



Research Article

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Effects of Inflation on Livelihoods of Tea Garden Workers in Bangladesh: A Study of Sylhet Region

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Abstract: Tea is not only an important cash crop in Bangladesh but a significant food commodity of international trade as well. Tea gardens in Bangladesh employ a huge number of labourers. The majority of the tea garden workers are women, and they are paid low wages in comparison to their hard work and market rate of labour. The people of the country, particularly the lower-income groups like tea garden workers, are the harsh victims of the current inflation. The principal aim of the study was to determine the extent of effects of current inflation on the livelihoods of tea garden workers in Bangladesh and explore the concern whether the inflation poses any threat to the industry in Bangladesh. In investigating the above aims and findings the objectives, data were collected from a structured survey from 149 tea garden workers from ten tea gardens of Sylhet, Habiganj and Moulvi Bazar. Data demonstrated that comparing to other nations, Bangladesh's tea garden workers' standard of living is miserable due to the low wages and high inflation.

Inflation diminishes the purchasing power of workers, resulting in heightened food insecurity, limited access to healthcare, and increased dropout rates in education. They suffer from diarrhoea, intestinal and respiratory disorders and child malnutrition. Most of them use alternative medicine. They frequently depend on debt to manage the higher cost of living. To effectively address the effects of inflation on tea garden workers, there is a need for more significant wage reforms, social protection initiatives, and access to financial services that cater to the specific needs of this vulnerable population. The study reveals that the current inflation will have a great negative impact on the livelihoods of tea garden workers, which may pose a threat to the industry.

Keywords: Inflation, livelihoods, tea garden workers, wages, industry.

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INTRODUCTION

Tea is not only an important cash crop in Bangladesh but a significant food commodity of international trade as well. Tea plantations or tea gardens are located mainly in the eastern and north-eastern parts of Bangladesh. 80% of the total tea gardens are in the Sylhet division. Moulvibazar is the main concentration of tea gardens, and it has almost 70% of this 80% of total tea gardens. Sreemangal of Moulvibazar district is known as the tea capital of Bangladesh. According to the statistics of the Bangladesh Tea Board, Bangladesh has 167 tea plantations and tea gardens.¹ Currently, Bangladesh is considered one of the top exporters of tea. It is the 10th largest tea producer and 15th largest exporter in the world. Bangladesh produces 1.68% of global tea production. At the same time, along with the production, it also consumes tea largely. Bangladesh is the 16th largest consumer of tea in the present world.² Tea gardens in Bangladesh employ a huge number of

labourers. This industry employs about 300,000 workers.³ The majority of the tea garden workers are women, and they are paid low wages in comparison to their hard work and market rate of labour.

The workers have been raising their demands to increase their daily wages for a long time. Even a century ago, in protest of their low wages, they wanted to go back to their homeland. It is important to note here that the tea garden workers were brought to Bangladesh by the British from various parts of India, namely, Bihar, Orissa, Madhya Pradesh, Uttar Pradesh, Andhra Pradesh, Karnataka, and Chennai. However, over the period, a few workers from Cumilla and Barishal are seen working in some gardens. The tea garden workers went on an indefinite strike in 2022 to increase their wages up to 150%. However, with the intervention of the then Prime Minister Sheikh Hasina, they agreed to withdraw their strikes and accepted their daily wages increased from Tk. 120 to Tk. 170. The wages the workers are getting are not

¹Bangladesh Tea Board.

² Imam Uddin, Sadia Haque, Fakir Azmal, Abdullah Al Zabir, and Jannatul Ferdous Sonia, 'Income Vulnerability of Tea Garden Workers in Bangladesh', Innovare Journal of Social Sciences, Vol. 8, Issue 1, 2020, p. 1.

³Md. Mirajur Rahman, 'Wages Diversity and Negligence: A Comparative Study of Tea Garden Workers in Sylhet Region, Bangladesh', *Open Journal of Economics and Commerce*, Volume 3, Issue 1, 2020, p. 15.

sufficient in any way to support their basic needs, including food, shelter, education, and health. The amount is enough only to support their food.⁴ The tea garden workers are not given the due treatment they deserve. Most of the tea garden workers fully depend for their livelihoods on their wages only. They do not have any other source of income to meet their daily needs.

