

STUDY ON THE IMPACT OF TEA PLANTATION SECTOR ON SOCIO-ECONOMIC PROFILE OF THEIR LABORERS: WITH SPECIAL REFERENCE TO CRAIG ESTATE GRAMA NILADHARI DIVISION IN BANDARAWELA DIVISIONAL SECRETARIAT DIVISION

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ABSTRACT

The tea plantation sector is one of the major sources of foreign exchange in Sri Lanka and it significantly contributes to the country's Gross Domestic Product (GDP). The majority of workers in this sector are Tamil, and they face considerable socio-economic challenges. These issues are also prevalent in the Craig Estate Grama Niladhari Division, located in the Bandarawela Divisional Secretariat Division. The main objective of this study is to analyse how tea plantations affect the socio-economic background of workers in the estate. The specific objectives include proposing methods to improve their socio-economic status and exploring opportunities for expanding tea plantations. A total of 80 individuals were randomly selected for primary data collection through questionnaire surveys and interviews, while institutional data were used as secondary sources. To analyse the data, the study employed the chi-squared test, GIS analysis, and descriptive analysis. The findings revealed that workers experienced low levels of education, poor nutritional status, and various health problems. Additionally, children demonstrated low engagement in educational activities. Due to financial difficulties, many workers were compelled to seek additional employment outside plantation work, particularly as their families grow in size. Furthermore, the study identified strategies to enhance workers' income, such as engaging in animal husbandry and vegetable cultivation alongside tea plantation activities. The government and relevant institutions must take necessary measures and provide essential support to improve their living conditions.

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1. INTRODUCTION

Tea cultivation began in Southwestern China and Northern Myanmar and many regions in worldwide engage in tea cultivation today, including 22 countries in Asia, 21 in Africa, 12 in the America, 5 in Europe, and 4 in Oceania (Ono, 2021). In 1824, the British planted a Chinese tea plant in the Peradeniya Botanical Garden in Sri Lanka. By 2007, Sri Lanka had become the fourth-largest tea-producing country (Sandika, 2018). Commercial tea cultivation in Sri Lanka began in 1867, initiated by James Taylor at the Loolecondera Estate in Kandy. He is considered the father of the reputed Ceylon tea.

Tea cultivation in Sri Lanka is categorised into three regions: upcountry tea, grown in Dimbulla and Nuwara Eliya; mid-country tea, grown in Badulla and Kandy; and low-country tea, grown in Sabaragamuwa and Ruhuna (Dhanushka, 2022). The expansion of tea cultivation has contributed to the development of Sri Lanka's import and export economy, as well as improvements in port facilities, telecommunications, law enforcement, highway construction, and banking systems.

Before tea cultivation, Sri Lanka primarily engaged in coffee cultivation. Low-wage laborers were brought from South India to harvest the crops, returning to their home country after harvesting. However, as coffee cultivation declined, tea plantations began to thrive. Initially, Sinhalese workers were employed in plantations, but they refused to work under foreign employers or live in estate-provided housing. As a result, a labor shortage emerged, leading to the

recruitment of South Indian workers in 1830, primarily from Tamil Nadu. These Tamil laborers were brought in as permanent workers for the tea industry. Many had endured difficult living conditions in India and migrated to Sri Lanka seeking better opportunities. By 1911, the number of Tamil workers had reached 500,000, increasing to 800,000 by 1964 (Silva, 2005). Following Sri Lanka's independence in 1948, many Tamil workers were repatriated to India, while the remaining population was granted citizenship. Since 1991, ownership of tea estates has been transferred to private companies (Philips, 2005).

Tamils constitute 12% of Sri Lanka's total population, with estate Tamils making up 5% (Ilyas, 2014). Estate Tamil communities face limited opportunities and inadequate living conditions. They reside in line houses with minimal infrastructure, typically consisting of a small 10 x 10 feet room, a living area, and a kitchen. These houses lack individual ownership, as they remain the property of the estate (Philips, 2005). South Indian cultural practices have flourished within these plantation communities due to their relative isolation from urban areas. Additionally, plantation families tend to have high birth rates. There are 25 caste divisions within the Sri Lankan estate Tamil community (Silva, 2005). Both men and women work on tea plantations, with women primarily engaged in plucking tea leaves for nine to ten hours daily, while men handle weeding, tea plucking, and fertilisation (Chandrabose, 2015). Sunday is their designated day off. The Land Reforms Act of 1972-1975 provided some relief to plantation workers, leading to salary increases and incentive schemes. Initially,

women were paid less than men, but the act ensured wage parity between genders (Silva, 2005).

The socioeconomic conditions of estate Tamil workers differ significantly from those of Sri Lanka's rural and urban populations. In 1975, both male and female workers earned Rs. 4.28 per day, gradually increasing to approximately Rs. 700 per day by 2019. As of 2021, their daily wage rose to around Rs. 1,000 (Craig Estate Office). However, despite large family sizes, often only one member of those families is employed, leading to financial hardship. Their educational attainment is lower than the national average, with older generations receiving minimal education. Childrens' education is also limited due to parental attitudes, ignorance, and lack of awareness. Health and nutritional issues are prevalent among plantation workers, with malnutrition and inadequate sanitation being the common concerns. Disease outbreaks frequently occur due to poor living conditions. Estate housing remains overcrowded, with families residing in small, estate-owned line houses without property deeds (Philips, 2005). The socioeconomic conditions of estate workers differ significantly from those of rural and urban communities, presenting numerous challenges. Given these conditions, this study aims to examine the impact of tea plantations on the socioeconomic well-being of workers in the Craig Estate Grama Niladhari Division in the Bandarawela Divisional Secretariat Division.

1.1 Research Problem

Tea cultivation in the hilly regions of Sri Lanka was introduced during the nineteenth

century under British colonial administration, leading to the large-scale recruitment of Tamil laborers from South India, particularly the Tamil Nadu region. These workers were brought as permanent laborers to sustain the plantation sector in the country. For more than a century, plantation workers have faced numerous socioeconomic issues in their lives, including low-income levels, inadequate housing facilities, poor sanitation, limited access to quality education, and poor health conditions etc. Living conditions, particularly in line housing with limited space and basic amenities, reflect long-standing neglect and unequal development compared to rural and urban communities in the country.

Although several policies and welfare programs have been introduced by the government and other responsible organisations over time to improve plantation sector livelihoods, the expected level of socio-economic transformation has not been fully achieved. On the other hand, there are limited studies focused on examining how tea plantation systems themselves influence the socio-economic status of plantation workers in the country. This gap is especially evident in areas such as the Craig Estate Grama Niladhari Division within the Bandarawela Divisional Secretariat, where plantation-based livelihoods dominate.

Therefore, the problem of this study is the lack of comprehensive analysis of the impact of tea plantations on the socio-economic profile of plantation workers in the country. Understanding these impacts is essential for identifying the existing challenges and proposing effective strategies to improve the

livelihoods and well-being of plantation communities in the country.

1.2 Objectives

1.2.1 Main Objective

- To study the impact of tea plantation on changes in socio economic profile of plantation workers.

1.2.2 Specified Objectives

- To study the current economic and social status of tea plantation in Craig Estate Grama Niladhari Division.
- To propose new suggestions to develop the livelihood of these tea plantation workers.

1.3 Research Questions

- What is the impact of tea plantation on changes in socio economic profile of plantation workers?
- What methods can be followed to improve the livelihood of those people?

2. LITERATURE REVIEW

Several studies conducted in Sri Lanka and around the world on factors related to tea plantations, tea estate workers, and socioeconomic status are comparatively discussed in this section.

