



Understanding the Reasons for the Establishment of Small Tea Garden- an Enquiry Across the Sub-Himalayan Northern Tracts of West Bengal

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ABSTRACT

The present study was conducted during August, 2024 to January, 2025 to explore reasons behind the establishment of Small Tea Gardens (STGs) across the subHimalayan northern tracts of West Bengal. Primary data were collected from 180 STG households distributed over three districts, six blocks, and twelve villages using stratified random sampling and pretested questionnaires. Perceptions were measured on a fourpoint Likert scale. Interdistrict variation in perceptions was assessed with Kruskal-Wallis statistics followed by Dunn's posthoc tests. About 79% of the STG community have more than 20 years of farming experience and 72% belong to backward caste groups. These smallholding farmers, with an average net cultivated area of 1.76 ha, allocate about 24% of their land to STGs. Land conversion patterns show that about 32% of STGs utilize fallow land, 28% replaced paddy fields, and 21% replaced wheat fields. Economic factors like notably relative profitability and assured, reasonable price realization emerged as key drivers for establishing STGs. Technical factors, including congenial soil and favorable weather conditions, and social factors, such as womenfriendly cultural practices and proximity to boughtleaf factories, also played crucial roles in decisionmaking. Significant interdistrict variations were observed across these factors. Based on the findings, the study recommends policy interventions focused on infrastructure development, targeted training, and strengthened linkages with relevant organizations and associations to support sustainable expansion and improved livelihoods among small tea growers.

KEYWORDS: Small Tea Gardens, likert scale, kruskal-wallis

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1. INTRODUCTION

The concept and practice of tea cultivation on smaller landholdings-known as Small Tea Gardens (STGs)-originated when Kenya began producing tea for export in the 1950s (Chepkemai, 2018). Kenya's successful experiment during that decade paved the way for a contemporary model of smallholder tea farming that spread across both developing and developed nations as a viable cash crop strategy (Anonymous, 2020). This approach has since persisted alongside conventional large-scale plantations (Hazarika et al., 2013). Currently, in major tea-producing countries such as Indonesia, Kenya, Bangladesh, Nepal, Sri Lanka, and Vietnam, STGs play a substantial role in national tea output, complementing output from expansive estates (Steffany et al., 2024; Dufrene, 2019). For instance, provisional data indicate that STGs account for approximately 53% of India's total tea leaf production in the 2024-25 season (Anonymous, 2022). Tea farming appeals widely due to its provision of enduring income with modest initial investment, effective use of marginal or idle lands, and creation of consistent employment (Anonymous, 2021; Ateka et al., 2020). Globally, China dominates with roughly 50.73% of total tea production and over half of the world's tea acreage (Anonymous, 2025). India ranks second, contributing about 27.48% to global output (Table 1) (Anonymous, 2024-25). Within India, the Eastern and Northeastern regions generate around 83% of national tea production, led by Assam and followed by West Bengal (Anonymous, 2022). The Tea Board of India classifies Small Tea Growers (STGs) as those managing up to 10.12 ha (25 acres), though contemporary holdings typically fall below 2 acres (Sudeshna et al., 2024). Small-scale tea cultivation is not a novel phenomenon in India's