Since the tea garden workers are not educated, they are not aware of their rights and do not know how to ensure their rights. They have been exploited and are still being exploited badly. They are deprived of their rights. With their low wages, they are leading their lives inhumanly. Phillip Gain described them as 'tea workers are like modern-day slaves'.⁵ Tea garden workers in Bangladesh are paid the lowest wage in the industry in the entire world. The average family income of these workers in Bangladesh is lower than that of poverty-level income.⁶ Although their contribution to country's GDP is not negligible and undoubtedly the future of the industry depends on them, they are the most unfortunate people of the country.⁷ The workers spend their lifetime in the gardens. The successive governments of the British, Pakistan and now Bangladesh paid scant attention to improving the livelihoods of tea garden labourers over the last 170 years.⁸

In this study, we explored the multifaceted challenges faced by tea garden workers in Bangladesh, particularly focusing on their livelihoods in the context of rising inflation, stagnant wages, and systemic exploitation. Through this study, we aim to contribute to the understanding of the conditions affecting tea garden workers and highlight the urgent need for comprehensive policies to support their rights and livelihoods in an increasingly challenging economic landscape.

BACKGROUND

Today, in Bangladesh, the inflation is a crucial aspect of our economy. The people of the country, particularly the lower-income or fixed-income groups, are the harsh victims of this current phenomenon. Inflation, in a simple word, means the increasing of prices of goods over a given period of time. Inflation reduces the purchasing capacity of the money. Hence, the fixed-income group is the ultimate sufferer of high inflation. Inflation up to a certain percentage is alright for the economy, such as up to 2%-3% inflation is tolerable

⁴Noorjahan Begum, Nushrat Hashmi, and Md. Mokshud Ali, 'Current Scenario of Tea Garden Workers in Bangladesh: Time Demands to Stop the Zero-sum Game', *Global Mainstream Journal of Business, Economics, Development & Project Management*, vol. 1, issue 4, p. 17.

⁵Al Jazeera, <https://www.aljazeera.com/news/2022/8/21/why-are-bangladesh-tea-workers-protesting>

⁶ Phillip Gain, 'Time to pay just wages to tea workers', *The Daily Star*, September 9, 2020.

and good. When the inflation rate is higher than this tolerable percentage, then the prices of goods become more expensive and go beyond the purchasing capacity of the people, which is bad for the country's economy. However, moderate inflation is a signal to economic growth.

A number of causes are responsible for inflation, such as increasing the number of jobs, wages, prices of raw materials, supply of money, and so on. It is natural that more jobs and higher wages increase the purchasing capacity of any household, and when it happens on a larger scale in any given country, inflation is a must. Inflation affects the cost of living and affects many aspects of a country's economy.

It is known that tea is a highly labour-intensive sector.⁹ In the Sylhet region, about 74% of tea workers live below the poverty line. Inflation affects the lives of tea garden workers in many different ways. As we know, generally, the wages being received by them are minimal and strikingly low. They are simply hand-to-mouth with existing low wages. Therefore, it is easy to assume that in the context of recent inflation, how measurable would be their livelihoods? With their existing wages, they cannot have nutritious food, and because of current inflation, their lives have become so deplorable. The high rate of inflation, as it is today, certainly will have direct and negative impacts on the livelihoods of tea garden workers. So far, a few studies reveal the measurable effects of inflation on their livelihoods in Sylhet region; these inadequately explain the actual situation. The impacts on their lifestyle have been poorly presented and documented, and there is no clear projection of what will happen in the industry in the days to come. If it continues and no proper step is being taken, then there remains a possibility that Bangladesh may lose earning foreign currencies. It is also not clear how the garden workers will behave in response if their problems are not addressed and solved, taking ground reality into consideration. The study will provide an assessment of how much they are affected and to what extent they are suffering. This study attempted to provide some recommendations on what strategies could be adopted to address the problem and to improve the livelihoods of the tea garden workers in the Sylhet region and how to minimize the threat posed to the industry.