Tea cultivation began in Southwestern China and northern Myanmar. Luyu wrote for the first time in a book that the Chinese have been drinking tea since the 6th century AD. Tea cultivation spread to Japan from China in 1000 AD (Silva, 2005). Tea was first cultivated as a commercial crop in 1867 by James Taylor at Loolecondera Estate, Kandy.

The first consignment of Sri Lankan tea was exported in 1872. By 1992, 460 government-owned tea estates had been privatised and transferred to 23 estate companies (Wickremasinghe, 2008). Today, there are many tea-growing areas around the world. 22 countries in Asia, 21 countries in Africa, 12 countries in America, 5 countries in Europe, and 4 countries in Oceania belong to it (Ono, 2021). In 1964, 459,000 plantation workers were sent to India under the Indo-Lanka Treaty. There are two parts to weeding in tea cultivation. There is manual weeding and chemical weeding. Chemical weeding reduces soil erosion (Chandrabose, 2015). After 2007, Sri Lanka has become the fourth largest tea producing country (Sandika, 2018).

The Tamil people of Sri Lanka are divided into two parts. Sri Lanka's Tamil population is 12%, and the Tamil population in the plantation sector is 5% (Ilyas, 2014). In the early days, Sinhalese workers refused to work under foreign employers or live in line houses. By the nineteenth century, the demand for plantation labor had significantly increased, leading to the recruitment of Indian workers from 1830 onward. Many of these Indian workers had experienced extreme hardship in their home country. After Sri Lanka gained independence in 1948, they were designated as temporary immigrants (Silva, 2005). The British constructed long, barracks-style buildings known as "lines" for the employees. Estate housing typically consists of compact units measuring approximately 10-12 feet, comprising limited living space and basic kitchen facilities. In 1991, the management and ownership of plantation estates were transferred to private sector companies (Philips, 2005). Estate workers

have historically lived in unsanitary conditions, with limited space between houses. In some cases, multiple houses share a single toilet, increasing the risk of disease outbreaks. Additionally, many workers raise chickens, cows, and goats as supplementary sources of income. During the rainy season, overflowing toilets and animal waste contribute to the spread of diseases such as cholera and diarrhea. Mothers often suffer from anemia due to inadequate nutrition and excessive labor, while malnutrition is prevalent among estate children (Silva, 2005). A lack of essential nutrients is a primary cause of malnutrition, which is a common issue among children under five in developing countries. In Sri Lanka, malnutrition rates in the plantation sector are higher than those in rural and urban areas (Kamalrathne et al., n.d.). A child's weight and nutrition are influenced by genetics, the nutrition of mothers and the surrounding environment. The plantations are inhabited by laborers imported from India. They get their basic needs through estate management. One reason for these nutritional problems is that they are very poor (Jayawardena, 2014).

Many research studies have employed questionnaires, interviews, and observations as primary data sources, while institutional records and magazines have served as secondary sources. Various data analysis methods have been used in these studies. One notable study, "Outgoing Labor and Its Impact on the Tea Plantation Sector in Sri Lanka" (Chandrabose, 2015), randomly selected 122 households in Nuwara Eliya and classified employees into three categories: fully involved in estate work, partially involved, or fully engaged in non-estate jobs. The study found that a significant

number of workers was shifting to non-estate employment, leading to labor shortages and affecting overall productivity. This trend also highlighted the socio-economic vulnerability of households relying solely on plantation employment, as diversification of income sources became necessary for survival.

Galagamuwa et al. (2017), in "Nutritional Status and Correlated Socio-Economic Factors among Preschool and School Children in Plantation Communities, Sri Lanka," examined malnutrition among children in three villages within Gangawata Korale, Patha Hevaheta, and Galaha Divisional Secretariat Divisions. The study revealed high rates of under nutrition and stunting, which were strongly associated with low household income, limited parental education, and inadequate access to health services. The study also noted that malnutrition was more severe in remote plantation villages compared to those with better access to infrastructure, suggesting that geographical isolation exacerbates socio-economic inequalities.

Compared to the rural and urban sectors, estate dwellers were found to have lower educational attainment. Many children did not attend school due to engagement in plantation work, parental ignorance or unwillingness, and economic difficulties. In estates, children often signed attendance with fingerprints rather than writing. The estate school system in Sri Lanka was established under Ordinance No. 5 of 1907, and after 1947, education up to the age of 14 was made compulsory (Silva, 2005). This historical context shows that despite legal provisions, socio-economic and cultural

factors continue to limit educational achievement in estate communities.

Jayawardena (2014), in "Underlying Causes of Child and Maternal Malnutrition in the Estate Sector of Sri Lanka," analysed maternal and child nutrition issues using data from the 2006 and 2007 Demographic and Health Surveys. The study found that maternal malnutrition and poor dietary diversity significantly contributed to child malnutrition, with children in estate sectors showing poorer nutritional outcomes than those in rural or urban areas. The research emphasised that addressing maternal nutrition and health education could substantially improve the well-being of plantation children.

Selvaratnam et al. (2003) conducted a study on "Nutritional Status and Productivity of Sri Lankan Tea Pluckers" using a sample of 304 randomly selected female tea pluckers. Dietary assessment using 24-hour recall, BMI calculations, and hemoglobin levels revealed that many female workers suffered from anemia and low nutritional status, which negatively affected their productivity. The study recommended iron supplementation and nutrition interventions, highlighting the direct link between health, nutrition, and economic productivity in plantations. Hassan (2014), in "Deplorable Living Conditions of Female Workers: A Study in a Tea Garden of Bangladesh," analysed work and social environments using a mixed-method approach with 50 female workers. The study found that female workers faced poor living and working conditions, lack of social support, and limited awareness of labor rights. The research emphasised the importance of improving workplace

conditions, social services, and empowerment programmes for female workers, demonstrating that gender-specific interventions are crucial in improving the socio-economic status of plantation communities.

Another significant study, "Poverty Incidence and Its Determinants in the Estate Sector of Sri Lanka" by Sinnathurai and Brezinova (2012), analysed poverty and unemployment in tea plantations. The research utilised data from the Household Income and Expenditure Survey conducted by Sri Lanka's Census and Statistics Department. This study focused on estates in the Sabaragamuwa, Central, and Uva provinces, covering 89 Divisional Secretariat Divisions. Poverty determinants were examined using a multiple regression model applied to cross-sectional data, with analysis conducted using EViews. Key variables included education, road infrastructure, agricultural employment, industrial employment, and market access. A simple linear regression model was used for further analysis.

While much research has been conducted on the health of tea plantation workers, relatively little attention has been given to their education and economic conditions. Among estate workers, betel nut chewing, smoking, and alcohol consumption are common. Oral leukoplakia, a precancerous condition, is more prevalent among male workers. Compared to other regions, tea plantation workers experience higher rates of poverty, language barriers, and poor education. Beedi smoking is widespread, and oral cancer is more common among estate workers than in other populations. Approximately one-third of household

income in plantation communities is spent on alcohol and tobacco (Ariyawardana et al., 2007).

Compared to urban and rural populations, the socioeconomic conditions of plantation workers present significant challenges. Factors contributing to child and maternal malnutrition include food insecurity, inadequate maternal and childcare practices, limited healthcare access, low maternal education levels, and substance abuse. Studies indicate a direct relationship between low birth weight and childhood malnutrition. Additionally, a mother's education level has a significant impact on her child's nutritional status. Undernourished mothers often give birth to underweight children. As a solution, researchers have recommended implementing targeted nutrition programmes for estate communities (Jayawardena, 2014). Drug addiction among estate youth is also a growing concern, influenced by limited education, religious practices, and peer pressure. The highest rate of drug abuse is observed among individuals aged 20 to 24. Many estate residents use smokeless tobacco products due to their low cost, contributing to widespread addiction (Medhi et al., 2006).