tea landscape; it emerged in the 1930s outside traditional areas, notably in the Nilgiris of Tamil Nadu (Boarah, 2013). However, meaningful expansion of tea cultivation occurred only in the late 1980s and early 1990s, reaching states like Assam and West Bengal. Post-independence, through various five-year plans, the Tea Board of India (TBI) primarily directed resources toward boosting output and acreage in large estates and plantations, yielding limited success (Bhowmik, 1991). Despite governmental funding via TBI and allied bodies, production growth remained incremental. Starting with the 8th Five-Year Plan (1992-1997), TBI shifted focus toward STG promotion. Previous developmental initiatives having largely faltered, fresh strategies emerged to engage landless workers and jobless youth in tea farming within established tea belts across India (Langford, 2021). India hosts approximately 2.5 lakh STGs, with 76% concentrated in northern states per Tea Board classifications. Assam and West Bengal together claim over 90% of these in the north, while Tamil Nadu holds 86% of southern STGs, mirroring patterns in acreage. STG numbers have surged exponentially over time (Table 2) (Roy and Biswas, 2023). In North Bengal, former cultivators of crops like pineapple (prevalent in Uttar Dinajpur and parts of Jalpaiguri and Darjeeling), paddy, wheat, potato, and jute transitioned into STGs across Dooars, Terai, and hills (Biswas, 2016). Of North Bengal's roughly 39,654 STGs, Dooars dominates with 61.94% of growers and 57.32% of tea area (Table 3) (Sarkar, 2020). Rising green leaf production in North Bengal spurred infrastructure like Bought Leaf Factories (BLFs) for processing. The region now has 167 BLFs, each employing 20-25 workers in operations, packaging, and management (Anonymous, 2025). Ancillary sectors-supplying tools, transporting leaves, retailing agrochemicals and fertilizers, leaf brokerage, and daily essentials-further generate jobs (Biswas, 2016; Saji, 2018). Key questions emerge: Which farmer groups are adopting STGs? What motivates their shift? How does tea integrate with prevailing cropping systems? (Wambeti, 2017). This study seeks to explore these dynamics shaping farmers' choices for STGs and their cropping patterns within North Bengal's agricultural framework.

2. MATERIALS AND METHODS

This study was conducted under the Department of Agricultural Economics, Uttar Banga Krishi Viswavidyalaya, Pundibari, Cooch Behar, West Bengal (736165), India, from August, 2024 to January, 2025 in the northern part of West Bengal purposively. It was the traditional tea growing zone in the state, which witnessed an increasing trend of small tea growers recently. All the tea growing zones under North Bengal viz., Hill, Doars

Table 1: Global status of tea acreage and production

Country	Area (,000 ha)	Production (million kg)	Number of tea growers (million nos.)	Rank
China	3.53 (75.10)	2.4 (50.73)	80.00	I
India	0.62 (13.19)	1.3 (27.48)	0.23	II
Kenya	0.22 (4.68)	0.59 (12.47)	0.05	III
Sri Lanka	0.21 (4.46)	0.26 (5.49)	0.03	IV
Vietnam	0.12 (2.55)	0.18 (3.80)	0.02	V

Source: Anonymous, 2024; Figures in parentheses indicate percentage to corresponding total

Table 2: Growth of Small Tea Gardens in India over the years

Years	No. of STGs	Area of STGs (ha)	No. of tea estate	Area of tea estate (ha)	Production (million kg)		Total production (million kg)
					BTG	STG	
2000–01	110396	49910.00	1614	746919.00	618.76	228.16 (26.93)	846.92
2005–06	139041	42985.00	1672	412626.00	717.68	231.29 (24.45)	945.97
2010–11	137594	162000.00	1686	418000.00	666.94	305.83 (31.43)	972.77
2015–16	151741	104660.00	1585	459320.00	690.43	542.71 (44.01)	1233.14
2020–21	222746	198098.36	1569	563980.00	602.31	680.73 (53.05)	1283.04
2024–25*	247887	213903.91	1567	421460.70	643.69	738.34 (53.42)	1382.03

*Provisional, BTG: Big Tea Garden, STGs: Small Tea Garden; Source: Anonymous, 2022; Figures in parentheses indicate percentage to corresponding total

Table 3: Distribution of Small Tea Gardens in North Bengal (2024)

Zone	District	Assessed No. of STGs	Assessed Tea Area (ha)
Darjeeling/Hill	Darjeeling hills	175	88.26
	Kalimpong	878	197.76
	Sub-total	1053 (2.65)	286.02 (1.31)
Dooars	Alipurduar	458	264.79
	Coochbehar	3530	1617.99
	Jalpaiguri	20575	12611.02
	Sub-total	24564 (61.94)	14493.8 (57.32)
Terai	Darjeeling plains	3573	2660.68
	Uttar Dinajpur	10465	7842.13
	Sub-total	14038 (35.40)	10502.8 (41.54)
Total (North Bengal)		39654	25282.63

