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Small Tea Growers' Perception towards Pricing of Green Tea Leaves in Dibrugarh District of Assam

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HIGHLIGHTS

- 51.72% of small tea growers perceived pricing of tea leaves as unfair and 25.32% considered it highly unfair.
- Areas of cultivation and the number of selling options available to small tea growers have a significant positive correlation with their perception.
- Improved market infrastructure, automation of processing units, and regulation regarding the commission of tea agents may improve the pricing of green tea leaves.

ARTICLE INFO

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ABSTRACT

Tea cultivation on a small scale plays a crucial role in employment generation in rural areas of Assam and has contributed a lion's share to the state's tea production. But the small tea growers (STGs) are facing many challenges, and a lack of fairness in the pricing of green tea leaves creates threats to their sustainability. The study assessed STGs' perception towards the pricing of green tea leaves in Dibrugarh district of Assam. 379 samples were selected purposively from 3 tea-producing blocks of the district, and data were collected using a structured interview schedule. STGs' perception towards pricing was examined with the help of a scale, calculated on the basis of 12 statements related to three approaches: distributive fairness, procedural fairness and interactional fairness. The market of green tea leaves was dominated by the buyers, where the STGs play a minimal role in price realisation.51.72% of STGs perceived the pricing of tea leaves as unfair, and 25.32% considered it highly unfair. Area of cultivation and the number of selling options were found to have a significant positive correlation with STGs' perception. Initiatives to improve market infrastructure and automation of processing units are needed to ensure a fair pricing mechanism.

INTRODUCTION

Tea cultivation on a small scale in Assam was introduced in 1978 and considered a prestigious source of livelihood in the rural areas (Gam & Deka, 2020). The Tea Board of India defines "a Small Tea Grower (STG) as a person who has a tea cultivation area of up to 25 acres or 10.2 hectares (ha)" (Sonowal, 2019). According to the Economic Survey, Assam (2024-25), there are 133,000 small tea growers in the year 2024 accounting for 295.35 million kg in production, which is almost 48% of the state's production. The tea cultivation in small scale covers 125802.83 ha of area under cultivation and provides direct and indirect employment to the rural areas of Assam. Dibrugarh district, also known as the tea city of Assam, has the highest number of small tea growers and contributes a major portion to the state's production. Despite the importance in the state's economy, the growers face many barriers (Panda et al., 2022). One of these barriers is a lack of a fair and remunerative pricing system. There are rapid price fluctuations of green tea leaves, and a significant gap exists between the price offered by the final consumers of tea and the price received by the growers (Das & Mishra, 2019). The real price of tea leaves begins to decrease with

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periodic fluctuation due to low nominal price realization (Gam & Deka, 2020). The Tea Board of India had introduced a price- sharing formula that mandates the Bought Leaf Factories (BLFs) to allocate a fair price to STGs from the auction price of processed tea as per the prescribed 60:40 ratio to protect STGs, which was never implemented properly (Gogoi, 2023). A degree of monopsonistic exploitation of small tea growers by buyers of green tea leaves was observed (Das, 2019). The small tea growers have become passive price takers, as the price of green leaves is determined by BLFs, collection agents, and estate factories, leaving growers with little bargaining power (Kakoty & Kaurinta 2021).

But a fair and remunerative pricing is a necessary condition for the sustainability of farmers (Verma et al., 2025; Lahiri et al., 2024). Fairness in pricing is not only about the price of green tea leaves; it is associated with livelihood security, dignity and justice. Growers' positive perception regarding pricing is an essential determinant of the future of small tea cultivation in the study area. Hence, the perceptions and behavioural aspects of the small tea growers regarding the pricing of green tea leaves should be addressed. In this study, small tea farmers' perception towards the pricing of green tea leaves is assessed using the three approaches of fairness in pricing.

METHODOLOGY

The present study focused on assessing the perception of small tea growers towards the pricing of green tea leaf using three approaches of fairness in pricing. Dibrugarh district of Assam was selected because, according to the Tea Board of India, it is the top-most producer of tea in Assam and the highest numbers of registered small tea gardens (27347) were concentrated here, with 20572.52 ha, and small tea growers contributed 52% of total district production (Economic Survey, Assam, 2024-25). In July, 2024, data were collected using a multistage sampling technique. Among the 7 development blocks, 3 blocks – Lahowal, Panitola, and Tingkhong were selected purposively. Using the Krejcie and Morgan (1970) table for sample size determination, the sample size was determined to be 379. Sample sizes included 126 from Panitola, 126 from Lahowal, and 127 from Tingkhong. From each block, 12 tea-producing villages were taken randomly, and 10 to 15 samples were selected from each village at random. The survey was conducted by using a structured interview schedule. The STGs were asked to indicate their perception by giving scores accordingly: strongly agree = 5, agree = 4, neutral = 3, not agree = 2 and, strongly not agree = 1. STGs' perception towards pricing was examined by calculating a scale developed by Sarnaik et al. (2020) with a little modification to match the objective of the present study. The scale was calculated based on 12 statements constructed from three approaches to pricing fairness, i.e., distributive fairness, procedural fairness, and Interactional fairness (Machini et al., 2024). The internal consistency of these approaches was tested using Cronbach's Alpha. The obtained values (0.802, 0.841, and 0.847 respectively) were above the acceptable threshold of 0.70, indicating satisfactory reliability. A total score was calculated for each respondent, and based on the obtained score, the perception index was worked out with the help of the formula:

$$\text{Perception Index} = \frac{\text{Actual obtained perception score of respondent}}{\text{Maximum obtained perception score}} \times 100$$