Traditionally, estate communities have been engaged in tea plantation work. However, over time, the number of workers in the sector has declined. The privatisation of tea estates, failure to increase wages and inadequate living conditions have contributed to this labor reduction. Chandrabose (2019) identified four categories of workers in tea plantations:

- 33% are fully engaged in estate work.

- 35% are partially engaged in estate work.
- 15% are fully engaged in non-farm jobs.
- 19% are involved in agricultural work.

The primary reasons for leaving plantation work include low wages, poor housing conditions, and limited educational opportunities. Following the nationalisation of tea estates, projects were introduced to eliminate the line house system (Chandrabose, 2019). Most estate families have low incomes, with only two or three members per household employed in tea cultivation.

Ahmad et al. (2015) conducted research on "Study on socio economic and educational condition of tea worker at Sylhet, Bangladesh". The objectives of this research are understand the socio-economic and educational status of tea workers and to educate them about human rights. Interviews, questionnaires, and observations have been used as primary data, and park authorities, books, magazines, and internet have been used as secondary data. The estate houses were typically constructed using bamboo, tin, and mud. Infrastructure deficiencies, including unreliable electricity, poor sanitation, and limited access to drinking water, were prevalent in estate communities. The study proposed several recommendations to improve conditions for plantation workers, including providing labor law education, implementing socioeconomic development programmes, and ensuring access to electricity, clean water, and proper sanitation facilities. Dishanka & Ikemoto (2014) conducted research on "Social development and labor productivity: the problem and a solution for the tea plantation sector of Sri Lanka". It has

revealed the importance of skills, knowledge, motivation, training, and other factors. Interviews and observations have been used as primary data. This study identified seven findings. These include low wages for tea plantation workers, which has a negative impact on their economy; a low human development index, which has a negative impact on productivity; a reduction in labor due to low wages and a lack of facilities; a reduction in traditional plantation labor supply; shareholder influence; management inefficiency; and informal labor contracts. The income of plantation workers is not sufficient for their monthly consumption. Their education, health, nutrition, housing, and space are at the minimum level. The new youth community rejects plantation work.

2.1 Literature Gap

The reviewed literature highlights critical socio-economic and health challenges faced by tea plantation workers in Sri Lanka, including malnutrition, poverty, inadequate housing, and labor dynamics. However, several gaps remain unaddressed. While considerable attention has been given to nutritional and health issues, there is limited exploration of the workers' overall well-being, including mental health, access to quality education, and social empowerment. The long-term effects of inadequate education, particularly among youth and women, on community development and socio-economic mobility have not been thoroughly examined. Similarly, although labor migration and non-estate job participation have been studied, economic diversification strategies and the role of skill development in improving livelihoods remain underexplored. Research has largely focused on material conditions such as

income and housing but has paid little attention to cultural and social integration challenges, including language barriers, community cohesion, and access to broader societal resources. Gender-specific issues, such as empowerment, leadership opportunities, and participation in decision-making, have received insufficient in-depth analysis. Additionally, the environmental impact of tea plantation activities and its implications for workers' health and local ecosystems have not been adequately considered alongside socio-economic factors. While policy recommendations addressing sanitation, housing, and training programmes exist, the effectiveness of their implementation and the role of governance in addressing these challenges remain unclear. Addressing these gaps requires a more integrated approach that considers socio-economic, cultural, gender-specific, and environmental dimensions, providing insights for sustainable development strategies and policy frameworks that holistically uplift plantation communities.

3. METHODOLOGY

3.1 Study Area

For this research, the Craig Estate Grama Niladhari Division (GND) which is located in Bandarawela Divisional Secretariat Division, Badulla District, Uva Province, Sri Lanka was selected. It locates at a distance of 5.7 kilometers from Bandarawela town.

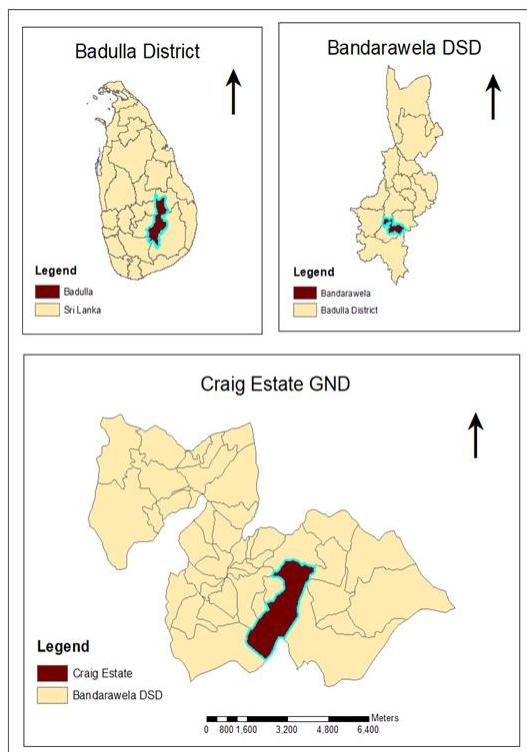


Figure 3.1 : Study area

Data Source: 1:50000 digital data, Survey Department of Sri Lanka, 2009.

Craig Estate GND is situated on a slight slope at the base of the Nayabedda mountain range. The land area is 383.68 square kilometers.

Table 3.1: Land use in Craig Estate GND, 2020

Land Use	Land Size (Hectares)
Tea	28761
Home Garden	4.046
Protected land	4.451
Uncultivated Land	0.404
Roads	1078

Data Source: Resource profile, AG office in Bandarawela, 2020

Tea plantation can be considered as the most common land use is Craig Estate GND.

The total population in the Bandarawela Divisional Secretariat Division is 72523. The population of the Craig Estate Grama Niladhari Division is 2535. There are 614 families and 599 houses. Out of this population, 1295 are female and 1240 are male.

Table 3.2: Employment by age group, 2021

Age Group	Population
18 - 30	160
31 - 45	209
45 - 60	324
Over 61	8

Data Source: Resource profile, 2021

Thus, the number of employees between the ages of 45-60 years is abundant.

3.2 Data Collection

The research employs a combination of primary and secondary data collection methods tailored to achieve the study's diverse objectives. This mixed-methods approach ensures comprehensive data coverage across various socio-economic aspects of tea plantation workers' lives.

3.2.1 Primary Data Collection Methods

Questionnaires

Questionnaires were administered to 70 respondents selected through the systematic sampling method and focus areas are

education levels, income and employment and health and nutrition.

Interviews

Conducted with 10 key stakeholders, including:

- Officials from the tea plantation office (labor and productivity data).
- School principal and teachers (educational progress and challenges of tea plantation children).
- Estate hospital doctor and midwife (health, nutrition, and prevalent diseases).
- Grama Niladhari Division officer (overall socio-economic insights).

Field Observations

Recorded on-site observations to capture the living conditions and environmental factors focused on:

- Housing and cleanliness: To assess income levels and hygiene practices.
- Physical appearance and behavior: To infer health and educational levels.
- Community dynamics: Behavioral patterns in social and work settings.

3.2.2 Secondary Data Collection Methods

Corporate Data

Sourced from estate offices to obtain, data on tea harvest and distribution, employment and labor conditions.