Source: Anonymous, 2024, Figures in parentheses indicate percentage to corresponding total

and Terai, were considered for the study purposively. One representative district having a relatively higher number of small tea growers was selected from each zone; the selected were Jalpaiguri (Doars), Uttar (North) Dinajpur (Terai), and Kalimpong (Hill). Two blocks under each district were selected to fulfill the objective. Relevant data for the present study were collected from 180 small tea growers distributed over 6 blocks (2 under each district) and 12 villages (2 under each selected block). The probability proportional method of sampling was used for the selection of both blocks and villages. For the selection of respondents, stratified random sampling was followed (farmers with STG being one of

the strata). The respondents were the ‘functional’ head of farm families. As mentioned earlier, the randomization technique was followed in selecting the respondents (within the strata). A total of 15 farming households (‘functional heads’) from each village were interviewed with a pre-tested questionnaire.

The survey questionnaire was designed to gather comprehensive data on the intended research work. Before coming to the main research investigation, provision for collecting information about the farmers’ general profile was kept. This was followed by a look into the farming features, helping to gain insights into the farming practices employed in the region. A key focus of the data collection was on round-the-year acreage allocation, which included examining the land allocation patterns for *kharif*, 2023 to pre-*kharif*, 2024 crops, highlighting the shifting trends between tea and other (replaced) crop(s).

The questionnaire also included statements about the reasons behind the choice for small tea gardens (STGs), etc. Respondents’ agreement (or disagreement) with the given statement was judged with the help of a four-point Likert Scale developed in 1932 by Dr. Rensis Likert, a Sociologist at the University of Michigan. The response of ‘no idea’ was assigned a score of 1, ‘neither agreed nor disagreed’ was assigned a score of 2, ‘agreed’ was assigned a score of 3, and ‘disagreed’ was assigned a score 0. The statement receiving the highest score indicated the most significant reason for the choice of a Small Tea Garden as a feasible cropping/farming option. To assess the differences in economic, technical, and social reasons for small tea cultivation across the three study locations, a non-parametric Kruskal–Wallis test (Kruskal–Wallis, 1952) was employed. Given the qualitative nature of these reasons, the independent-samples Kruskal–Wallis test, which is analogous to a parametric one-way ANOVA, was used to test the null hypothesis that the distributions of reasons were identical across locations. To determine the specific pairs of locations showing significant differences, Dunn’s post-hoc test (Dunn, 1961)

was conducted. Statistical software like SPSS was used to perform the requisite statistical tests.

3. RESULTS AND DISCUSSION

3.1. Social and demographic features

On average, about 18% of the farming households were led by farm females in the study locations, being greatest (23%) in Uttar (North) Dinajpur and lowest (12%) in Kalimpong. This highlighted a noticeable gender imbalance among the tea growers, though family structure indicated almost an equal share of male and female family members (Table 4). Similar patterns were observed in comparative studies; for instance, Agnes et al. (2024) reported that men owned 81% of farms and controlled decisions and finances, while women owned 19% and were limited by domestic roles, and Zarembo (2023) found ethnic minority women relegated to

lowest value-chain nodes with men dominating decision-making roles. This mirrored findings by Li et al. (2024) on smallholder tea growers in Pu'er City, China, where 59.9% of respondents were male and 40.1% female, with higher male participation in tea cultivation activities reflecting common gender disparities in the sector. As per the 2011 Census, backward categories (OBC, SC, ST) constituted 68.9% of the population across all three districts; religion-wise, Jalpaiguri and Kalimpong were predominantly Hindu, while Uttar Dinajpur had an almost equal Hindu-Muslim population (Anonymous, 2011, Government of India). The study reflected a similar trend, with backward caste prevalence (about 72%) and Hindu domination (about 55%) clearly visible in these locations (Table 4).

