (0.110)	0.765
Dependency Ratio	1.510* (0.242)	4.525	1.079* (0.275)	2.942
<i>Education</i>				
Below Secondary Education Dummy	0.223 (0.376)	1.249	-0.980** (0.439)	0.375
Higher Education Dummy	-0.271 (0.999)	0.762	-1.714 (1.085)	0.180
Constant	-4.691* (1.013)		2.058*** (1.056)	
Self-employed is the reference category				
Number of observations = 368				
LR chi2 (16) = 209.51				
Log Likelihood = -267.466				
Prob>chi2 = 0.000				
Pseudo R2 = 0.2814				

Note: Figures in the parentheses indicates standard error. * indicates significant at 1 percent level of significance. ** indicates significant at 5 percent level of significance, *** indicates significant at 10 percent level of significance

4.6 Conclusion

An econometric analysis of the determinants of an individual's choice of occupation and employment status helped us identifying the groups whose labour market prospects make them particularly vulnerable to deprivation and poverty. These groups include casual workers, female, ST and SC, older people, less educated who are mainly found concentrated in plantation work. Within plantation work, the casual workers were observed to be in the lowermost order in the employment hierarchy characterised by the presence of young individuals, female, ST and SC, illiterate. The trend of younger generation moving away from plantation work was also observed which has broader implications in terms of future availability of labour force in the tea plantations. This perhaps explains low attractiveness of plantation work among them inter alia on account of lower work status and lower remuneration associated with plantation work.

After getting an understanding of the determinants of employment position of an individual in tea plantation with the help of occupational choice model and employment status model of an individual, we will try to see whether the employment position of the workers have enabled them to have better economic status and hence better standard of living. This aspect will be explored in the next chapter.

Appendix 4A.1

Table 4A.1.1: Distribution of Resident Workers Households in Longview Tea Estate across 19 Labour Lines

Serial No.	Name of Labour Lines	Number of Households
1	Durpin	16
2	Barbatia	75
3	Ramitey	38
4	Munshidhura	24
5	Godamdhura	23
6	Kerabari	19
7	Velakup	45
8	Central Line	13
9	Kothidara	33
10	Naya Goan	15
11	Thalipakha	27
12	Bimitar	31
13	Pankhabari(New line)	6
14	Chilauneydhura	36
15	5 No. line	28
16	Hospital Line	32
17	Plain Line	59
18	T/34	50
19	Kalikhola	57
	Total	627

Table 4A.1.2: Distribution of Sample Households of Resident Workers across the Selected Labour Lines

Name of Labour Lines	No. of Households	Sample Households
Barbatia	75	32
Ramitey	38	16
Velakup	45	20
5 No. Line	28	12
Total	186	80

Table 4A.1.3: Distribution of Small Growers Households in Mineral Spring across 10 hamlets

Serial No.	Name of Hamlets	No of Households	Sample Households
1	Aapbotey	56	10
2	Dara Goan	18	3
3	Sailadhura	39	7
4	Subhandhura	51	9
5	Kotidhura	31	5
6	Godamdhura	96	16
7	Balbirdhura	32	6
8	Gairi Goan	117	20
9	Yangkhoo	62	11
10	11 No.	19	3
	Total	521	90

Table 4A.1.4: Demographic Features of the Study Area

Indicators	Lebong & Mineral Spring Small Growers	Longview Tea Garden	Darjeeling District	West Bengal
	Rural	Rural		
Number of Households	1121	954	318737	15872083
Household size	4.8	4.8	5	5.1
'Total Population'	5370	4558	778528	80176197
SC Population (%)	5.23	13.69	16.09	23.02
ST Population (%)	6.11	11.06	12.69	5.5
'Male Population'	2750	2304	830644	41465985
'Female Population'	2620	2254	778528	38710212
Total literacy (%)	78.5	62.2	71.79	68.64
Male literacy (%)	85.3	73.4	80.1	77
Female literacy (%)	71.4	50.8	62.9	59.6
life expectancy at birth Male (%)			67	65
Life expectancy at birth Female (%)			71	69

Source: Primary Census Abstract, Census of India 2001; Bureau of Applied Economics and Statistics, West Bengal

Table 4A.1.5: Descriptive Statistics of Number of Members in a Household Engaged in Plantation Work

Summary Statistics	Total Household	PWH	CWH	SGH
Mean	1.91	1.75	1.30	2.24
Median	2.00	2.00	1.00	2.00
Mode	2	2	1	2
Std. Deviation	.842	.626	.535	.940
Skewness	.997	.238	1.621	.817
Kurtosis	1.275	-.584	1.950	.558
Minimum	1	1	1	1
Maximum	5	3	3	5
No of observations	200	80	30	90

Appendix 4A.2: Descriptive Analysis of Intra-household Occupational Choice

A strong relationship is found between the members of three plantation categories and their occupation. The relationship between the two is found to be statistically significant at 5 % level. It can be seen from Table 4A.2.1 that in the case of permanent worker households, around 21 percent of the resident workforce did not pursue the traditional estate job. While in the case of casual worker households who reside outside the estate, around 40 percent of individuals are engaged in other occupation. For small tea grower households, around 23 percent of individuals are engaged in other occupation. The

dependence on other sources of occupation and income is lower for the members of the permanent worker households as compared to that of the members in casual and small grower households.

Table 4A.2.1: Distribution of Employed Members of the Plantation Households by Occupation and Household Category

Occupation	Members of Sample Households			
	PWH	CWH	SGH	Total
Plantation ¹⁴	140 (79.5)	39 (60)	189 (76.5)	368 (75.41)
Non-Plantation ¹⁵	36 (20.5)	26 (40)	58 (23.5)	120 (24.59)
Total Employed	176 (100)	65 (100)	247 (100)	488 (100)

Pearson chi2 (2) = 10.1107, Pr = 0.006; Cramer's V = 0.1439

Note: The figures in parentheses are the percentage distribution of employed members in different household categories by occupation

Age of the Individual: Table 4A.2.2 shows a strong relationship between occupation and age of an individual. The relationship is found to be statistically significant at 1 % level. Majority of the individuals engaged in plantation work (32 percent) are in the age group of 31 to 40 while majority of the individuals engaged in other occupation (44 percent) are in the age group of 21 to 30. In plantation work, 28 percent of the individuals were under 30 years of age while in non-plantation work 52 percent of them were under 30 years of age. This indicates that comparatively younger age individuals are engaged in non-plantation work than in the plantation work.

Table 4A.2.2: Distribution of Employed Individuals by Occupation and Age Groups

Occupation	15-20	21-30	31-40	41-55	Above 55	Total
Plantation Work	4 (1.1)	99 (26.9)	119 (32.3)	100 (27.2)	46 (12.5)	368 (100)
Non-plantation	9 (7.5)	53 (44.2)	26 (21.7)	27 (22.5)	5 (4.2)	120 (100)
Total	13	152	145	127	51	488

Pearson chi2 (4) = 32.870, Pr = 0.000; Cramer's V = 0.2560

Note: The figures in parentheses are the percentages of employed members of the households

¹⁴ Plantation work includes workers engaged as permanent estate worker, casual estate worker and small tea growers.

¹⁵ Besides plantation work, individuals were found to be engaged as carpenter, mason, shop keeper, cook, security guard and government employee. So they are broadly clubbed under non-plantation work.

Table 4A.2.3: Descriptive Statistics of Age of the Employed Individuals

Summary Statistics	Total	Plantation Work	Non-Plantation Work
Mean	38.19	39.79	33.28
Median	36.00	38.00	30.00
Mode	40	40	25
Std. Deviation	12.307	12.350	10.826
Skewness	.641	.622	.679
Kurtosis	-.050	-.072	-.343
Minimum	15	16	15
Maximum	78	78	60
No.of observations	488	368	120

Gender: The relationship between occupation and gender is found to be statistically significant at 1 % level (see Table 4A.2.4). A higher percentage of females (55 percent) were found to be engaged in plantation work as compared to males (45 percent). In other occupation, 81 percent males were engaged compared to 19 percent females. This is in line with the result that had been obtained from the secondary data showing greater participation of women in plantation work.

Table 4A.2.4: Distribution of Employed Individuals by Occupation and Sex

Occupation	Gender		Total
	Female	Male	
Plantation Work	203 (55.2)	165 (44.8)	368 (100)
Non-Plantation Work	23 (19.2)	97 (80.8)	120 (100)
Total	226	262	488 (100)

Pearson chi2 (1) =47.158, Pr = .000; Cramer's V = .311

Note: The figures in the parentheses are percentages of employed members of the households

Social Group: Occupation and social group of an individual shows a strong positive relationship with each other. It is found to be statistically significant at 5 % level (see Table 4A.2.5). Higher percentage of individuals belonging to ST category is seen to be engaged in plantation work (84 percent) than in non-plantation work (16.46). Similar pattern is noticed in the case of other category of social group such as SC and general.

Table 4A.2.5: Distribution of Employed Individuals by Occupation and Social Group

Occupation	Social Group			Total
	ST	SC	General	
Plantation Work	132 (83.54)	26 (61.90)	210 (72.92)	368
Non-Plantation Work	26 (16.46)	16 (38.10)	78 (27.08)	120
Total	158	42	288	488
Pearson chi2 (2) = 10.7344, Pr = 0.005; Cramer's V = 0.1483				

Note: The figures in the parentheses are percentages of employed members of the households

Educational Level¹⁶: The relationship between occupation and education of an individual is found to be statistically significant at 1% level (see Table 4A.2.6). In both plantation work (37 percent) and other occupation (44 percent), a higher percentage of workers are found to have middle secondary level of education. However, a higher percentage of 'not literate' individuals are found to be engaged in plantation work than in non-plantation work. 21 percent of individuals engaged in non-plantation work were found to have above higher secondary level of education as against 3 percent of individuals in plantation work who had above higher secondary level of education. This might reflect that members in plantation households who managed to get higher education seek to go for non-plantation work rather than plantation work.

