



Nurturing Lives and Unveiling Realities: Tea Plantations in Hill Regions

Rekha Khalkho^{1*} • Souvik Ghosh²

Department of Agricultural Extension, Institute of Agriculture, Visva-Bharati (A Central University), Sriniketan, West Bengal, 731236, India

*Corresponding Author Email id: rekhakhalkho34@gmail.com

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Abstract: Tea plantations serve as vital sources of sustenance and economic stability for the rural communities in Northern part and hill regions of West Bengal. It provides employment and housing to them. However, they live in poor living conditions without basic needs like healthcare, enough food, good education, clean water and proper sanitation. Due to regional underdevelopment, these essential services are unavailable, leading to significant hardships for them and their families. This study focuses on two tea gardens in the Kalimpong district of 100 tea workers including the daily wage earners, the elderly and permanent workers. The study reveals an average livelihood status of tea garden workers at 54.74%, with physical assets ranking highest (68%), followed by social assets (66.85%), human assets (61.40%), financial assets (46.40%) and natural assets (36.30%), highlighting disparities across asset categories. The study emphasizes the need for immediate and meaningful action. The state, central government, and tea garden authorities must collaborate to enhance living conditions and economic assurance. This entails ensuring fundamental rights at work, economic stability, food security, safe working conditions, and equitable compensation, free from discrimination based on various factors. Further measures include wage increments and educational awareness campaigns, vital for a brighter future.

Keywords: Livelihood status • Socio-economic condition • Economic imbalance • Tea Garden workers.

Introduction

Tea is an aromatic and most ancient cheapest beverage consumed by two-thirds of the world's population made from the processed leaf of *Camellia sinensis*. After water, it is the most widely consumed drink in the world (Hazra et al 2019). India is the second largest producer of Tea in the world after China with a 25% share of total production, including the famous Assam and Darjeeling Tea (Paul and Mondal 2019). While tea consumption in India accounts for 19% of the world's total, the per capita consumption remains relatively lower. Approximately 81% of the country's tea production is consumed within its borders. Despite the production, India is also the largest exporter of tea after China. Assam and West Bengal in East India and Tamil Nadu, Kerala and Karnataka in South India account over

98% of India's tea production (Tea Board of India 2023).

In West Bengal, the tea plantation industry is a cornerstone of the state's economy, particularly in its northern and hill regions. The state accounts for 22.37% of the total area under tea cultivation and produces 30% of India's total tea output (Tea Board of India 2023). These plantations are not just economic hubs but also crucial sources of livelihood for rural communities. Rooted in manual labour and basic technology, these plantations often engage entire families. By offering both employment and housing, they provide a refuge from limited job prospects elsewhere, evoking the spirit of historical contract labour (Dishanka et al 2021; Rout and Samantaray 2022; Khalkho and Ghosh 2023). Yet, the



reality within these plantations is a stark contrast.

Tea garden workers, the backbone of this industry, have depended on these gardens for their livelihoods for generations. Their hard work and effort have provided acceleration to the industry, yet their own socio-economic progress remains stagnant. Persistent issues such as the sudden closure of tea garden, frequent violence and strikes across tea gardens etc, have hindered their development (Middleton and Shneiderman 2018). Additionally, living conditions for tea workers are inadequate; deprived of essentials like healthcare, food security, and advanced education due to regional underdevelopment, they lack access to clean water, sanitation, and proper facilities in urban areas (Saha et al 2019). The closure and abandonment of numerous tea estates in hill regions have exacerbated the situation, plunging the labour force - the lifeblood of this industry - into poverty, malnutrition, and even starvation (Turkey and Nepal 2012).

Despite India's significant role in global tea production, tea workers continue to face these hardships. While prior studies have analysed aspects like occupational diversification, women's livelihood, there remains a lack of comprehensive analysis of sustainable capitals i.e., physical, financial, social, human and natural of tea workers in West Bengal using the Department for International Development (DFID) sustainable framework. Understanding these key components is essential to design effective interventions to improve their living standards.

Objectives

The main objectives of current research article are as follows:

- Study the socio-economic profile of the tea garden workers.
- Assess the key components of their sustainable livelihood assets through the DFID framework.