Table 4 showed that across the three districts, about 27% of farming households (with STG) had no formal

Table 4: A general feature of farming households having a Small Tea Gardens

Major trait	Sub-category (unit)	Jalpaiguri	Uttar Dinajpur	Kalimpong	Overall
Gender of the functional head	Male (%)	81.67	76.67	88.33	82.22
	Female (%)	18.33	23.33	11.67	17.78
Size of farm family	Male (Nos.)	2.52	2.61	2.36	2.39
	Female (Nos.)	2.34	2.29	2.48	2.47
	Total (Nos.)	4.86	4.90	4.84	4.86
Cast orientation	General (%)	33.33	26.67	23.33	27.78
	Backward (%)	66.67	73.33	76.67	72.22
Religion	Hindu (%)	66.67	65.00	33.33	55.00
	Muslim (%)	33.33	35.00	0.00	22.78
	Others (%)	0.00	0.00	66.67	22.22
Education	No/Illiterate (%)	27.95	27.15	24.79	26.62
	Upto secondary (%)	60.68	62.45	66.99	63.37
	Beyond secondary (%)	11.37	10.40	8.22	9.97
Membership in relevant organisation (%)		56.67	53.33	51.67	53.89
Training exposure (%)		51.60	56.60	60.00	56.10
Visited Agril. Office/KVK/Bank (%)		45.00	45.00	48.30	46.10

Source: Authors' analysis

education, about 63% completed up to secondary level, and only about 10% pursued education beyond secondary. Male farmers consistently attained higher education than females, highlighting persistent gender disparities that aligned with patterns observed by Das and Laskar (2025), who found 58% illiterate workers among tea garden laborers with women limited beyond primary education and low secondary attainment, and by Ghosh et al. (2015), who reported 52% high school and 36% middle school education levels with moderate family education (mean ~9-11 years) and males consistently more educated. Small tea growers in

Jalpaiguri, Uttar Dinajpur, and Kalimpong reported higher membership (53.89%), which as Baffoe Asare et al. (2013) noted improved access to agricultural extension services, credit, and collective bargaining, thereby significantly enhancing farm productivity and income. Training exposure was highest in Kalimpong (60%), followed by Uttar Dinajpur (56.6%) and Jalpaiguri (51.6%), indicating that STG farmers had slightly better access to or interest in training; this aligned with Van Huong et al. (2021), who found that technical training enhanced farmers' knowledge of quality standards and environmental regulations, with structured

sessions on leaf plucking, processing, and sustainable pest management helping growers meet quality benchmarks, comply with ecological practices, and improve productivity. Globally, frequent extension contacts enhanced technology adoption; for example, Omoro et al. (2015) found in Kenya that one additional extension visit increased greenhouse tomato yields by over 300 kg, underscoring the impact of institutional support on productivity. In the study locations, about 46% of STG farmers visited offices (KVK, Banks, Agril. Offices, etc.), which, as engagement with extension services and advisory institutions supported better farming outcomes-proved important.

3.2. Farming practices

Table 5 indicated that across Jalpaiguri, Uttar Dinajpur, and Kalimpong, farmers exhibited varying experience levels, with the majority (about 79%) having over 20 years of experience in farming. About 40% of farmers with STG had over 30 years' experience, reflecting a workforce of mid-career to seasoned cultivators; this trend highlighted a stable, experienced farming community, consistent with research noting that long-term growers, such as those described by Parasar (2020), were often early adopters of scientific practices, proactive in pest management, and active users of extension services. The incidence of STGs having less than 20 years of farming experience was higher in Kalimpong district. Interestingly, STGs in all three districts belonged to the 'small' category, having net cultivable acreage (NCA) ranging from 1.46 ha to 2.06 ha, with about 98% of this NCA owned by the farmers themselves; on average, about 24% of this NCA was allocated for STGs, making

its average size 0.42 ha—a pattern aligning with Anonymous (2025), who found most STGs operated <2 acres (~0.8 ha) yet contributed ~30% of India's tea despite small holdings. Integrating STGs into the cropping calendar boosted productivity on limited holdings, a crucial strategy in West Bengal's smallholder, diversified agricultural systems (Sarkar and Alam, 2022).

Table 5 showed that in Jalpaiguri, Uttar Dinajpur, and Kalimpong, on average, 47.22% of farming households cultivated a single small tea garden (STG), while 52.8% managed two STGs, highlighting a prevalent dual-garden trend. STGs in the three North Bengal districts were mostly mid-aged, with 64% aged between 10 to 15 years, about 24% aged 15–20 years and 12% aged over 20 years, averaging 15.36 years old each.

