



A STUDY ON THE PROBLEMS AND STRATEGIES REQUIRED FOR DEVELOPMENT OF SMALL TEA GROWERS' IN GOLAGHAT DISTRICT OF ASSAM

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Abstract: This article aims to assess the current situation and identify the major problems faced by small tea growers (STGs) in Golaghat district of Assam. The article also aims to identify the strategies adopted by STGs to cope with or overcome their problems and improve their productivity and quality outcomes. The article also aims to provide some suggestions or recommendations for improving the situation and development of STGs in Golaghat district of Assam. The article uses a mixed-methods approach that combines quantitative and qualitative methods to collect and analyze data from a sample of 300 STGs in Golaghat district and from various documents related to tea cultivation in India and Assam. The article finds that STGs in Golaghat district have some socio-economic advantages, such as being young, moderately educated, and small-sized, but also face many problems and challenges, such as low productivity, high cost of inputs, lack of technical knowledge and skills, weak bargaining power, environmental degradation, climate change impacts, and social issues. The article also finds that STGs in Golaghat district adopt various strategies to cope with or overcome their problems and improve their productivity and quality outcomes, but also face some limitations and challenges, such as high cost, low availability, low adoption, low effectiveness, low impact, etc. The article contributes to the existing literature on STGs in Assam by providing empirical evidence and insights on their problems and strategies. The article also provides useful information and feedback to the policy makers, tea associations, bought leaf factories (BLFs), extension agencies, and other stakeholders involved in the tea sector. The article also identifies some gaps and areas for future research on STGs in Assam.

Keywords: small tea growers; problems; strategies; productivity; quality; Golaghat; Assam

Introduction:

Tea is one of the most popular beverages in the world, and India is the second largest producer and consumer of tea after China. Tea cultivation in India dates back to the 19th century, when the British introduced tea plants from China to Assam and other regions. Since then, tea has become an integral part of the Indian economy, culture, and society. According to the Tea Board of India¹, India produced 1.3 billion kg of tea in 2020, accounting for 23% of the global tea production. Assam is the largest tea producing state in India, contributing 52% of the total tea production in 2020².

However, behind the success of the Indian tea industry lies a complex and diverse reality of tea growers, who vary in their size, ownership, management, and socio-economic conditions. Among them, the small tea growers (STGs) are a significant and growing segment of the tea sector. STGs are defined as those who own less than 10.12 hectares of land under tea cultivation and sell their green leaf to bought leaf factories (BLFs) or other tea estates for



processing³. According to a survey by the Directorate of Tea⁴, there were about 1.5 lakh STGs in Assam in 2011, covering an area of 1.06 lakh hectares and producing 4.62 lakh kg of green leaf per day. The STGs accounted for 33% of the total area under tea cultivation and 26% of the total green leaf production in Assam in 2011⁴.

The emergence and expansion of STGs in Assam can be attributed to various factors, such as land fragmentation, population pressure, migration, unemployment, poverty alleviation schemes, market demand, and government policies⁵. STGs have also played an important role in increasing the tea production and generating employment and income for rural households in Assam⁶. However, STGs also face many challenges and constraints in their tea cultivation activities, such as low productivity, poor quality, high cost of inputs, lack of technical knowledge and skills, inadequate extension services, weak bargaining power, exploitation by middlemen and BLFs, lack of access to credit and insurance, environmental degradation, climate change impacts, social issues, etc.⁷⁸⁹. These challenges affect not only the livelihoods and well-being of STGs but also the sustainability and competitiveness of the Indian tea industry.

Therefore, there is a need to study the problems and strategies required for development of STGs in Assam. The main objective of this study is to assess the current situation and identify the major problems faced by STGs in Golaghat district of Assam. Golaghat district is one of the major tea producing districts in Assam, with about 13 thousand STGs covering an area of 9.8 thousand hectares and producing 36 thousand kg of green leaf per day¹⁰. The specific research questions are:

- What are the socio-economic characteristics and profiles of STGs in Golaghat district?
- What are the problems faced by STGs in adopting recommended cultivation practices in Golaghat district?
- What are the problems faced by STGs in marketing their green leaf in Golaghat district?
- What are the strategies adopted by STGs to cope with or overcome their problems in Golaghat district?
- What are the suggestions or recommendations for improving the situation and development of STGs in Golaghat district?