⁷ Iftekhar Ahmad. Yasin M. Rowshan Ara and AKM Rafikul Islam., 'Study on Socio-Economic and Educational Condition of Tea Worker at Sylhet in Bangladesh', *Journal of Tea Science Research*, Vol. 5, No. 5, 2015, p. 7.

⁸ ASM Anam Ullah, Mamta Chowdhury, 'The history and the economic benefit of Bangladesh's tea industry', The Dhaka Tribune, October 18, 2022.

⁹ Md. Kamruzzaman, Shahnaj Parveen, and Animesh Chandra Das, 'Livelihood Improvement of Tea Garden Workers: A Scenario of Marginalized Women Group in Bangladesh', *Asian Journal of Agricultural Extension, Economics & Sociology* 7(1): 1-7, 2015; Article no.AJAEES.18690, p. 2.

Brief Snapshot of Tea Garden Workers' Lifestyle

In Bangladesh, tea garden workers live a very simple rural life based on the production of tea. It is their hands that pluck the tea leaves, and this work can be extremely hard on the body. They reside in small, often times rudimentary houses given by the tea gardens lacking healthcare, education and many other facilities. Tea garden workers, who hold an important place in the Bangladeshi economy by supporting tea production for people everywhere, have to live with a lot of insecurities. Tea garden labourers, particularly of Sylhet, are having a rough time here unused. They lead a life that is largely defined by the seasonal obligations of growing tea. Here's a brief overview:

Living Conditions:

- **Tea Garden Housing:** Workers live in small and generally dilapidated houses provided by the tea garden estate. Such slums often lack even basic amenities like sanitation and running water.
- **Infrastructure:** Clean water, sanitation, and healthcare services are sometimes limited in the rural tea gardens where people work at.
- **Rural Setup:** Tea gardens are typically isolated, far-flung from urban facilities and amenities.

Work:

- **Peak Season:** One as when the tea is picked; this being called peak season – picking also requires a lot of manpower. Peak season time (normally March-May), workers work for long hours in the tea gardens, and many of them have to face scorching sun.
- **Off season:** In the off season, there is less work to be done and workers may return home or get involved in other things like farming, etc.
- The majority of the tea garden workers are engaged in plucking leaves, pruning bushes, and maintenance of a Tea garden. Working hours can sometimes extend, especially during peak plucking seasons.

Economic Situation:

- **Low wages:** Wages of the tea garden workers are very low as compared to all other sectors of the economy.
- **Limited Prospects:** They are remote and without an education, with limited upward mobility or chance for another job.
- **Debt:** Low-paid, low-wage workers (may be part-time) in lower-paying jobs need credit, and that means getting into debt.

Social Conditions:

1. **Lack of Education and Healthcare Access:** Workers in the tea gardens can hardly get a chance to pursue their studies, understand concepts from textbooks, or visit doctors.
2. **Social Ostracism:** They can get socially boycotted and marginalized because of their low economic background or the caste they come from.

3. **Child Labour:** The efforts made to get rid of child labour have reduced it in some tea gardens, but the matter still remains a threat at different levels.

Cultural Identity:

Community: A common thread among our masala tea garden farmers is that they are often found in close-knit communities, passing down cultural traditions and customs from one generation to the next.

Traditional Culture and Lifestyle: Most of the tea garden workers followed traditional cultural practices with a value system.

Community-oriented: They live in communities and are very social.

Bangladesh has a significant tea industry with tea gardens; however, some facts will show how much the lives of tea garden workers in Moulvibazar, Sreemangal, and elsewhere are beset by various challenges. A number of initiatives have been taken or steps are in progress to better their working conditions and living standards, however, still effective steps left for real improvement.