Table 4A.2.6: Distribution of Employed Individuals by Occupation and Educational Level

Occupation	Not Literate	Primary	Middle Secondary	Higher Secondary	Graduation & Above	Total
Plantation Work	107 (29.1)	116 (31.5)	135 (36.7)	4 (1.1)	6 (1.6)	368 (100)
Non-Plantation Work	19 (15.8)	23 (19.2)	53 (44.2)	13 (10.8)	12 (10.0)	120 (100)
Total	126	139	188	17	18	488
Pearson chi2 (3) = 53.719, Pr = 0.000; Cramer's V = .332						

Note: The figures in the parentheses are percentages of employed members of the households

Geographical Location: The relationship between geographical location and occupation is found to be statistically significant at 1% level. A higher percentage of the individuals engaged in plantation work (62 percent) are shown to be residing outside the estate than within the estate. This figure is mainly reflective

¹⁶ Primary means from nursery to class 5; Middle secondary means from class 6 to class 10. Higher secondary means class 11 and class 12.

of the individuals who are mainly the small growers and whose majority of family members are also engaged in tea cultivation. The higher percentage of individuals residing in the estate (58 percent) is found to go for non-plantation work which indicates that the plantation population in the estate is moving away from plantation work.

Table 4A.2.7: Distribution of Employed Individuals by Geographical Location

Occupation	Geographical Location		Total
	Residing Outside the Estate	Residing In the Estate	
Plantation Work	228 (62)	140 (38)	368 (100)
Non-Plantation Work	50 (41.7)	70 (58.3)	120 (100)
Total	278 (57)	210 (43)	488 (100)

Pearson chi2 (1) = 15.196, Pr= .000; Cramer's V = .176

Note: The figures in the parentheses are percentages of employed members of the households

Monthly Income¹⁷ of the Individual: The median income of the individuals engaged in non-plantation work is Rs 3500 per month which is higher than the median income of individuals engaged in plantation work i.e. Rs 1449 (Table 4A.2.8).

Table 4A.2.8: Descriptive Statistics of Monthly Income of an Individual

Summary Statistics	Non-Plantation Work	Plantation Work	Total
Mean	6697.73	1853.53	2936.83
Median	3500	1449	1600
Std Dev	6456.54	1548.94	3898.5

Dividing the individuals engaged in plantation and non-plantation work by income quartiles, it can be seen that majority of individuals engaged in plantation work (49 percent) fall in the bottom income quartile. While a greater proportion of individuals engaged in non-plantation work (61 percent) belong to the top income quartile (see Table 4A.2.9). This reflects that the non-plantation work is relatively more remunerative than plantation work.

¹⁷ Monthly income of the individuals is shown in terms of basic wage for both plantation and non-plantation work because information on the wages of individuals engaged in non-plantation work (mainly formal work) was provided in terms of basic monthly wage of the individual. Hence to ensure comparability of the monthly income of the individuals engaged in these two occupations, basic wage was taken.

Table 4A.2.9: Distribution of Employed Individuals by Occupation and Income Quartiles

Occupation	1 st Quartile (Bottom)	2 nd Quartile	3 rd Quartile	4 th Quartile (Top)	Total
Plantation Work	181 (49.18)	42 (11.41)	93 (25.27)	52 (14.13)	368 (100)
Non-Plantation Work	9 (8.49)	8 (7.55)	24 (22.64)	65 (61.32)	106 (100)
Total	190 (40.08)	50 (10.55)	117 (24.68)	117 (24.68)	474 (100)

Pearson chi2 (3) = 109.6416, Pr = 0.000; Cramer's V = 0.4809

Note: The figures in the parentheses are percentages of employed members of the households

Appendix 4A.3: Descriptive Analysis of Employment Status of Plantation Workers

The distribution of three categories of workers in the plantation workforce is given in Table 4A.3.1. Out of 368 persons engaged in plantation work, 31 percent were engaged as permanent worker, 18 percent as casual and 51 percent as self-employed workers.

Table 4A.3.1: Distribution of Plantation Workers by Employment Status

Employment Status	Frequency	Percent
Permanent Worker	114	31.0
Casual Worker	65	17.7
Self-employed	189	51.4
Total	368	100

Age of an Individual: The mean age is 42.82 years for permanent worker; 33.60 years for casual worker and 40.08 year for self-employed worker (see Table 4A.3.2). The casual workers are seen to be relatively younger than the permanent and self-employed workers. The minimum age of an individual engaged in plantations is 16 and maximum age is 78. This minimum and maximum age corresponds to the individual belonging to self-employed small grower status. Individuals irrespective of smaller age or higher age are involved in tea growing in the small holder sector as compared to permanent workers.

Table 4A.3.2: Descriptive Statistics of Age of the Plantation Workers

Summary Statistics	Permanent	Casual	Self-employed
Mean	42.82	33.60	40.08
Median	41.00	31.00	38.00
Mode	40	22(a)	40
Std. Deviation	10.075	10.205	13.503
Skewness	.176	.936	.758
Kurtosis	-.771	.524	.009
Minimum	23	19	16
Maximum	63	66	78
Number of observations	114	65	189

The distribution of the plantation workers by employment status and age groups in the Table 4A.3.3 also clearly shows that majority of permanent workers are above 30 years of age while for the casual workers around 48 percent are in the age group of below 30 years. The relationship between age group and employment status of the plantation workers are found to be statistically significant at 1 % level.

Table 4A.3.3: Distribution of Plantation Workers by Employment Status and Age Groups

Employment Status	15-20	21-30	31-40	41-55	Above 55	Total
Permanent worker	0 (0)	14 (12.3)	42 (36.8)	43 (37.7)	15 (13.2)	114 (100)
Casual worker	1 (1.5)	30 (46.2)	19 (29.2)	14 (21.5)	1 (1.5)	65 (100)
Self-employed	3 (1.6)	55 (29.1)	58 (30.7)	43 (22.8)	30 (15.9)	189 (100)
Total	4 (1.1)	152 (26.9)	119 (32.3)	100 (27.2)	46 (12.5)	368 (100)

Pearson chi2 (8) = 36.012, Pr = 0.000; Cramer's V = 0.313

Note: The figures in the parentheses are the percentages of total plantation workers

Occupation of Household Head: The relationship between employment status of an individual and occupation of the household head is found to be statistically significant at 1 % level (see Table 4A.3.4). Since having a senior plantation member in a household can be expected to have an influence on the taking up of the above mentioned three employment status. As has already been mentioned, in case of permanent estate workers residing in the estate, it is compulsory to have at least one member of the family to work in the estate. As such if a head of the household happens to be a permanent worker in the estate and he/she is unable to continue with his/her job in the estate then one of the family member

Table 4A.3.5: Distribution of Plantation Workers by Employment Status and Gender

Employment Status	Gender		Total
	Female	Male	
Permanent Worker	55 (48.2)	59 (51.8)	114 (100)
Casual Worker	48 (73.8)	17 (26.2)	65 (100)
Self-employed	100 (52.9)	89 (47.1)	189 (100)
Total	203 (55.2)	165 (44.8)	368 (100)

Pearson chi2 (2) =11.767, Pr = .003; Cramer's V = .179, Pr = .003

Note: The figures in parentheses are percentages of the total plantation workers

Educational Level: The relationship between education and employment status of an individual is not found to be statistically significant (see Table 4A.3.6). However, useful insights can be obtained about the patterns of the educational level of these different categories of workers. A majority of the plantation workers (37 percent) are found to be "middle secondary" educated, followed by "primary" level educated (32 percent) and then "not literate" (29 percent). A greater percentage of permanent workers were found to be "primary" level educated (39 percent). 2.6 percent of permanent workers having above higher secondary level of education mainly belong to the occupational category of hospital and official staff in the plantations. While a greater percentage of casual (37 percent) and self-employed (40 percent) workers were found to be "middle secondary" educated.

The estate owners are expected to bear the responsibility of providing primary education to the residents of the estate under the PLA, though in very recent time this responsibility has been taken up by the Government in the estate sector in West Bengal. The greater percentage of permanent workers having primary level education as against higher level of education may plausibly be indicative of the fact that the provision of primary education by the planters has not been able to enable the plantation population in the estate to go for higher studies; perhaps reflecting the rather poor condition of primary education being delivered to them. As one can understand that providing better education to the plantation population may act as a deterrent to continuous labour supply to the estate (Abraham, 2010), since better foundation in the form of better primary education would enable the workers to go for higher studies which would further enable

them to obtain better employment opportunities; and hence move away from plantation work¹⁸.

Table 4A.3.6: Distribution of Plantation Workers by Employment Status and Educational Level

Employment Status	Education				Total
	Not Literate	Primary Education	Middle Secondary	Higher Secondary & Above	
Permanent	31 (27.2)	44 (38.6)	36 (31.6)	3 (2.6)	114 (100)
Casual	22 (33.8)	17 (26.2)	24 (36.9)	2 (3.1)	65 (100)
Self-employed	54 (28.6)	55 (29.1)	75 (39.7)	5 (2.6)	189 (100)
Total	107 (29.1)	116 (31.5)	135 (36.7)	10 (2.7)	368 (100)

Pearson chi2 (8) = 4.880, Pr = .770; Cramer's V = .081, Pr = .770

Note: The figures in parentheses are percentages of the total plantation workers

Social Group: The relationship between employment status and social group of an individual is found to be statistically significant between at 1 % level (see Table 4A.3.7). A strong relationship is seen between them. A higher proportion of permanent and casual worker are found to belong to the ST& SC category while a majority of self-employed workers belonged to general category. 71 percent of permanent workers and 65 percent of casual workers belonged to the ST& SC category. While 82 percent of the self-employed workers belonged to the General category.