The STGs were categorised into highly unfair, unfair, fair, and highly fair perceptions. The classification was carried out using the Cumulative Square Root Frequency (CSRF) method. 7 socio-economic variables were selected based on the relevance of these variables in the literature and growers' awareness, decision-making, and market participation. Pearson's simple correlation coefficient (r) was estimated to examine the direction of the relationship between STGs' perception and their socio-economic variables.

RESULTS

Socio-economic analysis revealed that 56.46% of respondents are in the 46-60 years age group. The majority of growers, i.e. 44.06% have studied up to matriculation, and 45.38% STGs have a big family with 5-6 members. The results regarding farm activities showed that 78.62% of STGs have a tea cultivation area of less than 2 acres, and 32.45% growers earn 76-100% income from tea cultivation. 53.03 per cent of growers have above 20 years of experience in the said sector. The result of the post- harvesting operation revealed an interesting fact that, 53.03 per cent of the small tea growers have 1-2 selling options to sell their product

Small tea growers' perception towards the pricing of green tea leaves

In this study three approaches were used to understand STGs perception towards the fairness in pricing of green tea leaves (Table 1). These included distributive fairness, procedural fairness, and interactional fairness.

The analysis of the data in Table 1 indicated a significant lack of perceived distributive fairness among green tea leaf farmers, as all mean scores fell below the neutral midpoint of 3.0. The most critical finding was the very low mean of 1.84 regarding the price received compared to the final retail price, which suggested that farmers felt heavily exploited or undervalued within the broader supply chain. This sentiment was compounded by a lack of trust in quality-based price differentiation, with a mean of 2.12 and a shared belief that price risks were not equitably distributed among stakeholders, reflected by a mean 2.23. Furthermore, the results highlighted a precarious economic situation for the growers; the mean score for profit margin adequacy was 2.54, suggesting that earnings were often insufficient to cover cultivation costs or provide a decent living. The low mean score for price stability (2.25), combined with a low standard deviation (0.89), reflected a strong, consistent consensus that the market was unreliably volatile. Overall, the data on distributive fairness revealed a farming community that felt economically marginalised, bearing the highest burden of market risk while receiving the lowest share of the value created.

The results of perception of STGs on procedural fairness in the pricing of green tea leaves reflected a significant deficiency in procedural fairness in the pricing of green tea leaves. The four indicators, i.e. transparent price formula, documentation, voice, and grievance redressal, score poorly, which suggests a widespread issue rather than an isolated one. The result regarding the price-sharing

Table 1. STGs' perception on distributive, procedural and interactional fairness in tea leaf pricing

Approaches of fairness	Statements	Mean	Standard Deviation
Distributive fairness	The price I receive for green tea leaves is fair compared to the final retail price of the pack.	1.84	0.92
	My current profit margin is enough to cover the cost of cultivation and provide a decent living.	2.54	1.29
	The price risk is endured by all stakeholders of the supply value chain.	2.23	1.08
	The differentiated prices based on the quality of leaves are reasonable and fair.	2.12	1.02
	The price of green tea is stable and fluctuations can be predicted.	2.25	0.89
Procedural fairness	I always receive a formal written contract or document from the processing unit/tea agent regarding price and terms of payment.	2.17	1.34
	A clear and transparent price- sharing formula is practised.	1.86	0.90
	I feel I have a collective voice that helps me negotiate or bargain for a better price.	2.17	1.17
	I feel confident that if I file a grievance, it will be resolved fairly to resolve disputes.	2.16	1.16
Interactional fairness	The processing units/ Tea agents are honest and trustworthy.	3.14	1.46
	I receive timely and clear information about the price and the causes of fluctuation in price.	3.13	1.38
	Tea agents/ Factory staff treat me with respect and dignity	3.84	1.10

formula showed the lowest average score (1.865) and the lowest standard deviation (0.909), which suggested that most of the growers find it unclear and unfair. Another statement was regarding a formal, written contract for the price and payment terms, which also showed a negative perception with a mean of 2.174, indicating it as an unfair aspect, and the wide spread in responses, standard deviation value of 1.344, implied that some growers get contracts while many others do not. Growers also felt that they had less bargaining power when it came to negotiating a better price (2.172) and lacked confidence that any disputes would be resolved fairly (2.169).