Institutional Records

- Schools: Educational performance and attendance records of plantation children.
- Estate Hospital and MOH Office: Health statistics and disease prevalence among families.
- Village Officer: Demographic and socio-economic data.

Published Literature

- Books, journal articles, and reports were analysed to provide contextual insights and support findings.

By integrating both qualitative and quantitative methods, this mixed approach enables the study to achieve its objectives holistically:

- Poverty Analysis: Through income data, housing quality, and field observations.
- Educational Impact: Through school records, interviews, and observations.
- Health Insights: Through health data from estate hospitals and interviews with medical staff.

This methodological framework ensures that the study captures a nuanced and multi-dimensional understanding of the socio-economic realities of tea plantation workers.

3.3 Data Analysis Methods

To comprehensively analyse the data collected, a combination of GIS analysis, descriptive analysis, and Chi-squared analysis has been employed. These methods are carefully selected to address the study's objectives and provide meaningful insights into the socio-economic and spatial dimensions of tea plantation workers' lives.

GIS Analysis

GIS Analysis was conducted to identify and visualise the spatial distribution of tea plantations within the study area. GIS tools map the geographical locations, distribution

patterns, and accessibility to resources within tea plantations. Significance of doing this process is to highlights spatial disparities in resource allocation and aids in identifying clusters of socio-economic issues across the region. By mapping the geographical locations, distribution patterns, and accessibility to resources, this analysis highlights spatial disparities in resource allocation and identifies clusters of socio-economic issues among plantation workers.

Descriptive Analysis

Descriptive analysis was conducted to systematically organise and present data obtained from the questionnaires. It summarises responses related to education, income, health, and living conditions, providing an overview of the socio-economic characteristics of the population. By categorising data according to income levels, health status, and educational attainment, and applying the chi-squared test to examine associations between variables, this analysis highlights key trends and patterns in the economic and social conditions of tea plantation workers.

Chi-Squared Analysis

The purpose of chi square analysis is to measure relationships between categorical variables. This discusses the extent to which the economy influences those tea plantation workers' education and health.

Hypotheses Tested:

- Null Hypothesis (H_0): There is no significant relationship between the economy and health of tea plantation workers.
- Alternative Hypothesis (H_1): There is a significant relationship between the

economy and health of tea plantation workers.

- Null Hypothesis (H_0): There is no significant relationship between the economy and education of tea plantation workers.
- Alternative Hypothesis (H_1): There is a significant relationship between the economy and education of tea plantation workers.

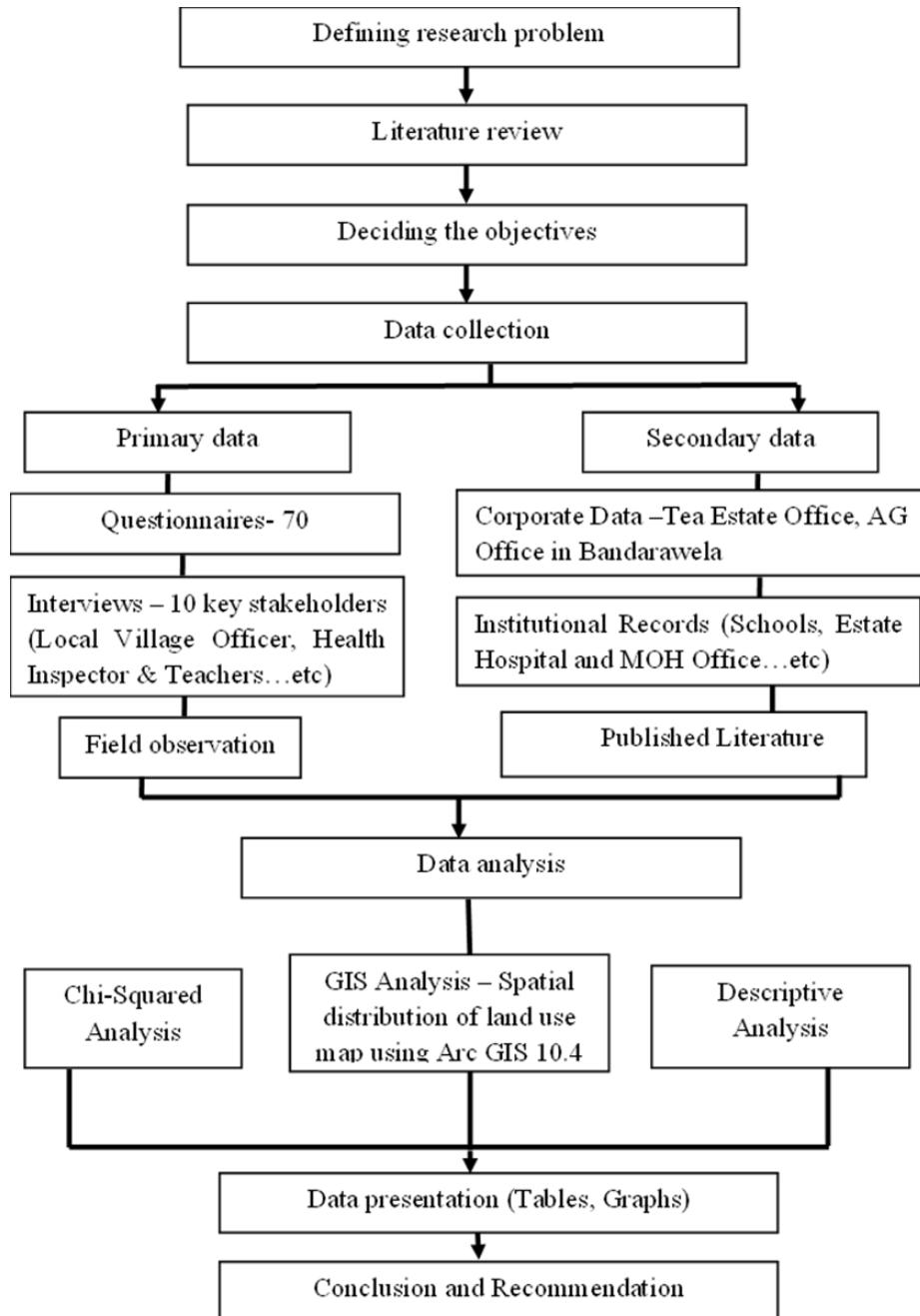


Figure 3.2: Methodology

4. RESULTS AND DISCUSSION

This section analyses the research data through scientific methods. The research problem that led to the research, the research objectives and the answers to the research questions are presented.

4.1 Land use change in the study area

One of the specific questions of the research was to systematically identify the changes in tea plantation areas and yields in the study area. To achieve it, two maps were created using GIS in 2005 and 2022. During these two years, the population has changed significantly.