Table 4A.3.7: Distribution of Plantation Workers by Employment Status and Social Group

Employment Status	Social Group		Total
	ST & SC	General	
Permanent Worker	81 (71.1)	33 (28.9)	114(100)
Casual Worker	42 (64.6)	23 (35.4)	65 (100)
Self-employed	35 (18.5)	154 (81.5)	189 (100)
Total	158 (42.9)	210 (57.1)	368 (100)

Pearson chi2 (2) = 95.244, Pr = .000; Cramer's V = .509

Note: The figures in parentheses are percentages of the total plantation workers

Earnings¹⁹: Earnings from a particular employment status can be expected to be an important factor in the determination of an employment status of an

¹⁸ This trend was seen in our previous analysis of occupational choice model.

individual. Though permanent workers in the estate are found to be at the top of the average monthly earning hierarchy (see Table 4A.3.8), the following insights gained from the field survey, presented in Box 4.1 may shed more light on the earning differential between the plantation workers.

Table 4A.3.8: Descriptive Statistics of Monthly Earnings of Plantation Workers by Employment Status

Employment Status	Mean	Median	Maximum	Minimum	Std dev.	Observations
Permanent	3062.36	3166	6880	1480	1045.31	114
Casual	1640	1640	1640	1640	0	65
Self-employed	1915.82	1250	13095	166.67	1997.35	189
Total	2222.28	1666.5	13095	166.67	1645.51	368

BOX 4.1: Payment System and Earnings of Tea Plantation Workers in Darjeeling

The earnings of the permanent workers comprise of basic pay, incentive payment and yearly bonus. The average earnings per month given here include the income of both time-rated and piece-rated worker. Majority of the workforce in the estate sector are engaged in plucking, and they are piece rated workers. The actual wage rate of the pluckers was reported to be Rs 68 per day, but after deducting Provident Fund contribution, Rs 58 was given as daily wage. Incentive wage payment which was in the form of extra leaf price comprised a major component of the earnings for these pluckers. Their task for a day was to pluck 8kg of green tea leaves if the tea bush was Darjeeling clone or 13 kg if the tea bush was Assam clone. For each extra kg plucked over and above their task, they were paid Rs 2 per kg for Darjeeling clone and Rs 1.50 per kg for Assam clone¹. The amount of extra leaves plucked and hence the incentive payment earned varied from worker to worker. Through the system of incentive payment, the workers managed to earn around Rs 50 per day on an average. Contd....

(¹This difference in the payment for extra leaves plucked with respect to the two types of tea bush- Darjeeling and Assam clone- was due to the fact that while the former bore less leaves, the latter bore more. As such it was more arduous and time consuming to pluck leaves from Darjeeling bush than from Assam Bush.)

¹⁹ Earnings include basic wage, bonus, incentive payment and other allowances. Though Dearness Allowance (DA) was also included as a component of earnings but from field it was understood that the workers did not any DA.

Contd....

The bonus component was given to the worker as a percentage of the annual income earned by an individual. The bonus given to workers last year from the date of survey was reported to be 20% of their annual income earned. The earnings of time rated workers, such as factory workers, drivers and security guard were relatively higher than the pluckers and it ranged from Rs 2000 to 4000 per month. They were mainly time-rated workers and were given yearly travel allowance as well which was around Rs 550.

The median earning of the permanent worker is the highest of all. In case of the permanent worker category (Table 4.29), the minimum earning of Rs 1480 corresponds to the earning of the pluckers while the maximum earnings corresponds to the other plantation workers not engaged in plucking. The casual workers were all engaged in plucking. Their daily wage rate was Rs 66, which seems to be higher than the permanent workers but as has been discussed in the earlier chapter, they are not entitled to any of the other provisions beside the wage they earn. They are still a low cost option for the employers. Since the work of the casual workers was seasonal in nature, they were engaged in other earning activities as well. For the self-employed small growers, they had multiple sources of earning. Most of them were engaged in multi-cropping, beside tea they were growing other crops and vegetables and also they were engaged in livestock rearing.

Table 4A.3.9: Distribution of Number of Permanent Workers in the Estate by Type of Work.

Type of Work	Number of Workers
Piece rate	84 (73.68)
Time rate	30 (26.32)
Total	114 (100)

Note: The figures in the parentheses are percentages of time/piece rated workers out of total permanent workers in the estate.

CHAPTER V

EMPLOYMENT POSITION AND HUMAN DEVELOPMENT STATUS

5.1 Introduction

It was understood from the occupational choice model and choice of employment status model in the previous chapter how the employment position of plantation workers is shaped by their individual, household and location characteristics. Within the plantation households, the varied occupational status and employment status of these workers could be expected to have its bearing on the economic status of the plantation households. Again, such differential economic status will, undoubtedly, be reflected in the living standard attained by these households.

This chapter is indeed a continuation of the discussion in the earlier chapter. In the light of the insights gained on the employment position of the plantation workers, this chapter attempts to assess the living standard of the plantation workers in terms of education, health and basic amenities, thereby highlighting their human development status. The chapter has been organized as follows. The second section looks into their economic status by examining the asset ownership position of the plantation households. Then the patterns in the living standard of the households with respect to education, health and basic amenities have been discussed in the third section. The fourth section assesses the effect of the varying asset position of these categories of households on their living standard. The last section gives the conclusion.

5.2 Economic Status of the Plantation Households: Assets Ownership Position

The economic status of the workers is examined in terms of their asset ownership position as assets provide “a better picture of long term living standards than an

income snapshot because they have been accumulated overtime and last longer” (Moser and Felton, 2007: 2).

Here ownership of nine items have been considered under assets, namely, television, mobile phones, two wheeler, vehicle, land, and livestock such as pigs, goats, cows and poultry. The distribution of these assets across the three categories of households are examined in the Table 5.1

Table 5.1 shows that overall 74 percent of the plantation households possessed mobile phones, followed by possession of T.V (66 percent) and possession of land (52 percent). Livestock such as pigs, cows, goats and poultry is seen to constitute a major asset for all the categories of plantation households. 4.5 percent of the households possessed two wheelers and 2.5 percent of the households possessed other vehicles. It is important to note here that while the small tea growers had higher access to land ownership (100 percent), the permanent workers did not have any ownership of land. The reason for this is that the permanent workers being residents within the estate, which is the property of the management, are not entitled to any land ownership.

Table 5.1: Distribution of Households by Different Categories and Assets Possession

Assets	Categories of Households of Plantation Workers			
	PWH	CWH	SGH	Total
T.V	61 (76.3)	12 (40)	59 (65.6)	132 (66)
Mobile phone	55 (68.8)	16 (53.3)	76 (84.4)	147 (73.5)
Two wheeler	5 (6.3)	1 (3.3)	3 (3.3)	9 (4.5)
Pigs	17 (21.3)	8 (26.7)	27 (30)	52 (26)
Cows	7 (8.8)	12 (40)	77 (85.6)	96 (48)
Goats	33 (41.3)	14 (46.7)	42 (46.7)	89 (44.5)
Poultry	54 (67.5)	4 (13.3)	68 (75.6)	126 (63)
Land	0 (0)	13 (43.3)	90 (100)	103 (51.5)
Other Vehicle	2 (2.5)	1 (3.3)	2 (2.2)	5 (2.5)

Note: The figures in parentheses indicate the percentages of households possessing these assets.

These nine assets have been further categorised into production assets and consumption assets. This differentiation has been made with respect to the possible returns that the holder of these assets are expected to derive. Production

assets consists of pigs, goats, cows, poultry, land and vehicle¹ which would enable the household to generate further income directly while consumption assets consists of television, mobile phones and two wheeler which does not directly lead to income generation. The premise on which this categorisation is made is that households will hold more of production assets as compared to consumption assets if their income earnings are uncertain. So in order to stabilise their income flows and hence consumption, that household will keep more of production assets than consumption assets.

To understand the economic status of the different plantation households in terms of a single representative indicator, an asset index was constructed and the ownership position of the three categories of households has been analysed.

Table 5.2: Asset Ownership Index by Household Category

Asset Index	PWH	CWH	SGH
Consumption Asset Index	0.42	0.27	0.41
Production Asset Index	0.12	0.28	0.51
Overall Asset Index	0.26	0.27	0.46

The asset ownership index² varies from value 0 to 1. The values shown in Table 5.2 are average values of the asset index for each household category. Considering the overall asset index, it can be seen that the small tea grower households yield the value of 0.46 which is higher than that of the permanent worker households (0.26) and temporary outside worker households (0.27). This indicates that as far as the asset ownership by the category of households is concerned, small growers have greater asset ownership than the other two categories of households. This could be reflective of the higher ownership of land by the small growers compared to the permanent workers and casual workers which can act as an enabling factor and thus have an important bearing on the ownership of other assets as well. When the category of assets as consumption and production asset is considered, it can be seen that small tea growers seem to possess more of production asset in relation to consumption asset unlike the

¹ It needs to be mentioned here that in the field survey it was known that households who possessed vehicles used it for plying goods and people from one place to another in return for fares; as such it has been considered as production asset.

² The construction of asset ownership index is given in detail in the appendix.

permanent worker households who possessed more of consumption asset as against production asset. This can possibly reflect the fact that the permanent worker in the estate being engaged in wage employment are ensured of a continuous flow of income as against the small growers who being self employed are exposed to more of risk and uncertainties regarding their income. Hence to overcome these risks and uncertainties they can be expected to keep more of productive assets so as to stabilize their income flow. Regarding the casual workers households, there is seen to be not much difference between possession of production and consumption asset, though the possession of production assets is higher for these households than the permanent worker households.

The asset index has been further divided into quartiles in order to get a better idea about the asset ownership position of the different category of plantation households.

As seen from Table 5.3, 28 percent of the households belong to the first asset quartile indicating that these households had the lowest asset ownership position of all the sample households. The households are seen to be more or less equally distributed across the second, third and fourth asset quartiles.

