

CHAPTER-1

INTRODUCTION

1.0. INTRODUCTION:

The labour force of the Indian economy consists of roughly 487 million workers in 2011, the second largest after China. In India about 70 percent of the labour force is employed in the agriculture sector. Although in the recent years the share of agriculture in Gross Domestic Product is coming down, still agriculture is the dominant sector of the economy and it impacts the well-being of the other sectors. Heterogeneity is the most notable feature in the working class in India. On the one side, there are workers engaged in modern industries, such as steel, heavy engineering and electronics, who interact with a high level of technology and whose work require a good measure of skill. On the other side, there are workers engaged in different plantations such as tea, coffee, rubber etc. and whose interaction with technology are at a bare minimum¹. Plantation is a part of agriculture and it directly employs more than 2 million workers in the country. Plantation plays a very crucial role in the export of agricultural produce. About 15 per cent of the total export earnings of agriculture products come from crops like tea, coffee and rubber, although these plantations occupy only one per cent of the total cropped area. The common characteristic among these different sections is that, they are all sellers of their labour power. These different sections of workers have diverse social backgrounds, levels of education, literacy and living standards etc. Hence, to understand the socio economic background of workers, micro level studies on workers engaged in different sections especially plantations are necessary. Among the different plantation crops, tea is considered to be the most important crop in India. It also contributes a sizeable amount to the national income of the economy.

Tea industry is one of the oldest industries in India. It occupies a pivotal position in the country's economy. The Indian tea industry accounts for gainful direct employment for more than a million workers of which a sizeable number of women and persons belonging to weaker sections of the society. Moreover, it provides a large number of indirect employment in various sectors like road construction, transportation, building of warehouses, manufacture of plywood tea chest, aluminum foil, tin plate, paper card board, fertilizers, insecticides, pesticides, coal, iron, steel etc². The importance of the tea industry is also vital in terms of its support to ancillary activities like substantial foreign exchange earnings with negligible import content, contribution to the state and central exchequers, preserving pollution free biosphere, role in soil conservation etc³. The most interesting feature of employment pattern in tea gardens is that it is family based. So, apart from its own workforce, it also looks after a large number of dependents. The tea garden workers who were drawn from tribal area to

remote corners of Dooars region had to face innumerable difficulties in adjusting with the local situation and in new and quite different environments. The language problem, the customs and traditions of the tribal population posed serious problems for them. Moreover, their working in a new complete environment and setting in tea plantation industry aggravated their miseries. The study of socio economic conditions of the tea plantation workers of Dooars reveals that about 1.64 lakh workers and their dependents living in 156 tea gardens in Dooars are direct descendants of the migrated labourers who were brought over here from different places. The subject matter of this study is associated with the socio economic condition of the workers who were engaged mainly in the tea plantations of Dooars region of West Bengal. Tea is grown extensively in Dooars and its cultivation in this region is especially important from socio-economic point of view.

Tea (*Thea Sinensis* or *Camellia Sinensis*) is a broad leaved, evergreen tea crop. It was primarily a luxury drink of aristocracy. The flavors and delicacy of the China brands were so conspicuous that tea party was held to be a part of aristocratic life style. Indian tea was relatively much strong compared to the Chinese Tea and it was used to blend with the latter. It is believed to have originated in China and to have spread from that country into other parts of South East Asia. The tea bush yields a perennial crop and flourishes only in areas with well drained and slightly acidic soils and where there is no extremely cold season. It is tolerant of a wide range of warmth such as prevails in the tropical and subtropical regions. As the tea shrub is moisture loving, it requires humid air and ample rainfall distributed in such a way over the year that continuous water supply is assured throughout the growing season⁴. *Camellia sinensis* (tea) is consumed by over two thirds of the world's population. It is the cheapest hot beverages. The Chinese used tea as a medicinal drink as early as 3000 B.C. and by the end of the 6th century as beverage. India, Sri Lanka and China together account for about 60 percent of the global production of tea, followed by Kenya and other countries in Africa⁵.

Tea is one of the India's largest and oldest industries dating to the colonial era and progressively indigenes. In fact, India has been the largest producer and consumer of tea in the world. Not only that, there is a significant growth in production and consumption of tea in India over the years. But in terms of productivity, it is next to Kenya. This decline is directly linked to the age of the tea bushes in the prime areas. One of the important factors that helped the growth of tea plantation industry in India is the fact that there are extensive regions in the country with climate and soil suitable for tea culture. However, it has also to be recognizing

that tea is a hardy plant and can grow under widely different conditions. In India tea growing regions are situated in the monsoon belt in the North and the moist slopes and plateaus of the Western Ghats in the South. The climate and soil of those widely separated regions show great variations, the effects of which are naturally reflected in wide differences in productivity. While the traditional tea growing states of India are Assam, West Bengal, Tripura, Himachal Pradesh, Uttar Pradesh and Bihar in the North and the East, and Tamil Nadu, Kerala, Karnataka in the South. Recently tea plantations have started in the states of Orissa, Manipur, Arunachal Pradesh and Nagaland. Attempts are also being made to plant tea in different non-traditional areas of tea growing states like Ayodhya Hills, located in the south western part of West Bengal, Kumaun Hills of Uttar Pradesh, Chamba and Mandi districts of Himachal Pradesh⁶.

In West Bengal, the traditional tea growing areas are located in the hills and foot hills of the Himalayas, consisting of three regions such as Darjeeling, Terai and Dooars⁷. In fact, the famous Darjeeling tea gardens which produce the world's most aromatic brews and lend their name to the choicest blends, have a large part of their bushes at over 110 years old and 80 percent of them are over 70 years old. This fact plays a critical role in the entire industry's fortunes, problems and the present situation. The tea industry is a large agro based and labour intensive industry. It largely depends on manual labour than technological inputs. Crop growth and production depends on the interaction of a biological system, which is the plantation more often a population of plants and the physical environment in which the plant grows. The total growth and production are in fact derived from the environment through the special mechanism and properties processed by the biological system.

The tea industry in India began with the foundation of the Assam Company in 1839. The potentiality for growing tea was discovered earlier in 1823 by major Robert Bruce when he came across indigenous tea bushes in Assam (ITA: 1933 v-vi). In 1833, when the East India Company lost its monopoly in the tea trade with China, its directors became interested in the possibility of tea cultivation in Assam which had been annexed by the British in 1825 (Bose 1954: 1-2). The first consignment of tea was sent to London in 1838 (Tinker 1974: 29)⁸. In 1834 A.D., Lord Bentinck, the Governor General of India appointed a committee called "Tea Committee" to study a plan for the accomplishment of the introduction of tea culture in India and for the super intendance of its execution. Thus, tea was first planted in Sadiya (1835), in Chabua (1836), in Cacher (1855) of Assam. The tea plantation in Sadiya is the first tea garden in India.

Tea plantations of Darjeeling and Jalpaiguri were the second biggest industry in Bengal. The tea plantation in Bengal was started in the Darjeeling district in 1840. Bengal Dooars formerly a part of Bhutan and after, the Dooars was annexed from Bhutan in 1865, the tea planters of Darjeeling explored possibilities of growing tea there. "Although the Dooars was a most unhealthy district in which malaria and black - water fever were rife, climatically it had much to recommend it as a tea growing area" (Griffith 1972: 115). In 1874, Darjeeling Tea Company started the first tea garden in the Western Dooars at Gajoldoba, which is close to the Darjeeling hills⁹. Thus, it took nearly 35 years for tea cultivation to spread from Assam to Jalpaiguri Dooars. The direction of spread of tea plantation was eastward that is from western to eastern fringe of Jalpaiguri Dooars. It also took several years to spread tea plantation from the western police station of Mal to eastern police station of Kumargram. Lack of communication was the main factor for the low movement from Western to Eastern Dooars.

Tea is the major beverage in the country. 65% of rural and 75% of urban households drink tea. In spite of low per capita consumption (630gms), almost $\frac{3}{4}$ of the total produce accounts for domestic consumption. Over 170 years old Indian tea industry continues to be an important foreign exchange earner. As per the figure of the tea statistics 2006, in India, the area under the tea plantation was 567020 hectares in which 114788 hectares area under the W.B., out of which 72906 hectares (63.51%) area covered by the Dooars region for tea plantation. The total tea production in India was 981805 tons in which West Bengal having 237106 tons, out of which 139188 tons (58.70%) came from the Dooars region according to 2006 tea statistics¹⁰.