Objectives of the Study

The principal aim of the study is to determine the extent of effects of current inflation on the livelihoods of tea garden workers in Bangladesh. The subsidiary aims are to:

- Analyze the impacts of inflation on the lives of tea garden workers of Bangladesh in general and in Sylhet region in particular;
- Assess the effects of inflation on the daily lives' of the tea garden workers in Sylhet;
- Explore the concern whether the inflation poses any threat to the industry in Bangladesh;
- Identify the constraints in increasing their wages up to the standard to maintain their daily lives in a modest way and
- Provide the policy recommendations on how to address their changed socio-economic conditions caused by the current inflation in order to save the industry and its workers.

LITERATURE REVIEW

Inflation, the continuous increase in the overall price level of goods and services, affects different socioeconomic groups in distinct ways, particularly putting marginalized and low-income workers at greater risk. In Bangladesh, the tea industry is vital to the economy, employing more than 300,000 workers in tea gardens. Many of these workers are descendants of labourers from the colonial period and endure chronic poverty, inadequate living conditions, and limited access to essential services. While several studies and reports have looked into the socio-economic status of these workers, there has been less focus on how inflation

specifically affects their livelihoods. This literature review brings together existing research on the economic vulnerability of tea garden workers and emphasizes how inflation worsens their living situations.

The Sylhet region of Bangladesh is home to the majority of Bangladesh's tea garden labourers, many of whom are members of ethnic minority groups or communities that have traditionally been excluded from mainstream development projects. According to Kibria (2018), these labourers have long endured low pay, restricted access to healthcare and education, and remote living conditions on the estates. The majority of tea workers lives in subpar accommodation and depends on estate management for basic amenities like water and sanitary facilities, according to Parvin and Sarker (2020). Workers' opportunities for economic advancement are limited by their reliance on estate facilities, which keeps them bound to a semi-feudal labour system.

This socio-economic backdrop renders tea garden workers especially susceptible to external economic shocks, such as inflation. Wages in the tea sector are typically determined through collective bargaining among estate owners, unions, and the government. However, these wages are often insufficient and fail to reflect the rapid inflationary pressures on the cost of living (Rahman & Bakshi, 2019). As a result, the workers' capacity to manage inflation is significantly limited.

Their collaboration proved to be productive. They cleared forests, nurtured tea saplings, planted trees for shade, and built comfortable cottages for the tea planters (Gain, 2009). In terms of employment, workers in tea gardens are mainly classified as either permanent or temporary. Most are hired on a temporary basis. Their wages and additional benefits depend on their employment status. The majority of the workforce consists of permanent employees, who receive different salaries, benefits, and compensation compared to temporary workers. Unlike permanent employees, temporary workers do not qualify for housing benefits, arable land, weekly rations, or festival bonuses. A permanent employee without land is entitled to a weekly ration of 3.5-7 kilograms of rice or flour, based on the number of dependents, along with two festival bonuses amounting to Tk. 3,400 each year. In contrast, a temporary employee only receives their daily wage without any bonus pay, such as a weekly allowance or an annual bonus. This modest wage is completely inadequate when compared to the workers' living expenses. Employees at nearby tea gardens often seek additional work to supplement their income. If workers become financially stable enough to leave the garden, tea manufacturers may be concerned about labour shortages (Islam, 2019).

Many children from tea gardens, aged six to twelve, do not attend school. Factors such as poor

socioeconomic conditions, a lack of parental interest, the absence of schools in and around tea gardens, and the reluctance of tea garden administrators create significant barriers to education for these children (Hossain, 2007). Their unawareness of cleanliness and health puts them at greater risk for various health issues, resulting in frequent illnesses (Ahmed, 2012). It's evident that these problems arise from insufficient education. Research shows that children's education is the third most important factor in enhancing livelihoods, and the respondents acknowledged the significance of educating their children for a brighter future.

Research shows that wage growth in the tea sector has historically not kept pace with inflation. Islam et al. (2016) point out that the wage structure for tea garden workers is based on multi-year agreements that often overlook sudden inflation spikes, resulting in a significant decline in real wages. Inflation affects essential needs like food, clothing, and healthcare, making it challenging for workers to sustain a basic standard of living. Khan and Alam (2021) stress that since the wages of tea garden workers are already below the national minimum wage, the impact of inflation is especially severe for them compared to other labor sectors in Bangladesh.