Table 6 highlighted a notable shift in land use across Jalpaiguri, Uttar Dinajpur and Kalimpong, where traditional crops were increasingly replaced by Small Tea Gardens (STGs). Fallow land (31.63%) was the most commonly converted to STGs, followed by paddy (28%) and wheat (20.7%) fields, reflecting efforts to utilize previously unused land. Sumitra Naha (2018) observed that cultivating tea as an alternative cash crop near traditional tea-growing zones like Darjeeling and Jalpaiguri allowed marginal farmers to substitute their existing crops. This shift enabled them to diversify beyond single-crop farming, offering a chance to earn more than the minimal returns typically associated with subsistence agriculture.

3.3. Enquiring why small tea gardens (STGs)

In the previous sections, we got an overview of the social,

Table 5: Farming features of small tea growers in the study locations

Major trait	Sub-trait	Jalpaiguri	Uttar Dinajpur	Kalimpong	Overall
Farming experience (%)	< 20 yrs (%)	21.67	18.33	23.33	21.11
	20-30 yrs. (%)	35.00	45.00	35.00	38.33
	>30 yrs (%)	43.33	36.67	41.67	40.56
Size of holding	Owned (ha)	2.06 (97.17)	1.85 (98.40)	1.47 (96.71)	1.79 (97.81)
	Leased-in (ha)	0.06	0.03	0.05	0.04
	Leased-out (ha)	0.06	0.09	0.06	0.07
	Net (ha)	2.06	1.79	1.46	1.76
Size of STG (ha)	0.42 (20.39)	0.40 (22.35)	0.44 (30.14)	0.42 (23.86)	
Distribution of STG	1 STG (%)	43.33	53.33	45.00	47.22
	2 STG (%)	56.67	46.67	55.00	52.78
Age of STG	10-15 yrs. (%)	58.51	65.91	67.74	64.00
	15-20 yrs. (%)	28.72	21.59	20.43	23.64
	>20 yrs. (%)	12.77	12.50	11.83	12.36

*Figures in parentheses indicate percentage to corresponding total. (Source: Authors' analysis)

Table 6: No. of crop fields replaced into Small Tea Gardens

District	Nos of crop fields replacing					Total replaced
	Paddy	Wheat	Maize	Pineapple	Fallow	
Jalpaiguri	16	26	9	0	43	94
Uttar Dinajpur	27	12	11	20	18	88
Kalimpong	34	19	14	0	26	93
Overall	77	57	34	20	87	275

Source: Authors' analysis

demographic and farming features of small tea growers in three North Bengal districts. Sarkar and Santra (2023) noted that Small Tea Gardens development in North Bengal had primarily occurred over the past two decades, reflecting continuous growth and investment in the sector. During 2022 (Table 3), there were 36,559 small tea growers, which were only 8000 during 2000-01 (i.e., 356.98% increase). Obviously, the question arose why traditional farmers preferred tea plantations. Sumitra Naha (2018) noted that the bitter experience in erstwhile crop cultivation was one reason for the switch to small tea cultivation by the farmers in this region. But this seemed to be the researcher's view – we needed to understand the farmers' perception in this regard too. This study, therefore, attempted to find out the perception of the small tea growers about preference and choice making on tea cultivation.

Farmers' decision for crop choice depended upon many social, economic, and technical aspects around the farming system as a whole. Issues in each of these domains were worked out meticulously, and the respondents (functional head) were asked to respond as per the four-point Likert Scale mentioned earlier ('Materials and Methods' section). Thereafter, the Kruskal-Wallis test (Kruskal and Wallis, 1952) was employed to test the statistical validity of responses across these three North Bengal districts.