1.1. PROBLEM OF STUDY AREA:

The various facets of the socio-economic implications which pertain to constraints of participation of tea workers as wage earners, attitudes of employers towards tea workers, lack of available information in regard to labour laws or labour facilities, lack of institutional supports etc. among the tea labourers, the inability to combine work with household and child rearing responsibilities etc. in case of women. For providing empirical facts on the various socio-economic issues behind the tea workers in a larger society hitherto unknown to them, a total study of the tea workers of Dooars has been undertaken.

In the recent years, there has been an increase of the population of the tea gardens of Dooars region and this has largely been due to the expansion of family size of the garden workers.

This increase is a matter of great concern for the local tea gardens owner as the tea gardens workers have been giving constant pressure on the garden management to absorb more of their family members into the gardens. Apart from this, the tea industry in this region faces a number of problems arising from the labour side. In view of the world wide concerned voiced recently in respect of the employment of child labour in India, the General Committee of the Indian Tea Association has directed its members not to employ child labour either in the factory or in the tea gardens.

The majority of the workers are tribal, mostly Santhal, forcibly inducted from contiguous regions, especially Bihar, generations ago. They live and work in the gardens and have nowhere else to go where gardens are abandoned or their wages are not paid. Apart from the wages, the other benefits to which a worker is entitled as an employer contribution to PF, gratuity on retirement, subsidized rations of rice, wheat, kerosene oil and occasionally tea from the gardens. The labour unions in every garden have fought relentlessly for years for deriving these benefits from the close-fisted management. But the tea garden owners opine that the extra expenditure, to make the economic conditions of the labourers better, increase the cost of production which ultimately minimizes the profit margin in this industry. The activities of these political parties, however, did not do well in all respects. They have given rise to labour unrest from time to time, which actually hampering the functioning of the plantations.

The Dooars region tea industry suffered a critical period from 2002 to 2004; during this time 14 of the 166 registered tea gardens in Dooars closed their doors, effectively abandoning resident workers and their families. Nearly 100,000 people (workers and their dependents) were directly affected by the closures, deprived of food rations, wages, health care, electricity, drinking water and transportation to and from schools for the children. Even in the existing tea gardens in Dooars region the tea workers are deprived from the aforesaid benefits, which are contributed by the management. Since tea plantation provided to some migrant workers with residential quarter within the plantation boundary, they had almost no socio cultural contact with the neighboring indigenous population. Such residential labour force that had earlier agricultural economic background was suddenly brought under the industrial ways of life. This had an important consequence on their socio economic life by bringing rapid transformation of their traditional social life.

1.2. REVIEW OF LITERATURE:

To get better insight into the socio economic condition of Tea garden workers, a brief review of available important studies has been outlined in this chapter. The review intends to identify research gaps on the topic, which would help in raising some issues for detailed discussion in this study. There are several studies made by different authors in India and abroad on various aspects of tea workers and the tea industry. Their studies are mainly on tea labourers and financial management. A few studies particularly deal with geographical aspects and its relation with tea workers. So, I bound to concentrate on some of the earlier publications which are noted as follows:

The book, entitled, "History of the tea industry in India " Written by Sir Percival Griffith, in 1967, describes the history of Indian tea industry and it's different aspects like tea production, labour recruitment, ownership etc. The author also describes the origin of trade union movement in different regions of India. This book is one of the most authentic books regarding the history of Indian tea industry.

Tusher Kanti Ghosh, in his books, in 1987, "Tea garden of West Bengal" and "Contains history of tea plantation of West Bengal" describes the tea land policies, rules, regulations etc. and the problems faced by tea laborers. It also elaborates the land management in sick gardens and the existence of dual economy.

Sharit Bhowmik (1981) in his book "Class formation in the plantation system" describes the origin of the plantation labour force and the plantation system that is related to work, wage and level of living etc. He also tells about the social life of the Adivasi and the trade union movement in Dooars region. It is a unique and true analysis of different aspects of class formation and its relation to class- consciousness¹¹.

The study on "Role of Women Workers in the Tea Industry of North East India" by Navinder K. Singh in 2001 portrayed various social, cultural and functional activities of female's tea workers in details. This study dwells on the continued exploitation of the women workers in the plantations dominated by males, and suggests that education and social empowerment is the daily way out for them. However, issues relating to development strategies for tea workers were not discussed in this study.

The books entitled, "Life and labour of plantation women workers" in 1997 which was investigated by Mita Bhadra shows that the background of tea plantation and social

interaction of the women workers and their outlook in the various tea gardens of Dooars region¹².

The book entitled "Human resources development for industrial workers: with special reference to tea industries" by Bishnu Prasad Sahu, in 2004, focuses on the migration pattern, socio-economic and cultural profile, role of trade unions and implication of labour legislation on the tea garden labourers and the problems of the different target groups in the tea gardens of Barak Valley, Assam. He has been made an effort to initiate HRD as a means for strategic management in the already ailing tea industry and also suggest some suitable HRD mechanisms for improving the quality of working life of the labourers¹³.

N. K. Jain in his book entitled "Economic crisis in tea industry" in 2008, analyze the impact of the economic crisis and discuss the methods of managing the cost-price squeeze. Strategies are suggested to reduce the costs in field and factory. Knowledge of tea chemistry has been employed to define the tea quality and to improve it, increase price realization and enhance earnings by taking to value added products form tea. It is designed to serve as a guide to the captains of the tea industry and to the policy makers to formulate sound economic policies for long term health of the tea industry and prevent/ reduce the recurrence of such economic disasters.

The book entitled "Evolution of land grants and labour policy of government: The growth of the tea industry in Assam, 1834-1940" by Mahammed Abu Siddhique, in 1990, portrays the development of the tea industry in Assam, with particular emphasis on government policy with regard to the supply of land and recruitment of labour.

Dan M. Etherington and Keith Forster in their book "Green gold: Political economy of China's post- 1949 tea industry" in 1993, analyzes the problems of administration and economies of scale as well as the conflicts between central and provincial governments that threaten the tea industry's future growth in the People's Republic of China.

The book entitled "Labour in the tea garden" investigated by Manas Das Gupta in 1999, explore the continuity and change in the economic conditions of the labourers in Darjeeling, Dooars and Terai tea gardens.

The book entitled "Plantation Sociology of North-East India" is a pioneering Research work by Khemraj Sharma in 2010, highlights the ways how the plantation workers of North-East India have been marginalized from all corners of the society. Since the his study falls under

the category of Labour studies relating to the plantation workers in the age of globalization, it highlights the ways and Means of marginalization of workers in the Golden era of globalization. The Study also highlights the fate of tea garden workers, their present being as marginalized human resource Capital and their urge to become the integral part of mainstream human resource capital of the country. The plantation workers as everybody knows, are the most neglected, marginalized and little known working citizens of the country. The study also highlights that in spite of their acute marginalization, they have still possessed high commitments to the industry although they are facing unwanted upheavals brought about by the vagaries of times in the history of one hundred and sixty three years of its origin, growth, development and present state of decaying in the era of Globalization. The work definitely helps the readers, scholars, students and thinkers of the Society who can contribute a lot to the literature of plantation workers of the country. The work is a noble exercise to explore a new theory that is most applicable to the study of plantation workers and thereby to enrich the literature on the plantation workers of the Country in the era of Globalization, Liberalization and Privatization of Indian economy¹⁴.

The book "Agony of Plantation Workers in North-East India" by T. C. Das and K. R. Sharma in 2008, deals with socio-economic agonies of the plantation workers of the state of Arunachal Pradesh, Sikkim and Darjeeling of the North East India. The workers are mainly immigrants from various parts of the country, and Nepal. After joining the jobs of tea plantations, they have been barricaded within the plantation enclaves only having little exposure outside the plantation world. Their socio-economic agonies have been hardly known to the civilized world of human society. This study shall enlighten their commitments to the industry, organized exploitations in the plantation universe, socio-cultural milieus and integration process. It also highlights their participation in nation building aptitude and perceptions to the change brought about by the liberalization of Indian economy including the plantation industry of the region. The book may act as a source material for further empirical study on the plantation frontiers of the country.