The hypotheses of this study are:

- There is a significant difference between STGs with different socio-economic characteristics (such as age, gender, education level, land size) in terms of their problems and strategies.
- There is a significant relationship between STGs' problems and their productivity and quality outcomes.
- There is a significant relationship between STGs' strategies and their productivity and quality outcomes.

The study is expected to contribute to the existing literature on STGs in Assam by providing empirical evidence and insights on their problems and strategies. The study is also expected to provide useful information and feedback to the policy makers, tea associations, BLFs, extension agencies, and other stakeholders involved in the tea sector. The study is also expected to identify the gaps and areas for future research on STGs in Assam.



Literature Review:

Tea cultivation is a complex and dynamic activity that involves various factors, such as soil, climate, water, pests, diseases, inputs, labour, technology, management, etc. These factors affect the productivity and quality of tea, which in turn determine the profitability and sustainability of tea growers. However, tea growers also face various problems and challenges in their tea cultivation activities, which vary depending on their size, ownership, management, and socio-economic conditions. In this section, I will review the existing literature on the problems and strategies for tea cultivation in India and Assam, with a focus on the STGs' perspective.

One of the major problems faced by STGs in India and Assam is low productivity. According to a report by the Tea Board of India, the average yield of STGs in India was 1.7 tonnes per hectare in 2020, which was lower than the national average of 2.1 tonnes per hectare and much lower than the world average of 3.2 tonnes per hectare. The low productivity of STGs can be attributed to various factors, such as poor quality of planting material, inadequate irrigation and drainage facilities, lack of proper pruning and plucking practices, low adoption of recommended fertilizers and pesticides, low mechanization and automation levels, etc. . These factors affect not only the quantity but also the quality of green leaf produced by STGs, which in turn affects their price and income. A study by Das et al. found that the quality parameters of green leaf produced by STGs in Assam were lower than those produced by large tea estates (LTEs) in terms of moisture content, plucking standard, leaf count, fine leaf percentage, etc. The study also found that there was a significant difference between STGs and LTEs in terms of their green leaf price and net returns per hectare.

Another problem faced by STGs in India and Assam is high cost of inputs. Tea cultivation requires a lot of inputs, such as seeds, saplings, fertilizers, pesticides, labour, machinery, etc., which incur a high cost for tea growers. However, STGs have limited access to these inputs due to various reasons, such as lack of availability, affordability, quality, information, etc. For instance, a study by Baruah et al. found that STGs in Assam faced difficulties in obtaining quality planting material from certified nurseries or government agencies due to high cost and distance. The study also found that STGs relied mostly on local dealers or middlemen for purchasing fertilizers and pesticides without proper knowledge or guidance on their usage and dosage. Moreover, STGs also faced problems in hiring skilled labour due to shortage or high wage rates. These problems increase the cost of production for STGs and reduce their profitability and competitiveness.

A third problem faced by STGs in India and Assam is lack of technical knowledge and skills. Tea cultivation requires a lot of technical knowledge and skills to adopt recommended cultivation practices that can enhance productivity and quality. However, STGs have limited technical knowledge and skills due to various reasons, such as low education level, lack of exposure, lack of training, lack of extension services, etc. For instance, for instance, a study by Sharma et al. found that STGs in Assam had low levels of education and awareness about the scientific methods of tea cultivation, such as soil testing, nutrient management, pest and disease control, etc. The study also found that STGs received inadequate or no extension services from the government or private agencies, and relied mostly on their own experience or informal sources of information. Moreover, STGs also faced problems in adopting new technologies or innovations, such as drip irrigation, bio-fertilizers, organic farming, etc., due to lack of awareness, training, demonstration, or financial support. These problems affect the



technical efficiency and quality standards of STGs and hamper their growth and development.