Further, the majority of households in the permanent workers' and casual workers' household categories are seen belonging to the first and second asset quartile. The self employed household category is mainly concentrated in the fourth asset quartile. This shows that asset ownership position of the small tea growers' households are relatively better than the permanent workers and casual workers' households. It was understood from the field that the small tea growers were initially engaged in agriculture, but of late (from 1997 onwards), they started growing tea as well besides other crops such as ginger, turmeric, cardamom and vegetables. As such they are engaged in multiple-cropping. Beside livestock was found to be an important source of their income.

Table 5.3: Distribution of Households by Asset Ownership Quartiles

Household Asset Ownership	Category of Households			Total Households	Percentage of Households
	PWH	CWH	SGH		
1 st quartile (bottom)	31 (56.4)	14 (25.5)	10 (18.2)	55 (100)	27.5
2 nd quartile	30 (65.2)	8 (17.4)	8 (17.4)	46 (100)	23
3 rd quartile	14 (28.0)	3 (6.0)	33 (66.0)	50 (100)	25
4 th quartile (top)	5 (10.2)	5 (10.2)	39 (79.6)	49 (100)	24.5
Total	80 (40.0)	30 (15.0)	90 (45.0)	200 (100)	100

Pearson chi2 (6) = 65.816, Pr = .000; Cramer's V = .406

Note: The figures in the parentheses are the percentages of households

Thus it was seen from the above analysis that the asset ownership position of the small growers engaged in self employment status was relatively better than permanent worker household and casual worker household in the estate. This could be attributed mainly to their higher access to land ownership as compared to other categories. The asset ownership position of the casual worker household was found to be worst among the categories of plantation households.

5.3 Living Standard: Education, Health and Basic Amenities

The living standard of the households has been explored in terms of the education of their children, health status of the members of the households, and basic amenities. Here basic amenities have been considered in terms of housing condition and sanitation facilities. Housing condition is seen in terms of type of houses- Kutcha, pucca and semi-pucca; while sanitation facilities in terms of availability of bathroom and toilet facilities.

Provision of education, health and basic amenities enables an enhancement of the human capabilities of an individual. Education is intrinsically essential as it leads to cultural awakening, awareness building, understanding of human rights, adaptability and empowerment, self reliance and self confidence. It also has an instrumental value with respect to employability (Sachs, 2004). Access to education, health and basic amenities is said to facilitate participation of an individual in employment and growth opportunities (Ianchovichina and Lundstrom, 2009). In the following sub-section, patterns in the living standard of the different categories of plantation households are discussed. As is known that

the permanent workers residing within the estate are wholly dependent on their employers for these facilities unlike the casual and self employed small growers, hence insights from the field regarding these facilities has been dwelt upon after each discussion on the patterns in the living standard of workers. This is done so as to get a better understanding of the human development of the workers.

5.3.1 Patterns in the Living Standard of Plantation Households

As the effect of the asset position of the workers can be expected to be reflected in the education of their children rather than one's own education, hence education of children is considered here. The minimum age of the children who were studying was three years while their maximum age was 27 (see Table 5A.1.1 in appendix).

5.3.1.1 Education of the Children

In the sample of plantation households, the total number of children who were currently studying was 255. Of which 44 percent belonged to the self employed households, 43 percent to permanent worker households and 13 percent to casual worker households (see Table 5.4).

Table 5.4: Distribution of Students by Different Household Categories

Category of households	Frequency	Percentage
PWH	109	42.75
CWH	33	12.94
SGH	113	44.31
Total	255	100

Table 5.5 shows that a majority of students (40 percent) in overall plantation households had middle secondary level of education followed by primary level of education (33 percent). The overall percentage of students engaged in higher education such as higher secondary, graduation, post graduation is 18 percent. With an increase in the educational level up to middle secondary, the percentage of students going for higher education is seen to be falling. Similar pattern as noticed in the case of overall plantation households and the three household categories as well. Unlike in case of children belonging to self employed

households, the highest level of education found in children belonging to permanent worker households and casual worker households is up to graduation. The mean age of the students belonging to permanent worker households, casual worker households and self employed households was respectively 12.22, 13.52 and 13.42 years (for details see Table 5A.1.1 in the appendix). It was understood from the field that the workers valued the importance of educating their children. They viewed education as a way of enabling their children of seek for jobs other than plantation jobs, this kind of response was especially found in case of permanent worker and casual worker households.

Table 5.5: Distribution of Students by Household Category and Educational Level

Category of House holds	Education of Children						Total
	Below Primary	Primary	Middle Secondary	Higher Secondary	Graduation	Post Graduation & Above	
PWH	12 (11.0)	36 (33.0)	45 (41.3)	11 (10.1)	5 (4.60)	0 (0)	109 (100)
CWH	7 (21.2)	7 (21.2)	12 (36.4)	4 (12.1)	3 (9.1)	0 (0)	33 (100)
SGH	5 (4.4)	42 (37.2)	44 (38.9)	11 (9.7)	7 (6.2)	4 (3.5)	113 (100)
Total	24 (9.4)	85 (33.3)	101 (39.6)	26 (10.2)	15 (5.9)	4 (1.6)	255 (100)

Pearson chi2 (10) = 16.376, Pr = .089; Cramer's V = .179

Note: The figures in parentheses indicates the percentage of children in the plantation households who are presently studying in different educational category

The relationship between gender of students who were currently studying and the category of household to which they belong was found to be statistically insignificant. However, from Table 5.6, it can be seen that the percentage of male students (53 percent) was higher than female students (47 percent) for the overall plantation households. But the percentage of females who were currently studying (51 percent) was found to be marginally higher than the percentage of male students (49 percent) in the permanent workers households. This is in contrast to the findings in other literature (Sarkar and Bhowmik, 1998) where lack of crèche in the estate is seen to indirectly put a burden on the children mainly female of the worker households to take care of the young ones at home when

other family members are off to work. It was found in our case that the estate did provide crèche facility for the workers.

Table 5.6: Distribution of Students by Different Household Category and Gender

Category of Households	Gender		Total
	Female	Male	
PWH	56 (51.4)	53 (48.6)	109 (100)
CWH	14 (42.4)	19 (57.6)	33 (100)
SGH	50 (44.2)	63 (55.8)	113 (100)
Total	120 (47.1)	135 (52.9)	255 (100)

Pearson chi2 (2) = 1.458, Pr = .482; Cramer's V = .076

Note: The figures in parentheses indicates the percentage of children in the plantation households who are presently studying

Despite indicating a brighter picture in terms of female education, Table 5.7 shows that out of total 287 children of the plantation workers, 89 percent were getting education while 11 percent were not studying. Children who were studying were mainly enrolled in government educational institutes. It was mainly higher percentage of children belonging to permanent worker household (21 percent) who were found to be not studying as compared to the children in casual worker and small grower households. Within the permanent worker household, a higher percentage of children belonging to the ST category (72 percent) had dropped out of schooling compared to children belonging to SC category (14 percent) and general category (14 percent) (See Table 5A.1.2 in Appendix). These children who had dropped out mainly belonged to the age group of 12 to 19 years. Majority of these children who had discontinued their studies have had middle secondary level of education. The main reason cited by the respondents for the discontinuance of their children's studies was that they were unable to afford higher education of their children and also their children did not perform well and hence had to discontinue education.

Table 5.7: Distribution of Number of Children by Household Category and Type of Schooling

Category of Households	Where does your Children Study			Total
	Government	Private	Not studying	
PWH	68 (49.3)	41 (29.7)	29 (21.0)	138 (100)
CWH	23 (65.7)	10 (28.6)	2 (5.7)	35 (100)
SGH	82 (71.9)	31 (27.2)	1 (0.9)	111 (100)
Total	173 (60.3)	82 (28.6)	32 (11.1)	287 (100)

Pearson chi2 (4) = 29.410, Pr = 0.000; Cramer's V = 0.226

Note: The figures in the parentheses are the percentages of number of children in the households

Children belonging to the small grower household are, thus, seen to have relatively better educational status than the casual and permanent worker households.

After this discussion on the education of the children of the plantation workers, it would be of interest to dwell on the provision of primary education in the estate under the Plantation Labour Act (PLA), 1951. In West Bengal tea plantations the responsibility of providing primary education, which was previously undertaken by the estate management, has been taken up by the government in recent years. In this estate too except for bearing the expense of giving salary to one of the teachers in the estate primary school, the management were free of all other educational expenses. However, most of the workers in the estate were found to send their children to private school for primary education rather than the estate school; and then switch over to government school for secondary and higher secondary education due to financial constraints. They reported that the main motive to send their children to private school for primary schooling rather than government school in the estate was to enable them to get education in English medium and thus provide them better foundation.

5.3.1.2 Health Status of the Household Members

Health is considered to be a good indicator of the socio-economic well being of individuals (Loewenson, 1992). In order to capture the health status of the individuals in the plantation households, information was sought on two aspects of health. One was the question as to how do they perceived the status of their health at present. There were three options given good, moderate and bad³. The other was the question on the individual having suffered from any major ailment in the last two years.

Table 5.8 shows that the health rating has been reported to be good for a majority of individuals in all the three category of households. However, compared to

³ The definition of good, bad and moderate is solely based on the perception of the respondent.

other two categories of households, individuals belonging to the permanent worker households seem to have relatively bad health status.

