Health and Healthcare Services in the Abandoned Tea Plantations of the Dooars Region, West Bengal

A Thesis Submitted in Partial Fulfilment of the Requirements for the Award of the Degree of

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DECLARATION

I hereby declare that the thesis entitled ***"Health and Healthcare Services in the Abandoned Tea Plantations of the Dooars Region, West Bengal"*** is the result of the research work carried out by me at the Department of Humanities and Social Sciences, Indian Institute of Technology Guwahati, under the supervision of Dr. Daksha Parmar. The work has not been submitted either in whole or in part to any other university or institution for a research degree.

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CERTIFICATE

This is to certify that Mr. Bikash Das has prepared the thesis entitled ***"Health and Healthcare Services in the Abandoned Tea Plantations of the Dooars Region, West Bengal"*** for the degree of Doctor of Philosophy under my supervision at the Department of Humanities and Social Sciences, Indian Institute of Technology Guwahati. This thesis is the result of his investigation and has not been submitted either in whole or in parts to any other university or institution for the award of any degree or diploma.

Date: 28th June, 2024

Dr. Daksha Parmar
Supervisor

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Abbreviations

ANC: Ante-Natal Care

ANM: Auxiliary Nurse Midwifery

ASHA: Accredited Social Health Activist

AWC: Anganwadi Centre

AWHs: Anganwadi Helpers

AWWs: Anganwadi Workers

AYUSH: Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy

BLF: Bought-Leaf Factory

BMI: Body Mass Index

BPL: Below Poverty Line

CHC: Community Health Centre

CHO: Community Health Officer

CHW: Community Health Workers

CMOH: Chief Medical Officer of Health

HBM: Health Behaviour Model

HWC: Health and Wellness Centre

ICDS: Integrated Child Development Services

MCH: Maternal and Child Health

MCI: Medical Council of India

MMR: Maternal Mortality Ratio

MMU: Mobile Medical Unit

MNREGS: Mahatma Gandhi National Rural Employment Guarantee Scheme

MoHFW: Ministry of Health and Family Welfare

MoTA: Ministry of Tribal Affairs

MPW: Multipurpose Workers

NCD: Non-Communicable Diseases

NFHS: National Family Health Survey

NGO: Non-Governmental Organization

NHM: National Health Mission

NRHM: National Rural Health Mission

NSSO: National Sample Survey Office

NVBDCP: National Vector Borne Disease Control Programme

OBC: Other Backward Class

OMC: Operation and Management Committee

OOPE: Out-of-Pocket Expenditure

OPD: Out-Patient Department

PDS: Public Distribution System

PHC: Primary Health Centre

PPP: Public-Private Partnership

PRI: Panchayati Raj Institutions

PTE: Patabari Tea Estate

RCH: Reproductive and Child Health

RNTCP: Revised National Tuberculosis Control Program

RTE: Rethi Tea Estate

SAHAI: State Action Against Hunger and Inequality

SC: Scheduled Caste

SCs: Sub-centres

SRS: Sample Registration System

ST: Scheduled Tribe

TB: Tuberculosis

TBA: Traditional Birth Attendants

TBI: Tea Board of India

TE: Tea Estate

TFR: Total Fertility Rate

THR: Take Home Ration

U5MR: Under-five Mortality Rate

VHND: Village Health Nutrition Day

WHO: World Health Organization

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Chapter: I

Introduction

1.1. Introduction

A fair distribution of health outcomes provides significant insight in evaluating the level of social justice within a society (Sen, 2002). Therefore, the progress in health equity offers a nuanced understanding of social well-being compared to traditional macroeconomic measures (Sen, 1999; Subramanian et al., 2008). The United Nations Sustainable Development Goals (SDGs) advocate for sustainable and equitable economic, social, and environmental development to address challenges such as health inequality, particularly in developing countries (Hosseinpoor et al, 2018). The SDG-3 focuses explicitly on ensuring and promoting Universal Health Care and Health for All and emphasizes the reduction of health inequality by leaving no one behind. Furthermore, SDG 3 is closely linked to all other SDGs (Fernandez, 2020). The SDGs advocate for a comprehensive framework to address the inequalities by promoting universal health coverage, improving healthcare infrastructure, and ensuring access to essential medicines (WHO, 2018). In this context, the SDGs emphasize the significance of addressing social determinants of health, including poverty and education, which are critical for achieving health equity in India (Nambiar et al., 2015).

Growing evidence of health inequities from different parts of the world suggests a failure to ensure health for all (Mishra, 2017). Over the years, in developing countries such as India, health disparities and inequalities between geographical regions, rural and urban populations, and social classes have posed significant challenges (Patel et al., 2015). It is uncontested that inequities in different socioeconomic indicators and health outcomes have widened since the 1990s when India adopted neoliberal economic policies (Uddin et al., 2020; Borooah, 2010). Scheduled Castes, Scheduled Tribes, and other marginalized communities are historically deprived groups, both economically and socially, who share the disproportionate disease burden and have the worst health outcomes (Borooah, 2010; Das et al., 2022). Tribal communities also face the burden of triple disease with communicable and non-communicable diseases supplemented by addiction to substances such as alcohol and tobacco (GoI, 2018). They also have a higher prevalence of malnutrition, malaria, tuberculosis, and leprosy (Kumar et al., 2020). Access to essential health care services, clean drinking water, housing, and sanitation is limited. (Barik & Thorat, 2015; Jungari & Chauhan, 2017). Thus, achieving health equity necessitates understanding health and illness in tribal communities from an

interdisciplinary perspective. This would further focus on an understanding of the broader determinants of health.

The tribal communities living in the tea plantations of the Dooars region have long faced marginalization and historical deprivation in terms of health and well-being. The situation worsened in the 1990s with the implementation of neoliberal reforms affecting the tea plantations of the region, leading to a crisis marked by the closure and abandonment of tea plantations (Das, 2023). This crisis adversely affected the livelihoods of the dependent population, resulting in a surge of hunger and starvation deaths in the tea plantations of the Dooars region in the early 2000s. Reports estimate around 1,500 deaths between 2001 and 2006, though some sources suggest a higher figure (Bhowmik, 2015; Ghosh, 2014; CHDR, 2006). The tribal communities in these tea plantations died due to starvation as they couldn't afford food due to the loss of livelihoods and employment caused by the closure of the tea plantations (CEC, 2005). The economic crisis in the tea industry, with declining auction prices despite increased production, particularly affected tea plantations in the Dooars region (Gothoskar, 2012). National and international media highlighted the issue, reporting on starvation deaths and heightened malnutrition in tea plantations, especially post-closure (Bhowmik, 2015; WBACSC, 2004; Talwar et al., 2005; Biswas et al., 2005). Despite these reports, the Government of Bengal contested that the deaths were primarily caused by starvation, attributing them to waterborne diseases instead (Chakraborty, 2013). The government further held people responsible for not seeking timely medical care (Chakraborty, 2013). The government blamed the Tea Estate management for medical neglect and refused to acknowledge hunger, malnutrition, and loss of immunity as key factors in the deaths of tea plantation communities. While health care is a public service provided by the State, it is strange that the Government held people responsible for their poor health, leading to increased fatalities and deaths. This tendency to attribute illness and disease to personal responsibility is a dominant approach to understanding illness (Chakraborty, 2013). By censuring citizens and labourers for not coming forward to utilize government hospitals, the state again places the blame on the people for their lack of awareness in seeking appropriate medical services. The government failed to examine the efficacy of the health services provided by government hospitals located in close proximity to the tea plantations in the region. It is also important to note that since the colonial period, the tea plantations in the Dooars region lacked public hospitals even decades after Indian independence in 1947.

The occurrence of starvation deaths in the tea plantations mirrors the broader economic crisis and, specifically, the challenges within the health sector in the Dooars region. The 2004 report presented by the West Bengal Advisor to the Commissioners of the Supreme Court of India acknowledged the prevalent hunger and starvation issues in the tea plantations of the Dooars region (WBACSC, 2004). However, it is imperative to emphasize that this was disproportionately distributed. Marginalized communities in these areas, lacking income, purchasing power, and access to health care services, were the most severely affected, with higher numbers of suffering and deaths. It is argued that the negative impacts of the economic crisis and its implications in the post-reform period impacted lower castes and tribal groups more than others (Thorat & Newman, 2010). This context evidences the fact that hunger deaths are not an isolated phenomenon but rather the manifestation of a crisis intensifying through the decades of the 1990s. The trend has resulted in the loss and uncertainty of employment and social security measures.

Given this background, the present study adopts a theoretical framework of social determinants of health to understand the crisis seen in the tea plantations of North Bengal. It explores and examines the nature of health and illness, evaluates prevailing healthcare services, and determines the conditions of health services utilization. The study is limited to two abandoned tea plantations of the Dooars region in West Bengal. The study uses empirical evidence derived from qualitative research methods such as ethnography and case studies. Through this study, I attempt to examine how the economic reforms and crises in the abandoned tea plantations impact the everyday life, work, and health of tribal populations residing in the Patabari and Rethi estates in the Dooars region of West Bengal. One focus of this study involves the prevalence of major diseases and illnesses amongst the tribal populations in these tea plantations. This will help me understand the nature of health and disease in the region. The present study also examines the structure of health services provided by tea plantations, the government, and informal medical practitioners to provide a comprehensive view of the different providers in the healthcare landscape of tea plantations. Further, this thesis offers a critical analysis of the determinants and barriers to accessing and utilizing healthcare services in the Dooars region. These investigations aim to provide insights into the complexities of healthcare in the abandoned tea plantations of the Dooars region. The relevance of the study comes in its attempt to fill a limitation in current scholarship. Current scholarship on health, illness, nutrition, and healthcare services in the region lacks an interdisciplinary perspective.

The current study fills this gap by using the theoretical framework of the Social Determinants of Health.

1.2. Structure of the Thesis

The present thesis is organized into eight chapters[1]. Chapter One, as an 'Introduction' to the study, provides a brief overview of the research study. Chapter Two, titled 'Contextualizing Health and Tea Plantation: A Review of Literature', provides a broad review of the research discourse on tea plantations in India, specifically on health and illness in these regions and their health systems. Chapter Three, 'Conceptualization and Methodology of the Study,' discusses the conceptual framework and methodology adopted for the study. Chapter Four, 'Tea Plantations Crisis in the Dooars Region,' analyzes the ways in which economic reforms and crises in the tea plantations have impacted the everyday life, work, and health of the tribal communities residing in the two abandoned tea plantations of Patabari and Reti located in the Alipurduar district of Dooars in North Bengal. Chapter Five, 'Illness and Disease in Abandoned Tea Plantations of Dooars Region', understands the health status by focusing on the major diseases and illnesses prevalent among the tribal communities in the two abandoned tea plantations in the Dooars region. Chapter Six, 'Mapping Health Services in the Abandoned Tea Plantations of Dooars Region,' analyses and maps healthcare services in the two plantations. Chapter Seven, 'Utilization of Healthcare Services in the Abandoned Tea Plantations of Dooars Region,' discusses the factors that determine access and barriers to the utilization of healthcare services in the two abandoned tea plantations. Chapter Eight summarizes the findings of the previous chapters and offers specific policy recommendations.

[1] The starvation deaths in the closed tea plantations of the Dooars region have resulted in widespread discussion and criticism in national and international media as well as the Indian Parliament (Chakraborty, 2013). In order to reduce hunger and poverty in the abandoned tea plantations in the Dooars region the state ought to start implementing supplementary nutritional schemes such as Integrated Child Development Services (ICDS) and State Action against Hunger and Inequality (SAHAI). On the other hand, the fieldwork of this present thesis on the health and illness in the marginalized sections of tea plantation communities was conducted at a time when the world was going through one of the deadliest health crises triggered by the outbreak of the COVID-19 virus. Therefore, the thesis attempts to understand the challenges in the implementation of the Supplementary Nutrition Schemes (ICDS and SAHAI) in the abandoned tea plantations of the Alipurduar district of West Bengal in India. In addition, the study also attempts to understand the impact of the COVID-19 pandemic on the abandoned tea plantations of the Alipurduar district. This study presents two appendix chapters at the end of the thesis with brief discussions on the Supplementary Nutrition Schemes as well as the outbreak of the COVID-19 pandemic in the abandoned tea plantations in the Dooars region.

Chapter: II

Contextualizing Health and Tea Plantation: A Review of Literature

2.1. Introduction

The present chapter provides a detailed overview of various studies undertaken on plantations and health and disease in South Asia and India. The chapter is divided into four sections. The first section contextualizes the tea plantations by discussing debates on the issues related to plantation studies around the world, the colonial history of plantations, labour migration, enclave economy as well as gender and work in the tea garden, and the plantation crisis in contemporary times. The second section discusses definitions and approaches to studying health, health equity, the epidemiological transition, and tribal health in India, and the burden of diseases in the tea plantations of South Asian countries and India. The third section analyses the development of health services and health system in India. The fourth section presents the development of health services in the tea plantations in India, followed by a summary.

2.2. Contextualizing the Tea Plantations

This section provides a contextual background for tea plantations by delving into the studies on plantations from India and different countries in the world. It explores the colonial history and labour migration in the tea plantations of the Dooars Region. This section contextualizes tea plantations as an area of study. It explores the concept of plantations as social systems or enclaves and categorizes various types of tea plantations. This section also examines living and working conditions and evaluates the availability of social security provisions for the tea plantation communities. It also analyses the gender dynamics in tea plantations and examines the crises faced by Indian tea plantations since the 1990s.

2.2.1. Plantations in the European Colonies in different parts of the world

In the history of colonialism, colonial settlers established plantations as a form of colonization, starting with sugar plantations in the Caribbean by the Portuguese in the 1550s (Greaves, 1958). During the period of European colonization, the plantation model spread to North America, where English settlers established plantations in Virginia, Rhode Island, and other colonies (Rönnbäck, 2023). During the nineteenth century, European capitalists established large-scale plantations of commercial crops such as tobacco, coffee, rubber, sugar, tea, cocoa, poppy, indigo, and cotton in the colonies in Asia, the Americas, and Africa. These colonial plantations

often involved enslaved labour, structural violence, and commercialized agriculture (Liu, 2020).

Breman (1989) examines colonial exploitation, capital accumulation, land alienation, and labour migration in the plantations in Southeast Asia in the late 19th century, with a focus on Dutch tobacco plantations in Sumatra. Breman (1989) explores the structures of social organization at these European-controlled plantations. His focus is on labour relations and the role of the colonial state. He finds that European planters, unable to force local people into labour work, imported a large number of Chinese, Indian, Javanese, and Thai laborers to work at these plantations. Breman's study of plantations shows that a hierarchical social structure was established in the plantations, placing white planters at the top and immigrant laborers at the bottom. Breman argues that the plantation system was built along the line of military organization, enforcing strict control over workers through regimentation, racism, and violent tactics leading to systemic disciplining' and 'dehumanizing of the labour force. Breman argues that the colonial state justified exploitation by providing legal backing to the indenture system. He contends that protective measures were not enforced due to the close relationships between planters and colonial officials. The repressive social structure and controlled labor practices impeded worker solidarity, resulting in internalized dependency. This, in turn, manifested in various forms of resistance, ranging from passive resistance to desertion and even violence against management (Breman, 1989).

In his seminal work, anthropologist Sidney W. Mintz (1986) critically examines the intricate connections between sugar production and consumption, the roles of plantation slaves and industrial workers, and the cultural significance of sugar in modern society. He emphasizes the influence of economic interests in shaping sugar consumption patterns. Mintz (1986) employed a center-periphery or metropolis-colonies model throughout the book and predominantly focused on sugar production in the British colonies and sugar consumption in Great Britain. The book provides a comprehensive overview of the evolution of sugar from its domestication in New Guinea around 8000 B.C., processing in India about two thousand years later, its spread to the Atlantic islands, and its introduction to the New World by Columbus. The book chronicles the historical journey of sugarcane cultivation from the Middle East to the Caribbean, emphasizing the growth of British Sugar colonies and the crucial role played by Barbados, Jamaica, and other sugar islands in the British mercantilist Empire. The book examines how sugar, as a colonial product, significantly influenced the development of world capitalism by examining the interplay between production and consumption. The author

explores the transformative journey of sugar from a curiosity and luxury commodity in the Middle Ages to a universal necessity in the English diet by 1800. Mintz gives sugar an organizing role in the formation of social behavior. Mintz (1986) argues that the mercantile and industrial revolutions introduced various new commodities, including tobacco, coffee, tea, and sugar, into the emerging market for mass consumption and underscores the minimal influence of enslaved Africans in sugar production and proletarianized English people in sugar consumption on the imperial economic system.

Kumar (2017) presents a critical history of Indian indentured laborers brought by the colonial rulers into the sugar plantations in Mauritius and Fiji. Kumar's study offers a critical analysis of the dynamics of labor migration from North-Eastern India to overseas plantations. A central concern in the study is the legal regulations of indenture that include the interests of both planters and laborers. These regulations include family dynamics, marriage, birth and death rituals, festivals, and religious practices. The book specifically examines the experiences of laborers in Mauritius and Fiji, drawing on the experiences and accounts of Muslim and Brahmin laborers, particularly women. According to the study, cultural elements such as language, religion, and gender roles were transformed during times of transition. The book is significant because it challenges dominant scholarship, stating that laborers were entirely tricked by recruiters and subjected to exploitation. The book suggests that, despite acknowledging such practices, laborers were aware of recruiters' operations and sometimes used the system to their advantage, securing benefits such as free transport, lodging, or food before walking away from recruiters (Kumar, 2017). However, the book has been criticized for the obsessive use of the term 'coolie', one of the most controversial terms in indentured historiography. Scholars like Roopnarine (2019) claim that the term is abusive and that it dehumanizes plantation workers (Roopnarine, 2019).

Jayawardena and Kurian (2015) critically examine the labor history of Sri Lanka's tea plantations, scrutinizing the period from their establishment in the early nineteenth century to the twenty-first century. Their focus lies predominantly on the Tamil plantation labor force of Indian origin and their enduring struggles encompassing economic, social, and political rights. The authors present a critical analysis of power dynamics and protest, delving into the complex interplay of class, patriarchy, and ethnicity over two centuries. Drawing on extensive archival sources and four decades of research experience on plantations, the book provides a comprehensive overview of the workers' struggle in the historical context of Ceylon's formation as a nation-state.

Within this broader historical framework, Jayawardena and Kurian (2015) address the heightened political and ethnic tensions of the latter half of the 20th century. They introduce seven interdisciplinary themes, ranging from the legacies of slavery to resistance, encompassing the formation of ethnic and labor identities. Additionally, the book traces the origins of contemporary plantation trade unions, explores developmental aspects, and highlights the leadership roles played by women in plantation labor movements. The authors contend that historical features of economic exploitation, social oppression, and gender discrimination persist, advocating for strong leadership, mobilization, and the inclusion of the sector in national dialogues to ensure due recognition of minorities, women, and workers' rights in the context of Sri Lanka (Jayawardena & Kurian, 2015).

Konings (2012) explores the complex connection between gender and plantation labor in Cameroon's tea plantations. This important work is among the few studies addressing the changing dynamics of gender within African plantations. Konings (2012) underscores the profound effects of colonial-era plantation labour on gender dynamics within its capitalist framework. The work examines diverse strategies of resistance in two tea estates with predominantly female and male tea pluckers. The author argues that the introduction of plantation labour in colonial Africa provided young individuals with a chance to escape the prevailing patriarchal constraints within their local communities. However, it also resulted in the emergence of a distinct form of patriarchal dominance, subjecting both male and female plantation workers to the control of male-dominated managerial authority. Despite ongoing male dominance in gender relations on plantations and other capitalist enterprises, female workers actively engaged in protests alongside their male counterparts, opposing control and exploitation in the labour process. The author highlights the intricate interplay of gender dynamics in plantation labour, shedding light on the diverse consequences of historical and economic forces on the lives of male and female workers (Konings, 2012).

2.2.2. Colonial History of Tea Plantations of the Dooars Region

Globally, in contemporary times, tea is the second most consumed beverage after water, and it has a long colonial history (Liu, 2020). The origin of tea is traced back to early imperial China in 2737 BC, where initially it was a religious and medicinal drink. Subsequently, tea became a popular beverage in China between 600 and 900 AD and disseminated across South Asian countries through the Silk Route, coinciding with the spread of Buddhism (Liu, 2020). Tea made its way to the European market in the seventeenth century as the British East India Company progressively imported tea in substantial quantities and established tea as a highly

lucrative business (Das, 2023). Over the next centuries, tea transitioned from a royal luxury to an everyday household product in Britain, evolved into a popular and exotic commodity, and became a symbol of British identity (Ellis et al., 2015). Furthermore, tea has also made its journey from being an imperialist British product to becoming an integral part of everyday life in Indian households in modern times through extensive promotion across various mediums such as printed and non-printed advertisements, literature, and films (Bhadra, 2005). Along with being a part of the cultural imagination, tea also shaped the economic and political history of Europe and South Asia, starting from the migration of indentured and captive labour to the Boston Tea Party (1773) and the Anglo-Chinese Opium War (1839-1842) (Ellis et al., 2015).

Tea plantations in India started in the colonial period with the discovery of tea plants by Robert Bruce in 1823 in upper Assam (Sharma, 2006). The beginning of commercial tea production in India started in 1837 in Assam to challenge the Chinese monopoly of tea in the European markets. Soon, tea plantations became a growing economic system in India under colonial patronage. The basis of the economic system was founded on cultivating crops for markets primarily through exports (Xaxa, 1997). The demand for tea increased tremendously as tea consumption became important in Western countries, particularly Britain. Following the successful venture of tea plantations in Assam, commercial tea production commenced in Darjeeling in 1856 and the Dooars region in 1857 (Das, 2023). Further, there was also capital available for investment in the tea plantations, which led to the massive growth and expansion of tea gardens in the states of Assam, West Bengal, Tamil Nadu, and Kerala. Thus, the British successfully ensured the availability of two main factors: land and capital production (Xaxa, 2019).

The first tea plantation in West Bengal was introduced in the Darjeeling district, which the British had transformed into a summer hill station and sanatorium for European officials and the Indian elite class (Bhattacharya, 2007). The origins of tea cultivation in Darjeeling can be traced back to 1841 when Archibald Campbell, a Civil Surgeon of the Indian Medical Service, initiated tea planting in the region. Darjeeling gained attention from British capitalist merchants who had already begun tea cultivation in Assam in 1837. While Assam saw commercial tea production commence in 1840, Darjeeling followed suit by 1856 (Khawas, 2006). However, by the third quarter of the nineteenth century, the expansion of tea plantations in Darjeeling faced limitations due to a scarcity of available land in the hilly tracts of the area.

The vast cultivable wasteland in the Dooars region[2] of North Bengal, situated at the foothills of Darjeeling and Bhutan Himalaya, captured the interest of capitalist planters from Darjeeling (Das, 2023). Subsequently, significant investments from British capitalist merchants led to establishing the first tea plantation in the Dooars region in 1874 at Gazoldhoba village (Chaudhuri, 1995). In 1878, the European planters established the Dooars Planters Association (DPA). This association included big agency houses like Duncan Brothers, Macneill & Magor, Davenport, and Octavius, as well as the small European tea planters of Darjeeling, Terai, and the Dooars (Bhowmik, 1981). A year later, a few Bengali lawyers and clerks based in Jalpaiguri started a joint-stock company named Jalpaiguri Tea Company in 1879. Consequently, the Mogalkata tea estate, the first Indian-owned tea estate, was established in the same year. The organization of Indian planters, known as the Indian Tea Planters' Association (ITPA), came into existence in 1915. The Indian planters owned 47 tea plantations by 1930 (Ghosh, 2011).

2.2.3. Labour Migration in Tea Plantations of Dooars Region

During the colonial era, British plantation owners encountered a significant labour shortage in the initial stages of establishing tea plantations (Xaxa, 1997). The early settlers in Assam, Darjeeling, and Dooars were primarily involved in subsistence agriculture and were unwilling to take up work as laborers in tea plantations due to the low wages and labour-intensive nature of the job (Bhadra, 1992; Das Gupta, 1992; Das, 2023). The British pejoratively referred to the local population as Lazy Natives (Sharma, 2009). The British planters had to rely on recruiting workers from eastern Paharis from eastern Nepal and Adivasi and Santhal communities from drought-prone and impoverished districts in the Chotanagpur region and Santhal Parganas to address the labour shortage in Darjeeling (Bhowmik, 1981; Sharma, 2011). Central Indian tribes like the *Oraons, Mundas, Santhals, Kurmis, Baoris*, and *Kharias* were enlisted as laborers in the Dooars region through the systems of *Arkatis* and *Sardars*[3] in Assam and the Dooars region (Bhowmik, 1981; Sharma, 1992; Das, 2023). Instead of hiring individual

[2] A large proportion of the Dooars region was carved out from Bhutan and annexed with British India after the Indo-Bhutan Duars War (1864-1865) by the Treaty of Sinchula. It was merged with parts of the Tetulia subdivision of Bangladesh, and the Jalpaiguri district was formed in 1869 (Ray, 2002).

[3] The *Sardari* system involved the recruitment of labor through Sardars, who served as both group leaders and plantation laborers. These *Sardars*, equipped with authorization certificates from garden managers, were dispatched to their home districts in Chhota Nagpur and Santhal Parganas to bring in new laborers for the plantations. Exploiting the challenging economic conditions of the workers, they often coerced them into working on the plantations (Rasaily 2003, p: 87). Various factors, including both push and pull elements, played a role in attracting laborers from the central Indian region. Sardars received incentives for each recruited laborer (Xaxa, 1997). Frequently, Sardars enticed laborers through misleading and deceitful promises. The labor recruitment system incurred significant costs, and during the initial phase of Dooars plantations, there was a severe labor shortage. Consequently, planters employed watchmen (Chowkiders) for rigorous surveillance to prevent laborers from fleeing the plantations (Bhowmik, 1981).

workers, the planters adopted a family-based recruitment system, including women and children, providing cheap labour (Bhowmik, 1981). However, this approach led to the displacement of early inhabitants such as the *Lepchas*, *Meches*, and *Rajbanshis*, who were unwilling to work in the plantations (Bhattacharya, 2007).

In contemporary times, the Indian tea plantation industry stands as one of the largest employers in the formal private sector, employing 1.2 million permanent workers and a substantial number of casual workers (Saha et al., 2019). The North Bengal region, particularly the Hill, Terai, and Dooars areas, has a significant population either employed or dependent on tea plantations. A survey conducted by the Regional Labour Offices of North Bengal in 2013 revealed that approximately 186,559 families reside in the tea estates of these regions. According to the report, the plantations in this area have 218,968 permanent workers and 80,853 casual and temporary workers (RLO, 2013).

2.2.4. Tea Plantation as a Study Area

The plantation has a distinct form of production organization that gives rise to certain specific social relations. According to Bhowmik (1981), the plantations in different parts of the world are characterized by a common colonial history of origin, migration, commercial production, labour-intensive, and a class-structure hierarchy. Banerjee (2015) characterizes the tea plantations of Dooars as a distinctive space that constitutes a unique social relationship within the plantation area. The plantations are not only the sites for production but also the living place of workers from different classes, castes, and ethnic communities. Historically, workers in the tea plantations of Assam and West Bengal are largely the Tribals and Dalits from the Central Indian provinces of the Chotanagpur plateau region. The colonial government forcefully brought them to work in the tea plantations as the local communities refused to work in tea gardens, given the difficult and harsh working conditions (Bhowmik, 1981). In the context of North Bengal, the workers are primarily tribals in a non-tribal society, brought by the Britishers as cheap and docile labour who acted as a captive labour force for the tea planters (Sharma, 2011). Historically ignored by the State, North Bengal has seen persistent poverty, inequality, and underdevelopment (Xaxa, 1985). These multiple identities play out in different ways in the daily lives of workers. They are seen in the everyday negotiations with various agencies and their lived experiences within the plantations. Currently, the workforce is predominantly composed of women due to the significant out-migration of men following the plantation crisis

that began in the early 2000s. The production of a distinctive social space makes the plantation system an interesting site to study (Banerjee, 2015).

2.2.5. Plantation as a Social System or as an Enclave?

Tea plantations are often seen as 'enclaves' within a larger society. The Oxford Dictionary of Sociology (2014) defines enclaves as "a term used in under-development and dependency theories to refer to parts of a third world economy that are based on production for export and are controlled and managed by foreign capitals. The enclave is thought to have few linkages with the national economy and thus to have little impact on internal growth" (Marshall & Scott, 2014, p: 212). Scholars such as Chaudhuri (1995), Bhowmik (1981), and Bhattacharjee (2012) have characterized tea plantations in different parts of India as 'enclaves' that are distinct from the surrounding areas. The 19th century saw substantial investments from capitalist planters in Darjeeling, resulting in the compelled commercialization of extensive areas of cultivable wasteland in the Dooars region. Profits generated by capitalist planters were frequently diverted to Centre-Western Europe, leaving plantation laborers in the hinterland with only minimal wages. This economic structure hindered even the primary transfer of wealth to the residents in the surrounding areas of the tea plantations. In addition, the existing economy of this region, based on pre-modern agriculture and allied activities, remained stagnant, with low income, demand, and investment throughout the colonial period. Thus, a dual economy[4] with minimum interaction between the plantations and their surrounding regions was created, and the plantations remained as an enclave to the hinterland (Chaudhuri, 1995). In addition, Bhadra (2004) argues that migrant workers, after three or four generations, discontinue any social relationship with the homeland (Bhadra, 2004).

Though the above sociologists conceptualize tea plantations as enclaves, there are alternative frameworks whereby tea plantations are not considered exemplars of an enclave. Das Gupta (1999) argues that tea plantations in the northern districts of West Bengal are not completely isolated from the hinterland. The enclave theory stipulates that the growth of the plantation economy leads to an impoverishment of local agriculture and allied activities. Das Gupta claims that this is not applicable in the case of Darjeeling or the Dooars region. The growth of plantations in Darjeeling and Dooars was accompanied by a growth in agriculture, local

[4] A dual economy refers to the coexistence of two distinct economic sectors within a single country or region, characterized by varying levels of development, technology, and demand patterns (Xaxa, 1997).

settlement, and small-scale supplementary industries. Thus, Das Gupta claims that agriculture and plantation are 'supplementary and complementary' to each other (1999).

Bhowmik (1981), in his seminal book, argues that the tea plantations of the Dooars region are more ‘isolated’ from the mainland than the tea plantations of Assam. However, Xaxa (1983) holds a different opinion and argues that though the tea plantations in the Dooars region are considerably isolated from the rest of the country, but they are not as isolated as portrayed by Bhowmik in his book. Xaxa (1983) argues that the growth of tea plantations in the Dooars region triggered the spread of railways, roadway networks, and markets in the adjoining areas. According to him, the former plantation workers settled in the neighbouring areas as cultivators while the share-croppers worked in the plantations as seasonal labourers. He argues that the plantation workers in Assam were restricted in their movements outside the plantations as a provisional condition of their recruitment. Thus, he argues that the question of isolation be understood in terms of the differences in society and politics between Assam and West Bengal (Xaxa, 1983).

2.2.6. Different Categories of Tea Plantations

The term plantation has a specific historical connotation directly rooted in European colonialism. The word ‘plantation’ becomes popular in the 16th and 17th centuries with the venture of West European countries to grow commercial crops such as tobacco, sugarcane, coffee, tea, cacao, rubber, oil palms, and bananas in the newly conquered regions in America, Africa, and Southeast Asian countries (Greaves, 1958).

The word ‘plantation’ refers to the large estates in the newly discovered countries in the tropical and subtropical regions where mono-crop cultivation was introduced and replaced traditional agricultural practices with investments from foreign capital under the direct patronage of the colonial rulers (Mandle, 1972). A single commercial and export-oriented crop, such as tobacco, tea, or sugarcane, was cultivated in vast tracks of these newly found colonies with enslaved or bondage labourers (Breman, 1989). Consequently, the socioeconomic system in the plantation then became synonymous with colonies as the investment of foreign capital, followed by the transfer of wealth from the periphery to the core, became a primary characteristic of the plantation (Scott, 2014). After the independence of the colonized countries in the second half of the twenty-first century, the term plantations continued to be used and is still widely used in social science literature.

The term ‘plantation’ also has a legal definition in post-colonial India. The Plantation Labour Act of 1951 has defined the meaning of the term ‘plantation’ in India. According to the Plantation Labour Act 1951, the term plantation refers “to any land used or intended to be used for growing tea, coffee, rubber, cinchona or cardamom which allocates 5 hectares or more and in which fifteen or more persons are employed or were employed on any day of the preceding twelve months” (PLA, 1951, p: 4). It is also to be noted that if “any piece of land used for growing, any plant (mentioned earlier) admeasures less than 5 hectares and is contiguous to any other piece of land not being so used, but capable of being so used, and both such pieces of land are under the management of the same employer. Then, for the purposes of this subsection, the piece of land first mentioned shall be deemed to be a plantation if the total area of both such pieces of land admeasures 5 hectares or more” (PLA, 1951, p: 4).

The tea gardens, which fulfil the criteria defined by the Plantation Labour Act 1951, can be termed as ‘Tea Plantation’, also referred to as ‘Organized Tea Estates’ or ‘Large Tea Estates’ in the plantation literature in India (Bhowmik, 1981; Chaudhuri, 1995). Subsequently, the gardens, which fulfil the criteria, are also subjected to the jurisdiction of the Act and the Government Labour departments. Given this definition, the term tea plantation is distinct from the term tea estate and tea garden on legal grounds.

The term Tea Estates is primarily found in the official documents and the signboards of the privately owned (under proprietorship or private company limited) tea-growing farms in the Dooars region of West Bengal. According to the Cambridge dictionary, Estate refers to “a large area of land in the country that is owned by a family or an organization and is often used for growing crops or raising animals (Turner, 2006). It is also defined ‘as a large, privately owned area of land in the country, often with a large house’ or as ‘a group of houses or factories built in a planned way’ (Turner, 2006). Therefore, the term ‘Tea Estate’ focuses on the land's ownership and arrangement (planning and location).

On the other hand, the tea garden is a colloquial term used widely by tea plantation communities and lay persons in the Dooars region of West Bengal. It is an umbrella term that refers to all types of tea-growing farms, including both small and large scale as well as cooperatives, privately owned, and public sector tea-growing farms. According to the Cambridge dictionary, the term ‘garden’ refers to ‘a piece of land, usually near a home, where flowers and other plants are grown,’ or the ‘gardens are also public places where flowers, trees, and other plants are grown for people to enjoy’ (Turner, 2006). In the Dooars region of West

Bengal, the term ‘Tea Garden’ is commonly used by tea plantation communities instead of the term ‘Tea Estate.’ The Workers on tea plantations prefer using the term 'garden' to describe their workplace based on their perception. This choice of terminology aligns with the general understanding among the local population, making it more accessible. Additionally, the term 'garden' has a historical association, as it reflects the traditional English terminology that has been in use since the British colonial era (Lama, 2022).

There are also different categories according to the ownership status of tea plantations in the Dooars region. In the colonial period, the tea estates in the Dooars region were subject to various forms of ownership, including proprietary, private, public limited, and sterling companies, primarily held by European planters and a few Indian tea plantation owners. However, the transfer of ownership from Europeans to the Indians started during 1939-1945. It was accelerated with the decline of the London Auction Market, followed by the establishment of the Auction Market in Kolkata in 1947. However, a significant number of tea estates continued to be owned and managed by European planters even after the independence of India in 1947, given the lucrative returns from the business (Biswas, 2022). The situation started changing rapidly in the early 1950s with the introduction of several acts and regulations by the Indian Government and growing socio-political movements in the tea gardens. The European planters sold their tea plantations in the Dooars region to the Gujratis and Marwaris in the mid-1960s and shifted their business to South Africa, Uganda, and Rhodesia. The transition of ownership from Europeans to Indian planters resulted in the prevalence of proprietary, private, and public limited tea estates under Indian ownership (Biswas, 2022).

The crisis in the tea plantations is addressed in the literature using various terms related to plantation conditions. Commonly used terms include 'sick,' 'distressed,' 'closed,' and 'abandoned' tea estates. Although these terms carry distinct meanings, they are often used interchangeably. Tea estates that are operational but confront significant challenges in terms of productivity and profitability are typically labelled as 'sick' tea estates. The term 'sick' was first employed in the 1950s in government inquiry commissions such as the Cachar Plantation

Enquiry Committee (1952)[5] and Plantation Inquiry Commission (1956)[6] to refer to financially unviable tea estates in Assam and Bengal (Thakur, 1995).

Thakur (1995), based on a study conducted in 13 tea estates in Bengal and Assam, contends that the economic decline of the tea industry began in the late colonial period and escalated under Indian ownership in the post-independence era. The situation worsened with the implementation of neoliberal reforms in the 1990s, leading to a prolonged economic crisis in tea plantations. During this period, many plantations experienced declining profits and increased production costs (Viswanathan & Shah, 2013).

The crisis faced by the tea plantations in the early 2000s resulted in abandoned tea plantations in the Dooars region as owners, facing economic losses, left without officially closing the estates (CEC, 2007). The estates are not officially closed but are left in a state of abandonment as it would require the planters to settle the dues of the workers and government (such as outstanding wages, gratuity, provident fund, and land revenue) before closing the estates officially (Rai, 2017). Therefore, the plantation owners conveniently fled without issuing an official lockout notice (CEC, 2007). Furthermore, with district administration support, the former workers and union leaders have resumed plucking tea in these abandoned estates by forming an Operation and Management Committee (OMC) to run the abandoned estates cooperatively, creating a temporary solution. Therefore, the estates are not 'closed' in a true sense, but a new form of operation has emerged as a makeshift arrangement (Ghosh, 2014).

The 'Distressed' tea estates are often used to refer to the tea estates where the socio-economic conditions of the labourers have been severely affected. The distressed status of the labour force is not limited to only the closed or abandoned tea estate. It can also be found in the functioning and sick tea estates. (Sen, 2015).

In India, the Small Tea Growers (STGs) have quickly developed a distinct operational type known as unorganized sectors that align with international trends. The organized sector, with a history of planned development dating back over a century and a half since the third phase of colonial rule in India, was primarily established to fulfil the needs of colonial rulers. The Small Tea Growers (STGs) began to be established in the early 1960s and were predominantly

[5] Cachar Plantation Enquiry Committee (1952) was constituted under the Ministry of Labour on April 4, 1950 to investigate the ongoing economic loss and labour condition in a few tea estates in Cachar district of Assam (Thakur, 1995).

[6] Plantation Inquiry Commission (1956) was constituted by Government of India under the chairmanship of P. Madhava, Indian Civil Servant (ICS), Joint Secretary Ministry of Commerce and Industry to look in the scope and cost control measure in plantations industries like tea, coffee and rubber in India (Thakur, 1995).

concentrated in the southern states of Tamil Nadu, Kerala, and Karnataka (Hannan, 2013). However, it was not until the late 1980s and early 1990s that this phenomenon spread to North-Eastern states, including Assam and West Bengal. These Small Tea Growers (STGs) are typically characterized by small-sized farms owned by individual proprietors and utilize labour-intensive production techniques. The workforce in these individual farms is considerably smaller, often limited to family labour, which distinguishes them from traditional estate gardens (Hannan, 2013).

It is important to note that small growers sell their green leaves to Bought Leaf Factories (BLFs), cooperative factories, different estate factories, and often to a middle-man broker. The Bought Leaf Factories do not have their plantations, and they procure green tea leaves from small tea gardens without factories and from abandoned tea estates. These factories benefit significantly by acquiring green leaves inexpensively from these tea estates, as they avoid the expense of providing social security to workers, allowing them to purchase tea leaves at a considerably lower cost than the expenses involved in cultivation and production. Currently, there are approximately 70 Bought Leaf Factories in North Bengal (Hannan, 2013; CEC, 2007).

2.2.7. Living and Working Conditions, and Social Security in Tea Plantations

The wage structure of tea plantation labourers was very low and exploitative during the colonial period (Bhattacharya, 2012). Traditionally, wages were issued in cash, and non-cash benefits were in the form of social security provisions such as housing, rations, and health facilities (Bhowmik, 2011). The Plantation Labour Act of 1951 necessitated that private owners of plantations bear the cost of social security provided to workers. The State has thus given the responsibility of providing social security to private management and has taken up merely the responsibility of monitoring the implementation of the Plantation Labour Act (Xaxa, 2019). However, the Plantation Labour Act of 1951 continues to be poorly implemented by plantation owners because of its added financial burden and lowering of profit, as well as the state's reluctance to monitor implementation. (Bhowmik, 2011; John & Mansingh, 2016).

The wage rate in tea plantations in West Bengal and Assam is significantly lower than the established wage standards in other organized industries and scheduled employment according to the Minimum Wage Act of 1948. This discrepancy is mainly attributed to the inadequacy of the wage policy for the tea sector and the limited bargaining power of plantation workers (Bhowmik, 2011). A significant contributing factor is the nature of the Minimum Wage Act of 1948, which, while statutory, lacks legal enforceability. In states like Kerala and Tamil Nadu,

adherence to the Act is observed as tea plantation is classified as scheduled employment. The 15th Indian Labour Conference in 1957 recommended employing three units of consumption per worker as a criterion for determining need-based minimum wages in industrial sectors (Oxfam, 2021). However, organizations representing Indian tea planters, such as the Indian Tea Association, Indian Tea Planters Association, and Tea Association of India, opposed this suggestion, advocating for a reduced criterion of 1.5 units for the plantation sector, citing the industry's crisis and its inability to bear additional burdens (Xaxa, 2019).

The wage rate in tea plantations results from negotiations involving plantation owners, state government, and trade unions representing workers (CWM, 2015). However, trade union leaders in Eastern Indian states often find themselves in a precarious position during these negotiations, being criticized for aligning with management interests. The labour unions, accused of favouring management, struggle to secure fair wages, especially given the vulnerable socio-economic circumstances of the workers (Das, 2023; Xaxa, 2019). Upper-caste and elite Bengalis and Nepalis exert significant control over labour unions, resulting in a visible lack of representation from the labour class, particularly from Tribal and Dalit communities. Notably, women are entirely absent from the composition of labour unions despite constituting the majority of the plantation workforce (Banerjee, 2020; Sarkar & Bhowmik, 1998). The colonial structure of the tea plantations, in its absence of land rights and the limited opportunities for employment outside the plantation, leaves plantation workers almost completely dependent on the paternalistic benevolence of the plantation management (Das, 2023).

Plantation labourers demand the implementation of social security provisions, including better wages, housing, and medical facilities guaranteed under the Plantation Labour Act 1951. However, as Rosenblum and Sukthankar (2014) argue, Tribal and Dalit workers have little bargaining power given their socio-economic position in the social structure. Resistance and protests by workers are often met with the threat of shutting down the estate. Owners use this as collective punishment to discourage protest, as even a week without work would push workers into starvation (Rosenblum & Sukthankar, 2014).

A study conducted in 2014 by the Human Rights Institute of Columbia Law School at 15 tea plantations managed by the Amalgamated Plantations Private Ltd (APPL), formerly under the Tata Groups in Assam and the Dooars region, highlights the flagrant non-compliance of social security provisions guaranteed by the Plantation Labour Act, 1951. The study reveals substandard living and sanitary conditions, including dilapidated and overcrowded houses,

overflowing latrines, poorly stocked medical facilities, and abandoned crèches. In addition, the systematic imposition of lower wages, higher rates of deduction, and harsh working conditions resulted in the plantation communities being highly vulnerable to 'diseases of poverty,' such as tuberculosis and typhoid (Rosenblum & Sukthankar, 2014).

A recent study conducted across 50 tea estates in Assam explores labour relations within the framework of 'decent work[7],' argues that plantation workers in Assam experienced inadequacies in wages and substandard working conditions, were deprived of housing, healthcare, education facilities, and have limited access to clean water and nutritious food which hinders their ability to lead a decent life within the tea plantations of Assam (Saha et al., 2019). The findings of the study reveal that 75 per cent of workers in tea plantations experience a monthly wage gap, receiving less than what they are entitled to after both written and unwritten deductions. Furthermore, 38 per cent of workers' households incur monthly expenses surpassing their income, with 45 per cent of workers allocating their bonus towards house repairs and medical expenses. In addition, 56 per cent of households exhibit a per capita daily calorie gap ranging from -2000 Kcal to 0 Kcal, and 19 per cent of workers spent their wages on housing repairs, obtaining firewood, children's education, and healthcare. Therefore, the study advocates a 'living wage' for workers, supplemented by appropriate non-cash benefits and welfare services to secure 'decent living conditions' for the plantation workers, considering the actual consumption patterns of the labour force (Saha et al., 2019).

Another recent study across 117 tea estates in seven districts of Assam has highlighted the challenges faced by tea plantation workers, including wage cuts, substandard living conditions, nutritional deficiencies, job insecurities, and lack of basic facilities at the workplace (Oxfam, 2021). The study argues that the cost of living is much higher than the wages received by the plantation workers, resulting in high debt, especially among temporary workers. The study reveals a rise in the casualisation of the workforce, with a gender wage gap in the tea plantations of Assam. The study is critical of the idea of minimum wage and instead argues for implementing a living wage of INR 884 per day for a decent standard, significantly higher (81%) than current wages received by the plantation workers and 54% above the National Minimum Wage suggested by the Anoop Satpathy Committee (2019) (Oxfam, 2021).

[7] The International Labour Organization (ILO) introduced the term 'decent work' at the 87th International Labour Conference in 1999 to advocate for opportunities that provide individuals with dignified and productive employment under conditions of freedom, equity, and security. The four essential pillars for achieving decent work include opportunities for employment and income, respect for rights at work, social protection, and strong social dialogue (Saha et al., 2019).

2.2.8. Gender and Work in Tea Plantations

Historically, women constitute a significant portion of the labour force in tea plantations. A number of studies have explored the status of women, their work participation, and their impact on their socio-cultural life within plantations. Bhadra's (1992) study on the status of women workers in the Darjeeling district found that women workers outnumbered male workers. She finds the cause of this to be planters' preference for a stable and readily available 'cheap workforce' on the plantation. Predictably, women were paid lower wages compared to male workers. The rationale for the lower wages of women workers lies in the planter's belief that women provide merely low-skill labour such as plucking and gardening that require limited use of machines. The narrative that women are not suitable for heavy work on the plantation is used to justify lower wages for women. This maintains the status quo of women occupying low-profile work. Additionally, it has been said that women's 'Nimble Fingers' make them more suited for plucking work in tea gardens. This belief and its logic are said to justify the economic exploitation of women in the tea gardens. (Sharma, 2016). Higher and more technical work such as managerial staff, field staff, sub-staff, supervisors, and technicians are largely occupied by men with very few women occupying these roles. (Bhadra 2004; Bhadra, 1985). Studies have found that opportunities for upward mobility for women in the tea industry are limited, given its strict occupational hierarchy. Given the structural and easy exploitation of women, planters prefer the model of women and family-based labour recruitment. This helps them maintain a captive labour force.

Sharma (2016) argues that the family-based recruitment system in the plantation is a gendered form of labour control. Rather than recruiting individual workers, family-based recruitment offers cheap labour for all family members, including women and children. Women's employment further guarantees a future workforce, as they were primarily seen as reproductive labour, so further recruitment ceases to be a problem. According to Sharma (2016), patriarchy, coupled with capitalism, systematically devalues women's work both inside and outside the home in the plantation system. Their productive labour comes from being pluckers in the field, but they are also the sole bearers of the social reproduction of the family. While they are glorified for their productive labour, their reproductive labour is unaccounted for and devalued. It is worth noting that the number of casual over permanent women workers has increased at a higher rate than that of their male counterparts. The increasing casualization of the female labour force during peak plucking seasons has pushed women into a more vulnerable situation.

Women have gradually become more confined within field-based jobs with the increased mechanization in the factories that are traditionally operated by men (Sharma, 2022).

In addition to plucking tea leaves, women are also assigned to weeding, pruning, transplanting, and light factory works. The crisis of livelihood in tea plantations in recent times has led to the increased migration of men to other states such as Kerala and Gujarat, so both productive and reproductive work in tea plantations falls disproportionately on women (Bhowmik, 2015).

Banerjee (2015) adopts intersectionality[8] as a theoretical framework to explore women worker's self-perceptions concerning identity and belonging. Her work extends to two tea gardens located near the periphery of Siliguri city. Critiquing the work of Bhadra (2004), who studied women workers as a homogenous category, Banerji (2015) argues that women workers belong to multiple subordinated identities. They are women in a patriarchal society, tribal in a non-tribal society, and exploited as cheap and docile labour. The women workers carry multiple identities and belong to multiple social spaces, often determined or influenced by ethnicity, class, religion, kinship, caste, and geographic location. The identity and belonging of a women worker are subjected to day-to-day negotiations with multiple agencies, and lived experiences within the space are constructed, deconstructed, and reinforced. Despite being a significant workforce in the tea gardens, women have remained systematically marginalized within the plantation's economy (Banerji, 2015).

2.2.9. Crisis in Indian Tea Plantation in the Post-economic Reform Period Since 1900s

Raj (2013) studied Tamil tea plantation workers in Kerala. His study suggests that an economic crisis in the tea plantations of Southern India resulted in opening up the isolated spaces of tea plantations in the area. Workers were exposed to a larger world as they sought alternative livelihoods as manual labourers in the nearby urban and semi-urban areas. However, their marginal social, economic, and economic position as plantation workers, along with the lack of resources, possessions, and land, significantly limited their negotiations with the outside world, thereby reinforcing a form of neo-bondage that resembles the indentured bondage of colonial times. (Raj, 2013).

[8] Intersectionality, introduced by feminist scholar Kimberlé Williams Crenshaw in 1989, explores the impact of overlapping identity categories (such as class, race, sexual orientation, age, religion, creed, disability, and gender) on individuals and institutions. This approach considers these multifaceted relationships when striving to advance social and political equity, as outlined by Banerjee (2015). Additionally, it serves as a qualitative analytical framework, highlighting how interconnected power systems influence those who are most marginalized in society.

Viswanathan and Shah (2013), in a study reviewing the Indian tea plantations in the post-reform period since the 1990s, argue that the result of the trade reforms was translated into a long-term crisis in tea plantations. This has affected the future of the tea industry in India. They have statistically documented the sharp fall of Indian tea in the international market in terms of quantity and per unit export prices in the post-reform period. The fall in export prices affected the profitability and feasibility of the Indian tea plantations (Viswanathan & Shah, 2013).

With the opening up of the economy, the traditional market of Indian tea faced a strong challenge from other tea producing countries like Kenya, China, and Sri Lanka in international exports. Immediately after the reforms were introduced, the price of Indian tea in the international and domestic markets experienced a drastic fall. In 1991, the price of Indian tea in the international market fell by almost 14 %, whereas countries like Kenya (43 %) and Sri Lanka (27%) experienced a significant rise in prices. Countries like Kenya and Sri Lanka also increased the quantity of exports in the international market against India and China, which experienced a fall in exports post the 1990s. In addition, for an extended period (1991-2005), the average price of Indian tea (US $ 0.206 per kg) remained low compared to Kenya (US$ 1.589), China (US$ 1.285), and Sri Lanka (US$ 1.19) in the international market (Viswanathan & Shah, 2013). Indian tea also faced a severe threat in the export market with the collapse of the Union of Soviet Socialist Republics (USSR) in 1991, which was the largest buyer of Indian tea (Arya, 2013).

The nature of employment in India rapidly changed in the post-reform period. The casualization of workers became a growing trend in the post-economic reform period. Large-scale planters, in particular, adopted various measures of cost-cutting and prudent financial management strategies to overcome the crisis. New beliefs of a neo-liberal and globalized era, like competitiveness in cost, quality, and value addition, were translated into the policies taken by the plantation authorities. Planters exploited their workers by increasing productivity and lowering wages, prioritizing maximum profit. Restructuring and new labour policies shifted the burden of the crisis on plantation labourers (George & Joseph, 2005). Investment in social protection and labour welfare was also significantly reduced. Cuts and a freezing of the daily rate, bonus, and other monetary entitlements were also adopted as a part of the strategy to reduce production costs. The wage rate of the labourer stagnated, deferred, and was non-revised for an extended period. The workload was also increased (like an increase in the quantity of tea leaves to be plucked in a day). A significant reduction was also made in the non-wage or

extra-wage benefits, bonuses, and incentives available for the labourers. The welfare provisions as stipulated by the Plantation Labour Act of 1951 were also reluctantly implemented or were denied. There were also temporary closures of crèches and health centres and non-maintenance of labour lines. (George and Joseph, 2005).

The plantation sector witnessed an increase in the rate of casual, temporary, and low-paid employment in the post-reform period (Sundaram, 2001). However, Gothoskar (2012 inquires into the beneficiaries of the tea plantation crisis and finds that major tea brands and corporates in India and the world significantly improved their profit margins over the last decade. She explains this mechanism by saying that corporate houses bought tea from auctions at a low cost and maintained these low costs using the power they gained from economic markets. The price received by the smallholder and tea growers from the tea auctions remained minimal. On the other hand, corporations sell the same tea to domestic and international markets for a high price after packaging. Thus, the difference between the retail price and auction price of tea increased steadily. According to Gothoskar (2012), corporate tea houses benefited significantly while tea workers and small producers struggled to make a living from the same industry (Gothoskar, 2012).

2.3. Defining Health and Approaches to Study Health

It is important to explain the working definition of health I will use for this study before discussing the theoretical framework to understand health and diseases. Historically, health was understood to be the absence of disease that would enable the human body to perform its various social roles and functions. On the other hand, diseases were considered abnormal conditions that negatively affected the structure or function of a part of the entire body. In biomedical understanding, disease is understood to be an agent that causes an interruption to the proper functioning of the body, which is understood as a machine (Jones, 1994).

Under capitalism, this functional approach to health has a very instrumental focus. It strives to maintain a healthy body that does not interfere with or diminish capital accumulation (Dey, 2018). However, the absence of diseases was considered a very negative definition of health, as it does not focus on the positive aspects of health and well-being when an individual is free of disease. The definition of health was broadened when the World Health Organization was established.

The World Health Organization gave the most comprehensive definition of health in 1948. The organization has defined health as 'a state of complete physical, mental, and social well-being

and not merely the absence of disease or infirmity' (WHO, 1948). This definition of health puts forward a holistic understanding of health. It recognizes the 'social' factors defining health and emphasizes the 'complete state' of 'well-being' along with a biomedical understanding of the 'physical' body. Hence, the focus was on understanding various aspects of the population's health and well-being. This definition has challenged the dominant discourse of health understanding from a biomedical approach. However, this definition of health is also criticized for focusing on the 'state of well-being' as it is difficult to identify such a state given the dynamic nature of human health and its interaction with society and the environment. Thus, the definition of health by the World Health Organization is criticized for being more idealistic than realistic propositions (Callahan, 1991).

There are different approaches to understanding health and diseases in populations. A critical understanding of health and public health comes from the biomedical approach, the Behavioural or Lifestyle approach, and the Political Economy approach. The first two models are predominant and almost taken for granted to understand health and disease (Birn et al., 2017).

The biomedical approach understands a healthy human body like a functioning machine, free from any diseases or infirmities that interrupt the smooth functioning of the machine. Any disease that interrupts any part (organs) of the machine (body) from proper functioning can be manipulated or repaired through technical interventions. The biomedical approach defines health and illness at the individual level, predominantly in biological terms, as an absence of disease or infirmity. This understanding decontextualizes health and illness from economic, social, and political contexts (Birn et al., 2017).

The behavioural approach views health and illness through an individual's behaviour, beliefs, and lifestyle. The behavioural or lifestyle model argues that human behaviour is the most critical determinant for variations in health outcomes (Satcher & Higginbotham, 2008). Living a healthy life becomes the responsibility of the individual. This approach portrays harmful human behaviour and practices at the individual or community level as the most important reason for ill health. Therefore, it argues for regulation or modification in human behaviour through education, counselling, and incentives to obtain desirable positive health outcomes (Birn et al., 2017).

The third model for understanding health and illness is the political economy approach. The political economy approach contextualizes health and illness within the larger economic,

social, and political structures of society. Thus, this approach challenges the predominant biomedical and behavioural approach to understanding health and disease.

The political economy approach explains health and diseases within the political, social, cultural, historical, and economic context of society. A political economy analysis shows how the political, social, and economic factors are intertwined at the societal, community, and household levels to produce health or ill health in individuals specifically and populations in general. This approach argues that health and disease are produced via societal structures. The structures are the political and economic practices, policies, and institutions (system of production, social protection, and governance) and the class, gender, and race interrelations. According to a political economy perspective, the political and economic forces largely determine the social structures and the power asymmetries perpetuated through these structures (Birn et al., 2017). The societal structures and relations interact with the particular conditions that lead to good or poor health. Unlike the biological and behavioural approach that focuses on individual characteristics, the political economy approach examines health, disease, and health inequities in relation to a range of social, economic and political factors. While explaining the broader context of health and illness, this approach also integrates the bio-medical and behavioural approaches to understand illness more comprehensively by not restricting itself to the narrow approaches of physiological and behavioural factors (Birn et al., 2017). It argues that socio-economic factors also influence and shape physiological and behavioural approaches. These factors include the distribution of wealth and power, the larger political order, historical experiences, class, caste, and gendered social structures, and the global trade and financial regimes. The central argument is who falls sick or experiences ill health and under what socio-political arrangement has occurred (Doyal, 1995; Solar & Irwin, 2010). It recognizes that socio-economic factors also determine access to medical services and welfare policies.

2.3.1. Social Inequality, Health and Disease

In the nineteenth century, disease and ill health were predominantly attributed to miasma theory, which argues that diseases are caused by noxious bad or night air and vapours (Tullett, 2018). Pioneering work by epidemiologist John Snow (1855) challenged the then-dominant understanding of the spread of illness and disease. His study of the cholera outbreak in London from 1848-1854 diagnosed that it was caused by contaminated pumped water running through the sewers and drains of London.

In his classic work, Frederick Engels (1845) examined relations between the workplace, environment, and condition of the workers in the context of the Industrial Revolution and British capitalism. He highlighted that mortality was high amongst low-wage workers who lived in conditions of squalor. He argued that the morbidity, mortality, and disability pattern among the working class in England was very high due to the poor living and working conditions of the workers characterized by poor housing, crowding, insufficient ventilation, chronic food shortage, excessive drinking, and the uneven distribution of medical practitioners.

Another major study was that of Thomas Mckeown (1976), who identified that the increase in population in England resulted from a reduction in the infectious diseases that were the significant disease burden. However, at that time, with limited techniques of disease prevention and treatment, Mckeown (1976) asserted that the decline in the infectious diseases of diarrhoea, dysentery and tuberculosis was mainly because of the improvement in nutrition that improved the immunity of the people and developed resistance to infectious diseases (Jones, 1994).

Turshen (1989) reiterated the concept of the 'social production of health and illness,' asserting that the germ theory emerged during capitalist expansion in Europe. The germ theory reinforced individualism by concentrating on disease processes within each person, shifting the perception of health from a collective responsibility to an individual one. Consequently, the traditional view of "health" focused on the absence of disease. Diseases were considered disruptors of the human body, akin to a malfunctioning machine, and medicine's role was seen as restoring functionality. This approach isolated the individual from their socio-economic context. Turshen argued that "mortality" is nonspecific, contending that the elimination of any single cause of death does not significantly impact overall community health. In her view, health status should not be solely defined by the 'absence of illness'. However, it should encompass factors such as access to socio-economic opportunities, mobility in terms of career advancement, and improved wages.

Packard (1989) analyzed the occurrence of tuberculosis (TB) and related mortality among the mineworkers of South Africa in the 20th century. He examined the political economy of black poverty and ill health in the context of expanding industrial capitalism. He explored how the Europeans brought diseases into the virgin land of South Africa. Soon, the disease turned into an epidemic among the native Africans who were exposed to the disease for the first time. The ill-equipped resistance system of the African mine workers and their families is characterized by poor living conditions, deficient nutrition, long hours of exhausting and unsafe labour, and inadequate wages attributed to the occurrence and prevalence of the disease. European

administrators and medical professionals relied on biomedical and behavioural mechanisms to address the issue, leaving the structural causes unaddressed.

Navarro (1977), in his collection of essays in the context of Western Europe, the United States, and Latin America, argued that the arrangement and allocation of health resources, as well as the distribution of economic and political power, are shaped by the same dynamics within a capitalist system. Consequently, comprehending the distribution of health services necessitates an examination of the structure of capitalist society. Navarro asserts that the socio-political and economic context of advanced capitalism significantly influences the state of health in both developed and underdeveloped regions globally. Conversely, any positive interventions aimed at addressing health issues that may pose a threat to capitalist interests have consistently encountered constraints within this political-economic framework.

In her classic work, Doyal (1979) analyses the issue of the social production of health and illness. She looks at social organization to understand health and sickness in the context of Britain. She opens up the historical context of the social production of disease in Britain and traces the formation of its National Health Service (NHS). Doyal argues that the state had realized the necessity of a healthy workforce by the mid-nineteenth century. New technologies had intensified the labour process, and a healthy workforce was required to keep factories running. The NHS, largely curative rather than preventive, was introduced to take care of the workers' health in the post-world war situation. She argues that these welfare mechanisms, alongside social development, served British capitalism in the post-world war situation.

In another important book, Doyal (1995) analyzes women's health from a gender and political economy approach. She examines the health and illness of women, contextualizing the life and work of women within the historical and political context. She analyses the risks and consequences associated with domestic work, paid labour, and caregiving, contextualizing the issues of women's lack of access to economic and social resources, the marginal status of women, and vulnerability to domestic violence, which leads to ill physical and psychological health.

In a recent volume, Prasad and Jesani (2018) present a series of well-written chapters examining equity and access issues within the Indian healthcare system. The volume explores the reasons behind the growing disparities in the health sector in India, investigating the impact of globalization on efforts to democratize healthcare. The book explores the role of the state in ensuring universal healthcare access, including distribution, utilization, and health outcomes,

considering factors such as caste, class, and gender. Several studies suggest that the inequity in health has been growing at an unprecedented rate, with higher disparity in morbidity patterns and health outcomes among the different sections of Indian society. The systematic dismantling of public health institutions and promotion of the private sector in health care has severely affected the marginalized sections of society. Out-of-pocket expenditure has been rising among socio-politically disadvantaged communities, pushing them further into poverty and raising inequality. The book critically examines the historical evolution of health services in India, highlighting a shift from state to market dominance in healthcare provision. For instance, the repercussions of adopting neoliberal policies in the Indian economy, the pharmaceutical sector, and clinical trials have witnessed serious challenges in drug production with the influence of multinational companies. The section on the Right to Health and Universal Health Coverage contends that the pledges to deliver health for all in India have not materialized due to political reasons. (Prasad & Jesani, 2018).

The preceding discussion illustrates the socio-economic setting influencing health and illness within a society. It also indicates the need to comprehend the epidemiological transition of a society in order to grasp the disease burden effectively. Consequently, the following sections endeavour to delve into the epidemiological transition and the associated concerns pertaining to tribal health in India.

2.3.2. Epidemiological Transition in India

The epidemiologic transition theory defines changing patterns of population age distributions, mortality, fertility, life expectancy, and causes of death (McKeown, 2009). In simple terms, it refers to the general shift from acute infectious and deficiency diseases to chronic non-communicable diseases (NCDs). For instance, since the 1990s, there has been a gradual shift in disease burden from communicable, infectious diseases such as tuberculosis and malaria to chronic illnesses such as cardiovascular diseases, cancers, and diabetes. One of the most evident indicators of this transition is the changes in the pattern of mortality and morbidity (Wahdan, 1996). The prevalence of acute infectious and deficiency diseases and the mortality caused by them is seen as a sign of underdevelopment. In contrast, the rise in chronic diseases is associated with modernization and an advanced level of development. The epidemiological transition is determined by several economic, social, economic, cultural, behavioural, and biological factors (Wilkinson, 1994).

Since the 1970s, India has been going through rapid structural changes in disease patterns and an increase in life expectancy; therefore, the country is experiencing rapid progress in demographic and epidemiological transition (Yadav & Arokiasamy, 2014). The burden of communicable and infectious diseases remained significantly high. In addition, the mortality burden caused by non-communicable diseases has increased rapidly without replacing the mortality burden caused by communicable diseases (Yadav & Arokiasamy, 2014; Menon et al., 2022). It is often argued that the non-communicable diseases in India are also increasing rapidly due to unhealthy diets, which are high in salt, sugar and cholesterol, lack of physical exercise, and other demographic and lifestyle habits. The emphasis on individual risk factors and relatively proximal causes of disease tends to overlook the social context or 'the fundamental causes' of diseases (Link & Phelan, 1995). It is important to note that disease prevalence and health inequities in society are significantly influenced by the Social Determinants of Health, which refers to the conditions in which people are born, grow, live, work, and age (Warne & Wescott, 2019).

Therefore, the epidemiological transition is not a uniform process but evolves in different ways among and within different societies at a different pace (Waters, 2006). It is argued that different sections of stratified societies based on class, ethnicity, gender, and race experience differential progress of epidemiological transition (Barrett et al., 1998). The following section attempts to understand the health status of tribal communities, one of the main groups of workers residing in the tea plantations of the Dooars region.

2.3.3. Tribal Health in India

It is difficult to postulate a singular definition of Indigenous, Tribal and Adivasi communities given the heterogeneity and diversity of the ethnicity. These are variously shaped by complex histories of colonization, political dynamics, cultural distinctions, and geographical landscapes, particularly in South Asia (Thresia et al., 2022).

There is enormous diversity in the tribal communities across different states of India. It is important to note the existence of stratification within tribal communities. Sub-tribes are differentiated by social class, educational level, land ownership and wealth status. The 2011 census shows that tribal communities constitute around 8.6 % of India's population. They are spread across nearly every state in India but with higher concentrations in the Central Indian and North-eastern states. Removed from mainland India, they live in remote, isolated, hard-to-reach areas and dense forests. Tribal societies have undergone tremendous social and economic

changes with their incorporation into larger social systems and the implementation of several development policies and programmes; this has resulted in significant changes in their way of life and has also affected social differentiation between tribal groups (Xaxa, 2004).

The tribal communities in India face a multitude of challenges, including widespread poverty, marginalization, social exclusion, difficult geographical terrains, inadequate transportation facilities, and harsh environmental conditions, all of which contribute to their poor health indicators (Ravindran et al., 2018; Acharya, 2018). Tribal communities, to a large extent, have poor health indicators, given the widespread poverty, marginalization and social exclusion. Different geographical terrains and poor transportation facilities result in difficult living and harsh environmental conditions, leading to poor health status. Further, tribes also have low levels of education, low incomes, poor housing and poor water supply and sanitation, further compounded by high levels of malnutrition and widespread hunger in the tribal communities. All these factors have a significant impact on the health status of the tribal population (Haddad et al., 2012; Kumar et al., 2020). Thus, within the tribal communities' women and children are the most vulnerable groups with respect to their health indicators, which is reflected in their high maternal and child mortality.

A recently published book by Ravindran et al. (2022) explores the complex health inequities among tribal populations, revealing diverse experiences within and across communities based on three studies conducted in the states of Assam, Chhattisgarh, and Kerala (Ravindran et al., 2022). The findings show that tribal communities generally face worse health indicators than others and show higher rates of infant mortality, maternal death risk, and prevalence of infections. The study also reveals that tribal adults and children are two to three times more undernourished than other populations. Regarding health services, the study finds that tribal communities encounter inadequate government services and poor quality of care. This pushes them towards unqualified providers in certain regions, thereby increasing medical costs. This book emphasizes the need for qualitative descriptions to capture the broader dimensions of the challenges to well-being, including everyday and overt violence. The book introduces the concept of the ecosystem of marginalization, which involves historical marginalization, post-independence policies, economic development trajectory, and social exclusion as significant contributors to vulnerability to health risks among the tribal communities in India. The book outlines the persistent pathways of health inequities, underscoring the failure of the public health system to address the needs of the tribal communities due to its inherent 'equity-blindness' in design and organization (Ravindran et al., 2022).

Thresia et al. (2022) argue that the lack of ethnicity-disaggregated data conceals the inequalities among Adivasi communities from different regions. Empirical studies, reports, and demographic health surveys suggest significant health inequality among Adivasis. These inequalities are characterized by poorer health outcomes, higher Infant Mortality Rate (IMR), Maternal Mortality Ratio (MMR), life expectancy at birth, and stunting compared to other population groups in South Asia. The intersection of social vulnerabilities with biological consequences for Adivasi communities manifests in a fourfold burden encompassing undernutrition, infectious morbidities (such as diarrheal disease, tuberculosis, leprosy, and malaria), genetic disorders (specifically sickle cell anaemia), and an increasing prevalence of non-communicable diseases (NCDs). The latest Comprehensive National Nutrition Survey (CNNS) conducted in 2016–2018 in India reveals alarming rates of anaemia, stunting, and underweight among Adivasi children (Thresia et al., 2022).

A significant research study conducted in select districts of Chhattisgarh, Jharkhand, and Odisha suggests that tribal groups share the disproportionate burden of severe health challenges, encompassing communicable diseases (such as malaria, tuberculosis, leprosy), non-communicable diseases, mental health issues, women's and maternal health concerns, undernutrition, acute respiratory infections, hemoglobinopathies, epilepsy, snakebites, dog bites, and other animal attacks (Sarojini et al., 2018). The report published based on the above study states that despite the National Health Mission (NHM) aiming for universal healthcare access, tribal communities face considerable barriers to achieving this goal. Despite efforts by the National Rural Health Mission (NRHM), tribal populations remain among the poorest and most marginalized, experiencing significant deprivations, including poverty and ill health. The widespread lack of essential diagnostics and drugs, insufficient infrastructure, limited human resources, and inadequate transport and communication facilities profoundly impact the health and healthcare of these communities. In tribal areas, the primary points of contact for healthcare are often local indigenous practitioners and, at times, unqualified medical practitioners available in or near tribal habitats. Although the acceptance of modern medicine has increased in recent years among tribal communities, the accessibility of quality healthcare remains a significant challenge. The persistent absence of healthcare facilities close to tribal populations denies them timely access to quality care. (Sarojini et al., 2018).

The Ministry of Health and Family Welfare and the Ministry of Tribal Affairs, Government of India, in a jointly published report (GoI, 2018), argue that tribal communities in India face a triple disease burden. Firstly, the wide prevalence of malnutrition, anaemia and communicable

diseases such as malaria and tuberculosis continue to be major health concerns in tribal communities in the country. Secondly, there is a tremendous rise in non-communicable diseases such as cancer, diabetes, and hypertension triggered by environmental degradation, stress accompanied by poverty, urbanization and changes in lifestyle. Thirdly, the burden of mental illness and also an increasing addiction to intoxicants such as alcohol and tobacco (GoI, 2018). Similar trends have been reported in other studies, which show that tribal populations in India have a higher prevalence of malnutrition, malaria, tuberculosis, and leprosy (Kumar et al., 2020). Debates persist over the relationship between non-communicable diseases and poverty in low- and middle-income countries (Vellakkal et al., 2013). Several studies indicate that non-communicable diseases are on the rise among the impoverished and marginalized segments of Indian society (Binnendijk et al., 2012; Vellakkal et al., 2013; Williams et al., 2018). According to an estimate by the Indian Council of Medical Research (ICMR), between 1990 and 2016, India experienced a decline in deaths from Communicable, Maternal, Neonatal, and Nutritional Diseases (CMNND) from 53.60% to 27.5%. Conversely, deaths from Non-communicable Diseases (NCDs) increased from 37.9% to 61.8%, indicating a shift in epidemiological patterns. Injuries also rose from 8.5% to 10.7%. In West Bengal in 2016, CMNNDs caused 31.7% of deaths, NCDs accounted for 55.5%, and injuries contributed to 12.9% (ICMR, 2017). Apart from the high prevalence of communicable and non-communicable diseases, the utilization of health services has remained significantly low among the tribal communities in India due to poor health infrastructure, shortage of health workers, and poor quality of health services (Kumar et al., 2020).

The provision of state-sponsored medical services in the tribal regions of India has remained historically limited and underfunded, resulting in an inability to deliver adequate care to the masses. Furthermore, the accessibility and affordability of legitimate private practitioners of Western medicine have remained a serious challenge as it has primarily been confined to urban areas. Consequently, various forms of alternative treatments, including quacks, unqualified doctors, traditional healers, and faith-based practitioners, persist and thrive within the tribal regions of India (Hardiman & Raje, 2008). Each of these medical practitioners and caregivers has their methods of healing and caters to the particular needs of the tribal people, given the socio-economic realities of the region (Hardiman & Raje, 2008). The different forms of alternative healing practices and Western biomedical practices coexist in the same region; however, they often conflict over ideas, efficacy, supremacy, and acceptance. The different forms of healing practices are also found among the tribal communities in the tea gardens of

the Dooars region (Chaudhury & Varma, 2002). The healthcare-seeking behaviour of tribal people in the Dooars region, from the practitioners of different healing, is shaped by Indigenous knowledge and beliefs, perceptions about health and illness, as well as historical experience and spatial interaction with Western medicine (Chaudhury & Varma, 2002).

2.3.4. Health and Disease in the North Bengal

An important study by Sharma et al. (2009) revealed that the Jalpaiguri district, with a significant presence of tea plantations, bears a heavy burden of malaria outbreaks, especially during the monsoon season. The district contributes 50-60% of the state's malaria cases and deaths despite making up only 4% of the total population. Between 2002 and 2005, the annual malaria-related deaths averaged 1.6 per 100,000 people. The Alipurduar sub-division of Jalpaiguri district witnessed a significant rise in malarial deaths, reporting 10,686 cases between January and July 2006. The overall attack rate was 799 per 100,000 population, peaking among individuals aged 15-44 years. Tribal communities had a slightly higher incidence (855 cases per 100,000 population). The study identified 77 deaths attributed to malaria in 2006, highlighting that over 24% of these deaths happened in tea estates in Alipurduar. An important finding of the study was that, to a large extent, the majority of the victims of the malaria outbreak were from the marginalized poor and tribal communities who largely sought care from informal sectors or private medical facilities provided by the tea gardens (Sharma et al., 2009).

In an important study, Sharma and Tilak (2021) investigated the occurrence of infectious diseases in North Bengal, a region with dense forests, ecologically rich biodiversity, and surrounded by several Indian states and countries which are endemic areas for several communicable diseases. One of the significant strengths of the study is its emphasis on the recent outbreaks in nearby regions of North Bengal, such as Assam, Bihar, Sikkim, Bangladesh, Nepal, and Bhutan, which share porous boundaries, similar geographical conditions, and experience significant movement of migrants and daily commuters.

The study argues that the geographical vulnerability and fragile interactions between humans, animals, and vectors resulted in spreading infectious diseases and led to significant increase in outbreaks and the re-emergence of vector-borne diseases such as malaria, dengue, Japanese encephalitis, kala-azar, scrub typhus, and Nipah virus (NiV) in North Bengal, particularly in districts like Alipurduar, Jalpaiguri, Darjeeling, and Cooch Behar in recent years. The study suggests that with efforts from the state, Malaria, Japanese encephalitis, and Kala-Azar are

under some extent of control; however, malaria still causes significant mortality and morbidity in North Bengal. On the other hand, there is a significant rise in dengue cases, and scrub typhus has re-emerged and turned endemic in the region (Sharma & Tilak, 2021).

2.3.5. Health and Disease in the Tea Plantations of South Asian Countries

The tea plantations in South Asian countries are located in remote villages or hills that are geographically isolated and deep in forests. Further, the tea plantation labourers, constituting a significant segment of the working-class population, predominantly hail from socially marginalized communities; consequently, the confluence of geographical and social factors, compounded by inequitable labour relations, significantly influences the health and well-being of these workers. The prevalent conditions, marked by poverty, inequality, meagre wages, inadequate sanitation, and food insecurity, among other factors, contribute substantially to the unfavourable health indicators observed within this population, as underscored by numerous studies highlighting the prevalence of various diseases in the tea plantations.

Mackay (1977) studied disease patterns among plantation workers in Bangladesh and suggests that the major causes of mortality in tea plantations are cardiovascular diseases, intestinal infections, respiratory diseases, tuberculosis, tumours of various kinds, and malaria. The author argues that most of these diseases are related to poor living, sanitary, and working conditions on plantations.

In a study on the utilization of health services in tea plantations in Sri Lanka, Gajanayake et al. (1991) observed that plantation workers have shown a greater dependency on home-based remedies and traditional medical practices over Western medicine. Western medical treatment in hospitals is often inaccessible and not affordable by the plantation workers. The medical centres are difficult to access from the tea estates located in geographically remote areas. On the other hand, doctors from the Sinhalese or Sri Lankan Tamils are not ready to serve in remote and mountainous areas living with the migrant people in the plantations. In addition, all the medical personnel, officials, and bureaucrats are from higher castes and politically better-off communities. These have together given rise to a power structure that systematically excludes plantation workers from accessing health care services. The authors argue that the relatively poor health status of the Tamil Indian tea labourers compared to the general population in Sri Lanka is the result of a complex set of factors such as inadequate staffing, poor quality of service provided on the estate, and high costs of seeking treatment outside the estate. These factors combined together create delays in seeking effective medical treatment that results in a

significantly higher share of adult and infant deaths among the socio-economically disadvantaged Tamil Indian tea labourers in Sri Lanka (Gajanayake et al., 1991).

The report published by the International Labour Organisation (ILO) on the working conditions of workers in the tea plantations of Bangladesh has documented the self-reported disease pattern in the tea plantations in the country (Ahmed & Hossain, 2016). The report highlighted various diseases and occupational health hazards suffered by the populations in the plantations. The report has recorded high occurrences of headache (84.3%), muscle pain (74%), back pain (71.9%), and skin-related diseases (65.5%), among other diseases like respiratory diseases, injuries, and fever in tea plantations of Bangladesh. The study also highlights the existence of extreme poverty, illiteracy, and poor living conditions among tea plantation workers who are socially excluded from the dominant Bengali Bangladeshi population.

A study among the elderly population in tea plantations of Bangladesh highlights that a large section of the elderly population (more than 90%) suffer from multiple morbidities as they age. They frequently reported diseases such as joint pain, gastric/ulcer, back pain, eye disease and skin diseases (Hossain et al., 2019).

In a study conducted by Hettiarachchi (2001) in the plantations of Sri Lanka found that the managerial approach towards health and welfare changed dramatically after the introduction of the Structural Adjustment Programs (SAP)[9]. The study shows that budget cuts affected health and allied activities most prominently. Management gradually decreased the number of qualified staff and started recruiting only on a contractual basis. There was also a steady withdrawal of various services offered for pregnant women, such as providing ambulance services for antenatal check-ups. This severely impacted the utilization of maternal health services in the plantations of Sri Lanka (Hettiarachchi, 2001).

Another qualitative study on the tea plantations of Sri Lanka found that introducing reforms in the early 1990s increased the privatization of healthcare. This resulted in the deterioration of healthcare facilities, with hospitals functioning without human resources or adequate equipment. Further, there were also difficulties in finding transportation to the local hospitals, as ambulance services were not repaired due to budgetary cuts. The unavailability of health facilities in the tea plantations led to increased expenditure on accessing medical care outside the plantations (CEPA 2005). Thus, the introduction of privatization in the tea estates of Sri

[9] Most of the plantations in Sri Lanka were nationalised in the mid-1970s but were opened up to the private sector in the 1990s.

Lanka resulted in impacting the provisions of comprehensive health services with the closure of maternity wards, retrenchment of staff such as nurses, welfare officers, and midwives, and discontinuation of the ambulance services that forced people to access private health facilities outside tea estates which were often expensive (CEPA 2005).

2.3.6. Health and Disease in Indian Tea Plantations

In this section, an exploration of studies conducted on the health and diseases prevalent among tea plantation communities across various states in India is undertaken. Table 2.1 provides an overview summarizing the key findings of these studies.

An important study on a tea estate in the Alipurduar district of the Dooars region investigated the mortality of children under five and its associated socio-economic factors. The study was based on the Oraon tribe, the largest community in the tea plantations in the Dooars region. It reported that the under-five mortality rate per 1000 live births in the tea plantation (96.86) is much higher than state and national levels (Mallick & Roy, 2020). The child mortality rate is comparatively higher in females compared to male children. The study also reports that the major causes of child mortality in the under-five years of age category are diarrhoea (38.13%), pneumonia (14.39%), and peptic ulcer (6.47%). Another significant observation revealed that a large number of parents (26.62 %) are ignorant of the cause of death of their children. The study argued that high female illiteracy, underage marriage of girls, and poor sanitary habits led to higher under-five child mortality among the Oraons in the tea plantations (Mallick & Roy, 2020). A recent study in two other plantations in the Dooars region found that more than half of the women in tea plantations were undernourished, while only one-third of the men were undernourished. There is a clear gender division in the number of undernourished and anaemic populations in the tea plantations (Mallick & Roy, 2022).

A recent cross-sectional study of 463 workers in three tea gardens of the Alipurduar district of West Bengal was conducted. It reported that almost 87.90 % of workers were anaemic, and more than one-third of them were undernourished; a majority of these workers were women from a marginalized social class and belonged to lower income quartile (Yasmin et al., 2022). The study has also found that a significant majority (69.8%) of workers suffered from some form of morbidity, such as non-communicable diseases (24.2%), musculoskeletal disorders (17.9%), skin diseases (17.7%), respiratory illness (16.2%), febrile illness (12.3%), gastrointestinal disorders (8.6%), and deficiencies in vitamins and micronutrients (Yasmin et al., 2022).

A study conducted by the North Bengal Medical College and Hospital, Siliguri, by Mondal et al. (2014) of children from tea estates in Darjeeling reported that a significant number of them were admitted to the hospital with diseases such as acute gastroenteritis, respiratory infections, meningoencephalitis, tuberculosis, neonatal sepsis, kala-azar, urinary infection. The study also found that a significant number of siblings of admitted children had nutritional anaemia, worm infestation, giardiasis (intestinal infections), severe stunting and wasting (Mondal et al., 2014).

Ishore et al. (2015) identified the morbidity pattern and the associated factors among 192 tribal children under five years of age living in tea garden areas of the Darjeeling district. The study revealed that a significant number of children (38%) suffered from morbidities such as diarrhoea (26%), acute respiratory infections (24.5%), and fever (16.7%). Additionally, 64.4% of the children were found to be underweight relative to their age. The study reported a high prevalence of morbidity associated with diarrhoea and acute respiratory infections in the tea plantations.

A recent study conducted among 200 people from ten tea estates in Darjeeling examined the prevalence and determinants of malnutrition among tea plantation workers (Mandal et al., 2023). The study suggests that the prevalence rates for undernutrition and obesity were 25% and 20.5%, respectively. The study further identified higher Body Mass Index (BMI) odds correlated with increasing age, male gender, permanent employment in the garden, and higher educational attainment. In addition, household food insecurity heightened the odds of undernutrition, as individuals from food-secure households exhibited significantly increased odds of having a higher BMI (Mandal et al., 2023).

A similar situation has been reported in the tea estates of Assam. In a study conducted among 605 adolescents in eight tea gardens in Dibrugarh district of Assam recorded a high prevalence of stunting and wasting among the participants. It was found that 47.40 % of male children, boys, and 51.90 % of female children suffered from stunting whereas 59.50 % of male children and 41.30 % of female children suffered from being underweight (Medhi et al., 2007).

In 2020, a study conducted in four tea plantations in the Dibrugarh district in Assam showed a high prevalence of tuberculosis among tea plantation labourers due to existing social, economic, and political inequalities (Sonowal, 2020). The study highlighted that more than 40 % of the total number of patients suffering from tuberculosis in the district from 2011 to 2015 were from the tea plantations. In contrast, the tea plantations comprise only 20 % of the district's total population. The study argues that the high burden of tuberculosis in the tea

plantations is a result of the low wage structure, extreme poverty, poor housing and sanitation facilities, malnutrition, consumption of alcohol and tobacco, poor working conditions, and other social determinants (Sonowal, 2020).

Table 2.1: Diseases and Illness in the Tea Plantations in India

Study	Study Area	Major Illness / Diseases	Key Findings
Sharma et al., 2009	Dooars Region	Malaria	Alipurduar witnessed a significant rise in malarial deaths, reporting 10,686 cases with 77 malaria deaths between January and July, 2009. Over 24% of these deaths happened in tea estates in Alipurduar.
Mallick & Roy, 2020	Dooars Region	Child Mortality	The under-five mortality rate per 1000 live births in the tea plantation (96.86) is much higher than the state and national levels. Major causes of the child mortality under five years of age are diarrhoea (38.13%), pneumonia (14.39%), and peptic ulcer (6.47%).
Mallick & Roy, 2022	Dooars Region	Anaemia and Malnutrition	More than half of the adult female population in tea plantations suffered from undernourishment and one-third of the adult male population suffered undernourishment were undernourished. Almost the entire male and female population in the two tea plantations suffered from anaemia.
Yasmin et al., 2022	Dooars Region	Anaemia and Malnutrition, NCDs, Musculoskeletal disorders, Skin diseases, and Respiratory illness	Almost 87.90 % workers were anaemic and more than one-third of the tea-garden workers were found undernourished. Plantation workers suffered from non-communicable diseases (24.2%), musculoskeletal disorders (17.9%), skin diseases (17.7%), respiratory illness (16.2%), febrile illness (12.3%), gastrointestinal disorders (8.6%).
Mondal et. al., 2014	Darjeeling	Child Mortality and Morbidity	A significant number of children admitted to North Bengal Medical College and Hospital (NBMCH) suffered from acute gastroenteritis, respiratory infections, meningoencephalitis, tuberculosis, neonatal sepsis, kala-azar, urinary infection. Many siblings of admitted children had nutritional anaemia, worm infestation, and giardiasis (intestinal infections), severe stunting and wasting.
Ishore et al., 2015	Darjeeling	Child Mortality and Morbidity	More than 38 % children suffered from morbidities such as diarrhoea (26%), acute respiratory infections (24.5%), and fever (16.7%), and 64.4% of the children are underweight. There was a high prevalence of morbidity associated with diarrhoea and acute respiratory infections.

Study	Study Area	Major Illness / Diseases	Key Findings
Mandal et al., 2023	Darjeeling	Malnutrition	In tea plantations, 25 % populationsuffer from undernutrition and another 20.5% from obesity. higher BMI odds correlated with increasing age, male gender, permanent employment in the garden, and higher educational attainment.
Medhi et. al., 2007	Assam	Malnutrition	47.40 % boys and 51.90 % girls suffred stunting whereas, 59.50 % boys and 41.30 % girls were underweight.
Sonowal, 2020	Assam	Tuberculosis	More than 40 % of the total tuberculosis patients in the district in 2011 to 2015 were from the tea plantations, whereas, the tea plantations form only 20 % of the district's total population.
Vasanth et al., 2015	Tamil Nadu	Musculoskeletal Disorders	The prevalence of musculoskeletal pain among the plantation workers was 83.6% within the last 12 months, while it was 78.5% within the last seven days. Most common musculoskeletal disorders were shoulder pain (59%), and lower back pain (52.8%). A significant association was found between an increase in morbidities and an increasing rise in musculoskeletal disorders.
Venugopal et. al, 2021	Tamil Nadu	Occupational Diseases	Toxic pesticide exposure causes respiratory illness, allergies, and reproductive disorders among women labourers. than non-workers. Women labourers frequently suffers from musculoskeletal disorders (such as neck pain, muscle pain, muscle rigidity), chronic diseases (such as allergies, and asthma), anxiety, eye problems and skin problems.
Ramesh & Kannan, 2022	South India	Occupational Diseases	Most of the workers (52.4%) have at least one musculoskeletal complaint and 35.8% workers) experiencing pain in more than one body part. In addition, 34.8% workers suffered from knee joint pain and many workers have shoulder problems (27.6%), lower back pain (22.8%), and upper back pain (19.3%).

Source: Compiled by the researcher based on available literatures

Vasanth et al. (2015) conducted a study among 195 tea leaf pluckers to examine the patterns and factors associated with work-related musculoskeletal disorders in a tea plantation in Annamalai, Tamil Nadu, India. Their findings indicate that within the last 12 months, the prevalence of musculoskeletal pain among the plantation workers was 83.6%, while within the last seven days, it was 78.5%. The predominant site of pain over the past year was the shoulder (59%), whereas in the last seven days, it was the lower back (52.8%). Furthermore, a significant association was found between an increase in morbidities among workers and an increasing rise in work-related musculoskeletal disorders.

A study of women labourers in a tea plantation in Tamil Nadu in Southern India revealed their exposure to various toxic pesticides, leading to health implications such as respiratory illness, allergies, and reproductive disorders (Venugopal et al., 2021). The study reported a higher instance of health complaints such as altered taste, profuse sweating, anxiety, eye problems and skin problems in these women compared to non-workers. They were also documented as having a higher prevalence of musculoskeletal disorders (such as neck pain, muscle pain, and muscle rigidity) and chronic diseases (such as allergies and asthma) than the women not working on the tea plantation. (Venugopal et. al, 2021).