In another book entitled "Globalization and Plantation Workers in North-East India" by T. C. Das and K. R. Sharma in 2009, is a piece of research study regarding the impacts of globalization among the workers. The impacts have been analyzed thoroughly in regard to the case of Darjeeling tea industry along with the industry in relation to other regions of West Bengal and Assam of North-East India. Since this is the first sociological study on the impacts of globalization among plantation workers, it elucidates the positive and negative

sides of present globalization process in the industry. It has also incorporated a whole lot of the assessment of changes taking place since 1991 of Liberalization, Privatization and Globalization of Indian economy in tea frontiers of North-East India.

The book “Globalization and industrial relations in tea plantations” written by Debabrata Mitra in 2010, focuses the impact of globalization on industrial relations especially of the Dooars tea industry. His study deals with history and growth of tea industry in West Bengal with special reference to Dooars and Terai regions. He also evaluated the trade union movement in the tea industry of West Bengal as well as Dooars and Terai regions. The changing pattern of industrial relation has been also evaluated in the tea gardens of Dooars and Terai regions during the post-independence period, which prove helpful to understand the different stages through which industrial relations had to go through before stepping into the era of globalization¹⁵.

The book entitled “The Dooars in historical transition” written by Sailen Debnath in 2010, in which he reflects the history of the antiquity of Dooars, most of the traces of which have not survived the ravages of time as well as of the medieval and modern times. He also focuses the establishment of tea plantation in Dooars during 1875 to 1968 and the labourers in the tea plantation¹⁶.

Purnendu Kumar in his book entitled “ State and society in North East India: A study of immigrant tea plantation labourers” in 2006, considered the labour recruitment and socio economic profile tea garden and ex- tea garden labour community. It also emphasis on political participation and voting behavior of tea workers and discuss the impact of tea plantation on the economy of Cachher (Barak Valley).

The book “Tea” written by K. C. Willson and M. N. Clifford in 1991, investigates the crop, its history, botany, cultivation and production, addresses the importance and production of the major tea varieties used as beverages and looks at the clinical and physiological effects of tea consumption.

The book entitled “The Darjeeling tea book” by Gillian Wright in 2011, tells the story of Darjeeling, the beautiful hill station in the Eastern Himalayas. She traces the history of its world-famous tea from its origins in China to the present day. The British appetite for tea convinced the merchants of the Raj that they should bring tea growing to India. The author recounts the adventures of the nineteenth- century botanists who succeeded in bringing the

closely guarded secrets of tea manufacture from China to India; of the founders of Darjeeling and of the pioneers—British, German and Indian—who took up tea plantation on the then remote mountain sides. Wright tracks the changes that accompanied the transition from British to Indian ownership after Independence, and describes the gardens of today through the seasons, places of astounding biodiversity, where leopards still roam and uncounted smaller creatures and unnumbered plant species thrive. Her encounters with planters and workers, especially the women, without whom the industry could not exist, illuminate their lives, hopes and aspirations.

Ram Gopal Sud in his book “The tea of Himachal Pradesh” in 2007, popularly known as 'Kangra tea' needs no introduction among the tea connoisseurs due to its distinct aromatic characteristics, discuss about the history of beginning of tea its glorious past and present status. It also delves into the developments that have been made so far as a result of research and extension accomplishments and Government initiatives to sustain the tea industry of Himachal Pradesh. This work also brings to fore the challenges that Kangra tea is facing due to opening up of the World trade and suggests remedial measures. Tea industry is a potential resource of income generation and employment. This book acquaints the reader with the ongoing efforts of the Centre and State Governments to promote the tea industry of the state in order to improve the socio-economic status of its people.

Deepak Kr. Misra; Vandana Upadhyay and Atul Sharma in their book “Unfolding crisis in Assam’s tea plantations: Employment and occupational mobility” in 2012, unravels the livelihood strategies and living conditions of labour in Assam’s tea sector, which has been undergoing a crisis since the 1990s. Stagnant production, decline in exports, and closures of many tea gardens have led to large-scale retrenchments in the labour force. The study begins by contextualizing the Assam tea sector in a comparative and historical perspective, and then delineates the chief employment characteristics of labour in this industry. Based on a detailed analysis of secondary data and primary field research, it goes on to examine the extent, types and implications of inter-generational occupational mobility (or immobility) among labourers in Assam’s tea gardens. In the process, it reflects on how even a sector that brought capital and labour from outside and contributed significantly to the country’s export earnings failed to create dynamic growth linkages within the local economy. The study contributes to understanding not only the development dynamics of the region, but also the contradictory ways in which forces of globalization and neo-liberal reforms have been reshaping the worlds of labourers in the margins.

The book entitled, "Status of women working in the tea plantations" written by Elizabeth Kaniampady (2003), has emphasis an empirical study on the status of women workers in the tea plantations. This is a maiden anthropological venture among the working women in Assam tea plantations¹⁷.

R. N. Chakravorty (1997) in his book "Socio- economic development of plantation workers in North East India" considered the rise, growth and horrible socio economic conditions and conundrums of the workers employed in various tea gardens in the North Eastern region of the country. He has probed into deep and critically analyzed many clues and clichés, surrounding the most fascinating story of the rise, growth and development of tea industry and its workforce, specially the piteous living condition of the workers in North Eastern region, before and after independence, and the roles which are being played by the Central Board for Workers Education under the patronage of the International Labour Organization (ILO), Geneva, for all round development of the workers¹⁸.

The study "Industrial Relation in Tea Plantation: the Dooars Scene" by Prasanneswari (1984), describe the condition of labour relation in the tea gardens of North Bengal with special reference to the gardens of Dooars region. It covers various crucial aspects of industrial relations in tea gardens like plantation hierarchy, attitude of the management towards the workers, role played by trade unions and factors affecting the labour relations.

The edited book entitled "Plantation labours of North-East India" in 1997 by R.K.Bhadra and Mita Bhadra considered the social, economic and health aspects of the plantation labourers. Organizational structure of the plantation system, trade union, economic interaction of labourers, growth of women labourers, commitment of the workers, absenteeism, class consciousness, condition of surplus plantation labourers, impact of plantation on the agrarian structure of the region etc. have been discussed in this book. Socio-cultural aspects of labourers, migration of workers to the plantation and consequent changes, changes in family, authority, status of female, their interaction with the neighbouring non-tribal population, ethnicity dimension of labourers etc. are analyzed in depth.

A study on "Social dimension of health of tea plantation workers in India", in 1997, made by R. K. Bhadra, describes the demographic and social structure of tribal population of tea plantation and this study also includes the cultural dimensions and health behaviors such as housing, sanitation, hygiene, food, intoxication etc.

R.C.Awasthi in his book "Economics of Tea Industry in India" (based on his doctoral dissertation), in 1975, has given a detailed account of the history, growth and development of Tea plantation and processing with particular reference to Assam. He has considered almost all the relevant economic aspects (only on the basis of secondary data) but has not employed any statistical tools and test to bring out their special significance with respect to the production variables.

Mita Bhadra in her book "women workers of tea plantations in India" in 1992, observes that the working women of plantations do not have any role in the decision making process in the industry, especially related to trade unions even though they are its members. Trade union leadership among the women workers has not yet emerged. They hardly participate in the union activities. Their educational attainment is very low, and this has further perpetuated their lower status.

In a different context Bhadra (1997: 229-246) carried out a study in North Bengal to understand the family authority, role and status of the Adivasis women workers of Chandmani Tea Plantation in Darjeeling District. She observes that women, by and large, work due to economic necessity and with the full knowledge and consent of their husbands and other members of the family. They seem to be happy with their jobs. They never feel inadequate and inept in their roles as wives and as mothers. They do not seem to experience any observable role conflict in their as wives, mothers and as workers. They generally integrate their work and the family in an accommodative manner.

In the context of her observations, she comments, their low levels of inspiration and education seem to help them to adjust better to the family life than the educated middle class working women who are to compete in a shrinking job market and enter into a conflict with a rigid patriarchal family system.

Manas Dasgupta (1988) in his article "Trade union movement in tea plantation" explain the trade union policies and workers participation in tea management.

While dealing with women workers (mostly the tribal women) in tea plantation of North Bengal and Assam, Dasgupta (1978: 192-199) observes that the women folk who have involved themselves in plantation work are still shackled to their traditional domestic responsibilities like cooking and managing household affairs. Lactating mothers carry their babies to the garden and keep them under the shade of a tree or in a crèche while they are

busy in plucking. The babies are looked after by the old women called Dhaima, employed for the purpose. The mothers suckle their babies at regular intervals. Besides her work in the garden, a women worker with her husband engages herself in raising some minor crops in the plot of land attached to the quarters given by the management. On the whole, in the industrial context, they have to maintain both the poles- the household as well as the industrial work.