Material and methods

The present study was conducted in the Kalimpong district of the eastern Himalayan foothills of West Bengal following exploratory sequential research design. Two tea gardens namely, Lower Fagu Tea Garden and Upper Fagu Tea garden were selected based purposive sampling. From Gorubathan block, these two tea gardens 50 tea garden workers each were randomly selected, and thus total sample was 100. Data was collected using structured interview schedule and focused group discussion during September to December 2023. The data were coded, tabulated, analyzed, and presented in tables to make the findings comprehensible and understandable. Descriptive statistics, which are helpful for summarising data, were used to analyse the data. The two primary categories of descriptive statistics are central tendency (such as the mean) and variability (like standard deviation).

Livelihood was considered as a function of workers' asset holdings, including physical, social, financial, natural and human assets, based on the DFID framework (1999) for a comprehensive and sustainable understanding of livelihood opportunities (Chambers and Conway 1992). Households with better access to and control over these assets face fewer negative livelihood impacts. The five asset categories identified in the literature served as indicators of livelihood. Schedule developed by Haobijam and Ghosh (2023) was used with modification to measure the level of livelihood of tea workers based on the five types of assets holding physical assets, social assets, financial assets, human assets and natural assets, each measured on a 5- point continuum scale. The collected data was subsequently normalized through actualisation score to ensure consistency and facilitate meaningful comparisons across different indicators. Similar approach used by Jaganathan et al (2020) in his study in Nayagarh district of Odisha.



Overall Livelihood asset index was worked out for each asset using the formula

$$\text{Asset Index} = \frac{\text{Actual score}}{\text{Maximum obtained score}} \times 100$$

Actual score is the score obtained by the respondent under each asset.

Overall Sustainable Livelihood index = PAI + SAI + FAI + NAI + HAI / 5

Where, PAI: Physical asset index, SAI: Social asset index, FAI: Financial asset index, NAI: Natural asset index, HAI: Human asset index.

Study area

Kalimpong is a picturesque district in the state of West Bengal, located in the eastern Himalayan foothills. Carved out of Darjeeling district in 2017, it is bordered by Sikkim to the north, Bhutan to the east, and Darjeeling to the west, between 26° 51' and 27° 12' N latitude and 88° 02' and 88° 53' E longitude. Covering an area of 1,053.60 km² (406.80 sq mi). It is characterized by steep terrain, lush green forests, and fertile valleys. The district experiences a temperate climate due to its altitude, with mild summers, chilly winters, and significant monsoon rainfall. The average annual temperature ranges between 8°C and 25°C, while the region receives about 2000 mm of rainfall annually, primarily during the monsoon season. Lower Fagu tea garden and upper Fagu tea garden located in Gorubathan block in Kalimpong district of West Bengal.

Table 1. Socio-economic characteristics of the respondents

Characteristic	Lower Fagu T. G.(n=50)	Upper Fagu T. G.(n=50)	Overall(n=100)
Age			
18 to 25 years	11(22)	07(14)	19
26 to 50 years	27(54)	32(64)	59
51 to 60 years	12(24)	11(22)	22
Mean (SD)	37.59(12.39)		
Sex			
Male	14(28)	15(30)	29
Female	36(72)	35(70)	71
Caste			
General	13(26)	15(30)	28
OBC	21(42)	23(46)	44
SC	06(12)	05(10)	11

The total geographical area 442.72 km² (170.94 sq mi).

Result and Discussion

The selected tea garden's villages come under the Fagu Tea Garden which located in Kalimpong district and established in the year of 1898 bearing registration no. under P.L. Act, 1951 of PR/20/86/ALC/MAL also having Tea Board registration no. 2628 (TG survey report 2019). Total area under tea garden 228.62 hectare with approx. 2300 workers (Tea statistics 2023). It is the member of Indian Tea Planters' Association (ITPA) and produces CTC type of tea.

Table 1 provides insight into the socio-economic characteristics of the respondents. Majority of the respondents were middle aged (26-50 years), predominantly female OBC workers from nuclear families. Most respondents had primary education followed by secondary education. It is evident that most were permanent workers with 5 to 21 years of experience, earning a monthly income of Rs. 3500 to Rs. 5000 only. While many workers were members of trade unions, their knowledge of trade union act and labour laws was limited. Similar results were reported by Gupta & Chattopadhyay (2016); Rai (2022).