A recent study by Ramesh & Kannan (2022) on 290 male pesticide sprayers in the tea plantations of Southern India found that most workers had different musculoskeletal disorders, and many had pain in more than one body part. Many workers reported pain in multiple body parts, with 152 participants (52.4%) having at least one musculoskeletal complaint and 104 individuals (35.8%) experiencing pain in more than one body part. Among the affected workers, 101 individuals (34.8%) reported suffering from knee-joint pain within the past twelve months. The study also identified other work-related musculoskeletal disorders in the past year, including shoulder problems (27.6%), lower back pain (22.8%), and upper back pain (19.3%). The study revealed that knee pain (31.7%), low backache (20.7%), and shoulder pain (24.1%) were the musculoskeletal issues that caused absenteeism from work among the participants (Ramesh & Kannan, 2022).

This section has analysed the prevalent diseases among the plantation communities, as highlighted in the studies carried out by researchers on tea plantations in various parts of the country. The following sections will analyse the literature on the development of health service systems in India as well as in the tea plantations.

2.4. Development of Health Service Systems in India

The health services of a country are the result of its historical, socioeconomic, and political context. During colonial rule in India, the government introduced medical care and implemented public health measures primarily limited to the European military cantonments and major cities of India (Ray, 1998). On the other hand, rural parts of India were largely neglected as there were hardly any Western medical services. The Health Survey and Development Committee, popularly known as the Bhore Committee, provided the blueprint and formed the basis for developing the healthcare system in India after independence. The Bhore Committee Report (1946) made significant recommendations for healthcare in India, including the establishment of universal healthcare, a network of primary health centres, improved medical infrastructure, increased healthcare professionals, implementation of public health programs, comprehensive health financing, and focus on health education and research (Duggal, 1991). The Bhore Committee, inspired by Britain's Beveridge Report (1942), recommended that the Indian government take responsibility for provisioning and financing healthcare services (Amrith, 2007). It called for establishing a comprehensive and universal healthcare system by strengthening primary health services and mandatory healthcare for persons despite their inability to pay. Several other committees formed at different times, including the Mudaliar Committee (1962), Chadha Committee (1963), Katar Singh Committee (1974), and Srivastava Committee (1975), took significant measures to strengthen India's rural healthcare system. These initiatives involved training multipurpose health workers, revising the population norms for the establishment of primary health centres, expanding medical education facilities, improving the training of healthcare professionals, and distributing primary health centres across the country (Priya, 2005).

India’s public health system is organized in a pyramid structure that provides different levels of services. Based on the population norms on which the rural health service is organized, one Sub Centre (SC)/Health and Wellness Center (HWC) must exist for a population of 5000 in the plains and 3000 in hilly, difficult, and tribal areas. A primary health centre (PHC) exists above this sub-centre that caters to populations of 30,000 – 20,000 persons. For populations of 1,20,000 and 80,000, a Community Health Centre (CHC) exists (GoI, 2012). Above the CHC are sub-district and district hospitals providing advanced medical care. These different health centres provide different levels of care depending on the availability of human resources in health and technology. For instance, the primary level includes the SC and the PHC. A sub-centre located in the village is the first point of contact between people and the health system.

It provides basic preventive, promotive, curative and outreach health services to the population. It also undertakes referrals of patients. The secondary level of care includes health services provided at the CHC and the District Hospitals, which have a higher level of competence, more specialists, more beds, and sophisticated technology. The tertiary level of care is the most advanced level of medical care located at hospitals in cities and the state capital. It is designed to be an integrated health service system that provides comprehensive care to all. Providing equitable and accessible services to the population is the primary objective of the public health system (Banerji, 1985). Over the years, the system has faced challenges in ensuring universal and comprehensive care to its population (Sharma & Popli, 2023).

Apart from the public health systems, medical care is also privatized. The privatized sector is diverse and fragmented and includes private practitioners of modern medicine, private practitioners of various Indian systems of medicine, and other unqualified quacks and healers. A number of non-government organizations, faith-based organizations, and charitable and mission hospitals also provide health services. While the goal of the public sector in health is to ensure welfare, the objective of the for-profit private health sector is to make profits (Baru et al., 2010).

The delivery of healthcare faces various challenges, the topmost of which is the growing disparity between rural and urban areas in terms of service accessibility. In India, health services are predominantly concentrated in urban cities. Studies reveal that the reasons for this concentration are the reluctance of doctors to work in rural regions, inadequate infrastructure in rural areas, and a scarcity of essential medications in rural parts of the country (Duggal, 2005).

Despite the presence of an extensive healthcare infrastructure, significant disparities in access and utilization of health services persist. These disparities primarily arise from the socioeconomic inequities that manifest in caste, class and gender differentials and the inequities in the availability, utilization and affordability of health services (Baru et al., 2010). Further, several international events and organizations have significantly contributed to the development of the health system in India. In 1978, India, along with 134 other countries, signed the Alma-Ata Declaration at the International Conference on Primary Health Care in the city of Alma-Ata, Soviet Union. The participating countries pledged to strengthen primary healthcare systems and recognize health as a fundamental right for all, leading to the ground-breaking proclamation of the commitment to “Health for All”. Following the Alma-Ata

Declaration, the Indian government enacted its first National Health Policy in 1983, which prominently reflected the influence of the conference (Priya, 2018).

2.4.1. Commercialization and Inequity in Access to Healthcare Services in India

By the early 1990s, the health sector underwent a transition from a state-provided 'health for all' approach to the commercialization of medical care due to the implementation of the Structural Adjustment Program (SAP). The health sector in India has also witnessed major policy changes along with other sectors of the economy since the adoption of SAP. Reforms formulated in Health Sector Reforms (HSR) introduced user fees, increased privatization of health services, adoption of public-private partnerships (PPP), and a reduction in the budget allocation for health. These reforms adversely affected the setting up of new infrastructure and service delivery and promoted insurance-based health care (Baru, 2003; Baru et al., 2010). Qadeer (2000) identified three key features of the evolving structure and content of the healthcare system in the post-reform period. The first was a significant reduction in public sector investment, which stunted the growth of primary health centres and led to a scarcity of resources at the secondary and tertiary levels of the health system. This, in turn, resulted in the breakdown of the referral system and the eventual dismantling of the public healthcare system.

The second feature was the dominance of international capital interests in shaping national health priorities. Donor-driven priorities caused a shift towards techno-centric reproductive and child healthcare at the expense of welfare and comprehensive healthcare. This shift also led to the emergence of several vertical programs targeting specific diseases, such as tuberculosis, leprosy, and AIDS. The third feature was the privatization of healthcare services. The Indian health sector always had mixed characteristics, whereas the private sector enjoyed some independence for a while. However, the SAP shifted the interest and dependency on healthcare services to the private players. (Qadeer, 2000).

With the emergence of the donor-driven priority structure of the health sector, multinational corporations (MNCs) have become important actors in determining the shape of health policies in India. The state also played a key role in the growth of these private players by either legitimizing them through bureaucratic control or providing them with loans, subsidies, and land at the initial stages of their establishment. Public investment in health was questioned on grounds of efficiency and quality and was determined to be wasteful of state money. (Jeffery, 2019).

In short, the agenda for health sector reforms introduced market principles in health care. It also redefined the role of the state in providing preventive and curative services. In preventive services, technology-based services like vaccination for disease control received more priority, which created a market scope for the private pharmaceutical industry. On the other hand, in curative care, primary-level health care was seen as a responsibility of the state. In contrast, the secondary and tertiary levels of care were opened to private players (Baru & Kapilashrami, 2019).

The Alma Ata Declaration (1978) gave centrality to the state and highlighted the link between development and health. This has become peripheral at the global and national levels in the context of the world economic crisis and neoliberalism (Baru & Nandy, 2008). It was argued that the new policies would make health services more productive and efficient. In addition, the commercialization of health services[10] was expected to be more efficient in improving health outcomes and delivering care to people (Baru and Nandy, 2008).

The private health sector has mainly expanded since the 1990s in India (Baru, 2003). This has created parallel systems in health care. Private health facilities, being more expensive, are used by wealthier citizens while the poor still depend on the public system. A number of studies have highlighted that the poorest of the poor depend on the affordable public health sector despite its centres being overcrowded and unhygienic. (Verma et al., 2018). Studies have also shown that the inequality in health and healthcare utilization has increased during the post-reformation period (Baru et al., 2010). A large section of society is not able to access healthcare facilities due to the increased commercialization of healthcare services (Roy, 2014).

Studies have shown that the privatization of health care has increased out-of-pocket expenditure of the rural poor people but has failed to provide basic primary healthcare needs (Selvaraj et al., 2014; Roy, 2014). The privatization of health has and continues to reduce access to medical care for most citizens. The indirect costs of publicly funded medical care have risen, pushing people with low incomes further into the margins. (Baru, 2003). The insurance-based model has contributed to the higher rate of hospitalization and surgeries, leading to an increased out-of-pocket expenditure due to the nature of an unregulated private

[10] Mackintosh & Koivusalo (2005) defined the concept of the commercialization of health care as the provision of health services through market transactions to those with financial means, involving investments, production, and financing for profit. This includes private contracting, supplying to publicly funded health care, and individual payments or private insurance. During a reform period, there was a notable increase in insurance companies competing to offer diverse medical and health insurance policies. The definition integrates liberalization, privatization, and marketization, offering a more comprehensive perspective beyond these individual terms.

sector in India (Prasad, 2018). The insurance intervention in health failed to provide financial risk protection to the underprivileged sections of society, and therefore, they are being further marginalized (Selvaraj et al., 2014). The insurance-based healthcare schemes have systematically reduced government investment in public health at the primary level and thus have failed to cater to the day-to-day medical needs of a large section of the population who do not have the luxury of having inpatient care that would compromise their daily wages (Vasan et al., 2014).

2.5. Health Services in the Tea Plantations

The development of health services associated with tea plantations in Dooars region is discussed in this section.

2.5.1. Health Services in Tea Plantations of India during the Colonial Period

The previous chapter discussed the isolation of tea plantations, the climatic conditions, and the working and living conditions within the plantations, resulting in the production of the unique nature of health and diseases in the region. Health services, as they emerged during the colonial period on the plantations, have played an important role in shaping the contemporary development of health services in the region.

One of the earliest accounts of the various services available in the plantations of the Dooars region is that of the Christopher and Bently Committee (1911). It was constituted to investigate the causes of the high occurrence of diseases like malaria and to report on the existing healthcare services in the Dooars region. The committee emphasized that the provision of healthcare services at the plantations was minimal. The planters had predominantly disregarded the investment in developing health infrastructure. Regarding healthcare services, the committee noted that a limited number of plantations in Dooars had employed resident native doctors, commonly referred to as *Doctor Babus*, who were predominantly English-speaking Bengalis (Christopher & Bently, 1911). The *Doctor Babus* were expected to reside within the tea plantations in order to manage and report medical situations that arose in the plantations. However, *Doctor Babus* lacked qualifications or professional training and did not possess medical degrees to handle day-to-day cases. Their training was limited to acting as compounders under the supervision of a qualified European doctor, who visited the plantation occasionally, primarily to attend to the needs of British officials. In emergency medical cases, plantation managers would provide certain commonly used medications listed in their Garden

Manual to the labourers. It is important to note that the provision of such medical care was entirely at the discretion of the managers (Bhattacharya, 2012).

Qualified European doctors in Northern Bengal were very few in number. Their work in the plantation was supervisory in nature, except in cases where a European fell ill. They were unavailable to the native workforce. A single European doctor was given a contract for several plantations and was responsible for looking after the healthcare services in plantations. While they were engaged as doctors for the plantations to serve the Europeans, they were simultaneously involved in private practice. The Western-educated Bengali doctors were not ready to serve the tribal labourers who dominated plantations located in the remote parts of Dooars. They hesitated to work in the plantations because of their Brahmanical notions of racial purity (Bhattacharya, 2012). Given this situation, the labourers in the plantations were forced to depend on the *Ojhas, Kabirajes, Hakims*, and other traditional practitioners for their health needs (Bhattacharya, 2012).

Bhattacharya (2012, p: 119), while studying health care within the plantation enclaves of North Bengal in colonial India, recommends that the public health and medical infrastructure in the tea plantations be analyzed in the context of their physical location and economic positions as 'enclaves of specialized medical attention'. According to her, the official discourse and the planter's perspectives stressed the fact that the 'plantations were a privileged segregated sector so far as the availability of medical care'. This was mainly because of the economic logic of investing in workers' health in order to ensure higher productivity. She argues that even though the tea plantations were the focus of government policies on public health and sites for the study of diseases prevalent in the plantation, the provision of health care did not necessarily follow the pattern of privilege to ensure better health for the labourers. She shows that the plantations adopted the rhetoric of investing to keep workers healthy. To a large extent, the planters were interested in making profits, which resulted in poor implementation of any measures with respect to health care services and the prevention of disease for workers.

In the early 1940s, the pioneering Health Survey and Development Committee was established under the chairmanship of Sir Joseph Bhore. The committee, known popularly as the Bhore Committee, was instituted by the British Government in 1943 to conduct a comprehensive assessment of the health conditions and formulate recommendations for enhancing the healthcare system during the post-independence era. The committee made observations concerning the health situation in the plantations. The section on Industrial Health of the Bhore Committee detailed the nature of health services in the tea plantations in the early 1940s by

focusing on the medical facilities in the plantations and the mining areas.[11] The report observed that from the evidence they had gathered, it was clear that 'the existing provision in plantations areas leaves much to be desired' (GoI 1946, p:76). Committee members visited two plantations in South India. According to them, the 'dispensaries maintained by the plantations were of a low standard' (GoI 1946, p: 76). One of the dispensaries was under the charge of a homoeopathic doctor. The dispensary had stocked both modern medicines as well as homoeopathic tablets. Both the dispensaries were small in size, and the standard of cleanliness was low. With respect to the plantations in North Bengal, the committee mentions that 'the conditions in the Dooars plantations in Bengal cannot be said to be better' (GoI 1946, p: 76). The committee further observed that in certain hospitals, duly qualified medical graduates were employed as doctors, whereas in smaller plantations, the services of licensed doctors were utilized. Additionally, in some plantations in the Nilgiris and in Tamil Nadu, even compounders were appointed as heads of the medical institutions. Thus, the committee clearly shows the substandard nature of healthcare services provided in the plantations, highlighting the employment of unqualified and semi-qualified personnel in hospitals. Simultaneously, the committee stressed the need to benchmark against better healthcare conditions prevailing in plantations elsewhere.

Based on information obtained from the Secretary of the Planters Association of South India, the committee notes that the total hospital capacity in the tea plantation districts amounted to 2170 beds across 81 hospitals. It was estimated that there were six beds per 1000 persons, which is approximately 25 times higher than the corresponding figure for the general population in the country as a whole (GoI, 1946). It did not consider the provision as insufficient for the plantations. Hence, what we see from the above is a continuation of the prevalent dominant understanding that plantations, as such, are the privileged units when it comes to the provisioning of health services because of the availability of medical infrastructure. However, the report failed to consider that service delivery was affected despite the availability of health facilities, given the under-qualification of medical practitioners and the absence of drugs.

2.5.2. Health Service in the Tea Plantations in the Post-Independence

One of the first-ever comprehensive surveys of medical facilities in the tea estates of India was conducted in 1947 by the Government of India under the chairmanship of Dr. E Lloyd of the

[11] In the Committee Reports, the Plantation sectors include details for all the plantations of Tea, Coffee, Rubber and others.

Directorate General of Health Services. The objective was to assess the standard of medical facilities in tea plantations and prescribe necessary standards for the same. According to Lloyd, the most significant drawback was that the health policy remained mainly in the hands of individual managers. (Lloyd, 1947). The managers received a fixed salary, but they also received a percentage of the profits. This led to decreased expenditure, which was profitable in the long run. It also affected the manager's spending on long-term health policy (GoI, 1947). To a large extent, investment in piped water or any other welfare measure was limited to a few large tea estates, which also had much irregularity. With respect to healthcare, the plantations adopted a short-term vision by focusing on profits rather than investing in health and medical infrastructure. As Bhattacharya argues (2012), the availability of health care during illness was a gift that a loyal worker might or might not receive. It largely depended on the benevolence, charity and will of individual planters and managers. The report that Dr Lloyd had submitted formed the basis of the welfare measures adopted under the Plantation Labour Act of 1951, which was enacted after Independence in 1951.

The Health Survey and Planning Committee constituted in 1959 under the Chairmanship of Dr A L Mudaliar, submitted its report in 1962. The report included a section on 'Healthcare Facilities in the Plantations'. I quote the start of this section in the report: "Extensive tea, coffee, rubber and other plantations are scattered over different parts of the country employing a sizeable number of workers. Although the "owners of some of the plantations were progressive and took good care of the health of the workers", largely the amenities provided in the plantations, in general, were "extremely poor and inadequate" (GoI 1962, p: 120). The committee categorically mentioned that the amenities provided were extremely poor and inadequate in nature.

The Mudaliar committee referred to the recommendations made by Dr Lloyd in 1947. It noted that the medical facilities available in the tea plantation were much higher than what was available to the neighbouring populations not employed on the plantations (GoI, 1962). The report observed that in some of the plantations, employers invested more in health, resulting in lower sickness rates, higher institutional attainment and a reduction in general and infant mortality rates in comparison to the general population. The report also raised concerns over the broader disparity between the plantation labourers and the general population outside the plantations. However, it is interesting to note that the report also observes that the overburden of investment in healthcare may also have negatively affected the 'economic prosperity of the plantation' (GoI 1962, p: 121). Thus, we see concern over the belief that medical care facilities

were of a higher standard in the plantations than what was available to the population in general.

Further, the committee also noted that one of the significant drawbacks in the plantations was not so much the lack of hospital and specialist facilities but the lack of public health measures. For instance, the report noted that low levels of nutrition, poor sanitation, and insufficient or unwholesome water supply were the leading causes of the low state of health, compared to the non-availability of medical facilities (GoI, 1962). Further, the officials, citing the report submitted by Dr. Lloyd Jones, praised the increasing welfare measures adopted by the planters. However, the report was critical that the State Health Department was reluctant to monitor and reinforce the provisions made under the law regarding the plantations. It was argued that the location of the plantations in remote geographical areas and the inadequacy of staff in the state health department had resulted in inadequate monitoring (GoI, 1962). This widely prevalent view continued in post-independent India. To a large extent, most of the large tea plantations in the states of Assam and West Bengal provided health facilities to their population. However, in most cases, there were problems relating to irregular staff and the unavailability of doctors and drugs. This impacted the utilization of health services.

In summary, the chapter extensively examines studies conducted on tea plantations, health, and disease in India, with a particular focus on the Dooars region in West Bengal. The chapter provides context to tea plantations, discussing global debates on plantation studies, the colonial history of plantations, labour migration, enclave economies, gender dynamics, and the crises in tea plantations in the post-economic reforms period. It also analyses the definition and approaches to studying health, health equity, the epidemiological transition, tribal health in India, and the burden of diseases in South Asian tea plantations. Furthermore, this chapter examined the development of health services and systems in India and the evolution of health services in Indian tea plantations. Based on the existing literature and scholarship across the social science disciplines, this chapter comprehensively examines the complex interrelationship between tea plantations, social security, employment and livelihood, health, and disease in South Asia, with a specific focus on India. By exploring diverse themes such as the historical backdrop of tea plantations, labour issues, gender roles, and contemporary challenges in the post-economic reforms period, the chapter provides a nuanced understanding of the subject. The exploration of health-related aspects, including definitions, approaches, epidemiological transitions, and tribal health, adds depth to the analysis. Furthermore, examining the development of health services in India and, specifically within tea plantations, offers valuable insights into the evolving landscape of healthcare. This chapter serves as a

background for the present study by exploring the intersection of plantations, health, and societal dynamics in the tea plantations in the Dooars region in West Bengal.

Chapter: III

Conceptualization and Methodology of the Study

3.1. Introduction

This chapter discusses the conceptual and theoretical framework and the methodology adopted in the thesis. The chapter is divided into seven broad sections. The first section explored the concepts of health equity and health inequality. The second section analyses the conceptual and theoretical framework of Social Determinants of Health, which has been adopted in this study to examine the health and illness of tea plantations in the Dooars region. The third, fourth, and fifth sections of the chapter present the rationale of the study, followed by the research questions and objectives of the study, respectively. The sixth section discusses the geographical location and the setting of the study area. The seventh section presents the different aspects of research methodology, data collection, and data analysis.

3.2. Health Inequity and Health Inequality

Health equity is the absence of unfair, preventable, and remediable differences in health among groups of people, defined by social, economic, geographic, or demographic factors, ensuring everyone has an opportunity to be as healthy as possible (WHO, 2021). Health inequality refers to random differences between population groups due to innate and biological factors, whereas health inequity is characterized by non-random patterns resulting from social causes. Although health inequality and health equity are frequently used interchangeably in research, there is a subtle difference between the two terms (Mohapatra, 2017). The World Health Organization (2021, p: 2) defines health inequity as "unjust differences in health between different social groups can be linked to forms of disadvantages such as poverty, discrimination, and lack of services or goods". Health equity extends beyond the mere distribution of health or the narrower focus on healthcare allocation. Health equity undeniably encompasses a broad and relevant spectrum, inherently multidimensional and integral to understanding social justice (Sen, 2002). The theoretical foundation of health inequities is rooted in social justice and explains the disparities in health across social groups. Therefore, health inequity is a normative concept that connects to inequalities deemed unfair or unjust across social groups, arising from processes rooted in society within the realm of social justice (Acharya, 2022).

Nevertheless, the growing evidence of health inequities from different corners suggests the failure to ensure health for all (Mishra, 2017). Despite substantial advancements in recent years

in attaining improved health status and increase in life expectancy, health inequity has been on the rise, particularly in developing nations (Fotso, 2006; Chopra, 2005; Mohapatra, 2017). The gap between the marginalized sections of society and the affluent class in health status has widened consistently. The poorest sections of society consistently face worse health, evident in an 18-year life expectancy gap between high- and low-income countries. Furthermore, a majority of premature deaths occurred in low- and middle-income countries, whereas the under-5 mortality rate in Africa is over eight times higher than in Europe (WHO, 2022). Several studies have found that substantial health disparities exist among various races, ethnicities, castes, genders, classes, religions, and geographical regions in different parts of the world (Das et al., 2022; Mohapatra, 2017; Mukhopadhyay, 2015; Iyer et al., 2008).

Health disparities arise from social inequalities and societal structures in the lived experiences of individuals (Weber, 2010). Indian society is highly stratified based on social identities such as caste, class, gender, and religion (Khamis et al., 2012; Thorat, 2002; Jungari et al., 2017). These social identities serve as determining factors for exclusion and discrimination, resulting in inequities in healthcare access, limited utilization of health services, and poor health outcomes in India (Borooah, 2010; Baru et al., 2010; Shaikh et al., 2018; Das et al., 2022). It is widely acknowledged that inequities in socioeconomic indicators and health outcomes have expanded over the decades among various population groups in India, particularly since the 1990s with the implementation of neoliberal economic policies (Uddin et al., 2020; Borooah, 2010).

In the late 1990s and early 2000s, several studies revealed the existence of a higher level of health inequities and demonstrated the inadequacy of existing health and social policies in reducing these equity gaps. Consequently, there was a growing realization that addressing health equity and the social determinants of health must become explicit policy priorities (Solar & Irwin, 2010).

It is important to examine health disparities in a society within a theoretical framework. It would help analyze the social structure that shapes the lived experiences of particular identity groups and, ultimately, the inequity in health. It is fundamental to understand the Social Determinants of Health (SDH) for improving health and reducing persistent health inequities (WHO, 2022).

3.3. Social Determinants of Health

Health services play an important role in the recovery process of patients so that they may perform their respective roles in society. However, the health of the population is not determined by health services alone (Qadeer, 1985). It is determined by the socio-economic context, the inequality in society, and poor environmental conditions (Basu & Basu, 2000; Smith et al., 1999).

Historically, health was considered to be influenced by the biological and physiological factors of individuals that determine health. The biomedical approach to health has remained dominant in the study of health. European industrialization brought out new sets of studies that highlighted the influence of the nature of work, working and living conditions, and wages on health. (Tulchinsky & Varavikova, 2009). Understanding the determinants of health is important to explain the occurrence of health and diseases in society. The SDH is an approach that attempts to understand the factors that influence the health of individuals as well as the community.

The social determinants of health are the conditions in which people are born, grow, live, work, and age (Braveman & Gottlieb, 2014). The distribution of resources and power at the global, national, and local levels shapes these conditions. Spiegel et al. (2015) have defined the social determinants of health as the social processes directly shaping the modes or ways of living of communities within the broader context that, in turn, influence living styles on the micro (individual/ family) scale. This includes the processes whereby those affected respond to these circumstances within and across the scales (Birn et al., 2017).

In March 2005, the WHO formed the Commission on the Social Determinants of Health (CSDH) to gather evidence on actions that can be taken to advance health equity and to catalyze a global movement to attain it (CSDH, 2008). The Commission has defined a framework for Social Determinants of Health, known as the CSDH framework. The Social Determinants of Health framework shows:

> "How social, economic and political mechanisms give rise to a set of socioeconomic positions, whereby populations are stratified according to income, education, occupation, gender, race/ethnicity and other factors; these socioeconomic positions in turn shape specific determinants of health status (intermediary determinants) reflective of people's place within social

hierarchies; based on their respective social status, individuals experience differences in exposure and vulnerability to health-compromising conditions."

-Solar & Irwin, 2010, p. 49.

The social determinants of health are largely responsible for health inequities across society. Hence, it is an important approach to understanding health inequities, the differences in health profiles within and across the countries by social group, geographic, and other factors. The inequalities are considered unfair and unjust, giving a moral and ethical dimension to the term inequity (Birn et al., 2017). However, there is a sharp difference between the concepts of the social determinants of health and health inequalities.

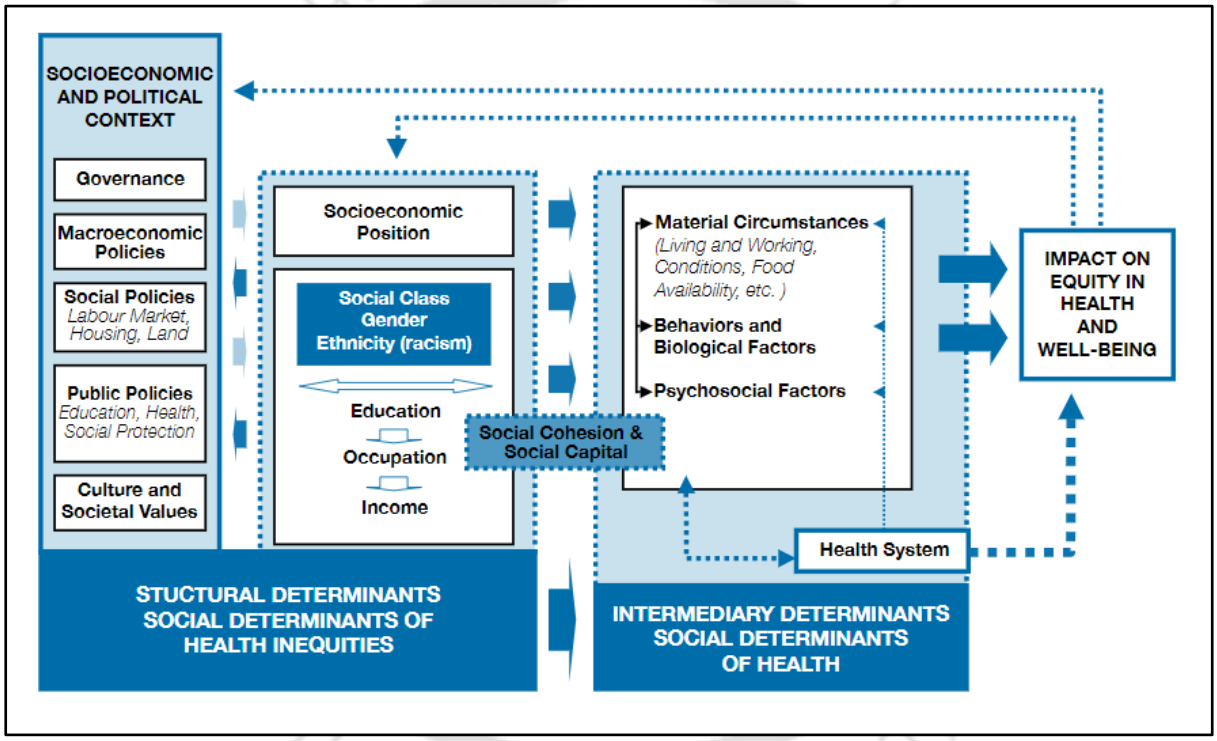

Fig 3.1: Conceptual Framework of the Commission on Social Determinants of Health (CSDH), WHO, 2010

The former is a set of social factors that influence health, while the latter is the result of the social processes that shape the unequal social distribution of health (Graham, 2004). Therefore, it is important to critically analyze how social, political, and economic structures affect patterns of health, illness, and disease within the organization under scrutiny (Doyal, 1979). In other words, it studies the distribution of diseases, illnesses, and healthcare outcomes as largely shaped and affected by the capitalistic organization of society. This concept helps us understand the processes of production and reproduction of health and ill health at multiple levels. It helps an understanding of how social determinants coexist, interact, and operate at the broadest (macro), intermediate (meso), and individual (micro) levels (Solar & Irwin, 2010).

As discussed in the earlier chapters, the tea plantations in Dooars have a distinctive social, economic, and political structure, which is different from societies outside the world of plantations in many ways (Bhowmik, 1981). The tea plantations of the Dooars region have a colonial history of exploitation. The industry has experienced several economic reforms and changes in policy and politics since independence. It is also characterized by class formation, the gendered division of labour, and ethnic diversity in the plantation population. Therefore, it is important to understand health and disease in the plantations by examining the larger economic, social, and political structures of the plantations. In this context, this study adopts the social determinants of health framework to describe, explain, and understand health and healthcare services in the context of social, political, and economic structures of the tea plantation in the Dooars region.

3.4. Rationale of the Study

Extensive scholarship exists from various disciplines on different aspects of the plantation sector in India and other countries. The history of the formation of tea plantations in Dooars and Assam (Das Gupta, 1992; Sharma, 2011), the creation of an enclave economy (Chaudhuri, 1995), the structure of class and economy (Bhowmik, 1981; Xaxa, 1997), labour history and movements (Guha, 1997; Behal, 2014), political activism and agency (Banerjee, 2017) are well documented and researched. The issues of gender, sexuality, and women's work in tea plantations have also drawn attention from researchers in recent times (Chatterjee, 2001; Banerjee, 2015; Bhadra, 1985; Bhadra, 1992; Bhadra, 2004; Sharma, 2016). However, studies on the health of tea plantation workers are limited (Rasaily, 2003). Research studies carried out on health in plantations in the Indian sub-continent offer historical contacts for the history of Western medicine, living conditions, health, and law in tea plantations (Bhattacharya, 2011; Bhattacharya, 2012; Ghosh, 2011; Dey, 2018a; Dey, 2018b). The government had also published colonial reports on disease occurrence, health, living, and working conditions in the tea plantations of Assam and North Bengal. (Rege, 1946; Christophers & Bently, 1911; Arbuthnott, 1904; Stewart, 1926; Monahan, 1910; Macdonald et al., 1931). Post-independence reports of inquiry commissions have highlighted the living, working, and health conditions of the plantation workers in India (Deshpande, 1948; Haldar, 1951). However, there are limited studies that have analyzed the continuity and changes in the development of health policies and services in the plantation sector after the tea plantation sector crisis.

Rasaily (2003), in her study, analyses the working, living, and health conditions in tea plantations in Darjeeling, North Bengal, India. The study attempts to understand the impact of

welfare interventions and document the everyday lives of workers in the tea plantations during the colonial and post-independence periods. She also examines the healthcare utilization patterns of plantation workers from both formal and informal healthcare providers. Similarly, Lama (2022), in her study based on two functional tea plantations in Darjeeling, reveals the precarious situation faced by plantation workers in terms of healthcare accessibility and the challenge of maintaining good health. The study suggests that health issues are not solely attributed to clinical factors but a series of social determinants. It reveals that accessibility, availability, and affordability of essential health services play a crucial and definitive role. Social determinants, including livelihood, poverty, working conditions, housing, food security, water and sanitation, access to basic necessities, and education, make tea plantation workers susceptible to health and illness (Lama, 2022).

In a recent research paper, Rajbangshi and Nambiar (2020) explored the social determinants of health that affect women workers in three functional tea plantations in Assam. The study identified structural, intermediary, and individual factors influencing health, including poverty, poor labour conditions, low social status, inadequate housing, sanitation, and limited access to health services, contributing to challenges faced in daily life. The authors emphasized the deep distrust in the healthcare system resulting from years of worker subjugation in the tea plantations.

Similarly, another recent research paper by Gogoi and Sumesh (2023) explored health disparities among labourers in a functional tea plantation in Assam, adopting decolonial ethnographic research methods. The study investigated persistent health inequalities and asserts that workers in tea plantations face various types of discrimination both in their workplace and within the healthcare system. The lived experiences of individual workers illustrate the continuation of prevalent social exclusion practices across society, the workplace, and healthcare institutions. The paper argues that tea plantation labourers still endure a ghettoized economy marked by confinement and strict control even after seven decades of postcolonial governance (Gogoi & Sumesh, 2023).

It is important to note that these studies have been carried out in functional tea plantations in Darjeeling district (Rasaily, 2003; Lama, 2022) and Assam (Rajbangshi & Nambiar, 2020; Gogoi & Sumesh, 2023), which have different demographic profiles, socio-political dynamics, and social realities than the abandoned plantations in Dooars region. For instance, Rasaily's (2003) work studied a tea plantation with 100 % Nepali workers in Darjeeling and covers an extended range of time, from the colonial to the postcolonial period, and does not give specific

attention to the post-reform period in the plantations. In addition, these studies are focused on functional tea plantations and have very limited scope in presenting a comprehensive overview of tea plantations with a special reference to health, illness, and health services.

The tea plantation sector in the Dooars region has been facing a crisis since the early 2000s. A large number of tea plantations in the Dooars region have been declared closed or sick and even abandoned by the estate owners. The Plantation Labour Act 1951, which aimed to protect plantation workers with social security, has also been poorly implemented (John & Mansingh, 2013; Xaxa, 2019). The crisis in the tea plantations of the Dooars region, coupled with the poor implementation of the welfare provisions in the plantations, has resulted in hunger deaths in this region. Unfortunately, there is a dearth of comprehensive research on the abandoned and closed tea plantations in the Dooars region apart from a few fact-finding reports by civil society organizations revealing the poor health outcomes, living conditions, and starvation deaths of workers in these areas (Talwar et al., 2005; CHDR, 2006; CEC, 2007). In addition, there are no exclusive studies on the health conditions and illness of the people in the abandoned tea plantations in the Dooars region, as well as the healthcare services in these tea plantations. Therefore, it is important to address this neglect of the health situation and the nature of health services in the abandoned tea plantations in the Dooars region. In this context, this study attempts to fill this research gap. The present study attempts to understand the impact of the closure of the tea plantation on the livelihood, work, and everyday life of the tea plantation communities in the Dooars region and how it has impacted their health conditions. This study also aims to explore and understand health and illness, as well as the healthcare services in the abandoned tea gardens. The present study will analyze aspects of healthcare services in plantations of the Dooars region in the post-economic reform period, in particular when the plantation crisis started and resulted in the closure of tea gardens in the Dooars. It also attempts to study the main determinants of the utilization of healthcare services and the barriers faced by people in the utilization of health services in the abandoned tea plantations of the Dooars region. Thus, the study will attempt to understand the different ways people seek medical care in a given context of the crisis and closure of the tea plantations in the Dooars region.

3.5. Research Questions

My study asks the following research questions:

1. What were the effects of the closure of the tea plantation on the livelihood, employment, and everyday lives of the tea plantation communities in the two abandoned plantations of Rethi and Patabari in the Alipurduar District of North Bengal?
2. What are the different illnesses and diseases, and what are the underlying reasons for their prevalence in the two abandoned tea plantations?
3. What is the availability of healthcare services within the two abandoned tea plantations in the Alipurduar district?
4. What are the factors that determine the utilization, and what are the main barriers to the utilization of healthcare services by the tea plantation communities in the two abandoned tea plantations?

3.6. Objectives of the Study

The study attempts to understand the following objectives:

1. Analyse the impact of the plantation crisis and subsequent closure of tea plantations on the livelihood and everyday life of tea plantation communities in the two abandoned tea plantations of Rethi and Patabari in the Alipurduar District of North Bengal.
2. Study the existing diseases and discuss the underlying cause of illness and disease in the plantation communities in the two abandoned tea plantations.
3. Study the access and availability of healthcare services in the two abandoned tea plantations.
4. Understand the major factors that determine the utilization of healthcare services and barriers faced by the tribal communities in the abandoned plantations.

3.7. Geographical Setting of the Study Area

The Northern districts of West Bengal situated on the north bank of the River Ganges, namely Darjeeling, Kalimpong, Jalpaiguri, Alipurduar, Cooch Behar, North Dinajpur, South Dinajpur, and Malda, are collectively known as North Bengal. The four major tea-growing districts of West Bengal are Darjeeling, Kalimpong, Jalpaiguri, and Alipurduar. Geographically, this area is divided into the Darjeeling Himalayan hilly region and the plains of Terai and Dooars regions (Debnath, 2010). The two districts, namely Darjeeling (except Siliguri subdivision) and Kalimpong, represent the Darjeeling Himalayan region. Until recently, Kalimpong was a subdivision of the Darjeeling district but was designated as a separate district in 2017 (Chanda,

2017). The Terai region includes the Siliguri subdivision. The entire Alipurduar district and Jalpaiguri district make up the Dooars region. Alipurduar was previously a subdivision of Jalpaiguri district but was designated as a new district in 2014. (Das et al., 2016).

The Dooars or Duars region is located at the foothills of the Eastern Himalayas and is spread over present-day West Bengal and Assam. According to a British Surveyor D.H.E. Sunder (1895), the Dooars (evolved from the Sanskrit word 'Duars', which means 'Doors') region located at the foothills of the Eastern Himalayas historically acted as the gateway and passage that connected the foothills to the mountain valleys (Sunder, 1895). There were eighteen such doors in the pre-colonial period, among which eleven doors were located in present-day West Bengal and seven in Assam. These doors refer to the passages between the Bhutan hills and the plains of India. The Dooars region is divided into the Eastern Dooars (also known as Assam Dooars) and the Western Dooars (also known as Bengal Dooars). The area between the Dhansiri River in the east and the Manas River in the west is known as Eastern Dooars, while the area between the Manas River in the east and the Teesta River in the west is known as Western Dooars. The Treaty of Sinchula, signed between the British Indian Government and the Bhutan Government in 1865, after the Indo-Bhutan Duars War (1864-1865), Annexed the Western Dooars to Bengal from Bhutan. In 1869, Jalpaiguri district was formed with the amalgamation of Terai, Dooars, and five police stations of Rangpur[12] namely Boda, Pachagarh, Tetuliya, Patgram and Debiganj (Ray, 2002).

At present, the Dooars region houses the highest number of large and organized [13] tea estates in the state of West Bengal, with a total of 150 tea estates. It is followed by the Darjeeling Himalayan region, 81 tea estates, and the Terai region, 45 tea estates. The tea plantations of the Dooars region are located in relatively isolated, remote, and inaccessible areas in the foothills. They are often surrounded by dense forests and rivers or located in the buffer zone of international boundaries (Bhattacharjee, 2012; Islam et al., 2022). The geographical location of the tea gardens makes it extremely vulnerable with respect to employment opportunities but also in cases of medical emergencies.

[12] Rangpur was a revenue and administrative division of the Mughals and later served as an administrative center of the East India Company in undivided Bengal (Ray, 2002). Rangpur is currently one of the major cities and administrative headquarters of the Rangpur Division of present-day Bangladesh.
[13] Tea estates in compliance with the criteria set by the Plantation Labour Act and recognized by the Tea Board of India.

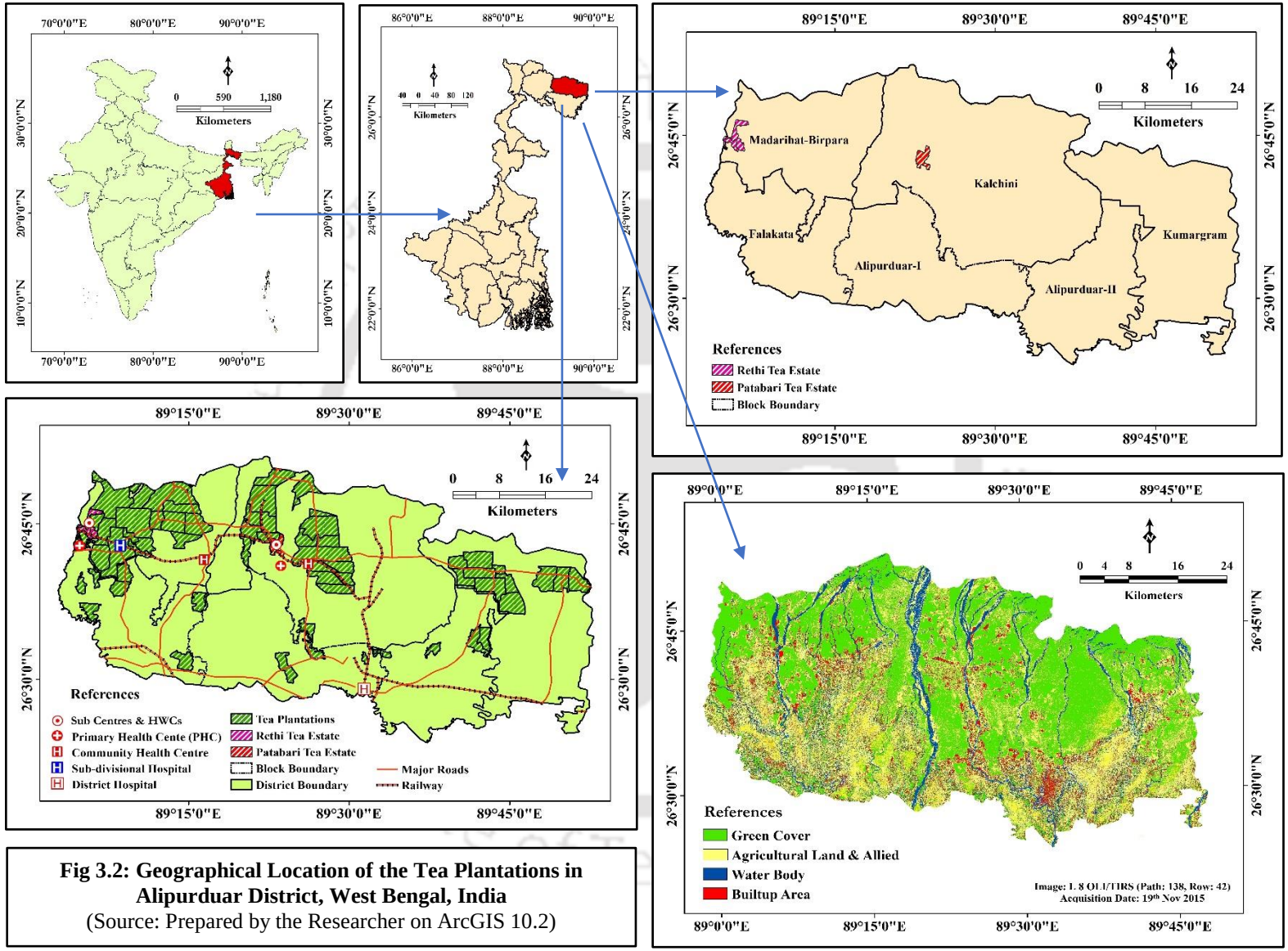

Fig 3.2: Geographical Location of the Tea Plantations in Alipurduar District, West Bengal, India
(Source: Prepared by the Researcher on ArcGIS 10.2)

The tea estates of Dooars are also known as Plantation Enclaves by virtue of their geographical inaccessibility as well as the low levels of social interaction and economic exchange with the rest of the region (Chaudhuri, 1995; Bhowmik, 1981; Bhattacharjee, 2012). Fieldwork for this study was conducted on two tea estates, the Rethi Tea Estate and the Patabari Tea Estate, located in the Alipurduar district. The first estate is geographically inaccessible, while the second is well connected by road and rail.

The Rethi Tea Estate is located in the Madarihat-Birpara block of Alipurduar district. The estate is located 75 kilometres from the district headquarters and 12 kilometres from the nearest town of Birpara. The estate is surrounded by rivers on three sides and the international Indo-Bhutan border on one. It also lies in close proximity to the Rethi Forest. The Rethi River flows on the western side of the estate, and the Rethi and Dimdima Rivers, near the estate, confluence together and flow downstream as the Rethi or Dudua River into the Jaldhaka/Mansai River. Existing between three rivers, the estate presents itself much like an island. There is no bridge or ferry to the estate, so the connection during monsoon season or flash floods disconnects the region.

The Patabari Tea Estate is located in the Kalchini block of Alipurduar district. The tea estate is located 40 km away northwest of the district headquarters and 4 kilometres from Hasimara town. The garden is located on State Highway 12A between Old Hasimara and Hamiltanganj. The Pataijhora or Patabari rivers flow through the estate surrounding the Patabari Forest, Basra River, and other tributaries of the Kaljani River. However, Patabari Tea Estate is well connected by roadways and railways (the nearest railway station, Hasimara, is located 8 km away) with the larger region. The two tea estates are located at a distance of 40 kilometres from each other. The Patabari Tea Estate is located at a distance of 18km and is well connected to the Jaigaon-Phuentsholing corridor, a major Indo-Bhutan land port and commercial hub. The Rethi Tea Estate is located 12 kilometres from the Indo-Bhutan international border near Samtse, which lacks a land port. The overall connectivity of the Rethi Tea Estate is significantly poor, given the geographical location of the tea estate compared to the Patabari Tea Estate.

The population of both the tea estates selected for fieldwork is comprised of Adivasi and Nepali communities, which are mainly Scheduled Tribe and Scheduled Caste. The major Adivasi communities are *Oraons, Mundas, Santhals, Kurmis, Baoris*, and *Kharias*, whereas the *Rai, Limbu*, and *Magars* are the dominant Nepali communities in both the tea plantations.

According to the District Census Handbook of Jalpaiguri (2011), Rethi Tea Garden has a geographical area of 580.3 hectares. The tea estate was owned by the Rethi Tea Company Private Ltd, which is registered as a Private Limited Company. Rethi Tea Estate has 567 households, a population size of 2643 persons, and a nearly uniform sex ratio. The population under six years of age is 366, with a sex ratio of 1056 girl children per 1000 boy children. The share of the Scheduled Caste population is 8.70 %, and the Scheduled Tribe Population is 46.89 % of the total population, constituting nearly 55.58 % of the total population of the estate. The literacy rate is 51.04 % in Rethi Tea Estate (Census of India, 2011).

Table 3.1: Rethi Tea Estate & Patabari Tea Estate at a glance

Details	**Rethi Tea Estate**	**Patabari Tea Estate**
Date of Establishment	09th May of 1913	1st April 1939
Year of Abandonment	August, 2002	September, 2012
Location	Madarihat-Birpara block in Alipurduar district.	Kalchini block in Alipurduar district.
Category of Estate	The estate was owned by a Private Limited Company and registered under the Plantation Labour Act 1951.	The estate was owned by a Private Limited Company and registered under the Plantation Labour Act 1951.
Area	580.3 hectares	451.42 hectares
Total Permanent Workers	602	947
Bigha (Casual) Workers	350 (Approximately)	300 (Approximately)
Total Population	2643	4540
Total Households	567	1000
Literacy Rate	51.04 %	60.24 %
Sex Ratio	1001 females per 1000 males	1033 females per 1000 males
Share of Scheduled Tribe population	46.89 %	62.78 %
Share of Scheduled Caste population	8.70 %	10.42 %
Geographical Location & Connectivity	Rethi TE is located close to the Indo-Bhutan international border and dense forest. The tea estate is surrounded by rivers from three sides, which do not have any bridge or permanent ferry system.	Patabari TE is located near the Indo-Bhutan land port and dense forest. Pataijhora River flows on the south-western side, and Basra River flows on the north-eastern side of the tea estate.
Connectivity	The roadway connectivity with the garden is very poor and gets completely cut off during the rainy season or flash floods in the Bhutan hills.	The tea estate is well connected by state highways & railways.

Source: Compiled by the researcher based on District Census Handbook of Jalpaiguri (2011), Baseline survey conducted by the Tea Board of India (2018), and fieldwork.

According to the baseline survey conducted by the Tea Board of India (2018), Patabari Tea Estate has a total area of 451.42 hectares, of which 323.08 hectares are under tea cultivation (TBI, 2018). The tea estate was owned by the Diabari Tea Co Ltd, which is registered as a Private Limited Company. According to the Census of India (2011), Patabari Tea Estate has 1000 households with a population size of 4540 persons. The sex ratio is 1033 females per 1000 males (Census of India, 2011). The population under six years of age is 476, with a sex ratio of 942 girl children per 1000 boy children. The share of the Scheduled Caste Population is 10.42 %, and the Scheduled Tribe Population is 62.78 % of the total population. The Scheduled Caste and Scheduled Tribe population together constitute 73.20 % of the total population of the estate. The overall literacy rate is 60.24 % in the Patabari estate. The Patabari Tea Estate has a significantly higher share of the Scheduled Tribe population and literacy rate than the Rethi Tea Estate.

There is also a significant time difference in the years that the two estates were abandoned. The Rethi Tea estate was abandoned by its management in August 2002, while the Patabari estate was abandoned in September 2012. The Rethi tea estate remained effectively closed for 20 years, but the Patabari Tea Estate remained closed for the last ten years. Rethi Tea Estate was abandoned by the owner in 2002 at the beginning of the crisis faced by the tea plantations of the Dooars region. In contrast, the private owners abandoned the Patabari Tea Estate in 2012, almost ten years after the crisis started. The time and duration of the closure of the two estates are important as their impact is different in terms of the everyday life, work, and health situation of the people in both tea estates.

3.8. Research Methodology

This section presents a critical analysis of the methodological considerations of this study. It highlights a comprehensive overview of the fieldwork, encompassing ethnographic and qualitative research methods, the rationale underlying the choice of tea plantations as the study area, the methods of data collection, ethical considerations, and the challenges encountered during fieldwork, along with corresponding mitigation approaches.

3.8.1. Ethnography and Qualitative Research Methods

Ethnography is widely accepted as an effective method for qualitative data collection in social science research, specifically in sociology, social anthropology, human geography, development studies, and political science (Jones & Watt, 2010). The well-reputed sociologist Karen O'Reilly (2012) defines ethnography: "Ethnography is a practice that evolves in design

as the study progresses; involves direct and sustained contact with human beings, in the context of their daily lives, over a prolonged period; draws on a family of methods, usually including participant observation and conversation; respects the complexity of the social world; and therefore tells rich, sensitive and credible stories (O'Reilly, 2012, p: 33)."

Ethnography draws from a wide range of methods, such as participant observation and in-depth interviews, to comprehend the social world. Ethnography embraces the complexity of the social world, refraining from the oversimplification implied in statistical or typological representations. It involves active engagement in the everyday lives of human agents, fostering trust and rapport. It maintains reflexivity about the researcher's role and acknowledges the intricacies of the research process (O'Reilly, 2012).

There are several important studies conducted on tea plantations in India that have used ethnography as a method of data collection.

Chatterjee (2001) adopted postcolonial feminist-ethnographic methods to examine labour practices in tea plantations in North Bengal critically. Using ethnographic and qualitative research methods, she explored the intersections of gender, class, and race, revealing how an idealized portrayal of female tea-pluckers in advertisements obscures harsh working conditions, low wages, and coercive labour practices under the patronage system in colonial and postcolonial periods.

Chaudhuri (2013), in an ethnographic study, used qualitative methods such as in-depth interviews, along with archival methods involving police records and newspaper archives in her pioneering work on witch-hunting in the tea plantations in the Dooars region. Using empirical evidence, she argued that the rise of witchcraft allegations, trials, and lynching was due to political, economic, and sexual exploitations of indigenous tribal communities of the region that left them in positions of no power and unstable employment.

Banerjee (2017), adopting an ethnographic approach, conducted semi-structured interviews and oral histories to understand the everyday nuances of activism and agency among women workers in the tea plantation workers in the Dooars. Her critical engagement with the narratives they told of their lived experiences and struggles in times of socio-political crisis explored victimhood, agency, and negotiations among women workers from the theoretical perspective of intersectionality.

Raj (2022) undertook long-term ethnographic fieldwork in the tea plantations of Kerala to examine the multifaceted crisis affecting Dalit plantation workers under global plantation

capitalism and caste hierarchy in the context of the collapsing tea industry in India. Using insider ethnographic methods, the author highlighted the profound socio-economic consequences of neoliberal economic globalization on the tea plantation system and its workforce, focusing on the Dalit workers who have been part of the plantation system for generations.

The present study is qualitative and adopts an ethnographic approach to understanding health and healthcare services in abandoned tea plantations. I offer an insider perspective on phenomena I observed in my field visits to the region as I was born and raised in a marginalized community in a tea plantation in the Dooars region. Though scholars such as Mosse (2005) and Erikson (2011) express concern about insider ethnography, implying the use of fuzzy concepts or missing out on rich ethnographic detail of the social situations and agents, feminist scholars have emphasized the importance of analyzing the researcher's positionality, privileges and reflexivity to acknowledge the power dynamics between the researcher and the researched, which may influence knowledge creation (Haraway, 1988; Conti & O'Neil, 2007). Keeping both concerns in mind, I have taken care to address the first issue by providing detailed field descriptions but also providing a detailed account of my positionality and reflexibility within the field.

3.8.2. Seeking Entry to the field: Selecting the Abandoned Tea Plantations

One important consideration for the study was the selection of tea estates in which to conduct fieldwork. I visited six functional and six abandoned and closed tea estates located in different parts of the Dooars region from October to December 2019. My original research project intended a comparison of a function and a closed tea plantation in the Dooars region. Thus, I visited and conducted preliminary research in the closed and abandoned tea plantations of Mujani Tea Estate, Rethi Tea Estate, Kalchini Tea Estate, Patabari Tea Estate, Lankapara Tea Estate, and Rethi Tea Estate. I selected Patabari Tea Estate and Rethi Tea Estate as representatives of closed estates given their differences in geographical location and the period of abandonment by their owners.

I abandoned my initial idea of a comparative research work on learning that permissions for fieldwork in functional plantations were extremely difficult without social connections to their owners or their head offices in the state capital of Kolkata, West Bengal. I started with the belief that I would have easy access to data collection as I was from a tea estate. Members of my family continue to work on plantations in the Dooars region as labourers and sub-staff. I

approached Mr. S.K. Bansal[14], the *Barra Sahib* (General Manager) of the tea estate where I was born. He expressed reservations and was apprehensive about 'allowing' me to conduct fieldwork in the tea estate. He held the opinion that posing questions regarding health and healthcare facilities to the labourers could potentially trigger 'unnecessary chaos' in the labour lines. For example, on my third meeting with him in his office, he advised me to conduct the fieldwork in a garden located at Malbazar, nearly 100 km away from Hollong Tea Estate. I present snippets of my conversation with him as follows:

> Me: "Sir, I submitted the letter from my supervisor to your office last week…."
>
> Mr. Bansal: "I told your father the other day. I'll give you the contact details of my friend, who is (an Assistant Manager) at Malbazar Tea Estate*. You can do the survey there."
>
> Me: "Sir, it would be good for my thesis if I could do the fieldwork here."
>
> Mr. Bansal: "See, my child, I want you to do well and get your degree. I can write a letter for you that you have gathered the field survey experience here in this garden. I know how important are these 'experience' letters. I have done my MBA from a top (private) institute. You submit this letter to your department."
>
> Me: "Thank you, sir. But I want to do the fieldwork."
>
> Mr. Bansal: "You know that our garden has reopened only a few years back. So, it is not a good idea to roam around the labour lines asking questions about their health status. It may create trouble for you and for me as well. I can't take this risk. So, I suggest you take this letter from here or do the survey in Malbazar."
>
> (Fieldnotes, 5th Sept 2019, Jaldapara Tea Estate, Alipurduar)

He also expressed reservations regarding my presence and emphasized the complexities of my role as a researcher in this context. He was reluctant to let me conduct fieldwork fearing that my inquiries about health and healthcare facilities may cause unrest among the labourers.

The tea estates of Dooars are closely guarded places where workers are under total control and constant monitoring of the estate management. One has to obtain special permission from the

[14] In most of the tea estates of Dooars, the general managers are from upper caste/class and business communities based in Rajasthan or Gujarat.

management to conduct any form of fieldwork or talk to the plantation workers. On December 2019, I decided to conduct the fieldwork at Kamalini Tea Estate, another tea estate located in close proximity to my house in the Dooars region. After a perusal of almost two weeks, the General Manager of the Kamalini Tea Estate "allowed" me and gave me a signed letter of permission to conduct fieldwork in the tea estate. But only on the condition that I have to report to his office each morning before starting my work for the day. I agreed to his condition. The next morning, I was surprised as I found that Mr. Sanatan Dutta, the Unregistered Medical Practitioner and the resident doctor of the garden, was waiting for me at the Manager's office. The doctor was instructed by the manager to "accompany" me throughout my interviews with the workers in the tea estate. He stayed with me the entire time I was in the field, closely monitoring my interactions with the tea plantation workers on health. He would often speak on behalf of the Adivasi workers. The experience of that particular day made me realize that it is not possible for me as a researcher to conduct fieldwork under such a strict arrangement of surveillance on my activities. In addition, the tea plantation labourers were also hesitant in their responses to my questions while having Mr. Dutta, a representative of the management, closely watching us. My third encounter with such surveillance came in January 2020 at the Diamond Tea Estate located in Kumargram block of Alipurduar district, 80 kilometres away from my home. I had received verbal confirmation from the General Manager of the tea estate to conduct fieldwork. However, the General Manager asked me to contact the Assistant Manager (Human Resources) of the tea estate to complete the formal procedure where I was asked to submit my questionnaires and interview schedules for the field survey. The week after, just before I started fieldwork, he expressed concern regarding my questionnaire, specifically the questions related to health, housing, and the hospital of the tea estate, and asked me to remove those questions from the interview schedule.

My next meeting with the management of a functional tea estate regarding permissions for field work was similar to my previous meetings with other managers. I visited another functional tea estate in the Central Dooars region of the Alipurduar district in February 2020. The General Manager denied me access to the tea plantation citing his experience with other researchers from other Indian Universities. He said:

> You people come to study here and our innocent labourers tell you everything and support your research. But when you go back you write bad things in journals about our gardens and defame our reputation. I've decided to not allow this anymore. Even a leaf in the garden does not move without our permission.

(Fieldnotes, 10th February, 2020, Dooars Hope Tea Estate, Alipurduar)

My efforts to receive permission to conduct fieldwork in a functional tea estate in the Dooars region were halted in March 2020 due to the outbreak of COVID-19 in West Bengal. The nationwide lockdown to arrest the spread of COVID-19 was implemented in different phases till the second half of 2021. I was thus compelled to reorganize my research study. Even for abandoned tea estates, I had to get permission from the Operation and Management (OMC) committee and the Gram Panchayat. The abandoned tea plantations (Rethi Tea Estate and Patabari Tea Estate) were selected on grounds of their geographical location, connectivity and accessibility, and duration of abandonment by the management primarily because I was given official permission to conduct fieldwork and collect data. My research is thus limited to the two abandoned tea plantations ofRethi Tea Estate and Patabari Tea Estate.[15]

3.8.3. Positionality, Reflexivity and the Fieldwork

Positionality and reflexivity are pivotal concepts in the field of social sciences, particularly in qualitative research. Positionality refers to the social and historical context in which both the researcher and the researched are situated (Lin, 2015). It is a core aspect of qualitative research that requires a critical examination of how knowledge and experience are situated, co-constructed, and historically and socially located. In other words, it is the understanding of how the researcher's subjective position, influenced by their social, cultural, and personal background, shapes their perceptions and interpretations throughout the research process (Reich, 2021).

On the other hand, reflexivity involves an active acknowledgment and critical examination of the researcher's biases and assumptions, encouraging self-awareness and transparency in their work. As Finlay and Gough (2003) note, reflexivity is a fundamental element in qualitative research, enabling researchers to understand the potential impact of their subjectivity on data collection, analysis, and interpretation.

Positionality and reflexivity play a crucial role in shaping the ethnographic fieldwork experience. Our multiple identities undoubtedly impact the qualitative fieldwork as ethnographers. Though I come from a marginalized section of society, my larger ethnic identity as Bengali, which is the dominant socio-political group in the region, influences the way I navigate the field. My identity as male and affiliated with a prestigious research institution in

[15] All the names of the tea gardens and the respondents have been changed in order to ensure confidentiality of gardens and study respondents.

India inherently embodies various social, economic, and political privileges in the Dooars region.

An exploration of positionality and reflexivity in ethnographic fieldwork becomes even more intricate because I have the privileges of my gender. A majority of my respondents are women from marginalized tribal communities. The power dynamics of gender are thus always present. It affects the way I am I am perceived and received by the tea garden communities. Being aware of these gender dynamics and reflecting on how they might influence the research process and interactions with the participants is crucial for maintaining ethical and respectful engagement. It requires me to examine my own biases and assumptions critically and to continuously adapt my approach to ensure that the voices and experiences of the women in the tea gardens are genuinely heard and represented in the study.

However, I also identify as a researcher from a marginalized Scheduled Caste community, which brings forth different experiences and challenges. My lower caste identity created challenges, particularly in accessing data from government offices and institutions. This duality of identities holds significant implications for my ethnographic fieldwork, particularly as I conduct fieldwork in the tea gardens inhabited by marginalized tribal communities.

I was born and spent my childhood with my family in Hollong Tea Estate[16] before moving to different cities and states to pursue higher education. For over three decades, my father, uncle, and other extended family members have worked in this tea estate located near a renowned National Park in the Dooars region. At the initial stage of this thesis work, when I was working on the research proposal, I had intended to conduct fieldwork in the same tea estate where I had spent my childhood and a 'home'. I initially believed that conducting fieldwork in the same tea estate would offer advantages due to my familiarity with the local residents and their social dynamics. I envisioned a potential for insider ethnography, as I assumed that my ties to the community would encourage open communication. I imagined that my identity as a researcher from a marginalized scheduled caste community would provide me with insights and empathy toward the experiences of other marginalized groups in the tea gardens. However, during preliminary field visits, I quickly realized the complexities of this positionality. During the preliminary field visits, I discovered that conducting fieldwork in Hollong Tea Estate presented its own set of challenges. As I embark on this fieldwork, my Bengali male identity and association with a premier research institution have influenced the way the tea garden laborers

[16] The name of the tea estate has been changed.

perceived me. The laborers in this tea estate perceive me as a representative of the plantation management due to my father and other family members holding various subordinate positions[17] within the estate.

This perception has created a sense of mistrust which has the potential to create barriers to open communication and a genuine engagement with the community. Confronted with these challenges, I had to grapple with my positionality as both an insider and a perceived representative of the management. This realization prompted me to critically reflect on my role as an ethnographer and the impact it could have on the research process and the community under study.

My experience of belonging to a marginalized scheduled caste community affected my encounters with different public and private institutes in the region and brought out the significance of reflexivity in ethnographic research. I struggled to gain access even in my tea garden, underscoring the systemic barriers researchers from marginalized backgrounds often face in the field. My experience served as a stark reminder of the importance of acknowledging and critically engaging with one's own positionality and privilege as a researcher.

In light of these circumstances, I had to reconsider my research approach and shift my fieldwork to a different tea estate where my positionality as an insider and a representative of management would be less pronounced. This decision allowed me to adopt a more reflexive stance and address the power dynamics inherent in my research.

Thus, acknowledging and critically reflecting on my positionality and multiple identities become crucial for ensuring this ethnographic fieldwork's integrity and ethical conduct. It is essential to be aware of the power dynamics, the privileges I hold, and how these factors might shape the research process and outcomes. As researchers, acknowledging our multiple identities and engaging critically with our positionalities can lead to nuanced and ethical research outcomes. It is imperative to be sensitive to the unequal power dynamics and systemic injustices that may arise during fieldwork and actively work towards mitigating their impact on the research process (Muhammad et al, 2015). Reflexivity, therefore, becomes a central component of this study, allowing me to constantly assess my biases and assumptions and adapt my approach accordingly to foster meaningful and respectful engagement with the tea garden communities. Through this self-awareness and reflexivity, I aim to minimize the potential

[17] They have been working in the tea estate in various sub-staff positions (such as field supervisor and clerk in the accounts department), who are the intermediators between the tea estate management and the laborers.

influence of my positionality while embracing the unique perspectives it offers to enrich the understanding of the complex social dynamics in the Dooars region.

3.8.4. Building Mutual Trust and Understanding among the Researcher and Researched

As discussed above, access and entry into tea plantations to interview respondents is very difficult. It requires a network of social connections with somebody from within the tea estate. Hence, I took help from two of my friends as we studied in the same college. One of them is working as a police inspector and another is a high school teacher. They both live and work in these two tea estates. I visited Sub Centres/Health and Wellness Centre, Primary Schools, and Community Kitchens during my initial days of data collection in December 2019, I used to sit there in order to meet and talk to people, observe their daily activities, build rapport with people of the tea estates and interact with the community health workers. Conducting fieldwork in situations where a majority of the people were in tremendous distress was extremely difficult for me. I was often confronted with questions regarding who I was, what information I was collecting, and why I was doing this study. I explained the purpose of my study and why I was doing it to the people I met in the field. There was misapprehension and suspicion amongst the people regarding media personnel and other researchers in the field area. I tried then to contact the people through my friends who were from the tea gardens and this helped in gaining their confidence as they started discussing the key issues that I was keen to explore and understand. I interacted and had discussions with former workers, both men and women, families of migrants, and sub-staff of the tea estates. As I was born and brought up in the region, I have a working command over Sadri, the common language (roughly similar to Hindi) spoken by the Adivasi community in the Dooars region. I also understand the Nepali language. This has given me the privilege to talk to the tea garden communities in a much more engaging way. As I started visiting both tea plantations regularly, I became a known face among the tea plantation communities after a period. They also invited and welcomed me to festivals and ceremonies such as *Karam Puja*[18] and marriages. They asked for my assistance related to their paperwork such as the filling of application forms for different government schemes, and discussed opportunities for their children's schooling and hostel accommodation. The workers of both

[18] A significant harvest festival observed by the Adivasi Communities (Munda, Ho, Oraon, Bhumij, Kharia, Kudmi, Karmali, and others) in the Dooars region of West Bengal. This celebration, which typically falls on the 11th day of the full moon in the Hindu month of Bhado (between August and September), is dedicated to Karam-Devta, the deity associated with power, youth, and vitality for a bountiful harvest and a wish for continued good health.

the tea gardens were generous enough to offer me water, tea, *tamul* (areca nut), and often lunch during my fieldwork which I had humbly accepted with happiness.

3.8.5. Data Collection and Analysis

The pilot phase of the fieldwork was done in the months of September-October 2019. I visited several functional as well as abandoned and closed tea plantations located in different parts of the Dooars region to identify possible sites for fieldwork. I interacted with key informants such as assistant managers, general managers, Panchayat members, pharmacists, police personnel, school teachers, staff nurses at tea estate hospitals, students, and trade union leaders from the various tea estates (Table 3.4.).

The first phase of the fieldwork was carried out in December 2019. I interacted with the Auxiliary Nurse Midwives (ANM), labour commissioners, casual labours, Community Health Officers (CHO), former compounders, trade union leaders, general managers, permanent labourers, panchayats, representatives of the Dooars Branch of Indian Tea Planter's Association (DBITPA), Self Help Groups, sub-staffs, Operation and Management Committees of Rethi Tea Estate and Patabari Tea Estate and different government offices (Table 3.5). The two abandoned tea estates selected for fieldwork for this study are located in close geographical proximity to my house in a tea estate located in the Dooars region of West Bengal. As an insider, I have observed the plantation society and the health system closely. The second phase of my fieldwork was conducted in February 2020, November 2020, and December 2020. It was carried out in a span of several months in 2020 because of the COVID-19 lockdown.

Table 3.2: Details of Respondents at the Tea Estates

Type of Respondents	Details	Patabari TE		Rethi TE		Total		Grand Total
		Males	Females	Males	Females	Males	Females	
Tea Plantation Communities	Ex-Permanent Labour	6	8	4	7	10	15	25
	Casual Labour	4	7	4	8	8	15	23
	Migrant Labour	5	2	4	1	9	3	12
	Sub-Staff	4	2	4	1	8	3	11
	Others (Students, Unemployed, Family, etc)	3	4	2	6	5	10	15
Total Respondents		22	23	18	23	40	46	86

Source: Compiled by researcher based on fieldwork

I interacted with former cooks, support staffs, former labourers, a former ASHA worker, patients of malaria, dengue, tuberculosis, anaemia, jaundice, skin diseases, diarrhoea, pregnant women, mothers, adolescent girls, homemakers, labourers, family members, pregnant mothers,

migrant labourers, Panchayat Pradhans, Panchayat Samiti members, mining contractors, staff nurses, and trade union leaders from Rethi TE and Patabari Tea Estate (Table: 3.3 & 3.6).

Table 3.3: Details of the Respondents at the Tea Estates (Disease Specific)

Type of Respondents	Details	Patabari TE		Rethi TE		Total		Grand Total
		Males	Females	Males	Females	Males	Females	
MCH	Pregnant Woman & New born mothers	0	5	0	4	0	9	9
People Suffering from Illness	Anaemia	0	3	0	4	0	7	7
	Tuberculosis	2	1	1	2	3	3	6
	Vector Borne Diseases	3	2	1	2	4	4	8
	Waterborne Diseases	1	2	1	1	2	3	5
	Diabetes	1	1	1	0	2	1	3
	Hypertension	3	1	1	1	4	2	6
	Skin Disease	1	1	0	1	1	2	3
	Jaundice	1	1	2	2	3	3	6
	Occupational Injuries	1	0	2	1	3	1	4
	Major Surgery	2	1	0	1	2	2	4
Caregivers	Caregivers of Patients (Family, Friends, etc)	5	4	8	2	13	6	19
SAHAI Kitchen	SAHAI Beneficiaries	2	1	1	2	3	3	6
Total Respondents		**22**	**23**	**18**	**23**	**40**	**46**	**86**

Source: Compiled by researcher based on fieldwork

I also interviewed women members of Self-Help Groups (SHGs) running the State Action Against Hunger and Inequality (SAHAI) kitchens, a government scheme that distributes mid-day meals to elderly people through community kitchens. I observed the functioning of the SAHAI kitchens and Health centres for a few days and interacted with the staff and its beneficiaries. Interactions with former staff of the Patabari Tea Estate Hospital provided insights into the impact of the suspension of work at the plantations when it was closed.

I had regular telephone conversations with the healthcare providers and the community members of the closed tea estates during the COVID-19 pandemic. I also volunteered with several civil social organizations and student groups from North Bengal to help with relief work for workers in the tea plantations in the Dooars region during the COVID-19 lockdown. This allowed me to continue my interactions with communities in the tea plantations. Interactions with healthcare providers and communities included conversations related to the pandemic, employment situation, migrant workers, availability of health services, and

challenges in accessing health care. I have tried to document the changes the pandemic brought to the everyday life of these communities.

Table 3.4: Details of the Healthcare Providers interviewed

Sl. No.	Details of the Healthcare Providers	Level	Males	Females	Total
1	Community Health Officer (CHO)	Health & Wellness Centre/ Sub- Centre	0	2	2
2	Auxiliary Nurse Midwife (ANM)		0	4	4
3	Accredited Social Health Activist (ASHA)		0	5	5
4	Anganwadi Workers (AWW)	Anganwadi Centres	0	7	7
5	Anganwadi Helpers (AWH)		0	3	3
6	SAHAI Bandhobi	SAHAI Kitchen	0	3	3
7	Rural Medical Practitioners (Quack Doctors)	Community Level	3	0	3
8	Traditional Healer (Kabiraj)		2	0	2
9	Traditional Healer (Ojhamati)		1	0	1
10	Traditional Birth Attendant (Duggrin)		0	1	1
11	Medical Officer	Mobile Medical Unit (Block Level)	1	0	1
12	Pharmacist		0	1	1
13	Nurse		0	1	1
14	Laboratory Technician		1	0	1
15	Support Staff		1	0	1
16	Medical Officer at PHC	Block	2	0	2
17	Block Medical Officer of Health	Block	2	0	2
18	Chief Medical Officer of Health	District	1	0	1
19	Private Practitioners (Doctors)	District	2	0	2
	Total		**16**	**27**	**43**

Source: Compiled by researcher based on fieldwork

My fieldwork also gave me opportunities to attend political gatherings, rallies, and campaigns of different political parties and trade unions in the tea plantations ahead of the West Bengal Assembly Election of 2021. These events expanded my understanding of the problems, challenges, and demands of people in the tea estates. They also helped clarify the processes of negotiations over health services, employment, housing, education, land rights, and food security in the closed tea estates.

The third phase of fieldwork was carried out from January to February 2021 where I held discussions with former male and female workers as well as sub-staff of the tea estates. I also interviewed casual labourers, the Chief Medical Officer of Health (CMOH), members of Non-government Organisations (NGOs), activists, members of Panchayats, permanent labourers, trade union leaders, pharmacists, program coordinators of Maternal Health, rural medical practitioners, traditional birth attendants, patients with diseases such as tuberculosis, anemia, skin diseases, diarrhoea, hypertension, occupational injuries, surgery patients, mothers of

young/ undernourished children. I visited their homes for the second and third visits and talked with people I had interacted with during the previous phases of my fieldwork.

Table 3.5: Details of the Key Informants of the Fieldwork

Sl. No.	Details of the Key Informants	Level	Males	Females	Total
1	General Manager of Functional Tea Gardens*	Tea Garden	3	0	3
2	Assistant Manager of Functional Tea Gardens	Tea Garden	5	0	5
3	Trade Union Leaders Closed	Tea Garden	7	0	7
4	Operation and Management Committee	Tea Garden	6	0	6
5	Self Help Group Members	Tea Garden	0	8	8
6	Panchayat Members	Tea Garden	4	2	6
7	NGO & Activist	Block & District	4	3	7
8	Epidemiologist	Block	1	0	1
9	In-Charge of Tuberculosis Cell	Block	1	0	1
10	District Statistical Officer of Health	District	1	0	1
11	Program Coordinator, Maternal Health	District	0	1	1
12	Labour Commissioner	District	2	0	2
	Grand Total		**34**	**14**	**48**

Source: Compiled by researcher based on fieldwork

I also conducted a series of interviews with the Auxiliary Nurse Midwife (ANM), Accredited Social Health Activists (ASHAs), Anganwadi Workers (AWWs), and Anganwadi beneficiaries. I spent considerable time with the Mobile Medical Units (MMU) that visited the closed tea gardens. I also interviewed the doctors, pharmacists, laboratory technicians, and patients of the Mobile Medical Units. I keenly observed the functioning of the Anganwadi Centres, sub-centres, and Health and Wellness Centres and interacted with the staff and its beneficiaries. I conducted group discussions with women and self-help groups in the closed tea estates. I also conducted in-depth interviews with key informants such as members of the Operation and Management Committee (OMC), members and officials of the Panchayat, the Sarpanch, local trade union leaders, and politicians (Table 3.5, & 3.6).

The fourth phase of the fieldwork was conducted from November 2022 to January 2023, where I interacted with patients with various diseases such as dengue, tuberculosis, anaemia, hypertension, diabetes, jaundice, and diarrhoea; and pregnant mothers. I also interviewed healthcare providers such as Anganwadi Helpers, Anganwadi Workers, BMOHs, CHOs, doctors, epidemiologists, medical officers, rural medical practitioners, staff nurses, and traditional healers in various public and private health facilities in the region (Table:3.4 & 3.6).

Table 3.6.: Summary of Phases of Fieldwork and Data Collection Methods Used

Phase	Setting	Respondents	Data Collection Methods
Pilot Phase (Sept- Oct 2019)	Bandhabpur TE, Rethi TE, Kunjanagar TE, Diamond TE, Barobisha TE, Patabari TE, Chilapata TE, Hollong TE, Jateswar TE	Assistant Manager, General Manager, Panchayat, Pharmacist, Police, School Teacher, Staff Nurse at TE Hospital, Student, Trade Union Leader (Key Informants)	Participant Observation, Fieldwork Site Selection, Interviews, Office Visits for Permission of fieldwork.
First Phase (Dec 2019)	HWC Patabari TE, Rethi TE, Panchayat Office Rethi TE, Aryaan TE, Dooars Kannya Alipurduar, DBTPA Office Birpara, Patabari TE	ANM, Labour Commissioner, Casual Labour, CHO, Former Compounder, Trade Union Leader, General Manager, Permanent Labourer, Panchayat, Secretary DBTPA, Self Help Group, Sub-Staff, Operation and Management Committee	Participant Observation, In-depth Interviews, Focused Group Discussion, Collection of Reports, Publications and Literature form DBTPA Office, Collection of Secondary Data from Labour Commissioners Office
Second Phase (Feb, Nov, & Dec 2020)	Rethi TE. Patabari TE School, Patabari TE, Patabari TE, Patabari TE Hospital, Panchayat Office Patabari TE, PBKMS Office Birpara, SAHAI Kitchen, SAHAI Kitchen Patabari TE, Sub Centre Rethi TE	Cook & Support Staff, Former Labourer, Former ASHA, Patients: Malaria, Dengue, Tuberculosis, Anaemia, Jaundice, Skin Diseases, Diarrhea, Pregnant Women, Mothers, Adolescent Girls, Homemaker, Labourer, Family Member, Pregnant Mother, Migrant Labour, Panchayat Pradhan, Panchayat Samiti Member, SAHAI Bandhabi, SHG Members, SAHAI Beneficiary, Mining Contractor, Staff Nurse, Staff Nurse, Trade Union Leader	Participant Observation, In-depth Interviews, Collection of Reports, Leaflets, Magazines and Publications from PBKMS Office
Third Phase (Jan - Feb 2021)	Anganwadi Centre Rethi TE, CHOM Office Alipurduar, Rethi TE, HWC Patabari TE, Patabari TE, Mobile Medical Unit Rethi TE,	Anganwadi Helper, Anganwadi Worker, ASHA, ANM, Casual Labour, Chief Medical Officer of Health, Support Staff, Doctor, Laboratory Technician, NGO Activist, Operation and Management Committee, Panchayat, Permanent Labour, Pharmacist, Program Coordinator of Maternal Health, Rural Medical Practitioner, SHG Member, Staff Nurse, Statistical Cell In-charge, Traditional Birth Attendant, Patients: Tuberculosis, Anaemia, Skin Diseases, Diarrhea, Hypertension, Occupational Injuries, Surgery Patients, Mothers of Young/ Undernourished Children,	Participant Observation, In-depth Interviews, Collection of Secondary data on Diseases and Health Service Utilization from Statistical Cell at CMOH Office,
Fourth Phase (Nov 2022 - Jan 2023)	Anganwadi Centre Patabari TE, CMOH Office Alipurduar, Rethi TE, HWC Patabari TE, Latabari Rural Hospial, Madarihat Rural Hospital, Patabari TE	Patients: Dengue, Tuberculosis, Anaemia, Hypertension, Diabetes, Jaundice, Diarrhea, Pregnant Women, Mothers, Anganwadi Helper, Anganwadi Worker, BMOH, Casual Labour, CHO, College Student, Doctor, Epidemiologist, Family Member, Former Labourer, Medial Officer, Migrant Labour, Permanent Labour, Pregnant Mothers, Rural Medical Practitioner, Staff Nurse, Student, Traditional Healer, Tuberculosis Cell In-Charge	Participant Observation, In-depth Interviews, Collection of Secondary data on Diseases and Service Utilization from Tuberculosis Cell at BMOH Office, & Secondary data on IDSP from Epidemiologist office.

Source: Compiled by researcher based on fieldwork

Lastly, I held discussions and conducted interviews with family members of the former labourer, casual labourers, migrant labourers, permanent labourer, pregnant mothers, and students in both tea gardens. Data collection through fieldwork used multiple methods. I conducted in-depth interviews with the key informants as well as the community members of both the tea plantations using semi-structured and open-ended questionnaires. A detailed account of the data collection methods during fieldwork has been presented in Table No. 3.5. I prepared different semi-structured interview guides and questionnaires for different respondents such as men and women workers, community health workers, and key informants at different public and private offices (Table 3.5). I also conducted two group discussion sessions with the Self-Help Group Members from both the tea gardens. During the entire fieldwork, participant observation has been a key method of data collection. I carefully observed the functioning of the health centres, HWCs, Anganwadi Centres, and Community Kitchen located in both the tea gardens. I also carefully observed the everyday life of the tea plantation community during the fieldwork. As I was born and grew up in a tea estate in the Dooars region, my personal experience and worldview have shaped the participant's observation during the fieldwork. I learned and unlearned several things during the fieldwork, which has also reshaped my observation during the fieldwork. I recorded detailed case studies of people in the tea plantations with differing illnesses during the fieldwork. I used an electronic audio recorder to record interviews and interactions with the consent of the respondents. I also took detailed field notes in a field diary. In some cases, where recording or taking field notes was not possible due to practical reasons, I made written documentation on returning from the field.

In addition to field interviews, I collected data, books, and publications from the Office of the Chief Medical Officer of Health, Alipurduar, the Block Medical Officer of Health, Kalchini, Office of Paschim Banga Khet Majoor Samity (PBKMS), Birpara, and the Dooars Branch Indian Tea Association (DBITA), Birpara. I also collected data and information from online archives, the North Bengal University Library, regional and national newspaper articles, as well as government reports and annual reports of the Tea Board of India.

I transcribed the interviews I had with the respondents and organized and analysed them using NVivo, a qualitative data analysis computer software package. Transcriptions of the interviews and field notes were arranged thematically to analyse the primary data. The statistical data on illness and healthcare services collected from different public health institutions were tabulated

and arranged using MS Excel. The maps presented in the thesis report were prepared using the ArcGIS software.

3.8.6. Research Ethics

In social science fieldwork, research ethics ensures that the study is carried out responsibly, ethically, and with integrity, thereby enhancing the reliability and integrity of the research outcomes. It is essential to undertake fieldwork in such a way that upholds the principles of informed consent, privacy, and confidentiality, as well as preserving the rights, dignity, and autonomy of the research participants (Babbie, 2016; McCutcheon et al., 2018). Fundamentally, research ethics acts as a moral compass that guides researchers in the field, ensuring that the research is carried out with integrity, and consideration of the welfare of all parties involved (Iphofen & Tolich, 2018). It ensures the protection and well-being of research participants, safeguarding them from potential harm, violation of their rights, and exploitation (Mertens, 2016). Moreover, ethical research fosters a collaborative and respectful approach, establishing a positive relationship between the researcher and the participants, and promotes transparency, trust, and credibility in the research process, thereby enhancing the validity and reliability of the findings (Maxwell, 2013; Israel et al., 2018; Guest et al., 2018).

I have implemented various measures during and after fieldwork that adhere to prescribed guidelines to ensure a robust research ethic. Firstly, verbal consent was obtained from the community leaders such as local panchayats of the tea gardens to conduct fieldwork in their communities, places, and everyday lives. In addition, written permission and consent were obtained from the OMCs and Panchayat Offices of the respective tea estates to carry out the fieldwork and data collection. Written permission was also obtained from the Chief Medical Officer of Health, Alipurduar district, to conduct fieldwork in the public health facilities and to collect secondary data for research work. The purpose of the research was explained to the respondents before conducting interviews. Informed consent of the respondents was obtained for their participation in interviews. A voice recorder application on a smartphone was used with the interviewee's consent to record the conversations. It was a challenge, both practical and cultural, to record every interview and conversation. In such instances, detailed notes of the conversations and discussions were written in the field diary on the same day after returning from the field. The interviews and focused group discussions conducted during the fieldwork were transcribed. Pseudo-names were used in this thesis to protect the identity and anonymity of the research participants, health workers, local politicians, bureaucrats, and government

officials. However, while adopting pseudo-names, utmost care was taken to maintain the original gender and caste identity of the individuals, as the social power axes play significant roles in shaping the experience and power dynamics in society. The names of the two tea plantations where the fieldwork was carried out were also changed for the same reason while keeping the geographical and socio-political settings of the tea gardens unchanged.

3.8.7. Fieldwork during the pandemic: Challenges and Way Forward

I live in a tea estate located in the Dooars region of West Bengal. The two abandoned tea estates selected for this study lie in close geographical proximity to my house. I visited my site for data collection in early March 2020. I lived in the tea estates during the entire period of the COVID-19 lockdown. However, travel restrictions and the closure of the estates to outsiders prevented me from continuing my field visits. I had to resort to telephonic interviews with respondents willing to discuss problems related to health and life caused by the pandemic. I further involved myself in relief work during the pandemic through which we collected and distributed food grains, hygiene products, medicine, and clothes to the tea plantation communities. I also made use of this time to write a literature review for this thesis as well as editorials on the health situation in Bengal/tea plantations in Bengali newspapers. Being from the community has allowed me to observe plantation societies and the health systems from a first-person perspective. I shared solidarity with the people during the pandemic. I have also maintained regular telephonic communication with the healthcare providers and community members in the closed tea estates during the COVID-19 pandemic. I have tried to document the changes that the pandemic has brought to everyday life. It is also important to understand how the health system worked when it was exposed to a greater challenge.

The outbreak of COVID-19 altered our everyday life but also made me rethink my research questions and seek new methodologies. I had to constantly rethink ways to reach the field and correspond with my respondents. While the pandemic was a difficult time for most people, its effect on the marginalized was more pronounced. It also posed a bigger challenge to the health system than what it was used to. While this thesis wants to understand questions of health and health services in a marginalized section of society, it would be inappropriate to overlook the questions that this pandemic raised. I have thus tried to be flexible with the methodologies that I have adopted during the fieldwork and tried to go beyond the traditional methods of data collection. My voluntary work during the pandemic and the opportunities it afforded me steps outside these traditional methods.

In summary, this chapter has analyzed conceptualizations of health and wellness. It informs that the theoretical framework of this study is that of the social determinants of health. This chapter also presented the methodological issues and considerations for the study and a detailed analysis of the geographical setting of the study. The next chapter will discuss the crisis within the tea plantations in the Dooars region and its translation into the lives of plantation communities.

Chapter: IV

Tea Plantations Crisis in the Dooars Region of West Bengal

4.1. Introduction

According to one estimate, more than 850 million people in India drink tea daily. It estimates that nine out of every ten households consume tea on a daily basis. In Western countries such as the United Kingdom, approximately 165 million cups of tea are consumed daily (Banerji et al., 2019). According to the Tea Board of India (2022), the country produced 1338.63 million kg of tea in 2018, contributing to over 22 % of the global annual production of tea. In addition, India is the second largest tea producer of tea globally, following China. In India, the state of West Bengal, particularly its northern districts where the majority of tea plantations are located, ranks as the second-largest tea producer following Assam. The Northern districts of West Bengal host a total of 276 tea estates, with 150 of them located in the Dooars region. In the year 2010-2011, the tea plantations in North Bengal collectively yielded 189.21 million kilograms of tea (GoWB, 2013).

However, since the early 2000s, the tea plantations in North Bengal, especially the Dooars region, started facing a severe crisis as several tea estates started shutting down. Plantation owners either abandoned or closed their plantations. Using empirical evidence based on qualitative research methods, this chapter attempts to understand the impact of the plantation crisis and the subsequent closure of tea plantations on the livelihoods and everyday lives of the tea plantation communities in the Dooars region. It attempts to understand the crisis in the tea plantations through a detailed review of literature on tea gardens in India as well as in North Bengal. It aims to document how the plantation crisis led to the closure of the tea gardens and its impact on communities dependent on their livelihoods on tea gardens. The primary purpose of this chapter is to set a background for the subsequent chapters on illness, health, and health services in the abandoned tea plantations.

The chapter is divided into five major sections. The first section analyses the characteristics of the tea plantation in the Dooars region in post-independent India. The second section analyses the nature of economic reforms introduced in the tea plantations of India in the 1990s. The third section examines the impact of these reforms and the reasons for the untimely closure of the plantations. The fourth section analyses the life, work, and survival strategies of former tea plantation workers in the abandoned tea plantations. The fifth section discusses the formation

of the Operation and Management Committees (OMC) by the former plantation workers and the functionalities of abandoned tea plantations under the OMC committee followed by a conclusion.

4.2. Tea Plantation in the Dooars region after Independence of India

At present, India is the second-largest tea-producing country in the world after China. India accounted for 22 % of the total global production of tea in 2018 (TBI, 2022). Other significant tea-producing countries include Kenya, Sri Lanka, Turkey, Vietnam, Indonesia, and Bangladesh. However, in terms of exports, India is the fourth largest exporter after Kenya, China, and Sri Lanka, with 256.06 million kg of tea exported. India shares approximately 13.71% of total tea exports in the global market (TBI, 2022). This is primarily due to a significantly large domestic market in India which presently constitutes 21% of the total global tea consumption, unlike Kenya and Sri Lanka (Basu et al., 2010). The transformation of India's domestic market is driven by the emergence of a middle class, whose consumer preferences are influenced by increasing incomes, exposure to international lifestyles, and easy access to information (Langford, 2019). According to the 64th annual report (2017-2018) of the Tea Board of India (TBI), almost 76 % of the total production of tea is consumed within the country (TBI 2018:13).