S. N. Singh in his book entitled “Socio-economic and political problems of tea garden workers –A study of Assam” in 2006, evaluated the causes of poverty and illiteracy of the tea garden women workers of Barak valley. He also focuses on the factors responsible for entering into labour force and the effect of their employment on the behavioral pattern and socio-cultural life. Although the study stresses upon the socio economic and political aspects of plantation workers of Barak valley, the genuine difficulties of the planters, proprietors, managers and other associated staff are also focused.

The book entitled “The development of tea industry in the district of Jalpaiguri, 1869-1968” edited by A.G. Ghosh in 2013 describes the history of the plantation in Jalpaiguri Dooars with special reference to the Bengali entrepreneurs. The author had nicely portrayed the pen picture of the growth and development of the tea plantation in Jalpaiguri Dooars and also in the Terai and Darjeeling.

H.N. Dwibedi in his book “Production of tea in India: with special reference to Dooars” in 1999, considered to identify the different climatic, technical and economic factors which are responsible for growth in tea production in Dooars of West Bengal. He also aims to identify the factors which are responsible for the wide variation in yield of made tea amongst the tea producers of Dooars.

Shah in 1950, in his study of “Women in tribal life” states that the social structure and organization of tribal life centres on the family. As the pivot of the family is the woman, her position and the social change that take place in her status and her daily life are most important.

The book entitled “Tribal migration” by S .N. Tripathy in 2005, evaluated the genesis of labour migration in India, highlighting the causes and consequences of labour out migration with a historical perspective. He also focused the socio economic features of migrant and non-migrant households and also discusses the impact of migration on rural economy.

Apart from that, there are several studies which are related to tea plantation such as “The world tea economy” by Goutam Kumar Sarker; “Socio economic process in tribal tea garden labour” by B.K.Roy Barman etc. The aforesaid studies on different aspects of tea plantation were highly informative and necessary. Dr. Sarkar has noticed a persistently positive correlation between the size of the tea gardens and their yield per acre in North India. This finding was based on data relating to a single year, 1966-67. In arriving at such an economic observation, Dr. Sarkar did not correctly define yield per hectare, could not properly consider the important size-class of above 400 hectares tea gardens. None of them have discussed the physical problems of tea plantation as well as the social and economic problems of tea workers.

Anirban Basu Majumder in an article entitled “Hyposidra Talaca (walker) – a destructive pest of tea in Dooars tea plantation”, in 2004, describes the loss of tea production due to insect pest, particularly loppers is one of the productivity barriers in Dooars tea plantations. The identification and host range of this pest was studied during 2006-07 from various tea gardens.

B.S.Mipun and Nomita Shyam, in their article “The tea tribes and female work force in the tea gardens of Assam” in 2003, describes the distribution of tribal workers and women participation in different activities in the tea gardens of Assam.

Bimal Barah in his article, in 1999, “ Land and labour productivities of tea – A case study of Sonitpur district, Assam” highlights the inventory of production variables which are directly or indirectly related to the cultivation and production of tea and the relative contribution of each production variable towards the land and labour productivities in tea in Assam.

Arun Kumar Singh in his article “Rice stems to tea bud; changing livelihood strategies among the paniyan – A marginalized tribal society of Nilgiri wynaad, Tamilnadu” in 2003, describes the various methods of tribal livelihood according to their local environmental condition in which they are placed. He also tells with the help of a local environmental condition and the emerging technological knowhow available with them in the form of plantation agriculture, the paniyan have become the tea grocer.

S. K. Dutta presented his article, in 2003; entitled, “Closeness of spacing in tea” describes the distance between the bushes in tea plantations and also highlights that the closer planted tea gives higher yields than orthodox planted tea.

Dr. R. K. Kar presented three articles in 1996, entitled “Work organization in a tea plantation: A case study in Assam”, “Absenteeism among tea labour: A case study in cultural ecology” and “A note on health and sanitation among the tea labour in Assam”. In the first article he has described the formal organizational structure of plantation which shows that the plantation does not have a complete industrial structure. This agro-based industry has a hierarchical structure of the staff from a manager to a worker, work schedule, work grouping, industrial wage pattern, leave rules, employment benefits, labour management relations, etc. it employs different types of tribal groups as its labour belonging to both sexes.

In the second article R. K. Kar has analyzed absenteeism among the workers of Assam tea plantations. In studying absenteeism he has clearly highlighted the reasons of absenteeism. In this agro-based industry reasons for absenteeism is of unique type. Heavy rainfall and other natural calamities prevent the workers from working. Diseases in particular ecology are also responsible for absenteeism. Besides lack of certain facilities which they do not get from the management are also other reasons.

In the third article he has discussed health and sanitation among the tea labourers in Assam. He has noted the causes and treatment of diseases. He informs that the workers live in an extremely unhygienic condition, Poor sanitation, inadequate and impure drinking water supply, inadequate and unhealthy housing, etc. are the normal living conditions of the workers which have been the main causes the diseases suffered by the plantation labourers in Assam.

S. Sannigrahi and T. Talukder in their article “ pesticide use pattern in Dooars tea industry” describes the average consumption of pesticide per hectare in different sub districts of Dooars and the consumption of pesticide in different months, to commensurate the seasonal occurrence of pests in different sub districts.

Subhamanyu Chakravarty in his article, in 1996, “Family welfare among tea plantation workers of West Bengal” shown that family welfare among plantation workers has brought tremendous awareness and acceptance of modern medicines. Workers covered under the program for about three years have been aware of the causes of worm infection inclined to take its medicine for its cure. They respond satisfactorily to the stool testing by the project personnel. As a preventive measure they have improved, to a certain extent, the hygienic condition. Immunization of child, pre and post natal care of mother, etc. have changed where traditional practices and beliefs are no longer getting primary importance. They are aware of

the importance of family planning, but not found to be adopted any method for it. As a whole there is a positive response of the tribal workers to accept modern health practices.

Sarmishtha Biswas, Debasis Chakravartee et.al, in 2005, in their article “ Nutritional survey of tea workers on closed, re - open and open tea plantations of the Dooars region, West Bengal, India” describes the nutritional status of the workers on closed, recently reopened (sick) and normally functioning gardens of the Dooars region.

Dr. Sibsankar Mukherjee presented his article, in 1996, entitled “Duars plantation economy: evolution and pattern” describes the historical perspective of development of tea entrepreneurs in the district of Jalpaiguri of West Bengal. He also considered that the entire plantation economy is based on cheap labour in comparison to the local agricultural labourers. This colonial pattern of economic development led the ruination of the local peasants.

No intensive sociological and anthropological investigation has so far been made on the socio- economic condition of tea garden workers of Dooars region in West Bengal. Thus, the present study, ‘Socio – economic condition of tea garden workers of Dooars region, West Bengal and formulation of development strategies’ is expected to be a maiden attempt in Dooars in this direction. Hence it covers all important aspects and the problems of tea labourers and formulates some strategies not only for the development of tea plantation and tea industry but also for the people associated with this industry in Dooars region of West Bengal.