Table 5.8: Distribution of Members of Households by Household Category and Health Rating

Category of Households	Health Rating			Total
	Good	Moderate	Bad	
PWH	374 (92.8)	22 (5.5)	7 (1.7)	403 (100)
CWH	120 (98.4)	2 (1.6)	-	122 (100)
SGH	419 (97.2)	8 (1.9)	4 (0.9)	431 (100)
Total	913 (95.5)	32 (3.3)	11 (1.2)	956 ⁴ (100)

Pearson chi2 (4) = 12.633, Pr = .013; Cramer's V = .081

Note: The figures in the parentheses indicate the percentage of total members in the different household category

Most of the individuals in the plantation households reported to have not suffered from any major ailment in the last two years (Table 5.9). Considering the category of households, 9.2 percent of the members of permanent worker household, 1.6 percent of individuals in the casual worker households and 1.2 percent of members in the small tea growers' households reported to have suffered from major ailments. These ailments were found to be related to brain, kidney, stomach, heart, jaundice and tuberculosis.

Table 5.9: Distribution of Members of Households by Household Category and Health Rating

Category of Households	Whether had any major ailment in the last two years		Total
	Yes	No	
PWH	37 (9.2)	366 (90.8)	403 (100)
CWH	2 (1.6)	120 (98.4)	122 (100)
SGH	5 (1.2)	426 (98.6)	431 (100)
Total	44 (4.6)	912 (95.4)	956 (100)

Pearson chi2 (2) = 33.314, Pr = .000; Cramer's V = .187

From the above two tables on health status of the individuals in plantation households, it can be said that the incidence of major illness was quite less for the plantation households. However, a comparison of the health status of the individuals by category of households shows that unlike the individuals in the casual and self employed households, a greater percentage of individuals in the permanent worker households' had relatively bad health status at present and

⁴ Instead of 957, the total number of member here adds up to 956 as one of the member in a small grower household had out migrated and the respondent was unaware of that particular person's health status.

also had suffered from major ailments in the last two years from the year of survey. This pattern may perhaps be indicative of the poor delivery of health services in the estate.

Estates are also supposed to provide health facilities to the estate workers under PLA. From the field, it was found that there was an estate hospital where health facilities were delivered to the estate workers free of cost. However, the health facilities provided were meant only for the treatment of minor ailments. In case of major ailments, the patients were referred to government hospitals by the estate hospital. The expenses of treatment in these government hospitals are to be borne by the estate and they are under the obligation to provide free transport to the patient. Instances were found where some workers were vocal about their demand and hence were able to get their medical expenses reimbursed while there were also sections of worker households who were unable to get their expenses reimbursed.

The individuals, who were entitled to the medical facilities in the estate, were the permanent workers and their dependents. Their dependents included their spouse and unmarried children. The married children of the workers and the workers' parents were not entitled to these facilities. They could, however, visit the doctor in the estate hospital but had to bear the medical expenses themselves.

The procedure for admission of a patient to government hospital was first to visit the estate hospital and then to be referred to government hospital through them. If this procedure was not followed then the patient was not reimbursed their medical expenses. Majority of worker households were found to be disillusioned by this practice as in cases of emergencies where the patients had to be rushed to the government hospitals directly without being taken to the estate hospital first, the expenses had to be borne by the workers themselves.

5.3.1.3 Basic Amenities

In this section the type of house that the workers lived in and the availability of bathroom and toilet facilities in their dwellings have been discussed⁵.

The houses were categorised as 'Pucca', 'Semipucca' and 'Kutchha.' 'Pucca' connoted a concrete house with concrete walls and roof, while 'semi-pucca' was taken to represent concrete/brick walls with asbestos roof. 'Kutchha,' houses were those which had mud/thatched walls and tiled/thatched roofs.

Table 5.10 shows that 44 percent of the plantations households had semi-pucca houses, followed by 37 percent kutchha houses and 20 percent pucca houses. Majority of permanent worker houses was semi-pucca (70 percent). The respondents in the permanent worker households in the estates reported that the houses were provided by the management but later its maintenance and extension of rooms has been done on their own expenses. None of the casual worker possessed pucca house. 63 percent of them had kutchha house and 37 percent had semi-pucca houses. Small growers is seen to have relatively better houses compared to that of permanent and casual workers as almost 40 percent of them had pucca houses.

Table 5.10: Distribution of Households by Type of Housing

Category of Households	Type of House			Total
	Kutchha	Semi-Pucca	Pucca	
PWH	21 (26.25)	56 (70)	3 (3.75)	80 (100)
CWH	19 (63.33)	11 (36.67)	0 (0)	30 (100)
SGH	33 (36.66)	21 (23.33)	36 (40.01)	90 (100)
Total	73 (36.5)	88 (44)	39 (19.5)	200 (100)

Pearson chi2 (4) = 65.0385, Pr = 0.0000; Cramer's V = 0.4032

Note: The figures in the parentheses are the percentages of total household

Table 5.11 shows around 52 percent of the overall plantation households did not have bathroom. Between the category of households, 55 percent in the permanent worker households, 87 percent of casual worker households and 38 percent of small grower households did not have bathrooms.

⁵ Though information on drinking water and electricity was also sought from the respondents, but since all the houses had drinking water provision and provision of electricity. There was seen no variation between these category of households in terms of these variables, as such this information was not included in the construction of index. The plantation households were found to have these facilities.

Table 5.11: Distribution of Households by Access to Bathroom Facilities

Category of Households	Access to Bathroom Facilities		Total
	No	Yes	
PWH	44 (55)	36 (45)	80 (100)
CWH	26 (86.7)	4 (13.3)	30 (100)
SGH	34 (37.8)	56 (62.2)	90 (100)
Total	104 (52)	96 (48)	200 (100)

Pearson chi2 (2) = 22.0264, Pr = 0.000, Cramer's V = 0.3319

Note: The figures in the parentheses are the percentages of total household

Table 5.12 shows that 69 percent of the plantation household had toilet facilities. With regard to the different category of households, a majority of casual worker households (73 percent) did not possess toilet facilities compared to the permanent and small grower households.

Table 5.12: Distribution of Households by Availability of Toilet Facilities

Category of Households	Availability of Toilet Facilities		Total
	No	Yes	
PWH	21 (26.3)	59 (73.8)	80 (100)
CWH	22 (73.3)	8 (26.7)	30 (100)
SGH	19 (21.1)	71 (78.9)	90 (100)
Total	62 (31)	138 (69)	200 (100)

Pearson chi2 (2) = 30.0932, Pr = 0.000, Cramer's V = 0.3879

Note: The figures in the parentheses are the percentages of total household

From the above analysis, it can be said that in terms of basic amenities, small growers seem to be better off than the casual and permanent workers. Casual worker seem to be the worst off of all.

5.4 Effect of Asset Ownership Position on Standard of Living- An Econometric Analysis

Now, given their asset position, this section seeks to explore whether the asset ownership position of the worker households has translated into better living standard (see appendix 5A.2 for details on the descriptive analysis of living standard). For the analysis, Ordinary Least Squares Regression has been applied.

In order to capture education, health and basic amenities of the different category of households in a single measure, living standard index (henceforth LSI) was

constructed. The level of information varied from each other⁶. Where the education status and health status was at individual level, the housing and basic amenities were at household level. So to construct the living standard index, the education status and health status was converted to the household level in the following way. The mean years of schooling of each household was taken as a representative of the educational status of the household; taking only one question related to the present health status of the individuals, an average of the health rating of the members of the household was taken. The living standard index takes value between 0 and 1.

5.4.1 Hypothesis

Higher asset ownership position is expected to have a positive impact on the living standard of the plantation households. As possession of assets, mainly production assets, help in further income generation which can help in strengthening their livelihood⁷ (Ellis and Freeman, 2005). This further enables them to attain a better standard of living (Barret and Swallow, 2005).

Further asset ownership position can be expected to be determined by the employment status of the households. This hypothesis is tested by regressing the living standard index on asset index along with category of households, interaction between asset index and category of households, the number of plantation workers in a household as a proportion of total earning members in a household by controlling for social group and other household characteristics such as dependency ratio, household size, and per capita income of the household. The regression model used is as follows:

$$LSI = a + b_1 AI + b_2 D2 + b_3 D3 + b_4 (D2 * AI) + b_5 (D3 * AI) + b_6 PPW + b_7 SG + b_8 DR + b_9 HHS + b_{10} PCI + e$$

⁶ While for education of children and for health status the level of information was at an individual level; for basic amenities, the level of information was at household level.

⁷ "The term livelihood captures not just what people do in order to make a living, but the resources that provides them with the capability to build a satisfactory living, the risk factors that they must consider in managing their resources and the institutional and policy context that either helps or hinder them in their pursuit of a viable or improving living" (Ellis and Freeman, 2005: 4)

Where LSI is Living Standard Index, AI is asset index, D2 is the dummy variable for the household category =1, if casual worker household; 0 otherwise, D3 is the dummy variable for the household category =1, if small grower household; 0 otherwise. Here permanent worker household is the reference category. Then (D1*AI) and (D2*AI) represents the interaction variables between casual worker household and asset index; and small grower household and asset index respectively. SG is the social group, PPW is the number of plantation workers in a household as a proportion of total earning members in a household, DR is the dependency ratio⁸, HHS is the household size and PCI is the per capita income; a , b_1 , b_2 , b_3 , b_4 , b_5 , b_6 , b_7 , b_8 , b_9 and b_{10} are the coefficients and e is the error term.

5.4.2 Results of the Estimated Model

The estimated results (see Table 5.13) shows that the occupational category of household, mainly casual worker household (represented by the casual worker household dummy), asset position of the household and per capita income of the household is seen to have a significant effect on the living standard of the households. It is seen that living standard of household corresponding to the casual worker household category will be lower than those corresponding to the permanent worker household. So belonging to a casual worker household will have negative effect on the living standard of the household as is depicted by the negatively significant sign of the coefficient. As expected asset position of the household is seen to have a positive impact on the living standard of the household. The other variables such as social group, dependency ratio and household size are not found to be significant. This is a likely indicator that though these factors may act as a constraint in attainment of assets but once an individual is able to overcome these constraints and able to earn and build up their asset ownership position, these variables are of much less importance in determining their living standard. Per capita income of the household is also seen to have a positive impact on the standard of living of the household.