Table 4.1: Number of Tea Estates in North Bengal

Region(s)	Administrative Area(s)	Number of Tea Estates	Total
Darjeeling Himalayan	Darjeeling Sub-Division	46	81
	Kurseong Sub-Division	29	
	Kalimpong Sub-Division	6	
Terai	Siliguri Sub-Division	45	45
Dooars	Jalpaiguri Sub-Division	33	150
	Malbazar Sub-Division	56	
	Alipurduar Sub-Division	61	
Total			**276**

Source: Report of the Survey of Tea Gardens- 2013, Joint Labour Commissioner, Govt of West Bengal, 2013

The four major tea-growing states in India are Assam, West Bengal, Tamil Nadu, and Kerala. Together they contribute 98 % of the total tea production in India (TBI 2018: 15). The state of Assam is the largest producer of tea in India, while West Bengal is the second largest contributor to tea production. In West Bengal, the tea plantations are concentrated mainly in the Northern districts. During the colonial period until 1900 A.D., a total of 134 tea estates

were established in North Bengal, with 67 located in Dooars, 8 in Terai, and 59 in hill areas. Between 1901 A.D. and 1947, an additional 95 tea estates were established, bringing the total to 229 tea estates before India gained independence. Plantations in India came under Indian ownership and management by the 1960s (Bhowmik, 1981). Tea gardens in India are currently under three categories of ownership: -public limited, private limited companies, and Government undertaking.

Table 1 highlights the distribution of tea plantations in various geographical as well as administrative regions in North Bengal. According to the Tea Garden Survey Report (2013) by the Government of West Bengal, there are currently 276 tea estates in the northern districts of West Bengal, with 150 situated in the Dooars region followed by 81 in Darjeeling Himalayan region and 45 in the Terai region. The total gross area is 162,979.128 hectares, with 101,372.58 hectares dedicated to tea plantations. In the year 2010-2011, the combined tea plantations in North Bengal produced 189.21 million kilograms of tea (GoWB, 2013).

A total of 186,559 households with a total population of 1,124,907 reside in the tea plantations in the Hill, Terai, and Dooars areas of North Bengal. There are 262,426 permanent workers and 67,440 casual (*Bigha*) workers employed in 273 tea plantations in North Bengal. In addition, out of the 235 tea estates with factories, 15,362 workers, including staff and sub-staff, are employed, while 38 tea estates have no workers in their factories. The tea estates of this region employed 16,347 sub-staffs in 269 tea estates and 564 sub-staffs (Medical) in 132 tea estates. The total number of non-workers in the tea estates of North Bengal is 872,938 (GoWB, 2013).

4.2.1. Nature of Work and Hierarchy in the Tea Plantations in the Dooars Region

The tea plantations follow an organizational work structure that includes management and labour. These are divided into four categories. The first category is occupied by management. The Manager (*Barra Sahib*) of a garden holds the highest position. A few companies also have a Superintendent of Managers to supervise the work of Managers of different plantations owned by the same company. The manager is the representative of the owner and is responsible for day-to-day work on a plantation. He is often assisted by the Assistant Manager (*Chhota Sahib*) who holds the second rank. A factory manager (*Kaul Sahib*) manages the factory as a tea plantation.

The second level is constituted by the Staff of a plantation known as *Babus*. They hold the position between the *Chhota Sahib* and the sub-staff. The next position of an Assistant Manager

is a Garden Assistant (*Bagan Babu*). The same rank as *Bagan Babu* is a *Factory Babu* who assists the *Kaul Sahib* in the factory. The *Bagan Babu* and the *Factory Babu* are the only *Babus* who do not work in the office, all other *Babus* work in the office as the term *Babu* is similar to a clerk. The senior most clerk is known as *Barra Babu* who maintains the accounts and finance.

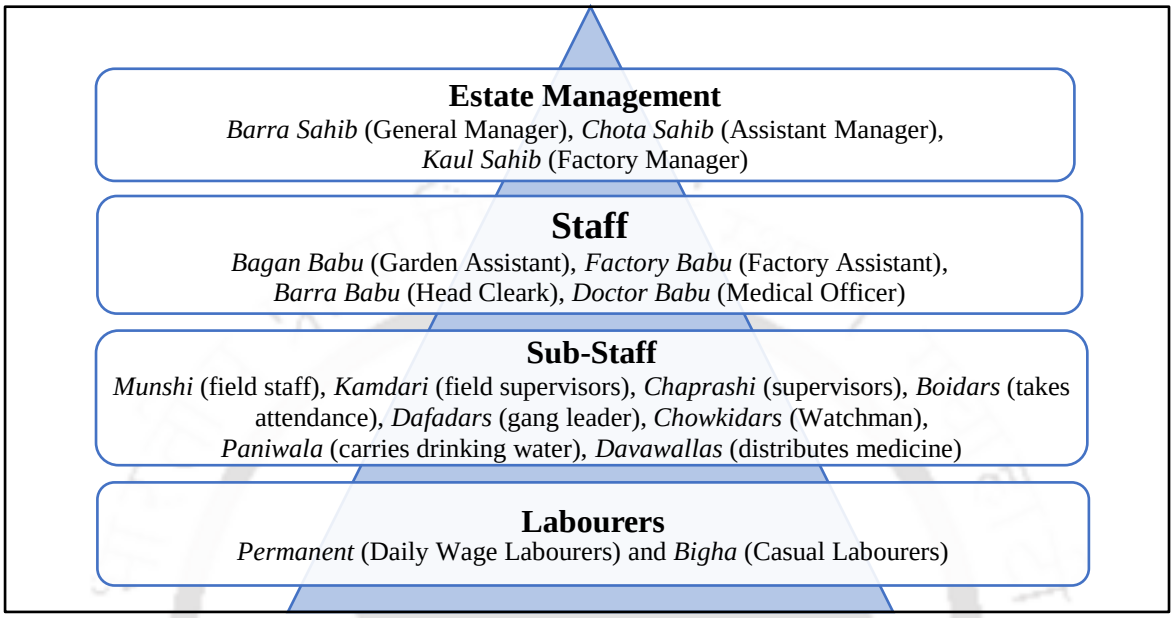

Fig 4.1: Work Hierarchy in Tea Plantations (after Bhowmik, 1981; Rasaily, 2003)

The managerial staff in the tea plantations of the Dooars were largely British, upper caste, and Western-educated Bengalis during colonial times. Currently, the *Sahibs* are largely Hindi-speaking upper-caste people from North Indian states and upper-caste Bengalis, whereas the *Babus* are mainly middle-class Bengalis (Bhowmik, 1981). The third category consists of the sub-staff in the plantation. The sub-staff supervises the daily work of the labourers in the field and acts as an intermediary between the labourers and the garden staff. The people in this category are of the same origin as the labourers (Nepalis or Adivasis) who were promoted from a lower rank. Earlier, the *Sardars* who were sent to recruit labourers from Chhotanagpur region in central India were from this category. This category consists of a variety of positions, which can be ranked as *Munshi* (field staff), *Kamdari* (field supervisors), *Chaprashi* (supervisors), *Boidars* (who takes attendance), *Dafadars* (gang leader), *Chowkidars* (watchman), *Paniwala* (carries drinking water), and *Davawallas* (distributes medicine) according to the hierarchy. The managerial staff, garden assistants, doctors, supervisors, and clerks manage the day-to-day work of labourers in plantations. These are the people in various higher positions in the occupational hierarchy in the plantations. In the plantations of Dooars, the *Sahibs* or *Babus* are

primarily upper-class and upper-caste-educated Bengalis. In the plantations, strict social order is practiced among the employees based on the hierarchy and rank of the work (Bhowmik, 1981).

The fourth and last category consists of the labourers in the plantations. The labourers in the tea plantations of the Dooars region are mainly Tribals and Dalits. They constitute the largest workforce in the plantations. There are two categories of labourers: Daily-waged labourers (permanent) and *Bigha* workers (casual) (Bhowmik, 1981; Rasaily, 2003). Women constitute a majority of the labour class and perform the work of manual plucking of tea leaves in the plantations. Apart from tea leaves plucking, women workers also perform several important works such as weeding, transplanting, manuring, nursing young tea plants, and working in tea processing factories (Bhadra, 1985). Men labourers work as pesticide sprayers, forking and cleaning soil, pruning tea bushes, driving vehicles, and occasionally plucking tea leaves.

Fieldwork for this study found that, unlike the colonial period, the current wages of manual labour for both men and women are the same. However, the fieldwork also found that women workers are only allowed to ill-paid work such as plucking. The tea planters justify this systematic discrimination by claiming that women are only suitable for jobs with limited mechanization and low-skill requirements, such as tea plucking and gardening (Sharma, 2016). This narrative of women's unsuitability for heavy work is constructed to rationalize their lower wages and to confine them to traditionally low-profile jobs.

The concept of Nimble Fingers[19] is used to argue that women are better suited for plucking work in tea plantations, reinforcing the exploitation and justification of low wages for women (Das, 2023). Furthermore, the employment structure within the tea industry limits upward mobility for women, with few opportunities in managerial, field, sub-staff, supervisory, and technician roles. This perpetuates a gender-based occupational hierarchy within the industry (Sharma, 2016; Bhadra, 2004).

The initial harvest of tea leaves known as First Flush[20] commences from early to mid-February, and typically extends to April. The peak season for tea plantations in the Dooars region occurs from May to November, reaching its zenith in the plucking season from July to September.

[19] The logic of Nimble Fingers argues that women have soft hands compared to men. Therefore, women workers possess unique abilities and are better suited for carefully selecting the optimal combination of leaves—two leaves and a bud—essential for producing the highest quality tea.

[20] First Flush tea is made of the initial leaves that appear after the winter dormancy period. These are the plant's most delicate leaves, resulting in a tea characterized by a subtle, exceptionally light color and aroma, accompanied by a gentle astringency or briskness. Consequently, First Flush tea holds greater market value compared to its alternatives.

During this period, women in particular, are required to increase their labour and pluck more than the plucking norm which is 24-25 kg per day). This increased amount of plucking is called "Doubly" for which they earn a nominal extra wage per kilogram of leaves. Conversely, from December to March, known as the slack season, female workers experience a reduction in earnings and overall family income due to diminished work volume and hours (Bhadra, 1985).

4.2.2. Limited Implementation of the Plantation Labour Act, 1951

After Independence, a series of acts and rules like the Minimum Wages Act, 1948, Employees' Provident Funds and Miscellaneous Provisions Act, 1952, Maternity Benefit Act 1961, Child Labour (Prohibition and Regulation) Act 1986, Assam Plantations Labour Rules, 1956, and West Bengal Plantations Labour Rules, 1956 were passed both at the union and state level to improve the working and living conditions, as well as providing social security to the plantation workers. These acts and rules protected the plantation laborers both economically and socially and shaped the lives of the tea plantation workers to a great extent. However, two acts in particular, the Tea Act 1953, and the Plantation Labour Act 1951 shaped the structure of tea plantations and were projected to impact the life of the plantation laboures.

The Tea Act of 1953 is one of the first examples enacted by the Parliament to bring an industrial sector (tea) under the Union Government's control, immediately after India's independence. The cultivation of tea, and export and import of tea as well as the levy of a duty of excise on tea came under the control of the government through this Act (Centre for Workers Management (CWM), 2015). The act also instituted the current Tea Board of India which was established in 1964 succeeding the Central Tea Board and the Indian Tea Licensing Committee to control the cultivation, production, export, and import of tea. In addition, the act empowered the Union Government to take over a plantation without the requirement of investigating the misconduct of plantation ownersi.e., them absconding or mismanaging an estate or its workers(CWM, 2015).

The Plantation Labour Act 1951 was passed to improve life and well-being and to protect the rights of plantation labourers. This Act entitles plantation labourers to benefits such as housing, sanitation, access to health services, canteens, crèches, access to safe drinking water, leave with wages, education for children, child care, recreation, and other facilities (PLA, 1951; John & Mansingh, 2016). These minimum welfare provisions were necessary to ensure the supply of a healthy working force for the plantations. Hence, expenditure on these services was considered an investment in increasing workers' productivity. This Act also specifies working

hours, restricts children and adolescents from being employed, and reinforces the provisions under Maternity Benefit Act, (Saha et al, 2019). States were also instructed to pass rules and guidelines. Accordingly, Assam Plantations Labour Rules, 1956) and West Bengal (West Bengal Plantations Labour Rules 1956 were passed. The Act was also amended at the central level from time to time (Plantations Labour [Amendment] Act, 2010). The act made plantation owners and management responsible for providing the benefits guaranteed to workers by the act. However, the Act was poorly implemented by the planters and reluctantly monitored by the government (John & Mansingh, 2016).

4.2.3. The Structural Challenges and the Question of Land in the Tea Plantations

The tea plantation labourers have lived in the labour lines of tea estates for generations since the colonial period. The current labour force in the tea estates of the Dooars region is composed primarily of succeeding generations of tribal and Dalit migrant workers brought in by colonial planters from the nineteenth century to the early twentieth century. The labour lines were set up within the gardens by the estate management to provide labour quarters within the tea plantations for a controlled and uninterrupted labour supply (Bhowmik, 2011). However, the labourers do not have land rights despite living in the same labour quarters in the labour lines of the tea estates for generations. Neither do they own any land inside the tea plantations nor outside the tea estates for agricultural production. The similar trend of not possessing any land by the workers was also reported in the International Labour Organization (ILO) report on the tea plantations of Bangladesh (Ahmmed & Hossain, 2016).

The private owners of the tea garden in the Dooars region have leased hundreds of hectares of land from the Land and Land Reforms Department of the Government of West Bengal. Therefore, tea gardens are categorized as private properties. This is also the reason the word tea estate is used in place of tea gardens in official documents. The tribal workers do not have land rights in the tea gardens. Fieldwork for this thesis found that land allocation for development projects on the tea plantations of the Dooars region faces problems. Respective departments have to obtain a No-Objection Certificate from the Tea Estate Management in order to establish development projects such as Anganwadi Centres, schools, sub-centres in the land of tea estates. Sunita Nag (52 years old woman from Bengali community), an Anganwadi Worker at Patabari Tea Estate, complained that the tea estate management is reluctant to give land for these projects. Sunita said:

> The *Barra Sahib* (estate manager) had given permission to use the land for only a few Anganwadi centres in the garden. Thereafter, in 2013, three new buildings were built by the department for three Anganwadi centre's in the garden. We had appealed to the estate manager many times to give land to our centres. We heard that the *Barra Sahib* had also permitted all the other centres. But, the garden closed in 2014 and the management had left the garden. Since then, we have heard that our centre will get a building but nothing happened.

Several trade unions have come together and formed a joined forum in recent years to demand land rights for the tea estate laborers of North Bengal (Das, 2023). The Tea Garden Coordination Joint Forum, an umbrella organization of 24 trade unions in the tea sector asserted their demand for land rights by saying that the people in the tea plantations are facing incalculable difficulties availing the benefits of various welfare schemes of the state as they do not have land of their own (The Statesman, 2018, p:06). Mr. Ziaul Alam, the spokesperson of the Joint Forum, in an interview with the Statesman dated 26 January 2018, said:

> Despite the over century-old settlement of the most socio-economically weak section, especially the tribal people, in tea plantations, the families there are yet to have household land rights.

During the colonial period, estate management used to provide a certain amount of land to the plantation workers for kitchen gardening and subsistence agriculture as a method of payment in kind to substitute the low wage rate of the labourers (Gupta, 1986). However, this practice no longer exists in the tea estates of Dooars. On the other hand, the plantation owners keep strict vigilance on the labour lines to ensure that the labourers of the estate are not lured away by other parties (Behal, 2014). In addition, the plantation owners did not entertain any other form of employment-generating activities within the garden to keep the people within the estate totally dependent on the plantation to ensure an uninterrupted labour supply at a low cost (Bhowmik, 2011). Therefore, once the tea plantations are abandoned or closed, the labourers do not have any scope to be dependent on agriculture as a source of livelihood. In addition, the former workers of the tea estates find it difficult to work as agricultural labourers as people are not willing to give them work as labourers in the field given that their skills were largely related to working in the plantations (Bhowmik, 2011).

4.3. Economic Reforms and the Tea Plantations of India in the 1990s

India adopted the Structural Adjustment Program (SAP) led by the World Bank and the International Monetary Fund to restructure the economy of the country. Accordingly, the tea plantation industry was exposed to the global market along with other industries as a part of the economic and trade reforms in India in the 1990s. Tariff and non-tariff barriers[21] were removed to facilitate easy market access for other countries. The plantation sector was subsequently opened up to global competition (Gowri et al., 2022).

Viswanathan and Shah (2013) examined the impact of trade reforms on Indian tea plantations during the post-reform era. They assert that the outcomes of these reforms have led to a prolonged crisis in the tea plantations, significantly influencing the future of the tea industry in India. The researchers have provided statistical evidence showcasing a substantial decline in both the quantity and per unit export prices of Indian tea in the international market after the reforms. This decline in export prices has adversely affected the profitability and viability of Indian tea plantations. Notably, Indian tea has experienced a significant drop in its international market prices, and this has been coupled with heightened competition from other tea-exporting nations such as China, Sri Lanka, Kenya, and Bangladesh in the post-economic reforms period (Viswanathan & Shah, 2013).

With the opening up of the economy, the traditional market of Indian tea faced a strong challenge from other tea-producing countries like Kenya, China, and Sri Lanka in international exports. Immediately after the reforms were introduced, the price of Indian tea in the international and domestic markets experienced a drastic fall. In the year 1991, the price of Indian tea in the international market fell almost by 14 %, whereas countries like Kenya (43 %) and Sri Lanka (27%) experienced a significant rise in the price. Countries like Kenya and Sri Lanka also increased the quantity of exports in the international market against India and China, which experienced a fall in exports post-1990s. In addition, for a long period (1991-2005), the average price of Indian tea ($ 0.206 per kg) remained low compared to Kenya ($ 1.589), China ($ 1.285), and Sri Lanka ($ 1.19) in the international market (Viswanathan and Shah, 2013). Indian tea also faced a serious threat in the export market with the collapse of the Union of Soviet Socialist Republics (USSR) in 1991, which was the largest buyer of Indian tea (Arya, 2013).

[21] Non-tariff barriers to trade (NTBs) are trade barriers that limit the import or export of goods or services using methods beyond the mere imposition of tariffs. These barriers include measures such as licensing, import quotas, packaging and labeling requirements, as well as rules related to sanitary and phytosanitary (SPS) standards.

Further, the decline in the international market also adversely influenced domestic auction prices in India as the domestic market experienced more supply. The price of tea in the market is controlled and dominated by the tea auction centres globally. The Indian auction centres account for almost 42 % of the global tea auctions. According to 2007 statistics, a large quantity (73%) of the total auctioned tea in India is dominated by the auction centres located in Eastern India (Kolkata, Guwahati, and Siliguri). The auction price of tea remained unstable and volatile in India compared to other countries. Moreover, the fall in price in the international market adversely affected the domestic price of tea in India (Viswanathan & Shah, 2013).

In the neoliberal regime, countries in the Global North raised concerns regarding the exploitative labour practices and poor working conditions in production units in the Global South (Langford, 2019). Public regulations and legal frameworks in the global south were solely responsible for regulating workers' rights. However, weak enforcement of such regulations led to the rise of privately-governed standards, including in the tea industry in India. In order to get a higher price for products in the market assured by international standard certifications, the producers were required to undergo certification processes that rigorously oversee and control their farming methods and developmental priorities (Moberg, 2014). This has given rise to the practice of the 'new geography of trade' where the 'global' actors set the standards while the 'local' actors experience them (Langford, 2019). This moral alternative of governance reflects typical neoliberal assumptions that regulation and development should be derived from consumer choices instead of state intervention (Moberg, 2014). In the Global North, market forces reinforce the standardization through certifications, such as fair-trade and Rainforest Alliance, which subjects producers in the Global South to stringent processes.

4.3.1. Fair Trade Practice (FTP) in the post-reform period

In the Western markets, like the European Union, several policies of non-tariff barriers were introduced related to environmental and labour standards in recent times. The policies are mostly in the form of Sanitary and Phyto-sanitary (SPS) measures like the Fair Trade (FT) practice to ensure environmental and labour standards. Tea plantations, along with the Fair-Trade certification, are also required to maintain very low levels of pesticide residues. These policies have put several restrictions on the import of tea from developing countries and often demand a structural change in the production system (Viswanathan & Shah, 2013).

Fair trade is an institutional framework designed to support producers in developing countries. It requires a portion of the profits to be allocated for the well-being of laborers. As per fair

trade principles, tea producers in developing nations must obtain certification from certifying bodies located in Europe or America. This practice guarantees that a consistent premium paid by buyers is specifically directed towards labor welfare, empowering marginalized producers, promoting involvement in community decision-making bodies, advocating for social justice, and facilitating women's empowerment (Neilson & Pritchard, 2010).

The fair-trade movement was very strong in Europe. India planters had to comply with certification rules in order to export in that market. It is also claimed that the recent trend of fair-trade practice in Indian plantations is important to promote social justice in the neoliberal context (Neilson & Pritchard, 2010). The fair and ethical trade certification ensures that a certain amount is invested for social welfare that will be subjected to regular monitoring. Thus, fair trade practice is argued to promote social justice among marginalized workers.

Neilson and Pritchard (2010), based on their study of the coffee and tea plantations in Southern India, argue that fair trade practices will reduce poverty amongst a certain section of the population, but a large section of the workers will remain outside its gaze and scope. The reason behind this claim is that a large number of labourers are employed on a contractual basis and thus fall outside of the jurisdiction of such acts. Therefore, a large number of casual workers who do not fall within the jurisdictions of this practice are not entitled to such fair-trade benefits.

However, Lama (2019), in her study based on two tea plantations in Darjeeling, examined the notion of the claims of practicing fair trade. The two tea estates surveyed in this study are internationally certified for practicing fair trade. She argues that the certification has helped the plantation owners capture the international market rather than improving the condition of the plantation labourers. It has a very limited impact on the social welfare of the workers. The efforts made through fair trade practices to improve the working, living, and health conditions have minimum effects on the daily lives of the workers. In reality, even the social protection benefits entitled to the labourers under the Plantation Labour Act (1951) have not been delivered.

Beskey (2008) argues that the government started seeing fair trade certification as a proxy for the implementation of the Plantation Labour Act, of 1951. Thus, the entitlement of housing, food and ration, medical, and other social protection under PLA, 1951 to the workers remained poorly implemented. Fair-trade practice is also criticized for reinforcing neoliberal policies by undermining the responsibility of the state and disbanding trade unions in the plantations

(Besky, 2008). The adaptation of fair-trade certification has limited the power of labour unions and replaced state intervention with an unaccountable non-state bureaucracy on the question of monitoring the social justice of the workers.

4.4. Implications of Reforms: Crisis in Tea Plantations in Dooars Region

Structural changes brought by neoliberal policies had several implications on the work and lives of the workers in the developing world. Harvey (2007) claims that social welfare measures, developed for the protection of workers, were systematically dismantled under neoliberalism with strategies such as flexibility, curbing trade unions, and the domination of capital over labour. Consequently, the responsibility for the social protection of workers was shifted from the employer to individual workers. The notion promoted was that protection and responsibility of protection and safety lie with the individual worker. The nature of employment in India changed rapidly in the post-reform period. The casualization of workers became a growing trend. Large-scale planters, in particular, adopted various measures of cost-cutting and prudent financial management strategies to overcome the crisis (George and Joseph, 2005). Slogans of a globalized era, like competitiveness in cost, quality, and value addition, were translated into the policies taken by plantation authorities. With a change of priorities, planters adopted strategic practices that led to further exploitation. For example, planters expected more work for less wages in an effort to increase worker productivity. These conscious efforts were formalized labour policies that shifted the burden of the crisis onto workers. (George & Joseph, 2005). Production costs were reduced by disinvestment in social protection and labour welfare so that there were cuts and freezing of daily wage rates for labourers, rates, bonuses, and other monetary entitlements. The wage rate of the labourer became stagnated, deferred, and or non-revised for a long period and the workload increased (like an increase in the quantity of tea leaves to be plucked in a day). A significant reduction was also made in non-wage or extra-wage benefits, bonuses, and incentives previously available to labourers. The welfare provisions stipulated by the Plantation Labour Act, of 1951 were either denied or reluctantly implemented. Planters also implemented a temporary closure of crèches, health centres, and non-maintenance of labour lines. (George & Joseph, 2005).

In the post-reform period, the plantation sector witnessed an increase in the rate of casual, temporary, and low-paid employment (Sundaram, 2001). Along with the increase in casual and temporary workforce, there was also a steady decline in permanent employment in tea plantations from the early 1990s to 2007 (Viswanathan & Shah, 2013). It must be noted that the casual workers had limited access to the provisions of social security measures that

permanent workers were entitled to (Srivastava 2012). The increase in the casualization of the workforce continues to be an instrument to reduce production costs and comes at the cost of compromising the economic and social protection of the workforce.

Economic reforms have also impacted the gender question on plantations where the percentage of women employees rose from 49 % in 1990-1995 to 55 % during 2002-2007 (Viswanathan & Shah, 2013). Their employment was confined to casual and temporary employment. This increase in the feminization of work in tea plantations is a strategy to increase profitability as it further reduces owner investments in the social security of workers (Viswanathan & Shah, 2013).

The crisis in tea plantation and its subsequent reforms in practice witnessed increased misery in the lives of plantation workers and their families. Gothoskar (2012) inquires into the question of the beneficiaries of the tea plantation crisis and argues that the major tea brands and tea corporate houses in India and the world significantly increased their profit margins. She explains its mechanism by stating that corporate houses bought tea from the auction houses at very low costs. They used their market power to maintain a constant low tea auction price so that the price received by the smallholder and tea growers from the tea auctions remained at a minimum. On the other hand, the corporates sold the same tea in the domestic and international markets packaging at a higher cost. Therefore, the difference between the retail price and auction price of tea increased steadily. According to Gothoskar, the corporate tea houses have significantly benefited from the crisis while on the other, the tea workers and small producers are struggling to make a living from growing tea (Gothoskar, 2012).

4.4.1. From Sick to Abandoned Tea Plantations of North Bengal

The prolonged crisis in the tea plantations in the Dooars region resulted in an abandonment of the tea estates rather than a formal closure by the owners and management of the estates. The official closure of tea estates involves applications to the State government after clearing unpaid dues to workers (Provident Funds, Gratuity, Wages, Bonus, Rations) and outstanding payments to state governments and banks (CEC, 2007). Owners conveniently bypassed these procedures and literally abandoned their estates without giving notice or settling dues (CEC, 2007; Rai, 2017; Sen, 2009). A large number of tea estates in North Bengal have outstanding dues to workers in the form of unpaid provident funds and gratuities, wages, bonuses, rations, and other facilities. These were often left pending even while the estate was open on account of, the managers, say, a non-availability of funds (Rai,

2017). Many of these estates also have pending payments to their state government in terms of land revenue and loans from various banks (CEC, 2007). Consequently, an increasing number of owners conveniently run away from the tea estates without prior notice or paying dues (Rai 2017). The management of such estates has 'abandoned' the tea gardens. However, many such abandoned estates have subsequently resumed work. Former workers and trade union leaders are supported by the district administration after forming an Operation and Management Committee (OMC) to run the gardens on a cooperative management basis. The estates are not 'Closed' in a true sense but a new form of operation has emerged as a 'stop-gap' arrangement (Ghosh 2014).

Since the early 2000s, several tea estates in the Dooars region were abandoned by the owners in different phases. However, data in the public domain on the number of tea estates that were closed or abandoned in various years remains lacking. According to an International Labour Organization Report (2005), more than 150 tea plantations had closed across the country (Shaktan, 2016). According to the 51st Annual Report (2004-05) of the Tea Board of India, 118 tea Plantations were closed between 2000 and 2005, impacting 68,442 workers. In 2007, the Dooars region had 13 abandoned tea gardens, with fluctuating numbers each year, particularly during the non-yielding seasons (CEC, 2007).

The two tea estates where the fieldwork of this study has been carried out have also experienced a similar trend of abandonment of tea estates. The owners of both estates left without notice or payment of dues to workers and banks. Mr. Bishnu Tanti, a 65 years old former sub-staff in the Rethi tea garden and the Convener of the Operation and Management Committee recollects the closure of the estate:

> It was one fine morning in August 2002. We were informed by the management that they are going to collect the wages from the head office of the garden. They never returned after that. We were not given even any order for suspension of work. To date, we do not know what is our fault and why the management left us.

Similarly, Mr Bhairav Oraon (67 years old), the former cook at the Hospital of the Patabari Tea Estate said:

> The garden was facing problems over irregular wage payments. Finally, one day in 2012, the Manager told us that he was going to collect a Bonus for the laborers from the bank at Alipurduar. He never came back and the garden was closed. The keys to the locks of the garden factory and office are still at Hasimara Police Station. we

> waited for a long time in the hope that the garden would open. But now I do not think it is going to open ever again.

It is evident that the gardens were abandoned suddenly by the management without notifying the workers of their closure. Beck (2007) explains in her study of closed tea gardens in Jalpaiguri district that most owners who abandoned their gardens where people without experience or expertise in plantations. They were ignorant of the tea business or the work that a plantation required. She claims that these new owners came into the business in search of easy money without the experience or technical expertise required to sustain it in the long run. As a consequence, when the new owners faced the crisis and challenging competition in the international market, they abandoned the tea estates leaving the workers in a vulnerable situation without even paying them their dues and wages (Beck, 2007).

A similar finding is reiterated by the Talwar Committee Report (2005). The committee was commissioned by two trade unions namely Paschim Banga Khet Majoor Samity and IUF (International Union of Food, Agricultural, Hotel, Restaurant, Catering, Tobacco and Allied Workers' Associations) to investigate closed and re-opened tea plantations in the Dooars region. The report argued that the frequent change in ownership of the tea estate severely affected the long-term sustainability of the tea plantations. The report also stated that Indian companies who bought the estates from the British learned the necessary skills to successfully manage plantations in the long run. Another group of owners and managers, derogatorily called traders by the labourers rather than planters (who have the expertise and technical know-how required in plantations emerged in the plantations of Dooars. The trader managements were interested in quick profits. Because they did not have the experience or expertise, they either sold or abandoned their estates as soon as they faced an economic crisis (Talwar et al, 2005).

4.4.2. Planters to Traders: Frequent Change in the Ownership

North Bengal is home to 276 large tea estates, which are situated in Darjeeling, Alipurduar, Jalpaiguri, and Cooch Behar Districts. These estates are predominantly owned by private organizations, private proprietorships, or private limited companies (Beck, 2007). However, the tea industry in this region faces a significant challenge due to the frequent change in ownership, which negatively impacts long-term development and sustainability. A report from the Joint Labour Commissioner in 2013 revealed that over the past ten years, 116 tea estates have been run by different managements (Beck, 2007). Many of these tea estates suffer from a

lack of development planning and investment, as the owners focus on short-term profits. As a result, when the tea estates face economic difficulties, they sell to other companies. The report of the Joint Labour Commissioner (2013) categorically mentions that these tea estates are managed by promoters who often lack consideration for long-term development planning, resulting in significant challenges to development and sustainability. Although some tea estates have been run by the same management for many years, with 160 being managed for more than ten years and 55 for more than fifty years, the frequent changes in ownership remain a challenge for the industry's long-term development.

Table 4.2: Tea Estates run by the same management in respect of the period in North Bengal, 2013

Management Period	Number of Tea Estates
Less than 10 years	116
More than 10 years	160
More than 20 years	120
More than 30 years	101
More than 40 years	67
More than 50 years	55
Total Number of Tea Estates	**276**

Source: Survey of Tea Gardens Report-2013, Joint Labour Commissioner, Govt of West Bengal, 2013

In order to focus more on buying from retail and auctions, where value accretion is strongest, some major firms, including the Tata Group and Unilever Company, have sold off much of the estates they once controlled (Nielsen & Pritchard 2008). There are also cases where the estate owners sell off their properties to people who have no prior knowledge of plantations. An iconic instance is the Ram Bahadur Thakur group which had a history of mining and purchased nine estates in Kerala in the late 1970s. With little reinvestment post immediate profits from the tea farms, all of the estates were shuttered by 2003, which resulted in the loss of jobs for close to 18,000 employees (Nielsen & Pritchard 2008). Another example is the poor management of the tea estates in West Bengal owned by Duncan Industries Limited, which shifted losses from another sector to the tea business and underinvested in the plantations as a result (Vijayabaskar & Viswanathan, 2019). The West Bengal tea plantations faced the crisis as the revenue from the tea industry was diverted to other revenue-generating industries and not reinvested to maintain or increase the quality of tea. However, Darjeeling and Assam's tea estates were able to maintain their quality, which helped them make it through the crisis (Sharma, 2022).

4.4.3. Reasons for the Abandonment of the Plantations in the Study Area

The Rethi Tea Estate was established on a land grant of 796.78 acres revived on 09th May 1913 by the Karmakar family, an influential merchant Bengali family based in Jalpaiguri (Dutta, 2001). As of 2000, it had 602 permanent workers. However, the ownership of the tea estate changed frequently in the early 2000s. In 2000, the estate was sold to a hotel owner based in Siliguri who had no earlier experience of managing a tea estate. The new owner had employed a person as general manager of the estate who was earlier employed in his hotel and therefore, failed to manage the estate due to lack of expertise in the field (WBACSC, 2004). Consequently, the estate was abandoned by the management on 21 August 2002 once it started facing economic losses. Before the estate was abandoned by the management, the workers were not given wages for three months, nor any subsidized ration for five and half months. In addition, the management had gradually taken the property of the estate such as the tractor, water generator, jeep, and 10 tons of iron over a period of six months. The tea estate owners of the region including Rethi did not even deposit the money in the Provident Fund of the workers for a significant time. It was reported that tea estate owners owe large due to the workers for wages, rations, and provident funds. In Jalpaiguri district, 60 tea estate owners defaulted in payment of INR 61.76 lakhs to the Government for not paying the land revenue for the land leased to the estates.

Patabari Tea Estate (PTE) was established on 1st April 1939 with a grant of 1055.28 acres of land to the Ghosh and Roy family, a renowned group of Indian tea planters of the colonial period based in Jalpaiguri (Dutta, 2001). The estate was owned by a Private Limited Company based in Kolkata. The company has more than 90 years of business experience in agricultural allied activities (The Economic Times, 2020). However, the ownership of the tea estate changed several times in the early 2000s. The tea garden was abandoned by the management in September 2012. Patabari Tea Estate had 947 permanent workers and more than 300 casual workers. Karampal Lohar (65 years old) an Adivasi man who worked as a *Boidar* (sub-staff) at Patabari Tea Estate informed that the tea estate was handed over to a Public Distribution System (PDS) ration dealer based in Kalchini, Alipurduar a few years before the estate was abandoned. The new owner and management did not have any expertise to run the estate. It was reported that the payment of wages, rations, and other benefits of social security had become irregular under the new management. Ultimately, the management abandoned the estate over a disagreement with the local trade unions on the payment of the Durga Puja bonus in September 2012.

4.5. Life, Work, and Survival Strategies in the Abandoned Tea Plantations of Dooars Region

The closure of tea plantations had immediate repercussions, primarily manifested in widespread unemployment that, in turn, triggered a surge in severe malnutrition and starvation deaths within the affected plantation communities (CEC, 2005; WBACSC, 2004). In the early 2000s, North Bengal's tea gardens witnessed a distressing wave of hunger and starvation-related fatalities, with estimates indicating around 1,500 deaths between 2001 and 2006, although some reports propose a higher toll (Bhowmik, 2015; Ghosh, 2014; CHDR, 2006). This dire situation garnered national and international media attention, prompting debates and discussions in the Indian parliament and judiciary (Bhowmik, 2015; WBACSC, 2004; Talwar et al., 2005). Various studies and reports by civil society organizations underscored the far-reaching consequences of plantation closures, unveiling a surge in precarious employment, human trafficking, out-migration, chronic diseases, child labor, and school dropouts within the plantation communities in the Dooars region (Ghosh, 2014; Biswas et al., 2005; CEC, 2007). However, these reports merely document the specific impacts of closure on the everyday lives of the workers in the abandoned tea plantations and the survival strategies adopted by the tribal communities. The subsequent sections of this chapter aim to explore these issues in greater detail.

4.5.1. Loss of Wages and Social Security

Historically, tea workers in the Dooars region have received consistently low wages, often compensated with both cash and in-kind benefits such as housing, rations, and health facilities (Das, 2022; Bhowmik, 2011). The prescribed minimum wage rate recommended by the Department of Labour, Government of West Bengal has yet to be enforced by tea plantation owners in the Dooars region as of December 2023. The rationale asserted by the plantation owners is that adopting the minimum wage rate is deemed unfeasible, citing crises in the export market and the loss-making nature of the tea industry. Consequently, several associations representing tea plantation owners advocated for and proposed an interim increase in the daily wage for plantation workers rather than providing a minimum wage. Surprisingly, both the state and labour trade unions agreed to this proposal back in 2015, when the prevailing wage for a tea plantation labourer stood at a mere INR 135.50 per day (UBS, 2023). Consequently, the wage for tea plantation labourers underwent incremental raises across five successive interim phases, amounting to INR 17.50, INR 17.00, INR 26.00, INR 30.00, and INR 18.00 in the subsequent years (UBS, 2023).

Presently, as of December 2023, the current wage for tea plantation labourers stands at INR 241 per day. The permanent labourers of the tea plantations in the Dooars region receive a total of INR 250.00 per day, with an additional INR 9.00 allocated for rations alongside the daily wage. In addition, there is an acute regional disparity in the wage structure of tea plantation workers in India. The wage rates in the plantations of the Southern States of India such as Kerala (INR 323.69), Tamil Nadu (INR 313.83), and Karnataka (INR 305) are much higher than in West Bengal (Xaxa, 2019).

The wage rate is settled between the state's labour department, plantation owners, and the labour unions on negotiation tables. However, the labour unions, often characterized as pro-management oriented, could never benefit from such negotiation because of their limited capacity to bargain given the fragile socio-economic position of the labourers (Xaxa, 2019). The labour unions are predominantly controlled by upper-caste and elite Bengalis, with a striking absence of the labouring class representatives, particularly Tribal and Dalit communities. Further, the presence of women is completely absent despite constituting the largest share of the plantation workforce (Banerjee, 2020; Sarkar & Bhowmik, 1998). The colonial structure of the tea plantations, with the absence of land rights and limited employment opportunities outside the tea plantations, often characterized as social enclaves, has compelled the plantation workers to remain highly dependent on the paternalistic benevolence of the plantation management (Das, 2023). The plantation management retaliated labour protests by threatening to shut down the estate, an act of collective punishment, as the lockdown of a few weeks could push the workers into starvation (Rosenblum & Sukthankar, 2014).

There are two types of workers in functional tea gardens, permanent and temporary (*Bigha workers*). It was found in the discussion with Hirendra Chandra Das (55 years old), a clerical worker in a functional tea estate in Dooars that the labourers in the tea estates of Dooars do not receive any wages or any other monetary allotment for the weekly holidays. Here, it is to be mentioned that the workers of the tea estate have only 14 days of paid leave and 3 days of unpaid leave in a year. Therefore, the monthly allotment for ration (INR 9/day) for a labourer is calculated for 26 days in a month which are INR 234 only. The women labourers need to pluck 24 kilograms of green tea leaves manually every day to be able to receive the total wage of the day. However, if a woman worker fails to pluck the tea leaves according to prescribed norms, her wage is deducted. This is applied both to permanent and casual workers. This system of wage deduction is known as *'Porota'* in the tea estates of the Dooars region. The permanent workers are also entitled to the benefits of the Employees' Provident Fund and the

social security entitlements under the PLA 1951. On the other hand, the casual or Bigha workers are not entitled to any social security benefits under the PLA, 1951. The casual workers only receive wages of INR 241 per day but not the INR 9 allotted for rations. The workers who work under the Operation and Management Committee (OMC) in the abandoned tea plantations in the Dooars region receive INR 10 to INR 15 per kilogram of green leaves plucked by them. They are also not covered by any social security benefits under the PLA, 1951. Due to the closure of the tea plantations, the workers not only lost their employment or wages in cash but also the social security benefits such as subsidized rations, fuel for cooking, health facilities, crèches, and primary schooling for children (Bhowmik, 2009).

4.5.2. Rising Unemployment in Abandoned Tea Plantations

One of the immediate impacts of the sudden abandonment of the tea gardens by the management has been the suspension of production thereby leading to a tremendous increase in unemployment. Studies conducted by the Centre for Education and Communication (CEC) have highlighted a significant decline in employment opportunities for workers and staff relying on tea gardens as their primary source of income (CEC, 2005; CEC, 2007). In one such study in Jalpaiguri district, Beck (2007) reported a staggering job loss of 25,000 workers in the 13 closed and abandoned tea gardens. However, this figure excludes casual (Bigha) workers and family members engaged in various support activities within the tea estates. The abrupt loss of livelihood has heightened the vulnerability of individuals in these deserted tea estates. It is crucial to recognize that tea gardens operate under a hierarchical structure, leading to diverse impacts on the affected workforce due to closures.

Bhowmik (2011) argues that the workers from tribal communities face enormous difficulties in finding employment in the nearby towns, even as manual workers, as all the employment-generating sectors are dominated by Bengalis, Rajasthani, and people from Hindi-speaking states. The lack of educational attainment and the absence of social networks restricts their choices of employment. The marginalization of the plantation labourers has compelled the tribal workers to restrict themselves within the plantation in search of livelihood (Bhowmik, 2011). Therefore, once the owners abandoned the tea estates, the managerial staff (*Sahibs*) and the clerks (*Babus*) left the estate and ran away immediately. However, the sub-staff workers and the workers did not have any other place to go, so, they remained in the tea estates. They were forced to adopt different livelihoods to sustain their life in an abandoned tea garden. Even among the workers, it was the casual labourers (*Bigha* labour) who were the most vulnerable

because they worked in the tea gardens at very low wages and without any social security. They were to a large extent left with no monetary savings when the garden was suddenly abandoned.

Mr. Dhananjay Tirkey (29 years old) is one of the very few young people from Patabari Tea Estate who is employed in the public sector. He has completed his graduation from a local college and currently works as a Sub-Inspector in West Bengal Police Force. His father is a former sub-staff at Patabari Tea Estate. Dhananjay said:

> The managerial staff of the Patabari Tea Garden such as the *Chota Sahib, Barra Babu, Chota Babu, Factory Babu, Bagan Babu, and Daktar Babu*, were all Bengalis. They had come to the tea garden from outside, and they left the garden immediately after the closure. However, the sub-staffs such as *Supervisors, Kamdari, Boidars, Dafadars, Hospital Workers*, and *Sardars* were the local Bengalis, Adivasis, and Nepalis. They worked as intermediaries between the management and the workers. The economic condition of the sub-staff category and the labourers became worse after the immediate closure of the tea garden. However, to a large extent, the labourers migrated outside the tea garden to nearby towns as well as in different parts of the country and worked as daily wage earners. It does not matter to us whether we work in the estate or outside the estate, in both places we are treated as labourers, as we do the manual unskilled work. However, the sub-staffs of the tea estates enjoyed a powerful position within the hierarchical work structure in the tea garden. They faced difficulty in finding employment initially in the estate as well as outside. In the past, the supervisors and other staff never did any manual work. They were not ready to work alongside the labourers and work as daily wage earners after the closure of the estate. It becomes a matter of their prestige.

The present study shows that the abandonment of the tea plantation led to unemployment for all. The workers responded by migrating out of the gardens to cities and other states in search of livelihood in the form of precarious employment and physical manual work. Given their economic situation, they were not in a position to sustain themselves without work. The sub-staff category, on the other hand, found it extremely difficult to engage as daily wage workers given the self-pride and prestige of not doing manual work in their lives. It was also possible for them to survive without work for a few months/years given the fact that had access to savings and other investments. Fieldwork revealed that some of the sub-staff members with savings had the capital to start businesses such as small grocery shops, and stationery shops at local markets near the Patabari Tea Estate.

4.5.3. Increased Out Migration of Workers from Tea Plantations

The abandonment of tea gardens by management has triggered a substantial migration of workers to various cities and states across India in pursuit of employment opportunities. Recent trends indicate that a considerable number of labourers from the shuttered tea estates have relocated to cities such as Kerala, Gujarat, Maharashtra, Punjab, and Delhi. In the Dooars region, migrants predominantly find work in construction sites, restaurants, garment and textile factories, as well as other highly mechanized industries, serving as labourers (Beck, 2007; Das, 2020). Young male members of families often migrate to distant cities like Surat and Pune. Additionally, a significant portion of workers has ventured to Southeast Asian countries like Bhutan and Nepal, which are in close geographical proximity to the region. Notably, the daily wage rates for unskilled and skilled labour in Bhutan, ranging from INR 450 to 500 and INR 600 to 650, respectively, surpass the rates offered in the region, set at INR 300 for unskilled labour and INR 450 for skilled labour (Das, 2020).

4.5.4. Work as Daily Wage Labourer in Nearby Towns

Both male and female former workers of the abandoned tea gardens travel daily to the nearest urban centres and small towns in search of jobs. They work in small factories or manufacturing units, shops, stores, and construction sites, as domestic labourers, and as daily wage labourers in different sectors. Mr Ranjit Tanti (47 years old), a former worker and local trade Union Leader from Rethi TE said that the workers of Rethi Tea Estate are engaged in such works in the Binnaguri town, which is located a few kilometres across the river. The workers from Patabari Tea Estate work in the nearby town of Jaigaon town and Hasimara Air Force station as daily wage earners. According to Mr Kishore Chhetri (52 years old), a former sub-staff and Panchayat member at the Patabari Tea Estate, almost 100 to 150 people from Patabari Tea Estate travel daily by bus, trackers, and motorcycles to Jaigaon, a small town at the India-Bhutan international border[22], located 18 km away from the Patabari Tea Estate. The Jaigaon-Phuentsholing corridor is one of the major mainland ports on the India-Bhutan border. These two small settlements across the border have emerged as important business hubs in recent years. The villagers from the nearby settlements work as daily wage earners in these two towns. The wage in Jaigaon is INR 400 to 550, and INR 450-600 in Phuentsholing. Another 100-150

[22]During the COVID19 pandemic migrants from all over the country were coming back to their states but many workers from Tea gardens were stuck in Bhutan for almost four to five long months as the international border was sealed immediately during the COVID19 lockdown. The workers started walking back, trying to cross the Indo-Bhutan border when no initiatives were taken at the Government level for their return even after several months.

people from Patabari Tea Estate work in Hasimara Airforce base station on construction sites and as manual labourers. The airbase station is located 2 km away from the Patabari Tea Estate.

4.5.5. Informal Work of Stone Quarry near the Plantation

The people unable to migrate to cities or other states for work are compelled to take up informal work in the stone quarry near the tea estates. For instance, it was observed that the people from the Rethi Tea Estate mainly work on the Rethi River where they are involved in collecting sand and stone chips which are used in construction sites. The sand quarrying works are mainly taken up by children, women, and the elderly, unable to migrate and lack other livelihood opportunities. A report in a regional daily alleged that sand quarrying works promote child labour. Children of workers from the closed and abandoned tea estates are forced to work on the river bed to support their families (UBS, 2020). Mr. Barun Tanti (40 years old), a former sub-staff of the Rethi garden said:

> People are forced to work at the rivers; they collect sand and stone chips and earn very little money from this. They work the whole day, children, adults, women, everyone, and they all get INR50-100 per day. It is a very tedious job and demands hard physical labour. A large number of children in our village have dropped out of school and they are working at the rivers or somewhere else otherwise their family will die of hunger. What will they do?

The sand quarrying job is completely informal work. The workers are compelled to work at a very low wage of INR 100-150 per day based on the amount of sand and boulders they collect. It is also very precarious in nature and involves serious health implications. The workers work in cold river water for the entire day without any protective shoes which often causes cold and cough. This work also causes problems in the respiratory system as the workers are exposed to dust continuously. The quarrying work is seasonal and does not provide a livelihood throughout the year as it gets disrupted, especially during the Monsoon season. The rivers that flow through the foothills of this region are prone to flash floods. The Dooars region also receives heavy rainfall (Deb & Mukherjee, 2022).

4.5.6. Casual Workers in Functional Tea Plantations

The women workers of the two closed tea estates also work as casual or Bigha workers in the nearby functional tea estates. Women from PTE find casual employment in neighbouring tea estates such as Santali Tea Estate, Bharnobari Tea Estate, and Beech Tea Estate while women from RTE work as casual labourers in Binaguri Tea Estate and Jay Birpara Tea Estate. But the numbers are very low. A limited number of the workers from

each of these two closed estates have managed to find employment as casual workers in neighbouring tea estates.

Mr Ranjit Tanti (38 years old) a former permanent laborer at the Rethi Tea Estate said:

> Only 60-65 former labourers of Rethi, mostly women, work as *bigha* workers at Binnaguri Tea Estate. They get work when there is an extra demand for labour during the peak of the harvesting seasons when there is an increased production of tea.[23] During this time period, a tracker van comes from Binnaguri to pick up casual labourers from Rethi every morning. They earn INR 100-120 a day. However, they do not get this work regularly or for the entire year.

The abandonment of the tea estates by the management has compelled the women workers to engage in low-paid and precarious work without having any legal entitlements or social security.

4.5.7. Government Jobs for Family Members of Sub-Staff Workers

In the last 10-15 years, the closed and abandoned tea gardens have seen an increased number of public institutions such as Anganwadi Centres (AWCs), Sishu Sikha Kendra's, and community schools. The educated wives and daughters of sub-staff workers have found employment in these establishments. According to Dhananjay Tirkey (32 years old), a youth of Patabari Tea estate who works as a sub-inspector of West Bengal Police:

> These recruitments were largely done by the local panchayat and block office. The sub-staff workers used their connections and power positions to influence Panchayat offices to recruit women belonging to their families.

Thus, it becomes clear from the field that the family members of the sub-staff category workers were able to find employment in the tea estates when the government intervened by establishing several government facilities be it schools or AWCs. It is to be noted that the sub-staff category workers in the tea estates are predominantly men. When the tea estates closed, women relatives of the sub-staff gained employment as the men in their families lost employment.

4.5.8. Impact on Women Workers of Abandoned Tea Plantations

Women constitute a significant portion of the entire workforce in a tea garden. They are mainly employed as pluckers in the tea gardens. Thus, the abandonment of the tea gardens rendered

[23]The harvesting season in the tea estates of Dooars starts from February-March and last for 7-8 months.

by a majority of women workers without a livelihood. This has led to a further marginalization of women in both tea estates. The Adivasi women workers are the most vulnerable and are the worst affected by the closure of the tea estate. They have taken up works such as collecting firewood and non-timber products and stone quarrying in the river beds. Antara Kharia, a tribal woman of 27 years of age, worked as a Bigha worker at the Patabari Tea Estate. She was compelled to take up firewood collection as a livelihood option to support her family after she lost her livelihood at the tea estate. Antara goes to the nearby Patabari Forest early morning with her neighbourhood friend to collect firewood, leaving her two children (7 years and 3 years old) alone at home. One standard pile of firewood takes 3-4 days to collect and sells for INR 350 to 400 in the nearby markets. She lived alone with her children in the tea garden as her husband had migrated to Bhutan to work at construction sites as a wage labourer.

A small number of women formerly employed as sub-staff in the Patabari Tea Estate found it difficult to find any form of employment after the abandonment of the tea estate. For instance, the two Adivasi women Nirmala Kerketta (45 years old) and Susmita Minj (41 years old) who worked as nursing staff in the Patabari Tea Estate hospital lost their job after the estate was abandoned by the management. They did not find any employment in any public or private health institution after the abandonment of the tea estate. Although Nayana has been working as a record keeper with the OMC committee for some time, Susmita remains unemployed. Susmita said:

> It has become more difficult for us (the sub-staff category) to find any employment in the tea estate now. Some of the former sub-staff workers who are influential, mostly men are running the OMC. We do not have any scope of employment there also.

The male workers have largely responded by migrating out of the tea gardens after the abandonment of the tea gardens. Some women workers have also migrated to cities like Delhi and Mumbai where they largely work as domestic helpers. Beck (2007) in her study of closed tea gardens reports that from a single closed tea estate in Jalpaiguri district, at least 100 girls and women below the age of 40 migrated to Delhi, Punjab, and other places in search of livelihood as domestic help. Chakraborty (2013) argues that a significant number of teenage girls migrating from tea estates in search of better employment get trapped in human trafficking, which has become a rampant practice in this region. According to Ghosh (2014) poverty, unemployment, poor wages, lack of awareness, illiteracy, closure of tea estates, high school dropout rate, domestic violence, and lack of social support are the main reasons behind

the high levels of human trafficking from the tea estates. According to him, tribal communities lack social support. Tribal populations are largely unorganized. They lack conditions that would enable them to report incidents of human trafficking to the local police.

4.6. Formation of the Operation and Management Committee in Abandoned Tea Plantations

Patabari Tea Estate was abandoned in 2012 by the estate management who were representatives of the plantation owners. They did so without issuing a lockout notice. The abrupt closure resulted in hardships for plantation workers who were left without employment or insurance for their families. Initially, the plantation communities held onto hope, anticipating the return of management to reopen the estate and reinstate employment for the labourers. Unfortunately, this expectation went unfulfilled. After enduring two years of economic crisis, in 2014, the labourers, in collaboration with trade union leaders, undertook the initiative to resume tea leaf plucking in the deserted plantations. Local trade union leaders and Panchayat members of the Patabari Tea Estate mobilized workers and held a joint meeting. They sought permission from the district administration to open and resume work at the plantation. Though they received only verbal consent from the district administration, they recommenced work on the plantation by clearing the bushes and nurturing the tea plants in an effort to restore the estate to working condition. The labourers first cleaned the grass and bushes in the plantation before pruning and subsequent plucking of tea leaves. They jointly formed an association known as the Operation and Management Committee (OMC), comprising labourers, trade union leaders, and Panchayat members, and took charge of running the tea estate.

I conducted an in-depth interview with Mr. Kishore Chhetri (52 years old), who worked as a sub-staff member at the Patabari Tea Estate before its closure. He had also served as a Panchayat member of the community and resides in the Upper Line of Patabari Tea Estate. Mr. Chhetri played a pivotal role in organizing the labourers and initiating the resumption of work at the Patabari Tea Estate. He said:

> Not everyone can go outside the garden to work. Most of the people had no work after the estate was closed. If the shutdown continued, many of our labourers would have died of hunger. We had no choice but to resume work at the estate on our own.

Thus, began the process of getting organised to resume the plucking work in the Patabari Tea Estate. The plantation labourers started plucking tea leaves from the February 2015 harvesting

season, and sold them to external Bought-Leaf Factories[24] (BLF). Kishore Chhetri and his fellow trade union leaders at the Patabari Tea Estate convinced the labourers to resume work at the estate. The OMC consists of members of the *Babu Staff*, and representatives from the trade unions, workers, and Panchayats. The OMC is responsible for plucking, selling of tea leaves as well as payment to workers. The committee also manages other day-to-day activities in the abandoned tea estates.

However, the trade union leader feared that legal action would be taken against them for working on private property. They called the labourers to come together and work in solidarity to deal with such a situation if it arises. Chhetri claimed he used his political power to convince party leaders at the district level to handle the local administration. They also informed the district trade union leaders. Chhetri said:

> I also informed Biplab Sharma at the district level. I am Nepali, he is also Nepali. You do understand, no, what I am saying?

Biplab Sharma, a resident of the same Kalchini block, is an influential trade union as well as a political leader in the district and has held various political positions including MLA, Zilla Parishad President, District Party President, and Member of Tea Development Committee of the state. The Nepali community holds some power in the tea gardens as they are economically better situated, better organized, and politically influential. Using their position, they sought and received contracts and tenders for development projects undertaken by government bodies as these development projects include the construction of a concrete drainage system and the building of concrete roads in the labour lines as well as resuming the plucking of tea leaves in the garden.

In addition to the challenges of employment and livelihood opportunities, the closing of the plantations and subsequent suspension of work invited associated challenges for the people of the Patbari Tea Estate. According to Mr Chhetri:

> The tea bushes had grown up due to a lack of maintenance and pruning. The gardens had become full-grown forests. The elephants, leopards, and other wildlife from the nearby sanctuaries had started coming to the locality more frequently.

[24] Bought Leaf Factories do not have any plantation of their own. They buy green tea leaves from the Small Tea Gardens (which do not have factories) and abandoned tea estates. The BLF are profiting hugely by buying green leaves on cheap rates from these tea estates as they do not have to pay any social security to the workers and are able to purchase tea leaves at a much lower price than the costs incurred to grow and produce the tea leaves in the gardens. At present, there are around 70 BLFs in North Bengal (CEC, 2007).

> The wildlife has destroyed the labour quarters and started attacking domestic animals like pigs and goats at the labour lines.

There was not much need for initial capital as the cleaning and pruning work was done voluntarily by the labourers before commencing the tea leaf plucking. However, the factory and the office of the tea plantation were locked and out of order. Because the factory was not in use, there was no requirement for electricity to resume work at the plantation. The workers resumed plucking tea leaves at the Patabari Tea Estate two years after it was closed. However, the tea leaf processing factories at both the estates were still not functioning at the time of this study as reopening factories would require substantial capital machine repairs, official permission from the state for electricity connection, and authorization to sell processed tea in the auction market. The workers pluck and sell the green tea leaves to the nearby bought leaf factories or sometimes to a middleman.

4.6.1. Tea Plantation under the OMC

The plucking of leaves in the OMC reopened plantations is done by former women labourers. The leaves are then sold to nearby bought-leaf factories. Chhetri claimed that:

> We started selling the tea leaves INR 17-18 per kilogram. We gave INR 10 to the labourer for each kilogram of green tea leaves they pluck.

Under this improvised system, wages are determined by the volume of green leaves plucked by each labour. The total weight of tea leaves in kilograms is then multiplied by INR 10 to calculate her earnings. Chhetri claims that each labourer earns INR 250-300 per day, depending on the volume of tea leaves they pluck. The committee invests the remaining money, after wages, into maintenance costs such as pest control, fertilization, and maintenance of the plants. This system also pays a salary to the sub-staff category workers and members of the management committee. Chhetri claims:

> After all these expenses, we managed to save 3-4 lakhs every year. We used this money to give a bonus to the labourers during Durga Puja. Each labourer received INR 3500-4000 as a bonus during my time. We have accommodated a maximum number of labourers to work in the garden except for the people who migrated outside for better wages.

However, the new system of work at closed tea estates is not always equally participatory. The people who pluck tea leaves only receive a fixed and minimum amount of money according to the volume of the green leaves plucked. The price of the raw and green tea leaves is subject to

fluctuations according to the demand of the bought-leaf factories. For example, in October 2020, in the midst of the lockdown, the price of green tea leaves reached INR 45 to 50 per kilogram in different bought-leaf factories of Dooars. However, the labourers barely received any benefits from such market demands and price hikes.

The OMC is largely male-dominated, with only a few women members. The Committee is supposed to organize regular meetings to work transparently and ensure workers' participation (Beck, 2007). A report published by the Centre for Education and Change (2007) observed that the OMC was formed through the initiative of trade unions, the Labour Commissioner, and the District Administration for a few closed tea estates in West Bengal.

Under this new system, the labourers do not receive any social protection entitled to them under the Plantation Labour Act, 1951, and only receive wages during harvesting time. Labour needs to be put into pruning, skiffing, fertilizing, and pest control throughout the year in which workers receive no wage. The pruning and skiffing work are mainly done by male workers. The fertilizing and pest control works are done by both men and women. The cleaning of the bushes and plucking of tea leaves are predominantly done by women. Some people are also apprehensive about the cooperative structure of the new system. For instance, Susmita Minj (41 years old) the former nurse of the Patabari Tea Estate Hospital saids:

> Although it is claimed that OMC is a workers organisation, in reality, the day-to-day functions of the estate are controlled by a few men. The management committee of the tea estate is dominated by the Panchayats and politically influential men of the estate. The management committee controls the tea plucking, site selection, sales, wages, and all other monetary matters. In addition, they also determine which labourers will get jobs in the tea plucking and collection process. Therefore, not all the former labourers of Patabari Tea Estate get to work as labourers in the estates managed by the. The political affiliation of labourers often determines the selection process. In addition, the labourers who do the pruning and gardening works during the non-harvesting season without any wage are given work in the harvesting season.

Further, political parties continued to take credit for the reopening of the plantation which has led to a lot of political interference. It was observed that a single group used to organize work at the Patabari Tea Estate when it first reopened. Control over the estate has subsequently been divided into three factions, led by the three Panchayats of the PTE, who control different parts of the estate. The Panchayats are from different political parties. Associates of influential

people supervise the tea plucking process, measure the weight of plucked leaves, and take attendance of the labourers. These works were earlier done by the sub-staff workers of the estate.

Bhowmik (2011), observes that the tribal communities in tea plantations form a large part of its demography. However, they have been marginalized within the political affairs of the region, often within the plantations as well. The political decisions taken at trade union meetings are dominated by the non-tribal and non-worker Bengali population of the region (Bhowmik, 2011). The other community that holds power is Nepalis. Ghosh (2014) claims that Nepali workers in the tea gardens of the Dooars are numerically dominant, more articulate, and better placed in the economic hierarchy. Further, they also hold important positions in the tea gardens primarily working as super staff which is an important position in the power hierarchy of the plantation industry.

The sub-staff category of workers has found it difficult to find employment within the new system. Falling into the intermediary position between the management staff and the labourers of the estate, they had enjoyed the privilege of power in the original occupational hierarchy when the estates were open. The management class, who had come from outside, left the plantations when it shut down. But the sub-staff members had been inhabitants of the estate for generations and had no place to go when it shut. Due to reasons of prestige and experience, the sub-staffs found manual employment difficult within and outside the plantations.

The CEC report (2007) found malpractices of the OMCs in several tea estates and argued for proper monitoring of the committees. Beck (2007) in a study conducted in the abandoned tea estates of Jalpaiguri district argues that the provisions of regularity and transparency were often violated. She noted that often a close coterie of local leaders forms a nexus with a section of the district administration to control the decision-making process of OMCs in their favour. The OMC members are often found to be involved in corruption that deprives the labourers of their legitimate dues (Beck, 2007).

4.7. Conclusion

This chapter has attempted an understanding of the tea plantation crisis in the post-economic reform period in the Dooars region of North Bengal. It has described the manifestation and the impact of the crisis on the lives of the tribal communities living in the area in the early 2000s.Labourers working on the Rethi Tea Estate and Patabari Tea Estate not only lost

livelihood and employment when managers and owners of tea plantations abandoned their estates, but they also lost the social and legal protection that they were entitled to under PLA 1951.

Tribal labourers were already living in conditions of severe poverty and exploitation under the organizational structures of the tea plantations. The abandonment of the tea estates caused the further marginalization of the tribal labourers. This is reflected in markers such as increased unemployment, out-migration, human trafficking, and high-school dropouts amongst workers' children in the abandoned tea estates of the Dooars region. Unemployed youth are in search of livelihood and seek employment within the tea estate and in nearby urban centres. The crisis in employment has forced large sections of men and women to migrate to different cities in India.

The present study highlights that the abandonment of tea plantations in the region has disproportionately impacted women and children, making them the most severely affected. The abandonment of the estate has compelled the women and children to take up, vulnerable, low-paying, and precarious work. Although, the OMCconstituted to resume tea leave plucking work has ensured some subsistence for the few families who could find jobs as packers, employment opportunities under the OMC are not universal for everyone and the work is often low paid or unpaid. It is also dominated by elite groups of men, so its cooperative structure is undermined.

The crisis and subsequent abandonment of the tea plantations in the Dooars region have not only led to hardships in employment, livelihood, and living conditions of the tribal communities but also given rise to certain forms of diseases and illness in the communities. Therefore, the next chapter attempts to understand the nature of health and illness in the abandoned tea plantations in the Dooars region.

Chapter: V

Illness and Disease in the Abandoned Tea Plantations of the Dooars Region

5.1. Introduction

The epidemiological transition theory defines changing patterns of population age distributions, mortality, fertility, life expectancy, and causes of death (McKeown, 2009). In other words, it refers to the general shift from acute infectious and deficiency diseases to chronic non-communicable diseases (NCDs) with the economic and social development of a country. However, the Tribal Health Report (2018) has also reported that the tribal communities are facing a triple burden of diseases. The communicable diseases have remained high along with an increasing burden of non-communicable diseases among the tribal population in India such as hypertension, diabetes, and cardiovascular diseases. In addition, there is a tremendous rise in intoxication and related health issues (GoI, 2018). Therefore, this chapter attempts to understand the prevalence and underlying causes of illness and diseases among the plantation communities in the two abandoned tea plantations. In doing so, this chapter argues that the increase in the precariousness of the livelihood and lack of social security have resulted in a much more complex pattern of disease burden in abandoned tea plantations beyond the binary of communicable and non-communicable diseases. The previous chapter has clearly shown that the closure of the tea plantation has forced the tribal communities to shift from a settled form of employment in the tea plantations to an unsettled form of employment in precarious working sites such as forests and rivers. This chapter argues that this change in the nature of employment along with poverty, inequality, and lack of social security coupled with environemental conditions have given rise to a complex pattern of disease burden in the abandoned tea plantations.

This chapter attempts to understand the prevalence of different types of illness in the Dooars based on the data collected from the in-depth interviews of people in the two abandoned tea gardens, discussions with the patients, health care providers, health centres, hospitals, public health officials, and the different public health institutions. Secondly, the chapter also discusses through detailed case studies of patients suffering from different kinds of communicable and infectious diseases, chronic illness, occupational injuries, and diseases due to nutritional deficiencies, the patient's perceptions of the cause of illness as well as their beliefs about the illness. It also attempts to understand the illnesses and diseases by locating them in their socio-

economic context. This chapter is divided into seven broad sections. The first section discusses the perception of health and illness in the abandoned tea plantations in the Dooars Region. The second section analyses the maternal and child health situation in the two gardens. The third section focuses on the communicable and vector-borne diseases in the tea gardens. The fourth section discusses the non-communicable diseases in the abandoned tea plantations. The fifth section explains the environmental vulnerability and diseases in the abandoned tea plantation in the Dooars Region. The sixth section presents the occupational health hazards that the population in the tea gardens are vulnerable to given their work and location in forest areas. The seventh section raises some concerns about the nature of data reporting on health problems in the tea plantations followed by a conclusion.

5.2. Perception of Health and Illness in the Abandoned Tea Plantations in Dooars Region

It is a dominant understanding among the Tribal communities that illness is often attributed to evil spirits, witches, and black magic. It is also believed that the illness and infirmity in the human body are caused by the evil spirit. Scholars have argued that the belief system in *Dains* (witches) and *Bongas* (spirits) plays a significant role in the spiritual and moral lives of the tribal communities in the Central Provinces of India (Sinha, 2007). In a study among the Gadaba Tribes in Southern Odisha, Mishra and Roalkvam (2014) assert that the conception of health, illness, and well-being within the tribal society revolves around the belief in ancestral spirits, referred to as *Duma*. The ancestral spirits are considered potentially dangerous and require appeasement through prayers or animal sacrifices. There are various categories of evil spirits linked to the circumstances of the villagers' or ancestors' deaths, which induce diverse illnesses and bodily discomfort and influence pregnancy and childbirth situations. There are also ‘insider’ and ‘outsider’ evil spirits embedded in time and geographical space (Mishra & Roalkvam, 2014, p. 128). For instance, a young mother visiting a river in the afternoon may anger the female spirit, causing diarrhea in children. While internal evil spirits are easily appeased, dealing with outsiders is more challenging (Mishra & Roalkvam, 2014).

Similarly, the people of the abandoned tea plantations under study ascribe special attributes of safe and unsafe physical space and favorable and unfavorable times to visit the respective places. For instance, the river sides, jungles, and fellow barren land are seen as unsafe in the mid-day and evening, especially for young women and children. It is believed that the evil spirits favour these places during a particular time of the day therefore visiting these sites at

odd hours may invite *Chhita-laga* or bad touch of the evil spirit leading to illness in the human body.

It is well documented that the Adivasi people in the tea plantations of the Dooars region believe that the *Dains* or witches can do black magic and shoot arrows at people, known as *Ban-Mara* which causes serious illness in the human body (Chaudhuri, 2012). The evil spirit is harmful, especially to children, men, women, and animals. It can also cause serious illnesses in the human body such as diarrhea, malaria, tuberculosis, fever, and stomach ailments (Chaudhuri, 2012). In the tea plantations of the Dooars region, the marginalized women, especially the widows, are labeled as witches and blamed for causing illness, child, and maternal deaths and attacked for witch-hunting (Chaudhuri, 2013). In a study within the tea plantations of the Dooars region, Chaudhury and Varma (2002) observed the widespread traditional beliefs in the tea plantations, suggesting that diseases are caused by malevolent forces, angry gods, or the evil eye. Prolonged illnesses, often with fever, are attributed to supernatural wrath, evil wind, and the evil eye. The curse of the gods is believed to cause diseases like measles, paralysis, and leprosy, leading to reluctance to seek treatment to avoid displeasing the gods (Chaudhury & Varma, 2002).

Similarly, the fieldwork for the present study in the abandoned tea plantations in the Dooars region reveals that the Adivasi communities identify the evil spirits as the root cause of illness and discomfort in the human body. The bad touch of the evil spirit or *Chhita-laga* is the leading cause of illnesses such as jaundice, fever, and diarrhea, especially among children. For instance, Sushma Oraon, a 25 years old Adivasi woman from Patabari Tea Estate associates the illnesses (fever and loose motion) of her 3.5 years old daughter Liza with a bad touch of the evil spirits.

> I knew that there was something wrong as my daughter was not getting cured with (allopathic) medicines. If the child is sick for a long time it is caused by the evil spirit for sure. In such cases, medicines do not work. My mother-in-law took her to the *Ojhamati* in the Beech Garden. He said that my daughter is affected by *Chhita-Laga*. He performed *Puja* and gave *Jhara* to my child.

The tribal communities believe that the *Ojhas* or *Bhagats* (traditional healers) have magical or supernatural powers and spiritual approaches to curing disease (Raj & Nayak, 2019). Therefore, a large number of people in the tea plantations seek care from the *Ojhas* or the traditional healers (Kar, 2000). The studies on the health culture among the tea plantation labourers in Assam argue that their belief in traditional healing practices is so strong among

the tribals, despite the availability of relatively improved and modern medical facilities, people prefer to go to the *Ojhas* and traditional healers to seek treatment (Kar, 2000). A study conducted among the Oraon female adolescents in Jharkhand argues that there is a multi-layered plurality of perceiving health and illness in tribal society and in decision-making to seek a specific form of treatment (Raj & Nayak, 2019). The study argues that the understating and causation of illness of adolescent girls is deeply guided by the community's standpoint and rooted in the cultural beliefs of the tribal society.

The dominant way of understanding health and illness among the tribal communities in the tea plantation is associated with evil spirits. Consequently, the available scholarship on the perception of health and disease among the tribal communities predominantly refers to the practices in and around evil spirits, black magic, witch-hunting, lack of awareness, unhygienic, and ignorance due to illiteracy (Chaudhuri, 2013; Mishra & Roalkvam, 2014; Roy et al, 2013; Sahoo et al, 2010). However, the fieldwork of the present study in the abandoned tea plantations of the Dooars region reveals that the tribal communities also assert the cause of disease and illness linked with working and living conditions, as well as the availability and consumption of food and drinks. The case studies documented that diseases such as tuberculosis and anemia are understood as the absence of a nutricious diet and harsh working conditions. Whereas, non-communicable diseases such as hypertension and diabetes are perceived as the consequence of the increased precariousness of the work and employment in the abandoned tea plantations. The tribal communities also asserted their shift of employment from plantations to more vulnerable working conditions such as at river beds, sand mining, jungles, and brick-kiln sites as the cause of increased occupational injuries and diseases. Similarly, Chaudhury and Varma (2002) argue that the perception of diseases and their causes in tribal societies are dynamic and complex in nature. The tribal communities in plantations attribute these relationships to either traditional knowledge or the modern domain based on their new work experience and objective conditions on the plantation. Tribal communities provide objective explanations for diseases linked to working and living experiences, attributing stomach problems to contaminated food, malaria from mosquitoes, and tuberculosis from contaminated water. Similarly, insecticide spraying is recognized for causing respiratory problems, and extended plucking hours are associated with overall poor health (Chaudhury & Varma, 2002). In addition, illness in the human body is understood as an interruption in everyday life. In other words, a person is considered ill when he or she is unable to perform everyday activities with the same vigor as

earlier. Any discomfort in the human body that does not hamper the daily routine activity is considered a minor health problem (Raj & Nayak, 2019).

5.3. Maternal and Child Health in the Tea Plantations

It has been found in different surveys and studies that Assam has the highest number of maternal deaths in the country. In 2018-2020, the Maternal Mortality Ratio (MMR) in India was 97 deaths per 100,000 live births. In the same period, West Bengal reported 103 MMR, and Assam had the highest in the country at 195 deaths per 100,000 live births (SRS, 2022). Of this large share of maternal deaths are mainly reported from the tea plantations of Assam. According to the National Rural Health Mission's data, 80 % of maternal deaths occur inside the tea plantations (Chaudhuri, 2015). The situation is not much different in the case of the tea estates of the Dooars region. The situation is similar in the context of tea plantations of West Bengal and much worse in the closed tea gardens. Maternal and Child Health has remained a serious challenge in the tea plantations in the Dooars region. It has been reported in various newspapers that tea plantations in the Dooars region have a higher rate of maternal death (GNRFN, 2016). However, there is a dearth of maternal mortality-related secondary data specific to the tea estates in West Bengal. There is also an absence of data on the Maternal Mortality Ratio specific to the tribal population in India (Kumar, 2020). However, according to an estimate, in 2017 the MMR in the tea plantations in the Dooars region was 117 per 1,00,000 live births (Sarkar, 2017).

Table 5.1: Live Birth, Immunization, Maternal and Child Mortality in Alipurduar District (2019-2023)

Items / Year	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**2019-20**	**2020-21**	**2021-22**	**2022-23**
Live Birth	21146	21214	21548	22714	23193	22340	21510	19487
Fully Immunized child (9 to 11 months) (%)	-	-	87.37	93.75	96.9	89.74	87.64	81.64
Infant Death	534	438	469	434	365	367	303	326
District IMR	-	-	-	19.1	15.7	16.43	14.09	16.73
Maternal Death	45	36	38	40	24	28	37	28

Source: Office of the Chief Medical Officer of Health (CMOH), Alipurduar, 2023

Table 5.1. provides an insight into the various aspects of maternal and child health in Alipurduar District from 2015-16 to 2022-23. The number of live births in the district has generally increased from 2015-16 to 2019-20, with a peak of 23,193 births in 2019-20. However, there has been a decline in the number of live births in the most recent year, 2022-23, with 19,487 births in Alipurduar District. The percentage of fully immunized children aged 9 to 11 months has been increasing, with some fluctuations in Alipurduar District. The

percentage increased from 87.37% in 2017-18 to 96.9% in 2019-20 but then decreased, reaching 81.64% in 2022-23. Infant deaths have generally decreased over the years in Alipurduar District. In 2015-16, there were 534 infant deaths, which dropped to 326 by 2022-23, which shows a positive trend indicating a reduction in infant mortality. The Infant Mortality Rate is an important indicator of the overall health of infants in the district. The IMR decreased from 19.1 in 2018-19 to 14.09 in 2021-22 but increased slightly to 16.73 in 2022-23. Maternal deaths have fluctuated over the years but have generally decreased in Alipurduar District. The number of maternal deaths decreased from 45 in 2015-16 to 28 in 2022-23.

In summary, due to a lack of specific population data on maternal and child health in the tribal communities in India, it is difficult to estimate the MMR the tea plantations. However, the available studies and the district-level data suggest that there are serious concerns with maternal and child health in the tea estates of Assam and West Bengal, particularly in the Dooars region. In recent years, Alipurduar District has shown a positive trend, such as a decline in maternal deaths. The ongoing complexity is evident in the fluctuation of fully immunized children and a recent increase in IMR. The issues faced by tea plantation communities require a comprehensive understanding of both regional and tribal contexts to address these challenges.

5.3.1. Anaemia and Malnutrition in the Abandoned Tea Plantations

The World Health Organization (2020) defines anemia as the condition of having a low number of red blood cells or a low amount of hemoglobin. Anemia is diagnosed when the concentration of hemoglobin falls below established cut-off values, therefore, the capacity of the blood to carry oxygen to tissues is compromised (WHO, 2017). The symptoms of anemia are fatigue, reduced physical work capacity, and shortness of breath. According to the World Health Organization Report (2017), there are three main mechanisms through which anemia develops in the human body. These mechanisms are a) when the body makes too few red blood cells known as ineffective erythropoiesis, b) when red blood cells are destroyed known as hemolysis, and c) blood loss. The three most common contributors to anemia are nutritional deficiencies, diseases, and genetic hemoglobin disorders. It has been reported that iron deficiency, hemoglobinopathies, and malaria are the three main causes of anemia globally (WHO, 2017).

Dr. Mukherjee, the BMOH of Kalchini block, Alipurduar explained that the majority of the diseases which are prevalent in the tea gardens are related to poverty and hunger. He gave an example of anemia which is a major concern in the tea gardens of the Dooars region. According to him:

> The tea gardens in Kalchini block are highly prone to anemic. The widespread anemia among adolescent girls and pregnant mothers is a major concern in this region. Often, we come across pregnant mothers who are severely anemic at our hospital and need at least 4 to 6 units of blood transfusion. I remember a case last year, we had to arrange 12 units of blood for a mother.

He explained the reason behind the prevalence of anemia in this region particularly among the tea garden communities and the challenges faced public health system to eradicate anemia. He shared:

> We regularly collect blood samples from adolescent girls and registered mothers at the sub-centers and health camps. If the hemoglobin level is below 7 then we advise the patient to get admitted to the hospital as she needs to go through a blood transfusion. If the hemoglobin level is above 7 then we try to treat her with iron-folic acid tablets. We distribute iron-folic acid tablets regularly through our health centers and schools. We are making continuous efforts to improve the anemia situation in the garden. However, to a great extent, the situation has not changed. The problem we have been facing is that they do not consume the tablet regularly. On the other hand, they do not get nutritious food regularly.

Dr. Mukherjee continued:

> As this area is dominated by tea gardens which have a large number of tribal populations, 'sickle cell anemia' is very common in this region. This is caused by inherent genetic default and leads to the formation of immature hemoglobin cells in the blood. However, we do not have the facility at our hospital laboratory to diagnose this disease. We usually refer the suspected patients to the district hospital at Alipurduar.

Debobrata Roy, the Epidemiologist at Kalchini block of Alipurduar district said:

> One of the main challenges for public health in this region is to reduce anemia among the tribal women in the reproductive age groups in the tea gardens. The actual situation is horrifying. If you do a ground reality check at any tea garden, it will show more than 80 % of women have a hemoglobin level under 8 (g/dl). This ratio is much higher than what we report.

Priyanshu Oraon (5 years old) is the son of Rajani and Shyam. According to the Mother and Child Protection Card (MCPC) records, Rajani Oraon (30 years old) was severely malnourished and anemic during her pregnancy. It was marked on the top right corner MCPC

card in red ink that Rajani was at 'High Risk' during her pregnancy. Rajani was admitted to the Birpara State General Hospital (CHC) for a week.

Her sister Srimati Oraon (27 years old) said:

> The doctor at Birpara Hospital asked us to take care of her food and eat *achha khana* (healthy food). How can we manage healthy food? The garden was closed and there was no work.

Rajani died due to anemia and liver complications almost a month after Priyangshu was born in 2016. Priyangshu was born underweight at the Birpara State General Hospital. After Rajani's death, Priyangshu is being raised by her aunt Srimati. Priyangshu was also severely malnourished since he was born and was referred to the district Hospital at Alipurduar. As Srimati said, Priyangshu's health was deteriorating and he was admitted to the Nutrition Rehabilitation Centre (NRC) at the district hospital when he was 2 years old.

Maternal mortality in the tea plantations is higher due to the widespread malnutrition and anemia among the women in the tea plantations. In addition, the access and utilization of Maternal Healthcare Services have remained significantly low in the tea plantations.

During one of my field visits in October 2021 to the weekly Mobile Medical Camp at Rethi Tea Estate a teenage Adivasi girl came to collect her blood test report. She works as a tea leave plucker in Rethi TE under the Operation and Management Committee. The doctor at the MMU gave her folic acid tablets and advised her to have a healthy diet. As she left, Dr. Jaiprakash, the Medical Officer at the MMU said:

> She has a hemoglobin level of 6 which is far below the normal (10 or above). If this continues, soon she will turn into an anemic patient like many other teenage girls in this tea garden.

During my fieldwork at the Rethi Tea Estate and Patabari Tea Estate, it was observed that a significant number of the Adivasi children were underweight (less than 2.5kg) at the time of birth. The doctor explained the reason behind the widespread anaemia in the tea estates:

> This is again mainly due to irregularity in food intake. They start the day early morning and do laborious jobs throughout the day. Given the economic condition in these closed tea estates, they hardly get nutritious food which is very essential at this age.

Nirmala Kerketta, a 45 years old Adivasi woman who worked as the Head Nurse at Patabari Tea Estate Hospital. She explained:

> The workers have major problems of malnutrition as they do not get to eat healthy food. The weakness and related illness are very common and the problem of anemia is widely prevalent. After the closure, these problems have even increased. The workers could not buy fruits, milk, eggs, and other food items that have protein. How will the workers buy such expensive food items when they struggle to manage staple food items like rice?

The widespread malnutrition and anemia among the tea plantation labourers and their family members are serious health concerns in the tea plantations in the Doosrs region. Malnutrition due to starvation and hunger is a common phenomenon in the closed tea plantations of the Dooars region. Multiple determinants make some individuals and population groups most vulnerable to anemia such as lack of sufficient income, low education level, discrimination based on gender norms or race, unhealthy behaviours such as smoking, poor living conditions, and inadequate access to water, sanitation, and hygiene (WHO, 2017). The people in the tea plantations have lost their source of income and livelihood due to the closure and abandonment of the tea plantations in the Dooars region. Therefore, people did not have the money to buy food. In addition, in the present times, the labourers in the tea plantation did not have agricultural land to cultivate crops for daily consumption. It is to be noted that the tea plantation labourers were denied the rights to the land of their own houses as the land was leased to the private owners of the tea estates by the state. Therefore, the people in the tea plantations are solely dependent on the food they purchase from the market. On the other, the poor Adivasi labourer in the closed tea plantations was forced to take up precarious employment such as at the sand quarrying sites in the monsoon rivers at a very low wage rate. Therefore, they do not have enough money to buy nutritious food for their family members. As a consequence, there is chronic hunger and starvation in the closed tea plantations in the Dooars region which lead to malnutrition and anemia.

5.3.2. Low age at Marriage and Inter-linkages with Poor Maternal Healthcare

Child marriage and pregnancy at a young age have been a major issue in the tea plantations of the Dooars region. For instance, Malati Oroan (23 years old), a tribal woman, lives in the Upper line at Patabari Tea Estate with her two children. She was a casual labourer in the Patabari Tea Estate. After the estate was closed she had lost her job. Thereafter, she started plucking tea leaves at the estate when work at the estate was resumed by the Operation and Management Committee. She gets INR 10 per kilogram of green leaf she plucks. She earns INR 250 to 300 per day based on the availability and production of the green tea leaves. She was married to

Kajal Oroan (28 years old) when she was 16 years old. The couple live with their two kids in a single-room house. Her elder son Sejal Oroan was born at home when she was only 17 years old. The MCPC card shows that she also had an abortion after her first child was born. She was diagnosed with Stage-I tuberculosis before her second child was born.

The Public health officials and the medical officers have raised serious concerns about the interconnections between early-age marriage of girls and anemia in the tea plantations of the Dooars region. Debobrata Roy, the Epidemiologist at Kalchini block of Alipurduar, shared his experience of child marriage in the tea gardens. The practice of marrying girls under the age of 18 is prevalent in the tea estates. It has several negative health effects, such as an increased rate of tuberculosis, maternal mortality, and anemia. Similarly, Dr. Ananta Chowdhury (36 years old) is a Medical Officer at Madarihat Rural Hospital which served numerous tea gardens located near the hospital. He has been working at Madarihat Rural Hospital for the last 5 years.

Dr. Ananta Chowdhury said:

> The problem that we often face is with the underage mothers from the tea gardens. There is a tendency for underage girls to marry in the tea gardens followed by pregnancy. Last year we had a patient of 14 years who was pregnant. Often these cases become complex and life threatening. We do not have a gynecologist at Madarihat Rural Hospital. We have to refer these patients to the Birpara State General Hospital or the District Hospital at Alipurduar.

Debobrata Roy, the Epidemiologist at Kalchini block of Alipurduar, shared his experience of child marriage in the tea gardens. Debobrata said:

> When girls are married at a young age, they are often forced to have children before their bodies are fully developed. This puts them at risk of complications during pregnancy and childbirth, including maternal mortality. We categorize these cases as 'high-risk mothers.' Girls who are married at a young age eventually drop out of school.

Debobrata stated that in the preceding four months, four child marriages were successfully averted. The root cause of such marriages is attributed to the dearth of education and employment prospects. Employment opportunities for the youth in tea gardens are restricted, mainly comprising casual labour positions. Consequently, young individuals within tea gardens face unemployment and a lack of career guidance. Debobrata's wife, Sumana Roy, 33 years old works as the first ANM at a Health Sub Centre in a tea garden (Nischoypur Tea Estate) 4

kilometres from Latabari Rural Hospital. The District Health Administration has given community health workers, including ASHAs, ANMs, AWWs, and CHOs, a special duty to report incidents of child marriage to law enforcement and the district administration. The community health staff must alert the police station when child weddings take place in a village. With the help of the police and members of the neighbourhood Panchayat, they can step in and prevent child marriage. He accompanies his wife in such cases, and also, being a health administrator of the block, he uses his social connections to act promptly. Child marriages of girls significantly are related to the school dropout rate, which may further restrict their access to health care and knowledge. Additionally, child brides are more likely to experience violence, abuse, and exploitation. These factors can exacerbate the health risks associated with early marriage, leading to poor maternal and child health outcomes.

5.3.4. Poor Awareness about MCH in the community

It has been found during the fieldwork that the poor awareness of the availability of various services under Maternal and Child Health among the women is one of the key factors of poor maternal health status and adverse health outcomes in the tea plantations.

Chadini Kujur, a 30 years old Adivasi woman lives at the Niche Line at the Nepania Division of Rethi Tea Estate with her husband and three children. Chandini was married at the age of 16 years to Shibu Oraon (36 years old). Her elder son Dipesh Oraon is 12 years old. Her two younger sons are Dwipen Oraon (10 years old) and Nitesh Oraon (2.5 years old). Dipesh and Dwipen were born at home.

Chandni said:

> I did not know about the free ambulance earlier (during the first two children's birth). My mother-in-law had sent me to my parents' house during my earlier pregnancies. I was at my home at Lankapara Tea Estate when my first child was born. I did not know if the centre at my home would give me services, so I did not go. My mother was also not aware of the centre and the free ambulance.

She said that the traditional birth attendant known as *"Dagrin Buria"* was with her during the childbirth. Chandini shares her experiences with home deliveries, shedding light on the prevailing poor awareness about maternal health care services in the community. Her narrative underscores the critical issue of inadequate awareness regarding maternal health care services, leading to a preference for home deliveries in the community. As she recounts her earlier pregnancies and the lack of knowledge about available health care resources, she emphasizes

the pressing need for enhanced awareness campaigns to ensure the well-being of expecting mothers and their children.

5.3.5. Child Malnutrition in the Dooars Region and in the Abandoned Tea Estates

The findings from the fieldwork unveiled a disconcerting reality of child health prevailing in the enclosed tea gardens of the Dooars region. A notable prevalence of malnourished, underweight, or stunted children has been identified across nearly all the Anganwadi Centres. Remarkably consistent, each centre has registered no less than one to four children exhibiting such conditions. Adding to the gravity of the situation, a community health worker has made a stark assertion: the term "tea garden" has now become synonymous with child malnourishment.

Sunita Nag, (52 years old), one of the most experienced Anganwadi Worker at Patabari Tea Estate said

> There will be malnourished children in the tea gardens. It is a reality! Malnourished children and tea gardens have become synonymous.

This assertion summarizes the alarming implications of this issue. It underscores the urgent need for intervention and remedial measures to address the multifaceted health challenges the tribal communities in the tea gardens face.

Gita Das Mandal (52 years old), an Anganwadi Worker at Niche Line of Patabari Tea Estate said

> Malnourished children are very common in the Anganwadi centers in the tea garden. Every year we have two to three children especially girls in the yellow or red category in our centre.