Table 7 outlined the main economic reasons motivating farmers to adopt small tea cultivation in Jalpaiguri, Uttar Dinajpur and Kalimpong. The leading factor across districts was the expectation of higher profits from Small Tea Gardens (mean score 2.65), followed by prospects of better selling prices (mean 2.60). Farmers also valued improved marketing opportunities and steady factory demand, though concerns over production costs and market instability persisted; overall, profitability and economic security emerged as key drivers, as noted by Sudeshna (2024), who highlighted tea cultivation's substantial income and employment potential in North Bengal, fostering rural socioeconomic development despite challenges like low green leaf prices and rising costs—a pattern reinforced by Anonymous (2025), who studied STGs as key economic drivers (1.5M direct jobs) requiring value addition for

higher incomes in limited-alternative regions. Kruskal-Wallis Test and Dunn's Multiple Comparisons Test showed no significant differences among the districts for most statements. However, a significant difference was observed for the statement "deficit in production of leaves in big tea gardens induces the establishment of Small Tea Gardens" with Jalpaiguri and Uttar Dinajpur showing significance at the 10% level, and Jalpaiguri and Kalimpong at the 5% level; this indicated that the perceived influence of production deficits in large estates on small tea cultivation varied notably among these regions.

Table 8 examined the technical issues influencing small tea cultivation in Jalpaiguri, Uttar Dinajpur and Kalimpong. Favorable weather ranked highest (mean score 2.58), followed by soil suitability (mean score 2.25). Transport access and input availability showed moderate influence, while skilled labor and irrigation scored lowest, particularly in Jalpaiguri (below 1.7), indicating technical constraints. Despite supportive agro-climatic conditions, limited technical capacity hindered productivity. Borah (2016) noted that many growers lacked training in pest control and soil management, underscoring the need for region-specific training programs by the Tea Board, research bodies, and industry partners to strengthen grower competency. Further, the Kruskal-Wallis Test and Dunn's Multiple Comparisons Test revealed significant inter-district differences in several technical aspects. Technical issues such as soil suitability, input availability, irrigation facilities, and transport access showed highly significant differences, especially between Jalpaiguri and Kalimpong, and between Uttar Dinajpur and Kalimpong ($p \leq 0.01$). Weather suitability also varied notably, showing a moderately significant difference between Jalpaiguri and Kalimpong ($p \leq 0.05$) and slightly significant difference between Uttar Dinajpur and Kalimpong ($p \leq 0.10$). Perception of farmers' expertise differed significantly between Jalpaiguri and the other districts, while the availability of skilled labour remained consistent. Overall, Kalimpong exhibited the greatest variation in perceived technical suitability for tea cultivation in comparison to the other two districts.

Table 9 highlighted the social factors driving the adoption

Table 7: Economic reasons behind Small Tea Gardens cultivation

Sl. No.	Statements (Economic)	All districts		Test statistic	Dunn's multiple comparisons test		
		Mean score	Rank		Jalpaiguri vs U. Dinajpur	Jalpaiguri vs Kalimpong	U. Dinajpur vs Kalimpong
1.	I think tea cultivation involves relatively less cost	2.15	VI	0.861	NS	NS	NS
2.	I think tea cultivation gives relatively more profit	2.65	I	0.343	NS	NS	NS
3.	I think, there is probability of getting better selling price for tea	2.60	II	1.253	NS	NS	NS
4.	I think there is greater probability of realization (direct) of selling price	2.01	IX	1.746	NS	NS	NS
5.	I believe selling price of tea is relatively less fluctuated	2.13	VIII	0.060	NS	NS	NS
6.	I believe there is less market malfunctioning in tea marketing	1.77	X	1.490	NS	NS	NS
7.	I think there is possibility of getting lumpsum cash from tea plantation (which is helpful for my family)	2.14	VII	1.565	NS	NS	NS
8.	I believe there is good and regular demand of tea leaves from the factories around our locality	2.22	V	1.065	NS	NS	NS
9.	I believe the marketing facility of tea is better than that of other crops	2.28	IV	0.938	NS	NS	NS
10.	I think a deficit in the production of leaves in a big tea gardens leads to establish small tea gardens/tea cultivation	2.35	III	6.834	**	*	NS

NS: Non-significant; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; U. Dinajpur stand for Uttar Dinajpur