⁸ Here the dependency ratio has been adjusted for the number of school going children by changing the definition as the ratio of number of family members who are not working (excluding school going children) to those who are working in the household.

Table 5.13: Estimates of the OLS Regression Model on the Determinants of Living Standard Index

Explanatory Variables	Coefficient (Standard Error)
Constant	0.193088** (0.086934)
Casual worker household dummy	-0.13227** (0.06206)
Small grower household dummy	-0.06862 (0.070415)
Asset index	0.262291** (0.123723)
Casual worker household dummy*asset index	0.172224 (0.184727)
Small grower household dummy*asset index	0.06667 (0.167419)
Proportion of plantation workers in total working member in a household	0.035227 (0.062084)
Social group	-0.00929 (0.026943)
Dependency ratio	0.021483 (0.017073)
Household Size	0.007442 (0.007601)
Per capita income of the household	6.57E-05* (1.03E-05)
R-squared	0.3996
Number of observations	200

Note: “**” indicates significant at 1 percent level of significance. “***” indicates significant at 5 percent level of significance, “****” indicates significant at 10 percent level of significance

5.5 Conclusion

The findings suggesting poor condition of the casual workers in terms of lower employment position, lower earnings, and lower asset position and hence lower standard of living is on expected lines. However, with regard to the permanent workers, contrary to the notion of such workers in an organized industry being better off in terms of employment position, higher earnings and better asset position and hence better standard of living, it is seen that despite their employment position being relatively better than the casual workers in the estate and small growers, their asset ownership position and hence living standard is relatively poorer than the self employed small growers. Further, it was observed that though social group was a significant factor in the choice of occupational status and employment status by an individual, it seemed to be an insignificant

determinant of the living standard of the workers. The possible explanation for this can be that social group does affect the employment position of an individual, but once he/she is able to overcome this constraint and build on their asset position, then social group does not matter in determining their living standard. This in fact points to the importance of productive asset holdings in enabling an individual to supplement his/her earnings and thus helping them to translate it into better standard of living.

As is known, unlike the casual workers and small growers, there is heavy dependence of permanent estate workers, whose life and work revolves mostly around the confines of the estate, on the management for employment, health, housing, sanitation facilities. This makes them more vulnerable to changes occurring in the tea sector. The lower living standard of the permanent workers might be reflective of the poor implementation of the provisions under the Plantation Labour Act. The cause for this gap in the provision of these facilities can plausibly be the burden of bearing these social costs by the estate. It has been pointed out in the report on plantation sector 2007⁹, that the social costs comes to about 5-8% of the average price of tea per kg. Given the profitability of the sector at the current level of prices both in the local and international markets, this burden has been estimated to be too high for the industry to bear. So this pressure on the management to maintain international competitiveness amidst high social costs are pushing them to resort to greater reliance on casual workers on the one hand and poorer implementation of the provisions under PLA on the other. The existing permanent workers are thus seen to bear the brunt of these cost cutting strategies resulting in their lower human development and hence leading to their immerisation. Further, this lower work status and lower welfare provisions associated with plantation work can be said to be leading to non-participation of the estate population in plantation work as was seen from the analysis on occupational choice. This trend can be expected to have serious implications for the availability of labour in future. Though these short term strategies are working for the tea sector at present, but there is no denial of the

⁹ For more details refer 'Report of Committee on Legislation Plantation Sector, 17th September, 2007', Department of Commerce, Ministry of Commerce and Industry, Government of India, New Delhi.

fact that this sector being a highly labour intensive sector and where possibility of mechanisation is restricted only to the factory, the importance of labour to this sector cannot be ignored.

Appendix 5A.1: Construction of Indices

Asset Index

The information on the ownership of the nine assets taken here namely mobile phone, T.V, cow, goats, pigs, poultry, two wheeler, land and vehicle was in terms of whether the households possessed these assets or not. A value of 1 was given for the possession of assets and 0 for non-possession. With this information an asset index for the households was constructed. The correlation between monthly income of the households and the possession of these assets were taken as weights and the formula used to obtain the index is given below:

$$\text{Asset index} = [(r_1 * \text{mobile phone}) + (r_2 * \text{TV}) + (r_3 * \text{cow}) + (r_4 * \text{goats}) + (r_5 * \text{pigs}) + (r_6 * \text{poultry}) + (r_7 * \text{two wheeler}) + (r_8 * \text{land}) + (r_9 * \text{vehicle})] / 9$$

Where $r_1, r_2, r_3, r_4, r_5, r_6, r_7, r_8, r_9$ are the value of correlation between monthly income of the households and assets possessed.

Then the value of the asset index obtained was normalized by using the formula (Observed value - minimum value) / (maximum value - minimum value)

The production and consumption assets were also constructed in similar lines as mentioned above, just the assets taken was cow, goats, pig, poultry, land and vehicle for the production asset index; and mobile phone, TV and two wheeler for the consumption asset index.

Living Standard Index

Living standard index is calculated as a simple average of education and basic amenities.

The education index was worked out as the mean years of schooling of the household then the values were normalized by the following formula

$$\text{Normalized Education index} = (\text{actual value} - \text{minimum value}) / (\text{maximum value} - \text{minimum value})$$

The health index was constructed as the mean of health rating of the members of the household.

Basic amenities index was calculated by considering type of house namely kutchha, semi-pucca and pucca; and sanitation facilities which were taken to be

represented by availability of bathroom and availability of toilet facilities. Basic amenities index was calculated by the following formula

Basic amenities Index= (number of rooms in a household*type of house) + (2*availability of toilet facilities) + (1*availability of bathroom facilities)

where type of house are 1 for kutcha, 2 for semi-pucca and 3 for pucca. For availability of toilet and bathroom facilities value of 1 is given if the household has these facilities and value 0 if they don't have it. Arbitrarily the value of 2 and 1 is given as weights for availability of toilet facilities and availability of bathroom facilities indicating greater importance of toilet facilities over bathroom facilities. The basic amenities index has been normalized using the same formula as mentioned above for the education index.

Then normalized education index and normalized housing index were combined into a simple average to get the living standard index.

Living standard index= (education index + health index + basic amenities index)/3

Table 5A.1.1: Descriptive Statistics of Age of Students

Summary statistics of Age of Students	Permanent Worker Household	Casual Worker Household	Self Employed Household
Mean	12.22	13.52	13.42
Median	12.00	14.00	13.00
Mode	15	6(a)	11(a)
Std. Deviation	4.717	6.558	5.444
Skewness	.128	.082	.394
Std. Error of Skewness	.233	.409	.227
Kurtosis	-.673	-1.186	-.435
Std. Error of Kurtosis	.461	.798	.451
Minimum	3	3	4
Maximum	24	26	27
No of observations	108	33	113

Table 5A.1.2: Distribution of the Children Currently Not Studying by Household Category and Social Group

Category of Households	Social Group			Total
	ST	SC	General	
PWH	21 (72.4)	4 (13.8)	4 (13.8)	29 (100)
CWH	0 (0)	2 (100)	0 (0)	2 (100)
SGH	0 (0)	0 (0)	1 (100)	1 (100)
Total	21 (65.6)	6 (18.8)	5 (15.6)	32 (100)

Pearson chi2 (4) = 14.713, Pr = .005; Cramer's V = .479

Note: The figures in the parentheses are percentages of total children currently not studying

Appendix 5A.2: Descriptive Analysis of Living Standard of Plantation Households

Standard of Living and Category of Households: Table 5A.2.1 shows that the majority of permanent worker households (33 percent) were mainly in the third quartile; while majority of casual worker households were in the bottom quartile. A higher percentage of small grower households (34 percent) were concentrated in the top quartile. Living standard of the small grower households can be said to be relatively better than casual and permanent worker households.

Table 5A.2.1: Distribution of Households by Living Standard Quartile and Household Category

LSI quartile	Category of Households			Total
	PWH	CWH	SGH	
1st quartile (bottom)	17 (21.25)	14 (46.67)	19 (21.11)	50
2nd quartile	22 (27.50)	8 (26.67)	20 (22.22)	50
3rd quartile	26 (32.50)	4 (13.33)	20 (22.22)	50
4th quartile (top)	15 (18.75)	4 (13.33)	31 (34.44)	50
Total	80 (100)	30 (100)	90 (100)	200 (100)

Pearson chi2 (6) = 16.9444, Pr = 0.009; Cramer's V = 0.2058

Note: The figures in the parentheses are percentage of households distributed across the category of households by living standard quartile

Standard of Living and Asset Ownership Position: Table 5A.2.2 indicates that majority of households having lowest living standard belonged to the bottom asset quartile (48 percent) while majority of households having highest living standard belonged to the top asset quartile. Thus there is an overlapping between households belonging to bottom asset quartile and having lowest living standard; and between households belonging to top asset quartile and having highest living standard. This is on expected lines indicating that better asset ownership position of household is more likely to translate into better living standard and vice versa.

Table 5A.2.2: Distribution of Households by Living Standard Quartile and Asset Quartile

LSI Quartile	Asset Ownership Index Quartile				Total
	1st Quartile (bottom)	2nd Quartile	3rd Quartile	4th Quartile (top)	
1st quartile (bottom)	24 (48)	13 (26)	9 (18)	4 (8)	50
2nd quartile	17 (34)	10 (20)	15 (30)	8 (8)	50
3rd quartile	7 (14)	17 (34)	11 (22)	15 (30)	50
4th quartile (top)	7 (14)	6 (12)	15 (30)	22 (44)	50
Total	55 (27.5)	46 (23)	50 (25)	49 (24.5)	200

Pearson chi2 (9) = 38.2567, Pr = 0.000; Cramer's V = 0.2525

Note: The figures in the parentheses are row percentages

Standard of Living and Social Group: The relationship between living standard quartiles and social group is not found to be statistically significant (Table 5A.2.3). The distribution of households by living standard quartiles across the social group shows that majority of 'general' category households are both in the bottom as well as top living standard quartile as compared to households belonging to 'ST&SC' category. The lesser number of 'ST&SC' households than 'general' households in the top LSI quartile are in expected lines but what explains for the presence of lesser number of 'ST&SC' households than 'general' households in the bottom quartile. The relatively lesser 'ST&SC' households in the bottom LSI quartile may be because the living standard of the 'ST&SC' small grower households had comparatively better living standard than their counterparts in the casual and permanent worker households in the estate.