Sumana Shunri (48 years old), a Scheduled Caste Woman is one of the most experienced Anganwadi Workers at Rethi Tea Estate. She has been working as an Anganwadi Worker since the first Anganwadi Centre was established at Rethi Tea Estate in 2003 on the Rethi Primary School ground. She provides further insights into the situation, acknowledging the grim reality of malnourished children within the tea gardens. She notes that it is a persistent issue, with her centre alone encountering two to three malnourished children every year. She said

> Every year we find two to three such malnourished children in my centre. We surveyed the sub-centre in 2018. We have found that there is a total of 39 malnourished children registered in nine different Anganwadi Centres in the Rethi Tea Garden. This year the number has come down to 18 children.

Sumana Shunri (48 years old) explained the nutritional status of the children in the abandoned tea plantation:

> The rainbow chart has come up recently on the Mother and Child Protection Card (MCP card). Earlier it was not there. However, I feel if it was there in those days when we had started our first centre, most of the children back then would have come to either red or yellow zone. There were many newborns who had a weight less than 2.5 kg at our centre at that time (at the initial days of closure of the plantation). There were numerous malnourished children and mothers. In a few cases, the children died due to malnutrition. The situation was horrifying. At that time the garden was closed for the first time, people did not have any work. The greatest concern was to earn a few rupees (*Dui Pisa*) to ensure at least a meal for the family. How could they take the extra care needed for the expecting mothers? People just did not have enough food to eat. Therefore, the women remained malnourished. Women always think of our family before us. The situation was so terrible even the expecting mothers had to go to rivers or other sites to find employment.

The collective observations of community health workers help to underline the persistent occurrence of anemia among children, adolescent girls, and mothers within these communities.

5.3.6. Jaundice among Children in the Abandoned Tea Plantations

Jaundice is caused by a build-up of a substance named bilirubin in the blood and the body's tissues. Jaundice is caused when any condition disrupts the movement of bilirubin from the blood to the liver and out of the body. The common symptoms are yellowing of the skin and the whites of the eyes (Pan & Rivas, 2017). The tribal communities in the tea plantations believe that there is a widespread prevalence of Jaundice in the tea gardens. It is believed that ailment and discomfort in the human body such as weakness, tiredness, distaste, and pale skin conditions are caused by jaundice.

Shibani Kharia (31 years old), an Adivasi woman from the Kharia community, lives with his family in the Jogi Line of Patabari Tea Estate. Shruti Kharia is her daughter who is 7 years old. Shruti's health condition was not good as she was suffering from fever frequently. Shibani said that she had brought allopathy medicines from the local unregistered Rural Medical Practitioner (RMP) for her daughter, however, her condition did not improve. Shruti's weight also remained subsequently lower than the average weight of the kids of her age. Shibani complained that Shruti does not feel hungry and therefore she eats minimum food.

Shibani said:

> My child had become so weak that she was not going to play with the other kids. My neighbour told me that Shruti might be suffering from jaundice. They advised me to take her to the Bhagat in the next village.

Shibani said that her daughter had become thin and pale and her eyes had turned yellow. According to Shibani these were the clear symptoms of jaundice. There are many people in the closed tea estates like Shibani who believe that their children were affected by jaundice at least once. It is believed that jaundice is widely prevalent among the children and the adolescent girls. According to the people, the common symptoms of jaundice are yellow and pale skins and eyes, weakness in the body, and feeling numb.

However, there is another argument that these are the symptoms of severe malnutrition and not necessarily of only jaundice. The medical practitioners in the tea estates are of the opinion that the severe child malnutrition is commonly mistaken with jaundice in the closed tea plantations. Dr Jaiprakash (42 years old), the doctor who works in the Mobile Medical Unit at Rethi tea estate, explained:

> If any illness occurs among the people, first they will assume that they were affected by Jaundice. If anyone is not eating properly, he or she will obviously feel weak. But they will relate it to jaundice.

The doctor also claimed that identifying child malnutrition as jaundice has a serious consequence on the child health in the tea plantation. He claimed with a firm voice:

> We come across a very few patients of jaundice occasionally, but in 99 % accused cases of jaundice are not true at all.

There is a common practice of seeking health care from the traditional healers for jaundice in the tea plantations. The traditional healers put the suspected child on a strict diet that only includes rice and a few boiled vegetables, and excludes the consumption of oil, and all non-vegetarian food. The doctor argues that this diet chart can be dangerous for the children who are already suffering from severe malnutrition.

5.3.7. Everyday Life of the Mother and its relation with Child Health

In tea plantations of the Dooars region lies a distressing account of deprivation and neglect of children and women's health. Chitra Jhora, a 32-year-old Adivasi woman works as a tea leaves plucker on daily wage (Bigha Worker) under the Operation and Management Committee at the Rethi tea estate. She has two children Nisha Jhora (10 years old) and Sujan Jhora (4 years old).

Nisha is a student at the Rethi Tea Estate primary school, and Sujan is one of the 26 children registered at the Anganwadi Centre at the hospital line. Chitra wakes up early in the morning around 5.00 am. She cleans the house and prepares salt tea for her family. Thereafter, she goes to pluck tea leaf at 7.00 am early in the morning with other women from the labour line. Chitra said:

> I need to get to work early in the morning and I cannot come back home from work. I do not get time to take my child to the centre every day. My daughter also goes to school and in between she takes care of her brother. She does not get food from the centre. So, I asked her to share her brother's food otherwise she would have to go to school on an empty stomach.

Nisha takes her brother to the Anganwadi Centre around 9.30 am. Most days the Anganwadi centre provides only Khichdi or Khichdi and a boiled egg. Nisha brings the food home and shares it with her younger brother. She goes to school at 10.30 am leaving her brother at her grandparents' home. Chitra comes back home from the field on a lunch break for an hour between 12.00-1.00 pm in the afternoon.

Plucking tea in the gardens is a demanding job, one that leaves her with little time to care for her two children, Nisha and Sujan. Chitra's predicament is not unique in the tea gardens of the Dooars region. Many mothers like her face the harsh reality of having to leave their children behind while they toil in the fields, lacking the luxury of time to ensure their children are adequately cared for. This dire situation, exacerbated by the closure of the only creche available, leaves families in an impossible bind. Chitra said:

> We had only one crèche in our tea garden. Our parents used to leave us there when they went to work in the field. The crèche has been closed years ago after the management left the garden. Now who will take care of our children? We do not have any place to keep them when we go to work. My mother is old and suffering from asthma. She cannot look after my child for a long time. I keep thinking about my child and get worried once I go to the field.

Gita Das Mandal (52 years old), an Anganwadi worker from the Dalit community at the Patabari Tea Estate, highlights the critical issue. She notes that the problem extends beyond the scarcity of nutritious food; It's the lack of time mothers have to care for their children, especially during the day. Mothers embark on their exhausting workdays early in the morning, often leaving their children at home without proper care. The Anganwadi Centre can only offer limited support during their operating hours. Gita Das Mandal, the AWW said:

> The mothers do not get time to take care of their children, especially during the day time in the way we advise them. They go to the tea garden to pluck tea leaves in the early morning around 7 am. Many of them also go to the river to work at the same time. The women work all day till evening. Neither they get the time to eat their own food or to feed their child.

Similarly, Sumana Shunri (48 years old), another Anganwadi Worker informed the routine of a mother who finds daily waged employment outside the abandoned tea plantation. She said:

> The mother will leave the child at our centre in the morning while going to work at the mustard field or 100-day job (MGNREGA). In the afternoon she will bring her child back from the centre while returning from work or lunch. Consequently, we are bound to be at the centre at least till 12 pm. Often, they share the egg or khichdi we give to the children with the family.

This is a common picture in the labour lines of the tea estates. In the afternoons, the labour lines become deserted. From the tea estates of Dooars, many men and women have already migrated out to other states or cities in search of employment. The people who can't afford to migrate out have managed jobs in nearby stone quarrying sites, brick kiln industries, and other informal sectors. The parents leave their children at the Anganwadi centres.

The provision of eating food at the Anganwadi centre is a critical component of ICDS and its efforts to address maternal and child malnutrition and ensure the overall well-being of vulnerable populations. Eating in the centre ensures beneficiaries receive their prescribed meals in a controlled environment, monitored by trained workers. This helps ensure the quality and quantity of the provided nutrition, which is critical for healthy growth and development. Additionally, it encourages mothers and caregivers to share experiences and learn from each other, fostering a sense of community and support (Nagaraja & Ravishankar, 2014).

However, during the fieldwork, it has been observed that collecting the food and taking it home is a common practice among the tea garden communities. The practice of taking food away can make it challenging to track whether the intended beneficiaries are receiving the nutrition they require. It was observed during the fieldwork that most of the centres in both the tea gardens distribute food to the children or the family members and there is no provision for the children to sit and eat in the centre. Gita's argument for a dedicated building for their Anganwadi centre remains substantially significant. The demand for dedicated infrastructure underscores the dire need to ensure every child receives proper care and nutrition. However, the current conditions force them to distribute food with the belief that children will eat the food at home. Gita said:

> If we had a building for our centre, we could have made sure that every child sits in the centre to eat their food. But we do not have a place to make them sit together to eat.

Soma Saha (38 years old), another Anganwadi worker, adds that even when they have food available, mothers are reluctant to send their children to the centre due to their tight schedules. The root of the issue lies in the demands of the tea gardens, which leave parents with little choice but to prioritize work over their children's well-being. Soma said:

> We do not have enough space for the children to sit and have food at the centre. The mothers also do not want their children to have food at the centre. They do not have time as they have to go back to work in the field.

Mitali Ghosh (43 years old), is a Bengali woman and an AWW at Patabari Tea Estate. She said:

> The children spend only a few hours with us at the centre and we provide only food for a single time. If the children are malnourished, it is more about what they get to eat at home. They don't get proper care and nutritious food at home. We give eggs to the children, but they take it home and share with their elder siblings.

She seems to blame the tea garden workers, suggesting that if children are malnourished, it's because they lack proper care and nutritious food at home. This divisive rhetoric only serves further to deepen the divide between the workers and the management, distracting from the central issue at hand – the dire conditions in which these families find themselves.

5.3.3. Out Migration of Males, Left Behind Women and Child Health

The abandonment of the tea plantations by the management has resulted in the loss of employment and social security of the tea plantation labourers. The tribal plantation labourers who had worked in the tea plantations for generations found it difficult to make a livelihood in the nearby villages due to their limited skills in agriculture. In addition, the Dooars region is primarily a forested area and one of the most underdeveloped regions in West Bengal. There is a striking absence of large-scale manufacturing industries in the Dooars region. Therefore, the tribal communities, especially the young men from the abandoned tea plantations were forced to migrate to the cities in Bhutan, Kerala, Gujrat, Maharashtra, and Karnataka to find employment as daily waged labour in the construction sites, hotels, and textile mills. This outmigration has not only impacted the economic stability of families but has also had detrimental effects on health, particularly for women and children, due to restricted access to healthcare services.

Sukanya Das is a 33 years old Bengali woman who works as the Community Health Officer at the Health and Wellness Centre (HWC) at the Patabari Tea Estate. Sukanya said:

> Sometimes it becomes very challenging emotionally to work at the (HWC) in tea gardens. A few months ago, a mother with her 6 months child came to our centre for vaccination. It was a very hot and humid day in June. The child was wearing a full-sleeved dress and a full pant. I got very angry and scolded the mother for not making the child wear light clothes. That poor girl looked at me and suddenly started crying. She was just 22-23 years old. It is her second child. Her husband went to some other state in search of a job. He does not send any money back to home. She said to me that somehow, she is managing to buy food. She doesn't have any money to buy a dress for her child. These clothes were given to her by someone from the garden.

In reflecting on the statement of the Community Health Officers, it becomes evident that the challenges to achieving health equity extend beyond medical care. The harsh realities of impoverished families, such as the struggling young mother with her infant, highlight the complex intersection of health and socio-economic factors. Her encounter emphasizes the need for a holistic approach to healthcare that considers the broader context of individuals' lives, acknowledging the socio-economic challenges that can impact their well-being. It reminds us that effective healthcare goes beyond the clinic walls, requiring a comprehensive response by addressing the root causes of these challenges, including poverty and lack of resources, which is essential for fostering healthier communities.

5.4. Communicable Diseases in the Abandoned Tea Plantations of Dooars Region

Communicable diseases such as malaria, malnutrition, anemia, diarrhea, worm infection, tuberculosis, and leprosy are widely prevalent in the tea plantations in India. There is a high prevalence of these diseases especially among children, women, and the elderly in the tea plantations (Medhi et al, 2006). In the next sub-section, some of the communicable diseases widely prevalent in the tea estates have been analyzed.

5.4.1. Pulmonary Tuberculosis in the Tea Plantations in the Dooars Region

Tuberculosis (TB) has remained as a significant health problem since the establishment of the tea estates in the Dooars region. This disease has remained prevalent among the tea garden communities even after the independence of India. There is a widespread prevalence of tuberculosis in the closed tea plantations of the Dooars region. There have been numerous

newspapers reports on the wide prevalence of tuberculosis cases in the closed tea plantations in the Dooars region (Bhattacharya & Gupta, 2014; Chaudhuri, 2015). In addition, there were several newspapers reports on tuberculosis cases in the Rethi Tea Estate (Biswas, 2011; Singh, 2022). In July 2014, five people in the Rethi Tea Estate in the Dooars region were tested tuberculosis positive and admitted to the government hospital after six other people from the same tea estate were died due to tuberculosis and malnutrition in the previous month (Singh, 2014). It is one of the two tea estates where fieldwork for this study was carried out. These reports show that the closed tea estates of the Dooars region have turned into a hotspot of tuberculosis due to the lack of access to food, chronic hunger, rampant malnutrition, and the precarious nature of alternative livelihood in the tea plantations.

Table 5.2.: Number of Pulmonary Tuberculosis Cases in Alipurduar District (2020-202)

Sl. No.	Block / Municipality	2017	2018	2019	2020	2021	2022	2023 (Till 16.10.23)
1	Alipurduar I	203	193	197	193	235	251	231
2	Alipurduar II	241	268	277	207	313	287	243
3	Falakata	317	332	324	260	395	436	305
4	Kalchini	745	789	867	808	804	816	682
5	Kumargram	489	498	532	357	362	470	299
6	Madarihat-Birpara	532	600	604	517	606	579	412
7	Alipurduar Municipality	205	229	205	186	104	117	87
Total (Alipurduar District)		**2732**	**2909**	**3006**	**2528**	**2819**	**4978**	**2259**

Office of the Chief Medical Officer of Health (CMOH), Alipurduar, 2023

Table 5.2. provides an overall insight on the number of Pulmonary Tuberculosis (TB) cases in Alipurduar District from 2017 through 2023. The total number of tuberculosis in the district remained significantly high throughout the period. However, there are some variations across the blocks in different years. The total number of TB cases in Alipurduar District was 2732 in 2017, reaching its lowest point in 2020 at 2528. However, in 2021 and 2022, there was a substantial increase. In 2020, there was a notable decrease in the total number of TB cases (2528) compared to the previous years in Alipurduar district. The number of TB cases increased substantially in 2021 (2819) and more dramatically in 2022 (4978), reaching its highest point during the period. Kalchini, which has the highest number of tea plantations in the Alipurduar district, consistently had the highest number of cases, followed by Madarihat-Birpara, another tea plantation-dominated block in the district in most years.

Dr. Manash Mukherjee (54 years old), the Block Medical Officer of Health (BMOH) of Kalchini discussed the reason behind the widespread prevalence of tuberculosis in this region. He said:

> Our biggest challenge is to tackle tuberculosis in this region. The condition is such that every month we have on average 250 active patients of tuberculosis in Kalchini block. The sub-centres located in the tea gardens report the highest number of tuberculosis patients. There are many families below the poverty line in the tea gardens. They have developed weak immunity or lack of resistance to diseases due to the absence of nutritious food in their diet for prolonged periods.

Dr. Ananta Chowdhury (36 years old) has been working as a Medical Officer for last 5 years at Madarihat Rural Hospital which is surrounded numerous tea gardens. Dr. Chowdhury said:

> The prevalence of tuberculosis is high in this area, especially in the tea gardens. Malnutrition, anemia, and tuberculosis; are interrelated in the tea gardens. They get infected with the disease easily. The tea garden villages are slum-like closed societies. There are minimal open spaces between houses, and people live in houses close to each other. The housing and sanitation facilities are also very poor. Therefore, the diseases spread from one person to another very easily.

According to Dr Mukherjee, the malnutrition and poverty along with the living conditions have made the tea garden communities more vulnerable to the spread of the tuberculosis in the tea gardens. He said:

> Apart from the poor nutrition level, the unhygienic condition of living is the main reason behind this situation. The labour lines are also overcrowded. The houses where the labourers live with their families have only one or two rooms. Often four to five people live in a single room. The rooms hardly have and window or ventilation for air and light. The living conditions in the tea garden labour lines are just like the slum areas of the big cities. In this condition, the bacteria of TB spreads rapidly and infects the other person quickly.

Susmita Minj, a 55 years old Adivasi woman who worked as a staff nurse at Patabari Tea Estate Hospital from 1992 to 2014 until the garden was closed. She said that the tea garden hospital had a separate building for treating the TB patients. There was a high number of TB cases in the hospital. The TB ward was shut down by the estate management as the TB patients were treated by the government sub centre at Patabari TE after 2007.

Kishore Chhteri, a 52 years old Nepali trade union leader and former workers at Patabari Tea Estate said:

> Tuberculosis is the most common disease in the tea plantations. If you go to any labour lines in the garden you will find at least two of three active cases. The

> government health centre has become quite active these days in tea estates. They visit each home and take the patients to health centres. If somebody denies to opt for medication, the health department seeks our support.

The above discussion highlights the persistent and alarming prevalence of tuberculosis in the Dooars region's abandoned tea estates, exposing a distressing public health crisis. It shows a critical situation of widespread tuberculosis cases, often accompanied by malnutrition, which has resulted in fatalities in the abandoned tea plantations in the region. The data from Alipurduar District underscores the gravity of the issue, revealing a consistently high number of pulmonary tuberculosis cases, particularly in blocks dominated by tea plantations. The closed tea estates in the region, facing issues such as food scarcity, chronic hunger, and precarious livelihoods, have become breeding grounds for tuberculosis. In addition, poor living conditions, malnutrition, and poverty, compounded by cramped living spaces in tea garden villages, contribute to the exacerbation of the disease.

5.4.1.1. Interlinkages of early age at marriage with tuberculosis

There is also an interlinkage of early age at marriage with tuberculosis as the poor nutritional status results in increased vulnerability to communicable and infectious diseases. Chadini Kujur lives on the Niche Line at the Nepania Division of Rethi Tea Estate with her husband and three children. Chandini was married at the age of 16 years to Shibu Oraon (36 years old). Chandini lives in a dilapidated labour quarter near the Kaljani River. Chandini works as a Bigha worker in the Rethi Tea Estate under the Operation and Management Committee. She does not get to work during the winter season. She loses her livelihood if there is a low yield of tea leaves in the garden. Her elder son Dipesh Oraon is 12 years old. Her two younger sons are Dwipen Oraon (10 years old) and Nitesh Oraon (2.5 years old). Chandini was infected with pulmonary tuberculosis twice. For the first time, she was diagnosed with the disease a few months after her daughter was born in 2017. She was diagnosed with tuberculosis for the second time in January 2022.

Malati Oroan (23 years old) lives in the Upper line at the Patabari Tea Estate with her two children. He was a casual labourer in the Patabari Tea Estate. After the estate was closed, she lost her job. Thereafter, she started plucking tea leaves at the estate when work on the estate was resumed by the Operation and Management Committee. She gets INR 10 per kilogram of green leaf she plucks. She earns INR 250 to 300 per day based on the availability and production of the green tea leaves. She was married to Kajal Oroan (28) when she was 16 years

old. The couple lives with their two kids in a single-room house. Her elder son Sejal Oroan was born when she was only seventeen years old. He is now six years and four months old. Sejal was born at home. She also had an abortion after her first child was born. She was diagnosed with tuberculosis before her second child was born. The Health and Wellness Centre (then Subcentre) put her on the medication for six months.

5.4.1.2. Nature of Work and Tuberculosis in the Abandoned tea plantations

TB, often regarded as a disease of poverty and inequality, manifests in the human body as a result of the complex interplay between socioeconomic factors and health. Mycobacterium tuberculosis, the pathogenic bacteria of tuberculosis, primarily affects the respiratory system and spreads through airborne transmission (Burke, 2011). This highly infectious disease disproportionately impacts individuals living in impoverished conditions, where overcrowded living spaces, inadequate nutrition, and limited access to healthcare create fertile grounds for its transmission. In addition, harsh working conditions, particularly in labour-intensive industries such as tea plantations and factories, play a pivotal role in the prevalence of tuberculosis. Prolonged exposure to dust, poor ventilation, and strenuous physical labour, irregular working hours and insufficient breaks, absence of proper nutrition contribute to weakened immune systems making individuals more susceptible to infection.

Banita Mahali is a 53 years old Adivasi woman who lives with her two sons, and a daughter-in-law in a labour quarter with her family. She works as a bigha worker and her husband worked as a permanent labour at the Madhu Tea Estate. Banita was diagnosed with tuberculosis in the month of July 20221. Banita come to know about the causes of the disease from her interaction with the nurse at the hospital and her young college Rina at the tea garden.

Banita said:

> The Nurse Didi at the medicine room was an Adivasi woman. She told me not to drink *Hadia* (rice beer) and to eat good food. She told me to eat food on time. Rina also told me to eat in the morning. I think the disease of TB infected me because of this only. I hardly get time to eat in the morning. I was always in a hurry in the morning. I had to reach the plucking section in the garden by 7 finishing all the morning household work.

Sanjit Ekka is a 40 years old Adivasi migrant worker from Patabari Tea Estate. He returned home from Bhutan in March 2022 as his health condition was deteriorating. In June 2022 he

was diagnosed with tuberculosis at Latabari Rural Hospital. Sanjit related tuberculosis to his working conditions. He suggested:

> I had worked in a cement factory for almost four years. There was a lot of dust all around the factory. I think the dust got accumulated in my chest and created a burning sensation. As I lived alone (in Bhutan) without my family, there was no timetable for eating and sleeping. I had no time to take care of my health. We (the labourers at the factory) had to cook food for ourselves. There was a lot of struggle to cook, eat, and then go to the factory on time.

Sanjit said:

> I was suffering from a fever frequently. I could not work as I kept on falling sick. So, I decided to come back to home. I had a fever and cough for more than a week. Later on, I started having burning sensations in the chest. I was feeling so weak that I could not do any heavy work even at home.

The nexus between occupation and health is often underscored in the narratives of individuals like Banita Mahali and Sanjit Ekka, both hailing from the marginalized Adivasi communities residing in tea plantation settings. Their experiences shed light on the intricate interplay between the demanding nature of their work and the onset of a debilitating health condition. Banita's struggle to balance household responsibilities and work, coupled with her compromised eating habits, underscores the challenges faced by labourers like her. Similarly, Sanjit's exposure to a dust-laden environment in a cement factory and the absence of a structured lifestyle further accentuate the vulnerability of those working in such conditions. This exploration investigates the complex relationship between the abandoned tea plantations, the nature of work, and the prevalence of tuberculosis among its workforce.

5.4.1.3. Difficulty of Isolation for TB patients and Labour Lines

There is a scarcity of rooms in the labour quarters which makes it difficult to isolate TB patients in a separate room. The labour quarters located in the labour lines of the tea garden in Dooars have 2-3 rooms. The labour quarters are arranged geometrically in straight lines located very close to each other known as ‘Labour Lines’. The labour lines of a tea estate are located mainly on one corner of the tea estate near forests or rivers. For example, the rooms in the labour quarter where Sanjit’s family has been living for three generations are located very close by the Kaljani River. Whereas, the staff quarters inhabited by the Managers and *Babus* of the garden are located in prime locations (such as near the factory, playground, and hospital) and in open

spaces. There is hardly any space between different labour quarters in the labour lines. However, given the crisis of the available rooms in the labour quarters, the family vacated a room for Sanjit to keep him in isolation. The other family members (5 people) shifted to two rooms in the quarter. The room where his old parents lived was also being used as a kitchen. Sanjit lived in isolation in one room for six months. He said:

> The doctor told me to stay away from my family for a few months. Otherwise, the disease might spread to them. We had to make such an arrangement. What can I do? There are no extra rooms available. My parents lived in the kitchen for months.

The drainage and sanitation systems in the labour lines are either in very poor condition or completely absent. The labour quarters are made of brick walls, with a mud floor and roof of tin sheets. In many labour quarters, the brick walls were replaced by thin sheets or plastic walls over time due to the poor maintenance of the labour quarters. The labour quarters were given by the tea garden management to the workers when the garden was established. The workers of the tea gardens have been living in the labour quarters for generations. Therefore, the family size of the workers has increased over the period but not the available space in the labour lines or the number of rooms in the labour quarters. In many labour quarters, people have had temporary arrangements for extra rooms with *Tripal* (plastic sheets), *Thermocol* (Polystyrene) sheets, and tin sheets. They often keep their cattle and other domestic animals in extra rooms. The workers need written permission from the estate management to construct new rooms in the labour lines. This does not apply to the closed or abandoned tea estates; however, it is often not possible given the financial constraints.

5.4.1.4. Social Sigma, Tuberculosis and impact on Education

The stigma and prejudices associated with tuberculosis infection often contribute to social exclusion, hindering individuals from receiving the understanding and support necessary for both their health and well-being.

Raju Oraon (20 years old) is the only son of Binita Oraon and Amal Oraon. He is among the few boys in Rethi Tea Estate who were admitted to a degree college. He was diagnosed with Tuberculosis in January 2022. Amal said that the teachers of the Raju's primary school which is located just beside his labour quarter keep praising their former student. Raju has been a bright student from his school days. Raju has dropped a semester due to his illness. He could not attend the classes in the college and missed the final semester examination. He said that he

has been experiencing stigma and exclusion due to the illness among his friends and classmates. Raju said:

> I missed last semester's examination due to the illness. I stopped going to college as my friends did not talk to me after they came to know about my illness. They do not want to include me in the groups in the college. I do not feel like going to college anymore.

Raju's narrative unveils the social impact of tuberculosis of dropping a semester and facing stigma-induced exclusion in college highlights a pressing societal issue. The ripple effect of such prejudices not only jeopardizes individual academic pursuits but also perpetuates a culture of alienation and missed opportunities. It becomes evident that addressing social stigma and prejudices surrounding health conditions such as tuberculosis makes the situation much more complex.

5.4.2. Vector Borne Diseases: Malaria and Dengue in the Tea Plantations

As per the "State Vector Borne Diseases Control and Seasonal Influenza Plan, 2018" published by the Health & Family Welfare Department, Government of West Bengal, Alipurduar district, has been categorized as the red zone with a very high prevalence of Malaria in the district. This category shows that more than 2 confirmed cases of malaria per 1000 population were found in this district in a year. The report also highlighted that 40 sub-centres at Kalchini block, and 35 sub-centres at Madarihat-Birpara block, the main two tea garden-dominated blocks of the district were categorized as Areas high risk for Vector-Borne Diseases (VBDs) as these centres reported a higher number of Malaria, Dengue, and Japanese encephalitis patients in the last few years. The tea plantations selected for the fieldwork are from these two blocks of Alipurduar district. The Patabari Tea Estate is located in Kalchini block and Rethi Tea Estate is located in the Madarihat-Bipara blocks of the Alipurduar district.

Table 5.3: Number of Malaria Cases in Alipurduar District (2020-2023)

Sl. No.	Blocks/ Municipality	2019	2020	2021	2022	2023 (Till 31.08.2023)
1	Alipurduar-I	3	3	1	3	0
2	Alipurduar-II	14	4	6	14	8
3	Kumargram	328	27	5	12	0
4	Falakata	7	2	6	9	1
5	Kalchini	15	4	6	5	0
6	Madarihat- Birpara	54	3	4	4	4
7	Alipurduar Municipality	22	0	3	6	3
Total (Alipurduar District)		**443**	**43**	**31**	**53**	**16**

Source: Office of the Chief Medical Officer of Health (CMOH), Alipurduar, 2023

Table 5.3. presents data on the number of reported Malaria cases in different blocks and the municipalities of the Alipurduar District for the years 2019 through 2023, with data as of August 31, 2023. The total number of reported Malaria cases in Alipurduar District shows fluctuations over the years. In 2019, there were 443 reported cases of Malaria, which decreased to 43 in 2020 and then increased to 31 in 2021. However, the number of Malaria cases slightly increased to 53 in 2022. Kumargram block, another tea plantation-dominated block, had the highest number of reported malaria cases in 2019 (328 cases). Madarihat-Birpara and Kalchini block, where most of the tea plantations are located in the Alipurduar district, has a higher number of reported malaria cases. Table 5.3 shows that the tea plantation-dominated blocks (Kumargram, Madarihat-Birpara, and Kalchini) had a relatively higher number of reported malaria cases compared to agriculture-dominated blocks (Alipurduar-I, Alipurduar-II, and Falakata) in the year 2019.

Table 5.4.: Number of Cases of Dengue Reported in Alipurduar District (2019-2023)

Sl. No.	Blocks/ Municipality	2019	2020	2021	2022	2023 (Till 16.09.2023)
1	Alipurduar-I	105	1	19	82	25
2	Alipurduar-II	81	0	11	42	49
3	Kumargram	34	2	5	22	9
4	Falakata	303	9	9	118	62
5	Kalchini	2228	21	71	104	31
6	Madarihat-Birpara	535	8	15	575	119
7	Alipurduar Municipality	46	0	8	34	11
Total (Alipurduar District)		**3332**	**41**	**139**	**977**	**306**

Source: Office of the Chief Medical Officer of Health (CMOH), Alipurduar, 2023

Table 5.4. shows the district profile of Dengue reported in the different blocks of the Alipurduar district from 2019 to 2023. The table suggests that Dengue has been a recurring public health concern in Alipurduar District, with an occasional rise in dengue cases. Kalchini block, which is the home of the highest number of tea plantations in the Alipurduar district, consistently had the highest number of dengue cases from 2019 to 2022. In addition, Madarihat-Birpara, another tea plantation-dominated block of Alipurduar district, had the second highest and witnessed a sharp increase in dengue cases in 2022. Falakata had a high number of dengue cases, especially in 2019 (303 cases) and 2022 (118 cases). Alipurduar-I and Alipurduar Municipality had relatively lower numbers compared to Kalchini and Madarihat throughout the years.

Malaria is one of the major vector-borne diseases endemic to the tea plantations in the Dooars region. The World Health Organisation defines it as an acute febrile illness caused by Plasmodium parasites, which are spread to people through the bites of infected female Anopheles mosquitoes (WHO, 2021).

Jayanti Oraon is a 56 years old woman who lives in the Kolai Line of Patabari Tea Estate. She works as a casual labour in the tea estate under the OMC committee. Jayanti was diagnosed with malaria in 2018.

Jayanti said:

> I had a fever for almost a week. My body was shivering at night, and I used to sweat frequently at day time. Every time the temperature of my body increased after that I used to sweat and feel cold. Earlier also many times I had a fever. I used to get well in a day or two with the medicine that I had brought from Dr Ali's shop. But this time the medicine did not work. So, I went to the health centre. The Centre Didi told me that I have malaria.

Jayanti said that she frequently felt sick with fever every year especially during the monsoon season. On being asked the reason behind her falling sick with fever frequently, Jayanti said:

> Bhai, I have to pluck tea leaves every day even if it rains or it is excessive heat on that day. I can't hold an umbrella and pluck tea leaves only with one hand. I can't take a leave otherwise I won't get the *Hazira* (daily wage).

She had brought medicines from the local Rural Medical Practitioner who has a shop in Patabari Chowpathy, located very close to the tea garden. However, this time she was worried as the medicine she brought from the Rural Medical Practitioner gave her relief temporarily. She did not get well as her fever lasted for more than a week. She had symptoms such as shivering and excessive sweating. She went to the Health and Wellness Centre at Patabari Tea Estate to seek care. Jayanti was diagnosed with malaria and the ANM at the centre recommended her visit to the Latabari Rural Hospital, the Community Health Centre (CHC) located a few kilometres away from the Patabari Tea Estate. She went to the hospital on the next day accompanied by her younger son Bibek Oraon (28 years old). She said:

> The Centre Didi gave me some tablets, but she kept telling me to go to the hospital on that day only. I was worried so I came back home. The next day, I went to the hospital with my son. The nurse at the hospital again took my blood and told me to go to the doctor's room. They gave me a lot of tablets and told me not to go to work for a week.

Jayanti said that the ANM at the HWC Patabari TE along with the ASHA worker came to visit her house the next week to check her health and the medicines.

> The *Centre Didi* (ANM, HWC Patabari) told me to keep the pigs away from my house premises and keep the drains clear so that mosquitoes can't grow. I don't have any other place in the house to keep my pigs. They are the only assets I have in case of any financial crisis. So, it is also not possible to get rid of the animals.

As the tea garden communities do not have agricultural fields, the livestock animals are a major source of alternative income for the households in the Patabari Tea Estate. The livestock animals such as pigs, goats, and ducks are the most common and are often found in small numbers (3-5) in and around the labour quarters. It is convenient to keep these animals in the household as they do not need much extra effort. In addition, these livestock have high market value in the region. However, as these animals especially pigs and ducks have a fondness for residing in muddy environments, they make the household surroundings dirty. They also make the open drainage system in the labour lines more clogged. Jayanti explained that the ANM of the HWC at Patabari TE suggested she should not keep the livestock within the household premises as the swampy areas created by these livestock can trigger the growth of mosquitos in the household. However, it is the financial condition of Jayanti that compels her to keep the livestock even within the household as these livestock are the only assets for her in case of any financial emergency.

5.4.2.1. Geographical Climate and Malaria Outbreaks in Tea Plantations

The Dooars region, located in the foothills of the Eastern Himalayan range, experiences the highest amount of precipitation in West Bengal. With the arrival of the southwest monsoon, the rainy season starts from May to June and lasts until the end of September in the Dooars region. The area's average rainfall is approximately 3,100 mm, with the highest precipitation observed during July and August. In this region, summer temperatures range from 31.6 °C (Max) to 21.3 °C (Min), while winter temperatures fluctuate between 23.6 °C (Max) and 10.7 °C (Min). Numerous rivers, streams, lakes, and water bodies make the Dooars region highly humid. In addition, the region is mostly covered with dense forest and has several National Parks and Wildlife Sanctuaries. Consequently, the geographical and climatic condition of the Dooars region makes it highly favourable for mosquito breeding and endemic to malaria outbreaks.

Historically, the tea estates of the Dooars region have been referred to as Malaria prone areas which are still prevalent among the public health officials in the state. Debobrata Roy (36 years old), a trained Microbiologist works as an Epidemiologist at the Office of the Block Medical Officer of Health, Kalchini. He said:

> In 2017, I attended a workshop organized by the Health Department (of Govt of West Bengal) at Swastha Bhavan, Kolkata. During an interaction session, a Senior Officer from the department said to me, 'Okay! You are from the heart of the malaria-dengue zone'.

Debobrata Roy said

> There is an increasing frequency of dengue outbreaks every year in this entire region, especially in the blocks with a large number of tea estates. The dengue outbreak is seasonal in the tea estates, especially in the late summers and monsoons. The poor housing, sanitation, and waterlogging conditions in the labour lines of the tea estates, make it vulnerable to malaria and other vector-borne diseases.

Dipika Chhetri (34 years old) is a Nepali woman born at Kathalguri Tea Estate. In 2008, she married Pratap Chhetri, a migrant worker, and started living in a two-room labour quarter at the Hospital Line of Rethi Tea Estate. Dipika is an active member of the Roshni Self-Help Group which runs a community kitchen for the disabled and homeless people at Rethi Tea Estate with government support since 2018. Nawraj Chhetri (23 years old) was Dipika's brother-in-law who worked as a helper on daily wage in the local fair price shop under the public distribution system. In August 2017, Nawraj was suffering from a high fever for almost a week. He had brought medicine from a medical store without consulting the doctor. However, Nawraj died of fever at home after a week. Dipika said:

> The ANM Didi organized a blood testing camp on the day after Nawraj's death. They have collected blood from more than 100 people in the locality.

In the rapid malaria test, a total of four people including Dipika tested Malaria positive.

Dr. Manash Mukherjee, the BMOH of Kalchini block explained the high prevalence of vector-borne diseases in the tea gardens of the Dooars region.

> This Dooars region is prone to vector-borne diseases such as malaria and dengue. Every year we get a significant number of patients suffering from malaria and dengue at our health centres, especially those living in the tea gardens. Often malaria and dengue outbreaks occur in this region, especially in the summer season. Last year (2022) we found more than 100 dengue patients in Kalchini block alone. This number was more than 300 in our neighbouring Madarihat-Birpara block. A large number of these patients were from the tea gardens.

Dr. Mukherjee said:

> The sanitary conditions in the labour lines in the tea gardens are very poor. The labour lines neither have a drainage nor sewerage system which causes waterlogging during rainy days. These conditions the tea gardens favourable for the breeding of mosquitoes. We have been conducting special camps to diagnose malaria in the tea garden areas along with regular screening and blood sample collections at the sub-centre level. The health department has taken the initiative for Indoor Residual Spraying (IRS) in the labour lines.

The preceding discussion highlights that the poverty, socio-economic inequality, harsh working and poor living conditions of the tribal labourers, along with the geographical and climatic vulnerability make the Dooars region highly susceptible to malaria and several vector-borne diseases.

5.4.2.2. New Emerging Vector Borne Diseases: Filariasis and Leptospirosis

As we discussed in the previous section, the Dooars region is susceptible to the occurrence of a multitude of infectious diseases due to its inherent geographical vulnerabilities. The Dooars region, rich in biodiversity and dense forests, shares international borders with Bangladesh, Bhutan, and Nepal, as well as inter-state borders with Indian states such as Bihar, Assam, and Sikkim; the latter of which shares its international border with China and Bhutan. These areas are known as endemic zones for recent outbreaks of communicable and vector-borne diseases, including Malaria, Japanese encephalitis, Scrub Typhus, Dengue, Kala-Azar, and the Nipah virus. Consequently, the geographical location and vulnerabilities of the Dooars region make it susceptible to these diseases, presenting an ongoing public health challenge marked by recurrent surges in cases and threats of outbreaks (Sharma & Tilak, 2021).

Dr. Ananta Chowdhury (36 years old) is a Medical Officer at Madarihat Rural Hospital. He said that filariasis has become an issue of concern in the tea plantations of the region. He informed that filariasis is also transmitted to humans through mosquito bites. The parasites of the disease can cause damage to the lymphatic system in childhood without any visible signs of the disease. However, in later life, the disease can cause visible symptoms such as lymphoedema, elephantiasis, and scrotal swelling. This disease can be extremely painful and disfiguring and can cause physical disability. Dr. Chowdhury said:

> Filariasis patients are frequently detected from the tea gardens. It is another disease transmitted by mosquitos. However, it does not get much attention like malaria or dengue from the health department. The malaria control program has been implemented much more rigorously at the village level. The screening and treatment for malaria are readily accessible, even at the village and sub-centre level. This ensures that people living in remote areas have access to diagnosis and timely treatment of malaria. This has significantly reduced the number of patients as well as the pressure on the rural hospitals. Recently, dengue and encephalitis have also received much attention from the health department. However, unlike these diseases, filariasis has not received the required attention from the health department. There is a need for awareness of filariasis, especially in the tea gardens.

Filariasis is often found among the tribal population residing in the tea gardens of the Dooars region of North Bengal. One of the most common symptoms of the disease is excessive swelling of legs, which is particularly prominent in adults. The excessive swelling of legs can lead to physical disabilities, resulting in the loss of livelihood and forcing the infected person into poverty. Unfortunately, there is also a social stigma attached to the disease, with people from the community often stigmatizing those who are infected. The stigma surrounding the disease can compound the already difficult circumstances that patients face, including mental, social, and financial challenges, which in turn contribute to both stigma and poverty. According to the WHO (2022), lymphatic filariasis commonly known as Elephantiasis, is a tropical disease that is often overlooked or neglected. Individuals from low and medium socioeconomic backgrounds are more susceptible to filariasis, as they face increased exposure to the disease due to various factors such as poor living conditions, lack of access to proper healthcare and sanitation facilities, and limited knowledge about preventative measures.

This disease mainly spreads through the domestic as well as wildlife animals. Pigs and goats are the common spreader in the tea estate. The bacteria of Leptospirosis spreads through the urine and excreta of the pigs. Often the people as well as the healthcare providers misread these diseases as ordinary fever.

Debobrata Roy (36 years old), a trained Microbiologist works as an Epidemiologist at the Office of the Block Medical Officer of Health, Kalchini. He said:

> We came across an interesting case. The people of tea gardens and forest villages often get infected with some peculiar diseases that are not seen in other parts of

> the state in general. In July 2018, an Adivasi man from the Bhatkhawa Tea Garden came to our hospital with a high fever. The doctor gave him medicines and advised for a blood test. His blood test reports of malaria and dengue were negative. We ran all other common blood tests that were available here. However, his fever was not completely cured as he kept on visiting the hospital with the same symptoms in the next few weeks. The doctors were puzzled. We decided to send his blood sample to the North Bengal Medical College at Siliguri. The reports came after one month that he had Leptospirosis. The patient had died by that time.

Debobrata Roy said:

> The medical college informed us that this was the fifth case of Leptospirosis in their laboratory in the last two years. All these patients were from the tea gardens of Kalchini and Kumargram block. There might be many more cases of Leptospirosis in the tea gardens. We do not have the infrastructure for screening and diagnosis of such diseases, thus it remains underreported. On the other hand, the patient goes through the wrong medication as the diagnosis of such diseases is not available in the entire region. This disease will cause multiple organ failure and ultimately the patient dies without treatment.

In summary, the Dooars region faces a multifaceted public health challenge, marked by the rise of several new diseases due to geographical vulnerabilities, poverty, and inequality. Neglected Tropical Diseases (NTD), especially lymphatic filariasis, often escape attention among those with low and medium socioeconomic backgrounds. Moreover, diseases like Leptospirosis remain underreported due to insufficient screening infrastructure, underscoring the critical need for improved healthcare resources in addressing these overlooked health challenges.

5.5. Non-Communicable Diseases (NCDs) in Abandoned Tea Plantations of Dooars Region

There is a major debate about whether non-communicable diseases are the diseases of poverty or affluence, especially in the low-and-middle-income countries (Vellakkal, et al, 2013). However, several studies have found that non-communicable diseases are increasing at an unprecedented rate among the poor and marginalized section of Indian society (Binnendijk et al, 2012; Vellakkal, et al, 2013; Williams et al, 2018). According to an estimate by the Indian Council of Medical Research (ICMR), the number of deaths due to Communicable, Maternal, Neonatal, and Nutritional Diseases (CMNND) has witnessed a decline from 53.60% to 27.5%

between the years 1990-2016 in India. Conversely, the deaths due to Non-communicable Diseases (NCDs) witnessed a substantial increase from 37.9% to 61.8% during the same period in India, highlighting a shift in epidemiological transition. In addition, deaths caused by Injuries also increased from 8.5% to 10.7%. The report notes that CMNNDs caused 31.7% of deaths, NCDs accounted for 55.5%, and injuries contributed to 12.9% of total deaths in West Bengal in 2016 (ICMR, 2017).

The Tribal Health in India Report (2018) jointly published by the Ministry of Health and Family Welfare, and the Ministry of Tribal Affairs, Government of India has found that there is evidence of early-stage epidemiological transition in the tribal societies in India. The rise in non-communicable diseases has been taking place without replacing the existing burden of communicable diseases in tribal societies. It has been reported that there is a tremendous rise in non-communicable diseases such as cancer, diabetes, and hypertension in tribal societies triggered by environmental degradation, unprecedented urbanization, and lifestyle changes (GoI, 2018).

Similarly, in the case of the tea plantations in the Dooars region, there is a significant increase in the number of non-communicable diseases such as hypertension and cardiovascular diseases, kidney diseases, jaundice, and cancer among the tea plantation workers. A recent study conducted among the tea plantation workers in the Alipurduar district found a significant increase in the rate of non-communicable diseases which accounts for 24.20 % of all forms of morbidities in the tea plantations (Yasmin et al, 2022).

The prevalence of noncommunicable diseases such as hypertension, diabetes, and skin diseases are higher in the closed tea plantations of the Dooars region. Ruma Barman (30 years old) has been working as a pharmacist with the Mobile Medical Unit since 2018 at the Rethi Tea Estate. The Mobile Medical Unit serves five other closed tea estates located near the Rethi Tea Estate. Therefore, she visits each tea estate once in a week. She said:

> Every close tea estate is in more or less similar condition. We get a lot of patients, every day, a lot (she repeated with emphasis). Most of them come with illnesses related to blood pressure, sugar, and skin diseases. Almost 90 % of the patients in closed tea estates have one of these problems. These diseases have become like every household phenomenon.

She explained the reason for the widespread of these diseases. She said:

> I think it has a lot to do with their lifestyle and food habits. The people here do not have proper employment nowadays. So, they do whatever they get, often which is not very good for their health (precarious job), like working in the river.

The precarious nature of alternative livelihood, prolonged stress of survival and finding jobs and the absence of social security due to the closure of the tea estates have increased the vulnerability to different noncommunicable diseases among the people in the tea plantations, especially the poorest Adivasis, women, and children.

5.5.1. Hypertension in the Tea Plantations of Dooars Region

In the abandoned tea plantations in the Dooars region hypertension has turned into one of the major non-communicable diseases. Hypertension, commonly known as high blood pressure, is a medical condition characterized by elevated pressure in the arteries. It is often caused by factors such as genetics, unhealthy lifestyle choices, excessive salt intake, lack of physical activity, and chronic conditions like kidney disease or hormonal disorders (Leggio et al., 2017).

Dr. Pranesh Das, 48 years old, a senior private practitioner based in Kalchini block explained one of the major reasons for the high prevalence of hypertension and cardiovascular diseases among the tribal communities in the tea plantation. There is a common practice of drinking salt tea which causes a high prevalence of hypertension among the tribal communities in the tea plantations.

Bhaktaram Oraon is a 49 years old man who worked at Patabari TE as a permanent labour. HE had lost his employment as the Patabari Tea Estate was abandoned by the owners. He currently works in a potato storehouse at the Hasimara market as a daily wage labour. He has two sons Ajay Oraon (26 years old) and Satish Oraon (22 years old). Ajay works as a migrant labour in Kerala, and Satish is a school dropout and unemployed. Bhaktaram lives with his mother, wife and younger son Satish at Niche Line at Patabari TE. Bhaktaram has been on medication for hypertension since December 2021. He said:

> Last year in the winter, I used to feel dizzy and have headache frequently. I did not care because I thought it was normal. One day while coming back from the Hasimara Bazaar I fell from a cycle on the roadside. The shopkeepers who were nearby rescued me and put water on my head. I waited there for almost an hour before I came back to home.

He went to an *Ojhamati*, the faith-based healer as advised by his mother to seek healthcare. As his health condition did not improve, we went to the Health and Wellness Centre at Patabari

Tea Garden located close to his house to seek medical care. He was diagnosed with hypertension at the Health and Wellness Centre.

Bhaktaram explained the causes of his illness with hypertension. He said:

> I have also discussed this with my friends. It's an illness of 'tension' you know. My friends keep telling me not to worry about this too much. How can I be tension-free? I have lost my permanent job. I do not get a fixed Hazira anymore. I do not even know what is my son doing in Kerala, and my younger son does not listen to me at all. He did not complete his school neither he does any work for a living.

Bhaktaram correlates the causes of his illness of hypertension with his high-stress level at work as well as family life. He lost his permanent employment at the Patabari Tea Estate after the tea garden was abandoned by the management in 2014. Since then, he has tried to find a permanent job in multiple places but he could not find such employment for himself. He was compelled to work as daily waged labour and often as contract labour at the nearby daily market and warehouses in the city. In addition, his family has also been going through a difficult phase as his elder son had to migrate to another state in search of livelihood. According to Bhaktaram, his younger son Satish did not complete his schooling to be able to find a decent job in the locality. Bhaktaram is also not happy about the attitude of his son and complained about Satish's peer groups in the garden.

5.5.2. Diabetes in the Abandoned Tea Plantations of Dooars Region

Shiv Kumar Oraon (51 years old) was a permanent labour in the Patabari Tea Estate since 1995. He worked as a tea leaf plucker for three years at the beginning and later on he joined a group of pesticide sprayers in the Patabari Tea Estate. He worked as a pesticide sprayer for more than 15 years before the estate was closed in 2014. Shiv Kumar lives in a labour quarter at Budhuram Line of Patabari TE with his family. Shiv Kumar Oraon was diagnosed with diabetes in 2021. Shiv Kumar stated that he had gone to a health centre to seek treatment for his fever. He mentioned that the Auxiliary Nurse Midwife (ANM) conducted a rapid test collecting blood from his finger and diagnosed him with high blood sugar. Shiv Kumar reported that she prescribed medicine for his fever and diabetes and instructed him to visit the health centre monthly to collect his medications for diabetes.

He explained his understanding of illness due to his prolonged exposure to pesticides and chemical fertilizers in the tea garden.

> I had worked in the spraying group for such a long time. I used to apply fertilizers on the trees by hand. I have worked with *Zaher* (Poison) all my life. I think that *Zaher* has come to my body as well.

Shiv Kumar had also taken advice from a doctor through the telemedicine services at the Patabari HWC as he had lost weight rapidly in recent months. Shiv Kumar Oraon explained his difficulties in following the routine he was advised by the doctor to follow to avoid falling sick.

> The doctor told me not to eat rice two times a day. He told me to eat more green vegetables but not rice. He told me to stop drinking Hadia, which I do not drink now. If we are not allowed to eat rice and potatoes, what shall we eat then? I cannot buy vegetables every day from the market. My elder son stopped sending me money from Gujrat. He has his own family now.

The diet chart of the former tea garden labourers is mainly based on carbohydrates. They eat rice-based meals twice to three times a day. The use of potatoes in regular meals is a common practice among the tea garden communities.

The case study of Shiv Kumar Oraon exemplifies the intricate connection between occupation, health, and dietary habits among tea estate labourers. His struggles adapting to a diabetes-friendly lifestyle, including nutritional changes, serve as a poignant reminder of the challenges individuals like him face. While a staple, the traditional rice-based and potato-rich diet of tea garden communities presents difficulties in adhering to medical advice. The need to shift dietary habits for health reasons clashes with the economic constraints faced by Shiv Kumar, exemplified by his elder son's inability to provide financial support. The case study underlines the importance of addressing tea estate laborers' unique healthcare needs and socioeconomic realities.

5.5.3. Eye Diseases and Disorders

It has been found during the fieldwork that various eye diseases including cataracts, glaucoma, and colour blindness have become very common among the tribal communities in the tea plantations in the Dooars region.

Debobrata Roy, an epidemiologist at Latabari Rural Hospital in Kalchini block, Alipurduar, informed that the district health administration had observed an influx of patients with ophthalmological complications at the hospital, many of whom were from the tea belt. These patients presented with various issues, including eye infections, blindness, night blindness,

dry eye disease, cataracts, and glaucoma. Notably, diabetic patients had a higher risk of developing glaucoma. Initially, the hospital lacked the infrastructure, medical staff, and doctors to address these cases. The hospital had organized monthly eye check-up camps with the district hospital and a Non-Government Organization (NGO). In 2017, with the assistance of a multinational NGO, they established an eye clinic within the hospital, where patients could access eye check-ups and consultations with doctors for a nominal fee of 10 rupees. He further explained:

> One of the main reasons is the lack of nutrition such as vitamins and fatty acids in the diet of the patients. The diet chart of the tea garden workers is primarily dominated by the carbohydrate. Night blindness due to lack of vitamin A is very common in tea gardens. In addition, excessive consumption and long-term exposure to alcohol cause serious damage to vision and eyesight. We term it optic neuropathy which is found in a high number among the tea plantation communities.

He explained the gender and age of the patients who come to seek health care services in the clinic.

> This problem is more acute among people in their late 40s. Comparatively, we get a much higher number of male patients in the eye clinic. The ratio is around 65 to 70 % of the total patients. The women patients do not come for follow-up checking after the first day of eye screening. Or they do not come at all for eye check-ups.

In summary, the eye disorders among the tribal communities found in the tea plantations of the Dooars region can be attributed to nutritional deficiencies, particularly in vitamins and fatty acids, prevalent in the predominantly carbohydrate-based diet of tea garden workers. Night blindness, a common issue, is linked to a lack of vitamin-A. Moreover, the detrimental impact of excessive alcohol consumption on vision, termed optic neuropathy, is widespread among the tea plantation communities. It has been found that the problem of eye-related diseases is more acute among men in their late 40s. The underutilization of follow-up services, especially among women, underscores the gendered nature of healthcare service utilization in the tea plantations of the Dooars.

5.6. Environmental Vulnerability and Diseases in the Abandoned Tea Plantation in Dooars Region

The Dooars region, a part of the Sub-Himalayan Bengal located at the foothills of the eastern Himalayan range, has a unique geographical and climatic condition. The Dooars region characterized by a subtropical climate with high humidity experiences a prolonged monsoon season with an annual rainfall exceeding 3100 mm (Deb & Mukherjee, 2022). The region is known for frequent and intense rainstorms and climate-related calamities, including flash floods resulting from unprecedented rainfall in the Bhutan Himalayas. Consequently, climate-triggered disasters such as floods have emerged as the primary causes of climate-induced vulnerabilities in the rural communities in this region (Ghosh & Ghosal, 2021). Furthermore, the Dooars region is witnessing the repercussions of climate change, evident in the heightened frequency of floods and degradation of the natural environment, along with socioeconomic backwardness have increased the vulnerability of the local communities (Sam & Chakma, 2018; Ghosh & Ghosal, 2021). The environmental vulnerability of the Dooars region along with the socio-economic insecurity and precarious living and working conditions in the abandoned tea plantations has given rise to certain specific diseases among the tribal communities. It has been found during the fieldwork that diseases due to environmental conditions such as diarrhoea, animal bites, scrub-typhus, and skin diseases have become major issues in the abandoned tea plantations in the Dooars region.

5.6.1. Diarrhoea and Waterborne Diseases:

The acute scarcity of drinking water has been a major challenge in the abandoned tea plantations in the Dooars region. The tribal communities in the tea plantations are primarily dependent on surface water such as rivers, *Jhoras* (small streams), open wells, and hand pumps for water for drinking and daily use. However, groundwater depletion and contamination from dolomite mining, pesticides and chemical fertilizers used in the tea plantations and nearby agricultural fields have the situation more vulnerabilities (Bishnu et al., 2009; Sarkar, 2017). The scarcity and contamination of water have given rise to several waterborne diseases in the abandoned tea plantations of the Dooars region. Waterborne diseases are caused by pathogenic micro-organisms that are transmitted through contaminated water while bathing, washing, or drinking. Waterborne diseases such as diarrhoea, cholera, dysentery, typhoid, and polio can be transmitted by microorganisms that contaminate drinking water. The tea plantation labours frequently suffer from waterborne diseases such as diarrhoea, dysentery, giardiasis, and other

stomach and skin infections. According to an estimate, the women are more affected by diarrhoea than the men in the tea plantations in the Dooars region. It was found that 33.33 % of the total female population and 26.21 % of the total male population are affected by diarrhoea in the tea gardens (Roy et al, 2013).

Table 5.5.: Diarrhoeal Diseases in Alipurduar District from 01/11/2022 to 31/01/2023

Sl. No.	Blocks	Acute Diarrhoeal Disease	Loose watery stools with blood < 2 weeks	Loose watery stools without blood < 2 weeks
1	Alipurduar - I	6934	28	1129
2	Alipurduar - II	1550	23	241
3	Falakata	2624	26	840
3	Kalchini	1699	47	957
4	Kumargram	1107	11	856
5	Madarihat	2349	41	551
Alipurduar District		**16263**	**176**	**4574**

Source: District Integrated Disease Surveillance Project (IDSP) Cell, Alipurduar, 2023

Table 5.5 provides a summary of diarrhoeal diseases in Alipurduar District for the period from November 1, 2022, to January 31, 2023. The total number of cases of acute diarrheal diseases in Alipurduar District during this period was 16,263. The total cases of loose, watery stools with blood and without blood were 176 and 4,574, respectively. Alipurduar - I had the highest number of cases with 6,934, followed by Madarihat (2,349) and Falakata (2,624). Alipurduar - II had 1,550 cases, Kalchini had 1,699 cases, and Kumargram had 1,107 cases. Table 5.5 distinguishes between two types of acute diarrhoeal diseases: loose watery stools with blood (less than 2 weeks) and loose watery stools without blood (less than 2 weeks). The number of cases with loose watery stools with blood is relatively low, with the highest in Alipurduar - I (28 cases) and Madarihat (41 cases). The number of cases with loose watery stools without blood is much higher, with the highest in Alipurduar - I (1,129 cases) and Kalchini (957 cases).

One of the major challenges in the tea plantations in the Dooars region is access to safe drinking water. When the tea estates were functional, there were provisions for piped water supply for the labour lines in both the Rethi Tea Estate and Patabari Tea Estate. The huge water tanks made of iron installed in the colonial period are still there near the factories of both the tea plantations. However, with the closure of the tea estates, the piped water supply to the labour lines had cut off gradually. Ranadhir Tanti (35 years old), the panchayat of the Rethi tea estate said:

> After the garden was closed, still there was water supply at labour lines for two or three years. Mukesh and his friends (from the tea garden) used to operate the

> pump voluntarily. But we did not have money to pay the electricity bill (for the pump). The electric department cut the power supply. The local minister had paid the electric bills once. However, it got cut again.

Birsha Oraon (72 years old), a retired Adivasi labourer at the Patabari tea estate said:

> The garden used to give ration, medicine, and water. Did you see the big water tanks in front of the factory? We used to get water from that tank in our homes. Once the garden was closed, we did not even get water to drink. In 2019, the government set up a new pump house and a water tank near the Manager's clubhouse, but it is not functional yet.

Patabari Tea Estate had piped water supply in the staff and sub-staff quarters of the tea estate. In addition, the piped water was supplied to a few labour quarters located near the factory of the tea estate. With the abandonment and followed by the closure of the tea estates in the Dooars region, the tea plantation labourers not only lost their employment and livelihood, but they also lost the social security and entitlements provided to them by the tea plantation management guaranteed under the Plantation Labour Act, 1951. However, most of the labour quarters located away from the factory near the forest at the edge of the plantation did not have piped water supply. The labourers were dependent on the water of the river, *Jhora* (small streams), and hand pumps for drinking and daily use. Access to safe and clean drinking water has been a major challenge after the closure of the tea estates. In addition, most of the tea plantations in Dooars regions are located in geographically inaccessible and remote areas surrounded by numerous rivers, forests, and hills. In most of the tea plantations, there is no deep tube wells, Public Health Engineering (PHE) water supply, or piped water supply. The people in the tea estates have to depend on open wells, rivers, and small streams known as Jhora for drinking water supply. In addition to the clean drinking water, there are also serious issues with sanitation and hygiene in the tea plantations in the Dooars region. It was found during the field survey in both the tea estates that the drainage and sewerage systems in the tea plantations are almost absent. There are no waste disposal methods in practice in the tea plantations. In addition, the labour lines have become overcrowded over the years and are in dilapidated conditions due to a lack of maintenance. The poor sanitary and living conditions along with the scarcity of safe drinking water have triggered the frequent outbreak of waterborne diseases in the closed tea plantations in the Dooars region.

Dr Manash Mukherjee, the BMOH of Kalchini block said:

> We have noticed that the prevalence of diarrhoea and other waterborne diseases has come to a check in the last four to five years in the gardens. This is because recently the supply of drinking water supply has been improved in the gardens by installing PHE water tanks in a few gardens. However, still, water is still scarce for drinking as well as daily use in the tea gardens. We get patients from tea gardens with the symptoms of acidity, gastritis, and stomach ulcers frequently in our health centres frequently. These conditions are directly linked to food habits and the availability of clean water. If you don't have clean water and sufficient food to eat on time, these diseases are bound to arise.

However, it has been observed during the fieldwork that the Madarihat-Birpara Block's tea estates suffer from severe water scarcity in contrast to the Kalchini Block's tea plantations. The majority of tea estates in the Madarihat and Birpara blocks, including Rethi, do not have piped water supplies, commonly referred to as Public Health Engineering (PHE) taps or tap calls. In contrast, the tea estates located in the Kalchini tea estate have been given a piped water supply in the last few years.

5.6.2. Skin Diseases among the Tea Plantation Communities

The contamination of water in the tea plantations of the Dooars region has increased skin diseases. The scarcity of water, especially during the non-monsoon seasons significantly impacts the health and hygiene practices in the tea plantations of the Dooars region. In addition, there are also a significant number of women who depend on the nearby forest to earn a livelihood. There are several skin diseases and infections such as dermatitis, ringworm, allergies, and rashes that are very common among the plantation labourers in the Dooars region.

Eleazar Toppo (49 years old) is a rural medical practitioner in the Rethi Tea Estate. Eleazar has been working as a rural medical practitioner for the last 22 years. According to him, there is also a wide prevalence of skin diseases in the tea gardens. He said that ringworm, eczema, dermatitis, and skin sores are very common among the tea garden labourers.

Dr. Ananta Chowdhury (36 years old) is a Medical Officer at Madarihat Rural Hospital which served numerous tea gardens located near the hospital. He has been working at Madarihat Rural Hospital for last 5 years. Dr. Chowdhury said:

> Various skin diseases mainly fungal infections are very common among the tea garden labourers. Skin fungal infections such as ringworm or tinea are very common in the tea gardens. This disease is known as '*Daaud'* in this area. Every fourth person gets infected once in a year. There is a scarcity of clean water for

> daily household work in the tea gardens. The water available in open surface sources like rivers or *Jhoras* is either not clean or highly contaminated with pesticides and other chemicals from the tea gardens. Water scarcity becomes more acute in the winter season. This scarcity of water, along with the other daily household works, also affects personal hygiene including taking a bath and washing clothes.

In summary, insights from healthcare providers highlight the widespread problem of skin diseases among the labourers in tea gardens. The most common skin diseases in the tea plantations are ringworm, eczema, dermatitis, skin sores, and fungal infections such as ringworm, locally referred to as *Daaud*. The difficulties in obtaining clean water, compounded by contamination from pesticides and chemicals into open water sources, contribute to the recurring nature of these skin ailments. The water scarcity, particularly notable in winter, further impedes personal hygiene practices, including bathing and clothes washing, increasing the health risks for the tea garden communities.

5.6.3 Animal Bites and Scrub Typhus in the Tea Plantations of Dooars region

The Dooars region is predominantly covered by tropical semi-evergreen forests, tropical moist deciduous forests, savannas, and tropical and subtropical grasslands. The fertile alluvial soil, irrigated by numerous rivers originating from the eastern Himalayas, and prolonged monsoon season formed the foundation for the dense jungles housing various wildlife sanctuaries and national parks in the Dooars region (Bhattacharjee & Parthasarathy, 2013). There are several important protected forests in the Dooars region of West Bengal including Jaldapara National Park, Buxa Tiger Reserve, Gorumara National Park, Chapramari Wildlife Sanctuary, and Chilapata Forests which are the home of numerous species of mammals, birds, and reptiles including Indian rhinoceros, Asian elephant, Indian bison, spotted deer, barking deer, sambar, rhesus monkey, fishing cat, jungle cat, tigers, clouded leopard, Indian leopard, pythons, scarlet minivet, sunbird, Asian paradise flycatchers, and Indian hornbill to name a few. This amalgamation of the unique geographical features has nurtured a diverse ecosystem along with numerous wildlife and habitats of different species, rendering the region a repository of rich biodiversity. However, the Dooars region has fallen victim to extensive human intervention, resulting in detrimental consequences such as river shifting, deforestation, water scarcity, and air pollution. The Dooars region has witnessed a surge in human-wildlife conflicts, underscoring the economic, social, and environmental challenges faced by the region (Kshettry et al., 2017; Bhattacharjee & Parthasarathy, 2013). The large mammals and reptiles often come

out from the forest in search of food and attack the human settlement in the tea plantations and forest villages. On the other hand, the tribal communities have become increasingly dependent on the forest to earn livelihood after the closure of the tea estates. The increased interaction and conflict between humans and wildlife has also given rise to several diseases in the tea plantations.

Kishore Chhteri, a 52 years old Nepali trade union leader and former worker at Patabari Tea Estate said:

> The tea trees had grown up due to lack of maintenance and pruning (while it was closed). The gardens had become full-grown forests. The elephants, leopards, and other wildlife from the nearby forest had started coming to the locality more frequently. This wildlife has destroyed the labour quarters and started attacking the domesticated animals like pigs and goats at the labour lines.

Debobrata Roy, the Epidemiologist at Kalchini block said:

> Kalchini block has one of the highest animal bite cases in the state. The number of snake and insect bites is also much higher than many other blocks in the state. We inject rabies vaccine at least 150 to 160 patients monthly. This number of patients is not a joke for a rural hospital like this. The animal and snake bite patients are mainly amongst women from the tea gardens and forest villages. Along with dog and snake bites, often we get patients who were attacked by leopards in the tea gardens.

Other than working under the OMC, the women labourers in the closed tea plantations mainly work in the river beds, forests, and brick kiln factories. Therefore, the women workers are more prone to scrub typhus, and insect bites such as hornets, spiders, wasps, or bees which result in fever, headache, body aches, and rash.

5.7. Occupational Health Hazards in the Abandoned Tea Plantations in Dooars Region:

The tea plantation workers in the Dooars region suffer from several occupational injuries and ill-health. It was found during the fieldwork that a significant number of people in the tea plantation suffer from occupational injuries such as musculoskeletal disorders, accidents, and cuts in the body. The nature of work in the abandoned tea plantations requires huge physical labour. After the atonement by the owners, the tea plantations are being operated by the Operation and Management Committees (OMC). The former labourers were mostly women and a few men who did not migrate to other places in search of livelihood works in the tea

plantation as tea labourers under the OMC committee. The works under the OMC committee include tea leaf plucking, pruning, maintaining drainage systems in the field, and spraying pesticides and chemical fertilizers. The women workers are mainly involved in tea leaf plucking and cleaning the gardens while the men labourers are largely involved in pruning, maintaining drainage systems in the field, and spraying pesticides.

5.7.1. Accidents and Musculoskeletal Injuries

A significant number of women labourers suffer from body pain, neck pain, muscle pain, muscle rigidity, and other musculoskeletal disorders as they carry a load of plucked tea leaves on their heads for a considerable amount of time every day.

Ruma Barman (30 years old) has been working as a pharmacist with the Mobile Medical Unit since 2018 at the Rethi Tea Estate. She said:

> Body pain-related complications are very frequent. Every day people come to us asking for pain killers. In fact, the majority of our patients report body pain. This is mainly because they work for long hours in rivers. They have to bend their body to collect sand and grabbles from the river bed, and they remain in this posture for a considerable time every day. Also, the other types of work the people here do need huge physical labour.

Bodiar Rahaman, a 57 years old Muslim man who is an Ayurvedic traditional healer known as '*Kabiraj*' in the Patabari Tea Estate. He has been selling Ayurvedic massage oil for muscle and joint pains to the tea garden labourers at the Patabari Tea Estate since 2010. He said:

> The works such as plucking and carrying tea leaves, sand mining on the river bed, or collecting firewood from the forest require huge physical labour. So, joint pains, muscle pain, and back pain are very common among the tea plantation communities.

The women labourers have to work irrespective of wind, rain, cold, and heat without minimum protective gear throughout the year. Therefore, the women workers frequently suffer from fever, cold, cough, and respiratory diseases.

The male labourers frequently suffer from accidents, cuts in the body, and other injuries, as they work with sharp objects while pruning and maintaining the drainage in the garden. The male labourers especially those who are involved in the pesticide spraying groups have said that they have higher chances of getting affected with asthma and other respiratory diseases.

5.7.2. Respiratory Diseases

The tribal communities especially the women and elderlies in the abandoned tea plantations of the Dooars region have started working in precarious conditions such as sand mining sites on the river beds, brick kiln industries, and forest products to earn a livelihood. This shift in the nature of work from a settled form of employment in the tea plantations to an unsettled form of employment in precarious working sites has given rise to a set of occupational diseases including respiratory illness and silicosis. It has been found in the fieldwork that the women who work in the sand mining sites on the river bed suffer frequently from cold, fever, and cough. In addition, many of them have developed symptoms of chronic asthma.

Jhulan Munda, a 56 years old Adivasi woman from Rethi Tea Estate has lost her employment after the abandonment of the tea plantation. She has been working at the sand mining site at the Rethi river bed under a contract for the last 5 years. She works more than 8 hours every day and earns INR 150-200 per day depending on the volume of the sand and grabbles she collects from the river bed. This prolonged exposure to water and dust of silica has caused asthma in Jhulan. She said:

> I've developed *Hapani* (asthma) in my body from this river. Now I cannot work for long hours like I had done before. I feel exhausted and have shortness of breathing. The contractor doesn't give the full payment if I don't fulfil the target of collecting the sand.

Jhulan said that her illness does not allow her to work at full capacity. The illness has not only resulted in discomfort in her body but also has severely limited her earnings.

5.7.3. Alcoholism and related Health Issues

In the abandoned tea plantations of the Dooars region, widespread alcoholism among the Adivasi communities in the tea gardens has become a concerning issue (Deb, 2022; Bhattacharya, 2023). It was found during the fieldwork that this problem of excessive alcoholism has notably intensified over the years, with a shift from traditional rice beer consumption to the easy accessibility of alcohol, particularly illegally smuggled ethanol from Bhutan. The impact is evident in the rising trend of intoxication among the youth, leading to increased cases of liver-related diseases, especially among unemployed school dropouts in the tea gardens.

Nirmala Kerketta, a 45 years old Adivasi woman who worked as the head nurse in the Patabari Tea Estate Hospital. She said:

> There is widespread alcoholism among the Adivasis in the tea gardens. After returning from work at the end of the day the workers drink rice beer which is very low cost and widely available. The Adivasi woman makes *Hadia* (rice beer) at home. However, nowadays the alcohol produced in Bhutan has become easily accessible in the Patabari Tea Estate. However, I came to know that the alcohol (mostly Rum) produced in Bhutan is smuggled illegally and is widely available in Bazaar at a very low cost.

Dr. Manash Mukherjee, the BMOH of Kalchini block said that alcoholism has significantly increased among the youths of the tea plantations.

> Intoxication has become a serious issue in the gardens over the years. Earlier, the men and women labourers used to drink *Hadia* (rice beer) after work in the evening. It has been a tradition in the tribal society in the gardens. However, nowadays the tendency of intoxication among youth has increased significantly. There is a huge number of school dropout young population in the garden who are unemployed. Because of this excessive alcoholism in the garden, you will come across many patients who are diabetic or have liver conditions such as fatty liver, liver cirrhosis, and liver ascites which is the worst scenario among these three liver conditions.

Eleazar Toppo (49 years old) is a rural medical practitioner in the Rethi Tea Estate. Eleazar has been working as a rural medical practitioner for last 22 years. He said:

> There is an increasing trend of alcoholism in the tea gardens. So, there are many incidents of liver-related diseases such as liver cirrhosis and liver failure, especially among the male workers in the tea gardens. In such cases, the patient has to be taken out of the tea garden to the cities; at least to Siliguri for treatment. The treatment of such conditions is also very costly. The tea garden labourers do not have that much money. They die without treatment. There are no facilities in the tea gardens. For major illnesses such as liver failure, the patients have to go outside the tea gardens in cities like Alipurduar, Siliguri, and Kolkata. However, the poor labourers cannot afford to go to the cities. They depend on us (RPMs). We provide care at a minimum cost.

The escalating trend of alcoholism in the tea gardens, exacerbated by the accessibility of cheap and illegal alcohol, presents a severe health crisis. This alcoholism is predominantly affecting the youth causing liver-related diseases like cirrhosis and liver failure. The labourers affected by alcoholism, often lacking the financial means to seek treatment in cities, depend on Rural Medical Practitioners (RPMs) for cost-effective care.

5.8. Health, Illness and the Social Determinants in the Closed Tea Plantations in Dooars

The inequality in society determines the nature of illness and health in the population. In other words, the health of the population is determined by the socio-economic factors and the political context of the society. Therefore, the social determinants play an important factor in determining the health of a population group and illness in a community. The social determinants of health are the conditions in which people are born, grow, live, work, and age. The social, economic, and political mechanisms give rise to a set of socioeconomic positions, whereby populations are stratified according to income, education, occupation, gender, race, ethnicity, and other factors. These socioeconomic positions in turn shape specific determinants of health status reflective of people's place within social hierarchies; based on their respective social status, individuals experience differences in exposure and vulnerability to health-compromising conditions (Solar and Irwin, 2010). Therefore, the social, economic, and political context in the closed tea plantations determines the nature and prevalence of diseases and illness among the tea plantation communities in the Dooars region.

This chapter argues that the geographical vulnerability of the region along with the marginalization of the tribal communities in the abandoned tea plantations in the Dooars region has given rise to the frequent outbreak of vector-borne diseases. In addition, the closure of the tea plantation has forced the tea plantation communities to become increasingly dependent on the forest, rivers, and out-migration to earn a livelihood due to the loss of livelihood and social security. Therefore, with the increase in the precariousness of the changing nature of livelihood from a settled form of employment to an unsettled form of employment, the interaction of the tribal communities with vulnerable geographical conditions has increased by multiple folds. Therefore, the socio-economic marginalization and precariousness of livelihood along with the increased interaction with vulnerable geographical conditions have led to the emergence of new vector-borne diseases in the abandoned tea plantations in the Dooars region. It has been found during the fieldwork that vector-borne diseases such as filariasis and leptospirosis have recently turned into a serious concern for the public health administration in the tea plantations of the Dooars region.

In general, the tea plantation communities in the closed tea estates are largely affected by the burden of communicable and non-communicable diseases as well as injuries and poor reproductive and child health morbidities. However, the poorest of the poor section of the Adivasi communities such as the Oraons, Mundas, and Kharias in the closed tea plantations are the worst affected by communicable diseases such as malnutrition, malaria, tuberculosis, and noncommunicable diseases such as hypertension and skin diseases. In addition, anaemia, jaundice, and kidney diseases are higher among the women in the closed tea plantations. The poorest section in the closed tea plantations is the Adivasi communities who did not have the social and economic capabilities to migrate to the other states in search of livelihood. The Nepali communities with better economic and social capabilities have migrated to other states to earn a livelihood. On the other, the poor Adivasi communities have remained in the closed tea estates in the Dooars region. They were compelled to find employment in the construction sites and markets located near the tea estates at a very low wage. On the other hand, the women and the adolescents in the closed tea plantations were forced to find precarious jobs as manual labour in brick kiln factories, sand quarrying sites at river beds, and wood collected in the forest. The loss of livelihood and employment in the closed tea plantations, associated with the low wages in the alternative source of livelihood has put the plantation communities in the vicious circle of poverty and malnutrition. The precarious nature of work, low wages, chronic poverty, and lack of a nutritious diet, along with the poor living and sanitary conditions have triggered several communicable and noncommunicable diseases in the closed tea plantations in the Dooars region.

5.9. Importance of Qualitative Studies, and Reliability of Data

On a winter afternoon in December 2021, I was seated in the office of the Chief Medical Officer of Health (CMOH) for the Alipurduar district. The office was on the third floor of a newly constructed building at the city's heart of the district headquarters. This particular office played a crucial role in overseeing the implementation and monitoring of both national and state health policies and programs within the district. It also served as the administrative head of all public health institutions within the district. Furthermore, the CMOH office acted as the nodal head for disease surveillance programs and data collection. The data collected here formed the basis for evaluating the performance of various primary, secondary, and tertiary health institutions in the district and assessing different health programs. The purpose of my meeting with Dr. Nibaran Kar, one of the highest-ranked health administration officials in the district, was to acquire data related to several key programs, including the Integrated Disease Surveillance

Program (IDSP), National Vector Borne Disease Control Program (NVBDCP), Reproductive and Child Health (RCH), and National Tuberculosis Elimination Program (NTEP).

Unlike a prior encounter with another official in the same office, Dr. Kar displayed interest in my research topic and appeared to be helpful. He provided the necessary documentation and a recommendation letter to secure cooperation from health workers in various facilities across the district. He also instructed the junior data entry operator in the office to assist me in accessing the required data. However, it was evident that Dr. Kar deliberately limited the data he provided to certain specific disease sets, seemingly avoiding information that might portray a different or critical perspective. During our conversation, he offered a piece of advice that might be translated as exploring the field rather than relying on the datasets. He said:

> I would also suggest you visit our block-level offices in the district. I am sure you will learn many things, especially the real situation in the field.

It was apparent from his particular stress on the last few words and his cautious approach to providing data that there was something he was not entirely comfortable sharing, given his position within the system, but his indication of something unusual in the field.

During my fieldwork at the Kalchini block in 2022, I met Mr. Debobrata Roy, a health official stationed in a public office surrounded by several other tea gardens. During our discussion, it became evident that the data collection process in the field of health and diseases is susceptible to errors, underscoring the need for vigilance when using such data owing to inherent flaws in data collection methods and the possibility of malpractices.

The Community Health Workers, such as ASHAs, and ANMs stationed at the health sub-centres, primarily collect data on disease prevalence and the utilization of healthcare services from the field. The health sub-centres are the first contact point of the community with the public health system. The health sub-centres send the reports to the epidemiologist at the block level, which are then shared upwards to the district-level offices and, ultimately, get uploaded to the Department of Health and Family Welfare on the State website. Besides providing healthcare, the health workers are overburdened with maintaining numerous register books and online reporting.

The SCs and HWCs were given an electronic device (a Tablet) in July 2020 from the state health department for online reporting of utilization of different health services and disease surveillance. The centre receives an additional allotment of INR 250 per month to recharge the

tablet for internet connectivity. Each HWCs have their own Login ID through which they report all the details related to Maternal and Child Health Services to the national portal maintained by the Swastha Bhavan, Ministry of Health and Family Welfare, New Delhi. These tablets have been given to all the 48 sub-centres and HWCs of the Kalchini block of the Alipurduar district. However, the internet services in the area are very poor. Therefore, community health workers often find it difficult to report the data to the head office.

Tulika Roy (42 years old) Auxiliary Nurse Midwife (ANM) at the Health and Wellness Centre (HWC) of the Patabari Tea Estate explained that the online data reporting has increased their workload as the paper works of maintaining several registers are still in practice along with online data reporting. She said:

> We have to do the same paperwork that we did earlier. The online reporting system did not reduce our work, but it has doubled our work burden. Now we have to report online to the head office as well as maintain all the registers to submit reports on paper to the block office. We are now doing the same work twice.

The workload placed on community health workers is immense. The primary responsibility of the community health workers is to provide a range of health services including maternal and child health care, non-communicable diseases, vector-borne diseases, and screening for anaemia. However, they have been assigned daily and weekly targets to provide these health services for a certain number of the population.

Tulika Roy (42 years old) explained that the community health workers at the HWC collaborate with Anganwadi Workers and community representatives to conduct an annual survey in the labour lines. This survey informs the preparation of an Action Plan for the year, estimating the number of expected mothers, children under six years of age, and adolescent girls. Targets for different health services are set based on this survey and subsequently submitted to the BMOH office for approval. However, the monthly targets received from the BMOH office by the health workers often appear arbitrary, making it challenging to meet them. Tulika said:

> The office sets a random target for us. It becomes difficult for us to fulfil those targets. Where will I get those extra mothers or children to show in the report? We have told this to our supervisor. But it seems the office does not understand the problem on the ground.

These targets are sometimes arbitrarily set by headquarters and only occasionally based on population ratios, exacerbating the burden on the community health workers and the block-

level offices. This pressure often leads to hasty and random data collection, compromising the integrity and susceptible to inaccuracies of the data collected. The Community Health Workers often raised their difficulties to the health officials.

Mr Debobrata Roy said:

> We (block health administration) do not set these targets; they are decided by the Swastha Bhavan (headquarters of the state health department in Kolkata). These target figures are not always based on the population ratio; sometimes, we feel the numbers are randomly assigned. The district office consistently pressures the block health office to achieve the set targets within the specified timeframe. We have no other choice but to transfer this pressure to the sub-centres in the villages to accelerate the data collection.

The Community Health Workers often raised their difficulties to the health officials. Mr. Barman said:

> At a monthly meeting at the block office, an ASHA Didi stood up, and in a houseful meeting hall, she asked us to come to the field to help her find new pregnant mothers. We have to face such awkward situations on multiple occasions.

Mr. Roy shared an incident from January 2020, when he observed a significant drop in anaemia cases reported from a tea garden over the past three to four months. Intrigued by this sudden decline, he investigated further during a field visit. Mr. Roy asked the NGO official responsible for managing the Mobile Medical Unit (MMU) in that tea garden about this matter. The reply of the MMU official left him astonished. Mr. Roy said:

> The MMU official said that if they report too many anaemia cases in a month, the health department does not clear their bills. I know the situation; I can't do anything about it. If we report the actual picture from the ground, a telephone call might come directly from the Swastha Bhavan, the next day. They will blame the district health administration and community health workers, assuming that the healthcare services have not reached the people. So, the reports do not always show the ground situation.

It is not that the district health officials are not aware of malpractices in reporting, moreover, it has been normalized within the system. The executive at the statistical cell of the office said:

> Sir, *data te aktu Jol toh achei.* (Sir, there is some water in the data.)

The narrative unfolds a complex web surrounding the collection and reliability of health data in the Dooars region. The significance of qualitative studies becomes evident as they provide an in-depth understanding of the challenges faced by community health workers, such as ASHAs and ANMs, in collecting accurate and reliable data. The above discussion emphasizes the importance of strict surveillance, revealing that selective data sharing and a cautious approach might indicate potential discrepancies in the information provided. Furthermore, the arbitrary setting of monthly targets by higher authorities creates pressure on community health workers and block-level offices. This pressure, in turn, leads to hasty and random data collection, potentially compromising the accuracy of the information. In essence, the importance of qualitative studies, strict surveillance, and ensuring the reliability of health data cannot be overstated. These elements are crucial for informed decision-making, effective policy implementation, and addressing systemic challenges in the public health sector. There is a need for a comprehensive approach that combines quantitative data with qualitative insights, rigorous surveillance mechanisms, and a commitment to address the root causes of data, inaccuracies to strengthen the overall health information system.

5.10. Conclusion

The manifestation of the closure of the tea estate was the rise of a specific set of communicable and non-communicable and occupational diseases, which are categorized as the illness conditions of poverty, inequality, and hunger. There has been a significant rise in vector-borne diseases such as malaria and dengue and waterborne diseases such as diarrhoea. In the epidemiological transition, it has been observed that the non-communicable diseases such as hypertension and diabetes in the tea plantations of the Dooars region have increased significantly without reducing the burden of communicable such as tuberculosis and vector-borne diseases. On the other hand, occupational diseases such as musculoskeletal disorders and respiratory illnesses have also increased among the tea plantation communities in the Dooars region. The shift in the nature of work from a settled form of employment in the tea plantations to an unsettled form of employment in precarious working sites has given rise to a set of occupational and environmental diseases including respiratory illness, scrub typhus, and skin diseases. In addition, there is a rise of new vector-borne diseases such as filariasis and leptospirosis in the abandoned tea plantations of the Dooars region favoured by the geographical setting and social-economic inequality. The issues related to maternal and child health-related issues, including anaemia and jaundice, remained unsolved problems in the tea plantations. However, there is a significant difference in the prevalence of different diseases

and access to health care services among the various tribal groups, specifically the Adivasi and Nepali communities in the tea plantations. It has been found that the social determinants of health, including poverty, unemployment, gender-based preferences, education, and awareness, remained the leading cause of the high prevalence of these diseases.

Chapter: VI

Mapping Health Services in the Abandoned Tea Plantations of the Dooars Region

6.1. Introduction

The nature of disease burden and utilization of healthcare services in a given society are significantly influenced by the availability of healthcare services. The tribal communities in the tea plantations of the Dooars region are often characterized as people who 'stays away from public health institutions' (Chakraborty, 2013: 17). However, the healthcare-seeking behaviour of a community is a much more complex phenomenon, as it is significantly determined by the nature of healthcare service delivery system and the broader social, economic, historical and cultural factors. This chapter analyses the development of the healthcare services system in the tea plantations of the Dooars region. This chapter also takes a closer look at the plurality of the health service provisioning in the tea plantations. Further, this chapter attempts to understand the availability, functionality, and challenges of healthcare service providers at public, private, and tea garden levels, as well as both from formal and informal providers in the region under study.

This chapter is divided into two broad sections and several sub-sections. The first broad section of this chapter examines the health services in the tea plantations in the Dooars region from the introduction of the Plantation Labor Act 1951 to the post-economic reform period. This broad section includes the analysis of the health services in the tea plantations of the Dooars Region (1960s to 1970s) and the availability of health facilities in Rethi Tea Estate and Patabari Tea Estate. It also includes the nature of health services in the plantations of North Bengal in the post-reform period. The second section of this chapter analyses the plurality in provisioning health services in the tea plantations of the Dooars Region. This section examines the health care service system in transition and discusses the public health services system in the tea plantations of the Dooars region. This section also analyses private health services, Mobile Medical Units, traditional healers, and Rural Medical Practitioners. This section finally highlights the importance of strengthening public health institutions in the region, which is followed by a conclusion.

This chapter is based on the fieldwork carried out at the Patabari Tea Estate located in Kalchini block and Rethi Tea Estate located in Birpara-Madarihat block of Alipurduar district. The

fieldwork for this chapter was also conducted at public and private offices and health institutions located in different parts of the Alipurduar district, which includes the office of the Chief Medical Officer of Health (CMOH) Alipurduar, the office of the Block Medical Officer of Health (BMOH) Kalchini, Alipurduar District Hospital, rural hospitals, health centres, and private clinics in the district. The data presented in this chapter were also collected from published autobiographies, memoirs, survey reports, expert committee reports, reports of the government labour department, archives, and published materials and literature. I have also conducted a series of in-depth interviews with government officials, healthcare providers, key informants, and the tea garden community members. The data collected from health institutions, using the participant observation method, have also contributed immensely to writing the present chapter.

6.2. Health Services in Tea Plantations in Dooars: From PLA 1951 to Post-Reforms period

This section examines the growth of the healthcare services in the tea plantations of the Dooars region since the introduction of the Plantation Labour Act 1951 to the post-economic reform period.

6.2.1. Provisions of Health Service in the Tea Plantations under the PLA, 1951

After Independence, the Government of India enacted the Plantation Labour Act, 1951, the Act formed the basis for provisioning welfare services in the plantations. Under the PLA, 1951, welfare and health services were to be compulsorily provided by the management to the workers and their families (John & Mansingh, 2016). The Act also made it necessary for the employer to ensure the supply of wholesome drinking water for all workers. It also necessitated that the management provides separate toilets for the families of all the workers (Thapa, 2016). Provisioning of houses was also made compulsory under the PLA, 1951. While the Act provided the larger framework, various states were supposed to frame rules with respect to the plantations. Apart from the above, the Act also mandated the need for setting up crèches for children under the age of six, whose mothers were working women (Thapa, 2016).

The tea plantations in the Dooars region of West Bengal are primarily located in geographically inaccessible and relatively isolated locations. Therefore, the geographical location of the tea plantations has severe implications on the accessibility of health services in the case of illness. Thereby, given the isolated location of the tea plantations, the availability of basic amenities such as sanitation and drinking water supply, as well as healthcare services within the tea plantations is crucial for ensuring social security of the communities who live on the plantation

sites. One of the important features of the Plantation Labour Act, 1951 is that it makes it mandatory for the employer to provide housing for their workers and their families along with sanitation facilities and provision for safe drinking water supply in the labour lines. The Act also calls for the provision of canteens where subsidized food should be available, crèche facilities for working women who have children-, and primary schools within reach. It also lays down that the labour lines must have pucca houses with piped water connections. However, to a large extent, these provisions do not exist on the ground (Saha et al, 2019). These minimum welfare provisions were necessary to ensure the supply of a healthy working force for the plantations, and the expenditure on these services was considered to be investments in increasing the productivity of the workers. Yet, these provisions were largely neglected by the planters.