1.3. THE STUDY AREA:

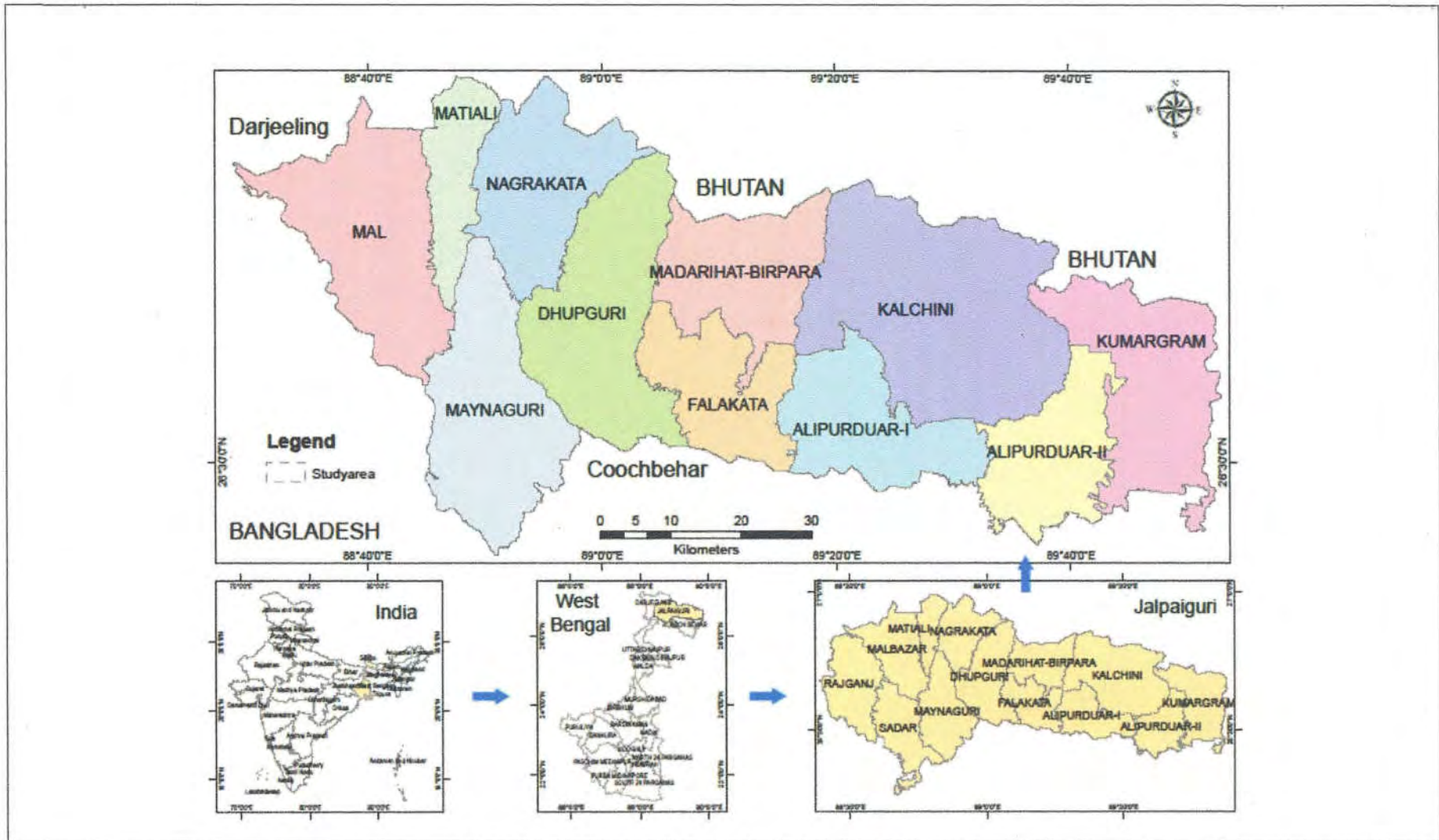
The Dooars region skirting the eastern Himalayan foothills covering the districts of Jalpaiguri of West Bengal plays a vital role in tea plantation. It is generally believed that the name of Jalpaiguri has been derived from Bengali term means a place where olive trees are available. But there is another opinion regarding the origin of the term of Jalpaiguri. Some people believe that the word ‘Jalpai’ derived from the Jalpesh temple which located in Maynaguri police station. Dooars was formerly a part of Bhutan before being annexed by the British at the close of the war of 1864-65. The area annexed consisted of the Western Dooars in Jalpaiguri district and the Eastern Dooars, which is now a part of Goalpara district in Assam and is no longer known by this name. Therefore, the Dooars now comprises that area which runs along the foot of the Bhutan hills bounded by the river Tista on the west and the river Sankosh on the east, which is the tea growing area of Jalpaiguri district¹⁹.

The Jalpaiguri district is divided into two major types of region according to different geographical aspects, one of them is known as Dooars, which lies in the eastern part of the river Tista, and another is Terai, which exists in the western part of river Tista. The tea growing area of Jalpaiguri district is known as the Dooars in planting parlance. Dooars, a land of unending beauty, lies in the sub-Himalayan foothills in Jalpaiguri district of West Bengal. Stretching from River Tista on the west to River Sankosh on the east, over a span of 130 km by 40 km along the foothills of Himalayas, Dooars occupies a major part of Jalpaiguri district²⁰. It derived from the word 'doors', Dooars or Duars acts as a gateway to Bhutan and the North-Eastern states of India. To the north of Dooars stand the East Himalayas as a natural backdrop, on the west by the Terai region, on the east by Assam and towards south it's a vast plain land with low river basin of extends farther up to Bangladesh and Koch Bihar district of West Bengal. H.N. Dwivedi in his book entitled 'Production of tea in India' used the term 'Dooars' region as the present form of tea plantation in the district of Dooars comprises the complete area of the administrative district of Jalpaiguri and one adjacent tea garden (Cooch Behar Tea Garden) in the administrative district of Koch Bihar²¹. Geographically, this area extends between 26°25' N to 27° 00' N latitude and 88°30' E to 89°53' E longitude and covering an area about 5111.53 Sq. Km. Dooars with a vast texture of dense forests teeming with wildlife, unending tea gardens, babbling rivers, interspersed with small ethnic settlements, constitute a fascinating tourist destination. Still unknown to the large section of tourist, the Dooars offers some magical landscape with fascinating view of river valleys and hills.

This entire Dooars region are criss-crossed by Tista, Raidak, Torsha, Jaldhaka, Kaljani and their innumerable tributaries trotting and rolling down from the hills. The entire region is served with a network of motor-able roads and highways connecting all important townships, forests and tea gardens. The railway service connects Siliguri and Cooch Behar via Alipurduar. A journey itself by rail or on road through the dense natural forests interwoven with lush green tea gardens gives immense delight and freshness to both the mind and the eyes.

The Dooars valley is specially noted for its wildlife sanctuaries, the most important of which are the Gorumara National Park (75 km from Siliguri), Chapramari wildlife sanctuary (68 km from Siliguri), Buxa Tiger Reserve (200 km from Siliguri) and Jaldapara Sanctuary (124 km from Siliguri). These sanctuaries are abounding in a fascinating diversity of rare flora and

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Map Number- 1.1 Location Map of study area

fauna. The vast texture of massive trees sheltering varieties of orchids and the forests resounded with songs of birds and call of wild animals make it a veritable paradise for lovers of nature and eco-tourism. The region slopes from north-west to south-west, and is intersected by numerous rivers and streams, which drains the Himalayas. In the North, a series of well wooded plateau, rising to between 470 and 590 meters, from the connecting link between the hills and the plains of West Bengal. This area is ideally suited for the cultivation of the tea bushes because of its high annual rainfall of 60 centimeters and its soil, which is red loamy clay amongst other factors. Loamy soil easily absorbs water and prevents puddles, which are harmful for the growth of the bushes. If water collects at the base of the bushes, their growth is ruined. One can see in the Dooars that even after a heavy shower, water rarely collects on the surface of the Soil, and is usually drained in the nearest river system.

It is generally believed that women are ideal for plucking the tea leaves rather than men. Majority of the labourers employed for plucking are women. The plucking season in the Dooars tea plantations begins with the early rains in March and ends in late November or early December. It reaches its peak i.e. highest yields, is usually during the months of July and August when rainfall is heavy. The first crop of leaves (known as the first flush) in the early monsoon showers is supposed to produce the best quality of tea. The entire labour force in the tea gardens of the Dooars are now consists of descendants of immigrant labourers who migrated from Bihar, Orissa, Chotanagpur or from Nepal. The male workers were slightly more in number than the female workers. This was peculiar to the only Dooars region and was not a general trend in the country or in the state.

1.4. OBJECTIVES:

The major objective of the research work is to find out the status of the workers of different tea gardens in Dooars region in respect to their socio economic conditions. In doing so, it has also been endeavored to appraise the distribution of the tea workers in this region and their population characteristics. The attempt is made to analyze the pattern of socio economic character with a view to understand the causes behind the socio economic conditions of the tea workers. Thus the present thesis has the following objectives in focus:

1. To study the history and origin of tea plantation and growth and development of tea garden as well as tea industry.
2. To illustrate the physical environment of Dooars region and their inter relation for assessing the major problems and its effects in tea plantations.