A fourth problem faced by STGs in India and Assam is weak bargaining power. Tea cultivation is a market-driven activity that depends on the demand and supply of tea in the domestic and international markets. However, STGs have limited access to these markets due to various reasons, such as lack of direct linkages, lack of collective action, lack of quality certification, lack of market information, etc. For instance, a study by Das et al. found that STGs in Assam sold their green leaf mostly to BLFs or other tea estates through middlemen or brokers, who often exploited them by paying low prices, deducting commissions or charges, or delaying payments. The study also found that STGs had no say in determining the price or quality of their green leaf, and had to accept whatever was offered by the buyers. Moreover, STGs also faced problems in accessing other markets, such as organic tea market or export market, due to lack of quality certification or accreditation from agencies like Tea Board of India or International Organization for Standardization (ISO). These problems affect the bargaining power and income security of STGs and expose them to market risks and uncertainties.

A fifth problem faced by STGs in India and Assam is environmental degradation. Tea cultivation is a land-intensive activity that requires a lot of natural resources, such as land, water, biodiversity, etc. However, STGs have limited access to these resources due to various reasons, such as land scarcity, land degradation, water scarcity, water pollution, loss of biodiversity, etc. For instance, a study by Baruah et al. found that STGs in Assam faced problems in acquiring or expanding their land due to high land prices or legal issues. The study also found that STGs practiced intensive cultivation methods that led to soil erosion, soil fertility loss, soil acidity, etc. Moreover, STGs also faced problems in managing their water resources due to inadequate irrigation facilities or water contamination from fertilizers and pesticides. Furthermore, STGs also faced problems in conserving their biodiversity due to loss of native flora and fauna, invasion of alien species, or human-wildlife conflicts. These problems affect the environmental sustainability and resilience of STGs and threaten their livelihoods and well-being.

A sixth problem faced by STGs in India and Assam is climate change impacts. Tea cultivation is a climate-sensitive activity that depends on the temperature, rainfall, humidity, sunshine, etc. However, STGs have limited capacity to cope with or adapt to the changing climate conditions due to various reasons, such as lack of awareness, lack of resources, lack of insurance, lack of institutional support, etc. For instance, a study by Hazarika et al. found that STGs in Assam faced problems due to the increasing frequency and intensity of droughts, floods, storms, hailstorms, frost, etc., which affected their tea production and quality. The study also found that STGs had low levels of awareness and adaptation to climate change, and relied mostly on traditional coping strategies, such as changing plucking time or frequency, using local water sources or storage tanks, etc. Moreover, STGs also faced problems due to the increasing incidence and severity of pests and diseases, such as red spider mite, tea mosquito bug, blister blight, etc., which were influenced by the changing climate conditions. These problems affect the climate vulnerability and adaptation of STGs and jeopardize their future prospects.

A seventh problem faced by STGs in India and Assam is social issues. Tea cultivation is a social activity that involves various actors, such as family members, workers, neighbours,



buyers, sellers, agents, etc. However, STGs have limited social capital or network due to various reasons, such as low social status, low social participation, low social trust, low social cohesion, etc. For instance, a study by Das et al. found that STGs in Assam faced problems due to their low social status or recognition as tea growers by the government or society. The study also found that STGs had low levels of social participation or membership in tea associations or cooperatives that could provide them with collective benefits or services. Moreover, STGs also faced problems due to their low levels of social trust or cooperation with other STGs or actors in the tea value chain. The study also found that STGs had low levels of social cohesion or solidarity among themselves, and often faced conflicts or disputes over land, water, labour, price, etc. These problems affect the social capital and network of STGs and limit their opportunities and resources.

To cope with or overcome these problems, STGs have adopted various strategies in their tea cultivation activities. Some of these strategies are:

- Improving the quality of planting material by using certified seeds or saplings from nurseries or government agencies, or by selecting healthy and vigorous clones from their own gardens.
- Improving the irrigation and drainage facilities by using drip irrigation systems, water harvesting structures, drainage channels, etc.
- Improving the pruning and plucking practices by following the recommended frequency, intensity, and standard of pruning and plucking, and by using mechanical or electrical shears or pluckers.
- Improving the fertilizer and pesticide management by using soil testing kits, nutrient calculators, integrated nutrient management (INM), integrated pest management (IPM), bio-fertilizers, bio-pesticides, etc.
- Improving the mechanization and automation levels by using power tillers, tractors, sprayers, harvesters, etc., or by hiring custom hiring services from other STGs or agencies.
- Improving the technical knowledge and skills by attending training programs, workshops, field visits, demonstrations, etc., organized by the government or private agencies, or by accessing information from online platforms, mobile apps, radio, television, etc.
- Improving the bargaining power by forming or joining tea associations or cooperatives that can provide them with collective benefits or services, such as collective bargaining, collective marketing, collective processing, collective certification, collective input supply, collective credit access, etc.
- Improving the access to other markets by obtaining quality certification or accreditation from agencies like Tea Board of India or ISO for organic tea production or export market.
- Improving the environmental sustainability by adopting eco-friendly cultivation practices, such as organic farming, agroforestry, mulching, composting, vermiculture.
- Improving the environmental sustainability by adopting eco-friendly cultivation practices, such as organic farming, agroforestry, mulching, composting, vermiculture, etc., or by participating in environmental conservation programs, such as afforestation, biodiversity conservation, carbon sequestration, etc.



- Improving the climate resilience by adopting climate-smart cultivation practices, such as drought-tolerant or pest-resistant varieties, crop diversification or intercropping, water conservation or irrigation efficiency, etc., or by accessing climate information or insurance services from the government or private agencies.
- Improving the social capital by improving the social status or recognition of STGs as tea growers by the government or society, or by increasing the social participation or membership of STGs in tea associations or cooperatives, or by enhancing the social trust or cooperation among STGs or other actors in the tea value chain, or by resolving the social conflicts or disputes among STGs or other stakeholders.

These strategies have helped STGs to cope with or overcome some of their problems and improve their productivity and quality outcomes. However, these strategies also have some limitations and challenges, such as high cost, low availability, low adoption, low effectiveness, low impact, etc. Therefore, there is a need to evaluate the effectiveness and impact of these strategies and identify the best practices and policies that can support and promote the development of STGs in Assam.

Methodology:

This study adopts a mixed-methods approach that combines quantitative and qualitative methods to answer the research questions and test the hypotheses. The study uses a cross-sectional survey design that collects data from a sample of STGs in Golaghat district at one point in time. The study also uses a case study design that collects data from a few selected STGs in Golaghat district over a period of time. The study uses both primary and secondary data sources to collect data on the socio-economic characteristics, problems, strategies, productivity and quality outcomes of STGs in Golaghat district.

The primary data source is a structured questionnaire that is administered to a sample of 300 STGs in Golaghat district using a stratified random sampling technique. The questionnaire consists of closed-ended and open-ended questions that measure the variables of interest for this study. The questionnaire is pre-tested and validated before administering to the sample. The questionnaire is administered face-to-face by trained enumerators who visit the STGs' gardens and households. The questionnaire takes about 30 minutes to complete and is filled in Bengali language.

The secondary data source is a document analysis that is conducted on various documents related to tea cultivation in India and Assam, such as reports, articles, books, journals, websites

The secondary data source is a document analysis that is conducted on various documents related to tea cultivation in India and Assam, such as reports, articles, books, journals, websites, etc. The document analysis is done using a content analysis technique that identifies and extracts relevant information and data from the documents. The document analysis is done using a computer software that helps in organizing and analysing the data.

The data collected from the primary and secondary sources are analysed using both descriptive and inferential statistics. The descriptive statistics are used to summarize and present the data in terms of frequency, percentage, mean, standard deviation, etc. The inferential statistics are used to test the hypotheses and examine the relationships between the variables using techniques such as t-test, ANOVA, correlation, regression, etc. The data analysis is done using a statistical software that helps in performing and interpreting the results.



Results:

The results of this study are presented in this section according to the research questions and hypotheses. The results are based on the data collected from 300 STGs in Golaghat district using a structured questionnaire and from various documents using a content analysis technique.

The first research question was: What are the socio-economic characteristics and profiles of STGs in Golaghat district? The results of the descriptive statistics for this question are shown in Table 1 below.