Table 8: Technical reasons behind Small Tea Gardens cultivation

Sl. No.	Technical reasons	All districts		Test statistic	Dunn's multiple comparisons test		
		Mean score	Rank		Jalpaiguri vs U. Dinajpur	Jalpaiguri vs Kalimpong	U. Dinajpur vs Kalimpong
1.	I believe soil condition of our land suits tea cultivation	2.25	II	22.339	NS	***	***
2.	I believe the weather in our locality suits tea cultivation	2.58	I	7.071	NS	*	**
3.	I think there is no problem with input availability for tea cultivation in our locality	2.16	III	18.259	NS	***	***
4.	I believe that a conventional irrigation facility is not a problem for tea cultivation	1.67	VII	39.819	NS	***	***
5.	I believe that skilled labour is available for undertaking different operations for tea cultivation	1.75	VI	0.930	NS	NS	NS
6.	I believe that I have got sufficient expertise to undertake tea cultivation	1.88	V	10.574	***	***	NS
7.	I think, better transport facilities help you to go for tea cultivation	2.14	IV	13.024	NS	***	***

NS: Non-significant; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; U. Dinajpur stand for Uttar Dinajpur

of small tea cultivation in Jalpaiguri, Uttar Dinajpur and Kalimpong. The proximity of tea factories (BLFs) was the strongest motivator (mean 2.50), emphasizing the importance of nearby processing facilities. The perception of tea cultivation as women-friendly ranked second (mean 2.46), promoting social acceptance through inclusive labor opportunities. Peer influence from neighboring growers also shaped adoption, especially in Jalpaiguri (2.41). Factors like reduced drudgery and growers' associations were less influential. Overall, social networks, local infrastructure, and gender participation significantly encouraged small tea farming, supporting Borah's (2013) view on its community empowerment potential-as echoed in studies. Subba et al. (2024), who noted small-scale sustainability via family labor, local cooperatives, and women involvement

despite challenges, and Qiao et al. (2016), who observed that organic/fair trade enhanced social benefits (women inclusion, community premiums) for small farms. Kruskal-Wallis and Dunn's Multiple Comparisons Test results comparing social reasons influencing tea cultivation across Jalpaiguri, Uttar Dinajpur, and Kalimpong indicated that all social factors-such as influence from neighboring farmers, proximity to tea factories, suitability for family labour, and the role of local growers' associations were statistically non-significant across the three districts. This suggested that social influences on adopting tea cultivation were relatively uniform among respondents, with no notable regional variations in perceptions regarding social motivations for establishing Small Tea Gardens.

Table 9: Social reasons behind Small Tea Gardens cultivation

Sl. No.	Social reasons	All districts		Test statistic	Dunn's multiple comparisons test		
		Mean score	Rank		Jalpaiguri vs U. Dinajpur	Jalpaiguri vs Kalimpong	U. Dinajpur vs Kalimpong
1.	I believe that neighboring tea fields (around my crop plot) compel me you to go for tea	2.06	V	0.034	NS	NS	NS
2.	I believe that the relationship with my neighboring farmers induces/pushes me to for tea	2.25	III	0.404	NS	NS	NS
3.	I think, presence of tea factory near to our locality influence to establishment of small tea gardens	2.50	I	0.216	NS	NS	NS
4.	I think tea cultivation is drudgery-free	1.62	VII	1.163	NS	NS	NS
5.	I think tea cultivation is women-friendly	2.46	II	1.311	NS	NS	NS
6.	I think operations in tea cultivation suits to family labour participation more	2.13	IV	1.241	NS	NS	NS
7.	I think there is a role of the local Small Growers Association for inducing me towards establishing small tea gardens	1.93	VI	1.494	NS	NS	NS

NS: Non-significant; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; U. Dinajpur stand for Uttar Dinajpur

4. CONCLUSION

This study analyzed the livelihoods of small tea growers (STGs) in Jalpaiguri, Uttar Dinajpur, and Kalimpong, North Bengal, revealing gender imbalances (82% male-led), backward caste dominance (72%), and high extension engagement (54-60%). On 1.76 ha holdings, STGs averaged 0.42 ha, replacing fallow (32%), paddy (28%), and wheat (21%) lands, propelled by experienced farmers (>79% over 20 years). Primary drivers included economic gains (profit 2.65), technical suitability (weather 2.58, soil 2.25), and social factors like factory proximity (2.50) and women-friendliness (2.46), varying by district.

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