3. To evaluate the demographic characteristics of the tea workers because tea industry is largely depends on manual labour than technological inputs.
4. To find out the socio-economic character with a view to understand the causes behind the socio-economic variations of the tea workers.
5. To uncover the problems and associated constraints in the tea plantations.
6. Finally, to extend appropriate suggestions for the development of tea garden and tea industry and also suggest some remedial measures to improve the present socio-economic conditions of tea workers of the study area.

1.5. HYPOTHESIS:

The present work tries to assert the truth or falsity of the following propositions:

1. The level of literacy pattern, in general, is low and most specifically it is lower within female population than male population in the tea gardens of Dooars region.
2. The socio-economic conditions of the small tea gardens are poor than the big ones in Dooars region.
3. The standard of living of the tea labourers is better in the tea gardens in which tea processing facilities are available.
4. Income of the workers is negatively co-related with the age of the tea bushes.
5. Higher accessibility in the tea garden indicates the higher level of development of tea gardens and altogether with the tea industry.

1.6. DATA SOURCES:

The present study based on both primary and secondary data. Necessary secondary data pertaining to various socio economic attributes of tea workers and also for tea industry can be drawn from the following sources:

- Census of India, 2001, 2011.
- District Census Handbook, Jalpaiguri district, 1951-2001,
- District Statistical Handbook, Jalpaiguri 2008 (published by the Bureau of Applied Economics and Statistics, Govt. of West Bengal).

- Various publications of books, journals, articles, unpublished research papers etc.
- Reports of the Indian Tea Planters Association (ITPA).
- Reports of the Dooars Branch Indian Tea Association (DBITA).
- Tea Statistics, 2007-2008, Tea Board of India, Kolkata
- 'Tea Statistics' published by M/s. J. Thomas and Co.
- Tea Digest, 2006
- 'Tea Directory' for various issues published by the Tea Board.
- Some unpublished mimeographed materials available at the Tea Board of India, Jalpaiguri Branch.
- Labour Welfare offices of Siliguri, Jalpaiguri, Mal, Birpara.

The primary data or information is collected through an extensive field work among the different tea plantations of the Dooars region of Jalpaiguri district of West Bengal, after preparing a suitable schedule. The primary information is collected by using stratified random sampling techniques. Samplings are made on the basis of requirement. In view of the absence of most of data for micro level study, extensive scheduled are prepared to cover the important aspects of the tea workers as well as tea industry of Dooars region.

1.7. METHODOLOGY:

The universe of the present study in the tea plantations workers of Dooars region of Jalpaiguri district. There were 156 tea gardens in Dooars in 2011, employing 163524 workers, spread out from River Tista on the west to River Sankosh on the east, over a span of 130 km by 40 km along the foothills of Himalayas, covering the 11 C.D. blocks out of 13 blocks of Jalpaiguri district such as Alipurduar-I, Alipurduar-II, Falakata, Kalchini, Kumargram, Madarihat-Birpara, Mal, Metiali, Nagrakata, Dhupguri, and Maynaguri. The particulars of the tea gardens of Dooars region are shown in Appendix- I.

SELECTION OF THE GARDENS:

For the present study, thirty gardens had been selected by using stratified random sampling techniques keeping view in mind that the selected tea gardens covers all the C.D. blocks. The priority of selection to the number of tea gardens was given to the C.D. blocks where tea gardens cover large part of the area. Out of the 30 selected tea gardens in the Dooars region, 1 tea garden selected from each C.D. block e.g. Alipurduar-I, and Falakata; 2 tea gardens from each block of Alipurduar-II, Kumargram and Metiali; 3 tea gardens from each block of

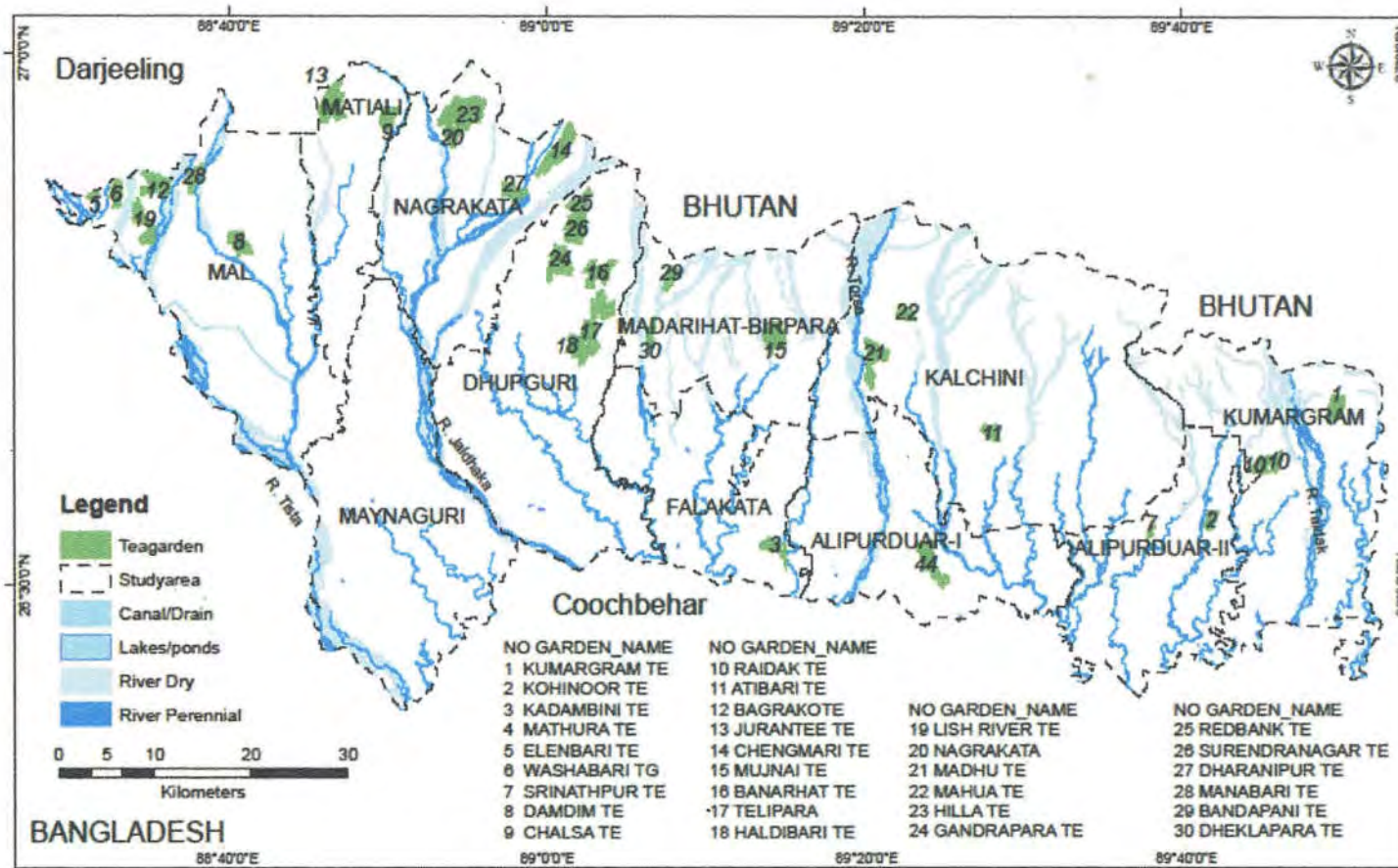
Kalchini and Madarihat-Birpara, 4 tea gardens from Nagrakata, 6 from Mal and 6 tea gardens from the C.D. block of Dhupguri. The table (Table Number-1.1) shows the location of selected tea gardens in Dooars region:

Table Number-1.1
Location of selected tea gardens of Dooars region

Sl. No.	C.D.Blocks	Name of selected tea gardens	Number of selected gardens
1.	Alipurduar I	Mathura Tea Garden	1
2.	Alipurduar II	Kohinoor Tea Garden	2
		Srinathpur Tea Garden	
3.	Falakata	Kadambini Tea Garden	1
4.	Kalchini	Atiabari Tea Garden	3
		Madhu Tea Garden	
		Mahua Tea Garden	
5.	Kumargram	Kumargram Tea Garden	2
		Raidak Tea Garden	
6.	Madarihat-Birpara	Bandapani Tea Garden	3
		Dheklapara Tea Garden	
		Mujnai Tea Garden	
7.	Dhupguri	Banarhat Tea Garden	6
		Gandrapara Tea Garden	
		Huldibari Tea Garden	
		Redbank Tea Garden	
		Surendranagar Tea Garden	
		Telepara Tea Garden	
8.	Mal	Bagrakote Tea Garden	6
		Dam Dim Tea Garden	
		Ellenbarie Tea Garden	
		Leesh River Tea Garden	
		Washabarie Tea Garden	
		Manabarrie Tea Garden	
9.	Metiali	Chalsa Tea Garden	2
		Zurrantee Tea Garden	
10.	Nagrakata	Chengmari Tea Garden	4
		Dharanipur Tea Garden	
		Nagrakata Tea Garden	
		Hila Tea Garden	
			Total = 30

SELECTION OF THE RESPONDENTS:

Out of the 37395 workers both permanent and temporary of 28066 households, 19150 were male and 18245 female workers in the 30 selected tea gardens in Dooars region. 854 workers of 601 households had been selected as sample population by random sampling procedure for



Map Number-1.2 Location of selected tea gardens of Dooars region

the present study of which 412 are male and 442 are female workers. Thus the sample size of the present study was 2.28%.