Table 5A.2.3: Distribution of Households by Living Standard Quartile and Social Group

LSI Quartile	Social Group		Total
	ST & SC	General	
1st quartile (bottom)	24 (48)	26 (52)	50
2nd quartile	27 (54)	23 (46)	50
3rd quartile	21 (42)	29 (58)	50
4th quartile (top)	16 (32)	34 (68)	50
Total	88 (44)	112 (56)	200 (100)

Pearson chi2 (3) = 5.3571, Pr = 0.147; Cramer's V = 0.1637

Note: The figures are row percentages

CHAPTER VI

SUMMARY AND CONCLUDING OBSERVATIONS

The main focus of the study was to understand some aspects of the nature and process of inclusive growth by taking the case of tea plantation workers. This issue assumes importance in a context wherein it is generally held that though the Indian economy has been experiencing high growth in the post-reform period; it was not inclusive and that certain sectors, regions and population of the country are being excluded from the benefits of growth. The study focussed on two dimensions of inclusive growth; employment and human development. Employment has been considered to be a critical instrumentality for inclusion. A better employment position could enable an individual to attain higher human development. Further the improvements in human development indicators such as education, health and basic amenities could facilitate their participation in employment and growth opportunities.

Further macro aggregates may not contribute much towards understanding the micro process of inclusion and also each sector varies in their ability to bring about inclusion/exclusion. Hence there is the need for micro level and sectoral studies. The sector that has been considered for exploring the two dimensions of inclusive growth is the plantation sector. This sector has certain distinct features that make it an ideal candidate for the study. These include high labour intensity, with more than half of the workers being women; higher participation of the marginalised and vulnerable (including the tribals); a major source of livelihood for the increasing number of small growers and being located in backward and rural regions of a few states of the country. The Indian tea sector, besides being characterised by the above mentioned features, is the most labour intensive among the other plantation crops.

The study began with an exploration of the evolution of the sector and located the major structural changes. The performance of the sector (1950 to 2007) was analysed against the backdrop of the observed structural changes. The structural

changes indicated that the sector has evolved mainly in terms of shift from foreign to domestic ownership, shift from export to domestic market and shift from large to small growers. In the light of these changes, it was observed that the sector has been performing well in terms of growth in area, production and productivity over the years; exception being the period from 1980 to 2000. Similar trend was noticed for the major tea growing regions in the country. However, the state of West Bengal was found to be performing relatively better throughout the period of analysis. But the sector was found to be losing its domination in the global tea market from 1980s onwards. The domestic market was gaining importance over export market.

These structural changes have been reflected in the labour market as well because the demand for labour is a derived demand. The analysis of employment structure of the plantations indicated increased casualisation and feminisation of the workforce, stagnation of real wages and earnings, and lower absorption of labour. These trends, the study argued, cannot be de-linked from the observed structural shifts in the sector. The shift from foreign to domestic ownership brought an end to the exploitative recruitment practices followed during the colonial era. This gave way to drawing up of various legislations for the welfare of the workers. The Plantation Labour Act, 1951 was identified to be the most important legislation. But the act was found to have led to a greater reliance on casual outside workers, leading to casualisation and greater labour flexibility. The trend of lower labour absorption in tea processing was expected to continue with the growing importance of the domestic market and the resultant shift from orthodox to CTC tea. The CTC production being more mechanised required lesser labour than was necessary for the orthodox tea production. Moreover, since CTC production caters to the price conscious domestic consumers, it does not demand finer plucking of leaves. So the estates can be argued to have resorted to outsourcing the green leaves from the small growers and thus employ lesser labour. With the growth in the small holder sector, the invisible labour force can be expected to increase further as they are predominantly reliant on unpaid family members, mainly women and children. Further, an increased use

of piece rated women workers whose wages were lower than the time rated workers was observed. Given the relatively higher cost structure of the estates unlike the small growers, this trend might be indicative of the adjustments made within the plantation workforce by the former.

These labour market trends indicated the various strategies adopted by the sector to reduce cost and maintain its competitiveness. But in this bid to remain competitive, the workers are seen to be the ultimate sufferers. It raised the question as to whether maintenance of international competitiveness of tea plantations under globalisation has been through the adoption of such strategies which led to the immiserisation of plantation workforce.

This question was probed by undertaking a micro-level empirical study of tea plantations in the Darjeeling district of West Bengal. With the help of appropriate econometric tools like binary logit, multinomial logit and OLS regression models we analysed the occupational choice, its determinants and its outcome as manifested in their human development indicators such as education, health and basic amenities. The plantation workers were classified as permanent workers and casual outside workers in the estate; and self employed small tea growers.

The analysis of their employment position showed that plantation work was characterised by the presence of aged individuals, females, having negligible or no education, smaller household size, belonging to ST and SC category, and earning lower income. Within plantation workers, the casual workers occupied the lowest position in the employment position hierarchy. This indicated the greater prevalence of sections of the society in plantation work who are particularly vulnerable to deprivation and poverty. These findings implied that there has been a shift from formal work engagement of women workers in the estate sector to informal work. Moreover, this increase in casual work opportunities for women have undeniably come at the cost of corresponding reduction of permanent earning opportunities for the other members of the plantation households. Further, the participation of majority of women as unpaid family worker in the small grower sector also implied that they are subjected to

the vagaries of fluctuations in the price of green leaf without any involvement of a formal labour market or a formal wage labour. This was indicative of the increased marginalisation of women's work by confining a large segment of the toiling majority to informal work opportunities.

Further the observed preference patterns among the younger and educated individuals indicated movement away from plantation work as it turned out to be less attractive for them. This could perhaps be due to the lower work status and lower remuneration associated with plantation work. This trend could be expected to have serious implications for the availability of labour force in future. At present, though supply of labour for the estates does not seem to be a major problem thanks to the casual outside workers at their disposal who are available at lower wages. But this kind of strategy of the management to lower their labour cost by depending more on casual labour will further reinforce this trend of the choice pattern of the coming generation being in favour of non-plantation work over plantation work.

The lower employment position of the casual workers resulted in lower asset ownership position and hence lower standard of living indicating their lower human development and exclusion. However, contrary to the notion of permanent workers in an organised industry being better off in terms of employment position, asset position and hence better standard of living; it was observed that despite their employment position being relatively better than the casual workers and small growers, their asset ownership position and hence living standard was relatively poorer than the small growers. Thus, the wage workers in the estate irrespective of their permanent or casual work status were found to be worst off in comparison to the small growers. Further, though social identity was found to be a significant determinant of employment position of a plantation worker, it seemed to be an insignificant determinant of the living standard of the workers. This indicated that social identity did affect their employment position, but once he/she was able to overcome this constraint and build on their asset position, then social identity did not matter in determining their living standard. This is an interesting finding which clearly points to the

importance of productive asset holdings in enabling an individual to supplement his/her earnings and thus helping them to translate it into better standard of living.

The lower human development of the permanent workers in terms of education, health, housing and sanitation facilities are a manifestation of poor implementation of the provisions under the Plantation Labour Act. A strong association was observed between social identity and the educational attainment of children. The relatively lower educational level of children of the permanent workers and a greater number of school drop outs from the scheduled tribes category as compared to those of casual and small growers indeed reflects the deprivation faced by these plantation children. These findings question the effectiveness of the PLA in promoting the welfare of the workers. The social cost associated with PLA is perceived by the plantation management as a burden on them. Given the structural changes, the pressure to maintain its competitiveness amidst high social cost seems to be pushing the sector to resort to informalisation of labour and poor implementation of the PLA. Nevertheless, the workers are seen to be bearing a disproportionate brunt of these cost cutting strategies resulting in worsening of their employment position and consequent lower human development; hence leading to their immiserisation. Thus in this conflict between efficiency and equity, the already disadvantaged and vulnerable groups which characterises the plantation sector are observed to be, further, excluded from the growth process.

An important step in this regard had been undertaken in terms of the recommendations of the Inter-Ministerial Committee¹ which had suggested the equal sharing of the social costs between the government and the plantation sector. But it is questionable whether this sharing of cost will lead to the welfare of the workers. Given the fact that for any venture, the motive to maintain its profitability comes prior to promoting the welfare of the workers, the tea sector

¹ The Inter Ministerial Committee was constituted by the Ministry of Labour in 2002 to examine the Plantation Labour Act which recommended that Government of India and State government/ local self government should bear 50% of the social cost while industry should bear the remaining 50 percent of the cost.

cannot be an exception to it. So to provide equality of opportunities for the plantation population especially in the estates, the role of government gains immense importance. One possible way out could be in terms of taking up the responsibility to provide the provisions under PLA entirely by the government. This could, indeed, on the one hand, help in enhancing the welfare of the people who have had a long history of exclusion beginning with the colonial rule; and on the other, it can help in promoting the viability of the sector. Further, the casual workers, who are outside the ambit of PLA, could be brought into social safety nets with contributions from the sector and the government. Efforts in this direction could possibly facilitate the promotion of the well being of these disadvantaged and vulnerable groups.