The structure of health services as stated under the Plantation Labour Act, 1951 specifies the

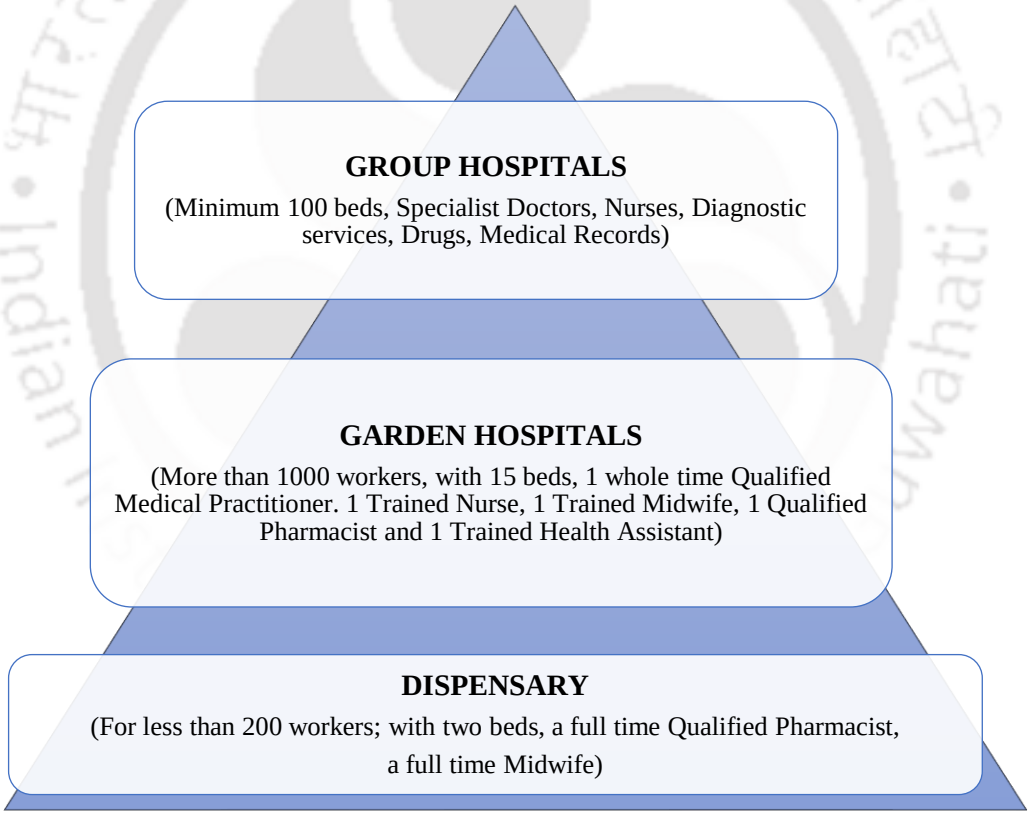

Fig 6.1: Health Service Delivery System in Tea Gardens. (Compiled from the Plantation Labour Act, 1951; and Assam Plantation Labour Rules, 1956)

need to establish various health facilities in the plantations. The act explicitly mandates employers to offer hospital facilities to their workforce. The legislation delves into the realm of healthcare provisions, detailing the range of services to be extended through Dispensaries, Garden Hospitals, and Group Hospitals. Garden hospitals deal with out-patients, including

patients who do not require any elaborate diagnosis or treatment, which are infectious cases, who require midwifery support, and simple pre-natal and post-natal care of infants and children, as well as periodical inspection of workers.

Group hospitals on the other hand are to be capable of efficiently dealing with all types of cases and also provide in-patient care. Group Hospitals were not to be used for routine treatment. Admission to the Group Hospital shall only happen based on the recommendation of a garden hospital doctor (PLA, 1951; GoWB, 2013). The Act stipulates that every tea plantation employer who employs less than 500 workers may provide a garden hospital in their plantation. In plantations employing less than 200 workers, there is a need to set up a dispensary. The dispensary should have two beds and the manpower should include full-time qualified pharmacists assisted by a full-time midwife (APLR, 1958). The dispensary must be supervised and visited daily, at regular hours, by the qualified medical practitioner of the garden hospital to treat outpatients only. A plantation employing 1,000 or more workers shall run its own garden hospital wherever possible. Whereas, plantations that are situated within reasonable distances from one another and employing less than 1,000 workers may, with the approval of the Chief Inspector, combine and provide joint hospitals/dispensaries and share their expenses (APLR, 1958).

With respect to human resources, the Act specifies that each Garden Hospital shall be at least under the supervision of a full-time qualified medical practitioner. The medical practitioners must be assisted by at least one trained nurse, one trained midwife, one qualified pharmacist, and one trained health assistant. They should be on a full-time basis and their services should be readily available throughout all hours. A minimum of 15 beds should be provided in every Garden Hospital per 1,000 population (PLA, 1951; APLR, 1958).

The act also specified the norms for human resources that should be available in the plantation hospitals. It has recommended one qualified medical practitioner for every 1,750 workers, or part thereof, and one midwife for every 1,750 workers, or part thereof. It has also set a norm of one trained nursing attendant for every 300 workers, or part thereof, one pharmacist for every 1,750 workers, or part thereof, and one health assistant for every 2,100 workers, or part thereof (APLR, 1958).

Thus, the Act largely specifies the nature of health service delivery which needs to be provided by the planters for the workers and the people living on the plantations. However, most of the planters hardly made any investments in the setting up of health facilities in the plantations.

Further, there are several issues in the implementation and monitoring of these welfare services (John & Mansingh, 2013; Xaxa, 2019).

6.2.2. Health Services in the Tea Plantations of the Dooars Region (1960s to 1970s)

Personal memoirs and autobiographies of individuals who grew up in a particular spatio-temporal context can offer valuable insights and first-hand perspectives into the history and society of a specific time and place (Kansteiner, 2002). Bagchi (2021) and Dasgupta (2023) spent their childhood and adolescent years in the tea gardens of the Dooars region in the 1960s and 1970s and recently published their autobiography and memoirs in the Bengali language. These personal accounts serve as historical records and become invaluable windows into understanding the given society, the nature of healthcare service provisions, health systems, challenges, and disease prevalence in the Dooars region in the late 1960s and 1970s.

Nandita Bagchi, who is in her mid-70s now, is a prominent Bangla writer and novelist of the contemporary times. Bagchi (2021) was born in Tasati Tea Estate located near Birpara town of the Dooars region, and she spent her early years there. She studied Bachelor of Science (BSc) at Alipurduar College and worked as a Mathematics Teacher in a school in Nigeria (1980-1990s) when her husband was posted as a doctor in a Nigerian hospital. Her father Dr. Bibhutibhushan Moitra was the Medical Officer-in-Charge of the Garden Hospital and served as a Resident Doctor of the tea estate from the early 1950s to 1960s. Dr. Moitra completed his medical education in Rangpur (presently in Bangladesh) and came to India immediately after Indian Independence in 1947. Bagchi lived with her family in a staff quarter located close to the factory and the hospital of the tea estate. Their neighbours were mainly Bengali babus who served in different managerial and clerical posts in the estate.

Apurba Dasgupta is a columnist, poet, and human rights activist based in Kolkata. He has been a state civil servant in the Department of Land and Land Reforms of the Government of West Bengal since the 1980s. He was born in 1957 at the Dima Tea Estate near the Kalchini town of Alipurduar district. Dasgupta (2023) spent his childhood and college days in the 1960s to 1970s in the tea estates of the Dooars region before his family shifted to Kolkata. His father worked as an Assistant Manager at Dima Tea Estate of the Dooars region. He lived in the *Babu Quarter* of the tea estate with his family for more than 15 years.

Recollecting about the tea garden which was owned by the British planter, Bagchi (2021) proudly writes:

> In our childhood, we felt proud that the owner of our garden was British. He lived in England. His representative in the garden, the manager was also a white-skinned English Man. His name was Mr. Gaul. The people in our garden used to call him *Burra Sahib*. He used to go 'Home' once a year. This type of estate (with white-skinned managers) was known as *Sahib's Estate*. My father was in charge of the estate hospital. The tea labourers used to call him *Burra Daktar Babu*.

It is important to mention here that the tea estates in the Dooars region were established and primarily owned by European planters before Independence; however, there were also a few owned by Indians. However, the transfer of ownership from Europeans to the Indians started during 1939-1945. It was accelerated with the decline of the London Auction Market, followed by the establishment of the Auction Market in Kolkata in 1947. However, a significant number of tea estates continued to be owned and managed by European planters even after the Independence of India in 1947 given the lucrative returns from the business (Biswas, 2022). The situation started changing rapidly in the early 1950s with the introduction of several acts, and regulations by the Government of India, and the growing socio-political movements in the tea gardens. The European planters sold their tea plantations in the Dooars region to the Gujaratis and Marwaris in the mid-1960s and shifted their business to South Africa, Uganda, and Rhodesia (Biswas, 2022).

Bagchi (2021) recollecting her times in the tea garden and her father's profession as a doctor, writes about the garden hospital in the 1960s:

> Our garden was well-maintained and clean as it was a *Sahib's Estate*. As a result, the Babus used to get more facilities than other estates in the region. The estate hospital was also very clean and had good infrastructure… My father and *compounder uncle* used to sit in the Doctor's chamber of the hospital. The medicine room and the store room were next to the Doctor's chamber. The medicines were stored in the huge porcelain jars in the store room. It was also kept in flat glass bottles sealed with corks in the medicine room. My father used to write prescriptions according to the illness of the labourers. Joseph and Hegagu were the *Dabaiwalas* who used to make a mixture of medicines and give it to the patients in those glass bottles. There was another *Dabaiwala* named Petera who used to cut and paste lebels throughout the day on those medicine bottles to mark the daily dose of medicines. The labourers of the estate received free treatment round the year.

Further, Bagchi (2021) writes about the services provided at the hospital and referral care:

> There was a corridor from the Doctor's chamber to the in-patient wards. This was six feet wide and at a height of 4 feet above the ground. It had a shed of tin above the iron pillars. My father and his colleagues used this corridor to go to the patient wards avoiding the sun in summer and rain in monsoon. There were two big rooms separate for male and female wards. There was an isolation ward for TB patients and a labour room for pregnant women. The hospital also had a small Operation Theatre (OT). My father was 'all-in-all,'. He had managed everything starting from complicated deliveries, and small surgeries, to plucking the teeth of patients. However, the patients were sent to Cooch Behar or Jalpaiguri government hospital in case of complex and advanced surgeries.

She also writes about the visiting doctors at the tea estate, who were predominantly from abroad:

> Once a week mainly on Wednesdays, *Doctor Sahib* used to come to visit at the garden hospital. He was a white-skinned *Sahib* with a Fellowship of the Royal College of Surgeons (FRCS) from London. He lived near Dalmore Tea Estate and worked as a visiting doctor in the tea estate hospitals located near Birpara town. Therefore, the mornings of every Wednesday our home remained super busy as everyone was in a hurry. My mother used to take out steam-ironed Dhoti and Shirt from the Almira for my father. His shoes were being polished and made new-looking by Jitu Da. On the other side, the hospital was being completely cleaned and washed. The Dabaiwalas, Nurses, and everybody would wear clean and washed uniforms, remained standing anxiously in the hospital corridor.

Recollecting the nature of healthcare services available in the tea gardens, Dasgupta (2023) writes in his memoir:

> If we suffered from fever, diarrhoeal disease, or any other illness, we used to go to our garden hospital opposite to our quarter. Dr. Sanyal at our hospital was capable enough to handle our illnesses. He was a family friend as he was our neighbour and lived in one of the *Babu Quarters* of the garden. He prescribed us, and we used to go to the compounder or the Dabawala with that paper. They made a mixture of medicine and gave it to us on marked bottles.

The personal memoirs and autobiographies of Nandita Bagchi and Apurba Dasgupta provide valuable insights into the healthcare services in the tea plantations of the Dooars region during the 1960s and 1970s. These accounts serve as historical records, shedding light on the social, economic, and medical aspects of life in the tea estates during that period. In essence, these personal accounts not only provide a vivid picture of healthcare services but also contribute to a nuanced understanding of the socio-cultural and economic aspects of life in the tea plantations of the Dooars region during a transformative period in history. The narratives highlight the unique dynamics of healthcare in Sahib's Estates, where European planters owned and managed the tea gardens. Bagchi's recollections portray a well-maintained hospital with good infrastructure, where her father served as the Medical Officer-in-Charge. The provision of free treatment to estate labourers, the meticulous prescription and dispensing of medicines by Dabaiwalas, and the referral system for complex surgeries to government hospitals showcase the functioning of the healthcare system in these tea estates. Dasgupta's memoir adds to the understanding of the local healthcare landscape, emphasizing the role of resident doctors like Dr. Sanyal. The shift in ownership of tea estates from Europeans to Indians in the mid-1960s is an important historical context that impacted the dynamics of healthcare in the Dooars region. The narratives bring out the sense of pride associated with Sahib's Estates and the contrast in facilities between estates owned by Europeans and those owned by Indians.

6.2.3. Availability of Health Facilities in Rethi Tea Estate and Patabari Tea Estate

Rethi Tea Estate and Patabari Tea Estate provided health services to the tea plantation communities when the plantations were functional. The garden hospitals and dispensaries used to provide a range of health services to the tea garden workers and their family members. Thus, the garden hospitals were an important institution in the health service delivery mechanism of the tea estates of the Dooars region of West Bengal. For instance, the garden hospital located near the factory of the Patabari Tea Estate provided a range of services to the people of the tea estate.

Nirmala Kerketta, a 45 years old Adivasi woman who lives in the staff quarters of Patabari Tea Estate near the factory was the head nurse at the Patabari Tea Estate Hospital. She has done her schooling at Sister Nirmala Girls School, a Christian Mission School in Alipurduar town, and nursing training from Jharkhand. She joined Patabari Tea Estate Hospital as a staff nurse in the year 1991 and worked till 2014 before the garden was abandoned by the management.

The former health workers of the hospital informed that the garden hospital at the Patabari Tea Estate had 17 beds in the in-patient department, 8 beds in the female ward, 8 beds in the male ward, and a single bed in the maternity ward. There was also a small separate operation theatre and an isolation ward for the patients. The garden hospital provided a range of services to the tea plantation labourers and their family members for the treatment of different illnesses, including fever, diarrhoea, dysentery, small operations due to work injuries, hydrocele operations as well as services for childbirth. Nirmala claimed that most of the deliveries happened in the estate hospital, and the doctor and the staff of the hospital were very efficient in handling maternity care. Nirmala said:

> The estate hospital used to provide all the medicines prescribed to the patients for free. If any medicine was not available at the dispensary, Doctor Babu used to give requisitions to the estate management, and the medicines were given to the patients. The labourers did not have to put their money for medicine or hospital services.

Bhairav Oroan is a 67 years old Adivasi man who was a cook in the Patabari Tea Estate Hospital. He cooked food for the patients of the hospital from 1976 to 2014, until the garden closed down. Bhairav Oroan described that the hospital took good care of the patients. The hospital also provided nutritious food to the patients who were admitted to the in-patient departments.

> We used to serve food three times a day. *Roti* and *Sabji* for breakfast, followed by lunch at 12 pm, and dinner in the evening. We used to buy all the vegetables and fish from the Hamiltonganj Bazaar. We used to buy fresh vegetables and *Shingi Mach*. We provided vegetarian meals, egg meals, fish meals twice a week, and mutton curry every Saturday.

The former nurse of Patabari Tea Garden Hospital informed that there was a dedicated and free ambulance in the tea state. The patients were directly referred to the Alipurduar Sub-divisional Hospital (which has currently been upgraded to a district hospital), and transported through the Estate's ambulance. In case the ambulance was not available for a patient, due to serving another patient, the patient used to be provided with the money for hiring other vehicles.

Susmita Minj was born and raised in the Patabari Tea Estate. Her father had served in the garden as a *Boider*. She presently lives with her husband and son in a staff quarter in the same garden. Susmita Minj joined Patabari Tea Estate Hospital as an assistant to the doctor in 1992.

She worked in the garden till the day the work suspension was declared in the entire estate in 2014. She informed me that the Patabari Tea Estate Hospital had the following human resources: a doctor, a compounder, three nurses, a health assistant, a dresser, two health workers at the pharmacy, two cooks cum attendants, and a *Dai* (traditional birth attendant). The hospital predominantly comprised male health professionals; except for the nurses and the traditional birth attendant, everyone was male. Nirmala Kerketta said:

> When the estate hospital was functional, the people of Patabari TE were happy. They did not have to bother about illnesses. Now people are not happy, whatever they earn goes towards medical expenses. Before if the people were sick, they used to get medical assistance from the estate hospital, and now they don't get any medicines if they are even dying. People cannot afford to go outside for treatment. They are dying.

The accounts from the abandoned tea plantations in the Dooars region underscore the important role of garden hospitals in providing healthcare services to the tea plantation communities in the Dooars region. The Patabari Tea Estate Hospital provided a range of medical services, including maternity care, surgeries for work injuries, and treatment for various illnesses including free medicines to the labourers and their family members. The hospital also provided nutritious meals to inpatients in the garden hospital. The provision of a dedicated ambulance and direct referrals to Alipurduar Sub-divisional Hospital demonstrate a systematic approach to handling medical emergencies. However, the abrupt closure of the estate in 2014 and the subsequent suspension of healthcare services have had profound consequences. The absence of the estate hospital has left the community without accessible and affordable healthcare, resulting in increased medical expenses and the distressing reality of untreated illnesses. The social and economic impact of the closure of garden hospitals on the tea plantation communities resulted in financial burdens and unmet health care needs of marginalized communities in the Dooars region.

6.2.4. Health Services in the Plantations of North Bengal in the Post-Reform Period

Several changes were introduced to the welfare measures provided by the plantations with the implementation of the health sector reforms under the structural adjustment program. Over the years, the expenditure on social welfare activities within the plantations increased the cost of production for the management (John & Mansingh, 2013). Dasgupta (2023) writes in his memoir:

> During the 1950s, the European owners who were mainly English writers had tried to improve the health facilities at the garden. They at least had that mentality to improve medical services and slowly the health services were improving in the garden. They even started a group hospital in this region to treat complicated diseases. However, now after the 1980s, the situation has turned the opposite. The Adivasi labourers started believing in the modern medical system. However, there are no medical services available in the garden hospitals. Now, there are hospitals in every garden, but no doctors or medicines are available in those hospitals.

A similar kind of observation is found in another important document. Bagchi (2021) writes in her autobiography about the contrast of health services between the 1960s and 1970s and after the 2000s in the tea gardens of the Dooars region of West Bengal. Bagchi (2021) decided to revisit the tea estate in the Dooars region, where she had spent her childhood, school, and college days. She had visited the tea estate in 2017 and the condition of the tea estate hospital made her uncomfortable and depressed. She writes:

> As I entered the garden in the early morning, I saw a huge Mandir had been constructed recently. The morning prayers and Aarati were going on. I passed the garden factory and went straight to the hospital. I felt heartbroken at that very moment. The crowded hospital of my childhood was in complete silence. There were no patients, no nurses, no *Dabaiwalas*, no medicine, and no compounders at the hospital. A 'Registered Medical Practitioner' was sitting alone in that silent-huge building. I came to know he was there only to write 'sick leave' recommendations for the labourers. The labourers of the estate go to the hospitals at Falakata or Birpara for treatment. Yes, I saw an ambulance at the hospital premises.

As discussed earlier, health sector reforms introduced in the late 1980s and 1990s resulted in a massive reduction in welfare expenditure (Rao, 1999; Baru, 2003). It also led to the introduction of user charges for services and increased involvement of the private sector in the delivery of health services (Roy, 2014; Baru & Kapilashrami, 2019). It must be noted that there are very limited studies that have explored the changes introduced in the health services in the tea plantations in the Indian context. While there are several studies on the living and working conditions of workers in the plantations, there are hardly any studies on the changes introduced in the health sector during reforms in the tea gardens of India. One reason why this has not been explored can be speculated as the difficulty of getting access to tea plantations.

The Regional Labour Offices, under the jurisdiction of the Joint Labour Commissioner, North Bengal Zone, Government of West Bengal, conducted an extensive survey of the tea plantations over two months, spanning from September to October 2012, and the final report was published in 2013. This survey covered 273 out of 276 tea estates located in different parts of North Bengal. Tea Garden Survey Report, 2013 does not provide complete information on three tea estates, namely Rethi TE, Dalmore TE, and Ringtone TE, as they were closed during the time of the survey. The survey was administered by the six Regional Labour Offices (RLO) headed by Assistant Labour Commissioners, the state civil service officers stationed in each of these offices. The tea estates in the Dooars region are under the jurisdiction of the Regional Labour Offices located at Alipurduar, Birpara, Malbazar, and Jalpaiguri, whereas the RLO office at Siliguri covers the tea estates of the Terai region. The tea estates in the Darjeeling Hill region are under the Regional Labour Offices located in Kurseong, Darjeeling, and Kalimpong. The abandoned tea plantations in the Dooars region, where the fieldwork was conducted, are under the jurisdiction of Birpara RLO and Alipurduar RLO. Rethi Tea Estate located in Madarihat-Birpara block of Alipurduar district is under the jurisdiction of Birpara RLO. On the other hand, Patabari Tea Estate located in the Kalchini block of Alipurduar district is under the Alipurduar RLO.

The survey in the tea gardens was conducted by the Regional Labour Offices, which falls under their jurisdiction. The primary objective of this survey was to obtain a comprehensive understanding of several critical facets, including the demography of the workforce, operational dynamics of tea estate management, the functionality of trade unions, the working conditions of labourers, their living conditions, and housing arrangements within the tea estates. The financial sustainability and viability of the tea estates in contemporary times, and an assessment of the legal obligations imposed on the employers were also studied. The report also provides valuable insights into the primary issues concerning healthcare infrastructure and healthcare service delivery in the tea plantations of North Bengal. The Tea Garden Survey Report 2013 is the only data source available so far that provides a comprehensive picture of all the tea estates in North Bengal. Earlier, in 2009-2010, the office of the Joint Labour Commissioner, Government of West Bengal had taken an initiative to conduct a ‘very précised survey’, however, the attempt was not successful (WoGB, 2013). During the fieldwork of this doctoral study in 2020, a senior official at the Labour Commissioners Office at the district headquarters of Alipurduar informed that another initiative was taken in 2017 to conduct a second round of a similar survey. However, it was delayed because of the West Bengal

Panchayat Election 2018. The following sub-section discusses the health infrastructure available in the tea plantations of the North Bengal region.

Table 6.1. shows the availability of healthcare infrastructure in the various tea estates of North Bengal. It was found that out of 276, only 166 (60.14%) tea gardens have hospitals within the garden premises. The tea gardens of Dooars regions (the tea gardens under the jurisdictions of the Alipurduar, Birpara, Malbazar and Jalpaiguri Regional Labour Offices) are in a relatively better position compared to the tea gardens in Kalimpong and Darjeeling in terms of the availability of the tea garden hospitals. However, there is variation in healthcare infrastructure availability across different locations. For instance, in Kurseong, only 16.7% of tea estates have garden hospitals, while in Malbazar, 78.7% tea estates have hospitals in the garden premises.

Table 6.1: Availability of Health Care Infrastructure in the Tea Gardens of North Bengal, 2013

Regional Labour Offices (RLO)	Tea Estates (N)	Garden Hospitals		Dispensaries		Dispensary at Out-Division[25]		Garden with Public SCs		Ambulance Services	
		No[26]	%	No	%	No	%	No	%	No	%
Alipurduar	38	34	89.5	28	73.7	11	28.9	27	71.1	26	68.4
Birpara	24	19	79.2	13	54.2	5	20.8	18	75	16	66.7
Malbazar	61	48	78.7	41	67.2	20	32.8	38	62.3	54	88.5
Jalpaiguri	32	25	78.1	13	40.6	5	15.6	18	56.3	24	75.0
Siliguri	45	25	55.6	28	62.2	12	26.7	23	51.1	35	77.8
Kurseong	24	4	16.7	20	83.3	6	25	14	58.3	11	45.8
Darjeeling	46	10	21.7	40	87	23	50	19	41.3	30	65.2
Kalimpong	6	1	16.7	5	83.3	2	33.3	4	66.7	3	50.0
Total	**276**	**166**	**60.14**	**188**	**68.11**	**84**	**30.43**	**161**	**58.33**	**199**	**72.10**

Source: Tea Gardens Survey Report-2013, Office of the Joint Labour Commissioner, Govt of West Bengal

It was found that out of 276, only 188 (68.11%) tea gardens have dispensaries in North Bengal. However, in contrast, the tea gardens of Darjeeling hills (Kurseong, Darjeeling, and Kalimpong) and Terai region (Siliguri) have better availability of dispensaries compared to the tea gardens of Dooars region. It was also found that only 40.60 % tea estates in Jalpaiguri, 54.2 % tea gardens in Birpara, and 73.7 % tea estates under Alipurduar Regional Labour Offices have dispensaries in the tea gardens.

[25] The large tea estates in North Bengal are often divided into multiple sections. The primary segment of the tea estates is known as the Main Division, which houses the tea garden factory, major offices, staff accommodations, and labor quarters alongside the actual tea plantation area. Additionally, there are Out-Divisions, separate plantation sites situated beyond the boundaries of the Main Division, often at distances of approximately 4-5 kilometers. While the Out-Divisions have their own labor lines, they lack factory facilities. An Assistant Manager primarily manages the Out-Division and is responsible for harvesting tea leaves, which are subsequently sent to the Main Division's factory for processing.

[26] Number of Tea Estates

Table 6.1 also shows the number of tea estates in each region that has dispensaries located outside the main division or an estate. In Alipurduar, 11 out of 38 tea estates (28.9%) have dispensaries at Out-Divisions. On the other hand, 15.6% of tea estates in Jalpaiguri and 20.8% of tea estates in Birpara have dispensaries at Out-Divisions of the tea estates. The Sub-Centres are the grassroots-level health institutions and the first point of contact with the Indian public health system (Fig 5.1) The Sub-centres were introduced in the tea plantations of North Bengal as a part of the National Rural Health Mission in 2005. It has been found that there are a significant number of tea estates in North Bengal, especially in the Darjeeling hills and the Terai region which do not have sub-centres. The table highlights that 71.1% of tea estates in Alipurduar, 75% of tea estates in Birpara, 62.3 % of tea estates in Malbazar, and 56.3 % of tea estates in Jalpaiguri have a sub-centre within the tea estates. On the other hand, only 41.3 % of tea estates in Darjeeling and 51.1 % of tea estates in Siliguri have a sub-centre within the tea estates.

Lastly, the table (6.1) highlights the status of the availability of ambulance services in the tea estates. This indicator is particularly important as the tea gardens in northern districts of West Bengal are primarily located in geographically inaccessible and remote locations. Therefore, the availability of ambulance services significantly determines the health service delivery and utilization in the tea estates. It was found that only 45.8 % of tea estates in Kurseong, 50% of tea estates in Kalimpong, 66.7% of tea estates in Birpara, and 68.4 % of tea estates in Alipurduar have ambulance services. Therefore, a significant number of tea estates in Dooars as well as the Darjeeling hill region do not have dedicated ambulance services for the tea garden labourers and their dependent population.

Table 6.2 highlights some key indicators related to the availability of various important and basic health care services at the tea garden hospitals of North Bengal, such as separate male-female wards, maternity wards, separate operation theatre (OT), and availability of medicines, first-aid boxes, and food. It was found that in Darjeeling and Kurseong more than 70% of hospitals do not have a separate male-female or maternity ward. In Alipurduar, out of 38, only 16 tea gardens (42.1%) have separate operation theatres (OT). In addition, only 41.7% of tea estates in Birpara and 42.6% of tea gardens in Malbazar have separate operation theatres in their hospitals. On the other hand, in Kurseong and Darjeeling, less than 20% of tea estates have separate operation theatres in the hospitals.

Table 6.2 shows the poor status of the availability of approved medicines in the tea garden hospitals in the Dooars region. It was found that only 33.3% of tea estates in Birpara, 37.7% of

tea estates in Malbazar, and 65.8 % of tea estates in Alipurduar have the approved medicine list in the tea garden hospitals. The situation is relatively better in Jalpaiguri (81.3%) and Siliguri (84.4%). It was found that in North Bengal out of 276 only 171 (61.95%) tea gardens have approved medicine lists available in the garden hospitals. The condition of the tea garden hospitals in the northern districts of West Bengal can be understood easily with the help of a basic indicator, such as the availability of first-aid boxes at the hospitals of the tea gardens. It was found that less than 20% of tea garden hospitals in the Darjeeling Hill region have a first-aid box. On the other hand, 73.7% of tea estates in Alipurduar and 79.2% of tea estates in Birpara have a first-aid box available in the garden hospitals. In North Bengal out of 276, only 162 (58.69%) tea gardens have first-aid boxes at the hospitals of the tea gardens.

Table 6.2: Availability Various Services at the Tea Garden Hospitals of North Bengal, 2013

Regional Labour Offices (RLO)	Tea Estates (N)	Separate Male/ Female/ Isolation/ Maternity Ward		Separate OT		Whether approved medicine list available?		First Aid Box at Hospitals		Whether good quality food supplied?	
		No[27]	%	No	%	No	%	No	%	No	%
Alipurduar	38	32	84.2	16	42.1	25	65.8	28	73.7	25	65.8
Birpara	24	20	83.3	10	41.7	8	33.3	19	79.2	17	70.8
Malbazar	61	51	83.6	26	42.6	23	37.7	49	80.3	46	75.4
Jalpaiguri	32	24	75.0	16	50.0	26	81.3	27	84.4	23	71.9
Siliguri	45	24	53.3	13	28.9	38	84.4	25	55.6	33	73.3
Kurseong	24	6	25.0	3	12.5	15	62.5	4	16.7	10	41.7
Darjeeling	46	13	28.3	8	17.4	30	65.2	9	19.6	22	47.8
Kalimpong	6	3	50.0	6	100.0	6	100.0	1	16.7	4	66.7
Total	**276**	**173**	**62.68**	**98**	**35.50**	**171**	**61.95**	**162**	**58.69**	**180**	**65.21**

Source: Tea Gardens Survey Report-2013, Office of the Joint Labour Commissioner, Govt of West Bengal

Lastly, table 6.2 highlights that only 180 (65.8%) tea gardens out of a total of 276 tea gardens in North Bengal provide good quality food in the hospitals. According to table 4.2, good quality food is provided in only 41.7% of tea estates in Kurseong, 47.8% of tea estates in Darjeeling, and 65.8% of tea estates in Alipurduar in the hospitals of the tea gardens.

Table 6.3. provides a clear picture of the availability of doctors and nurses in the tea gardens of North Bengal, as well as their training and affiliation status. According to the PLA, 1951 it is mandatory that each garden hospital shall at least be under a whole time "qualified medical practitioner". Here, the term "qualified medical practitioner" refers to a person who has a

[27] Number of Tea Estates

medical degree or diploma as prescribed by the Indian Medical Degrees Act, 1916 (VII of 1916), or in the Schedules to the Indian Medical Council Act, 1933 (XXVII of 1933)[28].

It was found that only 163 (59.05%) out of 276 tea gardens in North Bengal have a resident doctor in the garden hospital. In addition, only 100 (36.23%) tea gardens out of 276 tea gardens have a resident doctor who has the qualification recognized by the Medical Council of India (MCI), a statutory body that regulates the standards of medical education in India. This particular statistic shows that there are resident doctors in at least 63 (22.82%) tea gardens in North Bengal who do not have the medical qualification prescribed by the PLA, 1951. For instance, out of 38 tea gardens in Alipurduar 27 tea gardens have resident doctors. However, only 12 of these doctors have the medical qualification recognized by the Medical Council of India (MCI). In other words, the tea garden hospitals in North Bengal have recruited unqualified medical practitioners in place of the qualified medical practitioners recommended by the Medical Council of India. It was also that the majority of tea estates in the Darjeeling Hill region did not have resident doctors. This ratio is significantly higher in the Dooars region. Many of the tea garden hospitals do not have full-time residential doctors. However, they have recruited visiting doctors who visit the tea plantations occasionally to provide medical care to the tea plantation communities.

Table 6.3: Availability of Doctors and Nurses at the Tea Garden Hospitals of North Bengal, 2013

Regional Labour Office (RLO)	Tea Estates (N)	Garden with Residential Doctors		Residential Doctor Recognized by MCI		Visiting Doctor Recognized by MCI		Trained Nurses	
		No	%	No	%	No	%	No	%
Alipurduar	38	27	71.1	12	31.6	0	0	18	47.4
Birpara	24	17	70.8	13	54.2	0	0	16	66.7
Malbazar	61	52	85.2	31	50.8	4	6.6	44	72.1
Jalpaiguri	32	25	78.1	15	46.9	0	0	21	65.6
Siliguri	45	28	62.2	18	40	12	26.7	21	46.7
Kurseong	24	5	20.8	2	8.3	11	45.8	4	16.7
Darjeeling	46	7	15.2	7	15.2	17	37	3	6.5
Kalimpong	6	2	33.3	2	33.3	2	33.3	1	16.7
Total	**276**	**163**	**59.05**	**100**	**36.23**	**46**	**16.66**	**128**	**46.37**

Source: Tea Gardens Survey Report-2013, Office of the Joint Labour Commissioner, Govt of West Bengal

The tea estates in the Darjeeling Hill region are more dependent on visiting doctors rather than resident doctors compared to the Dooars region. However, the availability of visiting doctors is also restricted to less than 46% of tea estates in Kurseong, 15.2% in Darjeeling, and 33.3%

[28] A person having a certificate granted by an authority specified in the Schedule to the Indian Medical Degrees Act, 1916 (VII of 1916), or in the Schedules to the Indian Medical Council Act, 1933 (XXVII of 1933), and also persons holding granted certificates. under the different State (Provincial) Medical Council Acts.

in Kalimpong respectively. It has been found that only 16.66% tea estate tea estates in North Bengal have visiting doctors who have a medical degree recognized by MCI.

Table 6.3. also shows that only 46.37% of tea garden hospitals in North Bengal have trained nursing staff in the garden hospitals. The tea garden hospitals located in Malbazar (72.1%) have the highest number of trained nursing staff followed by Birpara (66.7%), Jalpaiguri (65.6%), and Alipurduar (47.4%) respectively. On the contrary, the tea garden hospitals of Darjeeling (6.5%), have the lowest number of trained nursing staff followed by Kurseong (16.7%) and Kalimpong (16.7%), respectively.

The Plantation Labour Act of 1951 mandates the provision of crèche facilities in tea plantations employing fifty or more women workers (PLA, 1951). These crèches are meant for children under six years of age, who are born to these workers, and they must also meet specific standards, including proper accommodation, lighting, ventilation, and hygiene. Trained women should supervise them, however, it was found that these standards in the crèche facilities are often not maintained or reluctantly implemented by the tea plantation management (Roy & Biswas, 2019). For instance, the final report of the Survey of Tea Gardens conducted in 2013 by the Office of the Joint Labour Commissioner, Department of Labour of the Government of West Bengal reveals that drinking water facilities are available in the crèches of 144 out of the 270 tea estates surveyed (GoWB, 2013). Furthermore, dress is provided to the crèche attendants of 128 tea estates, while milk is supplied to children only in the crèches of 144 tea estates out of 270 tea estates (GoWB, 2013). In addition, sanitary facilities, such as restrooms, were identified within the crèches of 119 tea estates, and washing arrangements were found to exist in the crèches of 133 tea estates across the districts of North Bengal (GoWB, 2013).

However, the closure of tea plantations in the Dooars region led to the shutdown of crèche facilities and other social security services for the workers. As a result, women from these abandoned plantations had to seek work in precarious jobs, like sand mining and firewood collection, or as casual labourers, in the nearby tea estates. However, they lacked day-care facilities for their children in these new workplaces. This left the children of the abandoned tea plantations more vulnerable, without access to crèche facilities in both the closed plantations and their mothers' new places of employment.

6.3. Plurality in Provisioning Health Services in the Tea Plantations of the Dooars Region

In contemporary times, there exists a plurality in the provisioning of health services in the tea plantations. For instance, there are different providers of health services, ranging from

unqualified medical practitioners to the services provided by the management, as well as those provided by the government. Figure no 6.2 maps, the provisioning of health services in tea plantations into three main categories public health care services, private healthcare service providers, and the health care services provided by the tea estate. The first category of public healthcare service providers includes community health workers, Anganwadi Centres, Sub-centres (SCs) Health and Wellness Centres (HWCs), Primary Health Centres (PHCs), Community Health Centres (CHCs), and District level hospitals. Public health care care provided by the state government through the Department of Health, which includes the Sub-Centers and the Primary Health Centres and the functioning of the Anganwadi Centres primarily for children under 6 years as a part of the Integrated Child Development Services (ICDS) of the Ministry of Women and Child Development. The second category of private healthcare providers includes formal providers such as registered private practitioners, clinics, nursing homes, and super specialty hospitals, as well as informal providers such as traditional medicine practitioners and faith-based healers. The informal service providers, which include various remedies undertaken by the individual at home, followed by the services provided by the traditional healers popularly known as Kabiraj, Ojhamatis, Bhagat, and Gunins in the region. In most of the cases, during childbirth, traditional birth attendants (Dais) were the major source of care provided primarily to women. The traditional healers play an important role in the lives of the workers in the Dooars region, this is because of their magico-religious beliefs and also because of the lack of access to health services and low wages. There are also local private practitioners in the region who are largely unqualified known as Rural Medical Practitioners (RMPs). The RMPs do not have government registration to practice allopathy and Western medicines. It has been found that they worked with medical doctors as compounds and gathered knowledge about medicines before starting their clinics in rural areas. The third category of healthcare service providers includes dispensaries, garden hospitals, group hospitals, and crèche services managed by the tea plantations for the labourers and their family members. In addition, there are also Mobile Medical Units (MMU), managed by a Non-Government Organisation (NGO) which provides primary health care servicers at the door step in remote areas under a public-private-partnership model. As per Rasaily (2003), the tea garden's dispensary faced shortages of medicines and only implemented the Pulso Polio and Family Planning programs, neglecting Maternal and Child Health. Due to insufficient medications, patients were often referred to government health centres. Additionally, the deteriorating condition of the sub-centre in Darjeeling with limited staff further hindered healthcare access.

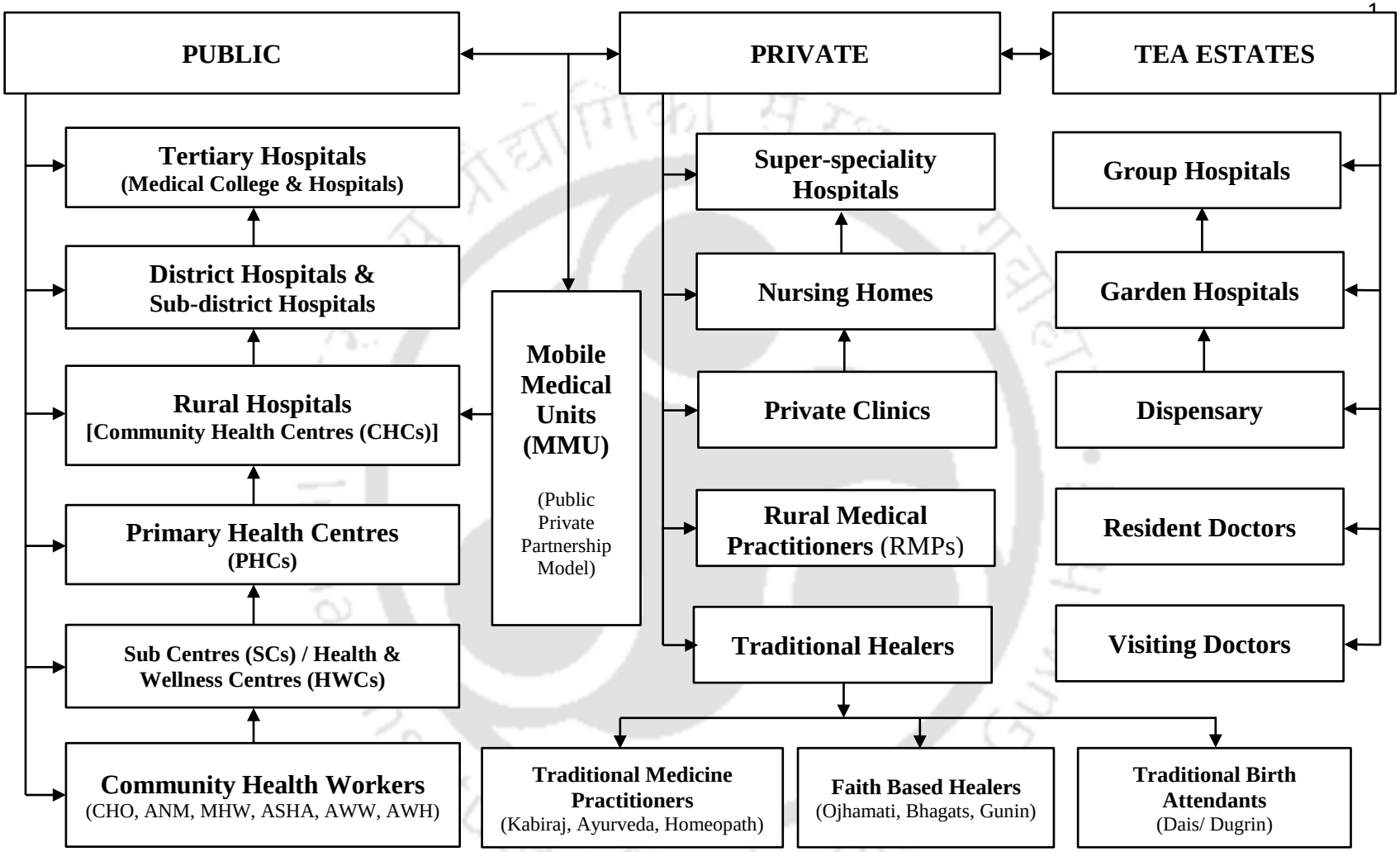

Fig 6.2: Health Care Delivery System in the Tea Plantations of the Dooars Region
(Source: Compiled by Researcher based on Fieldwork)

The above discussion highlights the diverse array of healthcare providers within tea plantations reflects a complex interplay of public, private, and estate-managed services. The next sections will discuss this plurality and complex web of healthcare service providers in the tea plantations in the Dooars region.

6.3.1. Health Service System in Transition in the Tea Plantations of Dooars Region

The tea plantations of North Bengal had their own health service system since the colonial period. The tea plantation management was responsible for providing healthcare services to the plantation workers and their families. Consequently, the tea plantations had their hospitals with doctors, nurses, pharmacists, and other support staff. After the Independence of India, the Plantation Labour Act, 1951 made this arrangement statutory. The act provided health services with other social security to the plantation workers through the plantation management. Thus, the act excluded the plantation workers from the scope of the social security services promised by the socialist state. This is a unique situation in the tea plantation where rather than actively engaging with the question of the social welfare of the citizens, the state acts as a mere observer from a safe distance. Scholars have termed this as an acute absence of the 'developmental state' (Xaxa, 2019). The management's abandonment of the tea estates, followed by the closure had created an entire vacuum in terms of health-care services and other social security. However, here I argue that first, the introduction of Panchayati Raj institutions in the tea plantations of the Dooars regions and secondly, the expansion of the health institution in the tea plantations after the crisis started in the tea plantations in 2003-2004 have made significant changes in the structure of the tea plantations in North Bengal. Xaxa (2019) argues that there is a complete absence of a Development State in the tea plantation. However, the growing Panchayati Raj Institutions, and the public health service delivery mechanisms in the tea plantations strongly suggest that the tea plantations in the Dooars region are going through a significant change, where the state has become more visible, especially since the crisis of 2003.

The Balwantray Mehta Committee (1957) recommended democratic decentralization through a three-tier Panchayat system to empower people through the development and transfer of power and resources to local Panchayati Raj Institutions (Johnson, 2003). In response, the West Bengal Panchayat Act 1957 was introduced. Later, the state introduced the West Bengal Panchayat Act, 1973 establishing a three-tier system with Zilla Parishad at the district level, Panchayati Samiti at the block level, and Gram Panchayat at the Anchal (cluster of villages) level. The West Bengal Panchayat Act 1973 came into force in the entire state on 1 January

1974, and consequently, the first Panchayat election was held under the Act in June 1978 (Raghavulu & Narayana, 1991). However, the coalfield areas in the western districts, the cinchona and tea plantations in the northern districts, and reserve forests remained outside its jurisdiction. The state formally extended the West Bengal Panchayat Act 1973 to the tea gardens, cinchona plantation, and forest areas at the time of the 5th Panchayat General Election held in 1998 (Lama, 2011).

In August 2012, the Standing Committee of the Cabinet on Industry, Infrastructure, and Employment of the West Bengal Government accepted the report of the Committee of Secretaries on the extension of State Government schemes to tea garden areas in North Bengal. As a result, in 2013 it was decided to extend the social security and welfare schemes of the government, such as the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), Indira Avas Yojana (IAY), and other schemes related to housing, sanitation, and water supply in the tea gardens of North Bengal (GoWB, 2012). The findings of the report categorically mentioned that the tea gardens of North Bengal were formally brought under the jurisdiction of the Panchayati Raj Institution in the late 1990s. It was expected that the benefits of various government social security and welfare schemes would eventually reach the people in the tea gardens. The report points out "However, this has not happened at the grass-roots, and implementation of different programs has taken place in an ad-hoc manner depending on the degree of cooperation between the Panchayat functionaries and the tea garden management" (GoWB, 2012, p: 6).

The worst affected regions with respect to hunger deaths are Dooars and the Terai and significant areas in Jalpaiguri and Darjeeling districts. Many estates have declared lockouts while others have just been abandoned. Wages have been low and this affects the income spent at the household level on food (Dasgupta, 2009) In April 2004 there was an intensification of the food crisis; Hence, the Right to Food bench of the Supreme Court passed certain minimum orders concerning the closed tea gardens of north Bengal (Report on Hunger in Tea Plantations of North Bengal, 2004). It instructed the Government of West Bengal to declare all the plantation workers in closed gardens as people belonging to Below Poverty Line (BPL)[29] category. It also called upon the government to provide the tea garden labourers with food grains under Antyodaya Anna Yojana. The rice was to be provided at INR 3 per kg and wheat

[29] The Below Poverty Line (BPL) is a benchmark in India used by the government to identify economically disadvantaged individuals and households eligible for government assistance. The parameters for determining BPL status vary among states and regions.

at INR 2 per kg. It was also instructed to send a medical team twice a week to every tea garden. The team included doctors, nurses, and pharmacists with proper stock of medicines. Further, it was also supposed to make sure that each worker gets 15 days of work every month under the Sampoorna Grameen Rojgar Yojana. In addition, for the tea gardens that were closed for more than one year, the government should provide an unemployment allowance of Rs 500 per month to every worker (Dasgupta 2009).

As a consequence of the report submitted by the West Bengal Advisor to the Supreme Court of India (WBASC, 2003), the Integrated Child Development Scheme (ICDS) was rolled out and Anganwadi Centres were introduced on a massive scale in the tea plantations of Dooars region. The Integrated Child Development Scheme (ICDS) played an instrumental role in improving the nutrition level among children, particularly in the rural areas of the country. However, with respect to the working of the ICDS in the closed tea gardens, a study observed that the government norm to have one Anganwadi Centres for every 500 population was largely ignored. The Anganwadi Centres had no kitchen and food was cooked in the open. There was tremendous pressure on the Anganwadi Centres to take care of every child on the block (Dasgupta 2009).

On the other hand, the Government healthcare institutions, such as the sub-centres and the Mobile Medical Units, were extended to the tea plantations after the launch of the National Rural Health Mission in 2005. A few sub-centres have been upgraded to Health and Wellness Centres (HWC) under the Ayushman Bharat or National Health Mission (NHM) in 2018. Consequently, the Sub-Centre at Patabari Tea Estate was also upgraded to a Health and Wellness Centre.

Therefore, the health system in the closed tea plantations is currently going through a transition phase. The health services are provided and influenced by several actors, such as public health providers, non-government organizations, private sector players, rural health practitioners, traditional healers, and operation and management committees in the closed tea estates.

6.3.2. Public Health Service System in the Tea Plantations of Dooars region

The provision of public healthcare in West Bengal is the responsibility of the Health and Family Welfare Department of the Government of West Bengal, which has a three-tiered system. In the first tier, there is the primary healthcare network, which includes sub-centres, primary health centres, and community health centres. The second tier consists of district and sub-

divisional hospitals, which provide secondary care. Finally, there are tertiary hospitals that offer specialized and super-specialized care (Dutta et. al, 2014).

In each district, the Chief Medical Officer of Health (CMOH) leads the health administration and oversees the implementation of various medical, health, and family welfare programs. This includes planning, supervision, and coordination to ensure the effective delivery of healthcare services.

6.3.2.1. Sub-Centre and Health and Wellness Centre in Tea Plantations of Dooars Region

The sub-centres are the first point of contact between the primary health care system and the community. According to the Government of India (2012) guidelines, there shall be one Sub-centre established for every 5,000 population in plain areas and for every 3,000 population in hilly or tribal regions and even desert areas. The sub-centres are divided into two categories

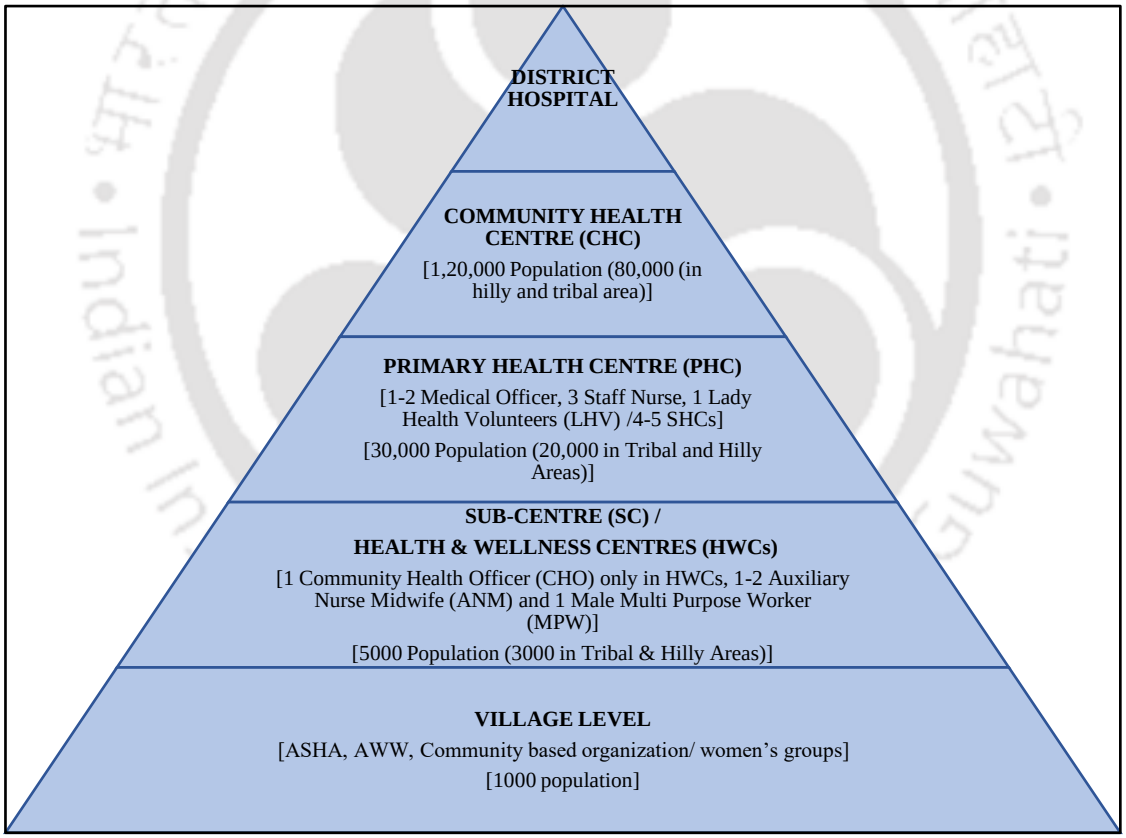

Fig 6.3.: Public Health Delivery System in India
Source: Adopted from Chokshi et al., 2016; GoI, 2012; & GoI, 2022

based on the availability of delivery and newborn care facilities within the centre, Type-A Centres (without delivery and newborn care facilities) and Type-B (delivery and newborn care facility). The recommended human resource at a sub-centre is two Auxiliary Nurse Midwife (ANM), one Multipurpose Health Worker (male), one Staff Nurse GoI, (2012).

The sub-centres are expected to deliver health services in outreach mode in the locality by conducting house visits, nutrition and immunization days, and meetings and events with the community, including the regular Outpatient Department Services at the building of the sub-centre. The primary responsibility of the Sub-centres and HWCs are to provide Maternal and Child Healthcare services, Non-Communicable Disease (NCD) care, and to implement public health programs at the grassroots level. Accredited Social Health Activists (ASHA) play a key role in facilitating and implementing health services at the grassroots level and bringing community to the public health facilities. The ASHA is selected from the community and there must be an ASHA for every 1,000 population. The health service outreach programs of the sub-centres are primarily implemented by the ASHAs (GoI, 2022).

A significant number of the sub-centres have been upgraded to Health and Wellness Centres under the Ayushman Bharat in 2018. The Health and Wellness Centre has a Community Health Worker (CHO), two Multipurpose Workers (Female), and a Multipurpose Worker (Male), per 5,000 population (GoI, 2022).

Table 6.4. provides information about the distribution of Sub-Centres (SC) and Health and Wellness Centres (HWCs) in Alipurduar District for the year 2022. It also includes data on the number of health workers, specifically Auxiliary Nurse Midwives (ANMs), and Accredited Social Health Activists (ASHAs) in various blocks within the district.

Table 6.4: Sub-Centres (SC)/ Health and Wellness Centres (HWCs) at Alipurduar District, 2022

Block / Municipality	No. of SCs/ HWCs (N)	Number of Community Health Workers			Ratio per SC/HWC		
		ANMs	2nd ANMs	ASHAs	ANMs	2nd ANMs	ASHAs
Alipurduar-I	37	36	36	141	0.97	0.97	3.81
Alipurduar-II	37	36	36	182	0.97	0.97	4.92
Falakata	45	44	44	217	0.98	0.98	4.82
Kalchini	49	48	48	147	0.98	0.98	3.00
Kumargram	36	35	35	140	0.97	0.97	3.89
Madarihat-Birpara	38	37	37	166	0.97	0.97	4.37
Total	**242**	**236**	**236**	**993**	**0.98**	**0.98**	**4.10**

Source: Office of the Chief Medical Officer of Health (CMOH), Alipurduar, 2022

The table shows that the highest number of Sub-Centres (SC) and Health and Wellness Centres (HWCs) are located in Kalchini block (N 49), followed by Falakata (N 45) and Madarihat-Birpara block (N 38). However, the ratio of Auxiliary Nurse Midwives (ANMs), and second Auxiliary Nurse Midwives (2nd ANMs) against SC/HWC is significantly low (<1) across all

the blocks in the Alipurduar district. This shows the acute shortage of community health workers in the Sub Centres and Health and Wellness Centres in the Alipurduar district. The table shows that the SCs and HWCs in Alipurduar-II, Falakata, and Madarihat-Birpara blocks have more than four ASHA workers per centre. On the other hand, Alipurduar-I, Kalchini, and Kmargram blocks have more than three ASHA workers per SCs/HWCs in these blocks. The Tea Garden Survey Report (2013) shows that out of 273 tea estates in the northern districts of West Bengal, only 160 tea estates have sub-centres within the tea estates while the remaining 113 tea estates do not have a sub-centre within the tea estate. It was also reported that among these 113 tea estates, 52 tea estates are located in the Dooars region, 38 tea estates are in the Darjeeling hill region, and 23 tea estates are in the Terai region which does not have any sub-centres within the tea estates (GoWB, 2013).

The first sub-centre at the Patabari Tea Estate located in the Kalchini block was established in 2006 and later the centre was upgraded to Health and Wellness Centre (HWC) in 2018. This HWC is well equipped with recommended human resources and operates from its newly constructed two-storied building located near the abandoned hospital of the Patabari Tea Estate. However, Rethi Tea Estate located in Madarihat-Birpara block did not have any sub-centre till 2012. The people of Rethi Tea Estate had to go to the nearby Jai Birpara Tea Estate located 5 km away to seek health services. In 2012, a sub-centre was established by the district health administration in Rethi Tea Estate.

Since then, the sub-centre has been operating from a small rented room at the Bandapani Panchayat Office building located in the main division of Rethi Tea Estate; the sub-centre has not been upgraded to Health and Wellness centre. In addition, the centre suffers from a serious shortage of human resources. The centre is managed by two Auxiliary Nurse Midwives (ANM) as there are no multi-purpose workers or Accredited Social Health Activists (ASHA) in this centre. Shakuntala Tanti (28 years old) was the only ASHA in the entire Tea Estate. She joined the centre in 2015 as an ASHA, but she resigned within a few months, citing the huge workload, and began working in a private school nearby in 2016

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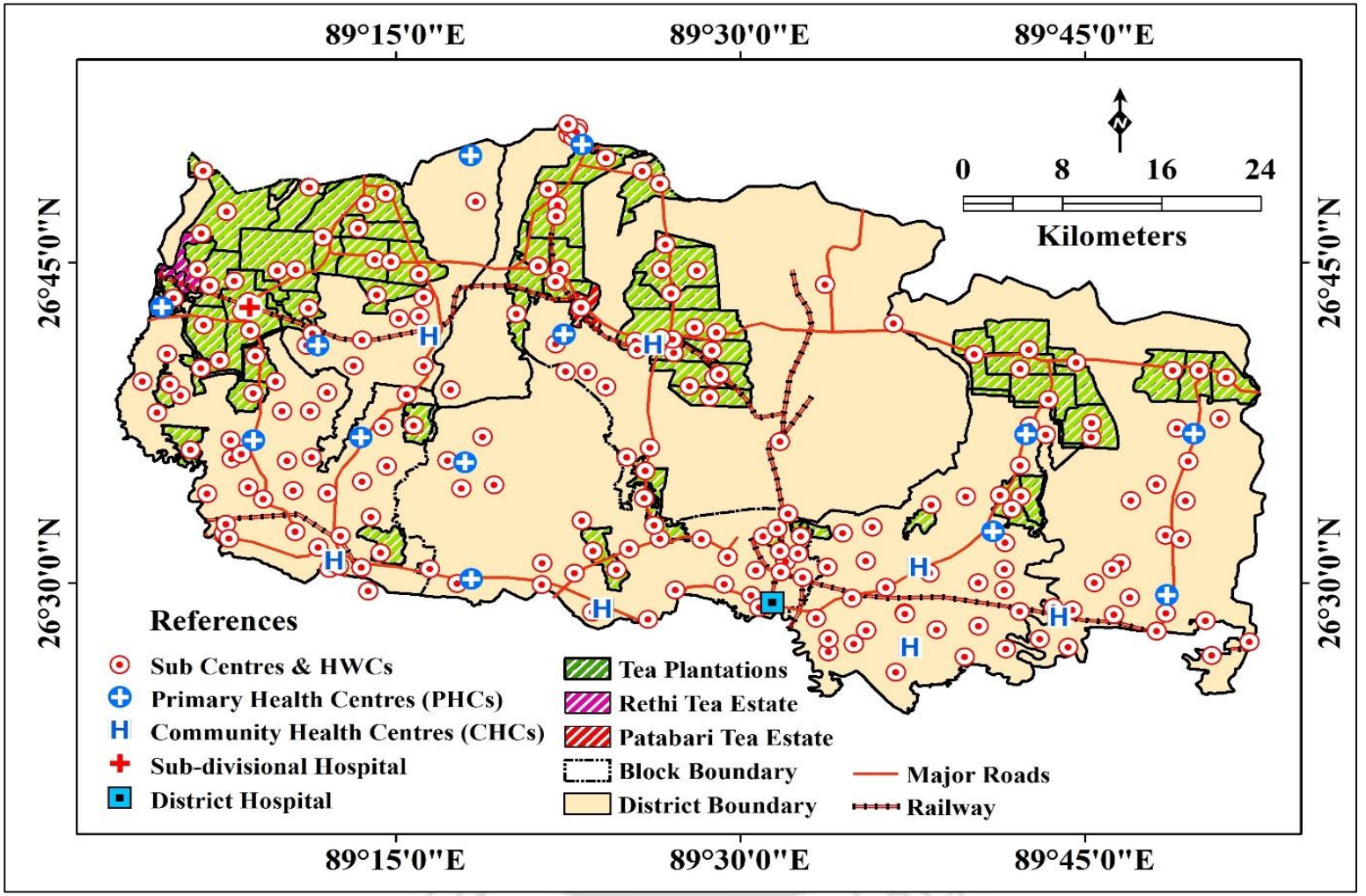

Fig 6.4: Location of SC/HWCs and Referral Hospitals in Alipurduar District, 2023
(Source: Prepared by the researcher based on the data provided by CMOH Office, Alipurduar)

6.3.2.2. Transformation of SCs into HWCs

With the upgradation of Sub Centres to Health and Wellness Centres (HWCs), a new cadre of health workers was recruited in the Health and Wellness Centres to manage the increased workload at the health centres due to the additional services that were introduced in the health centres. Sukanya Das, a 33 years old Bengali woman, has been working as a Community Health Officer at the Health and Wellness Centre (HWC) of the Patabari Tea Estate since 2022. She completed the General Nursing and Midwifery (GNM), a three-year diploma course from the Jalpaiguri District Sadar Hospital in 2015. Sukanya was posted at the HWC, at the Patabari Tea Estate in 2021 when the previous CHO Rima Dutta was transferred to another HWC at Panchkolguri in Alipurduar. Sukanya as the CHO leads the team of community health workers, which consists of two ANMs, four ASHAs, and a CHO of the HWC at the Patabari Tea Estate.

It was found during the fieldwork that the CHOs are frequently transferred to new HWCs which are often located a hundred miles away from their hometown. Sukanya is the fourth CHO at the HWC Patabari Tea Estate since the centre was established in 2018 and the third CHO since I started my fieldwork at Patabari TE in 2019. The frequent transfers not only affect the continuity and effectiveness of the health services, as they have to work closely with the community but also put an extra burden on the health workers to relocate to the new places. Community health workers need to engage with the community build trust in the people and increase acceptability to be able to promote health and health services at the grassroots level. However, the frequent transfer of the health workers interrupts this process and hampers the health services utilization significantly.

Sukanya Das (33 years old) described the transformation from a sub-centre to an HWC and the range of additional services the HWC provides compared to a sub-centre. She said,

> The health services related to NCDs have grown significantly. Nowadays, we provide a range of services related to NCDs, including hypertension, blood sugar, and cancer. We provide screening and medicine for these diseases and refer them to the hospital if necessary. This has been very successful as many people actually come to the health centre regularly to check their blood pressure and sugar and collect free medicines.

The CHO informed that with the introduction of the HWCs, the perception of people about the health centre had also changed.

> Earlier people used to think that the Sub-Centre is a place for only women and children to get health services. There was indeed a special focus on maternal and child-related concerns. Now there is a range of health services for all people, a good example is NCD screening and telemedicine services. Now we have a lot more variety of medicines available at the centre. The perception is changing gradually. We have a lot of patients nowadays at the centre.

Sukanya explained that the telemedicine services helped in improving access to health care for tea garden communities. She shared:

> I would say it is a very good initiative, particularly in places like tea gardens. Many of the people in tea gardens can't go to good doctors in the cities. They do not have money to buy bus tickets or consult a private doctor in the city. Neither can they manage a day of leave from work. In this situation, where would they go if fallen sick and required a doctor's consultation? Earlier they used to depend on the home medicines or quacks, or they lived with the disease. I can say from my experience that the telemedicine service is like a blessing for the tribal people of this area. Now, the people of the Patabari Tea Estate at least can have a consultation with a good doctor from Alipurduar, Siliguri, or Kolkata.

Telemedicine and consultation services have been introduced in the HWCs. Telemedicine services have proved to be an important intervention in inaccessible and remote locations such as the tea gardens of the Dooars region. Telemedicine services were introduced at the HWCs to provide consultation of general physicians and specialist doctors from different public health institutions across the state and the country to people in remote areas using Information & Communication Technologies (ICT). The Community Health Officers (CHO) facilitate the telemedicine services at the HWCs. She connects the patient to a specialist doctor available on the ICT portal on that particular day and time. The doctor provides required consultation to the patients which the CHO translates to the patient. The required medicines or assistance with referral services is provided to the patient by the HWC.

6.3.2.3. Primary Health Centres (PHCs) and Referral Hospitals in Alipurduar District

The primary health centres have at least six sub-centres or the HWCs under their jurisdictions. Primary health centres are the first point in the public health system where in-patient care services are available. According to the Indian Public Health Standard (2012), a primary health centre should have a medical officer (MBBS), and 13 other support staff such as nurse-midwives, pharmacists, health workers, health assistants, and sanitary workers.

Table 6.5: Primary Health Centres at Alipurduar District, 2022

Block / Municipality	Name of Health Facility	Doctor	Nurse	Lab Technician	Pharmacist	Gr-D	Sweeper	Total Support Staff	Available Bed
Alipurduar Municipality	Alipurduar UPHC	1	1	1	1	1	0	4	0
Alipurduar I	Munshipara PHC	1	1	2	1	1	0	5	0
	Silbarihat PHC	1	5	2	1	3	3	14	10
Alipurduar II	Turturi PHC	1	3	2	1	0	0	6	0
	Samuktala PHC	1	3	1	1	3	2	10	10
Falakata	Choto Salkumar PHC	1	1	1	1	0	1	4	0
	Jateswar PHC	1	2	2	1	0	0	5	0
Kalchini	Jaigoan PHC	1	4	1	1	2	3	11	0
	Satali PHC	1	1	0	1	0	0	2	0
Kumar Gram	Barobisha PHC	1	1	1	1	0	0	3	0
	Kumargram PHC	1	1	2	1	1	0	5	0
Madaihat-Birpara	Madhya Rangalibazna PHC	1	3	1	1	3	2	10	10
	Sishujhumra PHC	1	1	1	1	0	0	3	0
	Totopara PHC	1	3	1	1	0	3	8	10
Total		**14**	**30**	**18**	**14**	**14**	**14**	**90**	**40**

Source: Office of the Chief Medical Officer of Health (CMOH), Alipurduar, 2022

A Primary Health Centre has 6 indoor beds and caters to the needs of a population of 30,000 in the plain areas and a population of 20,000 in the hills, tribal, and geographically inaccessible areas (GoI, 2012). The Primary Health Centres refer patients to the Community Health Centres (CHCs), a 30-bed hospital that caters to a population of approximately 80,000 in tribal, hilly, or desert areas, and a population of 1,20,000 in plain areas. The CHCs are the first referral units in the public health delivery system in India. The CHC, which is a secondary-level hospital, refers patients to tertiary hospitals (district hospitals and medical colleges) for specialist care (GoI, 2012).

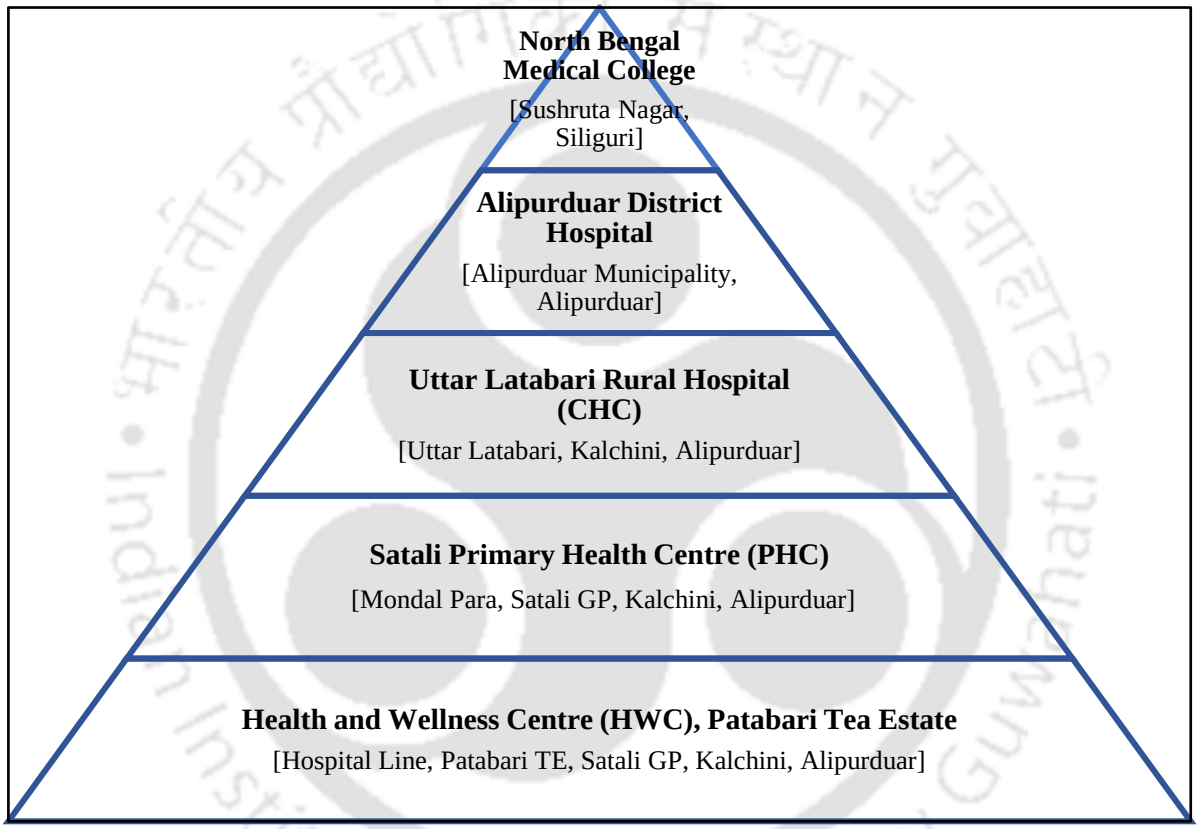

Fig. 6.5: Referral Hospitals from HWC, Patabari TE

Table 6.5. shows that Alipurduar district has 13 PHCs located in different blocks and one Urban Primary Health Centre (UPHC) located in Alipurduar municipality. Table 6.5 also shows that only the Madaihat-Birpara block has three Primary Health Centres (PHCs) and the rest of the blocks of the district have two PHCs in each block. Table 6.5 highlights the actual shortage of human resources and healthcare providers in the PHCs of Alipurduar district. All the PHCs in the district have only one doctor in each centre. According to the Indian Public Health Standard (2012), a Primary Health Centre should have 13 support staff, such as a nurse-midwife, pharmacist, health worker, health assistant, and sanitary worker (GoI, 2012).

However, it was found that Silbarihat PHC located in the Alipurduar-I block have 14 support staff and 10 PHCs in the district, and has less than 10 support staff at the PHCs. In addition, a total of 5 PHCs and UPHCs has less than 5 support staff. It was also found that only four PHCs in the district, namely Silbarihat PHC, Samuktala PHC, Madhya Rangalibazna PHC, and Totopara PHC, have 10 beds available in the health centre for in-patient care. The sub-centre at Rethi Tea Estate, located in Madarihat-Birpara block is under Sishujhumra PHC. The patients of the Sub-Centre of Rethi Tea Estate are referred to Sishujhumra PHC for medical care. However, Sishujhumra PHC has only one doctor and three support staff (a nurse, a laboratory technician, and a pharmacist). In addition, the PHC does not have any beds for inpatient care. Therefore, people generally prefer to visit Birpara State General Hospital (Sub-divisional Hospital), located 12 km from Rethi TE rather than the Sishujhumra Primary Health Centre.

However, the region has several rivers lacking bridges, and there is also an absence of ferry services on the rivers surrounding the Rethi Tea Estate. Consequently, the journey from Rethi Tea Estate to Birpara State General Hospital becomes more challenging, particularly during the monsoon season, exacerbating communication difficulties. On the other hand, the Health and Wellness Centre at the Patabari Tea Estate located in Kalchini block is under the Satali PHC. The infrastructure and human resource strength is also non-satisfactory, like in Sishujhumra PHC. The Satali Primary Health Centre has one medical doctor, one nurse, and one pharmacist. Therefore, the people of Patabari Tea Estate prefer to visit Uttar Latabari Rural Hospital, a community health centre located 9 km away from Patabari TE.

Table 6.6 shows that Alipurduar district has six Rural Hospitals (Community Health Centres) located in one each in Alipurduar-my, Kalchini, Kumargram, and Madarihat-Birpara block. Whereas Alipurduar-II has two Rural Hospitals namely Bhatibari Rural Hospital and Jasodanga Rural Hospital. The Rural Hospital of Falakata block was upgraded to Super-Speciality Hospital in 2016 by the Department of Health and Family Welfare, Government of West Bengal. The Madarihat Rural Hospital is in the second-tier referral hospital after the Sishujhumra PHC for the Sub-Centre of Rethi Tea Estate. TheMadarihat Rural Hospital has 2 doctors, 32 support staff, and 30 beds for in-patient care. On the other hand, Uttar Latabari Rural Hospital is a second-tier referral hospital after the Satali PHC for the Health and Wellness Centre of Patabari Tea Estate located in Kalchini block. The Uttar Latabari Rural Hospital also has 2 doctors, 21 support staff, and 30 beds for in-patient care.

Table 6.6: Community Health Centres (CHC) at Alipurduar District, 2022

Block / Municipality	Name of Health Facility	Doctor	Nurse	Lab Technician	Pharmacist	Gr-D	Sweeper	Total Support Staff	Available Bed
Alipurduar I	Panchkolguri Rural Hospital	2	8	5	2	4	6	25	30
Alipurduar II	Bhatibari Rural Hospital	2	8	3	2	3	5	21	30
	Jasodanga Rural Hospital	3	8	3	2	6	4	23	30
Kalchini	Uttar Latabari Rural Hospital	2	7	4	2	5	3	21	30
Kumar Gram	Kamakshyaguri Rural Hospital	2	7	5	2	7	4	25	30
Madaihat-Birpara	Madarihat Rural Hospital	2	14	4	2	6	6	32	30
Total		**13**	**52**	**24**	**12**	**31**	**28**	**147**	**180**

Source: Office of the Chief Medical Officer of Health (CMOH), Alipurduar, 2022

Table 6.7: Sub-Divisional Hospitals and District Hospitals at Alipurduar District, 2022

Block / Municipality	Name of Health Facility	Doctor	Nurse	Lab Technician	Pharmacist	Gr-D	Sweeper	Total Support Staff	Available Bed
Alipurduar Municipality	District Hospital, Alipurduar	44	237	19	7	62	41	366	281
Madarihat- Birpara	State General Hospital, Birpara (Sub divisional)	18	93	12	5	40	27	177	182
Falakata	Super Specialty Hospital, Falakata	26	65	11	3	7	5	91	150
Alipurduar-I	Integrated AYUSH Hospital, Tapshikhata	10	5	0	4	14	6	29	110
Total		**98**	**400**	**42**	**19**	**123**	**79**	**663**	**723**

Source: Office of the Chief Medical Officer of Health (CMOH), Alipurduar, 2022

The district has one Sub-Divisional Hospital located in Birpara town which has 18 doctors, 177 support staff, and 182 beds for in-patient care. The only super-specialty hospital of the district is located in Falakata town, which has 26 doctors, 91 support staff, and 150 beds in the in-patient department.

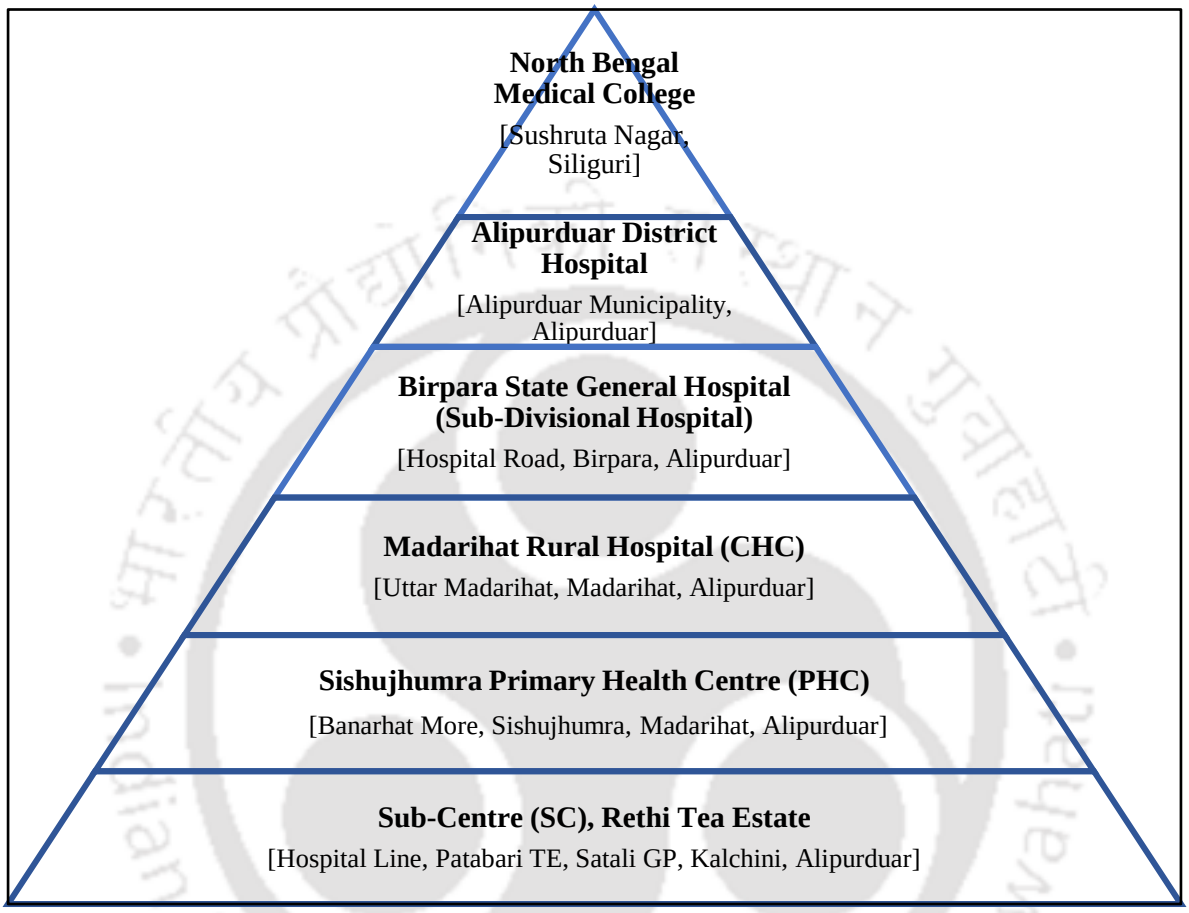

Fig.6.6: Referral Hospitals from Sub-Centre, Rethi TE

The only Integrated Ayurveda, Yoga and Naturopathy, Unani, Siddha, and Homoeopathy (AYUSH) Hospital is located at the Tapshikhata village in Alipurduar-II block, which has 10 AYUSH doctors, 29 support staff and 110 beds in the in-patient department. TheAlipurduar District Hospital is the top referral hospital located in Alipurduar district. This hospital, located in the Alipurduar district headquarters, also has an attached government nursing training school. There are 44 doctors, 366 support staff, and 281 beds for in-patient care in the Alipurduar district hospital. Alipurduar District Hospital has dedicated infrastructures which include Male Medicine Ward, Male Surgical Ward, Female Medicine Ward, Female Surgical Ward, Paediatrics Ward, 24 Bedded Hybrid Critical Care Unit (H-CCU), 10 Bedded Thalassaemia Control Unit (Day Care TCU), 10 Bedded Nutritional Rehabilitation Centre

(NRC), and 15 Bedded Isolation Ward (CMOH Office, 2022). The hospital also has a Dedicated Mother and Child Care Unit, which includes a 50-bedded Ante-Natal Ward (ANW), 60 bedded Post Natal-I Ward, 60 bedded Post Natal -II Ward (PNW-II), Labour Room with 6 Advanced LR Tables (LR Ward), Dedicated Maternity Operation Theatre (M-OT), and a 30 Bedded Special New-born Care Unit (SNCU). TheAlipurduar District Hospital is located 80 km away from Rethi and 40 km from the Patabari Tea Estate.

6.3.3. The Mobile Medical Unit in the Abandoned Tea Plantations of Dooars Region

The Mobile Medical Unit (MMU) was initiated under the National Rural Health Mission (NRHM) in 2005. The MMU is an innovative way for a health outreach program to provide primary health care services to vulnerable populations in remote and underserved areas through mobile medical platforms (Raikwar et al., 2021). The MMU in Rethi Tea Estate was established in the year 2007. The MMU is run under a public-private partnership (PPP) model. At present, the MMU at Rethi TE is run and managed by a private trust named Manbhum Ananda Ashram Nityananda Trust (MANT) with a registered office in Kolkata. The MMU Unit of the Rethi Tea Estate is stationed at Birpara State General Hospital and reports to the Office of the Block Medical Officer of Health of Madarihat-Birpara block. The MMU at Rethi TE has five staff including a doctor (MBBS), a lab technician, a nurse, a pharmacist, and a support staff cum driver.

The MMU organizes health check-up camps at both the Main Division and Nepania Division of Rethi Tea Estate once a week. The MMU operates from one of the rooms in the abandoned hospital building, located near the factory in the central division. The room could be in a better shape, it is full of dust and spider cobwebs. The room does not even have an electricity connection. There are a few old wooden chairs and two big tables, And the doctor, nurse, and pharmacist use one of the tables. The same table is also used to keep all the medicines and register books. The laboratory technician keeps all his slides, samples, and testing kits on the other table, and does all the testing from the table. A wooden bench was placed on the other corner of the room for the visiting patients, and only three to four patients can sit on this bench at a time. Therefore, this bench is only used by the patients who had to wait for a test report or anything of that sort. The patients quietly stand in long queues awaiting their turn to see the doctor.

The MMU comes to the tea estates every Thursday at 11 am and provides free healthcare services to the local communities till 3 pm. The MMU provides primary health care to the tea

garden workers and their family members at Rethi. The MMU provides basic treatment of ailments like fever, cold and cough, body pain, small injuries, and first aid. There are also provisions for pathological sample collection, blood tests (blood sugar, rapid diagnostic test of malaria, blood pressure), and X-rays. Ruma Barman, 30 years old, the pharmacist of the MMU unit shared that the MMU mainly caters to the needs of Maternal and Child Health Services. The unit provides full antenatal and postnatal check-up of pregnant women, and the child care services are mainly provided at the diagnostic level.

The MMU also facilitates the maternal and child health services provided by the sub-centres. Ruma Barman (30 years old), the Pharmacist with the MMU at Rethi Tea Estate said:

> The sub-centres nowadays provide antenatal care; however, they do not have pathological testing facilities. We provide services of pathological testing, such as blood sugar, haemoglobin, HIV, and urine tests, which are not available at the sub-centre. So, people generally prefer our MMU unit for medical services.

The MMU provides doctor consultation, pathological diagnosis, and free medicine for the patients. The MMU provides basic treatment for ailments like fever, cold and cough, body pain, small injuries, and does first aid. There are also provisions for pathological sample collection, blood tests (blood sugar, rapid diagnostic test for malaria and blood pressure), and X-rays. The unit also provides first aid care to occupational hazards and injuries which is very common in the tea estate. The patients of the closed tea estates largely depend on the Mobile Medical Units. It was observed during the fieldwork that on average 50 to 60 patients visit the mobile medical unit on the working days (once a week) with various illnesses and injuries for medical care. The MMU refers patients with major illnesses to the Birpara State General Hospital located 12 km away from Rethi Tea Estate.

There is an overlapping of services provided by the MMU and the Sub-Centres, especially related to maternal health services and non-communicable diseases (NCDs) related healthcare services, as these are also provided in the sub-centres which are located at the Rethi Panchayat office at a distance of merely 1 km. Ruma Barman, 30 years old, the pharmacist explained:

> Antenatal Care and NCDs-related health services are also provided at sub-centres now. But we have been providing services here for a long time, even before the sub-centres came up in Rethi TE. So, we continued with the services. In addition, to date, the maximum number of patients come to us for medical needs and MCH services. It is also because here at the MMU we have a doctor. The people can

> physically consult a doctor in the tea gardens only at the MMU. The sub-centres provide antenatal care nowadays, however, they do not have pathological testing facilities. We provide services of pathological testing such as blood sugar, haemoglobin, HIV, and urine tests, including X-rays, which is not available at the sub-centre. So, people generally prefer our MMU unit for medical services.

She explained that MMU and the Sub-centre works in collaboration to provide the MCH services in the tea estates. Ruma Barman said:

> We do not register pregnancy at MMU on the first visit. The pregnancy has to be registered at the sub-centre and the mother is given a Mother and Child Protection Card (MCPC) from the Sub-Centre after the registration. Then antenatal care is provided both by the MMU and the sub-centre. The patients can go to any of both places for medicine and check-ups. The sub-centre sends the patients to the MMU for pathological testing and other medicines that are not available to the sub-centre. Once we complete the diagnosis and pathological tests, the reports are also given to the sub-centre for further action. It is the duty of the sub-centre to make the necessary arrangements and assist the mother while referring her to the hospital for further check-ups if necessary and also to promote institutional delivery at the time of labour.

However, the MMU faces a serious challenge in referring the patients to the hospital due to the geographical inaccessibility of the tea estate. In addition, the MMU does not have a provision of ambulance services, it has to depend on the referral hospital to arrange ambulance service. Dr Jai Prakash, 42 years old, the doctor with the MMU said:

> If I refer them, they will ask me to arrange an ambulance for them, which is not possible for me. I cannot arrange an ambulance every time. If we refer the patients to Birpara Hospital, they will wait for the government ambulance to come. The patients think the ambulance will come and take them for treatment, only then they go to hospitals, otherwise they will stay at home and live with the disease.

The MMUs also suffer from a serious challenge of providing health-care without having basic infrastructure. Dr. Jai Prakash, explained:

> We do not have separate funding for infrastructure to make a place suitable to be seated for a few hours. The Government assumes that we will always be in a vehicle and serving people! So, we do not even have a chair or desk here for work where we can sit and serve people for a few hours. We have to manage it on our own. Here (at

> Rethi) somehow, we got this abandoned hospital building of the garden. On other sites, we often borrow chairs and tables from people in the locality. When we do not get anything, we stand under the trees! In such cases, how can we provide medical care for an expecting mother?

The MMU is an important intervention to provide health care services, especially in remote and geographically isolated places such as Rethi Tea Estate. The introduction of MMU under the National Rural Health Mission (NRHM) is an important intervention as the people in the closed and abandoned tea plantations receive medical care at their doorstep. In the closed tea gardens and geographically inaccessible places, the MMU is the only healthcare unit that provides physical consultation with a qualified medical practitioner which is otherwise very difficult for the tea garden communities. As such services are only available in the cities outside the tea estates. However, the Mobile Medical Units have also faced several challenges with respect to the availability of infrastructure and budgetary allocation in terms of providing better medical services.

6.3.4. Private Health Services in Alipurduar district

The International Monetary Fund (IMF) -driven Structural Adjustment Programs (SAP) forced the Indian health sector to open up market forces for efficiency and reduce state investment in health (Bandyopadhyay et al., 2018). As a result, the Indian healthcare system underwent a significant transformation in the post-economic reform period, marked by reduced public sector investment affecting the growth of primary health centres and causing resource scarcity in secondary and tertiary level hospitals. This decline disrupted the referral system, leading to the dismantling of the public healthcare system. There has been an increased influence of corporate houses and international capital on national health priorities, resulting in increased reliance on private healthcare services. The donor-driven agendas have shifted the focus on techno-centric reproductive and child health, and the vertical programs target specific diseases at the expense of broader welfare and comprehensive healthcare (Qadeer, 2000). As the health sector became a subject of market interest, the line between nonprofit and for-profit organizations in the private sector has blurred, giving rise to hybrid structures. In the mid-1990s, NGOs struggled with funding challenges, leading to closures, or adopting market principles by compromising on institutional values for survival (Baru & Kapilashrami, 2019). The Indian health sector, originally meant to be inclusive, influenced by Bhore committee recommendations, the Alma Ata declaration of ‘Health for all,’ and Nehruvian socialist policies, faced with a decline in state investment. This resulted in a shift towards a more

commercialized system, where healthcare is increasingly available only to those who can afford it (Jeffery, 2019).

In the context of West Bengal, studies have shown that the commercialization of health care has increased the out-of-pocket expenditure of the rural poor and has failed to provide the basic primary healthcare needs (Roy, 2014). The publicly funded health insurance models which, favoured private over public hospitals, have failed to significantly impact the pattern of hospital care utilization. The hospitalization rate in public hospitals remained constantly higher than the private hospitals in West Bengal as people were apprehensive about using private hospitals due to unpredictable fees, and hidden costs, and accused the private hospitals of unnecessary treatments and creating false claims for monetary profits (Bandyopadhyay et al., 2018). In addition, the introduction of user fees in various health care services, including basic diagnostic services, has excluded the marginal people from accessing healthcare from the public hospitals in West Bengal (Roy & Gupta, 2011).