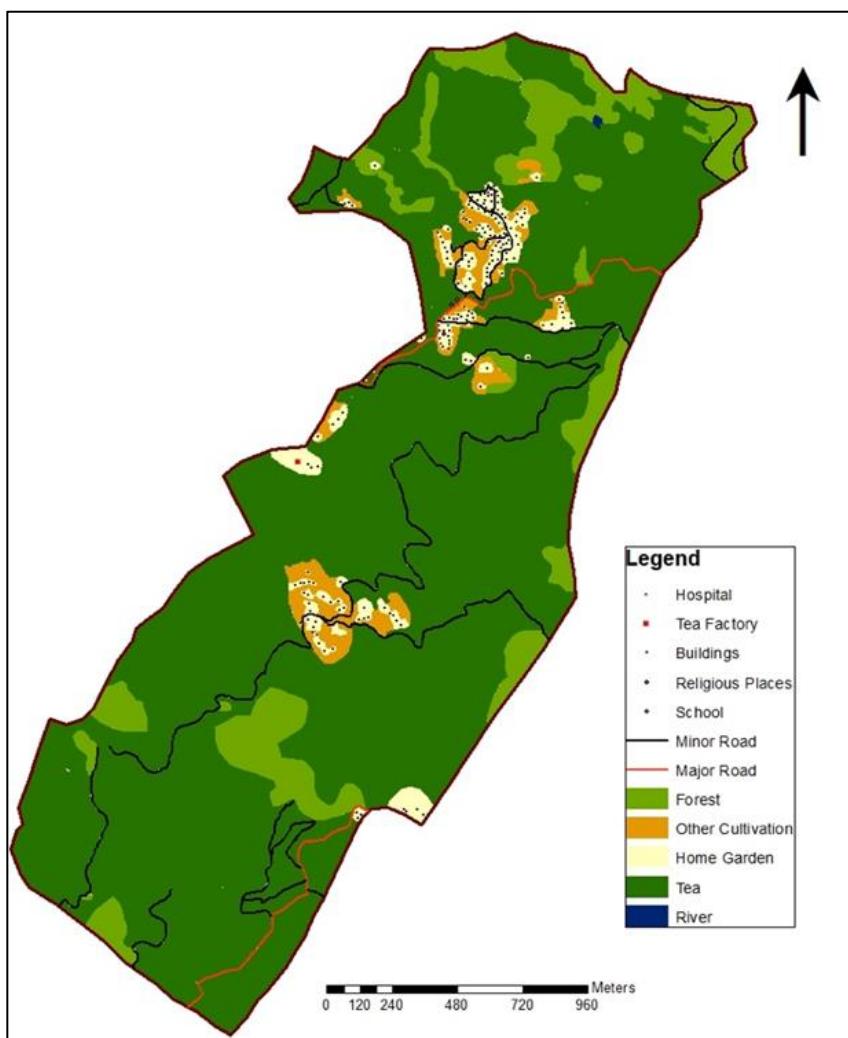


Figure 4.1: Land Use in Craig Estate, 2005

Data Source: 1:50000 digital data, Survey Department of Sri Lanka, 2005

In the year 2005, tea plantation and other land use categories in the Craig Estate Grama Niladhari Division can be seen in the above

figure 4.1. Houses are more common in the northern half compared to the southern half.

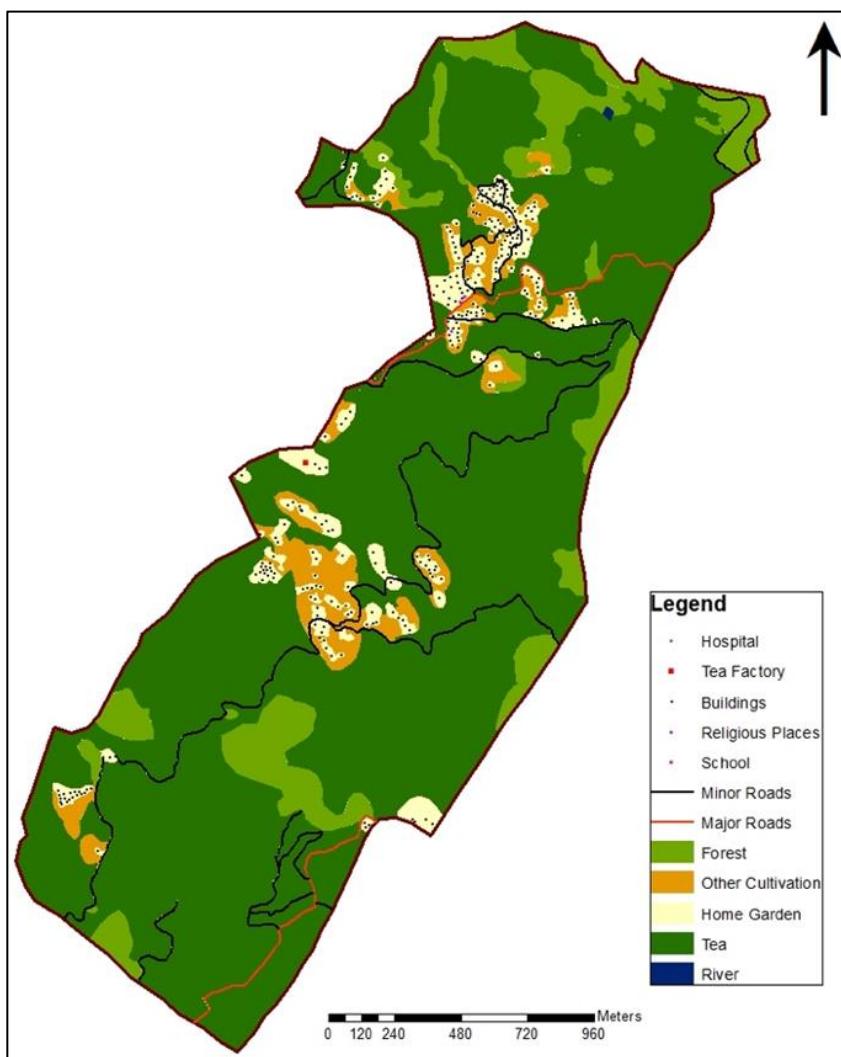


Figure 4.2: Land Use in Craig Estate, 2022

Data source: 1:50000 digital data, Survey Department of Sri Lanka, 2009

Through this figure 4.2, it is clear how the tea plantation has spread in the Craig Estate Grama Niladhari Division in the year 2022. Houses are more common in the southern half compared to the northern half.

Also, compared to the year 2005, in the year 2022, there are more houses in the Craig

Estate Grama Niladhari Division. Accordingly, those houses have been built in the year 2022 in the places where tea cultivation was seen in the year 2005. In addition, in the year 2022, there will be a home gardening environment around the houses. The main reason for this can be

attributed to the increase in marriages, with them separating from their families and moving into separate homes.

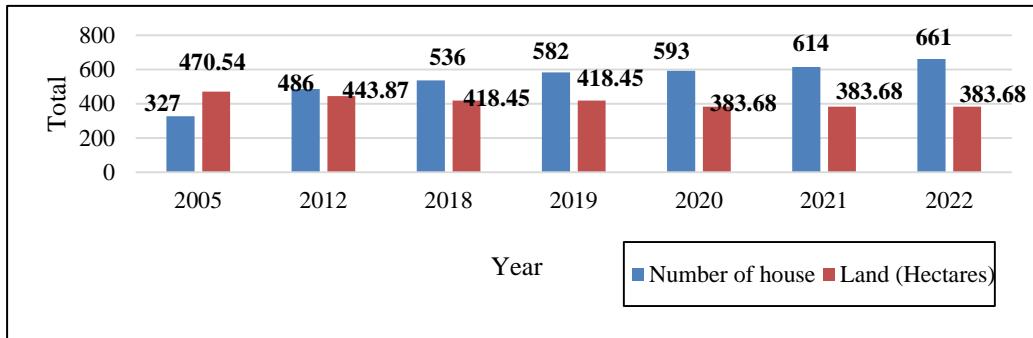


Figure 4.3: Tea land and Houses from 2005 to 2022

Data Source: Annual report in Craig Estate Office & resource profile

The figure 4.3 shows a description of housing units and land area for several years from 2005 to 2022. It is clear that the number of housing units has increased, while the tea land area has gradually decreased

from 2005 to 2022. This shows a shift land from plantation use to settlement use, reflecting socio-economic changes such as increasing population pressure and changing land use priorities.