ST	10(20)	07(14)	17
Family type			
Nuclear	21(42)	30(60)	51
Joint	29(58)	20(40)	49
Family size			
Up to 5 members	32(64)	20(40)	52
More than 5 members	18(36)	30(60)	48
Education			
Illiterate/Can read and write	08(16)	12(24)	20
Primary	15(30)	14(28)	29
Secondary	10(20)	15(30)	25
High secondary	17(34)	07(14)	24
Graduate	--	02(04)	02
Occupation			
Tea garden	41(82)	38(76)	79
Tea garden+ Business	01(02)	03(06)	04
Tea garden+ Wage earning	08(16)	09(18)	17
Nature of job			
Temporary	13(26)	18(36)	31
Contractual	09(18)	06(12)	15
Permanent	28(56)	26(52)	54
Work experience (Years)			
Less than 4.5years	13(26)	08(16)	21
5-21 years	25(50)	30(60)	55
More than 22 years	12(24)	12(24)	24
Mean (SD)	21.98(4.44)		
Migration			
No migration	23(46)	24(48)	53
Migration prevails	27(54)	26(52)	47
Income (Monthly)			
Up to Rs.3641.80	16(32)	08(18)	24
Rs.3641.80-5263.14	26(52)	36(72)	62
More than Rs. 5263.14	08(16)	06(12)	14
Mean (SD)	4452.47(810.67)		
Participation trade union			
Non member	24(48)	26(52)	50
Member	26(52)	24(48)	50
Knowledge about trade Union Act and labour laws			
NO	27(54)	32(64)	41
YES	23(46)	18(36)	59

This indicates a workforce with moderate educational attainment lacking sufficient knowledge of their legal rights and protections, emphasizing the need for targeted awareness programs.

The livelihood status of selected tea gardens was calculated by index values. This index is comprised of five assets viz. physical, social, financial, human and natural assets which include different indicators. The physical



assets holding of workers in both tea gardens are given in Table 2. It is evident that respondents of both the tea gardens had certain

similar distribution of holdings and certain dissimilar distribution of holdings.

Table 2. Differential livelihood status level of the tea garden workers with respect to physical assets

Indicators	Mean (SD)	
	Lower Fagu T. G. (n=50)	Upper Fagu T. G. (n=50)
No. of rooms in house	3.42 (0.84)	3.20 (0.67)
Roof of the house	3.12 (0.33)	3.06 (0.24)
Sanitary	3.10 (0.30)	3.08 (0.27)
Latrine	3.32 (0.68)	3.16 (0.55)
Vehicle	3.00 (0.0)	3.00 (0.00)
Electric power usage	3.92 (0.40)	4.00 (0.00)
Cooking stove	3.92 (0.40)	4.00 (0.00)
Telephone	3.40 (0.25)	3.36 (0.19)
Overall	3.40 (0.25)	3.36 (0.19)
Asset index (%)	68	67.14

Minimum and maximum possible scores are 1 and 5, respectively.

Table 3 represents social, financial, human and natural assets distribution of both the tea gardens. From table 2 and 3, it is revealed the highest level of physical assets (67.57) followed by social assets, human assets, financial assets and natural assets. Financial and natural assets holding (46.40 and 36.30, respectively) were below average in both tea

gardens. Overall mean livelihood status of the selected respondents of both tea gardens of Kalimpong district lies in average (54.74) level. Thus, it leads to draw a conclusion that the indicators of livelihood status in the study area were average, and workers possess fewer assets.

Table 3. Differential livelihood status level of the tea garden workers with respect to social, financial, human and natural assets

Indicators & Mean (SD)						
Tea Gardens						
Social assets	Respect/ Recognition in village	Participation in local political issues	Using common facilities at the locality	Membership in common bodies / clubs / groups	Overall	Asset index (%)
Lower Fagu T. G. (n=50)	4.40 (0.49)	2.00 (0.00)	5 (0.00)	2 (0.00)	3.35 (0.12)	67
Upper Fagu T. G. (n=50)	4.34 (0.48)	2.00 (0.00)	5.00 (0.00)	2.00 (0.00)	3.34 (0.12)	66.8
Financial assets	Source of income	Kinds of savings	Kind of investments	Borrowings	Overall	Asset index (%)
Lower Fagu T. G. (n=50)	2.00 (0.00)	2.00 (0.00)	2.00 (0.00)	3.38 (0.88)	2.35 (0.22)	47