Table 6.8: Private Health Facilities at Alipurduar District, 2022

Block / Municipality	Health Facility Name	Location	Ownership	Sanctioned Bed Count	Functional Bed Count
Alipurduar Municipality	Greenland Nursing Home Private Limited	Urban	Private	40	40
	Maa Seva Ashram Nursing & Diagnostic Centre	Urban	Private	30	30
	Pulse Sanjivani Nursing Home and Diagnostic Centre	Urban	Private	20	20
	Sri Krishna Nursing Home	Urban	Private	11	11
	ST Marys Nursing Home	Urban	Private	11	11
Alipurduar-I	Nil	Nil	Nil	0	0
Alipurduar-II	Nil	Nil	Nil	0	0
Falakata	Falakata Nursing Home	Rural	Private	20	20
	Varsha Falakata Health Care Pvt.Ltd.	Rural	Private	35	35
Kalchini	Family Planning Association of India - Kalchini	Rural	NGO	10	10
Kumargram	Nil	Nil	Nil	0	0
Madarihat-Birpara	Dooars Nursing Home	Rural	Private	30	30
	Maa Nursing Home	Rural	Private	40	40
Total	**10**			**247**	**247**

Source: Office of the CMOH, Alipurduar, 2022

In the context of the Dooars region, a study shows that a large number of patients sought healthcare for ailments, such as fever and diarrhoea, from the private practitioners in the out-patient department (OPD) in the private clinic and nursing homes before visiting the public hospitals at a secondary and tertiary level due to the non-availability of health care services and

medicines in the public hospitals (Bhattacharya, 2014). In addition, the poorest of the poor section of society remained largely dependent on public hospitals for seeking healthcare due to the unaffordability of medical care in private hospitals (Majumder, 2006).

Table 6.8. shows that Alipurduar district has only 10 private nursing homes that provide in-patient care. In addition, the private health facilities are mainly concentrated (5 out of 10 private nursing homes) in the Alipurduar Municipality, the district headquarters. Apart from Alipurduar municipality, there are two private nursing homes located in Falakata block of the district. However, these hospitals only have 20 and 35 beds for inpatient care respectively. The Madarihat-Birpara block also has two private nursing homes with 30 and 40-bed capacities in each nursing home respectively. Three blocks of Alipurduar district namely Kumargarm, Alipurduar-I, and Alipurduar-II do not have any private nursing homes or private hospitals. Kalchini block has one private hospital with 10 beds in an abandoned tea estate run by a non-government organization based in Mumbai.

Dr. Pranesh Das, 48 years old, a senior private practitioner based in Kalchini block informed that:

> Most of the private nursing homes in Alipurduar, except two, mainly cater to the needs of orthopaedic surgery or pregnancy and delivery-related health services. The private healthcare sector in our district is still at a very basic stage. We refer patients to Cooch Behar, in nearby areas or Siliguri. In major cases, people who have money tend to go to Kolkata or Sothern India to seek medical care from private hospitals.

Dr. Pranesh Das highlighted that the introduction of Swastha Sathi, a publicly funded health insurance scheme by the Government of West Bengal in December 2016, has led to a slight increase in the utilization of healthcare services in private nursing homes in the region. However, he noted that the limited usage of private healthcare services under this state-funded insurance scheme is due to its restricted coverage, which only includes selected in-patient department care. Notably, it does not cover out-patient department care, a crucial need for the common people. The insurance also covers a limited number of surgeries including C-Section deliveries in the Gynecology and obstetrics department, as well as occupational injury and accident-related orthopaedic surgeries. Consequently, a relatively small number of patients opt for these services. In addition, due to the scarcity of private nursing homes offering such specialized services, patients prefer seeking healthcare in Siliguri or Cooch Behar towns.

Dr. Bhabesh Sen, 38 years old, another private practitioner based in Alipurduar explained the pathological laboratory and other diagnostic services in the district. He said:

> You can understand the state of private health services from the fact that we do not have any private hospital or diagnostic centre in the entire district that provides Magnetic Resonance Imaging (MRI) scan. The pathological laboratories are only capable of doing simple tests. We have to send the sample to the laboratory in Siliguri or Kolkata. It takes 4-5 days to get the report from Siliguri or Kolkata.

It was found in the fieldwork that the private healthcare services in the Alipurduar district are primarily limited to the outpatient services provided by the doctors of public hospitals of the district in private chambers. The private chambers of the doctors are mainly in the chemist stores, or private pathology laboratories located outside the public hospitals. The chemist stores or pharmacy stores provide a single room known as a 'Doctor chamber' to the doctors to provide private medical consultation to the patients. There are a few medical stores in the urban centres such as Alipurduar or Falakata where the specialist doctors from the medical colleges of nearby districts (mainly Siliguri and Jalpaiguri) visits once a week or a month on a fixed schedule. On the other hand, the doctors from the Alipurduar district hospital or Falakata Super-speciality hospital visit the private chambers in chemist stores located in small urban centres or village markets (such as Kalchini, Madarihat, Kumargram) located near the tea gardens once a week, providing medical care in private chambers. The people from the tea gardens who are in a relatively better economic condition go to the private chambers of the doctors to seek medical care in case of serious illness. The doctors take a fixed consultation fee, known as visits which vary from INR 300 to INR 500 per consultation. The patients from the chambers of private practitioners refer to nursing homes in the urban centres based on their economic capability. However, it was found that the tea plantation communities, visit the public hospitals for inpatient care.

6.3.5. Traditional Healers in the Tea Plantations of the Dooars Region

Historically, the provision of state-sponsored medical services in the tribal regions of India remained limited and underfunded, resulting in an inability to deliver adequate care to the masses. Furthermore, the accessibility and affordability of legitimate private practitioners of Western medicine have remained a serious challenge as it was largely confined to urban centres. Consequently, various forms of alternative treatments, including quacks, unqualified doctors, traditional healers, and faith-based practitioners, persist and thrive within the tribal

regions of India (Hardiman & Raje, 2008). Each of these medical practitioners and caregivers has their own methods of healing and it caters to the particular needs of the tribal people, given the socio-economic realities of the region (Hardiman & Raje, 2008). The different forms of alternative healing practices and Western biomedical practices coexist in the same region; However, they often conflict over ideas, efficacy, supremacy, and acceptance. The different forms of healing practices are also found among the tribal communities in the tea gardens of the Dooars region (Chaudhury & Varma, 2002). The healthcare-seeking behaviour from the practitioners of different healing of tribal people in the Dooars region is shaped by indigenous knowledge and beliefs, perception about health and illness, as well as historical experience and spatial interaction with the Western form of medicine (Chaudhury & Varma, 2002).

This section discusses alternative healing practices in the tea gardens of the Dooars region, especially the traditional healers and the rural medical practitioners, also known as quacks. They are an integral part of the healthcare provision in the tea gardens and they play an important role as a large section of the tea garden communities depends on them for health care services. This section is divided into two parts, and it provides a critical understanding of the traditional healers and the rural medical practitioners in the tea gardens by looking into their socio-economic conditions, range of services, forms of operation, position within the health system, and the challenges.

6.3.5.1. Traditional Healers-*Ojhamatis*

Traditional Healers also known as *Ojhamatis* in *Sadri*, a common language of the Adivasi plantation communities. *Ojhamatis* are an important source of healthcare in the tea gardens. Often, they treat children who are considered to have fallen ill due to evil spirits or evil eyes. It is believed that children and adolescents fall ill due to *Chitta Laga* (bad touch) by the evil spirit, which causes illness and discomfort in the human body. The tribal communities believe that the *Ojhamatis* have magical powers to treat children and adolescents who are affected by evil spirits.

Sushma Oran, a 25-year-old Adivasi woman lives with her husband and mother-in-law in one of the labour quarters at Budhuram Line of Patabari Tea Estate. In 2021, Sushma's daughter Liza Oraon, who was 3.5 years old, remained sick for many months, she became physically very weak compared to the other children of her age. Sushma complained that Liza had been suffering from fever and loose motion frequently. When there was no change in the daughter's health condition, she decided to visit the Ojhamati. For instance, she said

> I knew that there was something wrong because my daughter was not getting cured with medicines. If the child is sick for a long time it is caused by the evil spirit, for sure. In such cases, medicines do not work. My mother-in-law took her to the *Ojhamati* in the Beech Garden. He said that my daughter is affected by *Chhita-Laga*. He performed Puja and gave *Jhara* to my child.

People in the tea gardens utilize their services for both simple and acute illnesses, such as weakness, fever, diarrhea, and skin diseases that persist for a long period. Often, they provide services from their homes, they have small temples constructed in the courtyard to perform different kinds of rituals. Depending on the nature of the illness, they either perform rituals, chant prayers, or also provide *Tabiz* (amulets), and *Jalpora* (water incanted with mantras given to patients to drink), as well as herbal medicines and oils for different kinds of ailments. Sushma who had taken her 3.5 years old daughter to an *Ojhamati*, shared:

> We bought the fruits, rice, mustard oil, duck eggs, white cloth, and other items for the puja. The *Ojhamati* performed the puja at his house for my child, he has a temple in his house courtyard. He does not demand any particular amount of money as payment. It depends on us how much we offer him happily. We gave him 100 rupees.

There are around six *Ojhamatis* in the two tea gardens selected for the fieldwork. For the present study, discussions were conducted with 3 *Ojhamatis*. Given the fact that they are easily located within a few kilometers of the tea gardens, people prefer to visit them as one of their first sources of treatment. They also provide services at a very reasonable cost and the people in the tea gardens can afford their services. For instance, Prakash Munda (70 years old) an *Ojhamati* practising for the past 45 years is merely three kilometres away from the Patabari Tea Estate. Often, elderly grandparents in the tea gardens advise people to seek services from Ojhamatis.

The *Ojhamatis* of the tea gardens of the Dooars region have learned the skills of traditional healing practice from the knowledge passed on by their ancestors. For example, Prakash Munda's family has been practicing traditional healing over the last three generations. His father was also a renowned and popular traditional healer among the tea garden communities in Patabari TE and other nearby tea estates.

6.3.5.2. *Kabiraj* or the Ayurvedic Practitioners in Tea Gardens of Dooars

Traditional healers who provide medical services based on some herbal medicines are another source of healthcare provider. They are popularly known as Kabiraj. Unlike the Ojhamatis who perform different rituals including *Jharphuk*, Puja, and chanting prayers, the Kabiraj provides medicines prepared at home from different plants and herbs. It is known as *Jaribooti* medicines in the *Sadri* language. People largely use their services in case of prolonged illness, when their conditions do not improve after seeking services from Ojhamatis or the RMPs. They are one of the main sources of health providers in case of treatment for Jaundice.

Banita Mahali is a 53 years old Adivasi woman who lives with her two sons, and a daughter-in-law in a labour quarter with her family. She worked as a bigha worker and her husband worked as a permanent labourer at Patabari Tea Estate. Banita was diagnosed with tuberculosis in July 2021. Banita did not continue with the medicines given to her from the hospital for tuberculosis as she was suspected to have jaundice. Banita went to her daughters' home at Birpara and started seeking care from a traditional Ayurvedic healer. Banita's daughter Shefali lives with her in-laws at Birpara Tea Estate, 50 km away from Patabari Tea Estate. Banita was taken to a Kabiraj at Birpara Tea Estate for treatment. She said,

> My daughter took me to a *Kabiraj* in their neighborhood. The Kabiraj also told me that I had serious jaundice. He gave me *Jaribooti* medicine. He did not do *Jharphuk* or puja like the *Ojhamati*. He gave medicine that he prepared at his home. I visited his home three times, once a week, and I was fine, the jaundice disappeared. His medicine worked well. We gave him INR 1,500.

There is also a Muslim Kabiraj in the Tea Gardens in Dooars. His name is Bodiar Rahaman, 57 years old, and lives in Sonapur village located at Falakata-Alipurduar Highway, 35 km away from the Patabari Tea Estate. His family has been practicing Ayurvedic medicine for generations and they are well-known in his locality and neighbouring villages. He is known as 'Muslim Kabiraj' among the people in Patabari Tea Estate because of his religious faith.

Once a week, usually on Saturdays, he visits Patabari Tea Estate on his motorcycle to sell his medicines. He is well known among the people at the Patabari tea estate for his Ayurvedic Tel (herbal oils). The tea garden workers buy his herbal oil to treat joint pain, muscle pain, and back pain. Bodiar has some fixed consumers who buy his medicine regularly. He visits their homes at the different labour lines at the Patabari Tea Estate to get an update on their requirements for medicine. He also gets connected with the new patients who had shown

interest in his medicine to his regular consumers in the previous weeks. In such a way, he builds social connections with new patients. He said that he gets business through word of mouth, through the satisfied patients of the tea estate.

The tribal communities residing in the abandoned tea plantations are involved in labour-intensive activities, including plucking tea leaves, carrying leaves on their shoulders, sand mining along riverbanks, and gathering firewood from the forest. Therefore, joint pains, muscle pain, back pain, and other musculoskeletal disorders are very common among the tea plantation communities. They buy the herbal oil and massage it on the affected parts of their bodies to get relief from pain. Bodiar also demonstrates and teaches the procedure to massage the oil on the affected part of the body to the patients and the family members. Bodiar Rahaman said:

> I have treated many patients who were suffering from severe pain in the body and were unable to work in the garden. This Ayurvedic oil is very effective, which is why people buy it.

Bodiar claimed his herbal oils have been very effective in treating partially paralysed patients. Boidiar also conducted massage therapy sessions at the labour lines of the tea estate for paralysed patients or severely injured people in the recovery stage. However, he charges an extra 200 rupees for each session.

He prepares the oil with mustard oil and herbs at his home and sells it in small plastic bottles at different tea gardens and villages. Bodiar sells a bottle containing 200 ml of herbal oil at INR 200 to 250. He runs his business at the Patabari Tea Estate mainly on credit. He said:

> I will not be able to do business in the garden if I do not sell medicines on credit. If someone buys a bottle of oil for 200 rupees, they pay me 50-100 rupees at the time of buying. It is often not possible for them to pay the entire amount in one go. They pay me the rest of the amount once they get the wage after the month.

The Adivasi labourers in the tea plantations mostly buy their medicines, daily grocery, and household products on credit from the local shopkeepers and market. They cannot afford to buy their daily groceries with cash due to their limited earnings and irregular payments of wages from the employers. I have witnessed this during my fieldwork in both gardens.

6.3.6. Rural Medical Practitioners (RMPs) in the Abandoned Tea Plantations

Rural Medical Practitioners are famously known as RMPs are one of the important providers of healthcare services in the tea gardens of the Dooars region. They are also known as quack

doctors and provide allopathic medicines without professional medical qualifications. They provide medicines based on the symptoms of the patients. There are several RMPs who are providing their services in both the abandoned tea gardens of the Dooars. In the two abandoned tea gardens, there are 5 RMPs in and around the tea estates. For the present study, I have interviewed 3 RMPs, 1 in Rethi Tea Estate and 2 in Patabari Tea Estates.

Dilip Roy (41 years old), a Rural Medical Practitioner who runs a medical store at MES Chowpathy, a bazar located 1.5 kilometres away from the Patabari Tea Estate. He has graduated from a government degree college in Alipurduar. Dr. Sadek Ali (38) is a Rural Medical Practitioner who runs a small medical store at Patabari Chowpathy. Md. Ali owns a small medical store in a rented room at Patabari Chowpathy near the Patabari Tea Estate. He lives in the nearby village of Satali with his family. He studied at the Kalchini Union Academy, a government school located 4 km away from his home. He had attended a one-month training course on primary health care at Siliguri, organized by a non-government organization a few years ago, after opening this medicine store. The patients buy those drugs often on credit from his store. Sadek Ali recommends drugs based on his long experience, of ten years, of treating patients. However, this entire procedure is 'paperless,' unlike the documented medical 'prescription.' He is a non-registered medical practitioner, also known as a rural medical practitioner. He is well known as 'Doctor Ali' among the people of the Patabari Tea Estate.

Eleazar Toppo, a 49 years old Adivasi man lives with his wife and two children in the Sarugaon Basti near Rethi Tea Garden. Eleazar has been working as a rural medical practitioner for the last 22 years. He is one of the very few people from the tribal communities in the tea gardens in this practice. Eleazar studied till 11th standard in a government high school in Birpara before he started working in a medical store in the same town as an attendant. He has worked in several chemist stores located outside the Birpara State General Hospital for more than 8 years. Eleazar has acquired knowledge of Western allopathy medicine from his experience of working in chemist stores. This has also given him exposure to interact with medical doctors, chemists, senior colleagues, and patients. Eleazar received a two-week long training in primary health care at Alipurduar town in 2015 organised by an NGO based in Kolkata.

RMPs usually set up small medical stores in the local markets, at the junctions of multiple roads, or just outside the tea estates. They often rent a small store to provide their services. Some of them who cannot afford to rent a store, often travel to the remote tea gardens on their motorbikes. They have fixed days on which they visit different tea gardens. For instance,

Eleazar does not have a medical store and provides his services by visiting the tea gardens in nearby areas, such as Jai Birpara Tea Estate, Nangdala Tea Estate, Bandapani Tea Estate, and Rethi Tea Estate. He bought a motorcycle in 2015, earlier he used to visit these tea estates on his bicycle. Eleazar said:

> It has become easy and less time-consuming to visit the tea gardens. Now I can easily reach the patients' home whenever they call me on my mobile phone.

RMPs often maintain good relations with the people in the tea gardens. They often communicate regularly with the people and this has increased people's trust in the RMPs. For instance, Dr Ali shared:

> I have built a good relationship with the communities in the tea gardens. I talk to them on a regular basis and call them on my mobile. I attend to the workers in the labour lines round the clock and also provide emergency services.

The services of RMPs are mainly used for minor illnesses, such as fever, cold, cough, injuries, body pain, and diarrhoea. Some of them also provide simple diagnoses and medical examinations, such as checking blood pressure and making observations based on eye, pulse, heart rate, and oxygen level apart from selling medicines. They also perform first aid treatment, such as stitching and dressing wounds and sodium chloride injection to the people. RMPs also provide medical services such as injecting saline and other medicines, and stitching and dressing the wounds of the patients in the home. The RMPs purchase their medicines and other medical diagnostics/equipment from the wholesale distributors' shops located near the Hospital Road of Birpara Town either once or twice a week.

Dilip Roy, 41 years old, a Rural Medical Practitioner runs a medical store near the Patabari Tea Estate. He said that he had worked as an attendant of a private practitioner in Alipurduar where he learned the skills of dressing and providing care for occupational injuries. He said,

> People in Patabari Tea Estate know me because of the services I provide, especially related to cuts, wounds, and injuries. If someone met an accident while working, they first come to me, I can give stitches to the cuts. I always keep TT injections in my store. I also visit their homes in labour lines to dress the wounds if necessary.

With the closure of the tea estates, the people of the closed tea estates had no other option but to seek medical care from the Rural Medical Practitioners. They are often one of the main and only sources of medical care for the tea garden communities. For instance, Eleazar shared:

> No one will come to (practice medicine) in such a remote place. I was born here and I live here. To treat the patients, I have to travel through the jungles, and tea gardens, sometimes crossing the violent rivers on rainy days risking my life. Nowadays I have a motorcycle, earlier I used to travel to two to three gardens on a bicycle.

There are several other factors for the increased dependency of the people in the closed tea estates on the Rural Medical Practitioners. The practitioners provide medical services in remote and geographically inaccessible areas. Their services are at an affordable price compared to the private clinics in the nearby Bazars (markets). They open their shops in the evenings and thus it is convenient for most of the workers to visit them once they are back from their day-long work. The practitioners often provide services on credit to the tea gardens given the poor socio-economic conditions of the workers. Some of the RMPs do not charge any consultation fees from their patients. Fees are popularly known as "visits," and they are charged by the registered qualified medical practitioner in their clinics. The RMPs only take the price of the medicines. The RMPs are often paid once the tea garden people receive their monthly wages at the end of the month. Some of them attend to the patients in the labour lines round the clock and are also available in case of a medical emergency. According to Eleazar:

> I do not give too many medicines in one go to the patients. I usually give medicines to the patients which costs 50 to 60 rupees. In a few cases, it goes up to 100-150 rupees. The Adivasi people in the tea gardens cannot afford more than that. Most of the time I have to sale medicines on credit to the patients. They pay me back when they get their wages after 15 to 30 days.

Since 2014, Eleazar has been a member of an organization named Rural Medical Practitioners Welfare Association of West Bengal based in Kolkata. This forum has branches in several districts of West Bengal and is vocal for the training, accreditation, and welfare of the Rural Medical Practitioners in the state. Eleazar claimed that he had attended several meetings and programs of this organization at the block and district headquarters. On enquiring if he has received any training or assistance from the government or the health department so far. He said:

> We had submitted applications to the district magistrate and the district health office (CMOH) on multiple occasions. They had also asked us to submit our documents several times. They assured us that there would be training programs for us at the

district hospital and Siliguri Medical (college), but nothing has happened yet. Now I have stopped going to such meetings. It is a waste of time and feels like harassment.

One incident, narrated by Mr. Eleazar and transpiring in 2018, involved Ratna Oraon, a 50-year-old laborer employed at Rethi Tea Estate. Struggling with severe underweight and persistent stomach upset escalating into severe diarrhea, Ratna's dire condition caught Mr. Eleazar's attention during his routine weekly visit to Rethi Tea Garden. Upon entering Ratna's residence on the fifth day of her illness, Mr. Eleazar discerned the gravity of her situation—severe dehydration. Convinced of the urgent need for medical intervention, he promptly conveyed to the family members that Ratna required immediate saline injection and hospitalization. Financial constraints hindered the family from seeking assistance at the government hospital, compelling them to beseech Mr. Eleazar for treatment.

Responding to the plea, Mr. Eleazar administered necessary medications and expedited the arrangement of saline water within the hour. As he injected the saline, he remained by Ratna's side for an additional hour until signs of improvement became evident. Unbeknownst to him, the Block Medical Officer of Health, conducting a field visit to the village's sub-centre on the same day, learned about Ratna's case and decided to inspect her residence.

The officer, upon arrival, exhibited displeasure and vociferously reprimanded Mr. Eleazar for treating the patient instead of facilitating her transfer to the hospital. Unyielding in his stance, the officer scrutinized the medicines and injections administered by Mr. Eleazar. Attempts by the patient's family to placate the officer proved challenging. They explained their financial constraints, elucidating that the inability to afford an ambulance compelled them to seek Mr. Eleazar's assistance. The patient, demonstrating improvement under Mr. Eleazar's care, served as a testament to the efficacy of the provided treatment.

In instances recounted by Mr. Eleazar, the Rural Medical Practitioners (RMPs) often find themselves censured by medical doctors affiliated with the health department for extending healthcare in emergency scenarios.

6.3.7. Strengthening Public Health Institutions

Dr. Manash Mukherjee has been working as the Block Medical Officer of Health at Kalchini Block for the past 12 years. Dr. Mukherjee is the head of the public health administration of Kalchini block of Alipurduar district which houses 21 large tea gardens, one of the highest in the Dooars region, as well as in West Bengal. Kalchini block has a geographical area of 892.57

sq. km., among which 70.63 % area is covered with forests, 20.43 % area is in tea gardens and the rest 20.43 % area is in revenue mouzas. Dr. Mukherjee's office is at the Latabari Rural Hospital, the only hospital in the block that caters to the medical needs of the people of almost 21 tea gardens and numerous forest villages.

Dr. Mukherjee observed a significant reliance on traditional healers such as Ojhas and Kabiraj among the tribal population residing in the tea gardens. Historically, tribal communities sought medical assistance from these traditional practitioners. Nevertheless, noteworthy progress has been achieved in the past decade, as sub-centres and Health and Wellness Centres (HWCs) have been established across nearly all the tea gardens within the district. The community health workers stationed at these sub-centres have played a commendable role in providing primary healthcare services within the tea gardens. Their efforts have contributed substantially to the improvement of healthcare accessibility and delivery in the region.

Dr. Mukherjee further said:

> Unlike earlier times, if someone falls, sick they come to healthcare service facilities to collect medicines. Nowadays, the tribal people prefer coming to sub-centres rather than visiting the house of the Kabiraj. The dependency on traditional healers has reduced rapidly over the last decade. The community health workers and the NGOs working under NRHM have made significant changes in the healthcare service utilization scenario in the tea gardens. The HWCs have started providing telemedicine services in the tea gardens. In addition, the Mobile Medical Units run by the NGOs under NRHM regularly organize medical camps, once a week in remote areas. The situation in the tribal-dominated tea gardens has started changing. Nowadays, people come to access healthcare facilities willingly in a large number. One of the best examples is the significant increase in institutional deliveries in the tea gardens. We have successfully reduced home deliveries in this tribal-dominated region.

According to the BMOH, since the introduction of the National Rural Health Mission, the district health administration has given special attention to establish sub-centres in all the tea gardens of the Alipurduar district. As a result, currently, there are 18 health sub-centres located in the different tea gardens in Kalchini block. The district health administration has started to upgrade the sub-centres in the tea gardens into Su-Swasthya Kendras or Health and Wellness Centres (HWC) in different phases since 2018. The district health administration has channelized the maternal healthcare services in the tea gardens through the health sub-centres

as per the NRHM guidelines. This has brought all the mothers and pregnant women in the tea gardens into the ambit of the public health system and facilitated the process of extending the antenatal and post-natal care services too. In addition, this was also proved to have a positive impact in increasing the institutional delivery and ultimately reducing maternal mortality in the tea gardens.

6.4. Conclusion

This chapter argues that the healthcare service delivery system in the tea plantations of the Dooars region, which was earlier dominated by tea garden-based providers and traditional healers, is now going through a transition phase with the increased presence of public health service providers and institutions. The healthcare service delivery system in the tea plantations of the Dooars region has become much more complex and plural in nature, especially with the introduction of public health institutions as a part of the National Rural Health Mission (NRHM). From discussions on fieldwork, it was found that the tea garden hospitals in the functional tea estates have an acute crisis of qualified medical practitioners and trained support staff. On the other hand, the tea plantation communities in the abandoned tea plantation primarily depend on the healthcare services provided by the tea garden hospitals. These hospitals faced severe challenges with the closure of the tea garden hospitals along with the closure of the tea estates. In this context, Rural Health Practitioners and traditional healers became a major source of healthcare, this is due to their easy availability and affordability. Many tea plantations are already covered by the network of sub-centres. However, most of the sub-centres still need to be converted to Health and Wellness Centres. In addition, the SCs/HWCs in the district lack community health workers in general and ANMs in particular. There is ample scope for strengthening the public health institutions and networks, particularly the PHCs in the district.

Chapter: VII

Utilization of Healthcare Services in the Abandoned Tea Plantations of the Dooars Region

7.1. Introduction

This chapter discusses the determining factors of healthcare services utilization among the tea plantation communities in the abandoned tea plantations in the Dooars region. There are several factors at individual, community, and structural levels, which determine healthcare utilization in the two abandoned tea plantations. However, these determinants are often intertwined with each other factors, resulting in a complex intersection of multiple factors. Secondly, the chapter also attempts to understand the barriers to the utilization of health services in the abandoned tea gardens. The chapter is divided into three main sections. The first section briefly discusses Anderson's Health Behaviour Model (HBM) of healthcare utilization which is one of the most important frameworks to understand health-seeking behaviour. In the second section, an attempt is made to understand various factors that shape and influence the utilization of different health facilities. The third section discusses the barriers faced by communities in the abandoned tea gardens that create various challenges in accessing and utilizing health services, followed by a conclusion. This chapter is based on the narratives and case studies on health care utilization for different individuals and illnesses, health providers, and key informants as well as it is also supplemented by secondary literature.

7.2. Understanding the Factors of Utilization of Healthcare Services

Ronald Andersen, a medical sociologist, explored the conceptualization of access to health care, shaping the foundation for studying medical healthcare access by understanding the systems and behaviour of medical care. In 1968, Ronald Andersen developed the behavioural model, which he revised in subsequent years and transformed the framework into a behavioural model for the utilization of health services (Andersen, 1968; Alkhawaldeh et al., 2023). Andersen's Health Behaviour Model (HBM) is one of the most important frameworks that explains the determinants of utilization of healthcare services (Aday & Andersen, 1974). This model provides a theoretical framework for understanding the access and utilization of health services and identifying the factors influencing an individual's choice to either utilize or abstain from available health services (Alkhawaldeh et al., 2023). It also helps in understanding the inequities in access to different health services among different population groups in remote or

rural areas as well as amongst ethnic communities (Rajput et al., 2021). According to this model, the use of health services can be predicted or understood by various population characteristics, including an individual's inclination to use services, the resources that either facilitate or hinder access, and their requirement for care. The Andersen Model suggests that three important factors determine the usage of health services which are categorized as predisposing, enabling, and need factors (Kabir, 2021). The predisposing factors such as age, gender, social structure, and health beliefs at the individual level play an important role in shaping the utilization of health facilities. The predisposing factors, including socio-demographic, structural, and behavioural factors determine the decisions regarding access to and utilization of healthcare services (Kabir, 2021). The enabling factors are mainly the logistical aspects of obtaining care which relate to the various resources that facilitate the access to the health care services. The enabling factors can be at personal, family, or community levels. At the personal and family level, this involves the resources and knowledge necessary for accessing health services, such as income, health insurance, a consistent healthcare provider, transportation, and the scope and quality of social connections. In addition, the community-level enabling factors include the presence of healthcare personnel and facilities, as well as waiting times (Travers et al., 2020; Kabir, 2021). Thus, the availability of free health services or access to health insurance are some of the factors that enable the utilization of health care. Lastly, the need factors primarily reflect the self-perception of the illness and disease or the severity or chronic nature of the disease (Rajput et al., 2021). The need factors in the health behaviour model refer to how individuals perceive their own health and functional condition or how it is described by another person, such as a healthcare provider. The perception of one's need can be positively or negatively influenced by factors such as the perceived seriousness of their health, access to health education programs, and the availability of financial resources or incentives (Travers et al., 2020). Based on Andersen's Health Behaviour Model (HBM), the present chapter attempts to understand how the people in abandoned tea gardens access and utilize health services.

7.2.1. Availability of Functional and Strong Public Health Facilities at Primary Level

The utilization of healthcare services is significantly determined by the nature of the healthcare system in the abandoned tea plantations of the Dooars region. With the initiation of the National Rural Health Mission (NRHM) in 2005, several sub-centres were introduced in the tea plantations of the Dooars region. This study showed that a network of sub-centres was established in the tea plantations of the Dooars region, with a particular emphasis on those that

had been abandoned, especially in the crisis period. These sub-centres at the village level served as the primary points of contact between the community and the public health system. The engagement of CHWs, including ANMs and ASHAs, has played a significant role in enhancing healthcare service utilization among tribal communities. This increased community engagement has often involved providing healthcare services at the doorstep, thereby improving accessibility. In 2018, several SCs were upgraded to HWCs which included the provision of enhanced human resources and a broader spectrum of healthcare services. As seen in the Patabari Tea Estate, this upgrade equipped with improved human resources and expanded services has contributed to increased utilization of healthcare services. For instance, a functional public health system at the grassroots level has made significant changes in the life of Agni Kharia, a 27 years old Adivasi woman from the Patabari Tea Estate. Agni Kharia, a mother of two daughters lives with her family very close to the Basra forest in a labour quarter located at the northernmost corner of the Patabari Tea Estate. Her elder daughter Diya Kharia (7 years old) was born in 2013 at her home and was attended by the traditional birth attendant (Dai) of the Patabari Tea Estate. However, during her pregnancy with the second child, Agni Kharia was provided with the provided antenatal care by the Health and Wellness Centre of Patabari Tea Estate. The community health workers arranged a 'Nischay Yan', the free ambulance provided under the NRHM to ensure her access to safe and institutional delivery. Priyanshi Kharia, the younger daughter of Agni Kharia was born in Uttar Latabari Rural Hospital in 2019. The same ambulance also gave free transportation to the newborn and the mother to their home in the Patabari Tea Estate from the hospital. Agni Kharia said:

> I did not know about these facilities during my first pregnancy. We were not sure about the expenses for the ambulance and hospital. My family thought it would cost a lot of money. The health centre Didi told me about these services. She made me take all the injections and iron tablets during my pregnancy. They were very strict regarding this. They used to come every week to my home. They had arranged the ambulance and made me go to Latabari Hospital when Priyanshi born.

A functioning public health system at the grassroots level in Patabari Tea Estate, especially the continuous effort of the community health workers has ensured better healthcare facilities for the tea garden communities in the tea estate. In this case, Agni Kharia received full antenatal care and had access to institutional delivery due to the continuous monitoring and efforts given by the CHWs at the HWC at the Patabari Tea Estate.

The sub-centres located in different tea estates of the Kalchini block including Patabari Tea Estate were upgraded to HWCs in 2018 which has resulted in an increased number of people accessing and utilizing public health centres in the tea plantations of the Dooars region. The CHO explained one of the key reasons that changed the scenario of healthcare service delivery and utilization at the HWC compared to the sub-centres. The human resources at the health centre in the villages increased significantly after the centre was upgraded to the HWCs. A new post of CHO with relatively better training has been appointed at the village health centres as well as the vacant posts of ANMs and ASHAs have been recruited regularly. Therefore, health service delivery and utilization have increased significantly at the HWCs.

7.2.3. Awareness about the Availability of Public Health Services

The introduction of HWCs in 2018 has also changed the approach and way of operating the health centres in the abandoned tea gardens. According to the CHO, Sukanya Das, 33 years old, the new guidelines of HWCs have made it mandatory to celebrate various occasions such as Children's Day, Malaria Day, Leprosy Day, Village Health and Nutrition Day (VHND) and many others at the community health centres. It has given a scope to the health workers to engage with the communities and to interact with them on specific and important issues such as immunization, AIDS, and Malaria. As a result, it has helped to increase the awareness and the weekly footfall of the patients at the health centre has also increased significantly. The engagement of the people as well as the representative of local governance at the village level in the health centre has increased and it has helped in its utilization at the tea gardens. Sukanya said:

> We started observing many days related to health such as Immunization Day, and Tuberculosis Day with the people of the area in centres. It is a good initiative for HWCs. This has helped a lot to create awareness among the people about various diseases. The Friday meetings every fortnight have become very popular in the tea garden. Many mothers, young girls, Anganwadi workers, and the local panchayats attend the meeting in our center premises. The cooperation between the HWC workers, the Anganwadi Workers, and the people has increased. The local Panchayats are also happy that we call them in the meetings. They are helpful and keep pushing people in the gardens to come to the centre.

The introduction of dedicated days for health-related activities has not only facilitated increased interaction between health workers and the community but has also led to a notable surge in the weekly footfall of patients at the health centres. The involvement of both

community members and local government representatives at the village level has seen a significant rise, fostering a more robust utilization of health services in the tea gardens. Moreover, the involvement of local Panchayats in these meetings has proven to be instrumental as their support and encouragement have played a pivotal role in motivating people and ensuring community participation in health centre activities in the tea plantations. This collaborative interaction among health workers, community members, and local governance represents an important model that not only fosters awareness but also enhances the utilization of healthcare services, thereby contributing to the overall well-being of the tea garden communities.

7.2.4. Availability of Comprehensive Health Care at Health and Wellness Centres

A functional public health care service system has made a significant change in delivering comprehensive primary health care to the people in Patabari Tea Estate in need and helped them to recover from illness. Sanjit Oraon is a 40 years old Adivasi man from Patabari Tea Estate who worked as a migrant worker in the neighbouring country Bhutan. Sanjit Oraon returned home in March 2022 as his health condition deteriorated. At the initial stage, he went to a private clinic to seek healthcare. However, given its increased costs he could not continue with treatment in the private clinics. Hence, he visited the Latabari Rural Hospital and in June 2022, was diagnosed with tuberculosis. The local HWC at Patabari TE was informed about the tuberculosis patients by the Office of the Block Medical Officer of Health located at Latabari Rural Hospital. The ASHA workers delivered the prescribed medicines (mainly Rifampicin 300 Capsules) at his home fortnightly regularly. Sanjit said:

> The first time the hospital gave me the medicines for a month. All the medicines together for a month. The nurse at the hospital medicine counter told me to contact our health centre in the garden once these medicines were finished. But, Sheuli Di (ASHA, HWC Patabari) came to our home next week (before I finished the medicine). She used to come to our home whenever she passed through our line to ask about my health condition. She gave me the medicines for the next five months. Whenever she could not come, she called my wife to collect the medicines from the health centre.

Sukanya Das, (33 years old), the CHO of Patabari Tea Estate explained that with the introduction of the HWCs has changed the perception of the community health centres of people in the tea plantations in the Dooars region. She said:

> People used to think that the Sub-Centre was a place only for women and children to get health services. It is true that there has been a special focus on maternal and child-related issues. Now in HWCs, there is a range of health services for all people, a good example is NCD screening and telemedicine services. Now, we have a lot more variety of medicines available at the centre. The perception is changing gradually. We have a lot of patients nowadays at the centre.

Sukanya also sounded very confident in talking about the telemedicine and consulting services that have been introduced to the HWCs. She mentioned the importance of telemedicine services in inaccessible and remote locations such as the tea gardens of the Dooars region. Telemedicine services were introduced at the HWCs to provide consultation of general physicians and specialist doctors from different public health institutions across the state and the country to the people in remote areas using Information & Communication Technologies (ICT). The required medicines or assistance with referral services is provided to the patient by the HWC. Sukanya said

> I would say it is a very good initiative, particularly in places like tea gardens. Many of the people in tea gardens can't go to good doctors in the cities. They do not have money to buy bus tickets or consult a private doctor in the city. Neither they can manage a leave from work. Now in this situation, where would they go if fallen sick and needed a doctor's consultation? Earlier they used to depend on the home medicines or quacks, or they lived with the disease. I can say from my experience that the telemedicine service is like a blessing to the tribal people of this area. Now, the people of the Patabari Tea Estate at least can have a consultation with a good doctor from Alipurduar, Siliguri, or Kolkata.

Shiv Kumar Oraon, 51 years old was a permanent labour in the Patabari Tea Estate. Shiv Kumar was diagnosed with diabetes in 2021 and since then he has been on medication. He shared his experience in accessing the telemedicine services at the Health and Wellness Centre at Patabari Tea Estate.

> I went to the centre to talk to the Centre Didi (ANM) about my illness. The new sister at the centre (the CHO, HWC) asked me to talk to the doctor on the computer. I was nervous because I never talked on the computer. She took me to another room and helped me to talk to the doctor.

The above discussion shows that innovative strategies such as the introduction of telemedicine services at the HWCs in the tea gardens, as articulated by Sukanya and Shiv Kumar, signifies

a vital step towards enhancing healthcare accessibility, breaking down traditional perceptions, and ensuring that even in remote areas of the Dooars region.

7.2.5. Shortage of Human Resources and Physical Infrastructure in the Public Health Institutions

The findings of this study highlight the transformative impact of an operational community health centre in delivering comprehensive primary health care, particularly evident in the Patabari Tea Estate. This functional public institute has played a pivotal role in delivering healthcare services according to the healthcare needs of the community. Nevertheless, there are substantial challenges in numerous tea plantations in the Dooars region.

Sumana Shunri (48 years old), lives in the Upper Line at Rethi Tea Estate. Her house is located a few meters away from the sub-centre at Rethi Tea Estate. She is one of the most experienced Anganwadi Workers in Rethi Tea Estate as has been working in the Anganwadi Centre since 2003 when the first Anganwadi Centre was established at Rethi Tea Estate near Hospital Line. As an Anganwadi Worker, she has to work closely with the sub-centre. She explained their difficulties in managing the work at Anganwadi Centres as there is no ASHA in the tea plantation. According to her Anganwadi workers of Rethi Tea Estate have been facing challenges in maintaining regular communication with the community and they have to go out of their way, especially in case of emergency. She said

> We face challenges taking the expecting mothers to the hospital for delivery as there is no ASHA in the village. Sometimes, we do not get the information on time. There are many cases of home delivery just because they (the family members) could not arrange an ambulance to take the pregnant lady to the hospital. There is a free ambulance service, but the patient's family does not know how to avail of the service. They do not have the information, and there is no one to help them.

Healthcare service delivery remains a significant challenge at the tea plantations in the region. Kalchini block located at the heart of the Dooars region has 49 sub-centres among which only 6 sub-centres have been upgraded to Health and Wellness Centres in 2018 including the sub-centre of the Patabari Tea Estate. A total of 18 sub-centres among these 49 sub-centres are located within the tea plantations of the Kalchini block of Alipurduar district. Therefore, many tea plantations still have a Sub-Centre that is yet to be upgraded to Health and Wellness Centres. The number of Health and Wellness Centres has remained significantly low in the tea

plantations of the Dooars region. Only a limited number of sub-centres have been upgraded to Health and Wellness Centres in the tea plantations of the Dooars region. For instance, the sub-centre of Rethi Tea Estate in Birpara-Madarihat block of Alipurduar district has not been converted into a HWC. Consequently, there are no CHOs at the SCs in Rethi Tea Estate. As a result, the subcentre in the tea estate provides limited health care services compared to the comprehensive healthcare services available at HWCs. In addition, the sub-centres or HWCs generally have 5-10 ASHAs depending on the population size. But there are no ASHAs in the sub-centre of Rethi Tea Estate at present in 2021. Sakuntala Tanti, the only ASHA of the centre resigned from her post in 2017 citing the excessive burden of work due to the scarcity of the human resources in the Centre. The healthcare services including the official works of the sub-centre at Rethi Tea Estate are managed by the two ANMs of the centre. The ANMs of the centre have to depend on the Anganwadi Centres to deliver healthcare services at the grassroots level as well as for community engagement in various programs. In addition, the study shows that the PHCs located close to the tea plantations of the Dooars region are heavily understaffed and lack adequate physical infrastructure. The Sishujhumra PHC and Santali PHC located near the study area has acute shortages of doctors, nurses, and other health care providers. In addition, there is no provision of inpatient care in both the PHCs. This chronic condition of the PHCs has significantly limited the access to healthcare services of the tea plantation communities in the Dooars region.

7.2.6. Living with the Illness: Closure of Hospital and its impact on Utilization

The tribal communities in the abandoned tea plantations largely depended on the tea garden hospitals when the tea plantations were functional. However, with the closure of the tea plantation, the health facilities were also discontinued abruptly. With widespread unemployment and rising costs of medical care, many of the former garden workers were forced to not seek medical care given their loss of income and subsequent poverty. Thus, the majority of the people in the tea gardens tend to ignore their health problems and start to live with the illness. This becomes clear from the narratives of Mrs Nirmala Kerketta, a 45 years old Adivasi woman, who worked as the former nurse of the Patabari Tea Estate. She informed that the tea estate had a dedicated free ambulance service for the tea plantation communities. The patients were directly referred to the Alipurduar Sub-Divisional Hospital (which has currently been upgraded to a District Hospital) by the ambulance of the estate. In case the ambulance was not available for a patient while serving another patient, the patient was provided with the money for hiring other vehicles. She said:

> When the garden hospital was functional, the people of Patabari Tea Estate did not have to be bothered about the illness. Now whatever they are earning goes to the medical expenses. Before if the people were sick, they used to get medical assistance from the estate hospital, and now they don't get any medicine if they suffer from serious illness. Many of the Adivasi labours in the garden cannot afford to go outside for treatment. So, they live with the illness.

It becomes apparent from the statement of the former health worker that the garden hospitals were more than just medical facilities—they were lifelines of the healthcare service provisions for the tribal communities. With the closure of the plantations, a void was created, leaving many former garden workers without the means to address their health concerns. This has increased the economic burden and out-of-pocket expenditure of medical expenses and resulted in increased poverty among the tribal communities in the abandoned plantations. They are compelled to endure illnesses silently, as seeking medical care becomes a luxury they can ill afford. Therefore, the abandonment of healthcare infrastructure, coupled with economic hardships, has increased the tendency of living with the disease among the tribal communities.

7.2.7. Utilization of Health Services by Different Social Groups

There is a significant difference in healthcare-seeking practices among the different communities in the tea plantations in the Dooars region. It has been observed during the fieldwork that tribal communities in tea gardens are often categorized into two categories such as black tribes and white tribes in the Dooars region. The tribal communities such as Santhals, Oraons, Mundas, Kharias, Malpaharia, Chikbaraiks, etc. who have migrated to this region from the central Indian provinces are locally known as *Modeshias*, *Adivasis* or Black Tribes in the tea gardens. On the other, the tribal communities such as Magars, Limbus, Tamang, Rai, etc. are known as *Nepalis* or White Tribes.

Dr. Ananta Chowdhury (36 years old) has been working as a Medical Officer for the last 5 years at Madarihat Rural Hospital which is surrounded by numerous tea gardens. Dr. Chowdhury said:

> I have understood working in this hospital that there is a higher number of tuberculosis patients from Adivasis than the Nepalis in the tea gardens. The socio-economic conditions of the Nepalis are relatively better than Adivasi communities. The Nepali communities seek health care services from public health institutions in large numbers compared to the Adivasi population. They

> prefer scientific health care more than traditional healing, unlike the Adivasis. The educational level as well as the health awareness is much higher among the Nepali communities. I've noticed that some Nepali communities who are slightly better off economically have now started seeking medical care at private clinics located in urban areas.

Ratan Tanti (23) works at the tea estate under the OMC. He does the pruning and cleaning of the garden. During one of my visits to the MMU at Rethi Tea Estate in October 2021, he came to the MMU at Rethi Tea Estate Hospital with a deep-cut injury in his leg. He had hurt himself while pruning the tea plants a week ago. The cut was already septic. Ratan had come to the MMU for treatment. The pharmacist scolded him for not coming on the same day as he had missed the TT injection which is given within 24 hours of the injury. She gave her a few medicines and asked him to do regular dressing. She also advised her to go to the hospital immediately for further treatment and antibiotics. After the patient left, the pharmacist said:

> Does he look like a 23-year boy to you? The people in the tea estates look much older than their actual age. Have you seen this boy? He already looks like 35 years old. It seems they become old at a very early age. This is mainly due to malnutrition, hypertension, and working conditions.

Sandip Jhora (38 years), a tribal man from the Jhora community worked as a casual labourer for five years till 2002 at the Rethi tea estate. He was the only bread earner in the family. After the tea estate was closed in 2002, Sandip found employment under a contractor at the sand quarrying site at the Rethi river bed. He used to operate a manual hand trolley to carry the sand and boulders. He used to collect the sand and gravel mined by the workers at load them to the tractors and lorries. His family was dependent on his earnings from his work river bed. In September 2019, he had met an accident while loading the boulders from the river bank. One of his legs got injured severely in this accident. He was admitted to Birpara Hospital. The doctors suggested Sandip consult a specialist orthopaedic and go for surgery in a nursing home as these facilities were not available at the hospital. Sandip could not afford to go to a private nursing home. Sandip said:

> The nursing home asked me to pay 7000 rupees for the operation. Where will I get so much money? I did not have.

Instead, he went to a traditional healer (*Kabiraj*) to seek treatment that was affordable to him. However, his injury did not cure fully as a consequence he lost his job under the contractor at the river sand quarrying site.

The former nurse suggested that the labourers in the abandoned tea plantations normalize the fear of diseases and illness with the hope that they will get cured. The Adivasi workers seek medical care after getting severely ill when there is no hope and little scope for medical intervention. When anyone falls sick in the family, the labourers try to heal the illness with home remedies, or go to the *Bhagats* and people seek medical care at the last stage.

Kishore Chhetri, a 52 years old Nepali trade union leader and former workers at Patabari Tea Estate said:

> We try to make them (the Adivasi workers) understand in the village meetings to follow the health guidelines as said by the ANM sisters. But it seems hardly anyone takes this advice seriously. You know what! The Adivasis eat everything. If you throw any dead animal like a chicken, pig, or goat, in the river, they will collect and eat that too.

It is not that people from other communities have a stereotypical understanding of the health and hygiene-related practices among Adivasi communities. It was observed that the communities who are relatively in higher power structures distance themselves from their own communities and categorize the Adivasi communities as ignorant about health and hygiene. For instance, Nirmala Kerketta, a 45 years old Adivasi woman who worked as the head nurse in the Patabari Tea Estate Hospital. She is one of the few Adivasi women who live in the staff quarters of Patabari Tea Estate near the factory as she holds the position of a staff worker at the garden hospital. She shared:

> There is an issue related to hygiene and health maintenance of houses in the labour line. There is negligence by the estate, no doubt about that, but the labourers often do not care about a healthy lifestyle. They don't know the importance of cleanliness and hygiene, and they do not maintain it.

It was found that the Nepali communities in the tea gardens have relatively better economic conditions compared to the Adivasi communities in the abandoned tea plantations in the tea plantation given their higher educational attainment, political, and employment positions within the work hierarchy, and higher mobility outside the tea gardens. The healthcare-seeking practices of public and private medical institutions are comparatively higher among the Nepali communities compared to the Adivasi communities in the tea plantations of the Dooars region.

7.2.8. Preference for Rural Medical Practitioners and Traditional Healers

Apart from the easy access and low cost of care provided by the traditional healers, particularly the RMPs, the poor quality of medicines given at the SCs is also another factor that determines the preference for increased utilization of RMPs at the Rethi Tea Estate. For instance, it becomes clear from the narratives of Mr. Jayram Munda, a 48-year-old Adivasi man and former permanent labour of Rethi Tea Estate. During the interview, he complained about the healthcare services provided by the sub-centre of Rethi Tea Estate. He prefers to seek health care from a traditional healer, for his illness related to occupational injuries and minor ailments such as fever and cough. He also frequently visits the clinic of the local RMP or quack doctor to buy medicine. Jayram explained his preference for seeking health-care from traditional healers and RMPs due to the variety of medical care as well as the personalized health care services compared to the sub-centre located in the tea estate. Jayram said:

> Whenever I went to the health centre with any health problem or illness like body pain, fever, or cough, they always gave me the same tablets. The tablets of the health centre look all the same, blue and brown. I do not feel the same tablets are effective for different illnesses. Isn't it? Our village *Daktar* (the local RMP) gives better medicines. He gives the syrup for cough. He even visits our homes to check the patients if necessary.

Eleazar Toppo, a 49 years old RMP based in Rethi Tea Estate explained that the high cost of treatment in the private sector forces the poor tea garden labourers to depend on the Rural Medical Practitioners for healthcare. He said:

> There are no good medical care facilities in the tea gardens. In major illnesses such as liver failure due to alcoholism, the patient needs to be taken outside of the tea garden to the cities; at least to Alipurduar or Siliguri for treatment. However, the treatment of such cases is also very costly. The poor tea garden labourers do not have that much money. They cannot afford to go to the cities. They depend on us (RMPss) as we provide care at a minimum cost.

TheRMP of Rethi Tea Estate said that the poor Adivasi tea labourers often have to sell or mortgage their property such as goats, pigs, and jewellery to arrange money for treatment in the cities. He said:

> In most cases, poor families take loans from money lenders, sell their pigs, or mortgage jewellery to arrange money. Where would they get money all of a

> sudden to take the patients to a hospital in the city? It takes time to arrange money for treatment.

In addition, it was found during the fieldwork that the tea plantation communities have a strong belief and faith in traditional healing practices. Bhaktaram Oraon (49 years old) is a former permanent labour at the Patabari Tea Estate as a permanent labour. At present, he is employed at a potato storehouse at the Hasimara market as a daily wage labour. In 2021, he was diagnosed with hypertension and given medication from the Health and Wellness Centre at Patabari Tea Estate. He said:

> It has been more than a year now, I am having this tablet every night. They (the health workers) told me that I had to continue with this tablet for a lifelong time. If I do nottake the tablet I'll fall sick. I don't like taking medicine every day, it feels like I am a sick person. That's why I still wear the *Tabiz* (amulet) of the *Ojamati* (traditional healer).

The healthcare landscape in tea plantations reflects a complex interplay of factors influencing the preference for traditional healers, and RMPs, over the services provided by the local sub-centre. The unavailability of comprehensive primary healthcare facilities within the tea gardens and the high cost of treatment in the private sector forces the tribal communities to depend on RMPs and traditional healers, who provide essential health care services at an affordable price. Thus, the access to healthcare in abandoned tea plantations shows the multifaceted challenges faced by the community.

7.3. Barriers in Accessing and Utilization of Health Care

This section analyses important factors that create barriers to accessing health care services before the tribal communities in the abandoned tea plantations of the Dooars region. This section analyses poverty, the nature of private health services, the gendered nature of work and differential treatment for diseases, health awareness, social support, and other determinants of healthcare utilization at structural, individual, and community levels.

7.3.1. Poverty as a Major Barrier for Utilization of Healthcare Services

One of the main reasons for not accessing medical healthcare services from outside the tea estate is the poverty and unemployment of the tribal communities in the abandoned tea plantations. Nirmala Kerketta is a 45 years old Adivasi woman who worked for more than two decades as the head nurse at the Patabari Tea Estate Hospital has explained:

> Going outside the estate for treatment needs money. The labourers seek health care at the end stage. People started living with the disease and ignored the disease at an early stage. When anyone falls sick in the family, the Adivasi labourers try to heal the illness with home remedies or go to the *Ojhamatis*. They seek medical care at the last stage after getting severely ill when there is no hope and has little scope for medical intervention.

The former nurse who still lives in a staff quarter of the Patabari Tea Estate after the closure of the tea estate informed that the Adivasi laborers normalize the fear of diseases and illness due to poverty. They live with illness with the hope that they will get cured.

7.3.2. High Costs at Private Hospitals and Dependency on Garden Based Providers

The high costs associated with seeking medical care in private health facilities located in urban centres have limited the utilization of essential health care services by the tribal communities in the tea plantations in the Dooars region. This has led to a growing dependence on HWCs and RMPs at the tea garden level. Bhaktaram Oraon is a 49 years old man who worked at Patabari TE as a permanent labour. He currently works at a potato storehouse at the Hasimara market as a daily wage labour. He felt sick in 2021 with the acute symptoms of hypertension and cardiovascular diseases. Bhaktaram was advised by his friends and co-workers at Hasimara Bazaar to go to a private doctor's clinic or the Health and Wellness Centre at Patabari Tea Garden. However, Bhaktaram decided to go to the Health and Wellness Centre located close to his house rather than going to the city which would be costly for him. He said:

> My friends at Hasimara told me to go to a good doctor in Alipurduar. They also suggested that I should go to the health centre in our garden. I decided to go to the health centre. If I had gone to Alipurduar I had to take leave from work for a day.

Sanjit Oraon, a 40 years old migrant worker from the Patabari Tea Estate with the symptoms of tuberculosis went to consult a general physician who does private medical practitioners at a Chemist shop at Kalchini Bazaar, located 10 km away from his home in Patabari TE. He had paid INR 400 as a consultation fee and brought medicines for INR 500. However, his health conditions did not improve completely. He did not go back to the private clinic for a follow-up due to the high cost of health care services provided by the private medical practitioner. Instead, he tried home-based care as suggested by the elder members of his family.

> I went to see a private doctor's chamber at Kalchini. He gave me tablets and cough syrup. I spent INR 900 paying for the doctor's visit and medicines.

> However, the cough never went completely. My uncle suggested me to drink the juice of *Basak* (Justicia adhatoda) and *Tulasi* (Ocimum tenuiflorum) leaves in the morning. I felt better for some time. But the cough and weakness never went completely.

Reshma Mahali (41 years old) is an Adivasi woman who worked as a permanent labour at the Patabari Tea Estate. Reshma was diagnosed with gallbladder stones in September 2019. She had to undergo surgery to remove the gallstones at a private nursing home in Cooch Behar town. She was referred from the Alipurduar District Hospital to North Bengal Medical College and Hospital, Siliguri located 150 km away from Alipurduar District Hospital. Her family decided to go to the nearest city Cooch Behar at a distance of 20 km from Alipurduar. Reshma's family had to pay INR 61,000 to the private nursing home after the surgery. Reshma told:

> They have taken money for everything, even in the drinking water. We had to buy blood from the nursing home (INR) 3500 per bottle. We had to buy three bottles of blood for the surgery. The ambulance that dropped us back at home asked for (INR) 300 rupees. We did not know that the nursing home would cost so much money. I spent all the money on my business.

The family had to struggle to pay the bills of the hospital. The family had taken loads from moneylenders from the village market.

> I had a small savings as I had a small business. After the work at the tea garden, I make *Hadia* (rice-beer) at home. I sell *Hadia* from home as well as in the *Haat* (local weekly market) every Wednesday. My husband had taken a loan from three persons from the *Haat*. We told them that we'll repay in installments in one and half years.

The higher cost of seeking health care services at private hospitals is a major barrier faced by tribal tea plantation workers in the Dooars region. The case of Bhaktaram reflects the complex interplay between health and economic conditions faced by tribal tea plantation workers in the Dooars region. The high costs associated with seeking healthcare in urban areas doesn't only limit access to essential medical services but also force individuals to navigate a complex web of choices. In such cases, the rational decision often outweighs the ideal decision of seeking healthcare on time. The high costs associated with seeking medical care in private facilities located in urban centres create a substantial hindrance. It compels the poor people of the abandoned plantations to force them to seek healthcare services from traditional healers, rural medical practitioners, quacks, and other garden-based healthcare providers at a much lower

cost. Sanjit Oraon's case further emphasizes the challenges posed by the high costs of private healthcare services. Despite spending significantly on consultation and medicines at a private clinic, his health condition did not improve entirely. The financial burden led him to explore home-based care, as suggested by his family, underscoring the limitations imposed by the cost barriers in accessing follow-up and comprehensive healthcare. These case studies offer a clear understanding of the complex challenges embedded in the healthcare utilization scenario in the abandoned tea plantations of the Dooars region. It highlights the urgent need to universalize healthcare by strengthening the public health institutions.

7.3.3. *'Who will take care of Other Children?'*: Barrier to Institutional Deliveries

The women workers of the abandoned tea plantations in the Dooars region find it difficult to access health care services given their increased workload and limited social support at the household level. For instance, Sukanya Das (33 years old), the CHO at the HWC located in Patabari Tea Estate recalled the difficulties faced by pregnant women and the reasons behind the high preference for home deliveries in the tea estates. She gave an example of Jayeeta Ekka (26 years old) a pregnant woman from the Patabari Tea Estate. She already had a 5-year-old boy and a 2-year-old girl. She said:

> Jayeeta came to our centre for an antenatal check-up as she was pregnant for the third time. Her husband works a daily waged labour in a nearby town. He is an alcoholic and doesn't care about his children or wife. I came to know from the ASHA worker that Jayeeta finds it difficult to even manage two meals a day for her children. We understood that she wouldn't be able to go to the hospital (for institutional delivery). If the child is born at home, the district office will shout at us. We suggested her to go to the 'Mothers Waiting Hub' at Latabari Rural Hospital once her delivery date approaches. Her reply left me silent and numb. She said if she goes to the Mothers Waiting Hub who will take care of her other children.

In the Dooars region, women workers from abandoned tea plantations face challenges accessing healthcare due to increased workloads and limited social support at the household level. The increased workloads and limited social support at the household level emerge as substantial barriers to utilizing maternal health care services. Jayeeta expresses her apprehension to avail the public health facilities for institutional delivery as she is concerned about leaving her other children unattended, bringing attention to a critical aspect often overlooked – the lack of a comprehensive social support system. The absence of social support

mechanisms within the family forces the women to face not only healthcare decisions but also the complex dynamics of familial responsibilities. Therefore, the decision of women to access healthcare services extends beyond the available healthcare realm and lies in social, economic, and familial support. Therefore, healthcare utilization is embedded within a broader context that addresses the intricate web of challenges faced by women in the Dooars region.

7.3.4. Gender and Differential Treatment of Tuberculosis: Case Studies from the Tea Plantations of Dooars Region

Gender is one of the important factors that determine the utilization of various health facilities. To a large extent, studies have observed that women tend to neglect their health, thereby delaying utilization of health care. The women are often overburdened with household responsibilities along with their economic activities which leaves hardly any time for them to seek medical care on time. The nature of women's roles and responsibilities, both in economic production and within the family, significantly influences the extent to which they experience diseases and their reactions to illness (Rathgeber & Vlassoff, 1993). The unequal burden of the workload placed on women produced by gendered divisions of labour and the gendered aspects of healthcare provision results in chronic health issues and malnutrition among women (Doyal, 1995). In the case of tuberculosis in the tea gardens which is one of the widely prevailing diseases in the plantations, the gender differentials in utilization of medical care of women and men are clearly visible. The case studies of two Adivasi women highlight the differential treatment of diseases based on gender norms in the abandoned tea estates in the Dooars region.

Banita Mahali is a 53-year-old Adivasi woman who lives with her two sons, and a daughter-in-law in a labour quarter with her family. She works as a bigha worker and her husband worked as a permanent labour at the Patabari Tea Estate. Banita was diagnosed with tuberculosis in July 20221. Banita was taken to the Latabari Rural Hospital by Rina Oraon (25) who lives in the labour quarter next to Banita and goes to pluck tea leaves with her every morning. Banita could not continue with the medicines given to her from the hospital for tuberculosis from the hospital. Banita went to stay at her daughters' home at Birpara as her health condition deteriorated further with the new symptoms of jaundice.

> There was no one at home to take care of me when I fell sick. My daughter-in-law had to the tea garden (working) in the morning after doing all the household

> work and cooking alone at home. She came back from work in the evening. So, my daughter came and took me with her to her home in Birpara.

Banita's daughter Shefali lives with her in-laws at Birpara Tea Estate, 50 km away from the Patabari Tea Estate. He husband Jyotish Mahali is a Chowkidar at Birpara Tea Estate. Banita was taken to a *Kabiraj* at Birpara Tea Estate for treatment. She said:

> My daughter took me to a Kabiraj in their neighbourhood. The Kabiraj also told me that I had serious jaundice. He gave me *Jaribooti* medicine that he prepares at his home for jaundice. I visited his home three times, once a week. His medicine worked well, and the jaundice was cured.

Banita returned home to the Patabari Tea Estate after one and a half months. However, she did not resume the medicines given to her for tuberculosis from the hospital. Either she visited the hospital for treatment or screening for the tuberculosis infection. Banita said it was the prevailing situation at her home at that time that did not allow her to pursue medical treatment from the public hospital.

She explained that the increased work burden on women makes it difficult for the woman patients with tuberculosis to comply with the treatment protocol. In addition, the fear of health workers among the patients for not complying with the treatment often makes it difficult to continue with the treatment.

> I had returned home after a long time. There was a lot of work waiting for me at home. I had to finish those household work after I returned. In the meantime, my younger son who had gone to Chennai a few months ago in search of work with his friends had telephoned us. He said that he had lost his job and she was not able to find a new job. He wanted to come back to home. He asked his father to send him money for his return. We had already spent a lot of money on my treatment. We did not have any money to send him. I was so tense and worried about him that I did not feel like going to the hospital. Later on, I started thinking if I went back to the hospital the doctor and the nurse would scold me for not taking those medicines.

It was found that the women prioritized their domestic responsibilities and care work and stopped visiting health facilities when their conditions improved. However, tuberculosis takes a long time to cure. As a result, the poor Adivasi women workers often discontinue the treatment as they can't afford to lose their livelihood and wages.

Chadini Kujur, a 30 years old Adivasi woman lives at the Niche Line at the Nepania Division of Rethi Tea Estate with her husband and three children. Chandini was married at the age of 16 years to Shibu Oraon, 36 years old. Chandini lives in a dilapidated labour quarter near the Kaljani River. Chandini works as a Bigha worker in the Rethi Tea Estate under the Operation and Management Committee. She does not get work during the winter season. She loses her livelihood if there is a low yield of tea leaves in the garden. Shibu works as a daily wage labourer in the Birpara Bazaar. Her elder son Dipesh Oraon is 12 years old. Her two younger sons are Dwipen Oraon (10 years old) and Nitesh Oraon (2.5 years old). Dipesh and Dwipen were born at home. Chadini's third child was a daughter. She was born in 2017.

Chandini was infected with pulmonary tuberculosis twice. For the first time, she was diagnosed with the disease a few months after her daughter was born in 2017. She was diagnosed with tuberculosis for the second time in January 2022. Chandini was given a strip of tablets for seven days at a time from the centre. Once a week she had to visit the sub-centre which was located in Jay Birpara Tea Garden nearly four kilometres away from her house those days. Later on, a new centre was opened at Rethi Main division. Chandini claimed that she took the medicines regularly for nearly a month. As her symptoms got weakened, she stopped going to the centre to take medicines. She said:

> I did not get time to go to the centre every week. It takes almost half of the day. I have to go to work. I have to earn to feed my children. The rest of my day goes running behind the children and cooking and other work at home. When shall I to the centre?

In contrast to Chandini's experience, the male members get priority in health care seeking in case of tuberculosis. The case study of Raju Oraon (20 years old) shows that strong primary health care in the village helped in the recovery and medicines. In addition, the family borrowed money as a loan to buy nutritious food for their son.

Raju's father Amal Oraon (48 years old), an Adivasi migrant worker lives with his family in a two-room labour quarter at Niche Line of Rethi Tea Estate. Amal was a permanent labourer at Rethi Tea Estate, and after the closure of the tea estate he migrated to Bhutan in search of livelihood. Raju Oraon (20 years) is the only son of Binita and Amal. He is among the few boys in Rethi Tea Estate who were admitted to a degree college. Apart from studies, Raju also works at a grocery store at Birpara market to support his family. He was diagnosed with Tuberculosis in January 2022. Raju said:

> I had a cough and chest pain for almost a month. I went to the doctor who comes to the garden hospital once a week. He gave me medicines, but it did not work. Next week he told me to go to Birpara hospital for a cough test.

Raju visited the MMU which runs a medical camp once in a week at the abandoned building of Rethi Tea Estate Hospital. The medical officer at the MMU referred Raju to the sub-district hospital for tuberculosis screening. Raju had symptoms such as cough, chest pain, and stiffness and had been suffering for more than a month. He decided to visit the sub-district hospital at Birpara one day after his college. He was diagnosed with pulmonary tuberculosis. He said:

> They gave me medicines for a week from the hospital and told me to report to our tea garden sub-centre regularly to collect the medicines every week. I did not realize at the beginning. But when I visited the centre, the *Didimoni* (sister) said that I had to take the medicines continuously for six months. She also asked me not to meet with many people at least for 30 days. I got scared.

Raju was under medication as prescribed by the hospital for six months. He said

> I used to go to the health centre every week to collect the medicines. Soma *Didimoni* from used to call me (on mobile) if did not go to the health centre any week. She used to scold me if I missed any dose of the medicine.

The family had borrowed money from the neighbours to buy vegetables and chicken to provide Raju with a balanced and protein diet during his illness. Raju's father Amal Oraon said:

> I have only one son and he became ill with this disease. I felt so anxious and helpless thinking about how to buy the medicines for my son. Thankfully, the health centre gave him all the medicines free of cost. But the Didimoni of the health centre told me to feed him chicken, eggs, and fruits every week. I had lost my job, so I borrowed money from my friend to buy chicken and fruit for my son.

The case studies show that gender emerges as a crucial determinant influencing the utilization of healthcare facilities as women often delay seeking medical care due to the burden of household responsibilities and economic activities. The case studies of Banita Mahali and Chadini Kujur illustrate how domestic responsibilities, economic conditions, and the apprehension of health workers restrict women's adherence to medical treatment, particularly in the case of tuberculosis in the abandoned tea plantations in the Dooars region. Furthermore, the prioritization of domestic responsibilities often leads women to discontinue treatment once their conditions improve, posing challenges for persistent illnesses such as tuberculosis which

has a tendency to become multi-drug resistant in such incidents. Gender disparities are evident in healthcare-seeking behaviours, as demonstrated by the contrasting experiences of women and men Oraon, in this case, Chandni and Raju, who received more support and priority in seeking healthcare. Therefore, understanding the complex relationship between gender roles, healthcare access, and individual choices is important for addressing health disparities among women in the context of tea plantations in the Dooars region.

7.3.5. Stigma with TB and Low Utilisation of Healthcare

During the fieldwork at Rethi Tea Estate and Patabari Tea Estate, it was found that there are atleast ten patients who are under the medications provided by the government health sub-centres at the tea estates. However, the patients hesitate to acknowledge their TB infection due to the stigma around the disease. Labita Buxla (38 years), an Adivasi woman, is one of the four ASHAs at the Patabari HWC located near the abandoned hospital building of the Patabari Tea Estate. Labita said:

> People do not come to the health centre to test for TB. We have to visit door-to-door searching for symptomatic patients and motivate them for the test. They fear if they test positive, their neighbours will stop talking to them and visiting their house. They also fear losing their daily wage and livelihood.

Tuberculosis is a highly contagious disease. The bacteria of tuberculosis spread from person to person when a TB-infected patient expels bacteria coughing, sneezing, or spitting into the air and the person at the receiving end inhale even only a few of these germs get infected. Therefore, if someone gets tuberculosis in the tea plantations, the neighbours and often the family members treat the patients as untouchables.

7.3.6. Fragmented Nature of Medical Care in Public Hospitals

Public health services despite being freely available or available at a subsidized cost, still result in low utilization particularly at district-level hospitals mainly because of the fragmented nature of medical care provided at these public facilities. Thus, selective services in public health institutions are one of the major barriers that people face in the utilization of public healthcare services. For instance, Ratan Tanti, a 37-year-old Adivasi man, is a casual labourer at Rethi Tea Estate. His wife, Malati Tanti 32 years old, was admitted to Birpara State General Hospital, a sub-divisional hospital located at Madarihat block of Alipurduar district, during her pregnancy with their second child in 2018. During her postpartum period, she was also admitted to the Alipurduar District Hospital at the district headquarters due to anaemia-related complexities.

Ratan said that both the public hospitals had prescribed numerous medicines and pathological tests (such as ultrasonography), which they had to purchase from outside the hospitals from the private chemists' stores and pathological laboratories. Ratan stated that it was very difficult for him to arrange money for purchasing medicines and diagnostic services from private providers, given his financial crisis due to unemployment in the recent past. Ratan described the challenges he faced in accessing healthcare services.

> The doctors of the Birpara Hospital kept giving me *slips* (requisition written on a white piece of paper) to do blood tests from outside the hospital. He also asked me to do the *Sono-report* (ultrasonography) from the clinic of a nursing home in Birpara. I had to buy a lot of medicines from the medical stores outside the hospital. The doctor said that those medicines were not available at the hospital. I did not have money, so I had to borrow from my relatives. If I have to buy so many medicines (from the private chemist shops), then what is the point of going to a *Sarkari Hospital* (Public Hospital).

The public health services intended to promote widespread healthcare access face a significant challenge in terms of low utilization given the fragmented nature of medical care within the public institutions in this region. The findings of the study show that despite the hospitals prescribing numerous medicines and pathological tests, the plantation communities found themselves compelled to purchase these essentials from private chemists' stores and pathological laboratories outside the hospitals.

7.3.7. Inconvenient Timings of Public Health Facilities in Abandoned Tea Plantations

The healthcare services are provided during scheduled hours at the public health centres located in the tea plantations which conflicts with the working hours of the tea garden communities. This restricts the workers from accessing the health care services from the public health institutes. Mukti Lakra, a 32-year-old Adivasi woman, is a casual labour at the Patabari Tea Estate under the Operation and Management Committee. She lives with her family in a labour quarter at the Niche Line of the tea estate near the western bank of the Basra River. Every day at 6.30 am in the morning, she walks with her co-workers from the labour lines to the different sites of the tea gardens known as ‘garden sections’ to pluck tea leaves. The different tea plucking sections in the tea plantations are often located more than 3km away from the labour lines. Mukti and her female co-workers have to report to the Kamdari (male field supervisor) by sharp 7.00 in the morning, and they have to pluck tea leaves till 4.00 pm. The female workers get a lunch break in the middle of the day for one hour from 11.30 am to 12.30 pm. However,

most days, Mukti cannot return home for lunch, given the distance between the plucking fields and her home in the labour lines. In those days, she prepared boiled rice or chapatis in the morning and carries the food with her to the tea plucking site for lunch. She eats the food along with her co-workers sitting under a shed tree in the garden during the lunch break. Once or twice a week, when the tea leaf plucking site is relatively near to her labour line, she tries to come to her home to finish some household work and take a quick look at her children. Mukti stated her difficulties in accessing the health care services from the HWC at Patabari Tea Estate due to the timing conflict between her work and the time of operation of the HWCat the tea garden.

> I do not get time to go to the health centre in the afternoon. It is very difficult for me to go home during the break and visit the hospital before returning to the plucking section. I get some time only in the evening, but the health centre closes down by that time. I can't take a leave to go to the health centre in the middle of the day. So, I go to the health centre to take my children for their injections (immunizations) and Vitamin Tel (Vitamin-A dose). Otherwise, I go to the local doctors' shop (RMPs) to buy medicines for my illness like fever and diarrhoea.

The accessibility of healthcare services for tea garden communities is negatively affected by the overlapping between the operational hours of public health centres and the working schedules of the workers in the tea plantations. The women labourers in the tea plantations face serious challenges in balancing the demanding nature of work in the tea garden, domestic responsibilities, with healthcare needs. The discrepancy between the scheduled hours of the HWC at in the tea plantations and the rigid work schedule of the women labourers creates a substantial barrier to accessing health care services from the community health centre. The constraints in timing make it difficult for her to visit the HWC, forcing them to prioritize essential health care for her children over her own needs. The limited scope to take a leave during the middle of the day further complicates the situation and forces the women labourers to depend on the local drug stores or RMPs for immediate health concerns.

7.3.8. Low Awareness about Health Problems in Tea Plantation Communities

The study shows a notably low level of awareness about health problems within the tea plantation communities, which poses a significant challenge to healthcare in the region. The healthcare providers based in this region emphasized the critical issue of inadequate awareness among Adivasi workers in tea gardens, making them susceptible to diseases such as malaria,

dengue, and tuberculosis. Dr. Pranesh Das (48 years old), a medical doctor based in Alipurduar who runs a private clinic in tea plantation areas of Kalchini said

> The major challenge in the tea gardens is the lack of awareness about diseases among the Adivasi workers. The low awareness level has made people vulnerable to several diseases such as malaria and dengue. They depend on home-based remedies or traditional healers. You just can't eradicate these diseases from tea gardens unless the Adivasi workers are aware of these diseases.

Kaberi Das (42 years old), the first ANM at Patabari Tea Estate explained

> Although the local people (in the tea gardens) are very supportive, the awareness level is very low compared to my own place (in Alipurduar town). So, I have to make extra efforts to make them understand health, diseases, prevention methods, and all.

Kaberi Das, the community health worker explained that the garden has a considerable number of TB patients (8-10 patients in 2019). There are a few houses in the labour lines which do not maintain minimum hygiene conditions. According to her, most of the garden members are very reluctant regarding their health conditions as they hope to get healed automatically.

7.3.9. Lack of Social Capital and Support

The social capital or social network is a determining factor in accessing healthcare services that are primarily concentrated in the urban centres outside the tea plantations of the Dooars region. Durga Bagdi (32 years old) is a casual worker from the Dalit community and lives at the Niche Line of the Nepania out division of Rethi Tea Estate. Durga accompanies her neighbours at Rethi Tea Estate to seek medical care, inspired by her mother who was a well-known traditional healer in the tea plantation. Durga said:

> The people of our garden are afraid to go to the hospital in the town. They feel lost as they don't understand whom to talk to and where to ask for certain facilities in the hospital. The doctors and staff also often misbehave and don't want to listen to the patients. If someone asks me, I accompany them to the hospital.

Similarly, Reshma Mahali a 41-year-old Adivasi woman who worked as a permanent labour at the Patabari Tea Estate faced challenges accessing medical care in the cities due to limited social connections. Reshma was diagnosed with a gallbladder stone in September 2019 in Alipurduar District Hospital. She was admitted for three days at the District Hospital at the district headquarters, 35km from the Patabari Tea Estate. As no infrastructure was available at

the district hospital for such kind of surgery, Reshma was referred to North Bengal Medical College and Hospital, Siliguri, located 150 km from the Alipurduar district hospital. However, for the surgery to remove the gallstones, her family decided to go to a private nursing home at Cooch Behar, 22 km from Alipurduar.

Reshma said:

> We were so worried as we did not know anyone in Siliguri. We also never went to Siliguri before. The doctor also said to my son it's better to go to a (private) nursing home for the surgery either at Cooch Behar or Malda. We did not know what to do. The Bengali didi of our centre (Anganwadi worker) told me that she knows a good nursing home at Cooch Behar. We decided to go to Cooch Behar because Malda is far away even from Siliguri.

Reshma said:

> I was at the nursing home for five days. My son also stayed at the nursing home for five days. He slept on the benches of the nursing home at night. We did not know anyone there. We had gone to Cooch Behar for the first time. There was a nurse at the hospital. She used to talk to me very nicely. I talked to her only in the nursing home.

Reshma's family hesitated to access medical care from the public medical college as it was located at a considerable distance from their tea garden. Instead, they decided to seek care from a private hospital was located relatively close to their tea garden despite the high cost of medical services in the private sector.

7.3.10. Geographical Barriers: Utilizing Healthcare Services in the Tea Plantations

The tea plantations in the Dooars region are primarily located in geographically inaccessible and remote locations in the Himalayan foothills, surrounded by dense forests and numerous flood-prone rivers. In addition, most of the tea plantations are located close to the India-Bhutan international border, for instance. Rethi Tea Estate is located 10 km from the nearest town, Birpara, in the Alipurduar district. However, Rethi Tea Estate is surrounded by the Rethi and Angrabhasa rivers from three sides and on the northern side of the Indo-Bhutan international border and Kalapani forest range. The road connecting Rethi Tea Estate with Birpara town via Nagdala Tea Estate and Jaybirpara Tea Estate is completely earthen in most parts and difficult to drive due to lack of maintenance. The road crosses the Angrabhasa River (a tributary of the Jaldhaka River) near Jaybirpara Tea Estate, and there is no bridge on the river. The river remains

dry in the winter season. However, it is prone to flash floods for being located just at the Himalayan foothills. The river becomes dangerous in the monsoon due to the faster water current that flows from the mountains to the foothill region. The riverbed has a length of almost 800 meters and is full of sand, silt, and boulders. During the dry season, all types of small vehicles like two-wheelers, three-wheelers, trackers, and e-rickshaws cross the riverbed, creating a footmark showing the path on the riverbed. Therefore, in the rainy season or during 'flash flood' the tea estate gets completely cut off from the rest of the country.

Jagadish Munda (56 years old), a former labourer of Rethi Tea Estate, described the difficulties that the people of Rethi Tea Estate face during monsoon since there is no bridge on the rivers.

> We are in an isolated place. From three sides we are surrounded by rivers and on the northern side there is Bhutan. And you see there is no bridge on these rivers so during monsoon when the water level rises, we become disconnected from the rest. Some trackers, and auto rickshaws come from the city. A small bus runs between Birpara and Bandapani TE (which is located north of Rethi TE) but only till 2 pm. People are mostly dependent on bicycles and motorcycles.

Bishnu Tanti (65 years old), another former labourer of Rethi Tea Estate described that the people of the tea plantation had to struggle to seek medical care from the hospitals located in the cities during a medical emergency during the monsoon season.

> We wait near the riverbanks with the patient helplessly for the water level to come down, so that the river can be crossed. A few years back, one of our girls who had a delivery case complication had died waiting near the river banks. She was married recently. He continued there was not even a health sub-centre here at that time. It was built a few years back.

Rajani Oraon (aged 30 years), a tribal woman, died at her home at Rethi Tea Estate a month after her son Priyangshu was born. Rajani was severely malnourished and underweight and was at 'High Risk' during her pregnancy as it was marked on the top right corner MCPC card in red ink. The family could not arrange a private car to take her to the hospital on time. They had to wait for the Government hospital ambulance to take Rajani to the hospital. Her sister Srimati Oroan (aged 27 years) said:

> We did not have money to hire a vehicle to take her to the hospital. The vehicle driver asks for 1500 to 2000 rupees to go to Alipurduar. The *Sarkari Gari* (government ambulance) is not available in our area. They come to our village from Birpara Hospital. But we have to call them and request them many times. They don't want to come to our tea garden.

Finally, when the ambulance arrived after almost three hours, Srimati had lost her sister.

The only tertiary government hospital located at the district headquarters Alipurduar located 75 km away from the Rethi tea garden. The people at Rethi tea estate and surrounding areas have to depend on the ambulance services provided by the Madarihat Rural Hospital Birpara State General Hospital and the Civil-Society Organisation based in Birpara and Madarihat. The Road that connects Birpara with the tea gardens in this locality such as Jay Birpara Tea Estate, Nangdala Tea Estate, Rethi Tea Estate, and Bandapani Tea Estate is a bituminous road, however, it is in the worst state of condition with full of potholes, stone, and mud due to lack of maintenance and repair for a long period. The ambulance drivers often refuse to come to Rethi Tea Estate or ask for higher charges.

On the other hand, the community health workers in the tea plantations also face difficulties in providing health care services in the tea plantations of the Dooars region. The community health workers mainly come from the nearby urban centres and villages to the public health institutions in the tea plantation. For instance, Soma Dutta (48 years old) is the ANM at the Sub-Centre of Rethi Tea Estate. She lives in nearby Birpara town and commutes daily to the centre on her scooter or public transport vehicles. She said:

> Many days, I couldn't come to the centre because there was water on the river due to sudden rain or flood. I had to return home to the other bank of the river. There were also days when returning home from the centre was difficult for the same reasons. During the rainy season, I keep thinking while working at the centre whether I'll be able to return home from the centre.

Eleazar Toppo, 49 years old, is a Rural Medical Practitioner based in Rethi Tea Estate. Eleazar has been working as a rural medical practitioner for the last 22 years. He visits different tea plantations in Birpara block of the Alipurduar district on his motorcycle and sales allopathic medicines to patients.

> No one will come to practice medicine in such a remote place. I was born here and I live here. To treat the patients, I have to travel through the jungles, and tea

> gardens, sometimes crossing the violent rivers on rainy days risking my life. Nowadays I have a motorcycle, earlier I used to travel two-three gardens and Basti's on a bicycle.

The geographical inaccessibility and remote location of the tea plantations in the Dooars region, particularly in Rethi Tea Estate, create critical barriers to healthcare access for the communities living in these tea plantations. The absence of a reliable road network worsens the situation, making transportation to the nearest towns difficult. This isolation leads to dire consequences during medical emergencies such as often waiting helplessly for river levels to subside to access hospitals during the monsoon. The geographical location has not only affected the community's utilization of healthcare services primarily located in the cities but also created significant barriers for the health workers to provide health care services in the institution located within the tea plantations.

7.4. Conclusion

The healthcare service utilization in the abandoned tea plantations in the Dooars region has remained a significant challenge due to the social, economic, and geographical determinants. The complexity of these factors encompasses structural, community, and individual levels, and poses significant challenges for tribal communities in the abandoned tea plantations to access and utilize health care services. The study shows that the socio-economic determinants compel the tribal communities to live with diseases as a consequence of poverty and income loss, leading them to seek medical assistance only when their health conditions become critical. The everyday lives of the women labourers are occupied with a busy schedule of managing family responsibilities as well as working in remote locations ignoring their health conditions. The plantation workers, facing the dilemma of choosing between health care and daily wages crucial for survival, often opt for traditional healers or garden-based healthcare providers such as RMPs over public health facilities located in urban centres. However, it has been found that the presence of a well-functional primary healthcare system in Patabari Tea Estate has significantly increased access to health care services compared to the tribal communities in Rethi Tea Estate. The health sub-centres and Health and Wellness Centres which are located within the plantations have a rigid operational schedule that conflicts with the working hours of the women on the plantation or other daily waged sectors. On the other hand, the community health centres including the Primary Health Centres in this region are heavily understaffed and lack adequate physical infrastructure and in-patient care. This has also significantly limited the utilization of healthcare services by the plantation communities. In addition, geographical

inaccessibility has remained a significant challenge in the Rethi tea estate for seeking health care services by the tea garden communities as well as in providing healthcare services by the community health workers.

Chapter: VIII

Conclusion

8.1. Summary

The present study examined the impact of the closure of the tea plantation on the livelihood, work, and everyday life of the tea plantation communities in the Dooars region and how this has impacted their health conditions. This study also explored the health and illness, as well as the healthcare services in plantations in the post-economic reform period, in particular when the plantation crisis started and resulted in the closure of tea plantations in the Dooars. This study based on the empirical evidence collected through qualitative research approaches such as ethnography and case studies, has analysed the determinants of the utilization of healthcare services and the barriers faced by people in the utilization of health services in the abandoned tea plantations of the Dooars region. Thus, the study examined how, in a given context of the crisis in the post-economic reforms period and followed by the closure of the tea plantations in the Dooars region, what are the different ways people are seeking medical care in their everyday lives. In doing so, this study adopts a Social Determinants of Health (SDH) approach to study the health and illness in the abandoned tea plantations in the Dooars region of West Bengal. The SDH are an analytical approach that explores the determining factors shaping individual and community health. The social determinants of health are the conditions in which people are born, grow, live, work, and age (Solar & Irwin, 2010; Braveman & Gottlieb, 2014). Social determinants are defined as processes that shape the lifestyles of communities and affect the behaviours of individuals and families. This framework also looks at how individuals affected by these circumstances respond at different levels (Birn et al., 2017). It is essential to examine the impact of societal, political, and economic structures on health patterns, illnesses, and diseases within a given organization (Doyal, 1979). In March 2005, the World Health Organization (WHO) formed the Commission on Social Determinants of Health (CSDH) which has explicitly defined and prescribed a theoretical framework of Social Determinants of Health to study the health and illness in a given society. However, as discussed in the previous chapters, the abandoned tea plantations in the Dooars region have distinctive social space, political structure, colonial history, and socio-economic realities. Therefore, this present study proposes a modified version of the Social Determinants of Health Framework prescribed by the Commission on Social Determinants of Health (CSDH) of WHO (Fig: 8.1).

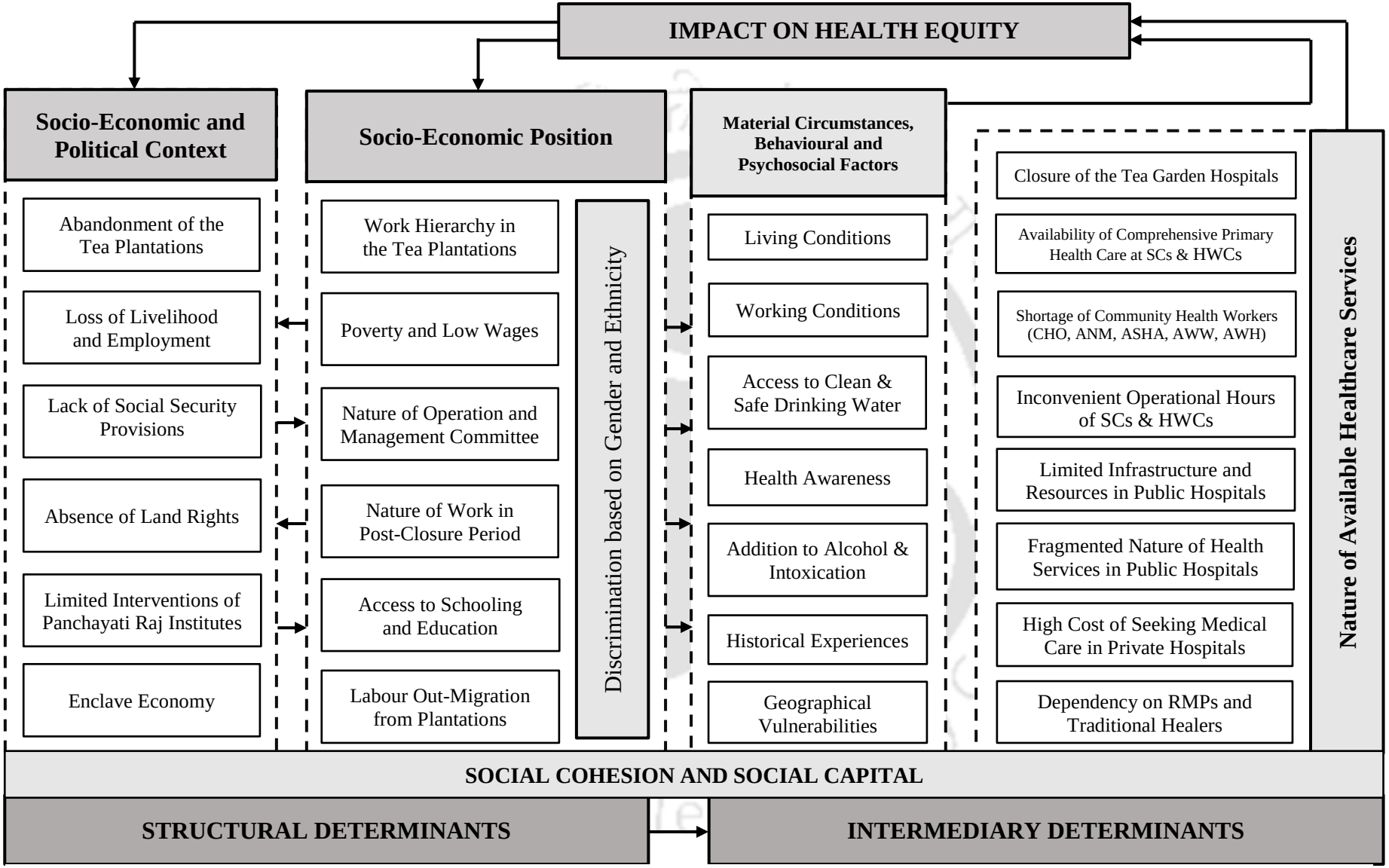

Fig 8.1: Framework of Social Determinants of Health and Illness for the Abandoned Tea Plantation Proposed in this Present Study

This proposed framework of Social Determinants of Health is specially designed to study the health and illness in the Abandoned tea plantations in the Dooars region as well as other parts of the world with similar socio-economic, and political contexts (Fig 8.1). This framework divides the social determinants of health into two broad categories which are structural determinants of health and the intermediary determinants of health. The term structural determinants refers to the dynamic interaction among socio-economic and political contexts, structural mechanisms contributing to social stratification, and the consequent socio-economic status of individuals (Solar & Irwin, 2010). In the context of the abandoned tea plantations, these determinants can be categorized into two broad themes: the socio-economic and political context, and the socio-economic position. The first category encompasses the abandonment of tea plantations, loss of livelihood and employment, lack of social security provisions, the absence of land rights, limited interventions of Panchayati Raj Institutes, and the enclave economy. On the other hand, the socio-economic position category includes aspects such as a work hierarchy in tea plantations. This category also includes poverty, low wages, the nature of employment, the nature of work in the post-closure period, access to schooling and education, and labour out-migration from plantations (Fig. 8.1). Additionally, discrimination based on gender and ethnicity significantly influences these structural determinants.