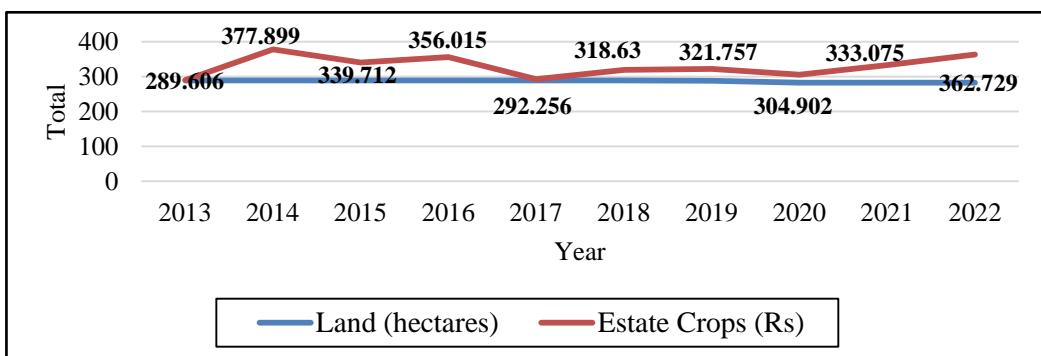


Figure 4.4: Tea land and Estate crops from 2013 to 2022

Data Source: Annual report in Craig Estate Office

According to the above figure 4.4, a description of the tea estate area and the income from 2013 to 2022 is shown. Accordingly, although the area has decreased from 2013 to 2022, the income from 2013 to 2022 has increased. This is because tea

cultivation is carried out most efficiently and productively on the available land. Another reason is that cultivated land is not abandoned over time.

4.2 Socio economic profile of plantation workers

A main objective of the research is to identify how tea plantation affects the socio-economic status of tea estate workers. Under this, factors such as education, health and the economy are considered. Both men and women were selected for this study because both genders employ as tea plantation workers. Sampling units were selected among the plantation workers in the Craig Estate GND.

Table 4.1: Sample unitsz

	Male	Female	Total
Total Laborers	113	239	352
Sample Unit	28	42	70

Data Source: Field survey, 2023

The percentage of female is 60% and the male is 40% in these samples. Women were the majority from the tea plantation workers. Since they receive minimum wages, men turn to other jobs.

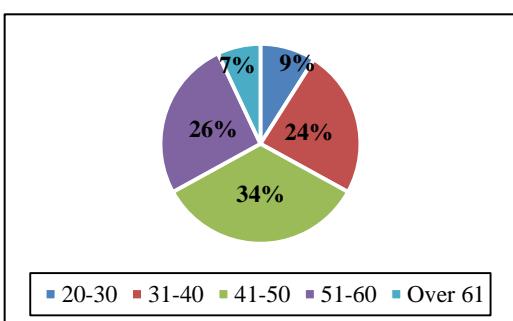


Figure 4.5: Age group of laborers

Data Source: Questionnaire survey, 2023

According to the figure 4.5, the age levels of 70 estate workers were considered for the sample. Accordingly, between the ages of 41-

50 are 34% and at least more than 7% of the laborers are 61 years old. Due to the lack of care for workers and the low wages, the younger generation is not interested in working tea plantations. Therefore, there are youth suffering from unemployment and some are doing other jobs.

69% of families had between 1-5 members. 31% families had more than 5 members. Young marriages are common here. The reasons for this can be attributed to their social system, lack of education and money. Their low education has also contributed to the increase in the number of members in a family. This further weakens their economy.

4.2.1 Education of tea estate workers and their children

The education of tea plantation workers and their children is low compared to other areas.

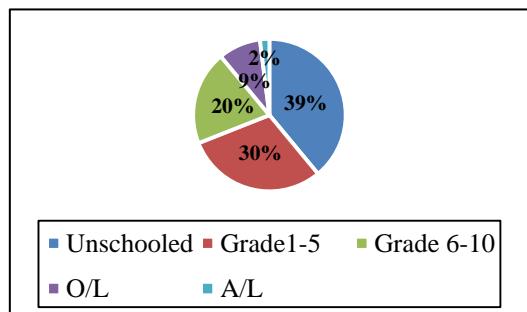


Figure 4.6: Education level of plantation laborers

Data Source: Questionnaire survey, 2023

It is clear from the figure 4.6 about the education of plantation workers. Accordingly, 39% of the estate workers are uneducated and 30% of the workers have received only primary education. In addition, 2% of plantation workers have higher education. The poor economy of their families can be taken as the reason for their

low level of education. Therefore, it is common for the elder children in the family to seek employment. Education level of tea estate workers is very low. Conflicts are increased around their houses. When discussing the average attendance of worker's children at school, the attendance

of primary school children is better, compared to grade 6-13. That is, the older children of these families have stopped from going to school and are encouraged to work. Younger children are sent to school daily to prevent being isolated at home.

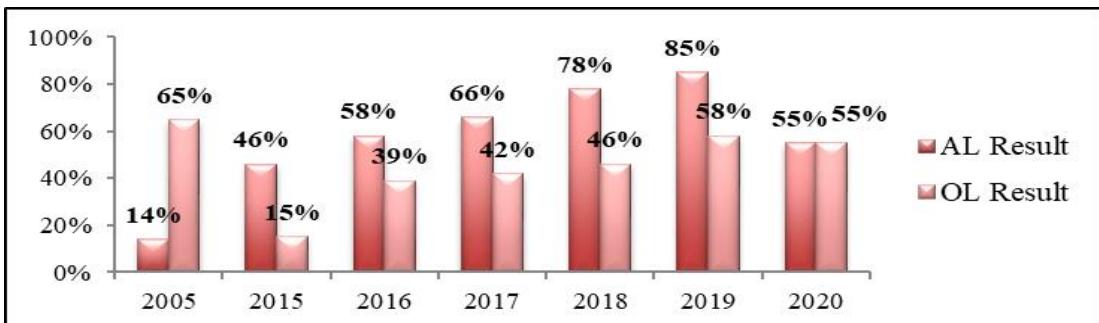


Figure 4.7: A/L results from 2005 to 2020

Data Source: Results report in Craig Tamil Maha Vidyalaya

According to the figure 4.7, there is a report about the Advanced Level (A/L) and Ordinary Level (O/L) results of the worker's children. As a result, in 2005, a percentage of 14% have passed the A/L exam. In 2019, a percentage of 85% has been recorded. By the year 2020, a percentage of 55% have passed the examination. Compared to 2005, it is clear that children are interested in higher education. Accordingly, in 2005, the percentage of the children who have passed is 65% and the year 2015, it has reduced to 15%. It has gradually increased by 55% by

2020. It is clear that compared to the past, nowadays children pay more attention to the Advanced Level examination. They have to choose education as a remedy to improve their family's economic status. Their education was disturbed during the Covid-19 pandemic. Not every house has the access to mobile phones which made it difficult for them to attend online classes. Therefore, the teachers at the school said that they have been brought to school and taught through smart boards.