The perception regarding interactional fairness in pricing of green tea leaves was better compared to distributive and procedural fairness. The sample STGs reported good treatment from the processing units and tea agents, with a mean of 3.84 above the neutral response. The results regarding informational fairness, i.e. clarity and timeliness of data and trustworthiness, were slightly positive above the neutral, with a mean of 3.13 and 3.14, respectively. But they had high dispersion values, i.e. 1.388 and 1.455, which indicated a lack of uniformity in the experience of interactional fairness in the study area. A perception score was calculated for each respondent and based on the obtained score, the perception index was worked out using the formula mentioned in the methodology. Here, the maximum obtained perception score is 60, minimum perception score is 12. After calculating the perception index for each respondent, the STGs are grouped into four categories on the basis of perception index using the Cumulative Square Root Frequency (CSRF) method shown in Table 2.

Table 3 showed that a significant portion of STGs, especially 51.72% perceived the pricing of green tea leaves as unfair, and 25.32% considered it highly unfair. Only 13.98% of the STGs perceived the pricing of green tea leaves as fair, and 8.97% judged it as highly fair.

Table 2. STGs' Perception towards fairness in the pricing of green tea leaves

Category	Strata	Frequency	Percentage
Highly Unfair	40-49	96	25.32
Unfair	50-59	196	51.72
Fair	60-69	53	13.98
Highly fair	70-above	34	8.97

Correlation between demographic and farm variables with perception of STGs towards fairness in pricing of green tea leaves

The correlation analysis was conducted to examine the relationship between selected demographic and farm characteristics of respondents and their perception towards fairness in tea leaf pricing to assess how individual and farm characteristics shape small tea growers' perception regarding pricing fairness. These included age, education, area of cultivation, selling options, income, family size, and years of experience. The selection of these variables was based on their relevance in literature and growers' awareness, decision-making, and market participation.

Table 3. Correlation between demographic and farm variables with perception of STGs towards fairness in pricing of green tea leaves

Demographic and farm variables of respondents	Correlation	P value
Age	-0.216	0.076
Education	-0.194	0.095
Area of cultivation	0.256	0.013*
Selling options	0.237	0.002*
Income	0.189	0.341
Family size	-0.312	0.156
Year of experience	-0.345	0.197

*Significant at the 0.05 level of probability

Area of cultivation and selling options exhibited a significant positive correlation with STGs' perception towards pricing of green tea leaves, with p value less than 0.05.

DISCUSSION

The results reveal a predominantly negative outlook on the pricing of green tea leaves. More than 75% of the growers consider the pricing process unfair. The STGs are not satisfied with the

distributive and procedural approaches of fairness compared to interactional fairness. The results are found to be fair in terms of interpersonal treatment, i.e. respect and dignity of growers in the process of pricing of green tea leaves. It is found that the market of the green tea leaves is dominated by the buyers, where the STGs play a minimal role. The cartel of processing units has a strong influence on the supply chain of green tea leaves. Though they do not have their own tea plantation, they can dictate the price. The results show that, they fix the price without a specific formula and are not transparent regarding the price formulation process. Kakoty and Kaurinta (2021) found similar result in their study that the pricing decision of green tea leaves is controlled by a cartel of BLFs, collection agents and large estate factories where the growers are considered as the price takers. Marchini et al. (2024); Hazari et al. (2023) pointed out that the weak position of farmers in the supply chain is a very crucial issue that prevents them from obtaining a good price for their product. Kagira et al. (2012) and Ghosh et al. (2017) also found that the small tea growers frequently receive prices lower than the justified market value and faced market vulnerabilities due to a lack of direct market access, limited institutional support, poor organisational strength, weak infrastructure, and insufficient transparency in the pricing process. According to Lahiri et al. (2025) small-scale production, lack of storage, and seasonal fluctuations are major constraints that reduce bargaining power. Mano Raj (2021) also found poor bargaining power as one of the factors that exacerbated STGs' market vulnerabilities.

The correlation of STGs' perception with area cultivation is positive and significant. It indicates that with an increase in the area of cultivation, the growers perceive the pricing process as fairer compared with the growers with a small area of cultivation. The growers with less area of cultivation are found to be less organised and confident, which makes their perception towards the pricing of green tea leaves unfair. Similarly, the growers having many selling options considered the pricing process fair. On the other hand, the growers with fewer selling options perceived the process as unfair. Das and Das (2022) also found that the small tea growers who have only a single sales option are exploited more by the buyers than those with multiple sales options of green tea leaves.

CONCLUSION

The present study reveals a predominantly negative perception towards the pricing of green tea leaves. The position of small tea growers is weaker in the supply value chain of tea compared to processing units and tea agents, and they need urgent attention from policymakers. Initiatives should be taken to improve market infrastructure, automation of processing units, and regulation regarding the commission of tea agents, which will reduce the dominance of buyers over small tea growers. Diversification of farms, establishment of co-operatives, and contract farming, help increase living income and strengthen the collective bargaining capacity of growers. The government should initiate a robust mechanism to align growers and processors for fair price realisation, and can also introduce a Minimum Support Price to protect the marginal growers from severe price fluctuations.

DECLARATIONS

Ethics approval and informed consent: Informed consent was sought from the respondents and their organisations regarding the study during the course of the data collection.

Conflict of interest: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest. The authors declare that during the preparation of this work, they thoroughly reviewed, revised, and edited the content as needed. The authors take full responsibility for the final content of this publication.

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