Upper Fagu T. G. (n=50)	2.00 (0.00)	2.00 (0.00)	2.00 (0.00)	3.18 (0.87)	2.30 (0.22)	46
Human assets	Communication ability	Education /Literacy	Managerial skills	Travel/ Mobility	Overall	Asset index (%)
Lower Fagu T. G. (n=50)	3.54 (0.65)	2.30 (0.81)	3.36 (0.60)	3.04 (0.70)	3.06 (0.39)	61.2
Upper Fagu T. G. (n=50)	3.58 (0.73)	2.36 (0.72)	2.90 (0.89)	3.48 (0.50)	3.08 (0.29)	61.6
Natural assets	Land	Irrigated land	Livestock	Poultry	Overall	Asset index (%)
Lower Fagu T. G. (n=50)	1.00 (0.00)	1.00 (0.00)	2.36 (0.48)	2.54 (0.71)	1.72 (0.23)	34.4
Upper Fagu T. G. (n=50)	1.00 (0.00)	1.00 (0.00)	2.48 (0.50)	3.14 (0.45)	1.91 (0.18)	38.2

Minimum and maximum possible scores are 1 and 5, respectively.

The higher level of physical assets strengthens the living habitat. Different indicators are there to identify livable house like number of rooms inside, roof of the house, sanitary vehicle etc. According to past studies, poor access to physical assets (low grade of house, absence of bathroom, water logging for poor drainage, access of vehicle, connectivity of electricity etc.) leads to degradation of life standards of workers (Ganguli and Bhattacharya 2020). The findings of present study have a similarity with the results reported by Gurung and Mukherjee (2018) that financial assets like

earn meagre incomes, low level of saving and investments affect the well-being of the workers. Jairu & Acharya (2020) reported that low level of natural assets are indicators of deteriorating livelihoods among tea garden workers as well as affect their socio-economic status. Lama and Kuri (2015); Gurung (2022) have reported access to a wide range of resources and diversified livelihood options significantly enhance the livelihood opportunities and standards of tea garden workers in the hill regions of West Bengal.

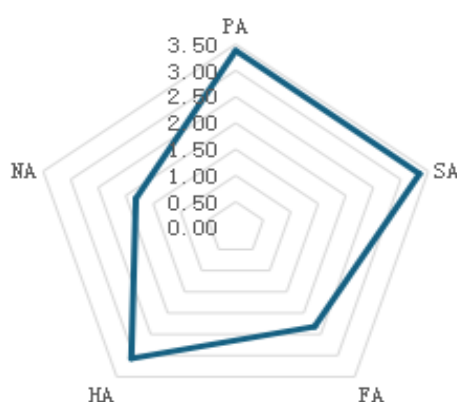


Fig. 1. Overall livelihood status of respondents



The distribution of the respondents of selected tea gardens various livelihood asset-physical, social, financial, human and natural- as well as the indicators to display in the livelihood asset pentagon were depicted in the radar diagram (Figure 1) above. The pentagon's shape illustrates the tale of the differences in access to livelihood assets. The core of the pentagon stands for the zero value in terms of possession and access to assets. Higher values of livelihood assets occupied by the residents of the research area were indicated by deviations from the pentagon's middle point to its outer corners.

Conclusion

The livelihood status of the tea garden workers is a critical determinant of the plantation industry's economic growth and development. With an average livelihood value of 54.74% indicates a moderate livelihood status, suggesting that, on a scale of 0 to 100, the workers' overall well-being is approximately halfway between the lowest and highest possible scores, there is an evident need for strategic interventions to improve their living conditions. Despite of stable employment and long tears of experience, low-income levels and inadequate access to critical assets constrained their economic resilience and overall well-being. The stark inequalities in access to livelihood assets, with the core revealing limited financial and natural resources. This underscores the urgent need for targeted policy interventions, including asset diversification, financial literacy programs and sustainable resource management, to address existing vulnerabilities. Empowering tea garden workers with better access to resources, education and rights is pivotal to fostering sustainable livelihoods and driving equitable development in the economically and strategically significant Eastern Himalayan region.

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