The structural determinants operate through a sequence referred to as intermediary social factors or intermediary social determinants of health. Typically, these social determinants of health inequities precede the intermediary determinants, which, in return, connect to individual-level factors such as health-related behaviours and physiological aspects. These intermediate factors originate from the foundational arrangement of social stratification and play a role in shaping differences in exposure and susceptibility to conditions that compromise health (Solar & Irwin, 2010). In the context of abandoned tea plantations, the intermediary determinants are further categorized into two groups: material circumstances, behavioural and psychosocial factors, and the nature of health care services. The first category encompasses living conditions, working conditions, access to clean & safe drinking water, health awareness, addiction to intoxication, historical experiences, and geographical vulnerabilities. The second category includes aspects like the closure of tea garden hospitals, the availability of comprehensive primary health care, and the shortage of community health workers. It also includes inconvenient operational hours of health centres, limited infrastructure, and resources in public hospitals, fragmented nature of health services in public hospitals, high cost of seeking medical care in private hospitals, and dependency on RMPs and traditional healers.

Furthermore, social cohesion and social capital are recognized as crosscutting determinants in the framework, exerting a substantial influence across both the structural determinants and the intermediary determinants within the social determinants of health framework. The dynamics of social cohesion and capital intertwine with other determinants, creating a comprehensive understanding of the multifaceted influences on health outcomes (Solar & Irwin, 2010). The interplay of structural determinants and intermediary factors gives rise to complex structures that result in health inequities within abandoned tea plantations. This present study employs the Social Determinants of Health framework to examine the dynamics of health and illness among the plantation communities. It delves into the characteristics of the healthcare services available and the factors that determine their utilization within the tribal communities residing in the abandoned tea plantations of the Dooars region. Subsequent sections provide a condensed overview of the key findings of the study on health and healthcare services, employing the social determinants of health framework specifically in the context of abandoned tea plantations in the Dooars region.

The tea industry underwent a significant economic crisis in the 1990s following the implementation of neoliberal reforms. This period saw a decline in profits and an increase in production costs within the tea plantation sector. Additionally, Indian tea industry faced a substantial decrease in its export prices on the global market, as it encountered heightened competition from other tea-exporting nations like China, Sri Lanka, Kenya, and Bangladesh in the aftermath of the economic reforms (Viswanathan & Shah, 2013). In the post-reform period, the plantation sector witnessed an increase in casualization and feminization of labour and a steady decline in the permanent workforce. The increase in the casualization of the workforce is used as an instrument to increase profitability by systematically reducing investment in the social security of the regular workers (Srivastava 2012; Sundaram, 2001). The investment in social protection and labour welfare provisions as stipulated by the Plantation Labour Act, 1951 was also reluctantly implemented combined with the cuts and freezing daily rate, bonuses, and other monetary entitlements that were adopted as a part of the strategy to reduce production cost. The corporate tea houses capitalized on the crisis by manipulating the auction market to maintain consistently low tea prices through market power. Major tea corporations prioritized auction purchases, often selling their tea estates to individuals lacking plantation knowledge and tea business experience. This shift in business focus, coupled with the diversion of revenue from the tea industry to other sectors, led to underinvestment in plantations, particularly affecting West Bengal tea plantations and compromising the quality of the tea produced

(Nielsen & Pritchard, 2008). This resulted in the frequent changes in ownership in the Dooars tea estate which had a detrimental impact on long-term development and sustainability, leading to challenges for new owners during crises and international competition. The prolonged crisis in the tea plantations in the Dooars region resulted in the abandonment of the tea estates rather than declaring the formal closure by the owners and management of the estates by paying the dues of the workers including provident funds, gratuity, wages, bonuses, rations and outstanding payments to state governments and banks, leading to the trend of owners running away and abandoning the estates without notice or settling dues (CEC, 2007; Sewn, 2009). As a result, since the early 2000s, several tea estates in the Dooars region were abandoned by the owners in different phases. One of the immediate implications of the closure of tea plantations was severe malnutrition and starvation deaths among the plantation communities as they could not afford food. In the early 2000s, the tea gardens of North Bengal experienced a series of hunger and starvation deaths, with an estimated 1,500 deaths between 2001 and 2006, although some reports suggest a higher number (Das, 2023; Bhowmik, 2015; WBACSC, 2004; CHDR, 2006).

This study shows that the abandonment of the tea estates by the management in the Dooars region has brought significant changes in the work and the life of the tea plantation labourers. The labourers have lost not only their source of livelihood but also their social and legal entitlements. The abandonment of the tea estates caused the further marginalization of the tribal labourers who were already in severe poverty in the plantation enclave and the exploitative structure of the tea industry in Dooars. There has been a tremendous rise in unemployment, out-migration, human trafficking, and high school dropouts amongst the workers' children in the abandoned tea estates of the Dooars region. The unemployed youth search for jobs within the tea estate and the nearby urban centres. However, they were not able to find work given the fact that most of them were only skilled enough to work in tea gardens. Thus, the employment crisis has forced many men and women to migrate to different cities in India and Southeast Asian countries. The present study highlights that the abandonment of tea plantations in the region has disproportionately impacted women and children, making them the most severely affected. The women within the tea plantations of the Dooars region confront numerous intersecting layers of subordination and discrimination of being tribals in a non-tribal society, a patriarchal society and residing in a historically neglected region of the state. Furthermore, tribal women have been subjected to exploitation as inexpensive and submissive labourers

(Banerjee, 2015). The abandonment of the estate has compelled the women and children to take up, vulnerable, low-paid, and precarious work.

The women and children in the abandoned tea plantations in the Dooars region were forced to take up low-paid and precarious work in forests, sand mining sites in river beds, and brick kiln factories. The tea plantation workers in the Dooars region, who have been marginalized historically became more vulnerable with the closure of the tea plantations.

The study shows that the tribal communities in the tea plantations were pushed to further margins due lack of political representation in the local governance and the absence of land rights (Das, 2023). During the 5th Panchayat General Election in 1998, the tea plantations of North Bengal were officially incorporated into the jurisdiction of the Panchayati Raj System - a local three-tier self-government structure in rural areas. This inclusion occurred after approximately two and a half decades of the implementation of the West Bengal Panchayat Act, 1973 in the rest of the state. The report submitted to the Standing Committee of the Cabinet on Industry, Infrastructure, and Employment of the West Bengal Government by the Committee of Secretaries in 2012 revealed that, at the time of the tea plantations' formal integration into the Panchayati Raj, there was an expectation that the state's social security and welfare schemes would effectively extend to these areas. The report categorically mentioned that "however, this has not happened at the grass-roots and implementation of different programs has taken place in an ad-hoc manner depending on the degree of cooperation between the Panchayat functionaries and the tea garden management" (GoWB, 2012, p: 6). Consequently, in 2013 the state had decided to extend social security schemes including Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), sanitation, and water supply to the tea plantations of North Bengal (GoWB, 2012). However, this present study conducted nearly a decade after this inclusion revealed that Panchayati Raj institutes in tea plantations have struggled to create a positive impact at the grassroots level. The social security scheme, MGNREGS, designed to provide 100 days of employment in a calendar year to rural communities, could have significantly benefited the abandoned tea plantations where the tribal communities lost their livelihood due to plantation closures. Unfortunately, MGNREGS is presently in a non-visible state in tea plantations, attributed to the insufficient political commitment, poor implementation, and limited coverage (Das, 2020).

Historically, the wage rate in the tea plantations in the Dooars region has remained low. Traditionally, the wage in the tea plantation is given in cash and kind in the form of social

security benefits such as housing, rations, and health facilities (Bhowmik, 2011). The Plantation Labour Act of 1951 necessitates the private owners of the plantations to bear the cost of the social security benefits provided to the workers. In contemporary times, the wage rate is settled between the labour department of the state, plantation owners, and the labour unions on negotiation tables. However, the labour unions, often characterized as pro-management oriented, could never benefit from such negotiation because of their limited capacity to bargain given the fragile socio-economic position of the labourers (Xaxa, 2019). The labour unions in tea plantations are predominantly controlled by men who are from upper-caste, elite Bengali and Nepali communities, with a striking absence of the labour class in the leadership positions, particularly from the Tribal and Dalit communities, and the presence of women in utterly absent despite constituting the largest share of the plantation workforce (Banerjee, 2020; Sarkar & Bhowmik, 1998).).

The tea labourers in the Dooars region have resided in labour lines inside the tea estates for generations. The current workforce consists mainly of descendants of tribal and Dalit migrant workers brought in by colonial planters from the 19th to early 20th centuries. Despite residing in labour quarters for generations, the plantation labourers were denied and deprived of land rights both within and outside the tea estates. The colonial structure of the tea plantations, with the absence of land rights and limited employment opportunities outside the tea plantations, often characterized as 'Social Enclaves', has compelled the plantation workers to remain highly dependent on the paternalistic benevolence of the plantation management (Das, 2023). The absence of land rights has also significantly limited the labourer’s power to bargain wages, social security, and well as civil rights with the plantation owners as well as the state. The plantation management retaliated labour protests demanding wage and social security by threatening to shut down the estate, an act of collective punishment, as the lockdown of a few weeks could push the workers into starvation (Rosenblum & Sukthankar, 2014). In this circumstance, the abandonment of the tea plantations has further pushed them into the margins.

The present study shows that the Operation and Management Committee, comprising labourers and local sub-staff from tea plantations, has been established to recommence tea leaf plucking activities in an abandoned estate. This initiative has ensured minimal support for the families of former plantation workers, enabling them to earn wages as tea leaf blockers, particularly during the harvesting season. However, the workers under the OMC committee are ill-paid and do not have social security provisions such as provident fund, gratuity, rations, housing, medical benefits, and others. Moreover, the nature of the work is exclusively seasonal, leading

to job losses for workers during the winter season. Employment under OMC is selective and granted primarily to those who engage in unpaid tasks such as pruning and nurturing tea plants during non-harvesting periods. Furthermore, these OMCs do not function as workers' cooperatives in a true sense. The present study also highlights that the OMC committees are predominated and controlled by the male members who are former sub-staff, trade union leaders, and local politicians, primarily from the dominant Bengali and Nepali communities. Therefore, there is a need for accountability and transparency in the management of tea estates under the OMCs. The present study strongly recommends that in addition to ensuring fair wages, the OMC must provide maternity benefits, childcare support, paid sick leave, and improved working conditions for the labourers.

One of the significant manifestations of the closure of the tea estate was observed in the rise of a specific set of diseases and illnesses in the tea plantations. Therefore, adopting a theoretical framework of Social Determinants of Health, this thesis attempts to understand the disease burden and underlying causes of the illness and diseases among the plantation communities in the two abandoned tea plantations based on the empirical evidence obtained from ethnographic and qualitative research methods.

The dominant understanding of health and illness among the tribal communities in India is often attributed to evil spirits, witches, and black magic. It is believed that the illness and infirmity in the human body are caused by the evil spirit. The present study in the abandoned tea plantations in the Dooars region also reveals that the Adivasi communities identify evil spirits as the root cause of illness and discomfort in the human body. However, this study also shows that tribal communities also assert the cause of disease and illness linked to working and living conditions, as well as the availability and consumption of food and clean and safe drinking water. Therefore, their perception of health and illness is not necessarily restricted only to witchcraft, and evil spirits. The case studies highlight a connection between certain diseases such as tuberculosis and animals and factors such as poor diet and challenging working conditions. On the other hand, non-communicable diseases such as hypertension and diabetes are linked to the heightened instability of work and employment conditions in abandoned tea plantations. Tribal communities attribute their increased vulnerability to occupational injuries and diseases to a shift in employment from plantations to more precarious work environments such as river beds, sand mining, jungles, and brick-kiln sites. Furthermore, illness is perceived as a disruption to everyday life, where individuals are considered unwell when they are unable

to carry out routine activities with the same energy and intensity as before. Minor health problems are defined as discomfort in the body that does not impede routine activities.

The dominant literature on the disease burden among the tribal communities in India primarily deals with the epidemiological transition which examines the general shift from acute infections and deficiency diseases to chronic non-communicable diseases (NCDs) with the economic and social development of a region. Similarly, the Tribal Health Report (2018) highlights the triple burden of diseases among tribal communities in India, encompassing persistently high rates of communicable diseases, a growing prevalence of non-communicable diseases, and a significant surge in intoxication-related health issues (GoI, 2018). However, this study argues that the increase in the precariousness of the livelihood and lack of social security have resulted in a much more complex pattern of disease burden in the abandoned tea plantations beyond the binary of communicable and non-communicable diseases.

It has been found in the study that communicable diseases such as tuberculosis and vector-borne diseases such as malaria, and dengue have been a major challenge in the abandoned tea plantations in the Dooars region. More than one hundred years ago, Christophers and Bentley (1911) wrote in their investigation report that widespread malaria among the tea plantation labours in the Himalayan foothills is primarily caused by 'tropical aggregation of labour' characterized by harsh living and working conditions in densely populated labour lines and 'what largely determines existing conditions in the Duars is its labour system' (Christophers & Bentley, 1911, p. 88). A century later, the tea plantations in the Dooars region have remained highly endemic to vector-borne diseases including malaria, dengue, and Japanese Encephalitis. Nevertheless, till the present time malaria has remained a major killer in the Dooars region (Sharma & Tilak, 2021). There have been several outbreaks of malaria in the Dooars region, especially in the tea plantations of the Alipurduar district since the 2000s (Sharma et al., 2009). In addition, dengue outbreaks have become an annual phenomenon, especially in the tea plantations of this region. In the epidemiological transition, it has been observed that the non-communicable diseases such as hypertension and diabetes in the tea plantations of the Dooars region have increased significantly without reducing the burden of communicable such as tuberculosis and vector-borne diseases. There has been a significant rise in vector-borne diseases such as malaria and dengue and waterborne diseases such as diarrhoea and typhoid. The vector-borne diseases and communicable diseases which are often categorized as the illness conditions of poverty, inequality, and hunger have remained high in the tea plantations. It has been found that tuberculosis has increased tremendously among the tribal communities

in the abandoned tea plantations due to poor housing, the loss of livelihood, the absence of adequate diet, and precarious working conditions. The vicious circle of poverty, out-of-pocket expenditure of accessing healthcare services, malnutrition, and poor working conditions has given the repeated occurrence of diseases. This study highlighted that the social determinants of health, including poverty, unemployment, gender-based preferences, education, and awareness, remained the leading cause of the high prevalence of communicable and non-communicable diseases in the abandoned tea plantations in the Dooars region.

There is an important debate about whether non-communicable diseases primarily afflict those in poverty or affluence, particularly in low- and middle-income countries. Nevertheless, a mounting body of evidence from various studies indicates that non-communicable diseases are escalating at an alarming rate among the poor and marginalized segments of Indian society (Binnendijk et al., 2012; Vellakkal et al., 2013; Williams et al., 2018). Similarly, there has been an alarming rise in non-communicable diseases among the plantation communities in the Dooars region. The major non-communicable diseases in the tea plantations are hypertension, diabetes, and eye diseases. The present study argues that the non-communicable diseases in plantations arise from factors such as work-related stress, job insecurity due to temporary employment, and exposure to pesticides as well as poverty and inequality. The plantation workers also asserted that the state of their health and illnesses were linked to their living and working conditions. They attributed health issues, such as diabetes stemming from nutritional deficiencies, injuries arising from the precarious nature of their work, and instances of diarrhoea to the consumption of unclean water. However, Public health officials note a rise in hypertension among Adivasi communities due to excessive salt-tea consumption, and link night blindness to a vitamin-A deficiency. Furthermore, excessive alcohol consumption is identified as a widespread cause of optic neuropathy in tea plantation communities. In addition to communicable diseases such as tuberculosis and malaria, and non-communicable diseases such as hypertension and diabetes, various other illnesses such as musculoskeletal disorders, eye diseases, skin infections, and respiratory illnesses are widely prevalent in the tea plantations of the Dooars region.

As we have mentioned in the previous sections, the plantation labourers had not only lost their employment and livelihood but also the social security provisions such as subsidized rations, crèches, housing, and health facilities. As a result, the tribal communities, particularly women, children, and the elderly faced were forced into precarious working conditions such as sand mining, river beds, brick kilns, and forests, while young men migrated to urban centres for

livelihood. This thesis argues that the shift in the nature of work from a settled form to an unsettled form of employment in precarious working conditions and vulnerable geographical locations has given rise to several environmental diseases and occupational hazards including respiratory illness, skin diseases, musculoskeletal disorders, scrub typhus, and silicosis. The Dooars region located at the foothills of the Eastern Himalayan range is characterized by the long stretch of floodplains, marshy lands, and dense forests created by enormous river networks, humidity, and moist climate with heavy rainfall with relatively high seasonal climatic variation (Deb & Mukherjee, 2022; Ghosh & Ghosal, 2021). The increased dependency of the tribal communities on the forest and rivers due to the closure of the tea estates coupled with extreme poverty, hunger, and social inequality have led to the emergence of new vector-borne diseases such as filariasis and leptospirosis in this region. On the other hand, the absence of proper drainage and sanitation along with the acute crisis of clean water has contributed to the increased disease burden in the tea plantations of the Dooars region.

In tea plantations in the Dooars region, alongside this complex morbidity and disease burden, maternal and child health has remained a serious concern with high maternal mortality rates posing a considerable public health challenge. There is a high prevalence of undernutrition and anaemia among the women of reproductive age in the abandoned tea plantations. Malnutrition due to starvation and endemic hunger is a common phenomenon in the closed tea plantations of the Dooars region. Multiple determinants make the plantation communities more vulnerable to poor maternal and child health such as lack of sufficient income, low education level, discrimination based on gender and ethnicity, poor living conditions, inadequate access to water, poor awareness about public health services, low utilization of maternal health care services and child immunization. In addition, there is a nexus between an early-age marriage of girls and poor maternal health outcomes, including the widespread prevalence of anaemia, tuberculosis, and undernutrition in the abandoned tea plantations in the Dooars region. This study argues that the exhaustive work schedule in the everyday life of the mother, patriarchal norms, and exploitative nature of work that the women are engaged in, precarious and low-paid jobs without social security leads to poor outcomes in the maternal and child health in the tea plantation. The demanding work schedule leaves little room for mothers to prioritize their own health in everyday life, further contributing to the poor health status of women in reproductive age groups.

In summary, the disease burden faced by tribal communities in abandoned tea plantations in the Dooars region is multifaceted and complex in nature. This includes a persistent prevalence

of communicable and vector-borne diseases, a rising incidence of non-communicable diseases, and an emergence of new vector-borne diseases. The study also shows that the shift in the nature of employment and geographical vulnerability has given rise to a set of environmental and occupational diseases among the plantation communities. In addition, the maternal and child health indicators have remained low in the abandoned tea plantations of the Dooars region. The study emphasizes the significance of social determinants of health, underscoring that the circumstances surrounding individuals' birth, upbringing, living conditions, work environments, and aging all play a role in the occurrence of illnesses and diseases. Social determinants, such as income, education, occupation, gender, and ethnicity, serve to further differentiate populations, impacting their susceptibility and exposure to conditions that compromise health. The study argues that the complex disease burden among tribal communities in abandoned tea plantations in the Dooars region is a result of broad structural causes, including socio-economic, and political structures, working conditions, gender norms, and geographical vulnerabilities.

The exploration of the disease burden within tribal communities residing in abandoned tea plantations has given rise to two pertinent questions. These inquiries revolve around the availability of healthcare services within the plantations as well as the region. Secondly, the ways in which people access these healthcare services, and the determinants of utilization of said healthcare services.

Historically, the tea plantations in the Dooars region have had their health service system since the colonial period, with the plantation management responsible for providing healthcare services to the labourers and their families. In the post-colonial period, the Plantation Labour Act, of 1951 made this arrangement statutory and the state became a mere observer rather than a provider of health care services. Surprisingly, in the tea plantations, the healthcare services along with other social security provisions promised by the 'socialist' state were given in the hands of private corporate houses (Das, 2023; John & Mansingh, 2013). The scholars have defined this situation as the complete absence of the 'developmental state' in the tea plantations and advocated for the restructuring of tea plantations at both the organizational and institutional levels, emphasizing the necessity of dismantling the deeply rooted colonial structure and ethos that characterize tea estates in India (Xaxa, 2019; Sharma, 2022; Rajbangshi & Nambiar, 2020). However, the abandonment of tea estates by the management resulted in a complete void in terms of healthcare services and other social security measures provided by the private owners of the plantations. Here, I argue that the introduction of Panchayati Raj institutions and the

expansion of public health services in the tea plantations of the Dooars regions have brought significant changes. The presence of Development State is now more visible, especially after the crisis-induced hunger deaths incidents of 2003, with growing Panchayati Raj Institutions and public health initiatives, such as the National Rural Health Mission (NRHM) and Health and Wellness Centres (HWCs), indicating a transformation in the structure of health system in the tea plantations in North Bengal. The study also shows that the healthcare service delivery system in the tea plantations of the Dooars region, which was largely dominated by the tea garden-based providers and traditional healers is going through a transition phase with the increased presence of public health service providers and institutions.

The healthcare service delivery system in the tea plantations of the Dooars region has become much more complex and plural in nature, especially with the introduction of public health institutions as a part of the National Rural Health Mission (NRHM). The tea garden hospitals in the functional tea estates have an actuate crisis of qualified medical practitioners as well as trained support staff. On the other hand, the tea plantation communities in the abandoned tea plantation primarily depended on the healthcare services provided by the tea garden hospitals. They faced severe challenges with the closure of the tea garden hospitals along with the closure of the tea estates.

Nevertheless, it is crucial to clarify that this study does not endeavour to advocate the notion that the mere existence of public health institutions guarantees equity in health or universal health care for the population in the region. The introduction of public health institutions does not imply that they comprehensively address all healthcare needs or resolve the issues prevalent in the abandoned tea plantations in the Dooars region.

The study highlights that with the introduction of NRHM, a network of sub-centres has been established as the first point of contact for public health with the community at the tea plantations of the Dooars region. The study shows that the availability of a well-functioning primary health care system, notably the Health and Wellness Centre (HWC) in Patabari Tea Estate, has significantly improved health care access. On the contrary, the Sub-Centre at Rethi Tea Estate, lacking adequate human resources and physical infrastructure has significantly limited the utilization of healthcare services by the plantation communities. Most importantly, this sub-centre does not have any ASHA workers who are at the forefront of delivering healthcare services at the community level. However, the Sub-centres in the district lack community health workers in general and ANMs in particular. In addition, there are several

sub-centres in the tea plantations of the Dooars region including Rethi TE which are yet to be upgraded to HWC. Consequently, there are no CHOs and also ASHAs at the SCs in Rethi Tea Estate. As a result, the subcentre in the tea estate provides limited health care services compared to the comprehensive healthcare services available at HWCs. The healthcare services including the official works of the sub-centre at Rethi Tea Estate are managed by the two ANMs) of the centre. In addition, the study shows that the PHCs located in a close proximity to the tea plantations of the Dooars region are heavily understaffed and lack adequate physical infrastructure. The Sishujhumra PHC and Santali PHC located near the study area has an acute shortage of doctors, nurses, and other healthcare providers. In addition, there is no provision of inpatient care in both the PHCs. This chronic condition of the PHCs has significantly limited the access to healthcare services of the tea plantation communities in the Dooars region. There is ample scope for strengthening the public health institutions and networks, particularly the Anganwadi Centres, Sub-Centres, and Primary Health Centres in the region. There is an urgent need for strengthening the Primary Health Centres to facilitate universal health coverage among the plantation communities. It is important to strengthen the SCs/HWCs and PHCs to promote comprehensive primary health care which can also significantly transform the maternal health care utilization and institutional delivery in the tea plantations in the Dooars region. The Mothers Waiting Hub is an excellent initiative introduced by the District Health administration, however, it needs to be extended to the PHCs as well.

While the NRHM endeavours to establish universal access to healthcare, the condition of tribal communities in the tea plantations remains markedly distant from this goal. It is primarily due to the absence of essential diagnostics, and medications, insufficient infrastructure, limited human resources, and inadequate transportation and communication facilities which limited the access to healthcare services for the tribal communities. Consequently, the local Rural Medical Practitioners (RMPs), quacks, and traditional healers become the primary points of contact for healthcare in the abandoned tea plantations of the Dooars region. The RMPs and the traditional healers became a significant source of health care due to their easy availability and affordability. There is no denying the fact that the Rural Medical Practitioners, also known as Unqualified Health Practitioners or the Quacks have been the first point of contact in geographically remote and inaccessible locations like tea plantations. Over the years, they have gained the trust of the local communities by giving them essential medical support during any health crisis or emergency. However, there is an urgent need to train the RMPs to equip them with the technical and medical knowledge to be able to provide the basic health care needs of

the people in remote areas. There is a need to bring them into the ambit of the rural health care system by having their details through the government registration process under the public health system.

The utilization of healthcare services in the abandoned tea plantations of the Dooars region is determined by a combination of social, economic, and geographical factors. The complexity of these factors encompasses structural, community, and individual levels, and poses significant challenges for tribal communities in the abandoned tea plantations to access and utilize health care services. However, there is a significant difference in the prevalence of different diseases and access to health care services among the various tribal groups, specifically the Adivasi and Nepali communities in the tea plantations. The study shows that the socio-economic determinants compel the tribal communities to live with diseases as a consequence of poverty and income loss, leading them to seek medical assistance only when their health conditions become critical. The everyday lives of the women labourers are occupied with busy schedules of managing family responsibilities as well as working in remote locations ignoring their health conditions. The plantation workers, facing the dilemma of choosing between health care and daily wages crucial for survival, often opt for traditional healers or garden-based healthcare providers such as RMPs over public health facilities located in urban centres. The health sub-centres and Health and Wellness Centres which are located within the plantations have a rigid operational schedule that conflicts with the working hours of the women on the plantation or other daily waged sectors. In addition to enhancing the capabilities of public health centres in tea plantations, it is important to ensure flexibility in the operating hours of HWCs. This adjustment is particularly important to facilitate access to healthcare services for tribal communities, especially women labourers.

The present study highlights that geographical inaccessibility remains a significant hurdle for both seeking and providing healthcare services in the Rethi tea estate. In this context, the Mobile Medical Units have been an important intervention that ensured access to primary health care services to the plantation communities residing in remote geographical locations. However, there is a need to enhance the capacity through improved facilities, enhanced monitoring, and the deployment of adequately trained healthcare providers. Furthermore, it is imperative to ensure the availability of medicines, pathological tests, and diagnostic services within the Mobile Medical Units.

The study indicates that tribal communities often encounter stigma and feel alienated within public health institutions in the village and urban health centres. They frequently encounter challenges in accessing health care services from hospitals in the cities due to a lack of social connections, the complex nature of operations, as well as the medical terminology employed in these facilities. To address the alienation of tribal communities in public hospitals, it is important to combat stigma which calls for making the health system, particularly the public hospitals more accommodative, responsive, and inclusive in nature. In addition, there is a need for prioritizing and inclusion of local communities in various roles within the public health system, including positions such as CHO, ANM, Staff Nurses, and other healthcare providers within public health institutions, to make a more inclusive system.

In summary, the healthcare challenges experienced by tea plantation workers in the Dooars region reflect broader societal inequalities and structural factors. The crisis in the Dooars tea plantations underscores the need for comprehensive and sustained policy-level interventions to address the challenges faced by the tea plantation communities in the Dooars region.

8.2. Policy Recommendation and Scope for Further Research

Based on the findings, this study presents a set of specific policy recommendations for interventions intended to improve the living and working conditions of the tribal communities residing in tea plantations in the Dooars region, with a particular focus on the abandoned tea plantations. These measures aim to enhance the health conditions of the plantation communities ensuring the alignment with the principles of health equity outlined in the concepts of Health for All and Universal Health Care. These suggested interventions are classified under two headings as follows:

8.2.1. Improving the Living and Working Conditions

1. The Government of West Bengal has cancelled the leases and taken back the possession of land and properties from private owners of the abandoned tea plantations (The Telegraph, 2014; TOI, 2016). The state government must prioritize the restart of the abandoned tea plantations as a government enterprise to safeguard the well-being and working conditions of the plantation communities in the Dooars region.
2. Tea plantations in the Dooars region need to be restructured at both organizational and institutional levels. This underscores the imperative of dismantling the entrenched colonial structure and ethos by endowing land rights to the plantation communities and fortifying the Panchayati Raj Institutes. The tribal communities living in the tea

plantations in the Dooars region must be given land rights to ensure access to land for alternative livelihood opportunities and improve living conditions.

3. It is necessary to strengthen the Panchayati Raj System in the tea plantations of the Dooars region. Specifically, it is important to promote women's participation in decision-making by ensuring increased female representation in community governance in the tea plantations. The policy aims to achieve equitable and responsive governance by reinforcing the Panchayati Raj System with a commitment to gender-inclusive participation.
4. A key policy recommendation for revitalizing abandoned tea plantations in the Dooars region is to encourage the formation of workers' cooperatives, which can significantly boost livelihood opportunities, empowering local communities. The workers' cooperatives can serve as a sustainable model, contributing to both livelihood generation and self-sufficiency.
5. It is recommended to engage NGOs along with the Panchayati Raj Institutions in providing training programs focused on employment-generating activities and vocational training within the abandoned tea plantations in the Dooars region. This collaborative effort can significantly contribute to skill development, enhance employability, and empower individuals to secure sustainable livelihoods in tribal communities.
6. There is an urgent need for better implementation of the *Mahatma Gandhi National Rural Employment Guarantee Act* (MGNREGA), 2005 to ensure livelihood security in the abandoned tea plantations in the Dooars region.
7. To support closed tea plantation workers, the government should implement a policy that harnesses their social capital and existing skills for alternative employment opportunities. This policy would involve assessing the workers' skills and organizing retraining programs tailored to local market demands. Establishing workers cooperatives and Self-Help Groups within the community can provide employment in areas such as handicrafts, agriculture, horticulture, and small-scale manufacturing. Additionally, facilitating access to microfinance and business development services will empower workers to start their own ventures. By leveraging their collective strengths and skills, this policy aims to create sustainable livelihoods and improve the economic resilience of abandoned tea plantation workers.
8. It is necessary to make the decision-making process in the OMC more inclusive and transparent by ensuring the participation of the tribal labourers, specifically women.

Moreover, the OMC committee must implement comprehensive labour welfare measures, which include maternity benefits, childcare support, paid sick leave, and improved working conditions along with fair wages to the plantation labourers.

9. The tea plantation workers in the abandoned tea plantations must be given living wages as suggested in the Oxfam Report, 2021. Furthermore, this involves the implementation of comprehensive social security provisions including housing, rations, educational entitlements, and healthcare service facilities. This policy initiative is aligned with the principles of fair labour practices and social justice, contributing to the overall well-being of the workforce in the tea industry.
10. It is important to ensure the provision of essential facilities at working sites in tea plantations such as the establishment of washrooms, access to clean drinking water, availability of menstrual hygiene products, subsidized canteens, and the provision of safety gear to prioritize the well-being and dignity of workers, promoting a conducive and safe working environment within the tea plantations.
11. The formation of women's groups including SHGs in abandoned tea plantations in the Dooars region can empower women economically, foster community development, and enhance social cohesion. The involvement of women's groups is important to promote collective initiatives, entrepreneurship, community engagement, and addressing diverse socio-economic challenges in the region.
12. Providing the tea plantation communities with access to government housing schemes, such as the *Pradhan Mantri Gramin Aawas Yojana* (formerly known as *Indira Awas Yojana*), are essential to enhance housing conditions. This approach encourages individuals to construct their own houses (Alam et al, 2022). In contrast, the recently introduced *Chai Sundari* Scheme by the West Bengal Government is designed to create labour colonies by allocating two-room quarters to former permanent workers on abandoned tea plantations, relocating them from their previous residential areas (Indian Express, 2022). Notably, the construction of these new houses involves arranging them in straight lines within a confined space, reminiscent of the old labour lines from colonial times. This spatial arrangement inadvertently reinforces the historical trend of ghettoization among plantation labourers in the Dooars region. The scheme, while providing housing, raises questions about the broader socio-economic implications and the potential impact on the social dynamics of the labour community in the Dooars region.

13. The PDS must be strengthened with a better implementation of social security schemes such as the *Antyodaya Anna Yojana* and Annapurna Scheme to ensure food security. In this regard, the involvement of Women's Self-Help Groups and local Workers' Cooperatives can prove beneficial in facilitating the grassroots-level operationalization of the PDS, thereby enhancing transparency and ensuring effective implementation of the scheme.
14. It is essential to establish public schools, community libraries, and hostels for students within the tea plantations in the Dooars region to promote quality education and inclusive development. It is highly recommended that infrastructure and human resources be strengthened in primary schools, which were earlier run by the tea plantation management and taken over by the school education department of the state government in the 1970s. There are no high schools in most of the tea plantations in the Dooars region. The government must ensure free school education and scholarships for higher education for the plantation communities.
15. There is a necessity to build sports and recreational facilities, with a particular emphasis on football, athletics, gymnastics, karate, volleyball, and cricket, which have considerable popularity and exhibit promising potential among both girls and boys in the tea plantations. The development of sports infrastructure and facilities has the potential to substantially enhance physical and mental well-being as well as to reduce the addiction of intoxicant substances among youth (UN, 2002).
16. It is an urgent need to construct connecting roads and bridges under the *Pradhan Mantri Gram Sadak Yojana* (PMGSY) scheme of the Government to enhance accessibility and mobility from tea plantations located in remote geographical areas. This strategic infrastructure development can significantly improve the transport network, facilitating smoothly connected and addressing the challenges posed by the inaccessible terrain of these tea plantations.
17. To address information asymmetry among tea plantation workers, the government should implement a comprehensive policy that includes establishing community radio stations, organizing awareness camps, promoting community engagement, implementing informal education programs, and launching literacy drives. Community radio will provide accessible information in local languages, while awareness camps will educate workers on their rights and social welfare schemes. Encouraging community engagement will foster collective action, and informal education programs will offer practical learning opportunities. Literacy drives will improve educational

levels among workers and their families. The civil society organisation can play a great role in this regard. Together, these initiatives will empower tea plantation workers with the knowledge and tools to enhance their socio-economic conditions.

18. The immediate policy changes should focus on restructuring these plantations through workers' cooperatives, employment generation, and strengthening public health systems to shape a better future for distressed workers in the abandoned tea plantations of the Dooars region. First, there is a need to facilitate the formation of workers' cooperatives to take over and manage closed gardens, providing necessary training and resources for efficient operation. This cooperative model will empower workers, ensuring sustainable livelihoods and a sense of ownership. Second, diversify employment opportunities by introducing alternative income-generating activities such as horticulture, animal husbandry, and small-scale agro-industries. Third, the government should enhance the Public Distribution System (PDS) to ensure food security for all workers and their families. Lastly, there is a serious need to invest in the public health system by upgrading healthcare facilities, ensuring the availability of essential medicines, and conducting regular health camps to address the community's medical needs. These combined efforts will not only revive the abandoned plantations but also significantly improve the socio-economic conditions of the workers.
19. In addition to the above, the state must ensure the proper implementation of all the other social security schemes related to the old age pension, widow pension, students' scholarships, disability pension scheme, supplementary nutrition programs, poverty alleviation schemes, training, and skill development programs to improve the socio-economic conditions of the tribal communities in the abandoned tea plantations in the Dooars region.

8.2.2. Strengthening the Public Health Services

1. It is imperative to implement an improved drainage and sanitation system along with the provision of piped drinking water in the houses within the abandoned tea plantation communities in the Dooars region to address critical needs for better hygiene, sanitation, and access to safe drinking water as well as to reduce the burden of waterborne diseases and vector-borne diseases.
2. It is essential to ensure universal access to comprehensive primary health care by strengthening the network of HWCs in the abandoned tea plantations within the Dooars

region. It is necessary to upgrade all health sub-centres to HWCs in the tea plantations on a priority basis.

3. The HWCs must be equipped with adequate physical infrastructure, human resources, and medical equipment and drugs.
4. It is strongly recommended to lower the population norms for recruiting ASHAs, as well as strengthening the Anganwadi Centres, and HWCs in the abandoned tea plantations to ensure universal health care coverage.
5. There is an urgent need to strengthen the Anganwadi Centers under the ICDS scheme within the abandoned tea plantations of the Dooars region. It is important to enhance the physical infrastructure of these centres by providing adequate buildings, piped water services, kitchens, and toilet facilities. Furthermore, the crucial task of filling vacant positions for Anganwadi Workers and Anganwadi Helpers should carried out through regular recruitment, giving priority to the local communities in the selection process. There is a need for increased budgetary resources for the Supplementary Nutrition Program (SNP) and ensuring timely disbursement of funds are essential steps to ensure the effective functioning and implementation of the program in these abandoned tea plantations. The proper implementation of the ICDS scheme can significantly alleviate malnutrition among women and children in the abandoned tea plantations.
6. It is highly recommended to introduce flexibility in the working hours of SCs and HWCs to ensure convenient and accessible health care services. The operational hours of these health service facilities often coincide with the working hours of women labourers in tea plantations, limiting their access to healthcare services. To address this issue, it is advisable to establish Evening SCs and HWCs, extending healthcare services in the evening and beyond traditional working hours. This strategic adjustment not only accommodates the unique schedules of the plantation communities but also enhances overall accessibility, contributing to improved healthcare outcomes for women in these areas.
7. It is imperative to prioritize and include local tribal communities, in key roles within the public health system, such as ASHAs, ANMs, CHOs, AWWs, and other healthcare providers to address the alienation of tribal communities in public hospitals, combat stigma, and make the public health system more accommodative, responsive, and inclusive.

8. It is imperative to provide training and recognition for Rural Medical Practitioners (RMPs), who serve as primary contact points during illness and provide primary health care services to the tribal communities in tea plantations.
9. Mobile Medical Units (MMUs) play a vital role in providing primary healthcare to remote plantation communities. However, there is a need for improved facilities, enhanced monitoring, and deployment of adequately trained healthcare providers to optimize their impact. It is also crucial to ensure the availability of medicines, pathological tests, and diagnostic services within the MMUs.
10. It is crucial to promote a strong intersectoral coordination among community health workers including ASHAs, ANMs, and AWWs along with, MMUs, RMPs, local Panchayats, and community representatives to optimize healthcare delivery and promote health and social awareness in tea plantations. In addition, active community participation must be ensured in village health day observations and the formulation of village health plans at the HWC level to integrate various healthcare components, engage the community in health-related decisions, and health campaigns, and formulate localized health strategies, thereby promoting more effective and community-centric healthcare services.
11. There is an urgent need to strengthen PHCs situated in close proximity to abandoned tea plantations that currently lack in-patient care services, despite established norms to cater to the needs of the tea plantation communities and ensure comprehensive and timely medical support.
12. There is a critical need to strengthen Sub-Divisional Hospitals, District Hospitals, and Tertiary Hospitals in the Dooars region by expanding in-patient departments, critical care facilities, surgery units, and advanced diagnostic services to improve the healthcare infrastructure to make these hospitals well-equipped to provide comprehensive and specialized medical care to the communities in the Dooars region.
13. It is essential to strengthen the network of ambulance and referral services from the HWCs to the top level Tertiary Hospital level given the remote location of the abandoned tea plantations to ensure timely and efficient access to advanced medical care.
14. It is essential to establish fair-price and subsidized drug stores in every public hospital to ensure equitable healthcare access. Furthermore, it is recommended to provide free diagnostic services and pathological tests in all block-level and district hospitals to

enhance affordability and accessibility to essential health care services by the tribal communities in the abandoned tea plantations of the Dooars region.

15. It is recommended to establish a publicly funded advanced diagnostic and virology laboratory in the Dooars region, particularly at the Alipurduar district hospital to facilitate the efficient screening of the common as well as newly emerging diseases in the region and tea plantations.

8.2.3. Scope for Further Research

This study lists a few ideas which can be investigated and explored through further research:

1. A comparative study of the health and working conditions among the tea plantation communities in the Dooars region and South Indian States.
2. A detailed study with a special focus on non-communicable diseases in the tea plantations.
3. An exploratory study on labour out-migration from the tea plantations in the Dooars region.
4. A detailed investigation of the human-trafficking from the sick and abandoned tea plantations in the Dooars region.
5. A sociological study on the growth and working conditions in the Small Tea Growers (STGs) Plantations in the Dooars region.

In conclusion, the tribal communities have witnessed the manifestation of the abandonment of the plantation in the post-economic reform period in the form of increased precariousness and a complex burden of diseases. In such a situation, access to universal healthcare was pivotal to improving the health conditions of tribal communities. The study argues that although the health system in the tea plantations has been going through a transitional phase with increased visibility of the state, however, the social determinants of health have put different obstacles in various capacities in front of the plantation communities to seek healthcare. Thus, it is extremely important to understand the complex and multifaceted determinants of health in the context of abandoned tea gardens with a focus on understanding the inequities in health. The government needs to take into consideration the social determinants of health and accordingly strive to provide comprehensive primary health care services to the people striving to survive and live in the abandoned tea gardens. With the focus of the SDGs on leaving no one behind, it is high time that policies are adopted to provide universal and comprehensive health care to the communities living in abandoned tea gardens of the Dooars region.

Appendix-I

Supplementary Nutrition Programs in Abandoned Tea Plantations of Dooars Region

9.1. Introduction

The Integrated Child Development Scheme (ICDS) and the State Action Against Hunger and Inequality (SAHAI) are two key programs aimed at ensuring social security in sick and closed tea estates, particularly in response to starvation deaths in the early 2000s in the Dooars region (WBACSC, 2004). The ICDS scheme primarily focuses on child nutrition and health, extending its services to adolescent girls, pregnant women, and nursing mothers. On the other hand, SAHAI was introduced to provide cooked meals to elderly and destitute individuals in the abandoned tea plantations of the Dooars region to prevent starvation deaths. These programs directly address hunger and nutrition issues in the region.

This chapter analyses the functionality and issues related to child health and ICDS programs in closed tea estates in the Dooars region. It also discusses the functioning of the community kitchens under the SAHAI scheme that provides cooked meals for the elderly, destitute persons, and people with illnesses in abandoned tea gardens. The chapter attempts to understand these two programs, by exploring the challenges the workers face in implementing the programs in abandoned tea plantations. The chapter is based on the in-depth interviews of the Anganwadi Workers and Helpers, Self Help Group Members, mothers of young children, SAHAI Bandhabi (the supervisor of the scheme in the garden), the beneficiaries of the community kitchen and interviews of key informants associated with the program. Apart from this, the chapter is also based on the guidelines of the SAHAI program available online and newspaper articles.

This chapter is divided into five broad sections. The first section discusses the introduction of the ICDS in India as well as the tea plantations in the Dooars region. The second section focuses on the everyday functioning of the Anganwadi centres in the tea plantations. The third section examines the challenges of ICDS in the abandoned tea plantations of the Dooars Region as well as discusses the need for a structural change of Anganwadi centre to daycare centres. The fourth section discusses the Community kitchens under the State Action against Hunger and Inequality (SAHAI) in the abandoned tea plantations of the Dooars Region. The fifth section analyses the challenges faced by the community kitchen in the abandoned tea plantations followed by a conclusion.

9.2. Introduction of Anganwadi Centres in the Tea Plantations of North Bengal

Anganwadi Centres are essential components of India's ICDS program, launched in 1975 to combat child malnutrition (Rajpal et al., 2020). They offer health services, nutrition, immunization, and preschool education to children under six, pregnant or lactating mothers, and adolescent girls. The program started with 4,891 centres in 1975, and in 2022, there were 1.391 million operational centres. Each centre is managed by an Anganwadi Worker (AWW) and an Anganwadi Helper (AWH) and supervised by an ICDS supervisor (GoI, 2023). Their main objectives are to improve child well-being and reduce mortality, illness, malnutrition, and school dropout rates, while also focusing on maternal health (Jain, 2015). The number of centres is determined by population norms, and in West Bengal, they provide nutritious meals based on local food habits. The cost norms for supplementary nutrition were adjusted in 2017, with the Government of India contributing 60% and State Governments 40% to fund the centre, with a 50:50 fund share for the Supplementary Nutrition Program. Research indicates that the ICDS program in rural India positively influences the nutritional well-being and physical growth of children aged 0-2 years, particularly those who receive daily supplementary nutrition from Anganwadi Centres (Jain, 2015).

In 2001, Rajasthan faced a severe drought, leading to famines, food scarcity, and loss of livelihoods. The People's Union for Civil Liberties (PUCL) initiated a petition in the Supreme Court, arguing that the right to food was an extension of the "right to life" in the Indian Constitution (Dasgupta, 2009). The court accepted the petition, broadening its scope, and required responses from all states and government bodies. On November 28, 2001, the Supreme Court issued an 'interim order,' directing the government to fully implement eight food-related schemes (Birchfield & Corsi, 2009). These schemes included Annapurna, Antyodaya Anna Yojana, Integrated Child Development Scheme, Midday Meal Scheme, National Family Benefit Scheme, National Maternity Benefit Scheme, National Old Age Pension Scheme, and Targeted Public Distribution Scheme (Guha-Khasnobis & Vivek, 2007). The court also mandated the establishment of functional Anganwadi Centers and mid-day meal programs in primary schools. Some state governments raised concerns like financial constraints, food poisoning, caste biases, and dietary preferences, requesting the court to reconsider. In June 2004, the United Progressive Alliance (UPA) government at the central level fulfilled its electoral promises and passed a universal Midday Meal Scheme funded by the Government of India.

Before 2003-04, the establishment of Anganwadi Centers (AWCs) in the Dooars region's tea estates was limited. This expansion of ICDS is linked to hunger-related deaths in the early 2000s and national-level discussions on hunger and undernutrition. In response to Supreme Court judgments, a study team visited closed tea estates in the Dooars region in December 2003, finding hunger-related deaths and deficiencies in government schemes (WBACSC, 2004). They recommended comprehensive ICDS and midday meal scheme coverage, expanding the Public Distribution System (PDS), compensation disbursement, and addressing defaulters. The report also highlighted the lack of AWCs in many tea estates. In Rethi Tea Estate, where the study was conducted, only one AWC served around 200 children aged 0-6 years. Similar situations were found in other estates, with either remote or non-functioning AWCs (WBACSC, 2004). The first AWC in Rethi Tea Estate started in 2003 at the hospital grounds of Rethi Tea Estate. At present, there are nine AWCs in Rethi Tea Estate. Among these centres, six AWCs are located in different corners of the main division of the garden and rest three are located in the Nepania out-division. Patabari Tea Estate has thirteen AWCs located in different labour lines of the tea estate.

9.3. Everyday Functioning of the Anganwadi Centres

The fieldwork conducted at Rethi Tea Estate and Patabari Tea Estate revealed that many AWCs were designated to commence operations at 8:00 am in the morning. Nevertheless, findings from the fieldwork conducted at Rethi Tea Estate and Patabari Tea Estate have revealed that a substantial portion of the centres commences operations around 8:30 am. Notably, the Anganwadi Helpers consistently undertake the initial tasks involved in the opening process of the Centre for the day. These tasks encompass various preparatory activities, including cleaning the centre premises and procuring essentials such as water and firewood for the kitchen, where the day's meals are prepared. The Anganwadi Workers typically arrive at the centre around 9:00-9:15 am in the morning; However, not every day. Some days, the Centre may not witness their presence at all. A group of Anganwadi Workers only visits the centre once or twice weekly, often to fulfil duties such as maintaining registers and submitting weekly reports to higher authorities.

In the tea estates of the Dooars region, the Anganwadi Workers who are primarily from the dominant Bengali or Nepali communities tend to reside outside the tea gardens and prefer commuting to the centres on a daily basis. However, there are Anganwadi Workers who live within the tea gardens; They are mostly the family members or spouses of the tea estate

managers, Babus, and sub-staffs, who originate from socially and politically dominant groups within the tea gardens. Conversely, the Anganwadi Helpers are mainly from tribal communities residing within the labour lines of the tea gardens. During fieldwork, it becomes evident that in most of the Anganwadi centres the workers do not come to the centres on a regular basis or on time. This pattern is observed across almost every centre in the two tea estates. For instance, at the Anganwadi centre of Birsha Line at Patabari Tea Estate, there was a wait of one and a half hours as the worker, Meena Chhetri, did not attend. Similar experiences were encountered at the Anganwadi centre in Basa Line at Patabari Tea Estate in the same week.

Children start arriving at the Anganwadi Centre around 9.30 am. They often engage in play outside while the Anganwadi helper prepares Khichdi, a rice and lentil dish, on the veranda. The Anganwadi Worker stays inside, focusing on daily reports and not calling the children in for preschool activities. Some older children bring their own utensils. Family members, mainly mothers and older sisters, arrive around 9.45 am, bringing tiffin-carriers and bowls for the children. They collect the Khichdi and leave with the children.

9.4. Challenges of ICDS in the Abandoned Tea Plantations of the Dooars Region

This section discusses the challenges faced by the Anganwadi Workers and Anganwadi Helpers in running the Anganwadi Centres in the closed tea plantations. It also discusses the structural challenges faced by the Anganwadi centres in the tea plantations.

9.4.1. Inadequate Infrastructure in the Anganwadi Centres

The Anganwadi centers in the Dooars tea gardens face severe infrastructure and resource shortages, affecting their daily operations. In the Patabari tea estate, only three out of thirteen centers have dedicated buildings. For instance, Sunita Nag (a 52 years old Bengali woman), is one of the most experienced the Anganwadi Worker (AWW) at Patabari Tea Estate, said:

> The main problem is we do not have our own room or any other infrastructure. We have to vacate this place (the school) by 10.30 am, and then the school will start here at 11 am. The headmaster of this school allowed us kindly to use this kitchen. Otherwise, where would we have gone? There is no water tap or toilet for children. There is no place for the children to sit or to eat the food here. If a child comes to the centre now, where shall I make them sit? This is how we have been managing our everyday activities for the last two decades.

Gita Das Mandal (52 years old woman from Dalit community) has been working as an AWW at Patabari Tea Estate since the year 2010. Her centre has been operational within the premises of Chunanti Oraon's residence for the past six years. Chunanti, a tribal woman (aged 35), is a colleague of Gita as she works as an Anganwadi Helper at the same centre. She resides in a labour quarter comprising two rooms in a labour line of the Patabari Tea Estate. Within this limited space, she has accommodated the Anganwadi Centre in the small courtyard of the labour quarter. Gita said:

> We have to face a lot of problems in running the centre at Chunanti's house. Her husband is an alcoholic. He often threatens us to shut down the centre. We have to argue with him in front of the kids almost every morning.

The Department of Women & Child Development and Social Welfare, Government of West Bengal funded to build the Sishu Aloy (Model Anganwadi Centres) in Patabari tea estate. The centres were built by the Department of Panchayats & Rural Development The model centres were built in the year 2010 and have their own buildings. Gita Das Mandal said:

> The model centres are in such a condition, anytime dogs can enter in the kitchen. If you see the centre of Meena Chhetri, (the second model centre), the tin walls of the building have broken down. The centre is also surrounded by bushes and bamboo plants.

This is a common picture of the Anganwadi centres in the tea gardens of the Dooars region. In most cases, the Anganwadi centres lack dedicated buildings of their own. Consequently, the community health workers are compelled to conduct their daily activities within makeshift arrangements, often utilizing nearby school premises or residences within the neighbourhood. While a small number of Anganwadi centres have their dedicated buildings, the physical condition of most such structures is in a state of considerable physical deterioration.

9.4.2. The Structural Challenges and the Question of Land in the Tea Plantations

It has been found during the fieldwork in the tea estates of the Dooars region that there is a problem with land allocation for developmental projects. The tribal workers do not have land rights in the tea gardens. The private owners of the tea garden have leased hundreds of hectares of land from the Land and Land Reforms Department of the Government of West Bengal (Rasaily, 2013). Therefore, the tea gardens are categorized as private properties. For some developmental projects such as establishingAWC, schools, and sub-centres in the land of tea estates, the concerned department has to obtain a 'No-Objection Certificate' from the Tea

Estate Management. Sunita Nag (52 years old) an AWW at Patabari Tea Estate complained that the tea estate management is reluctant to give the land for these projects. Sunita said:

> The manager had given permission to use the land for only a few AWCs in the garden. Thereafter, in 2013, three new buildings were built by the department for three Anganwadi centres in the garden. We had appealed to the estate manager many times to give land to our centres. We heard that the manager had also given permission for all the other centres. But, the garden closed in 2014 and the management had left the garden. Since then, we have heard that our centre will get a building, but nothing happened.

The findings of the study highlight a critical issue surrounding land allocation for developmental projects in the abandoned tea plantations in the Dooars region. Sunita's account unveils a complex situation where, despite the initial permission granted by the estate manager for a few Anganwadi centres, subsequent attempts to secure land for additional projects faced obstacles. The promise of buildings in the centre has remained unfulfilled and excluded the community from accessing the services. This scenario points to a failure of land allocation for development projects, with potential implications for the well-being of the tribal workers and the communities reliant on these facilities. The need for a 'No-Objection Certificate' creates a dependency on the goodwill of tea estate management. It raises broader questions about the role of government departments in overseeing land-use policies and ensuring that developmental projects are executed without hindrance, particularly in areas crucial for the well-being of marginalized communities. In summary, the fieldwork findings underscore the need for a structural change in the land rights and ownership of the plantation communities.

9.4.3. Shortage of Human Resources in the Anganwadi Centres

AWCs in tea gardens face a severe shortage of human resources. Two centres in the estates lack AWWs, and the responsibility falls on AWHs. Sumana Shunri (48 years old), who has worked with the ICDS program since 2003, started as an Anganwadi helper and later became an Anganwadi Worker.

Sumana Shunri starts her day in the very early morning. She prepares meals for her husband and school-going son. Afterward, she goes to the Anganwadi Centre near her home. This centre has an Anganwadi helper who helps cook the meals and take care of the children at the centre.

This centre has 31 registered children. Sumana quickly takes a round of the centre and instructs Gouri, the helper, about work to be done that day. She hands out the food grains to be cooked that day from the storeroom. Then she leaves for Kalapani AWC on her bicycle, giving the responsibility to Gouri to run the centre for the day. The second centre is located at the Kalapani forest village, almost 8 km from her house at Rethi's main division. Every morning, she rides her bicycle through the forest, crossing rivers to reach the Kalapani AWW Centre. She has to ride her bicycle through the Down Chamurchi forest for almost an hour to reach Kalapani. The Anganwadi centres at Kalapani village did not have any workers or helpers. Therefore, it took a lot of work for Sumana to manage the centres at Kalapani and her own Rethi centre. She had to make a local arrangement to find extra hands to help her in the centre at Kalapani. Sumana has convinced a local woman from Kalapani to help her manage theAWC. She said:

> I had to pay the money as I had asked her to help me. It was very difficult for me to travel every day and manage the centers at the same time. I don't have the time to cook for the children (of the Anganwadi Centres).

The financial burden of such a makeshift arrangement falls squarely on Sumana's shoulders as she tries to ensure that Anganwadi centres continue to operate and serve the community.

During fieldwork, a senior official at the block-level office of the ICDS program in Madarihat-Birpara revealed that there has been hardly any new recruitment of AWWs and AWHs as well as ICDS supervisors for more than a decade in the AWCs located within the tea gardens of the Dooars region. This critical shortage of human resources, coupled with a lack of support and supervision, portrays a bleak picture of the state of the ICDS program in this region. AWWs significantly deliver vital services such as nutrition, healthcare, and early childhood education to marginalized communities. The fact that these positions have remained unfilled for such an extended period is a disservice to the people of the Dooars region. Adding to the problem of the absence of new recruitment, many Anganwadi Workers have either retired or reached retirement age, intensifying the human resource crisis. Therefore, the burden on existing workers has increased significantly.

In addition, the prolonged vacancies in the posts of ICDS supervisors have resulted in a glaring lack of oversight, inadequate supervision, and lack of support from ICDS supervisors. The existing ICDS supervisors are overburdened with work as they manage the work for multiple workers, which hampers supervision, quality and issue resolution in Anganwadi Centres.

Without proper supervision, it becomes challenging to ensure that the program's objectives are being met effectively.

9.4.4. Additional Workload of the Anganwadi Workers

It was found during the fieldwork that the Anganwadi Workers and Helpers are overburdened with additional workload apart from their daily work at the Anganwadi Centres. For instance, the Anganwadi workers were employed as field investigators by the Block Development Offices (BDOs) to identify the beneficiaries at the village level for the government housing scheme before the Panchayat Elections scheduled in July 2023 in West Bengal.

Rima Baghwar, a 43 years old Anganwadi Worker at Patabari Tea Estate said:

> The BDO office told us to survey our localities to find the people's economic status and housing conditions. They had given us forms (questionnaires) for the survey. It created a huge problem for us as the Panchayat office displayed the list of people who would be given the government houses. The people who were not on the list thought we had not given their names intentionally. Our relationship with the local people was severely affected by this (work). We depend on the local people for our Anganwadi-related work. We need their cooperation to run the centre. It was affected after this incident.

It was also found during the fieldwork that due to the absence of ASHA workers in the Rethi tea estate, the Anganwadi workers and Helpers had to share the work of the ASHA among themselves. The AWWs assisted the Sub-Centre in delivering healthcare services to the community in the absence of the ASHA worker in Rethi Tea Estate.

9.4.5. Honorioum of the Anganwadi Workers

The AWWs and AWHs receive a fixed monthly honorarium determined by the Government from time to time, which varies across different states in India. Gita complained about the irregular payment of their honorarium and bills for various expenses. She said:

> We do not get our full salary on time for the last five to six months. I get a salary of only (INR) 8300 rupees per month that also the government does not give at the time. For example, last month I received only (INR) 3700 rupees. I do not know when they will give me the rest of the money. Sometimes, the office says that the state government did not sanction the money, sometimes they blame the central government.

Moreover, Gita's statement highlights the financial burden on community health workers. They have been systematically forced to use their money to run the centre, including purchasing essentials like eggs for the beneficiaries. Yet, uncertainty shrouds the process when they submit bills for reimbursement, with no clarity on when they will receive their rightful payments. Gita said:

> With this limited salary, we have to spend our own money to run the centre. We have to buy eggs with our own money for the entire month. But when we submit bills at the end of the month, nobody knows when we'll get our payment.

In India, the Community Health Workers (CHW), including the AWWs, AWHs, and ASHAs, are provided honorariums for their work. An honorarium, by definition, is a gesture of favour, traditionally given as a nominal token of appreciation. On the other hand, a salary is structured with a pay scale, potential increments, and often additional benefits like transport allowances, ensuring a fair and equitable compensation system (Roy, 1998; Zelizer, 2021). The allocation of an honorarium to CHWs fails to acknowledge the value of their work and affects them disproportionately. The CHWs are predominantly women who are ill-paid, have limited educational backgrounds, and are usually appointed at the lower end of the hierarchy within the health system (Standing, 2000; George, 2008). Scholars argue that the continued reliance on honorariums for CHWs is unjust and a deliberate mechanism to exploit the women community healthcare workers. The practice of paying honorariums to CHWs rather than salaries is a classic example of systemic exploitation as their contribution remains hidden, marginalized and not recognized as skilled labour (Roy, 2020).

9.4.6. *'The Department Knows Everything':* Delay in Releasing the Funds

The AWCs in the tea gardens of the Dooars region have been facing hidden challenges. Sunita Nag (52 years old), an AWW at the Patabari Tea Estate, articulates that while the department provides rice and pulses on time, essentials such as mustard oil, salt, eggs, and spices are procured independently by the AWWs. The critical problem is the delay in receiving the funds necessary to purchase these essential items, with some workers having to wait 3-4 months for payments. Sunita Said:

> The department provides us with rice and pulses for the centre generally on time. However, there are a lot of things such as mustard oil, salt, eggs, spices, etc., we have to buy from the market. The department does not give money for these

> things on time. We have to buy from the market with the money from our own pockets. Sometimes, we wait for 3-4 months for the payment.

The AWCs in the tea garden do not have a Liquified Petroleum Gas (LPG) connection. The Anganwadi helpers cook food for the children with firewood procured from local tribal women who collect firewood from the nearby forest to earn a livelihood. Sunita's distressing revelation that they haven't received funds for firewood in four months shines a spotlight on the ripple effect of bureaucratic delays. Sunita's words resonate deeply when she questions:

> We haven't got the money for firewood for the last four months. The Adivasi women who sell firewood to us are really poor. How long can I buy the firewood on credit for them? Their families are dependent on this money. I can buy eggs or spices from the local grocery store on credit but not firewood from these poor women.

The socio-economic interdependencies within the communities in the tea gardens are starkly evident, underscoring the intersection of class, caste, and gender.

Gita Das Mandal, (52 years old), an AWW from Dalit community at Patabari Tea Estate:

> Many of our friends from the neighbouring centres told me that if this continues then they have decided to stop cooking eggs in the centre; because no grocery store is ready to sell eggs on credit anymore. A single plate of eggs (30 eggs) costs 190 rupees now. And we have to buy throughout the month. People will complain if we don't give eggs to the children, and in addition, the officers from the BDO often come to field visits. If they see that we are not cooking eggs for the children, then we'll be again in trouble.

Sunita sounded upset.

> If the department starts paying the bills (for firewood, eggs, and other edibles) on time, there shall be no difficulties in running the centre smoothly. Our department office knows everything. They know our difficulties, but no one is ready to acknowledge this. As if everything is fine and perfect.

The AWCs are aware of the realities they face. They understand that the timely disbursement of essential funds can resolve many of these challenges. It is important that government agencies acknowledge and address the struggles faced by these dedicated individuals who play a significant role in shaping the future of the children they serve. There is a serious need for

tangible support and timely payments to ensure that the promise of a healthy and nourished future becomes a reality for the children of these tea garden communities.

9.4.7. Need for a Structural Change: Anganwadi Centre to Day Care Centres

Shibani Ekka (38 years old) is one of the very few tribal women with a graduate degree in the tea gardens in the Dooars region. She has been working as a facilitator cum trainer with a Kolkata based Non-Governmental Organisation (NGO) named Child in Need Institute (CINI) at Patabari and other nearby tea estates in Kalchini block of Alipurduar district. She said:

> We need more day care centres than the Anganwadi centres for the children of the tea estates. There are one or two crèches in some of the functional tea gardens. But hardly there are any caretakers in those crèches. They only provide biscuits and some milk to the children. This minimum facility is also absent in closed tea gardens like Patabari.

According to Shibani the AWC take care of the children only for a few hours in the morning and provide a single meal in a day. The mothers of the children have to go to work in the gardens or the rivers and forest early morning. They hardly get any time to feed or take care of the children throughout the day. Therefore, the children do not get food on time or require attention due to the lack of day care centres or crèches in the closed tea estates. In addition, there is a wide prevalence of severe malnutrition among children in the tea gardens as they do not receive a balanced and nutritious diet throughout the day.

9.5. The State Action against Hunger and Inequality (SAHAI) in Abandoned Tea Plantations of Dooars Region

State Action Against Hunger and Inequality (SAHAI) is a poverty alleviation program launched in 2007 by the Department of Panchayat and Rural Development, Government of West Bengal. The program was started in response to Rural Household Surveys (RHS) undertaken by the state government in the early 2000s and the 61st round of the National Sample Survey Office (NSSO) which revealed that a significant rural population is unable to afford two square meals daily due to widespread poverty and food insecurity (GoWB, 2007; Chaudhuri et al., 2014). Addressing the findings of NSSO and Rural Household Surveys, the program aims to ensure at least one square meal a day for the rural elderly, destitute, and vulnerable population groups facing food insecurity. The SAHAI program was designed to improve the conditions of the poorest of poor sections through a series of interventions at two levels. Firstly, it calls for strengthening the implementation and enhancing the scope of existing

welfare schemes including Mid-day Meal (MDM), Supplementary Nutrition Programs (SNP), Public Distribution System (PDS), and Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS). Secondly, the SAHAI program also focuses on undertaking a series of new initiatives including special pensions, increased PDS quotas, community kitchens, winter garments, disability support, land distribution, farming assistance, community housing construction, and support for students and destitute individuals (GoWB, 2007). The SAHAI Program addresses malnourished individuals and tuberculosis patients, emphasizing a personalized diet chart in consultation with the Block Medical Officer of Health. The program provides flexibility to the Gram Panchayats to identify and implement interventions beyond the specified guidelines.

The beneficiaries of the SAHAI program are to be identified through a detailed survey based on parameters from the Rural Household Survey (2002-2004) conducted by the state. It targets the poorest individuals who struggle to afford one square meal daily, considering factors such as employment and livelihood status, condition of health and illness, purchasing power, dependency, persons affected by accidents or hazards, destitution, and availability of shelter among others. Gram Panchayats initiate the identification of beneficiaries in coordination with Self-Help Group networks at the community level, followed by rigorous verification at the block and Panchayat Samiti levels.

The SAHAI program is implemented through Self-Help Groups (SHGs), Non-Government Organizations (NGOs), or civil society organizations identified by the Gram Panchayat and Panchayat Samiti, with a preference for women's Self-Help Groups. The guidelines of the program mandate monthly monitoring by Panchayati Raj Institutions, Block Development Officers, or Sub-divisional Officers, with provisions for regular beneficiary list updates and progress record monitoring by Self-Help Groups. The guidelines of the SAHAI program do not delineate a specific budgetary allocation provision for the program. Instead, the guidelines propose ad-hoc or provisional measures to secure funding for the program, often entailing the reallocation of funds from other programs, such as the Backward Regions Grant Fund (BRGF) (GoWB, 2007).

However, when it comes to the closed tea gardens in the Alipurduar district, the scope of the SAHAI program is largely restricted and becomes a target-oriented nutrition program focusing only on a selective and limited group of people identified as beneficiaries of the program. Under this program, a mid-day meal is provided through a SAHAI kitchen to the elderly persons, the

destitute, and the poorest of the poor. This section attempts to analyse the functioning of the SAHAI scheme and also highlights some of the key challenges in the operationalizing of the SAHAI in the closed tea gardens of Alipurduar district. This section is based on the in-depth interviews of the SAHAI Supervisors, Workers, SHG Members, and the beneficiaries of the SAHAI kitchen conducted during the fieldwork at the Patabari Tea Estate as well as Rethi Tea Estate.

9.5.1. Community Kitchen of SAHAI in the Abandoned Tea Plantations of Dooars

In the closed and abandoned tea plantations in the Dooars region, community kitchens run under the SAHAI scheme provide a mid-day meal to the most vulnerable section of the population. The beneficiaries of the SAHAI program in the abandoned tea plantations are predominantly elderly individuals, people suffering from chronic illnesses, and destitute elderly persons left without family members to provide support.

In the Patabari Tea Estate, three Community Kitchens, situated at various locations within the estate and spaced 1.5 to 2 km apart, cater to a total of 155 beneficiaries, including 90 females and 65 males. On the other hand, the single Community Kitchen located in the main division of the Rethi Tea Estate hosts provides free lunch to 56 registered beneficiaries, including 20 females and 36 males. However, neither tea plantation has a dedicated infrastructure or separate building for the Community Kitchens, leading both community kitchens to operate in temporary locations. The first Community Kitchen at Patabari Tea Estate operates from an Anganwadi Centre within the plantation, while the other two kitchens utilize the courtyards of two labor quarters situated in the labor lines of Patabari Tea Estates. The community kitchen in Rethi Tea Estate operates within the premises of the abandoned tea plantation hospital.

The community kitchens provide cooked meals for lunch free of cost to the registered beneficiaries. The community kitchen at the Upper Line of Patabari Tea Plantation had a menu posted on the walls of the kitchen listing daily food items available from 12 pm to 2.30 pm. The food chart includes *Bhat* (cooked rice) and *Dal* (lentils) as daily staples, accompanied by a choice of *Aloo Bhorta* (mashed potatoes), *Soybean Jhol* (watery curry of soybean) or *Sabji* (mixed vegetables). The community kitchen provides chicken curry and egg curry in the non-veg option once a week to its beneficiaries.

In the Patabari Tea Estate, six Self-Help Groups were identified from the *Kalyani Mahila Sangh*, a village-level Self-Help Group Cluster, to manage the three community kitchens at the Patabari Tea Estate. Similarly, *Roshni Mahila Sangh*, another village-level Self-Help Group

Cluster comprising twelve Self-Help Groups operationalized the community kitchen at the Rethi Tea Estate. Each month, a community kitchen is operated by a Self-Help Group, selected on a rotational basis from the village-level Self-Help Group clusters. A Self-Help Group comprises 10-15 women members from the tea plantations, registered under the Rural Development Department of the district administration, with a joint savings account in a nationalized bank. The members of each Self-Help Group select a secretary and cashier among themselves to administer the group democratically by organizing monthly meetings. It was observed during the fieldwork that the members of a Self-Help Group organize themselves into small teams of 2-3 women, distributing the monthly work at the community kitchen among themselves. Each team assumes the responsibility of cooking food at the Community Kitchen for a week. If any team member is absent on a particular day, her duties are shared by the other group members.

The daily operations of a community kitchen are overseen by a Self-Help Group member called *SAHAI-Bandhabi* (meaning female friend), responsible for supervising, maintaining records, attendance registers, and managing finance accounts. She reports to the Office of the Block Development Officer. Parvati Ekka, a 32-year-old tribal woman, works as the cashier of a Self-Help Group at Patabari Tea Estate. She is a high school graduate and serves as the *SAHAI-Bandhabi* of the community kitchens on the plantation. Parvati travels daily on a cycle between three centers, ensuring timely food preparation and distribution. Similarly, Lipika Chhetri and Babita Chhetri fulfill the role of *SAHAI-Bandhabi* in Rethi Tea Estate. Lipika Chhetri, a 34-year-old Nepali woman, holds the position of member secretary, while Babita Chhetri, a 30-year-old Nepali woman, serves as the cashier of a Self-Help Group affiliated with Roshni Mahila Sangh. In the SAHAI program, the budget for a single meal is INR 20 out of which INR 18 covers the cost of food grains, groceries, and firewood. The remaining INR 2 is given as remuneration to the *SAHAI-Bandhabi* for supervisory work and maintaining the register and finance of the community kitchen.

It has been found in different study reports that the crisis followed by the closure and abandonment of the tea plantations has resulted in the loss of livelihood, wages, and social security of the plantation communities in the Dooars region. Consequently, the crisis triggered the death toll due to hunger and starvation, especially among the vulnerable sections within the plantation communities. It becomes evident from the field narratives that the community kitchen played a significant role in hunger and starvation deaths in the abandoned tea plantations. The SAHAI program categorically addresses the poorest of the poor, destitute,

chronically diseased, physically challenged, and elderly who do not have any social support or means of livelihood. Therefore, a minimum of one mid-day meal provided by the community kitchen to this vulnerable group of the population became crucial for their daily survival as they have no other means of support. For instance, Pashupati Lakra, a 65 years old Adivasi man is a former permanent labourer of Rethi Tea Estate. He has been suffering from chronic asthma since 2015. He lives alone in a labour quarter at the hospital line of Rethi Tea Estate. His daughter was married to a worker at Nagdala Tea Estate. He is a beneficiary of the Community kitchen at Rethi Tea Estate. Pashupati described the importance of Community Kitchen for his survival.

> I cannot cook twice a day. I am not able to do much work nowadays given my illness. I feel exhausted and have shortness of breath if I do heavy work. So, I eat whatever I get from the centre (SAHAI kitchen) in the afternoon. These girls have kept me alive by giving me food. Otherwise, what would I have eaten? If there is some extra rice, they often give me that for the night as well. If my health is well, sometimes at night, I cook rice from the *Ration Dukan* (PDS shop). My niece also gives me food in the night occasionally. This is how I have been living here.

Lipika Chhetri, the *SAHAI-Bandhabi* at Rethi Tea Estate said:

> We distribute food to 40-45 people daily from our kitchen. Some of them cannot come due to illness or someday to bad weather conditions. We try to deliver the food to their homes in the labour lines through the other people who come to the centre. Sometimes, we also send the food through their neighbours if they pass nearby the kitchen at that time. We request them to deliver the food. Otherwise, these poor people will remain hungry throughout the day.

The present study highlights that the community kitchens under the SAHAI program played a crucial role in providing a daily mid-day meal for the poorest, destitute, chronically diseased, physically challenged, and elderly who lack social support or livelihood. Most beneficiaries of the SAHAI program are elderly, tribal, and Dalit, and many widows living in poor conditions. The community kitchen ensures food reaches those in need, preventing hunger throughout the day.

9.6. Challenges faced by the Community Kitchen in the Abandoned Tea Plantations

The SAHAI program faces multiple challenges in the implementation of the program in the two tea gardens of the Dooars region.

9.6.1. Limited Infrastructure in the Tea Estate

In Patabari Tea Estate, one of the three community kitchens lacks a separate building, with the Bishua line centre operating under a roadside tree due to the absence of government funds for infrastructure. The government did not provide any additional funds for infrastructure development to construct a separate kitchen for the program. The supervisor mentioned that initially one of the grocery shopkeepers had given his courtyard to cook and distribute the meal. However, after a few months, the shopkeeper refused access to his courtyard. Thereafter, the SHG members prepare the food in their own homes and distribute it among the beneficiaries under a roadside tree. Parvati Ekka said:

> It is really difficult to carry the cooked meals of 50 people from home to the tree shed. It becomes more difficult during the rainy days. There are no Anganwadi Centres or Primary schools in this line to whom we can request to use their kitchen.

During my visits to the PTE, I observed the male family members helping the SHG members in carrying the big utensils on their cycles to the Centre. In another community kitchen during my visit, the food was being cooked in the old kitchen room located on the premises of the Upper Line SSK School at Patabari Tea Estate. The school authorities had given this room to cook to the women of the SHGs in the tea garden. The school cooks the mid-day meal for children in the newly constructed kitchen in the school area. The community kitchen at Rethi Tea Estate functions in the abandoned one-room kitchen of the Tea Estate Hospital. Lipika shared:

> This is a very old building of the hospital. There are many holes in the roof (made of a tin sheet) of the building. The rainwater pours down from the roof during monsoon days and makes the floor dirty. One of the wooden doors has also broken down for a long time. Dogs can easily enter the kitchen if no one is around. We also can't keep our utensils here in the kitchen at night. Every day, we take the utensils home after cooking and bring them on the next day. We do not have any other place to cook the food other than this building.

In Patabari Tea Estate, one of the three community kitchens lack a separate building, with the Bishua line centre operating under a roadside tree due to the absence of government funds for infrastructure. Initially, a shopkeeper provided in his courtyard, but later withdrew permission. The SHG members now prepare and distribute meals at the roadside tree, facing difficulties during rain and lacking nearby facilities like Anganwadi Centres or Primary schools. Male

family members assist in transporting utensils. In another kitchen at Patabari, the Upper Line SSK School premises are used for cooking. Meanwhile, the Rethi Tea Estate community kitchen operates in the dilapidated one-room kitchen of the Tea Estate Hospital, facing challenges such as a leaky roof, broken doors, and the need to carry utensils home daily due to a lack of storage space.

9.6.2. Irregular Update of Beneficiary List

The maintenance of the beneficiary list within the SAHAI Program lacks regularity, with infrequent updates. Despite the presence of numerous eligible elderly individuals awaiting inclusion, the process remains stagnant. Lipika said:

> We have 46 people this year (2020) on our register. Thera are people who are really poor, or handicapped and do not have a family. But they are not on the register. There are 5-8 people who also come to collect food. We cannot deny to give them food. They are our people from the tea estate only.

The Self-Help Group (SHG) members express their limitations due to budget constraints. The SHG members advocate for routine surveys to keep the list updated. However, the update of the register is done annually during field visits by officials from the BDO, who make infrequent appearances. Therefore, the delay in updating the register hinders the program's responsiveness to the evolving needs of the elderly in the community.

9.6.3. Limited Intervention of the Scheme

The SAHAI program offers a single lunch meal each day, and some beneficiaries divide it between lunch and dinner due to a lack of other means of support. While the program aims for beneficiaries to eat at the community kitchens, most prefer taking the meal home, and sharing it with family members. Many recipients have dependents who cannot earn, and dignity concerns lead them to avoid eating in public. The SAHAI Supervisor, Parvati Ekka responded that:

> A few of them do not have any other means of support. They take this meal and divide it for lunch and dinner. We try to give some extra rice during lunch, but we can't do that every day. In those days they were dependent on their neighbours. If someone gives them food, then they eat otherwise they remain hungry without food at night and in the morning.

On enquiring with the supervisor, if people eat here at the kitchens. She said:

> We always ask them to eat here. So, if one needs extra rice we can give them. But very few people eat here at the centre; most of them take the meal home.

She further said that many of the beneficiaries share the food with other members of the family. A few of them have grandchildren or other members who are unable to earn. Most of them also do not want to eat sitting in an open public place. It is a matter of dignity for them. They do not want to be dependent on others, but the situation has compelled them to collect food from SAHAI kitchens. While saying this, they also understand the importance of the SAHAI program in their lives. It has been an important system of life-support for them to survive. Thus, the SAHAI program becomes a target-oriented Supplementary Nutrition Program that provides mid-day meals through community kitchens only to a selected group of people such as the elderly persons, people suffering from chronic diseases, destitute and poorest of the poor who were identified as beneficiaries of the program.

9.6.4. Delay in Release of Funds

The SAHAI program in Patabari Tea Estate faces severe challenges due to chronic delays in the release of allocated funds. The SHG members complained of not receiving the monthly budgetary allocation for several months. For instance, they did not receive any funds almost for eight months from January to October 2019. Due to this delay, the Group members came under a debt amount of INR 1.5 lakhs borrowed from the market sources. The SHGs often had to invest their group savings and loan amount (which is given to the SHGs to start employment-generating activities) to buy rations for the SAHAI programs from the market. The SHG members said that they have complained to several offices including the Panchayat office, block development office, as well as the district headquarters. However, they had failed to receive any funds for the entire period of eight months. Due to this delay, they had exhausted all their savings that resulting in the discontinuation of the service. For instance, Parvati Ekka said:

> We did not stop the services in the first one or two months when we were not paid. We continued the services for eight months without any payment. We did not stop because this job is also important for us. We got this job after a long time doing work under the Self-Help Groups. And also, we did not want the people who depended on the SAHAI kitchen to suffer and remain hungry. Given the tremendous delay in the release of the funds from the government, we had finished all our own SHGs savings in running the community kitchen.

However, the payment delay for the SAHAI program remains unresolved. SHG members reported sporadic payments, causing them to dip into their savings. Budgetary allocation led to program discontinuation from Nov 2019 to Jan 2020 at the Patabari Tea Estate, highlighted in a local video report[30] and newspaper article. After this coverage, the district administration released the pending funds, and the program resumed in Jan 2020. Lipika and Babita pointed out the challenges faced by Self-Help Groups in running the community kitchen at Rethi Tea Estate due to delays in the fund release by the block administration. Babita Chhetri (30-year-old Nepali woman) another *SAHAI Bandhabi* at Rethi Tea Estate said:

> It is not possible for a single Self-Help Group to run the SAHAI Kitchen for an entire year. A single SHG doesn't have that much money in the account to invest in SAHAI Kitchen. Therefore, multiple Self-Help Groups run the kitchen in different months of the year. Each group from our SHG Sangh (village-level cluster) runs the kitchen for a month only.

Lipika shared their experience in receiving the funds for the SAHAI Kitchen in 2019. The Self-Help Group members of Rethi Tea Estate have submitted applications on several occasions to the block and district administration for the timely release the funds for the community kitchen.

> "In December 2019, we received the payment for one and half years together. We had been running the kitchen investing our own money from July 2018. We had submitted our bills to the BDO Office always on time. But we did not receive the payment. We had also submitted applications for payment to the BDO office several times. Once the officer said that they did not have funds for the kitchen. Once we had also gone to the Dooars Kanna (the District Magistrate's Office at the District Headquarters) for the same reason."

The SAHAI program at the abandoned tea plantations in the Dooars region faces a critical challenge stemming from chronic delays in fund allocation. Despite their commitment to the community and persistence in service provision without payment, the SHGs were forced to borrow heavily from external sources, resulting in a debt burden. The critical delays in fund allocation have not only strained the financial stability of SHGs but have also disrupted essential community services.

[30] In Patabari Tea Garden, SAHAI Yojna Stalled, Video Volunteers, https://www.youtube.com/watch?v=gTC9BKgfok4 accessed on 8 Feb 2021

9.6.5. Low Renumeration of the Self-Help Group Members

The SHG members face challenges due to the meagre remuneration they receive for their cooking services. Some SHG members are hesitant to work in community kitchens due to insufficient compensation and the demanding nature of the work. The women members of the SHGs are compelled to work as daily wage labourers which offer higher daily wages, as they strive to secure essential income for their families. Lipika, the SAHAI Bandhabi at Rethi Tea Estate informed:

> Some of our SHG members do not want to come to the kitchen to cook because of the very little money the get working here. They prefer to go to other places to work as daily labour where they at least get (INR) 250 to 350 rupees per day based on the work. We also cannot force them to come to work at the centre losing their daily wage. They have to earn *Dui Paisa* (money for bread and butter) for their children and family.

The study shows that the SHG members encounter challenges due to the inadequate compensation they receive for their cooking services in community kitchens. The low remuneration discourages some members from participating. Many women prefer working as daily wage labourers elsewhere, where they can earn higher daily. The demanding nature of kitchen work and the low pay contribute to the reluctance of SHG members to engage in community kitchen activities, as they prioritize securing essential income for their families through alternative employment opportunities.

9.6.6. Poor Quality of Food

Fulmoni Minj, a 65 years old Adivasi woman from RTE who along with her husband is a former permanent labour and lives in a labour quarter in the hospital line of Rethi Tea Estate. Their son is a migrant worker in Kerala. Fulmoni and her husband are dependent on the remittance sent by their son from Kerala. In 2017, Fulmoni had a road accident as a result she had a fracture in her right leg which did not recover fully. Fulmoni is a beneficiary of SAHAI kitchen at Rethi Tea Estate. Fulmoni complained about the quality of food given to the beneficiaries from the community kitchen. She shared:

> The food is not good at all. They have been giving us only *Patla Musoor Dal* (watery red lentils), and *Aloo Bhorta* (mashed potato) with *Bhat* (steamed rice) for the last ten days. It is hard to eat the same Aloo Bhorta every day. On some

> days, they give us only *Soybean-Aloo Tarkari* (Soybean-potato curry) with *Bhat*. We get egg curry only once or twice a month.

The above challenges in the functioning and the implementation of the community kitchen in the two abandoned tea plantations of Dooars region have resulted in the poor quality of food provided to the elderly persons in the community.

9.6.7. Absence of Legal Framework of the Scheme

It is well argued that the rights-based approach to social security in India has contributed to establishing a functional and accountable system by converting social benefits into legal entitlements. Drèze and Khera (2017) argue that it also introduces rigidity and centralization in policies, making modifications difficult despite the potential need for adjustments over time. However, it has been witnessed that the absence of legal entitlements has provided an opportunity for the state to implement the SAHAI program reluctantly. This is clearly evident from the delay in releasing funds and the makeshift arrangement of operationalizing the community kitchens in the abandoned tea plantations of the Dooars region. Therefore, the demand from the grassroots has been taking its ground to make the SAHAI program legally entitled to ensure the right to food for the most vulnerable section within the marginalized society. During the December 2020 fieldwork, I met Dr. Anamika Khatri a prominent figure in the West Bengal Agricultural Labour Unity (WBALU), an independent trade union. Her organization played a crucial role in documenting the crisis in the Dooars region's tea plantations and advocating for the social security and rights of plantation workers at the Supreme Court of India. She said:

> I would prefer to understand the SAHAI as a makeshift arrangement taken by the District Administration under peer pressure from the citizens' groups to control the hunger and starvation-induced deaths in the tea gardens of the Dooars region. You can't expect regularity in implementing a scheme until it was passed as a bill in the assembly or ordered by the court of law.

She suggested that community kitchens were started for the vulnerable population groups in the closed tea plantations as a response to the debates followed by the starvation deaths reported from the closed tea plantations in the national and international media. However, there have been no separate budgetary allocations for SAHAI schemes in the state. Therefore, the scheme has remained a provisional arrangement without legal protection. The financing of the community kitchens has been done with the different development-related funds by the district

administration, which is subject to availability. Therefore, there has been a chronic delay in releasing funds for the scheme from the district administration.

9.7. Conclusion

The state introduced an important intervention namely SAHAI in the abandoned tea estates of Dooars. These two programs have immense potential to significantly impact the lives of children, adolescents, senior citizens, and people with chronic illnesses in the abandoned tea plantations of the Dooars region. While the introduction of the ICDS in the abandoned tea estates of the Dooars region represents a significant effort by the state to address the pressing issues of child malnutrition and starvation in the region, critical shortcomings have hindered the full realization of their potential impact. The ICDS scheme, aimed at providing nutritious foods and healthcare services through Anganwadi Centres, holds promise as a vital intervention to mitigate the adverse effects of the immediate closure of tea estates on the vulnerable populations in Dooars. However, the chronic delay of funds, limited human resources, and inadequate physical infrastructure have severely hampered the effective implementation of the program. These challenges undermine the objectives of ICDS, preventing it from reaching its full potential in addressing the pressing health concerns of children, adolescent girls, pregnant mothers, and individuals with chronic illnesses. Moreover, the ownership dilemma regarding land in the tea gardens poses a significant obstacle to establishing public health institutes. The allocation of land to private owners of tea estates complicates the establishment of much-needed healthcare facilities, perpetuating the existing healthcare gaps in the region. The closure of existing daycare centres in tea plantations necessitates an urgent increase in the capacity of Anganwadi centres. This reflects a crucial need for comprehensive planning and resource allocation to adapt to the changing landscape and the requirements of the community. Failing to address these issues may result in the perpetuation of health disparities and the continued vulnerability among the affected populations.

The community kitchen under the SAHAI Scheme becomes the sole life support by providing as minimum as a single meal every day to the elderly vulnerable population who, otherwise, would have died due to starvation. The program has made a critical intervention to address the hunger and starvation deaths which had become a serious issue after the immediate closure of the tea estates in the Dooars region. However, it has been found that this intervention faces several challenges in terms of structural and non-structural issues in the abandoned tea plantations of the Dooars region. The community kitchen under the SAHAI scheme in the

abandoned tea plantations in the Dooars region suffers from a serious implementation problem and poor budgetary allocations. The welfare intervention under the SAHAI scheme in the abandoned tea estates was introduced as a makeshift arrangement and thus lacked statutory and legal protection. The target-oriented approach SAHAI schemes have excluded many of the poorest of the poor from the welfare interventions. The community kitchens have provided essential support to the most vulnerable in Patabari Tea Estate, preventing hunger and starvation. However, the target-based approach excludes many in extreme poverty, leading to deprivation and hunger. This approach has been criticized for excluding genuinely needy individuals and reducing the effectiveness of welfare schemes. Providing only one meal a day for adults raises concerns about meeting nutritional requirements. Budgetary challenges, including delayed fund releases, further increase the vulnerability of poor beneficiaries, leaving them hungry.

Appendix-II

Pandemic in Plantations: Unfolding of COVID-19 in Tea Planatations of the Dooars Region

10.1. Introduction

This chapter attempts to understand the livelihood, health, and illness among the tribal communities during the COVID-19 pandemic in the Dooars region with a special reference to the abandoned tea plantations. This chapter aims to unfold the crisis induced by the COVID-19 pandemic in the tea plantations of the Dooars Region, specifically during the first wave of the pandemic from March to November 2020. The chapter is divided into five broad sections. The first section discusses the spread of the Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2) or COVID-19. The second section discusses COVID-19 and the lockdown in the tea plantations of Alipurduar. The third section discusses the lockdown and its implications in abandoned tea plantations. The fourth section examines the response of the health systems to the pandemic specifically COVID-19 testing and quarantine facilities in tea gardens in Alipurduar. The fifth section discusses the increased burden of COVID-19 on the health workers in tea gardens as well as the disruption of the essential health facilities during the COVID-19 pandemic followed by a conclusion.

The chapter is based on fieldwork conducted with communities living in Rethi Tea Estate and Patabari Tea Estate in November- December 2020 and February 2021, the abandoned tea plantation in the Dooars region. It is based on in-depth interviews with the community members and community health workers in both the tea gardens. In addition, this chapter is also substantiated with secondary literature available online, particularly in newspapers, articles, and guidelines issued by the Health Department in the district. Apart from this, the chapter is also based on the participant observation undertaken at various tea gardens I visited during the relief work I had undertaken with a local civil society organization in some of the closed tea gardens in the Alipurduar District from March 2020 onwards.