TECHNIQUES OF DATA COLLECTION:

Necessary data has been collected for the present study by adopting the following techniques:

1. Interview schedule for the respondents:

The responses of the respondents i.e. 854 sample populations of the selected tea gardens, on different aspects were collected with the help of interview schedule which was prepared keeping in view the objectives of the study and present socio economic condition of the respondents. The interview schedule was also pre-tested and modified for the convenience of the respondents.

2. Interview schedule for the garden managers:

Through the interview schedule for the garden managers, necessary data on different aspects of the selected tea gardens such as total grant area, area under tea plantation, area under of tea bushes of different age group, number of workers employed, types of workers, population of the garden, composition of population, production, wages and other facilities extended to the workers as per Plantation Labour Act, strikes and lockouts, owners association, etc. were collected from the managers of the selected tea gardens.

Besides, the data and relevant information are also collected from the trade union leaders through the interview method in the selected tea gardens in garden level and also from the branch level.

ANALYSIS OF DATA:

The data and information thus collected through extensive field work with the interview schedules as stated above and from various secondary sources are thoroughly evaluated, processed and analyzed properly to arrive at fair conclusion on the relevant matters for presentation in the thesis. The analysis of data or facts and figures had also been done along with necessary interpretation to find out the inherent facts which related with present socio economic condition of the workers and their problems of daily life. The cartographic methods and statistical techniques which are implied in different chapters for presentation of data are described below:

The second chapter of the thesis is representing the physical background of the Dooars region. This chapter deals with about the geology, relief, drainage, climate, soil, vegetation and land use of the Dooars region. The suitable cartographic techniques are used to represent the available data and for preparing the maps GIS packages have been used.

The third chapter attempts to study the temporal variation and spatial pattern of tea plantation in different tea gardens of Dooars region. Statistical techniques are used to demonstrate the trends of tea plantation.

The next chapter studies the demographic characteristics of workers of tea gardens. Cartographic techniques like Choropleth, bar graph, line graph, histogram, compound pyramid, pie graph, etc. are used to present the different demographic characteristics of tea workers.

The fifth chapter demonstrates the socio economic condition of tea workers. Statistical measures including mean, standard deviation, variance, coefficient of variance, correlation coefficient, composite index, principal component analysis etc. are used to evaluate the socio economic condition of the workers and the results are presented in the form of relevant maps and diagrams by applying suitable cartographic techniques.

The next two chapters attempt to identify the problems of the study area and suggest some strategies for the improvement of the socio - economic condition of tea workers.

The last chapter illustrates some broad based conclusions on the basis of results and discussion of different chapters.

Standard Score: For constructing Composite Index, the method of Standard or Composite Standard Score has been used. This technique is very useful as it allows calculating the probability of a score occurring within normal distribution and also this technique enables to compare two scores that are from different normal distributions. The Standard Score does this by converting or standardizing score in normal distributions to Z-score in what becomes a standard normal distributions.

The technique has been explained as follows:

$$Z_{ij} = \frac{x_j - \bar{x}}{\sigma}$$

Where, Z_{ij} = standard score of the observation

x_i = original value of the observation

\bar{x} = mean value for all the values of X

σ = standard deviation of X

Further, the result of Standard Score obtained from the different indicators aggregated by Composite Standard Score. In this way, the disparities in the level of literacy, standard of living, socio economic condition and level of development of tea garden workers as well as tea industry of Dooars region can be obtained. It is expressed as-

$$\text{Composite Standard Score (CSS)} = \sum Z_{ij}/n$$

Where, Z_{ij} indicates Z-Score of any indicators and it finally added to determine the overall pattern of socio economic development, educational development of the tea workers as well as tea industry of Dooars region and Composite Standard Score of selected demographic indicators also adopted to assess the inequality in the development among the selected tea gardens. In order to measure the overall development of the tea garden workers, the Composite Standard Score value can be obtained for 30 selected tea gardens of Dooars region.

Correlation Regression Analysis: The word 'correlation' is used to denote the degree of association between variables. If two variables x and y are so related that variations in the magnitude of one variable tend to be accompanied by variations in the magnitude of the other variables, they are said to be correlated. If y tends to increase as x increases, the variables are said to be positively correlated. If y tends to decrease as x increase, the variables are negatively correlated. If the values of y are not affected by changes in the values of x, the variables are said to be uncorrelated. Correlation may also be linear or non-linear. If the amount of change in one variable tends to bear a constant ratio to the amount of change in the other variable, then correlation are said to be linear. This is measured by correlation coefficient. To identify the correlation between the literacy rate and important socio economic variables, monthly income and important socio economic variables, total workforce and dependent population, total planted area and density of population, etc. the correlation regression analysis has been used.

Bivariate Regression Analysis: Bivariate is used to describe situations in which two characters are measured on each individual or item, the character being represented by two

variables. Statistical data relating to the simultaneous measurement of two variables are called bivariate data. It can be estimate or predict the unknown values of one variable from known values to another variable. The estimation is done by means of suitable equations, derived on the basis of bivariate data. The variable which is used to predict the values of interest variable is known as the independent variable or explanatory variable. The analysis is called the simple linear regression analysis- simple because there is only one predictor or independent variable and linear because of the assumed linear relationship between the dependent and independent variable. Such an equation is known as a Regression equation and its geometrical representation is called as regression curve.

Regression equation also known as estimating equations is algebraic expressions of the regression lines. The regression equation can be expressed as follows:

$$Y = a + bX$$

Where, y is the dependent variable

X is the independent variable

'a' is 'y intercept' (its value is the point at which the regression lines crosses the y axis, i.e. the vertical axis).

'b' is the 'slope' of line (it represents the change in y variable for a unit change in x variable.

'a' and 'b' in the equation are called numerical constants because for any given straight line, their values does not change.

If the values of the constant 'a' and 'b' are obtained, the line is completely determined. The 'Least Square method' is used to obtain the values of 'a' and 'b'. The methods states that the line should be drawn through the plotted points in such a manner that the sum of the squares of the deviations of the actual values from the computed 'y' values is the least, in order to obtain a line which fits the point's best $\sum(y-y_c)^2$ should be minimum. Such a line is known as the line of 'best fit' obtained by the method of Least Square. With a little algebra and differential calculus it can be shown that the following two equations, if solved simultaneously, will yield values of the parameters 'a' and 'b' such that the 'least square' requirement is fulfilled:

$$\sum Y = Na + b \sum X$$

$$\sum XY = a \sum X + b \sum X^2$$

These equations are normally called the normal equations. In the equations $\sum X$, $\sum XY$, $\sum X^2$ indicate totals which are computed from the observed pairs of values of two variables 'x' and 'y' to which the least squares estimating line is to be fitted and 'N' is the number of observed pairs of values.