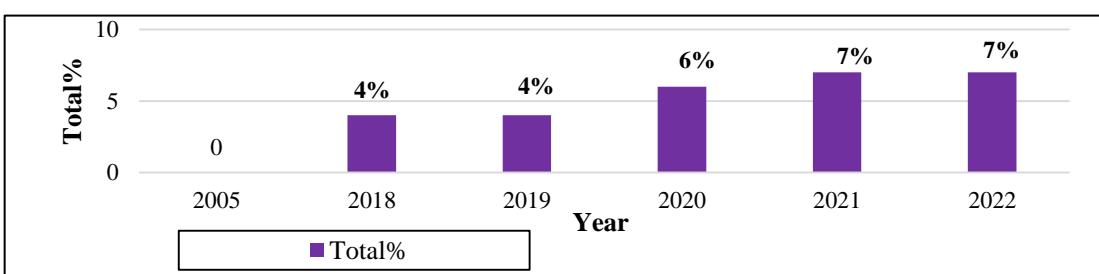


Figure 4.8: Scholarship results from 2005 to 2022

Data Source: Results report in Balagala Ella Tamil Vidyalaya

The figure 4.8 shows a report on scholarship results. The results of 2005 are 0% and 6% of the year 2020. The results of the year 2021 and 2022 results are 7% which shows that parents do not care about their children's education. This confirms that children are only sent to school because there is no one at home to look after them. Children often stop coming to school because there are too many members in a family. They go to work in the tea estate. This usually happens when students are in grades 09, 10 or 11. Children are given stationaries and dry food as donations. Breakfast is provided free to children. There is an institution called a Child Development Center in this estate which takes care of the children of the people who work in the tea estate. Day care and nursery are conducted by these institutions. It also takes care of the children of people who do not work in the tea estate but live in the GND. They are charged five hundred rupees per month.

4.2.2 Health of tea estate workers and their children

The health status of tea plantation workers is generally poor due to their negligence on health measures.

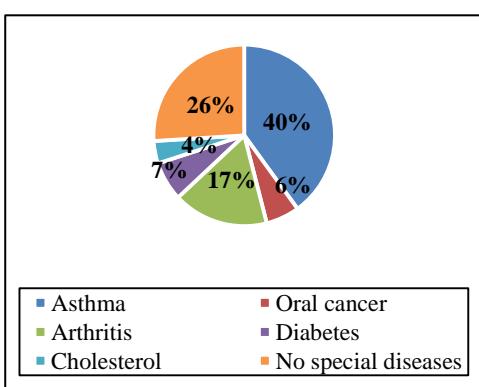


Figure 4.9: Diseases of plantation laborers
Data Source: Questionnaire survey, 2023

The figure 4.9 indicates that 40% of plantation workers have asthma. There are 26% special diseases and 17% arthritis patients in these plantation workers. In addition, they are usually treated for disease, such as fever, vacant diseases. These laborers do not have proper health knowledge and due to this reason various diseases are spread.

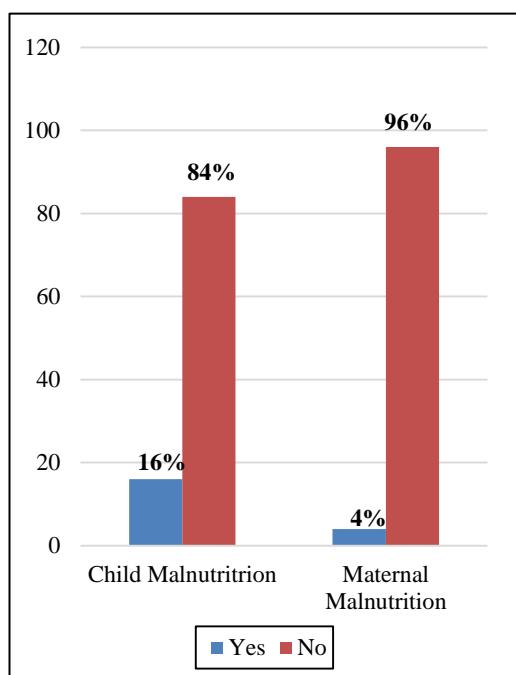


Figure 4.10: Child and maternal malnutrition
Data Source: Questionnaire survey, 2023

The figure 4.10 is indicative of malnutrition of children and pregnancy women in the families of plantation workers. Accordingly, 16% of children and 4% of mothers in these families suffer from malnutrition. Those can be attributed to lack of access to nutritious food and early marriage. Malnutrition was common before 2010. About 15 children are suffering from malnutrition in the GND. There are 21 pregnant mothers, six of whom are malnourished.

4.2.3 Economy of tea estate workers

The income and expenditure of tea plantation workers have been examined to see how tea cultivation affects their economy.

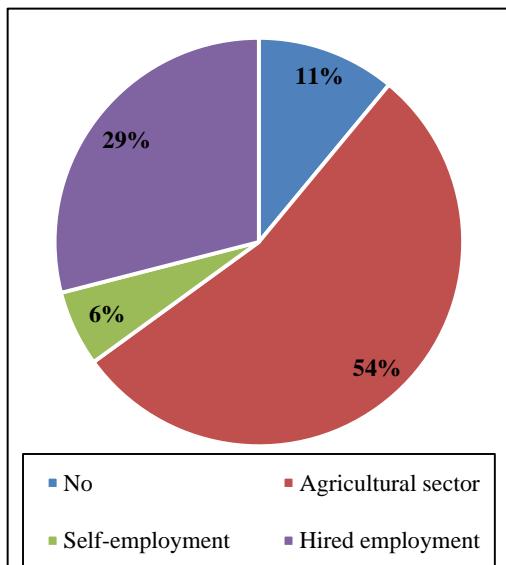


Figure 4.11: Other jobs of laborers
Data Source: Questionnaire survey, 2023

The figure 4.11, the details of other jobs performed by plantation workers are shown. 11% do not work and their main source of income was the tea plantation work. It is evident that 54% of the agricultural sector jobs, and 29% will be hired employment. In addition, 6% self-employment.

Accordingly, the income of plantation workers varies according to these jobs. Due to reduced income from plantation work, they are seen restoring to various jobs. The reason for that is the increase in the number of family members and the inadequate income.

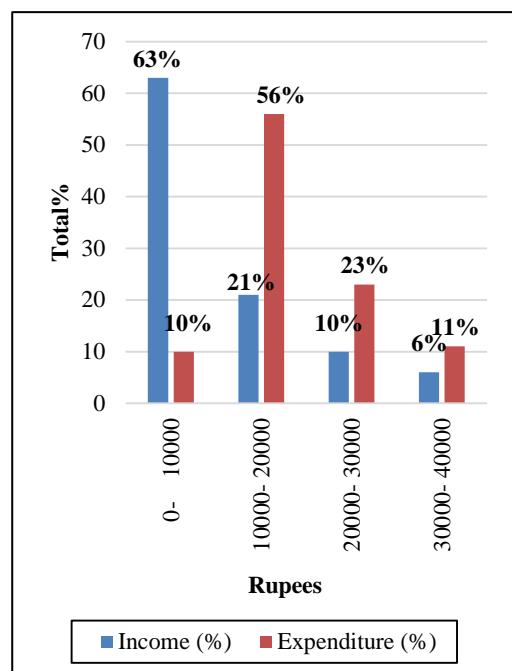


Figure 4.12: Income and expenditure
Data Source: Questionnaire survey, 2023

According to the figure 4.12, the information about the monthly income of estate workers 6% of the sample earns a monthly income between 30000-40000 rupees. A higher percentage of 63% earns less than 10000 rupees. It is clear that the monthly income of the families of plantation workers is mostly less than 10000 rupees. 56% have a monthly expenditure between 10000-20000 rupees. Monthly expenditure of 11% is recorded as 30000-40000 rupees and monthly expenditure of 10% is less than 10000 rupees. Food expenses, education expenses of school children and family health costs are included under this expenditure. Their main income is mostly plantation work only. Plantation workers turn to other jobs besides plantation work and family members turn to other jobs. Some families had people working abroad.