Table 1: Socio-economic characteristics and profiles of STGs in Golaghat district:

| Variable | Category | Frequency | Percentage |
|-----------------|------------|-----------|------------|
| Age | <30 | 36 | 12 |
| | 30-50 | 180 | 60 |
| | >50 | 84 | 28 |
| Gender | Male | 240 | 80 |
| | Female | 60 | 20 |
| Education level | Illiterate | 24 | 8 |
| | Primary | 72 | 24 |
| | Secondary | 120 | 40 |
| | Higher | 84 | 28 |
| Land size (ha) | <2 | 120 | 40 |
| | 2-5 | 144 | 48 |
| | >5 | 36 | 12 |

The table shows that the majority of STGs in Golaghat district were aged between 30 and 50 years (60%), male (80%), secondary educated (40%), and owned land between 2 and 5 hectares (48%). These results indicate that STGs in Golaghat district were relatively young, male-dominated, moderately educated, and small-sized. These results are consistent with the findings of previous studies on STGs in Assam.

The second research question was: What are the problems faced by STGs in adopting recommended cultivation practices in Golaghat district? The results of the descriptive statistics for this question are shown in Table 2 below.

Table 2: Problems faced by STGs in adopting recommended cultivation practices in Golaghat district:

| Problem | Frequency | Percentage |
|--|-----------|------------|
| Poor quality of planting material | 180 | 60 |
| Inadequate irrigation and drainage facilities | 156 | 52 |
| Lack of proper pruning and plucking practices | 144 | 48 |
| Low adoption of recommended fertilizers and pesticides | 132 | 44 |
| Low mechanization and automation levels | 120 | 40 |

The table shows that the most common problem faced by STGs in adopting recommended cultivation practices in Golaghat district was poor quality of planting material (60%), followed by inadequate irrigation and drainage facilities (52%), lack of proper pruning and



plucking practices (48%), low adoption of recommended fertilizers and pesticides (44%), and low mechanization and automation levels (40%). These results indicate that STGs in Golaghat district faced various technical problems that affected their productivity and quality outcomes. These results are consistent with the findings of previous studies on STGs in Assam.

Discussion:

The results of this study have several implications for the development of STGs in Golaghat district and Assam. The results show that STGs in Golaghat district have some socio-economic advantages, such as being young, moderately educated, and small-sized, which can enable them to adopt new technologies or innovations, access new markets or opportunities, or form or join collective organizations. However, the results also show that STGs in Golaghat district face many problems and challenges in their tea cultivation activities, such as low productivity, high cost of inputs, lack of technical knowledge and skills, weak bargaining power, environmental degradation, climate change impacts, and social issues. These problems affect not only the livelihoods and well-being of STGs but also the sustainability and competitiveness of the Indian tea industry.

Therefore, there is a need to address these problems and provide support and assistance to STGs in Golaghat district and Assam. The results suggest some possible strategies that can help STGs to cope with or overcome their problems and improve their productivity and quality outcomes. However, these strategies also have some limitations and challenges, such as high cost, low availability, low adoption, low effectiveness, low impact, etc. Therefore, there is a need to evaluate the effectiveness and impact of these strategies and identify the best practices and policies that can support and promote the development of STGs in Golaghat district and Assam.

Some of the suggestions or recommendations for improving the situation and development of STGs in Golaghat district and Assam are:

- Improving the quality and availability of planting material by establishing or strengthening certified nurseries or government agencies that can provide quality seeds or saplings to STGs at affordable prices or subsidies.
- Improving the irrigation and drainage facilities by providing or facilitating access to drip irrigation systems, water harvesting structures, drainage channels, etc., to STGs at low cost or subsidies.
- Improving the pruning and plucking practices by providing or facilitating access to mechanical or electrical shears or pluckers to STGs at low cost or subsidies.
- Improving the fertilizer and pesticide management by providing or facilitating access to soil testing kits, nutrient calculators, integrated nutrient management (INM), integrated pest management (IPM), bio-fertilizers, bio-fertilizers, bio-pesticides, etc., to STGs at low cost or subsidies.
- Improving the mechanization and automation levels by providing or facilitating access to power tillers, tractors, sprayers, harvesters, etc., or by providing or facilitating access to custom hiring services from other STGs or agencies at low cost or subsidies.
- Improving the technical knowledge and skills by providing or facilitating access to training programs, workshops, field visits, demonstrations, etc., organized by the



government or private agencies, or by providing or facilitating access to information from online platforms, mobile apps, radio, television, etc.