QUESTIONNAIRE

Centre for Development Studies, Thiruvananthapuram, Kerala

Date of interview:

Schedule No:

State:

District:

Name of the estate:

Village:

A. General Details of the Household

S r l n o.	Name of the member	Relation to the head (a)	age	sex (male-1, female-2)	Religion (b)	Social group(c)	Marital status (d)	Education (e)	Asset status (put a tick mark on the codes given) (f)							Savi ngs, if any (g)	
									1	2	3	4	5	6	7		
	Informant																

(a) Relation to the head: Self- 1; spouse of head- 2; married child- 3; spouse of married child- 4; unmarried child- 5; grandchild- 6; father/mother/father-in-law/mother-in-law- 7; brother/sister/brother-in-law/sister-in-law/other relatives- 8; servants/employees/other non-relatives- 9

(b) Religion: Hindu- 1; Christian- 2; Muslim- 3; Others- 4

(c) Social Group: ST- 1; SC- 2; OBCs- 3; General- 4

(d) Marital Status: never married- 1; married- 2; widowed- 3; divorced/separated/deserted-4

(e) Education: not literate- 1; below primary- 2; primary- 3; middle secondary- 4; higher secondary- 5; diploma/certificate course- 6; graduate- 7; postgraduate and above- 8

(f) Assets: T V- 1, Bike- 2; mobile phones- 3; pigs- 4; cows- 5; goats- 6; others (specify)-7

(g) Mode of savings: Post Office- 1; Bank- 2; others (specify)- 3

1. Debt Status

1.1 Do you have any debts? : Yes- 1; No- 2

1.2 If yes, whom do you take debts from? : Money lender- 1; friends/relatives- 2; banks- 3; chit funds- 4

1.3 Purpose of debt: education- 1; health- 2; marriage- 3; daily consumption- 4; others (specify)- 5

1.4

Size of debts	Repayment (put a tick mark wherever applicable)		
	Able to pay	Able to pay but irregular	Not paying
Big			
Medium			
Small			

(Big, small and medium size of the loans are solely based on the perception of the informant)

2. Migrant Status

2.1 What is the generation of In-migration? 1st generation- 1; 2nd generation- 2; 3rd generation- 3; 4th generation- 4, more than 4th generation- 5; no migration- 6

2.2 If yes, from which place, mention?

2.3 If first generation In-migrant, whether: Permanent- 1; temporary- 2; cyclical/seasonal- 3

2.4 Whether any out-migrant from the household (only 1st generation)? : yes- 1; no- 2

2.5 If first generation out-migrant, whether: Permanent- 1; temporary- 2; cyclical/seasonal- 3

Srl no as in col. 1 of 'A'						
Whether employed/ unemployed/ studying/ not in the labour force? (a)						
If employed, what is your activity status? (b)						
Usual Principal Status	Full time (industry code)					
	Part time (industry code)					
Usual Subsidiary Status	Full time(industry code)					
	Part time (industry code)					
Monthly income of the members (Rs)						

(a) Employed- 1; Unemployed- 2; studying- 3; not in the labour force (house wife, elderly people) -4

(b) Activity status: permanent wage employee- 1; casual wage labour- 2; self-employed- 3

(c) Industry code: Employed in plantation- 1; other agriculture- 2; Industry- 3; services- 4; NREGA- 5

B. Employment and Working Conditions (only for plantation workers)

Srl no. as noted for plantation workers in 'B'					
Occupation (a)					
Nature of employment (b)					
If contractual, type of job contract (c)					
Average hours worked per day in the last month					
Average days worked in a month					
Method of payment (d)					
Wages per week (Rs)					
If piece-rated worker,	Regular wage rate(Rs)				
	Wage actually getting paid (Rs)				
If time-rated worker	Regular wage rate(Rs)				
	Wage actually getting paid (Rs)				
Whether eligible for paid leave? Yes- 1, no- 2					
Availability of social security benefits (e)					
Amenities at work (f)					

- (a) Occupation: plucker- 1; field worker (weeding, digging, planting, manuring, pruning, shade lopping and spraying of insecticides) - 2; estate driver- 3; factory worker- 4
- (b) Nature of employment: permanent- 1; contractual- 2; casual: daily- 3; weekly- 4; monthly- 5
- (c) Type of job contract: no written job contract- 1; written job contract: for 1 year or less- 2; more than 1 year to 3 years- 3; more than 3 years- 4
- (d) Method of payment: time-rated - 1; piece rate - 2
- (e) Social security benefits: only PF/pension- 1; only gratuity- 2; only health care & maternity benefits (MB)- 3; only PF/pension and gratuity- 4; only PF/pension and health care & MB- 5; only gratuity and health care & MB- 6; PF/pension, gratuity, healthcare & MB- 7; not eligible for any of above - 8.
- (f) Amenities: latrines- 1; resting shed- 2; drinking water- 3; canteens- 4; crèches- 5; all - 6

Contd. of 'C'

srl no. as noted for plantation workers in 'B'						
No of working days in a month in season time						
Conditions of work in a year (name of month/months)	Busy					
	Normal					
	Dull					
	No work					
Length of service (in years)						
Are there any chances for promotion: Yes- 1; no- 2						
Are you a member of any trade union? Yes- 1; no- 2						
Benefits from the union (g)						

- (g) Benefits: getting higher wages- 1; better working conditions- 2; getting regular employment- 3; no benefits- 4

1. Earnings of Workers

Srl no as noted for plantation workers in 'B'						
Components of workers' earnings per month (Rs) (piece rated)	Basic wage					
	Dearness Allowance					
	bonus					
	Incentive payment					
	Other allowances					
Components of workers' earnings per month (Rs) (time rated)	Basic wage					
	Dearness Allowance					
	bonus					
	Incentive payment					
	Other allowances					

C. Household Consumer Expenditure

Srl no	Item group	Value of consumption (Rs) during	
		Last 30 days	Last 365 days
1	Food expenses		Not required
2	Fuel (firewood, charcoal, gas, kerosene etc)		
3	Clothing and footwear	Not required	
4	Educational expenses		
5	Medical expenses		
6	Consumer durables (includes expenses for purchase of utensils, fan, furniture, T.V, mobile, and similar household durables)		
7	Other non-food expenses		
8	Total non-food expenditure (items 2 to 7)		
9	Total consumer expenditure (item 1 and item 8)		

1. Provision of other Entitlements to the Workers

Srl no. as noted for plantation workers in 'B'					
Do you get ration from the estate?					
If yes, how much and what do you get, elaborate? Yes- 1; No- 2					
Do you get firewood from the estate?					
If yes, how much, elaborate?					
Do you get kerosene from the estate?					
If yes, how much, elaborate?					

D. Education and Health

Child srl no.					
Where does your child study? (school code) (a)					
If not studying in estate school but in outside estate school, reasons (b)					
If studying, are your children getting education stipend from the plantations? (c)					
Had your children been able to get education grant under Nehru Award Scheme? (d)					
If not going to school, reasons (e)					
Future plan about the career of your child (f)					

- (a) School code: Estate school- 1; Outside estate school: Government- 2; Private- 3; not studying- 4
- (b) Reasons for not studying in estate school: absence of well-trained teachers- 1; consider education in outside estate school better than in estate school- 2; passed primary schooling from the estate school and pursuing further studies outside- 3; passed primary schooling from outside school and pursuing further studies outside- 4; other (specify) - 4
- (c) Yes- 1; No- 2 (applicable only to children whose parents' monthly wages and income does not exceed Rs 10000 per month and the number of children would not exceed 2 per family)

- (d) Yes- 1; No- 2 (applicable only to wards of workers securing 60% marks in X, XII examinations and for prosecuting higher studies in degree courses and whose parents' annual income does not exceed Rs 48000)
- (e) Reasons for not going to school: required for household work- 1; looking after young ones at home- 2; no incentives for studying- 3; other (specify) - 4
- (f) Career plans for child: Plantation worker- 1; other service out of plantations- 2; don't know- 3

Srl no as in col. 1 of 'A'				
In general, how do you rate your health today (a)				
Did you have any major ailment in the last 2 years? Yes- 1; no- 2				
Whether you had any health issues due to your work? Yes- 1; no- 2				
Type of hospital you get medical aid from(b)				
Reasons for not going to estate hospital (c)				
Do you get free transport to the hospital when required? Yes- 1; no- 2				
The last time you were admitted to the hospital, for how long was it?				
If admitted to hospital other than estate hospital, who bears the expenses? (d)				
If you do not work daily, is it due to health problems? Yes- 1; no- 2				
Were your any disabled members in the family able to get any financial assistance under the General Welfare Scheme of the Tea Board? (e)				

- (a) Health rating: good- 1; moderate- 2; bad- 3
- (b) Type of hospital: estate hospital- 1; outside estate hospital: Government- 2; Private- 3
- (c) Reasons for not going to the garden hospital: inadequate supply of medicine- 1; inadequate medical staff- 2; non-availability of resident doctors- 3, other (specify) - 4
- (d) Bearing of expenses: Management- 1; yourself- 2
- (e) Yes-1; No- 2 (under General Welfare Scheme, the Tea Board provides financial assistance to disabled plantation workers and their dependents for purchase of crutches, artificial limbs, caliper shoes, hearing aids etc)

E. Living Conditions

Srl no.		
1	House you live in (a)	
2	Type of house (b)	
3	No. of rooms	
4	Separate kitchen: Yes-1; No- 2	
5	Bathroom available: Yes- 1; No- 2	
6	Toilet facilities available Yes-1; No-2	
7	Source of drinking water (d)	
8	Electrification of house: yes- 1; no- 2	
9	Sources of fuel (e)	

- (a) House you live in: Own- 1; Rented- 2; provided by the Management- 3; others- 4
- (b) Type of house: Kutchha- 1; Semi-Pucca- 2; Pucca- 3
- (c) Drinking water: pipes to individual houses-1; communal stand pipes-2; others(specify) -3
- (d) Sources of fuel: fuel wood- 1; fuel wood and kerosene- 2; fuel wood and LPG- 3; fuel wood, kerosene and LPG- 4

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