Even if the monthly income is reduced, their expenses have increased. Some children are studying in these families. There are also the people with various diseases. Clearly, the cost of their family is increasing adding after all these expenses. Accordingly, their lives are very problematic. The monthly income of estate workers is sometimes less than 3000

rupees. Organisations like OXFAM, World Vision and Save the Children are providing assistance to plantation laborers.

Women work in the garden from 8.30-4.30 and men from 8-1. Those who go to work every day are given one kilo of rice and one kilo of bread flour at the end of the month.

4.3 Correlation between income, education and health

Table 4.2: Economy & Education

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	12.615 ^a	4	.013
Likelihood Ratio	14.154	4	.007
Linear-by-Linear Association	3.650	1	.056
N of Valid Cases	70		

a. 4 cells (40.0%) have expected count less than 5. The minimum expected count is .91.

Data Source: Questionnaire survey, 2023

The value of Pearson chi square (p) is less than 0.05. It has been confirmed that there is a relationship between Craig Estate laborers' economy and their education. When there are economic problems in the family, they

stop their education and are tempted to work. They cannot apply for other jobs due to lack of educational qualifications. Thus, they choose to work in the tea estate.

Table 4.3: Economy & Health

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	14.080 ^a	5	.015
Likelihood Ratio	15.888	5	.007
Linear-by-Linear Association	.973	1	.324
N of Valid Cases	70		

a. 6 cells (50.0%) have expected count less than 5. The minimum expected count is 1.60.

Data Source: Questionnaire survey, 2023

The value of Pearson chi square (p) is less than 0.05. It has been confirmed that there is a relationship between Craig Estate laborers' economy and their health. The reason for the poor health of plantation workers is that they do not pay attention to their health. That is, due to the economic problems in their families, and even people who are sick are seen resorting to plantation work. That is, they do not pay attention to the disease and do not even take medicine on time. It is also seen that they do not pay attention to their nutritional status.

4.4 DISCUSSION

This study has discussed the impact of tea cultivation on the socio-economic profile of tea estate workers through various objectives and sub-objectives. Land-use maps from 2005 and 2022 were used to compare the area under tea cultivation and the number of houses. In general, the findings show an increase in the number of houses and a decrease in the area under tea cultivation in 2022 compared to 2005.

However, tea yield was higher in 2022 compared to 2005. Young marriages are common among estate communities, and the increase in housing is largely due to population growth. Although the area under tea cultivation has decreased, productivity has increased due to improved cultivation methods. The rise in yield can be attributed to the utilization of all land suitable for tea cultivation and the reuse of areas that had been abandoned in 2005. Tea plantation work is most common among individuals aged 30–60. Younger people are generally reluctant to work on plantations due to low wages, lack of recognition, and poor treatment of workers. The educational level of tea plantation workers themselves is very low.

Regarding the education of their children, primary school attendance is higher compared to attendance in grades 6–13. Poverty and economic difficulties force many older children to leave school and join the workforce. Interestingly, A/L results tend to be better than O/L results because children who continue their studies aim to secure

better employment opportunities. Estate workers commonly chew betel leaves, which increases the risk of oral cancer. Social issues such as early-age marriages, nutritional deficiencies, and economic instability contribute to rising maternal and child malnutrition. The monthly income of plantation families is minimal and often insufficient to support the entire household. As a result, many workers are turning to supplementary forms of employment. Agriculture, wage labor, and self-employment have become the most common alternative income sources.

4.5 Suggestions to develop the livelihood of these people

A sub-objective could be to propose suggestions for improving the living standards of plantation workers. Tea plantations directly or indirectly influence the socioeconomic status of these workers. However, their economic well-being cannot be improved through tea cultivation alone, as the income generated is often insufficient to cover even a month's expenses. Therefore, introducing alternative income-generating activities can help strengthen their financial stability.

- Animal Husbandry - Many estate households engage in animal husbandry, raising chickens, goats, and cattle. However, they often lack the space to build proper enclosures for these animals. Providing designated spaces and support for essential resources such as animal feed and veterinary care could help improve their livelihoods.
- Vegetable Cultivation - Necessary resources can be provided to encourage

vegetable cultivation. Guidance on suitable crop varieties and cultivation techniques can be offered. Additionally, distributing free seeds can serve as an incentive for workers to engage in farming and supplement their income.

5. CONCLUSION AND RECOMMENDATION

5.1 Conclusion

Tea plantation is a vital component of Sri Lanka's economy, representing the highest import and export earning crop. Historically, Tamil workers from South India were brought to work on these plantations under challenging conditions. Many of these difficulties continue to persist today. This study focused on understanding the socio-economic impact of tea plantations on the lives of plantation workers. Key findings indicate that the majority of workers fall within the 41–50 age range. Most earn less than 10,000 rupees per month, which leads to significant financial struggles. As a result, many workers are seeking alternative employment to improve their economic status.

Health and nutrition challenges are also prevalent. Child and maternal malnutrition remain significant concerns. In terms of education, school attendance among primary students appears satisfactory. However, academic performance particularly in scholarship examinations, as well as O/L and A/L results remain low. This situation reflects limited parental interest and broader socio-economic barriers to education. Conditions further worsened after COVID-19, as some children left school to support family income. Interviews revealed that estate authorities provide certain

welfare services, including child-care through the Child Development Center. Despite this, serious health risks such as oral cancer and alcohol addiction are widespread among workers. Although the area under tea cultivation decreased between 2005 and 2022 due to population growth, productivity improved during this period. This improvement demonstrates advancements in agricultural practices.

This study underscores the urgent need for holistic interventions to address the socio-economic, health, and educational challenges faced by plantation workers. Strategies aimed at improving income, health care, education, and welfare systems along with sustainable plantation practices—are crucial for uplifting this marginalized community while ensuring the continued contribution of the tea industry to Sri Lanka's economy.

5.2 Recommendations

Tea plantations hold immense potential to boost Sri Lanka's economy and plantation workers are its vital contributors. However, their socio-economic conditions remain underdeveloped. Improving their living standards can positively impact on both the workers and the tea industry. The following recommendations outline actionable steps to achieve this;

- **Elevating the Status of Tea Plantation Work**

Tea estate labor is often perceived as low-status work. Awareness campaigns should emphasise the essential role of tea plantation workers in the economy. Wages must fairly reflect actual hours worked typically 5 hours for men and 8 hours for women. Additional

allowances and benefits should be increased to motivate workers and enhance job satisfaction.

- **Upgrading Housing and Sanitation**

The transition from line houses to individual housing systems should be prioritised to enhance privacy and living standards. Estate management, with support from relevant institutions, should assist in constructing adequate toilet facilities for every household, promoting hygiene and sanitation.

- **Addressing Family and Health Issues**

High family sizes and early-age marriages contribute to socio-economic challenges and malnutrition among plantation workers. Regular counseling sessions through midwives and healthcare professionals can help mitigate these issues. Maintaining a registry of children in plantation worker families will enable authorities to monitor school attendance and reduce dropout rates.

- **Encouraging Alternate Income Sources**

Diversifying income sources can significantly improve the financial stability of plantation workers. Government and estate management should facilitate training and resources for activities like animal husbandry and vegetable farming, empowering workers to supplement their incomes.

- **Supporting Higher Education**

Children of plantation workers who pursue higher education require additional support. Scholarships, financial aid, and mentorship programmes should be established by estate management and government agencies. This

ensures that talented students can complete their education and avoid dropping out due to financial constraints.

These recommendations aim to create a more sustainable, productive, and equitable system that benefits plantation workers and the tea plantation sector alike.

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