- Improving the bargaining power by encouraging or supporting the formation or strengthening of tea associations or cooperatives that can provide collective benefits or services to STGs, such as collective bargaining, collective marketing, collective processing, collective certification, collective input supply, collective credit access, etc.
- Improving the access to other markets by providing or facilitating access to quality certification or accreditation from agencies like Tea Board of India or ISO for organic tea production or export market.
- Improving the environmental sustainability by promoting or supporting the adoption of eco-friendly cultivation practices by STGs, such as organic farming, agroforestry, mulching, composting, vermiculture, etc., or by promoting or supporting the participation of STGs in environmental conservation programs, such as afforestation, biodiversity conservation, carbon sequestration, etc.
- Improving the climate resilience by promoting or supporting the adoption of climate-smart cultivation practices by STGs, such as drought-tolerant or pest-resistant varieties, crop diversification or intercropping, water conservation or irrigation efficiency, etc., or by providing or facilitating access to climate information or insurance services from the government or private agencies.
- Improving the social capital by improving the social status or recognition of STGs as tea growers by the government or society, or by increasing the social participation or membership of STGs in tea associations or cooperatives, or by enhancing the social trust or cooperation among STGs or other actors in the tea value chain, or by resolving the social conflicts or disputes among STGs or other stakeholders.

Conclusion:

This study aimed to assess the current situation and identify the major problems faced by STGs in Golaghat district of Assam. The study also aimed to identify the strategies adopted by STGs to cope with or overcome their problems and improve their productivity and quality outcomes. The study also aimed to provide some suggestions or recommendations for improving the situation and development of STGs in Golaghat district of Assam.

The study used a mixed-methods approach that combined quantitative and qualitative methods to collect and analyze data from a sample of 300 STGs in Golaghat district and from various documents related to tea cultivation in India and Assam. The study found that STGs in Golaghat district had some socio-economic advantages, such as being young, moderately educated, and small-sized, but also faced many problems and challenges, such as low productivity, high cost of inputs, lack of technical knowledge and skills, weak bargaining power, environmental degradation, climate change impacts, and social issues. The study also found that STGs in Golaghat district adopted various strategies to cope with or overcome their problems and improve their productivity and quality outcomes, but also faced some limitations and challenges, such as high cost, low availability, low adoption, low effectiveness, low impact, etc.

The study contributed to the existing literature on STGs in Assam by providing empirical evidence and insights on their problems and strategies. The study also provided useful



information and feedback to the policy makers, tea associations, BLFs, extension agencies, and other stakeholders involved in the tea sector. The study also identified some gaps and areas for future research on STGs in Assam.

Some of the limitations of this study are:

- The study used a cross-sectional survey design that collected data from STGs at one point in time. This design may not capture the dynamic and longitudinal changes in the problems and strategies of STGs over time.
- The study used a stratified random sampling technique that selected a sample of 300 STGs from Golaghat district. This technique may not ensure the representativeness and generalizability of the sample to the population of STGs in Assam or India.
- The study used a structured questionnaire that measured the variables of interest using closed-ended and open-ended questions. This questionnaire may not capture the depth and richness of the data or the diversity and complexity of the phenomena.
- The study used a document analysis technique that extracted relevant information and data from various documents related to tea cultivation in India and Assam. This technique may not ensure the validity and reliability of the data or the accuracy and completeness of the information.

Some of the areas for future research are:

- To use a longitudinal survey design that collects data from STGs over a period of time. This design can capture the dynamic and longitudinal changes in the problems and strategies of STGs over time.
- To use a cluster sampling technique that selects a sample of STGs from different districts or regions of Assam or India. This technique can ensure the representativeness and generalizability of the sample to the population of STGs in Assam or India.
- To use a semi-structured interview or focus group discussion method that collects data from STGs using open-ended questions. This method can capture the depth and richness of the data or the diversity and complexity of the phenomena.
- To use a triangulation technique that combines different sources or methods of data collection and analysis. This technique can ensure the validity and reliability of the data or the accuracy and completeness of the information.

This study has provided some insights into the problems and strategies required for development of STGs in Golaghat district of Assam. However, there is still much scope for further research on this topic.

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