10.2. The Spread of a New Virus

The first trace of COVID-19, a contagious disease caused SARS-CoV-2 was found in Wuhan City, China, in mid-December 2019 (Laxminarayan et al, 2020). The disease began to spread rapidly around the world by March 2020. The first confirmed case of COVID-19 in India was reported on 30th January 2020 in Kerala among three medical students who had a recent travel

history to Wuhan, China (Kaushik et al., 2020). On the same day, the WHO declared the outbreak of coronavirus a Public Health Emergency of International Concern (PHEIC). It was declared a pandemic by the WHO on 11th March 2020 (Jee, 2020). The news channels had started reporting COVID-19-positive cases from different parts of the country. Even the TV channels and commercial breaks had started giving 'handwashing breaks' for 20 seconds in the middle of their shows asking people to take a break to wash their hands with soap. The Department of Health and Family Welfare, Government of West Bengal, has advised the citizens to strictly follow numerous standard preventive measures. These advisory preventive measures include implementing stringent lockdowns, using face masks, regular hand hygiene, practicing social distancing, contact tracing, and quarantine protocols, to break the chain of transmission of the Covid-19 virus (Singh et al, 2020).

10.2.1. COVID-19 in North Bengal

In mid-March 2020, an 18-year-old student returning from London became West Bengal's first confirmed COVID-19 case (Singh, 2020). The state recorded its first coronavirus death on 23rd March 2020 involving a 57-year-old patient who had recently travelled to Italy (Singh, 2020). The fear of COVID-19 had already started by this time (Chowdhury & Mitra, 2020). On March 28, the first case in North Bengal was reported, a 57-year-old woman from Kalimpong, sparking panic across the region (Goswami, 2020). She had returned from Chennai and visited clinics in Siliguri before succumbing to the virus at North Bengal Medical College and Hospital, marking the state's second COVID-19 death (Giri, 2020). The rising number of cases drew attention to the health infrastructure, particularly at North Bengal Medical College and Hospital, by the end of the first week of April 2020. On April 7, the state reported 69 active cases, which escalated to 1,548 by May 7, with 1,101 cases still active. As of August 10, 2020, West Bengal had reported a total of 98,459 positive cases, with 70,328 recoveries and 2,100 deaths (Covid-19 Health Bulletin, GoWB, 2020). The state's death toll reached 1,000 by July 15, and the total COVID-19 positive cases crossed 50,000 on July 23 (Covid-19 Health Bulletin, GoWB, 2020).

10.2.2. Locking and Unlocking the Nation

The Prime Minister of India announced a complete lockdown of the entire country from 24th March 2020. Initially, the lockdown was announced for 21 days to control the spread of the Coronavirus. The lockdown limited the movement of the entire 1.38 billion populations of India by restricting the movement of people, social gatherings, meetings, and use of public

spaces. It also closed down all the establishments, including offices, schools, colleges, markets, factories, commercial units, production houses, recreation facilities, and the entire transport system in the country. The only relaxation was given to a few essential sectors, such as Banking and Medical Care institutes. The lockdown extended in phases until May 2020, with different zones (green, red, orange) and corresponding restrictions. Starting in June, a gradual reopening plan called "Unlock" was introduced, with multiple phases, each further easing restrictions. However, in 2021, due to a severe second wave of COVID-19, some states imposed complete lockdowns in April. This wave lasted from March 13 to June 19, 2021, spanning 99 days (Agarwala et al., 2022).

10.3. COVID-19 and Lockdown in the Tea Plantations of North Bengal

The early spread of the COVID-19 virus in North Bengal in April 2020, followed by the subsequent lockdown, had profound implications for the tea estates in the Dooars region. The pandemic posed serious challenges to the survival of people in the closed tea estates, increasing their insecurity and vulnerability. While work in other sectors remained closed for several months, tea plantation work resumed within a month after the lockdown, compelling workers to return amid fears of coronavirus exposure.

The first reported cases of COVID-19 in the tea plantations of North Bengal surfaced in late July 2020, with positive tests from the Chuapara Tea Estate and Mechpara Tea Estate. A fear heightened in August when the Satali Tea Estate reported an average of 30 workers with high fever daily. Further outbreaks occurred in Haldibari Tea Estate, Jiti Tea Estate, Chuna Bhati Tea Estate, and other estates in Madatihat-Birpara block. Civil society organizations expressed concern about community spread due to poor living and sanitary conditions in the plantations (Lakra, 2021; UBS, 2020).

In Patabari Tea Estate, the CHWs including the CHO, ANM, and ANM supervisor, were infected in the first wave of the pandemic. Eight people tested positive from March to November 2020 in Patabari, with a similar pattern in Rethi Tea Estate, where only five people were infected in the same period. Most of the infected patients in both estates were male migrant labourers who had returned from outside the state. It was found from the discussion with the CHWs at the HWC at Patabari tea estate that the CHWs, including the CHO, the ANM, and the ANM supervisor, were infected with the COVID-19 in the first wave of the pandemic.

10.3.1 Fear and Stigma of the Disease in the Tea Plantations

The spread of COVID-19 triggered fear and sigma among the tea plantation communities in the Dooars region. The fear of death caused by the newly spread disease grasped the people's consciousness as the nature of the disease was completely new to people. For instance, the first death due to COVID-19 in the Alipurduar district was reported on 19th April 2020. A senior citizen from Kalchini block of Alipurduar district reportedly died at the Integrated AYUSH Hospital, Tapsikhata, which was turned into a COVID-19 Care hospital by the District Health Administration. At midnight on 20th April 2020, two police vans and an earthmover entered the river bed of Torsha near Jaldapara National Park of Salkumar Hat. The villagers suspected that the dead bodies of COVID-19 infected patients were brought silently by the police for burial on the river bed near the forest at midnight. The villagers did not get a satisfactory answer to their questions on this mysterious incident of midnight. Therefore, they started protesting and stopped the earthmover at the river bed. The local villagers claimed that the police had fired two rounds of gunshots in the air. This incident triggered violence as the villagers attached the police vans and set them on fire. The following day, the news of this particular incident spread rapidly all over the region, along with several rumours. Soon, the local news channels started broadcasting the news on TV (CN Calcutta News, 2020[31]). Patabari Tea Estate is located very close to this area, a few kilometres away on the other side of the forest. This particular incident had spread increased fear of deaths among the marginalized forest village dwellers and the tea garden communities in the region, given the suspicion that the dead bodies of COVID-19 patients were cremated near their plantations. People started believing that the death toll due to COVID-19 had started reaching its peak and that the district administration had to bring dead bodies from the city for burial in the forest at midnight.

Gopal Munda is 36 years old migrant labourer from Rethi Tea Estate. He was working at the construction sites as a daily waged labour in Ernakulam city of Kerala. At the end of May 2020, he returned home to Rethi Tea Estate on a "Shramik Special Train[32]" from Kerala. He said

> I was very scared. I thought I wouldn't be able to return home. I came to know about the special train from my friend. We got on the train without thinking anything. But the train was full of workers. I thought I would die on the train only with Covid-19.

[31] [31] In the darkness of the night again, rumours about dead bodies and gunshots resounded, CN Calcutta News, https://www.facebook.com/livecalcuttanews/videos/545446856346512, Accessed on 25 April 2020

[32] Government of India introduced "Shramik Special" trains on 01st May, 2020 to move migrant workers, pilgrims, tourists, students, and other persons stranded at different places due to lockdown.

The above discussion highlights the widespread fear and stigma that gripped the tea plantation communities in the Dooars region amid the pandemic. The initial uncertainty and lack of understanding about the novel virus fueled anxiety, particularly following the mysterious incident near Jaldapara National Park. The suspicion and rumors surrounding the alleged midnight burials of COVID-19 victims intensified the already heightened fear among marginalized forest village dwellers and tea garden communities. The incident, marked by violence and clashes with the police, became a focal point for the community's apprehensions, amplifying the perception that the death toll from COVID-19 was escalating. The narrative of the migrant laborer, further underscores the widespread fear, grappling with the uncertainties of the pandemic, including the apprehension of contracting the virus during their journey home.

10.3.2. Lockdown and Suspension of Work in Tea Plantations

The work in the tea estates of North Bengal was never completely suspended during the nationwide lockdown except for the initial few days. The Government of India announced a strict nationwide lockdown on 24th March 2020. Consequently, all the industrial units were closed down, and public gatherings were prohibited except the emergency services. However, this had led to confusion about the functionality of the tea gardens. Therefore, the Tea Board of India issued a circular on 26th March 2020, stating that all tea gardens are under lockdown and will not be operational (Singh, 2020).

In this situation, the workers and the trade unions demanded full wages for lockdown days, which the various tea plantation owners' associations rejected (Das, 2020a). The Planters Associations had entirely denied the demand for wages during this lockdown, arguing that the tea plantation industry in India was already in crisis. This lockdown will put an additional burden on the survival of the gardens in the long run. The plantation owners' associations had appealed to the state and the Central Governments to allow them to work as they were in the middle of the first harvesting season, known as first flush tea. It is the most productive and profitable harvesting season of tea in a year as it has a higher demand for export of its good quality. Most of the tea garden workers' unions opposed the decision to resume work in the tea plantations amid the lockdown. However, the tea plantations of North Bengal were reopened on 13th April 2020 amidst the nationwide lockdown with up to 25 percent of the workforce (Tamang, 2020). However, the Government of India had already given a green signal to resume work at tea plantations (TT Bureau, 2020).

According to the guidelines issued by the Department of Labour, Government of India, the labourers in the tea plantations would be employed following a rotation system where only 25 percent of labourers would get to work at a time, and the rest of the workers would wait for their turn. However, different plantation owners' associations kept advocating for the Government to resume work on the plantations with a full workforce. As a result, the West Bengal Government allowed the plantations to deploy 50 percent of workers on 11th May 2020 (PTI, 2020 A). After a few weeks of this decision, on 29th May 2020, the state allowed 100 workers to be deployed at the tea plantations amid the countrywide lockdown (PTI, 2020b).

The tea gardens were among the first very few industries to resume functioning within a few days of the announcement of the lockdown. It is to be mentioned that the plantations follow 'no work, no pay' rules, and the labourers do not get wages on holidays or days without work. The tea estate workers were compelled to resume work at the tea estate, suppressing their fear of getting infected with the virus as neither the plantation owners nor the state had agreed to bear the responsibility of providing them rations and paid leave. The workers were under the compulsion to work by risking themselves to infection as a majority of them did not have any other source of livelihood or income. The contractual workers who depended on the plantations for survival are facing increased precarious life in the times of a pandemic.

The plantation workers have very minimum savings exhausted in the first few days of the lockdown. It is important to note here that the tea estates of Dooars pay the workers a minimum of INR 202 as daily wage. Therefore, most of the workers do not have any savings.

In addition, the rations provided to them in the initial lockdown period were about to finish. In this situation, a worker from the tea estate said in a report, "If we do not join the work immediately, our children will die of hunger even before the virus attacks us." (Lalwani, 2020, p. 2).

Similar was the situation even in the abandoned tea gardens of the study. For instance, Anita Oroan, a 48-year-old woman belonging to the Adivasi community, serves as a laborer under the OMC at the Patabari tea plantation in Alipurduar. After her husband succumbed to liver failure resulting from alcoholism a few years ago, Anita, now responsible for four children, with three of them attending school, faced the challenge of supporting her family. Relying on remittances from her eldest son, who had migrated to Kerala, and her wages from the tea plantation, Anita found herself in a difficult situation when lockdown measures led to job losses for migrant workers in the tea plantation areas. Unable to send remittances, Anita's family

struggled to obtain rations from the PDS shop due to the recent introduction of digital ration cards by the State Government. Instead, they received a coupon from the Panchayat office, which is on the verge of running out. Faced with this predicament, Anita, along with numerous other workers, felt compelled to return to work in the plantations, despite the looming fear of contracting COVID-19. Anita said:

> I am scared of the virus. I heard that it killed many people, even a few in our neighboring tea garden. But I have to go to work. I can't sit back at home thinking only about Corona. I need to earn *Dui-Paisa* (money for bread and butter). Otherwise, I have to ask for money from the moneylenders to buy rations for my family.

The casual workers were the first category of employees who lost their employment immediately after the imposed restrictions on using an entire workforce in the tea estates. Even the casual workers were not called back to work after 29th May 2020, when the government called off the restriction on employing the entire workforce at tea estates. Shefali Tanti (35 years) lives with her two children in the Upper Line of the Rethi Tea Estate, which has been closed since 2002. Biresh Tanti, her husband, has migrated with many of his neighbours to Kerala to earn a livelihood. Shefali works as a casual (Bigha) labourer in the Banarhat Tea Estate, located 12 km away from Rethi. Every morning, a tractor with a trolley van arrives at Rethi to collect casual labourers for Banarhat Tea Estate. Shefali and 50/60 other workers, mostly women, go to the Banarhat tea estate to earn a daily wage of INR 202. It was only the permanent labourers who were called back to work. Shefali has once again lost her job due to the Covid-19 pandemic. She said:

> They (from the other tea estate) said they would call us when the situation becomes normal. The trolley van did not come in the morning. I cannot find any job here (in my garden). My husband has not sent money (remittance) since the lockdown started. How shall I feed my children?

The tea plantations were already hot spots of hunger and starvation. In the recent past, it had witnessed a specter of hunger deaths due to the closure of several tea gardens. There is fear amongst the people about the pandemic but what scares them more is the problem of hunger and starvation due to the loss of livelihood.

10.4. Lockdown and its implications in Abandoned Tea Plantations

The government of India announced a complete lockdown of the entire county from midnight on 24th March 2020 within a short notice of a few hours. As a consequence of this sudden

lockdown, the country has seen a severe migration crisis. The migrant workers from the Indian cities started marching hundreds of kilometres on the highways on foot toward their homes. The people who managed to reach their homes, fighting against all odds, faced new challenges. The migrant workers were seen as the carriers of Coronavirus by the local people. The villagers started blaming the migrant workers for the increased number of coronavirus cases in the region (Bhattacharya, 2020). There were reports in the local news media from different tea estates that the migrant workers were not allowed even to enter the village. They were compelled to stay outside the village, in abandoned houses, and temporary tents as the government quarantine facilities were also not available (UBS, 2020).

10.4.1. March on the Road: The Migrants Crisis

One of the immediate implications of the sudden announcement of the nationwide lockdown at midnight on 24th March 2020 was the distress and misery faced by the migrant workers across the country's urban centres. As discussed earlier, the sudden lockdown announcement led to several challenges as many migrant labourers returned to their villages located in different states. The visuals of hapless and poor migrant workers walking away from big cities towards inter-state borders invited severe discussion in the country. The poor migrant workers were compelled to walk from big cities to their villages. Migrant workers from cities like Delhi, Mumbai, and Bangalore could not find transportation, so they walked hundreds of miles to their villages. Some died on the way from hunger, illness, or accidents. The police sometimes mistreated them, and authorities used chemicals to “sanitize” them (TOI, 2020).

The northern districts are a remote and marginalized part of West Bengal, inhabited by scheduled castes, tribes, minorities, and other socially marginalized population groups. The economy is mainly agricultural due to the lack of any heavy or large-scale mechanized industries. This entire Dooars region's agrarian situation has been in distress for the last few decades. One of the main economic pillars of North Bengal is undoubtedly the tea plantations. However, since the restructuring of the trade policies with the implementation of economic reforms, many of the tea gardens have faced severe economic crises, leading to their closure one after another from the early 2000s. Because of this triangular economic crisis, the northern part of Bengal could hardly generate the required employment opportunities for the survival of young generations. Consequently, thousands of working people from rural north Bengal have been forced to migrate for better livelihood opportunities in different metro cities and states of India, leaving their families behind. Many people from the tea plantations of Dooars have

migrated to the states of India in search of livelihood. During this lockdown, a huge number of migrant workers lost their jobs and went back to the plantations (Das, 2020b).

Over the years, the Kingdom of Bhutan in the Himalayas emerged as a major destination for labour migration from the Dooars region. The labourers, especially from the sick and abandoned tea estates of Alipurduar and Jalpaiguri districts, migrate to Bhutan in search of livelihood and a better wage. The daily wage rate in Bhutan for unskilled labour is Rs 450 to 500, and the wage rate for skilled labour is Rs 600 to 650; These are much higher than the daily wage rates offered in the nearby village (Rs 300 for unskilled labour and Rs 450 for skilled labour) (Das, 2020c). Due to the COVID-19 lockdown, the migrant labourers from the tea gardens had lost their employment and were trapped in Bhutan for more than a year. The contractors who employed them had abandoned the labourers, and the administration of the two countries did not make any arrangements for their return or suitable conditions of their stay in Bhutan. Therefore, the labourers decided to start their journey home through such difficult geographic terrain amidst the COVID-19 pandemic. There was a massive influx of migrants to the tea gardens from the highly infected states of Maharashtra, Gujarat, and Tamil Nadu. It is claimed that eight districts in North Bengal have reported 995 COVID-19-positive cases till 11th June 2020, and 95 percent of them are migrant returnees (Giri, 2020). There is a likelihood of increased risk of spread of infection in the tea gardens

At midnight on 20th May 2021, as many as 38 migrant labourers started a journey from the Chukha village of Bhutan in the Himalayas to reach their home in the Dooars region located in the Himalayan foothills. On this journey, the labourers had to cross hills, dense forests, and the violent Torsha River to escape being apprehended by the Bhutan Police and administration. They reached the small town of Jaigaon on the India-Bhutan border the next morning (Choudhury, 2021). A young migrant labourer drowned in the Torsha River while escaping from Bhutan with four others migrant labourers on another similar journey.

10.4.2. Loss of Livelihood and Increase in Hunger in the Abandoned Tea Plantations

The lockdown had resulted in the loss of livelihood of many people in the tea estates, especially those who worked as daily wage earners outside the garden area. The lockdown had forced the women laborers to take up more precarious and vulnerable work to sustain their livelihood. Namita Oroan (30 years) was a permanent worker at the Patabari Tea Estate before the management abandoned it in 2012. Since then, she worked as a daily wage laborer in Hasimara Airbase and sometimes in the MGNREGA based on job availability. Her husband Sukura

Oraon worked as a labourer at a warehouse in Jaigaon town at the Indo-Bhutan international border. He survived an occupational injury a few months before the lockdown. Since then, Namita has been the only employed person in the family. She had started going to the nearby forest to collect firewood and non-timber products with her friends from the neighborhood. Namita said:

> Since the lockdown started, there has been no more work at the Airbase. I also did not get 100 days of work. So, I go to the jungle to collect wood to sell in Hasimara Bazaar. There are also hardly any people to buy the firewood.

Sankari Munda, a 39-year-old tribal woman, resides in a labour line at the Patabari tea estate near the forest with her three children and physically challenged husband. Her livelihood relies on collecting non-timber products from the forest, which she sells locally for income. However, the onset of the lockdown led to the closure of the local market, depriving her of a crucial source of earnings. Additionally, a primary school near her home, where her children used to receive lunch through the mid-day meal scheme was also closed during the pandemic. Therefore, her children did not receive the mid-day meals from the school an important source of nutrition and survival of her children. The school only provided a limited quantity of rice and potatoes in adherence to the state government's guidelines during the lockdown, proving insufficient for her family's needs.

The COVID-19 pandemic had a differential impact on various segments of society, particularly exacerbating the vulnerability of those already marginalized. The tea plantation workers, who were already marginalized, faced heightened challenges and hardships during the pandemic, pushing them to the edge of the margin. The pandemic's consequences were severe, especially in the tea garden communities, a marginalized population group with low-income backgrounds and ethnic minorities who have historically faced systemic discrimination and social inequalities. The Adivasi workers encountered a compounding of pre-existing disparities, making their circumstances even more precarious. The COVID-19 pandemic exacerbated existing inequalities within society, disproportionately affecting marginalized populations.

Mala Oraon (65 years old), an Adivasi woman, was a tea plucker at the Rethi Tea Estate. Her husband, Jawaharlal Oraon, was also a laborer at the same garden. The couple has two sons, Shyam Oraon (29 years old) and Ajay Oraon (25 years old), and one daughter Sibani (22 years old). Shyam worked as a Bigha worker in the garden. Mala Oraon sells firewood in the local market. Mala described her struggle to make a living during the pandemic:

> "*Hum Kuch Bhi Nehi Karte. Kya Karega! Koi Kaam Hi Nehi Hai* (I am unemployed. What shall I do? There is no work here.) I go to the forest to collect firewood. *Bhagwan Jane Kaise Hum Khana Khaye*. (Only the god knows how we managed food!)"

Mala said she occasionally visited the river to work with the sand mining sites. Nevertheless, the work opportunities in the riverbed had dwindled. She mentioned that the river had become increasingly crowded, and there were frequent instances of sudden water surges. Moreover, the river's resources were depleting rapidly, with a scarcity of stone chips in the river bed. She said that the river is also exhausting fast. There are not many *Patthar* (stone chips) in the nearby sites of the river.

10.4.3. 'Physical Distance' and Hand Hygiene Protocol in the Tea Plantations

Maintaining physical distancing is difficult in the tea gardens and labour lines. There is a high risk that if one of them is infected, then it can quickly spread to the others. Tea production necessitates working in groups, such as plucking and weighing. This makes physical distancing challenging to practice. The labour lines where the workers live on the plantations are close in proximity without adequate sanitation and water supply facilities. According to workers, it isn't easy to maintain physical distancing when weighing the tea leaves. Further, the large gathering of people at various points of the production process is inevitable in tea gardens. Even if distancing is maintained during plucking and manufacturing, it becomes difficult to ensure this when tea leaves are weighed or when the sack of tea is loaded in the truck.

Most of the workers had to use one common soap available for them at the worksite, and there were no hand sanitizers or masks. The tea gardens had no health check-ups, basic thermal screening, or testing facilities (Lalwani, 2020). In a few gardens, workers were provided with soap and water when they came to work. However, they are not being provided with any other protective gear, such as masks, gloves, or sanitizers. The dispensaries and the garden hospitals are the first points of contact, which were also ill-stocked and often remain closed. The responsibility for the safety measures is on the owners, but to a large extent, they have never adhered to these welfare measures in the past. It is unlikely that they will do so during the pandemic (Lahiri, 2020).

Mala Tanti (70 years), an Adivasi woman, lived in a labour quarter with her family at the Beech Line at Rethi Tea Estate for more than 40 years until the quarter was vandalized by a group of elephants a few years back. She had to relocate to one of the abandoned Babu-staff quarters

near the garden factory along with her younger son, daughter-in-law, and two grandchildren. Since then, she has been living with her family in a single room as three other families have already occupied the other rooms in the building. When her elder son returned from Kerala during the COVID-19 pandemic, the family had no space to keep him in isolation. At least 20-22 families live in such conditions in abandoned buildings in Rethi Tea Estate. The labour quarters in different labour lines are also mostly in dilapidated conditions due to poor maintenance. These quarters, with two to three rooms, were given to the tea estate labourers a few generations ago. With time, the population has increased in the tea estates, however not the number of the labour quarters. In addition, the labourers in tea estates do not own any houses. They are also not entitled to any home under various Government housing schemes as the labourers do not have any land in the tea gardens. Over the period, the labour lines became overpopulated and turned into slums due to the estate management's ill-maintenance despite the housing entitlements under the PLA, 1951. The labour lines where the workers live on the plantations are close in proximity without adequate sanitation and water supply facilities. In these circumstances, maintaining physical distancing is a significant concern in the labour lines of the tea plantations.

10.4.4. PDS and MGNREGA during the Pandemic

The state government had promised to provide free rations through the PDS system till September 2020 to needy families according to their ration card category. However, West Bengal has witnessed several protests against ration dealers, with beneficiaries complaining that the system is defective. Several families were excluded from the PDS as they do not have the digital ration cards introduced recently by the Government of West Bengal. It was found during the fieldwork that a significant number of the tea plantation workers did not have the digital ration card. Consequently, thousands of villagers were seen queuing outside the Food Supply Office in the Block Offices to apply for new ration cards or to update their old cards. Bishnu Mahali (57 years) a former worker at Rethi Tea Estate said:

> I went to the Panchayat Office for the ration card (before Covid-19). We had applied for six ration cards in our family. But the new cards were given only to my son and daughter. There were mistakes in our name (printed) on the card. So, we had to return it for correction. Now, the ration dealer only gives rice and wheat flour to two people in my family.

Later on, temporary coupons were distributed to the people who did not have ration cards from the panchayat office to collect ration from PDS shops. In addition, a significant number of the

closed tea estates have job cards under the MGNREGA scheme but work under this scheme was temporarily suspended during the lockdown. Panchayat officials in the village reported having received instructions from state officials to resume work under MGNREGA while following the guidelines and instructions of the health department.

10.5. Response of the Health Systems to Pandemic: Covid-19 Testing and Quarantine Facilities in Tea Plantations in Alipurduar

The outbreak of the COVID-19 virus puts the health services in tea plantations under a severe challenge that was already in distress. There was a massive influx of migrants to the tea gardens from the highly infected states of Maharashtra, Gujarat, and Tamil Nadu. After the first case was detected in West Bengal on 18th March 2020, the District Administration and the Health Department became active and started tracking the migrant workers in the region. On 21st March 2020, the Office of the Chief Medical Officer of Health (CMOH), the apex authority of health in the district of Alipurduar, claimed that more than 600 migrant labourers returned to the district on a single day. The migrant labourers were primarily from the district's closed or sick tea estates (PTI, 2021). The Assistant Chief Medical Officer of Health (ACMOH) of Alipurduar District appealed to the migrant workers to go to the public health centres for a health checkup. The frontline health workers were asked to track and report about the migrant workers in health care facilities. The local administration, along with the police force, started searching for migrant workers in every village. The situation was getting worse, and people in the villages started panicking about the sudden active presence of the health workers, administration, and the police. The district health administration also requested the people not to spread rumours about the Covid-19 virus. Soon, the fear of a new disease, accompanied by numerous rumours grasped by the people. The fear of COVID-19 increased among people by many folds, given the everyday news reports on the lack of health institutes and infrastructure available in the Northern part of West Bengal. It became clear that eight districts in North Bengal had reported 995 COVID-19-positive cases till 11th June 2020, and 95 percent of them were migrants who had returned from different cities in India (Giri, 2020).

Migrant labourers who arrived via the *Shramik Express* (COVID-19 special trains for migrants) and government-organized buses underwent screening at various checkpoints established at both bus and railway stations. Depending on their test results, they were either sent to their homes or directed to quarantine centres per the prescribed guidelines. However, many had also returned by hiring private vehicles. Thus, several check posts at the inter-district borders undertook screening for COVID-19 symptoms. A few of the tea garden management in the

Dooars region was asked to send a list of returnees to police stations, BDO, BMOH, CMOH, and other administrative authorities, including the Labour Department. The migrant workers were also returning from Bhutan, Nepal, Thailand, and other neighbouring countries. There were also reports of migrant workers roaming around in the tea gardens and violating medical protocols, such as coming out while on home quarantine (Bannerjee, 2020b). On the other, the general population also blamed the migrant workers for the increased spread of coronavirus cases in the region. A few incidences were reported that the migrant workers were not even allowed to enter the village and were compelled to stay outside the village, in abandoned houses and temporary tents, as the government quarantine facilities were also unavailable (Bannerjee, 2020b).

The Patabari Tea Estate Hospital has been abandoned since the tea estate was closed in 2012. The abandoned building of the hospital was renovated overnight by the District Administration to convert it into a quarantine facility for the migrant workers who had returned to the Tea Estate. On the other hand, the primary school building in the Rethi Tea Estate was converted to a quarantine facility. The local Panchayats were given the responsibility to arrange the food. The Panchayat offices employed the women Self Help Groups to cook the food for the people in quarantine. However, both facilities had limited accommodation capacity.

Ranadhir Tanti (37 years old), a panchayat member of Rethi Tea Estate, said:

> At the beginning of the lockdown, only 5-6 people from outside came back home to our garden. We had temporarily arranged their stay at our primary school ground, requesting the headmaster. Otherwise, where would they have gone? They are our neighbours, friends, and relatives only. But the numbers started increasing in May 2020. We requested the BDO office to allow us to run a quarantine centre at the primary school. They approved it. On average, 25-30 people stayed at the school for the next three months. Later on, the number becomes less.

Gopal Munda is a 36-year-old migrant labourer from Rethi Tea Estate. Gopal worked in the construction sites as a daily waged labour in Ernakulam city of Kerala. At the end of May 2020, He returned home to Rethi Tea Estate. He said:

> I was in the quarantine centre at the School of Rethi Tea Estate. They gave me free food three times a day. On the third day, I had a fever and body ache. The police van came and took me to the Tapsikhata Hospital in an ambulance. I was tested positive. My family members started crying in front of the police. I could

not eat anything at the hospital, seeing so many patients. I thought I would not be able to return to my home again.

On 9th August 2020, the Deputy CMOH of Alipurduar district claimed that almost 4,000 samples were tested from 58 tea estates out of the total 64 tea estates in the district. He also approached the Tea Estate management of the district to facilitate rapid testing in the tea plantations. On the other, the plantation owners' associations like the Tea Association of India-Dooars Branch (TAI), and Dooars Branch Indian Tea Association (DBITA) on 30th July, have demanded special arrangements for COVID 19 testing in the tea plantations of North Bengal. However, a senior leader of the Chay Bagan Mazdoor Union, in a meeting on 22nd July 2020 in Jalpaiguri, alleged that both the state and the tea plantation management have completely failed to manage the COVID-19 situation in the tea plantations of North Bengal. The trade union leaders demanded the establishment of COVID-19 testing facilities near the tea plantations at Banarhat, Nagrakata, and Odlabari in the Dooars region (Giri, 2020).

10.6. Health Services in Tea Plantations During the COVID-19 Pandemic

This section discusses the health care services in the abandoned tea plantations during the COVID-19 pandemic.

10.6.1. Challenge of seeking medical care during pandemic

The COVID-19 pandemic has again pointed out the importance of public sector health services. The public sector health institutions primarily responded to medical emergencies and served people nationwide during the pandemic (Das, 2020d). The private sector health institutions in India either remained isolated or were interested in making a profit from the crisis (Das, 2020d). This pandemic has also exposed the harsh reality of public sector health institutions. Over the period, the public health institutions become more incompetent due to the lack of funding and political will. However, given the constraints, the public sector health institutions stood firmly in the battle against the COVID-19 virus.

The situation in North Bengal was deplorable concerning health services. As late as June 2020, a Senior Health Department Official stated a dearth of COVID-19 hospitals in North Bengal. Cooch Behar and Alipurduar districts did not have a single dedicated COVID-19 hospital till April 2020. All the people who have tested COVID-19 positive were admitted to North Bengal Medical College and Hospital (NBMCH). With a surge in cases, there was an urgent need to increase the number of COVID-19 hospitals in these two districts (Mitra, 2020).

The labourers returned to their village homes in the last week of March 2020. However, there was no infrastructure to make the migrants quarantine or other people tested for COVID-19 in the state's northern districts. The newly set up medical colleges in Cooch Behar and Raiganj are still in their very incipient stage. In addition, all these medical colleges are far from the Dooars region's tea estates (Das, 2020a). The number of hospital beds, doctors, and nurses was minimal compared to the area's population. The number of Health Centers, Rural Hospitals, and other Tertiary and super-speciality hospitals has also remained insufficiently in the Dooars region (Das, 2020a). The tea planters of Darjeeling, Terai, and the Dooars region have written to the Tea Board of India to set up COVID-19 testing facilities close to the tea gardens as they feared the rapid increase in the number of COVID-19 cases in North Bengal. They have urged the Tea Board of India to sponsor testing facilities in the state government-run hospitals. There is a massive demand for the only Viral Research and Diagnostic Laboratory (VRDL), whose testing capacity is under tremendous pressure. Only one VRDL is located at the Siliguri-based North Bengal Medical College and Hospital (NBMCH). Several reports claimed that the situation in Dooars was alarming, and the workers, even in the institutional quarantine, were not being appropriately tested (Giri, 2020). The lab tested around 850 samples daily, and its target was to test 1250 after the installation of another machine soon (Banerjee, 2020 A).

The public hospitals in the Dooars region remained overcrowded throughout the year in normal times. Even during the regular times during the pre-COVID-19 days, the public hospital in the Dooars region consistently operates at maximum capacity. The limited space often forces the hospital to house patients in its hallways and corridors. The public hospitals near the tea gardens are dismal, with many lacking medical professionals such as doctors and nurses. Therefore, access to essential and basic medicines for ailments like fever, headache, or stomachache is limited, let alone treatment for more severe illnesses (Lakra, 2021).

The pandemic has worsened the situation. So, there is no other way but to strengthen the economy and health service system of North Bengal because more than police surveillance and lockdown alone is needed to fight COVID-19 or any other pandemic in the near future.

10.6.2. Mobile Medical Units during the Covid-19 Pandemic

Ruma Barman has worked as a Pharmacist with the MMU for the last three years. She was trained at the Birpara State General Hospital before joining the MMU unit as a pharmacist. She has been working with this unit for the last three years. The services of MMU were available during the COVID-19 lockdown. She said that the MMU remained functional throughout the

COVID-19 pandemic. However, the contact tracing and tracking were mainly done by the Sub-centre in association with the Panchayat members. She said:

> It was challenging to work during the initial days of the pandemic. People were very scared and there was fear all over. But soon the situation changed, here people normalized the fear very soon and started going out without precautions and safety measures. We tried our best to make people aware of the guidelines of health and hygiene issued by the Health Department. But you see there is hardly anyone wearing a face mask or maintaining social distance.

Amidst the COVID-19 pandemic, MMUs played a crucial role in supporting tribal communities within the Dooars region, particularly those in deserted tea plantations. These MMUs assumed the vital task of conveying vital health and hygiene guidelines from the health department, aiming to raise awareness among the population. Despite initial fears and uncertainties, the dedicated health workers at the MMU persevered, delivering primary health care services to a population left underserved by public hospitals overwhelmed with COVID-19 cases. The significance of MMUs became evident as urban public hospitals struggled to cope with the increasing number of COVID-19 patients. In the remote tea plantations, tribal communities found comfort in the doorstep healthcare services provided by the MMU. Concerns about infection risks in crowded public hospitals led individuals to choose the accessible and community-focused MMUs, ensuring essential healthcare was brought directly to their doorsteps.

10.6.3. Community Health Workers during the COVID-19 pandemic in Abandoned Tea Plantations

Labita Buxla (38 years old) an Adivasi woman, is one of the four ASHAs at the Patabari HWC located near the abandoned hospital building of the Patabari Tea Estate. She is one of the four ASHAs in the HWC centre of the tea estate. Labita lives in one of the labour lines with her family in the Patabari tea estate.

The Coronavirus outbreak had increased Labita's daily workload by many folds. The ASHAs were given the responsibility by the district health authority to trace the migrant workers who returned to the tea estate during the pandemic. The ASHAs had to visit the houses of the migrant workers to convince them to do health check-ups and report to the health centres. They had to trace and keep track of the people who had come in contact with the migrant workers and the COVID-19-infected patients. The ASHAs were at the forefront of the COVID-19 awareness campaigns at the village level. They had to keep close contact with the district health

officials, police, and local administration for the hospitalization, isolation, and quarantine of the people with COVID-19 symptoms. Labita said this was a very challenging work given the panic situation invited by the pandemic outbreak. She had to face stigma at various levels during her work. Labita, the ASHA worker of Patabari TE said:

> Our department asked us to monitor the quarantine centre at the old hospital building of our tea garden. I also visited the households where the migrant workers had returned from other states. At the beginning of the Covid-19, I could not buy sanitizer or masks. There was no sanitizer available in the market at all. Our department also did not supply any masks or sanitizer. They gave us masks, gloves, and sanitizer towards the end of April 2020. By that time, those things were available in local medical stores. I was a little worried, especially thinking about my children. I was tensed that I might infect them.

Tulika Roy (42 years old) is working as an ANM at the HWC of the Patabari Tea Estate. Tulika lives with her family in Satali village, located just outside the Patabari Tea Estate. She has been working in the Patabari HWC for the last three years. Earlier, she was posted in the Satali Tea Garden Sub Center for over 10 years. Tulika was posted in the HWC Patabari TE during the Covid-19 pandemic. She was tested Covid-19 positive on 1st September 2020. Tulika, the ANM of Patabari TE said:

> Every day I returned from work, I thought I might bring the virus home from outside, which may infect my children. It was also very emotionally challenging to be in quarantine at my house. Sometimes, I felt like I became a burden to my own family, putting their lives at risk. My son studies in Navodaya school (JNV). He was at home as the district administration turned his hostel into a quarantine centre. My daughter studies at the local college. I could work during the Covid-19 period because of my children, especially my daughter. She took all the responsibility for the house when I was admitted to the hospital and then in isolation at home.

The nature of work done by community health workers was very challenging during the outbreak of COVID-19, a highly contagious disease. They were not even given any protective gear to work in such situations. The ANM said:

> I had done my ANM duty during the entire Covid lockdown period in this tea garden. I was also very afraid at the beginning, like everyone else in our friend circle (her colleagues). But, I gathered courage and did our duty as per the instructions given by the block office. I thought of the needs of the expecting

> mothers of my centre. I wanted to provide them with routine health care. They were my first priority.

The community health workers at the HWC at the Patabari Tea Estate, including Rima Dutta, the CHO, Tulika Roy, the ANM, and Sima Dutta, the ANM supervisor, were infected with Covid in the first wave of Covid pandemic. Only 7-8 people, including Sheuli's husband, tested COVID-19 positive in the first wave of the pandemic in the Patabari Tea Estate.

Many people from the tea estate community of Patabari were infected with Covid-19 in the first wave. One enquiring about COVID-19 infections in the Patabari Tea Estate, Tulika recollected:

> Our ASHA-Sheuli's husband was the first person in the garden who tested positive in July 2020. During the next month, we had arranged Rapid Antigen Testing in the garden, but only two people were found positive. Including them, around 7-8 people (3 of them were women) were found Covid positive in the Patabari Tea Garden in 2020.

The Covid-Care Hospital was located at Tapsikhata village, 10 km away from the district headquarters of Alipurduar. This was the only public Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homeopathy (AYUSH) Hospital in the entire North Bengal region which was turned into Covid-Care Hospital by the District Administration during the pandemic. Tulika also had a co-morbidity and this worsened her condition when she was infected with COVID-19 infection. She shared that:

> I had trouble breathing and a high fever. It was a painful experience. I had chronic asthma. So, the doctors advised me to get admitted to Covid Hospital at Tapsikhata, and I was admitted for five days. If I didn't have a history of asthma, they would have advised me for home isolation.

Tulika was of the opinion that she got COVID-19 infections while working in the tea gardens undertaking door to door work for providing ante-natal services. According to her:

> Maybe I got infected from the Tea Garden only. We had to visit door to door to provide services like antenatal care. We were also doing the Covid-19 related duties such as contact tracing in the labour lines. Many people who went outside the state had come back home at the labour lines. I got infected from the labour lines only. A lot of people were admitted to the Tapsikhata Covid hospital along

> with me. We had separate beds. I can't complain about the services provided by the health workers. I understand how they worked during that difficult time. The doctors visited us twice daily, and the nursing staff checked our health conditions frequently.

In summary, the experiences of Labita Buxla, an ASHA worker, and Tulika Roy, an ANM, shed light on the immense challenges faced by frontline healthcare workers during the COVID-19 pandemic in the Patabari Tea Estate. Despite the lack of protective gear and initial support, Labita tirelessly worked to trace migrant workers and raise awareness about the virus. Tulika, who tested positive for COVID-19, exemplifies the personal sacrifices made by healthcare workers, grappling with the fear of infecting their own families. The community health workers at Patabari Tea Estate, including Rima Dutta and Sima Dutta, faced the brunt of the first wave of the pandemic. The shortage of resources and the vulnerability of health workers to the virus highlight the need for better preparedness and support systems in such challenging times. Their stories underscore the resilience and dedication of frontline healthcare workers who stood at the forefront of the battle against COVID-19, often at great personal risk.

10.6.4. Increased work burden for Anganwadi Workers during the COVID-19

The work burden for all community health workers increased tremendously during the COVID-19 pandemic. They were required to work at the community level, visiting door to door to create awareness about the new disease as well as preparing a list of people who had returned from cities. For instance, Sumana Shunri (42 years old), an Anganwadi Worker at the Rethi Tea Estate shared:

> The ANM Didi used to send the list of the migrant workers who came back from other states during the pandemic. Sometimes, we inform the ANM. We were asked to visit the houses of the migrant workers in my area. We visited the houses, asking about their health conditions. We requested them to follow the health guidelines and contact the health centre in case of any difficulties. We mainly did contact tracing and tracking during the COVID-19 virus outbreak in March-April 2020 for the first time. We were only given two pairs of rubber gloves, a few surgical masks, and a bottle of hand sanitizers.

There are no ASHAs at the sub-centre of the Rethi Tea Estate which has severely impacted the health service delivery at the village level particularly for pregnant women and children.

Further, in the absence of the ASHA, the AWWs and the helper at the village level have to work more and this has increased their work burden as well. For instance, Ms Sumana Shunri shared:

> As an Anganwadi Worker, I have to work closely with the sub-centre. AWWs face challenges in maintaining regular communication with the community, and they have to go out of their way, especially in case of emergency. We face challenges taking the expecting mothers to the hospital for delivery as there is no ASHA in the village. Sometimes, we do not get the information on time. There are many cases of home delivery just because they (the family members) could not arrange an ambulance to take the pregnant lady to the hospital. There is a free ambulance service, but the patient's family does not know how to avail the service. They do not have the information, and no one is out there to help them.

Sona continued:

> There is another problem. Who will accompany the patient to the hospital and stay with her for the next few days? The ambulance service is free of cost, but staying at the hospital (for the family members) costs money. In addition, they will lose their wage for those days. How many of them can afford this wage loss? Not Many! So, they prefer home delivery over hospitalization. If there were an ASHA in the village, she would have been very helpful.

During the COVID-19 pandemic, community health workers like the Anganwadi Worker, Sumana Shunri at the Rethi Tea Estate faced a surge in responsibilities. They took on the crucial tasks of raising awareness, compiling lists of returning migrants and conducting door-to-door visits for contact tracing. However, their efforts were hindered by a scarcity of protective gear—limited to two pairs of rubber gloves, a few surgical masks, and a bottle of hand sanitizer.

10.6.5. Fear of Contracting COVID-19 infections while using public health services in the community members

In the initial days of the pandemic, people had heightened fears of contracting the COVID-19 infections. Given this, many people did not come forward to utilize the services provided by the public health facilities. For instance, the family of Pratima (25years old), who had delivered her child in the early week of March 2020, refused to use the services of the ambulance provided by the HWCs due to the fear of COVID-19 instead, they hired a private

vehicle and incurred a higher expenditure. For instance, Pratima (25 years old) lives in the Upper line at Patabari Tea Estate shared:

> I had delivered a baby in the first week of March 2020. I had to go for a cesarean section delivery. I was referred to the Alipurduar District Hospital from Uttar Latabari Block Primary Health Centre for a follow-up. The family had hired a private car. The family spent INR 3000 on hiring a car to reach the District Hospital and return. The HWC centre offered us a free ambulance service[33]. However, my family was in a dilemma of using the ambulance of the health centre during the initial days of the pandemic. They feared that the young mother might get infected with coronavirus.

During the early days of the pandemic, heightened fears of contracting COVID-19 led to people avoiding public health due to fear of infection.

10.6.6. Stress and Fear of COVID-19 resulting in Death

During the initial phase of the COVID-19 pandemic, there was very high fear about this infection. Further, the elderly population was much more vulnerable to COVID-19 infections, given their co-morbidities. Their health conditions, along with the fear of contracting the disease, proved fatal to the elderly population in the tea garden. According to the ANM, one elderly person called Birsha Mahali died due to the fear of COVID-19 in the first wave of the pandemic when he tested positive. She narrated:

> Birsha Mahali died in August 2020. But I do not think he died of Covid. He lived near the Patabari bus stand, just outside the tea garden. His brother works in the Patabari Tea Estate. He had got high fever. He even came to our centre for a check-up. I checked his blood for malaria. It was negative. I gave him paracetamol tablets and told him to go to Latabari Hospital if he didn't get cured. He did not go. After two to three days he had severe diarrhoea and he had to be admitted to the hospital. At that time, the hospital was testing Covid on all the patients. Birsha was found to be Covid positive. So, the nurse came to the in-patient ward asking 'Who is Birsha? Who is Birsha?' loudly and said that he was positive. That poor fellow died there only. I think he became scared and had a heart attack. He was 65 years old.

[33] "Nischay Yan", the free Ambulance Service under NRHM with a dedicated toll-free number, 102. It operates under a PPP model. However, BPL/SC/ST pregnant mothers can avail of free delivery transportation to Govt. Health Facilities. All neo-natal children between 0-28 days will also be transported free of charge to any Govt—health Facilities within the district (Dan et al., 2016).

During the initial phase of the COVID-19 pandemic, heightened fear of infection, particularly among the elderly with co-morbidities, had fatal consequences in tea gardens. The case of Birsha Mahali illustrates the impact of both the fear of the virus and underlying health conditions on the vulnerable elderly population in tea gardens.

10.6.7. Disruption in Essential Health Services in Closed Tea Gardens of Dooars region:

The outbreak of Covid-19 had highly disrupted the regular maternal and child health services in the tea estates.

Mrs Sumana Shunri (42 years old), who works as an Aanganwadi Worker at the Rethi Tea Estate expressed concerns about the closure of the Anganwadi Centres:

> When we started working in the centre, the nutritional conditions of the children were very poor. Many children were malnourished. We had worked a lot in these centres to keep the children healthy. We used to take extra care of the children in the red category (in the MCPC nutrition chart). I fear that the shutdown of the centre for more than a year can worsen the situation. It has been over a year since the centre closed due to Covid-19. The Govt asks us to hand out food grains to the children instead of giving them cooked food. We give every child 2kg of rice and 300 gm of pulses once a month. We receive many complaints about the quantity of the food grains from the parents. We also understand that more than this quantity is required. But what can I do or say to the parents?

The CHWs were primarily responsible for the contact tracing and monitoring of the suspected COVID-19 patients and the migrant workers at the village level. Based at the sub-centres theyworked during the Covid-19 pandemic. This additional duty during the pandemic has turned into a mammoth work for the community health workers, which resulted in significant disruption of the regular health services provided by the sub-centres.

On the other hand, the government had completely shut down the Anganwadi centres since the pandemic outbreak. In addition, the primary schools which provided cooked mid-day meals to the students were also closed during the pandemic. It was found during the fieldwork that these Anganwadi centres and primary schools were one of the principal sources of a square meal for many children in the closed tea estates. These Anganwadi centres under the ICDS program have played an instrumental role in providing nutrition and health care for children and adolescent girls at the village level. Therefore, the closure of the Anganwadi centres and the schools have seriously interrupted child nutrition in the tea estates during the pandemic. The government had decided to provide students with food grains monthly instead of cooking meals

in the Anganwadi centres and schools. However, the food grains supplied to the students were claimed to be insufficient and of poor quality by the parents during the fieldwork.

10.6.8. Increased Dependency on RMPs during the Pandemic

The workers and their family members of the Patabari Tea Estate largely depended on the services of Sadek Ali, a Rural Medical Practitioner during the COVID-19 pandemic. The reports have shown that regular health services other than COVID-19 during the pandemic were significantly interrupted as COVID-19-related care predominantly occupied the health facilities. On the other hand, medical institutions often refuse to provide services to the medical needs of people other than the Covid-19 related care due to the increased fear of getting infected with Covid-19. Therefore, the Rural Medical Practitioners had become the saviour to the people in the tea estates.

With the closure of the tea estates, the people of the closed tea estates had no other option but to seek medical care from the Rural Medical Practitioners. Several other factors exist for the increased dependency of the people in the closed tea estates on the Rural Medical Practitioners. The Rural Medical Practitioners provide medical services in remote and geographically inaccessible areas. The Rural Medical Practitioners provide services at an affordable price compared to the private clinics in the nearby Bazars.

Krishna Minj (52 years), the mother-in-law of Pratima, was a labourer at the Patabari Tea Estate. Although the plucking in the tea estate was resumed by the Operation and Management Committee (OMC) at the Patabari Tea Estate, Krishna could not go to work because of her illness. She has high blood pressure. Krishna regularly visited the Health and Wellness Centre for pressure checkups. She was under medication given by the HWC. However, she claimed that the services at HWC became irregular. She also feared going to the HWC, given the possible crowd gathered at the centre. She said the people of Patabari Tea Estate also started avoiding the road that leads to the health centre as the quarantine centre for the migrant workers was opened at the abandoned hospital of the Estate located next to the HWC. Krishna had to depend on one of the unregistered medical practitioners or the Rural Medical Practitioner (RMP), who owns a medical store at the Patabari Bus Stand. The people at the Patabari Tea Estate refer to him as Dr. Ali. Many people in Patabari Tea Estate seek medical treatment from him regularly. It is reported that they have become more dependent on the RMP during the lockdown. The RMP used to visit Krishna's home during the lockdown and diagnose her blood

pressure level. The RMP used to charge INR 50 to 150 for each visit based on the medicine he gave.

10.7. Conclusion

The spread of COVID-19 has caused one of the most severe humanitarian crises that the world has experienced in recent decades. It has caused loss of livelihood and increased social vulnerability in society, along with human deaths across the countries in the world. However, the worst affected groups by the COVID-19 pandemic were the most marginalized people who did not have a livelihood and food security and were employed in occupations with limited job security. The workers of the abandoned tea estates and the migrant workers from the closed tea plantations, therefore, became more vulnerable and were already distressed due to the closure of the tea estates in the Dooars region. The pandemic led to widespread unemployment and economic instability, disproportionately affecting the marginal plantation workers. The pandemic has pushed them to the furthest periphery. On the other hand, the health system facilities for testing and quarantine facilities remained significantly low in the tea plantations. The public health institutions in the tea plantations remained engaged with Covid-19 and led to a disruption of providing routine health services to the community. The community health workers who remained at the forefront of the battle against COVID-19 have experienced harassment at both structural and individual levels. The community members also feared contracting COVID-19 to access healthcare services from public health institutions. As a result of these factors combined, the tea estates' community members became increasingly dependent on traditional healers and rural medical practitioners to seek healthcare. The COVID-19 pandemic exacerbated existing societal inequalities, disproportionately affecting marginalized populations in terms of health, economics, education, and overall well-being.

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Appendix: III

Photographs from the fieldwork at the Dooars Region

Photograph 1: "Private Road: ONLY for Company Personnel"

Photograph 2: "Outsiders are not allowed without Manager's Permission"

Photograph 3: "Trespassers are Prohibited"

Photograph 4: Focus Group Discussion at Rethi Tea Estate

Photograph 5: The Women Workers Plucking Tea Leaves at Rethi TE


Photograph 6 & 7: Abandoned Factory of Rethi Tea Estate, Alipurduar

Photograph 8: Abandoned Factory of Patabari Tea Estate, Alipurduar

Photograph 9: Collecting Fodder from Patabari Forest, Alipurduar

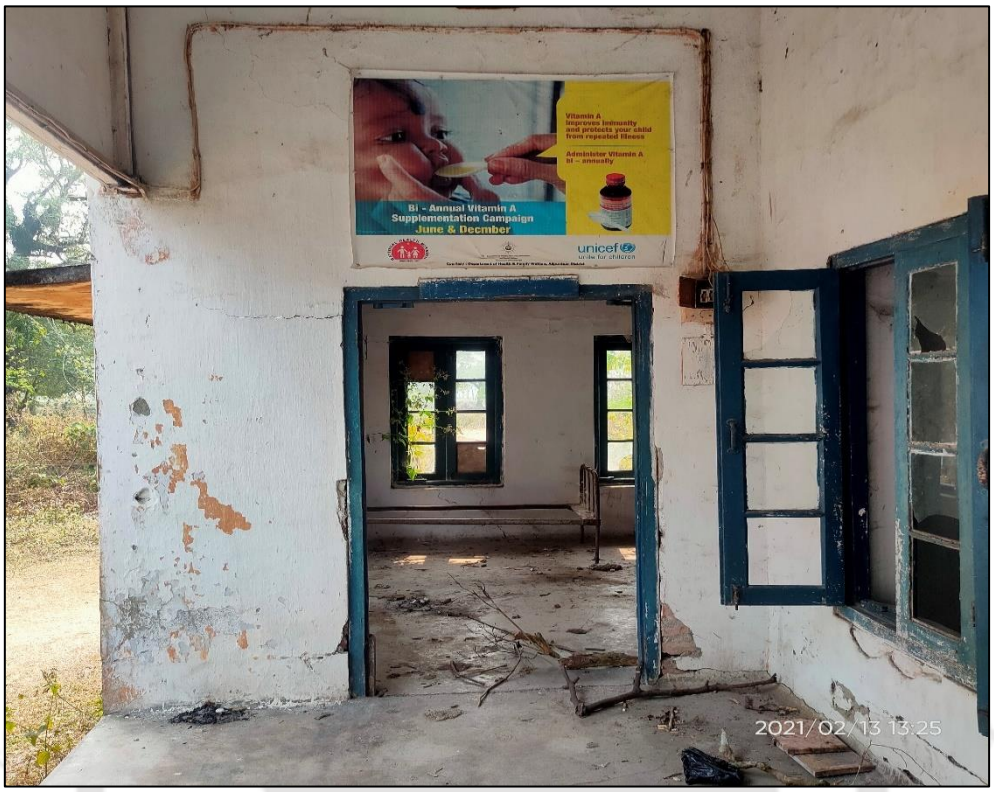
Photograph 10: Collecting Fodder & Edibles from Rethi Forest, Alipurduar

Photograph 11: Adolescent Boys Returning Home after Collecting Firewood from Rethi Forest, Alipurduar

Photograph 12: Women Engaged in Precarious Job such as Sand Mining from River Bed at Rethi TE

Photograph 13: Women from Rethi Tea Estste Returning Home after Collecting Firewood from Forest

Photograph 14: An Elderly Woman is Carrying Firewood on Her Head to Sale at Weekly Market



Photograph 15: Abandoned Garden Hospital of Patabari Tea Estate, Alipurduar

Photograph 16: Abandoned Garden Hospital of Patabari Tea Estate, Alipurduar

Photograph 17: Health and Wellness Centre (HWC), Patabari Tea Estate

Photograph 18: Anganwadi Centre, Rethi Tea Estate

Photograph 19: Community Health Workers Providing Health Services at a Weekly Camp in Open Field

Photograph 20: Mobile Medical Unit, Rethi Tea Estate

Source: All the photographs were captured by the researcher during the fieldwork of this present study in the Dooars region

Appendix-IV

Interview Schedules, Tools, and Guides

Serial No: ……

Interview Schedule

(Only for Women Workers)

Hello, my name is…….... I am working with the INDIAN INSTITUTE OF TECHNOLOGY GUWAHATI. We are conducting a survey on Health in the Tea Plantations of North Bengal. I would like to ask you some questions about your household. The questions usually take about 20-25 minutes. The information on family welfare and health that we collect from households and individuals is purely for academic purpose. All of the answers you give will be confidential and we will not use the real names of the person, place, tea garden, or any one in the report. Your participation in the survey is voluntary. If I ask you any question you don't want to answer, just let me know and I will go on to the next question or you can stop the interview at any time. If you have any questions about this survey you may ask me. We will be happy and appreciate if you kindly give your consent to participate in the survey. Do you agree to participate in this survey? If yes, please sign bellow.

Yes, I give my consent to participate in this survey.

Date:

Place

Signature of the participant

Full Signature of the Field Investigator with Date & Time

A) Household Details

1. Name of the Women Worker
2. Age of the Respondent:
3. Marital Status:
4. If married, Age at which got married
5. If she has Children:
6. What was her age at the time of her first child born:
7. Number and Gender of Children:
8. How many members are there in your family:
9. Educational Status of the worker:
10. Since when are you working in this Estate:
11. In which post is she working at the garden:
12. Occupation of husband:
13. Caste/Ethnicity:
14. Religion:
15. If her family has BPL Ration Card:

B) Health and General Illness

16. In the six months, have you fallen sick with any illness not necessarily COVID-19?
17. What was the health problem?
18. How long were you ill?
19. Did you visit the Government health Centre?
20. What did the ANM/MO of the Government health Centre say?
21. How much money did you spend on seeking treatment: Diagnostic, Travel, Medicines?
22. Did you get hospitalized: if yes how long?
23. Who stayed with you at the hospital?
24. Where were you hospitalized?
25. Did you call the ambulance:
26. How was your experience at the Government hospital?

27. Did the doctor/health worker treat you properly?

28. Did you get referred to any other health institution? If yes, where?:

29. Did you visit the traditional healer? If yes, why and what medicines did he give, how much did he charge?

C) For Maternal and Child Healt)

- **Pregnancy-related**

30. Have you registered for your pregnancy in a Government Health Centre?

31. Did you go for your regular Ante Natal Check-ups-blood tests, weight monitoring, TT injection?

32. Did you receive Iron and Folic Acid Tablets from ASHA workers?

33. Did the ASHA visit you in the last six months and for what purpose?

- **The Women Who Had Childbirth Recently**

34. When was your child born date and month and time:

35. where was the child born: Home/ Institutional: SC-PHC-CHC-DH ?

36. If home delivery-who assisted you?

37. Why did you prefer Home delivery?

38. Were any Dai/family members around during the childbirth?

39. Did ASHA accompany you during Delivery?

40. Did they do your COVID-19 testing before admitting you in Government Hospital or Nursing Home for delivery?

41. Did you have complications during/post childbirth?

42. How much money have you spent during hospitalization on childbirth?

43. Was your child immunized at birth?

44. Any illness in the child after birth?

D) COVID-19 Related

45. Were you made aware of COVID-19 and the risks related:

46. How did you come to know about COVID-19?

47. Was thermal temperature checking done in the last 6 months?:

48. Were you infected with COVID-19?

49. When did you get infected? :

50. How did you realize it is COVID-19?

51. Where and when did you undergo testing?:

52. What was your experience during testing?:

53. Do you have any idea how did you got infected?:

54. Did you have complications, or were your symptoms mild? :

E) Lockdown Related

55. Do you have any family members who have returned from another city during the lockdown? Who has returned?

56. If yes, from where did he/she return? What was the purpose of the visit?

57. From where do you buy daily/weekly/monthly ration, vegetables, and other food items

58. Did you face any difficulties in buying ration and other consumable items during the lockdown?

59. Is there any change in your food habits/food items/number of meals/quantities of food during the lockdown?

60. Does anyone drink alcohol in your family?

61. Do you think that the consumption of alcohol of people has increased during lockdown?

62. Tell us in details about what kind of problem did your children and other family members have faced during this lockdown period.

63. Tell us about any other problems that you have faced during the lockdown.

Thanks for your participation

Serial No: ……

INTERVIEW SCHEDULE

(Household)

Informed Consent Form

Good Morning/Afternoon. My name is Bikash Das. I am doing a doctoral research at the Department of Humanities and Social Sciences, Indian Institute of Technology Guwahati. We are conducting a survey on health related issues in the Tea Plantations of North Bengal. The information on health that we collect from households and individuals is purely for academic purpose. Your household was selected for the survey. I would like to ask you some questions about your household. The questions usually take about 20-30 minutes. All of the answers you give will be confidential and will not be shared with anyone other than members of our survey team. Your participation in the survey is voluntary. If I ask you any question you don't want to answer, just let me know and I will go on to the next question or you can stop the interview at any time. We will be happy and appreciate if you kindly give your consent to participate in the survey. If you have any questions about this survey you may ask me. If you agree and give your consent to participate in this survey, please sign bellow.

Yes, I give my consent to participate in this survey

Date:

Place:

Signature of the participant

Thank you for Participating in the Survey

Block A: Participant's Details			
1. Name of the Tea Estate:		**2. Status of the Tea Estate (Code):**	
3. Name of the Labour Line:		**4. Date:**	**5. Time:**
6. Name of the Person Interviewed:			**7. Age:**
8. Sex (Code):	**9. Social Category (Code):**		**10. Years of Schooling:**
11. Sub-caste/ Community:		**12. Religion (Code):**	
13. Name of the Household's Head:			
14. Household's Relation with the Estate (Code):			

Code for Block A:

(Q.2) Functional=1, Closed/Abandoned =2, Closed & Labour Cooperative= 3, Closed & Govt. Undertaken =4

(Q.8) Female=1, Male =2, Others= 3,

(Q.9) SC=1, ST =2, OBC= 3, Unreserved =4

(Q.12) Hinduism=1, Islam =2, Christianity= 3, Buddhist =4, Jain= 5, Others=7

(Q.14) MEMBER(S) OF THE HOUSEHOLD WERE- Permanent Labour=1, Casual Labour=2, Both Permanent & Casual Labour=3, Sub-staff-04, Sardar-05, Not Directly dependent on Garden= 06

Block B: Demographic Information of the Household

Sl. No.	Name of the Household Member	Sex (Code)	Age (Years)	Marital Status (Code)	Years of Schooling (Years)	Employment Status (Code)
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**

Code for Block B:

(Col 2) Male=1, Female=2, Others=3;

(Col 4) Never Married = 1, Currently Married = 2, Widowed = 3, Divorced/Separated= 4.

(Col 6) Infant=1, Student=2, Unemployed=3, Permanent Labour in Tea=4, Temporary Labour in Tea=5, Wage Labourer outside garden=6, Self Employed/Small Business=7, Migrated to other states/region for job= 8, Govt. Service= 9 Others=10 (Specify).

Block C: Housing and Sanitation

1. Housing Condition

FLOOR	WALL	ROOF
MUD/CLAY/EARTH/ RAW/WOOD/ PLANKS/ BRICK/CEMENT/ TILES/ MARBLE/ OTHERS……	NO WALLS/ CANE/ PALM/ BAMBOO/MUD/GRASS/ THATCH/ BAMBOO WITH MUD/ STONE WITH MUD/ PLYWOOD/ CARDBOARD/ UNBURNT BRICK/ CEMENT/CONCRETE /CEMENT/ BURNT BRICKS/ CEMENT BLOCKS/ WOOD PLANKS/ GI/METAL/ASBESTOS SHEETS/ OTHERS……	NO ROOF/ THATCH/PALM LEAF/ GRASS/ MUD/ PLASTIC/ POLYTHENE/ SHEETING/ PALM/BAMBOO/RAW WOOD/ PLANKS/TIMBER/ UNBURNT BRICK/ LOOSELY PACKED STONE/ METAL/GI /CEMENT FIBER ASBESTOS SHEETS/RC/RB/CEMEN/CONCRETE/ ROOFING SHINGLES/ TILES/ SLATE/ BURNT BRICK/ OTHERS……

2. Number of Rooms

LIVING ROOM	STORE ROOM	DRAWING ROOM	KITCHEN ROOM	CATTLE SHED

3. Source of Drinking Water

PIPED WATER (PHE)	PIPED WATER (PRIVATE)	DUG WELL	HAND PUMP	DEEP TUBEWELL	SURFACE WATER (River/Spring/ Dam/ Lake/ Pond/ Stream/ Canal)	OTHERS:

4. Who is the provider/ or bears the expenses of the water source, if there any?

TEA ESTATE MANAGEMENT	Panchayat / BDO	OMC	COMMUNITY	OWN EXPEDITURE	OTHERS:

5. How far is the source of water is located from your house & time takes for collecting water?

Distance from Home (in KM):		Time Required:	

6. Availability of toilet facility in the household

FLUSH OR POUR FLUSH TOILET	PIT LATRINE (Ventilated Improved Single/ Pit/Biogas Latrine/Single Pit Latrine With Slab/	NO FACILITY/ USES OPEN SPACE OR FIELD

(Flush to Piped Sewer System/ Flush to Septic Tank/ Flush to Pit Latrine/ Flush to Somewhere Else)	Single Pit Latrine Without Slab/Open Pit/ Twin Pit/Composting Toilet/ Dry Toilet)	

7. If the house has a concreate toilet block, who has financed the building of the toilet?

TEA ESTATE MANAGEMENT	GOVERNMENT	COMMUNITY	OWN EXPEDITURE	OTHERS:

8. What type of drainage facility does your household have?

CLOSED DRAINAGE	OPEN DRAINAGE	DRAIN TO SOAK PIT	NO DRAINAGE.

9. Where is the cooking usually done in the house?

A SEPARATE ROOM USED AS A KITCHEN	IN A SEPARATE BUILDING	IN THE SAME LIVING ROOM	OUTDOORS

10. What type of fuel does your household mainly use for cooking?

ELECTRICITY	LPG	BIOGAS	KEROSENE	WOOD	COAL	STRAW/SHRUBS	COW DUNG	OTHERS

Block D: Income, Livelihood and Assets

11. Source of income of the household

Primary/Main Source	Secondary Source

12. Land Ownership Details

Type of Land	Owned	Cultivated Land	Under Tree Plantation	Home/Living Area	Others
Area (In Acre)					

13. Livestock Asset

Livestock	Oxen/ Cow	Buffaloes	Goat/ Sheep	Chicken/Duck	Pig	Others
Numbers						

14. Does the house have any of the following assets?

Assets	Yes/No	Assets	Yes/No
T.V.		Scooter/ Motorcycle	
Radio		Steel cupboard	
Gas stove (LPG)		Wooden bed, chair, table, etc.	
Kerosene cooking stove		Fan	
Electricity connector		Mixer/ Iron	
Solar Energy Connection		Water tank	
Cycle		Big wall clock	
Smart Phone		Any other	

15. Details of the migrants who have migrated outside the village and reside outside the village.

Name of Migrant	Sex & Age	Education	Seasonal or Annual	Place of Migration	Reason of Migration	Work Engaged in	Wage Earned	Remittance send back home

Block E: Health and Nutrition

16. What do you understand by health? What are conditions for being ill according to you?

17. At what level of severity of the health problem do they go the doctor? (Please rank in order)

Type of Services	Rank	Reason/Remarks

As soon as the first symptom occurs I visit Doctor		
Generally Ignore at the first Place		
Seek home remedies		
Visits to a Traditional Healers		
Visits to a RMP		
Visits a Government Health Centre or Hospital		
Visits a Private Clinic		
Visits a medical doctor when it becomes very critical		
Do not Seek medical care at all		

18. Where do you generally seek treatment?

Sub Centre /Primary Health Centre	Public Hospitals	Private Clinics	RMP	Traditional Healer	Home Remedies

19. Tell us about your experiences about the treatment?

Type	Type of Disease/ Illness	Experience of the Service	Opinion on the Staff	Cost/ Expenditure
Sub Centre				
PHC				
Public Hospitals				
Private Clinic				
Traditional Healer				
RMPs				
Home Remedies				

20. If he/she has did not availed medical care from Government institutions, what are the reason for not availing treatment from Government sources?

21. In case of not seeking medical services, what are the reasons for not seeking medical advice?

22. How many square meals do you/your family take in a day?

Females:	Males:	Children:

23. How many times in a week do you eat the following items?

Egg	Meat/Chicken	Soybeans	Milk/Milk Products	Pulses

24. Do you send your children to ICDS/Anganwadi centres? Tell us your experience about the services in the ICDS centre.

25. Do you have BPL ration card? Do you receive subsidised ration form PDS shop?

Block F: Morbidity, Mortality, and Maternal Health

26. According to you, what are the main diseases/illness prevail among the people in this tea garden?

27. Details of Morbidity and Medical Service Utilisation in the Household

					In Last 365 Days	

Sl. No.	Name of the Household Member	Whether suffering from any chronic diseases/ ailment? (Code)	Whether suffering from any other Diseases/ ailment during last 15 days (yes- 1, no-2)	Type of Medical Services Availed (Code)	Whether hospitalised (yes-1, no-2)	Duration of hospitalisation	Source of Financing (Code)
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**

(Col 3) No=0, Arthritis=1, Respiratory Diseases=2, Cancer=3. Diabetes=4. Anaemia=5 Tuberculosis=6, Others=7 (Specify).

(Col 5) Not Opted Any Medical Care=1, Garden Hospital=2, Government Hospital=3, Registered Medical Practitioners (Private Clinic) =4, Private Nursing Home= 5, Registered AYUSH=6, Brought Medicine from Dispensary without consulting a Doctor=7, Traditional Healers=8, Others=9 (Specify)

(Col 8) Fully Government Subsidised=1, Fully by Tea Estate=2, Partially Govt./Estate combined with OOPE=3, Fully OOPE=4, Fully Insurance Covered=5, Insurance Covered and OOPE = 6, Others = 7 (Specify)

28. Have you ever suffered any occupational health hazards or illness? If Yes,

Type of occupational health hazards or illness	How had it occurred?	When did it happened?	Type of medication or treatment sought	Expenditure & Source

29. Are there any household members who is suffering from major illness like Tuberculosis, Leprosy, Diabetes, Anemia, or recently had and surgery?

Name of family member	Type of illness	Duration	Source of treatment	Reasons for choosing	Any other treatment sought	Reasons for seeking other treatment	What was the result of treatment	Total cost in illness

30. How do you pay the cost of the treatment?

Own Pocket	Health Insurance/ Swastha Sathi	Free of Cost from Public Hospital	Loan/ Money Landed	Mortgage Property	NGOs Support	Sold Properties	Others

31. If you have utilized any health insurance scheme, tell us your experience or difficulties you have faced while accessing care under insurance scheme.

32. Details of Maternal Health Care for Pregnant Women of Age 15-49 Years During the Last 365 Days

Name of the Woman	Age (Years)	Serial No. of Pregnancy	Whether Received Tetanus Toxoid Vaccine During Pregnancy (Yes-1, No-2)	Whether Taken Iron & Folic Acid Tablets During Pregnancy (Yes-1, No-2)	Whether Any Other Prenatal Care Received (Code)	If Yes, Nature of Pre-Natal Care (AYUSH-1, Non-AYUSH-2, Both-3)	Total Expenditure Incurred on Pre-Natal Care (Rs.)	Outcome of Pregnancy (Code)	Place of Delivery/ Abortion (Code)	Whether Any Postnatal Care Received (Code)	If yes, Nature of Post-Natal Care (AYUSH-1, Non-AYUSH-2, Both-3)	Expenditure Incurred On Post-Natal Care (Rs.)
(1)	**(2)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**	**(11)**	**(12)**	**(16)**	**(14)**

(cols. 7, 12): whether any other pre-natal/ any post-natal care received:
no -0
yes, from HSC/ANM/ASHA/AWW -1
yes, from PHC/dispensary/CHC/mobile medical unit -2
yes, from public hospital -3
yes, from private doctor/clinic -4
yes, from private hospital -5

(col. 10): outcome of pregnancy:
live birth -1,
stillbirth -2,
abortion-3,
pregnancy continuing -4

(col. 11): place of delivery/ abortion:
in HSC -1
in PHC/dispensary/CHC/mobile medical unit -2
in public hospital -3
in private clinic -4
in private hospital -5
at home -6

33. In case of institutional delivery, how did you go to the hospital/clinic? Did you rent any vehicle or ambulance? What was the cost?

34. Was your child immunized at birth? Any illness in the child after birth?

35. If you have/had availed pre-natal and post-natal care from any institution, and had an institutional delivery, please tell us your experience about the services.

36. Particulars of former household members who died during the last 365 days (including COVID-19 deaths).

Name of Deceased member	Sex	Age at death	Reason of Death	Whether medical attention received before death	Whether hospitalized	Remarks

37. Particulars of former household members who died during the last 5 years

Name of Deceased member	Sex	Age at death	Reason of Death	Whether medical attention received before death	Whether hospitalized	Remarks

38. What are the main health problems in your village (top 5)? Please rank them from 1-5 according to the most important or major problems (l) to less important (5)

Health problems in the village	Rank (1-5)	Who suffers from them usually; children, male or female	What type of treatment is sought and where	In your opinion the reason for the problem/disease

39. What kind of new services / improvement in existing health services would you like to see in your village?

a)	
b)	
c)	
d)	

Block F: COVID-19 in Tea Plantations

40. How did you come to know about the COVID-19 for the first time? Were you made aware of COVID-19 and the risks related?

41. Were you or any of your family members infected with COVID-19? If yes, when?

42. Where did you undergo treatment? Can you share your experience of seeking treatment? How much money did you spent for the treatment?

43. Did you experience stigma or discrimination? Can you narrate some experiences when you felt so?
44. Was there any Rapid Antigen Test Camp or Sample collection for RTPCR test camp organised by the Government in your locality? If yes, what was the result of the tests done in the camp?
45. Was there any quarantine centre of isolation facility in your locality? Who has organised the centre? Tell us about the quality of the facilities provided in the centre.
46. Do you have any family members who have returned from another city during the lockdown?
47. Did you face any difficulties in buying ration and other consumable items during the lockdown?
48. Did you lose your wage/ employment due to the pandemic? Or did you face difficulties in earning livelihood during the lockdown?
49. Is there any change in your food habits/food items/number of meals/quantity of food during the lockdown?
50. Do you have a ration card? Did you receive the subsidised ration from PDS during the lockdown? Tell us about the quality and quantity of the ration distributed in the PDS shop.
51. Did the lockdown hamper the regular health care services in your area? Did you find it difficult to access the health care services (other than COVID-19 care) for you and your family members during the pandemic?
52. How did you manage/arrange the needs of medical care (if there was any) for yourself and your family members during the lockdown?
53. Did you receive any assistance from the community or civil society organisations during the pandemic? Or, were you a part of any such initiatives? Tell us about the community response during the pandemic.
54. Tell us about any other problems that you have faced during the lockdown.

Thanks for your cooperation

Interview Tool

(ASHA/ANM/Health Workers/ICDS/AWW)

Namaskaar/Hello. My name is Bikash Da I am working with the INDIAN INSTITUTE OF TECHNOLOGY GUWAHATI. We are conducting a study on the Health and healthcare services in the Dooars Region. This is purely for academic purposes. I would like to talk to you about the work you do for the people in the tea garden. This conversation usually takes about 25-35 minutes. Your all opinion and comments will be confidential and anonymous, and will not be shared with anyone. Your participation in the survey is voluntary. If I ask you any questions you don't want to answer, just let me know and I will go on to the next question or you can stop the interview at any time. We will be happy and appreciate it if you kindly give your consent to participate in the conversation. If you have any questions about this study you may ask me. Do you agree to participate in this conversation?

Thanks

A) Personal Information

1. Name of the Health Worker:
2. Designation:
3. Name and Address of the Health Centre/AWC:
4. Name of the Tea Estate where the centre is located:
5. Telephone/Mobile:
6. Date and Time of interview:
7. For how long (how many years/days) are you working in this post and in this institute?
8. Where is your home? How do you come to the center or visit the villages every day?
9. How many colleagues do you have at your center? Can you give me their names and phone numbers?

B) Pre-COVID19 situation

10. How many hours do you work at the health centre or as a health worker in a day?

11. What are the household duties do you do at your home? Can you give us an idea of your daily schedule?

12. Do your family members (the male members) supports you in your work? Do they provide you any form of assistance with your work?

13. What are the services do you provide to the people in the normal time of a year (Pre-COVID situation)?

14. How do you provide these services to the people? and how often?

15. To you visit door to door to provide services?

16. Tell us about your experience working in tea plantation area?

17. According to your opinion, what are the health-related issues faced by the villagers frequently in your area?

18. Where do people seek health service when they fall sick? Do they visit health centre, or do they buy medicine from outside? Or do they ignore/overlook minor illness?

19. Do people take advice of traditional healers like *Gunins* or *Ojhas* or *Kabiraj*?

20. In your centre what are the number of registered beneficiaries like children, adolescent girls & expecting mothers?
21. What are the services do you provide to these beneficiaries?

22. What are the issues/scenarios related to child and maternal health in this area?

23. What kind of services do you provide related to child and maternal health?

24. What is the situation of malnutrition and anaemia cases at your centre?

25. Are there any TB patients registered at your centre? If yes, how many? How do you identify them? How do you provide services to the TB patients?

26. Is there any sigma/ rumours around the TB patients in the village?

27. Tell us about the immunization programs at your health center. How you immunize children against diseases and illnesses? Do you visit their homes?

28. In recent times, was there any special health camp/ drive program/vaccination camp (like Malaria, Dengue, Japanese encephalitis) in this area? Please tell me more about this (how frequent, the services, challenges, participation).

29. What are the challenges to work in this area? Do you face any difficulties in working in this area?

30. Do you get the honorarium or salary and other incentives for your work on a regular basis?

C) Work during COVID19 situation

31. How did you come to know about the COVID19? What were your initial thoughts when you came to know about the virus?

32. Were you scared to work in the midst of a pandemic? Tell us in details about this.

33. Did you receive a mask, sanitizers, gloves, and other personal protective equipment to work during COVID19?

34. Did you get any special trainings/instructions to fight or work during the COVID19 situation?

35. How is the COVID19 situation at your area? How many people get infected with the virus?

36. What do you do (nature of work) at the community level in the village during this COVID 19? What type of services do you provide?

37. How do you work during this COVID 19 situation? Who did you visit the patients? Did you visit the hospitals with patients?

38. How do you come to the health center or visited the households in the village during the lockdown?

39. Did you receive any special instruction/ training to work in the COVID situation?

40. Can you tell me about the awareness campaigns you are carrying in the villages? How are you giving information on COVID to the community? What type of information?

41. What do you do when you come to know that there is a person in the village who has a travel history in our area?

42. How many migrants have returned home in your area during the lockdown? How did you track, screen and get them tested? What were the arrangements for quarantine and isolation?

43. What do you do if anyone is tested positive? Where do you report? What are the referral system available in this area? How were the patients taken to the hospital?

44. How challenging is it to work during this pandemic? What are the challenges? What type of problems did you face working during the lockdown?

45. How do you manage the challenges that you have faced during working in the pandemic?

46. What type of problems did you face at your personal or family level during the lockdown?

47. Is your work load increased for COVID19 duties? How many hours of extra from your regular routine are you working during the pandemic? How do you manage the increased work pressure because of COVID19 (apart from your earlier routine work)?

48. What happened to the services that you provided the rest of the year (before the COVID 19 situation), for example, maternal health services? Did they get affected during the increased workload in the COVID19 situation?

49. What did happen to the Child nutrition schemes (ICDS, Mid-Day Meals) during this pandemic? Did it also affect the growth and nutrition of the child?

50. What happened to the child immunization, vaccination, iron-folic acid tablets distribution schemes? Did the pandemic affect these services?

51. How did the community respond to the COVID 19 situation, in terms of the awareness, following the instructions of the health department and the administration?

52. What was the response of your family towards you for doing COVID19 duty? Did they support you?

53. Do you face any difficulty working with the community during this pandemic? Did you witness any stigma, threat, violence, rumours, etc.?

54. What was the reaction of your neighbours towards you for doing COVID19 duty? Did you face any hackling or abuse?

55. Did you go back to home after doing COVID19 duties? Or were there any institutional quarantine facilities arranged for you by the government?

56. Did you isolate yourself at your home from your family members while doing the COVID19 duty? Is there any isolation facilities/separate room for you at your home? What are the challenged you faced for this?

57. Do you face any difficulty in terms of getting equipment, drugs, supplies, finance, services from the Government?

58. Did you receive your salary/ honorarium and incentives during the COVID19 situation?

59. Can you tell us your experience/opinion of working during the Pandemic? Please also tell us if you have any suggestions/comments.

Thank you

Interview Guide for

Former Nurses and Health Workers in Tea Estate Hospitals

1. Name and Age:

2. What was your role in the tea garden hospital?

3. Where did you complete your studies or training?

4. How did you join the tea garden hospital?

5. When did you join the tea garden hospital and how long did you serve there?

6. What were the infrastructure of the hospital (human resource, OPD, in patient care, bed, pathological labs?

7. What were the services the hospital provided to the garden workers?

8. Were the services available for the families (and dependent population) of the permanent workers and the casual workers?

9. What were the provisions for medicine? How was the medicine supply? What was the supply chain (did the garden management buy the medicines)? What do they do if there was shortage of any prescribed medicine?

10. If the workers used to buy medicine from outside? Was there any provision to reimburse the cost of the medicine and medical services brought by the workers from outside?

11. What were the major diseases and health related issues in the tea gardens? Is there any diseases (trends) specific to tea estates?

12. What were the occupational health hazards in the tea gardens?

13. How were the maternal and child health conditions? Do you remember any special incidence related to these health services?

14. What was the scenario of Institutional delivery and home delivery? Was there Trained Birth Attendant in case of home delivery?

15. What was the scenario of tuberculosis cases in the tea garden? Why did the Tuberculosis Section of the Hospital was closed after a few years?

16. What was the referral system? Where did they refer the critical patients?

17. How was the ambulance service? Was it free of cost to the workers?

18. What was their collaboration with the government Sub-centre located in the garden?

19. What were the collaborations with the PHC, tertiary hospital and other Government health institutions? How did you work with these institutions?

20. What were the changes brought by the NRHM in the tea garden health system?

21. What is the health-related practices among the tea garden labourers? Do they visit hospital in general or they prefer the traditional healing system?

22. Can you share your experience of working with the community? How did you communicate with the community or motivated them to come to the hospital?

23. What were the challenges of working in the tea garden?

24. How was the support from the tea garden management when you served the hospital?

25. Why did you leave the tea garden hospital?

Thank you

Interview Guide

for Medical Officers & Doctors

General Information

1) Please tell me about yourself. For example, where have you studied medicine?
2) How long have been practicing in Alipurduar?
3) Location of the chambers and private clinics.
4) Fees & number of patients.
5) If associated with any government hospital?
6) Name of the public hospital and period of service
7) What is the infrastructure status of the hospital and services healthcare services available in the hospital?

Health Issues of Dooars Region and Tea Gardens in particular

8) What are the main diseases and illness in this region?
9) Can you please tell me 5 major diseases found in the region especially in the tea plantations?
10) What is the rate of prevalence of these diseases and what are the reasons?
11) Can you tell me about the prevalence and nature of the following diseases in the region as well as in the tea plantations?
    - Tuberculosis, Malaria, Dengue
    - Anaemia & Malnutrition
    - Waterborne Diseases
    - NCDs such as Hypertension & Diabetes
    - Skin Diseases, eye diseases, Occupational diseases
    - Any other diseases?

Patients Health Seeking Behaviours

- Can you elaborate on the following points regarding patient's healthcare seeking behaviours in this region and especially in the tea plantations?

12) Awareness about health and disease

13) Continuation of treatment

14) Following the Prescription

15) Regularity of Medicine Intake

16) Living with Disease

State of Private Healthcare Infrastructure in the Region

- Can you elaborate on the following points regarding the state of private healthcare infrastructure in the region?

17) Availability of Doctors

18) Nursing Homes

19) Diagnostics and Pathological Services Difficulties of Private Practice

20) Difficulties faced by the Doctors if any

21) Difficulties faced by patients, if any

Cost of Healthcare in this Region

22) What is the average approximate cost of seeing care in the OPD section of your clinic?

23) How do people pay the cost? Cash or Credit or Insurance?

24) If you can recall any incidents of difficulties faced by patients paying the cost?

25) What is the status of *Swastha Sathi Scheme* (State funded Health Insurance): Utilization pattern, health services covered, referrals:

Thank you for cooperation

Appendix: V

Details of Publications, Seminars, Conferences, and Workshops

A) Publication Details

- **Journals**

1. Das, B., Adhikari, M., Singha, S.R., & Parmar, D., (2024). Who is Anaemic in India? Intersections of Class, Caste, and Gender. *Journal of Biosocial Science*, Cambridge University Press. https://doi.org/10.1017/S0021932024000245
2. Das, B. (2023). Hundred Years of Chargola Exodus: Changes and Continuity in the Tea Plantations in Eastern India. *Contemporary Voice of Dalit*, SAGE Publications. ISSN: 2455-328X. DOI: https://doi.org/10.1177/2455328X231169637.
3. Das, B., Hossain, M., & Roy, P. B. (2022). Caste, Social Inequalities and Maternal Healthcare Services in India: Evidence from the National Family and Health Survey. *Contemporary Voice of Dalit*, SAGE Publications. ISSN: 2455-328X, DOI: https://doi.org/10.1177/2455328X221125603
4. Das, B. (2021). Book Review: Sujata Mukherjee, Gender, Medicine, and Society in Colonial India: Women's Health Care in Nineteenth and Early Twentieth-Century Bengal, *South Asia Research*, SAGE Publications, 41(03): 453-456. ISSN: 0262-7280, DOI: https://doi.org/10.1177/02627280211034678
5. Das, B. (2018). Tea Plantation on Reports: Health Services in Colonial Bengal. *Eastern Geographer- Journal of the Department of Geography, Utkal University, Odisha.* XXIV (02). 60-69. ISSN: 0973-7642.

- **Books & Monographs**

1. Das, B. (2023). *Chayer Desh: Somaj, Mahamari, Ebong Arthoniti*. (The Land of Tea: Society, Pandemics and Economics), Kolkata: Apon Path Publishers. ISBN: 978-93-92022-23-4. (In Bangla)

- **Newspaper Columns, Post Editorials, and Reports**

1. Das, B. (2020, July 30). *COVID-19 in Rural India XLII: How Sinking Prices Doom Farmers in Khauchandpara of West Bengal*. News Click. https://www.newsclick.in/Farmers-suffer-because-of-sinking-price-in-West-Bengal,
2. Das, B. (2020, April 07). *Mohamari, Arthoniti Ebong Uttorbonger Prantik Jibon,* (Pandemic, Economy, and the Marginal Lives in North Bengal). Post -Editorial. Uttarbanga Sambad. p. 06.

3. Das, B. (2020 July 28). *Bortoman Gramer Arthoniti O' Eksho Diner Kaj* (Rural Economy and Hundred Days Employment at Present), Post -Editorial. Uttarbanga Sambad. 2020, July 28. Alipurduar Edition. P 6. (published in Bangla).
4. Das, B. (2020, Sept 12). *Mohamari Bojalo Sorkari Chikitsa Bebostha Kotota Joruri*. (Pandemic has made us relaise the importance of Public Health System). Post -Editorial. Uttarbanga Sambad. Alipurduar Edition. p. 06. (published in Bangla).
5. Das, B. (2021, Mar, 1). *Apusti abong Roktoswolpotar Porisonkhane Uttorbonger Chhobi Hotasha Jonok*. Malnutrition and Anemia portrays a scary picture in North Bengal. Post - Editorial. Uttarbanga Sambad. Alipurduar Edition. p. 06. (published in Bangla).

B) Workshops, Summer Schools, and Short-Term Courses

1. *Research Capacity Building Programme* on *"Plantation and Development",* National Research Programme on Plantation Development (NRPPD), Organized by Centre For Development Studies (CDS), at Centre For Development Studies (CDS), Thiruvananthapuram, Kerala, on August 07-13, 2023.
2. *Fourth Summer School* on *"Health Policy Analysis: Theory and Measures"* Organized by Indian Health Economics and Policy Association (IHEPA) in collaboration with Azim Premji University, Bengaluru & Centre for Multi-Disciplinary Development Research, Dharwad at Centre for Multi-Disciplinary Development Research, Dharwad, Karnataka on June 25-29, 2019.
3. *Seven Days Course for Urban Policy Practitioners by Urban Action School* on "Urbanizing North-East India: Interrogating Questions of Sustainable Economic Development" Organized by Urban Action School, at Tezpur University, Tezpur, Assam from July 29 to August 5, 2018.

C) Papers Presented on Seminar, Conference, and Invited Lectures

1. Special Lecture on *"Introduction to Health and Public Health"* at the Annual Camp of National Service Scheme (NSS) at Alipurduar Mahila Mahavidyalaya, on January 06, 2024.
2. Invited Talk on *"Mosquitoes in Dooars: Tea, Colonialism, and Public Health"* as part of a Series No. 22 on "Culture and Personality" organized by the Department of Sociology, Birpara College, in association with the Educational and Cultural Station (ECS), Belur on August 01, 2021.
3. Presented a paper on *"Brewing Misery: Health and Determinants in Tea Plantations of Dooars Region, West Bengal"* at the 5th Regional Science and Technology Congress, 2022-2023 organized jointly by *Cooch Behar Panchanan Barma University*, and the *Department of Science and Technology and Biotechnology, Government of West Bengal* on 17th and 18th

January 2023 at Cooch Behar Panchanan Barma University, West Bengal. (Received the Outstanding Paper Award in Social Sciences)

4. Presented a paper on *"Living with Disease: Health in the Tea Plantations of Sub-Himalayan West Bengal"* at the International Seminar on 'Essence of Geography: What, Where, Why, and How' organised by the Department of Geography, *Cooch Behar Panchanan Barma University*, in collaboration with *Foundation of Practising Geographers* on 11 & 12 November, 2022 at Cooch Behar Panchanan Barma University, West Bengal.
5. Presented a paper on *"Tea Plantation on Reports: Health Services in Colonial Bengal"* at the International Seminar and Conference of the Eastern Geographical Society on 'Society and Sustainability: An Interdisciplinary Approach' organized by Department of Geography, Vivekananda College Kolkata & *Eastern Geographical Society, Utkal University, Bhubaneswar* on January 12-13, 2019 at Vivekananda College, Kolkata, West Bengal.