Pearson's product moment formula which is popularly known as Pearson's co-efficient of correlation is denoted by the symbol 'r' and is used as a measure of linear correlation between 'x' and 'y'. The formula for 'r' may be written in various forms. The Pearson's co-efficient correlation between the two variables (denoted by the symbol of 'r') is then defined as-

$$r = \frac{\sum xy}{N \sigma_x \sigma_y}$$

Where, $r = (x - \bar{x}) ; y = (y - \bar{y})$

σ_x = Standard Deviation of series of x

σ_y = Standard Deviation of series of y

N = Number of pairs of observations

r = the (product moment) correlation coefficient

The value of the co-efficient of correlation as obtained by the above formula shall always lie between ± 1 . When 'r' = +1, it means there is perfect positive correlation between the variables. Where 'r' = -1, it means there is a perfect negative correlation between the variables. When 'r' = 0, it means there is no relationship between the two variables. The co-efficient of correlation describes not only the magnitude of correlation but also its direction.

Student's 't' Test: Theoretical work on 't' distribution was done by W.S. Gosset in the early 1900 century. Gosset was employed by the Guinness and Son, a Dublin Bravery, Ireland, which did not permit employees to publish research findings under their own names. So, Gosset adopted the pen name 'student' and publish his findings under this name. Thereafter, the 't' distribution is normally called student's t distribution or students distribution.

Testing of the significance of an observed correlation coefficient: Given random sample from a bivariate normal population, if to test the hypothesis of the correlation coefficient of the population is zero, i.e., the variables in the population are uncorrelated, then the following test can be apply-

$$t = r / \sqrt{1 - r^2} \times \sqrt{n - 2}$$

Where, t is best on (n-2) degree of freedom if the calculated value of t exceeds $t_{0.05}$ for (n-2), d.f., it can be say the value of r is significant at 5 %. If t less than $t_{0.05}$, the data are consistent with the hypothesis of an uncorrelated population.

1.8. SIGNIFICANCE OF THE PRESENT STUDY:

The main thrust of the present study is to ascertain the socio economic condition of tea gardens workers in Dooars region. In the tea gardens all the workforce belongs to the categories of labourers or workers. The workers in tea industries have felt alienated from their workers organization (trade union) which over the years has developed into oligarchic and bureaucratic institutions. The management even does not fulfill their obligations under labour laws; forget about the possibilities of going beyond statutory requirement and allocating resources for growth and development of workers. In this context, it is necessary for both the employees and trade unions to change their orientation and increasingly focus on development issues. Within workers group there are only two categories that are either unskilled or semiskilled. The unskilled workers are engaged in plucking of leaves whereas the semi-skilled workers are engaged in preparation of nursery bed, pruning, cleaning and clearing, loosening the soil, spraying of insecticides and pesticides etc. Besides these some workers work in the factory premises. There is no mobility among the workers to a top position; the only mobility is from a daily wage worker to a monthly wage worker. The tea industries characterized with the heterogeneous composition of the workforce comprising workmen from socially dis-advanced groups, women, children and different language groups. In the tea gardens is it a tendency to treat the human being and his needs as mere factors of performance production and nothing more. The significance of the present study lies on the following facts:

1. The present study is first of its kind in view of the fact that no scholar or expert has made any endeavor to assess the socio economic and demographic characteristics in

detail of the workers of Dooars tea plantations during long span of time. So, it would be pioneering one in this field.

2. The present study is confined to the tea plantation workers of Dooars who are mostly backward and down trodden due to their large scale illiteracy, colossal ignorance, abject poverty, prejudices, traditional outlook and bad habits etc. and who are isolated from the general cluster of community life of society, for location of the plantations in remote and rural areas whereas other studies confined in and around towns only.
3. An attempt has been made through the present study to expose the socio economic environments under which the tea workers are to live with their family members aiming to attract the attention of all concerned in furtherance of the tea community. No such effort was made earlier by any scholar to unveil the vivid picture in this respect.
4. This study may also be useful for the West Bengal Labour Welfare Board for state level and Ministry of Labour and Employment at national level so that they extend the welfare facilities to the more and more workers of the tea plantations.
5. Since the study encompasses with the vital objectives of the workers condition of Dooars tea plantations, it may helpful to the state government to take necessary measures for diminishing their worse condition.

1.9. LIMITATIONS OF THE STUDY:

In both physical and social sciences, the researcher has to delimit the problem under investigation to certain possible extent, for it is quite impossible either to control or include all the factors involved in it. The limitations of the present study are restricted to 30 tea gardens and limited to the workers and their families of these gardens. The study was limited to a sample of 2.14 percent households of the selected tea gardens. The study was restricted to the tea plantations industry located in the Dooars region of Jalpaiguri district. There were problems in conducting the interview with the respondents who were from the indigenous ethnic groups as some of the respondents spoke only in Nepali and had very little knowledge of other dialects. Discrepancies in information given by management and employers were seen, as opposed to my observation. Most of the respondents claimed that there were no child workers in their employment but during field work, it encountered several of them. Furthermore, the management of the tea gardens seemed hesitant to provide information and data on a number of subjects such as the exact number of workers in their tea gardens, the

gender distribution, production figures, and financial data and so on. The present study was restricted to percentage analysis and statistical techniques.

1.10. RESEARCH DESIGN:

The whole work commences with the analyzing of the socio economic condition of tea workers of Dooars region of West Bengal and in this respect the mass of data has conveniently been presented in the following eight chapters:

Chapter – I: Introduction

This chapter deals with a discussion on some basic concepts, the problem of study area, review of literatures, objectives, hypothesis and the methodology used in this study.

Chapter – II: Physical background of the Dooars region.

The second chapter of the thesis is representing the physical background of the Dooars region. This chapter deals with about the geology, relief, drainage, climate, soil and vegetation of the Dooars region.

Chapter –III: Temporal variation and spatial pattern of tea plantation.

The third chapter attempts to study the temporal variation and spatial pattern of tea plantation in Dooars region. This chapter examines the evolution and history of tea cultivation in India and abroad with an objective to understand how tea has become important in daily life with the passage of time and also discuss the factors responsible for tea plantation.

Chapter – IV: Demographic characteristics of workers of tea gardens.

This chapter studies the demographic characteristics of workers such as growth and distribution of population, population density, composition of population, age-sex structure, level of literacy, religion, migration, tribal unrest etc. of tea gardens in Dooars region.

Chapter – V: Socio – economic condition of tea gardens workers.

The fifth chapter demonstrates the socio economic condition of tea workers such as house type, sanitation, occupational pattern, wage structure, education, marriage, birth control, child

rearing practices, health, hygiene, food and intoxication, water supply, transport and communication, market, finance etc.

Chapter – VI: Identification of the problems.

This chapter deals with some basic problems which are faced by the tea garden workers and tea owners such as physical problems, socio economic problems, cultural problems, management problems, administrative problems etc.

Chapter – VII: Strategies for the improvement of the socio- economic condition of tea workers.

This chapter attempts to presents some possible strategies for the improvement of the socio economic condition of tea garden workers in all respect in different tea gardens of Dooars region.

Chapter – VIII: Summary and conclusion.

The entire work has been summarized in this chapter and some broad based conclusions have also been incorporated on the basis of results and discussions of different chapters.

1.11. CONCLUSION:

The tea industry is one of the most important agro-based industries. The history of tea industry in India goes back to 1820 when tea plant was discovered growing wild in Assam. In 1835, the first tea plantation was started in Assam by the British Government. Gradually West Bengal was found suitable for tea cultivation and experimentally tea plantations were established. The tea producing areas in West Bengal are Darjeeling, Dooars and Terai regions. Tea growing areas situated in the Jalpaiguri district with an annexation of a small tea growing area in Koch Bihar is popularly known as Dooars. The present study covers the 30 tea gardens in Dooars region. Stretching from River Tista on the west to River Sankosh on the east, over a span of 130 km by 40 km along the foothills of Himalayas, Dooars occupies a major part of Jalpaiguri district. Geographically, the Dooars area extends between 26°25' N to 27° 00' N latitude and 88°30' E to 89°53' E longitude and covering an area about 5111.53 Sq. Km. The tea industry is a labour intensive one. Workers play a significant role in enhancing overall productivity in the tea industry as they are involved at every stage of production starting from the nursery development to the final preparation of the packets. But the socio

economic condition of the workers of the tea industry is still awfully bad mainly due to suppressive measures of the managements for more than a century. The habits of drinking alcohol, gambling etc. are rampant among the plantation workers. Low wages, dilapidated housing conditions, inadequate drinking water, absence of health care facilities, absenteeism, low productivity rate of the workers, inter-union rivalry etc. are the vexed problem in the tea gardens of Dooars region. The present study seeks to analyses the socio economic condition of tea garden workers of Dooars region of West Bengal.

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