Research conducted by Hossain and Majumder (2017) further shows that during periods of high inflation, the prices of essential goods, especially food, rise more quickly than workers' wages, worsening food insecurity. Given that tea workers spend a significant portion of their income on food, inflationary pressures severely limit their ability to afford a nutritious diet, pushing them further into poverty. This scenario aligns with global studies on the impact of inflation on low-income workers in labor-intensive industries, where the cost of living increases faster than income, resulting in what is referred to as the "inflation-poverty trap" (ILO, 2018).

Inflation has a significant effect on the affordability of essential services such as healthcare and education for tea garden workers. Ahmed and Rahman (2019) point out that while some estates provide basic healthcare services, these offerings are often inadequate and poorly funded. As inflation increases, so do the costs of medicine and healthcare services, making it difficult for workers to access necessary treatments. This lack of healthcare access exacerbates existing health issues, particularly for women and children, who are already more susceptible to malnutrition and unfavourable living conditions (Shahid, 2020).

In terms of education, various studies show that inflation raises the costs of school supplies and transportation, leading to higher dropout rates among the children of tea garden workers (Sarker & Ahmed, 2018). This situation perpetuates a cycle of poverty, as education is one of the few pathways to upward mobility

for these families. However, the financial pressures of inflation make it challenging for families to prioritize education over their immediate survival needs.

Rising inflation is pushing tea garden workers to rely more on informal loans to cover their daily expenses. Hossain (2018) points out that as prices rise, these workers often turn to local moneylenders who impose steep interest rates, which traps them in a cycle of debt. This situation exacerbates their financial instability, as they are forced to use future earnings to repay loans, leaving them with little chance to save or invest in improving their livelihoods. Additionally, the limited access to formal financial services further restricts the options available to tea garden workers in managing the impacts of inflation.

Research by Parvin (2020) emphasizes that the weight of debt has a notable gendered impact. Female workers, who make up a significant portion of the tea garden labour force, frequently take on the responsibility of managing household finances. As inflation escalates, women face the greatest financial strain, leading to heightened stress and reduced well-being within their families.

The literature also documents instances of labor unrest linked to inflationary pressures. In times of high inflation, tea garden workers and unions often demand wage increases to keep up with the rising cost of living. However, tea estate owners are reluctant to adjust wages frequently, citing financial constraints and global tea market dynamics (Islam & Rahman, 2017). This creates tensions between workers and management, leading to strikes and protests, as seen in several tea estates in

Bangladesh during the early 2010s and more recently in 2022. Despite these efforts, wage increases often fall short of compensating for the loss of purchasing power caused by inflation, leaving workers frustrated (Amin, 2021).

Similar exploitative and unstable working conditions can be found in plantation areas around the world, as seen in the South Asian tea industry. Although the Plantation Labor Act of 1951 set forth various standards for the living and working conditions of plantation workers—such as permanent housing with access to clean drinking water and sanitation facilities, recreational areas, affordable canteens, and free primary education for children—Bhowmik (2011) notes that no agribusiness has fully complied with these requirements. Even with these global standards in place, health and safety regulations in the workplace are often overlooked and frequently omitted from the legislation. One of the most significant gaps in protection is related to working hours, as agricultural workers are sometimes forced to work excessively long hours.

The majority of the literature provides a clear picture of the lives' of Bangladeshi tea workers by reflecting the current situation of their livelihood, wages, income, and working conditions. They haven't, however, provided information regarding their present employment situation or other outside employment opportunities. Current working conditions, worker kinds, pay, food consumption and nutrition, and non-salary benefits are all examined in this study. Additionally, potential career paths to generate more money for a higher quality of life are also investigated

Conceptual Framework (Theoretical framework)

Concept	Description	Impact on Livelihoods
Inflation ↔ Livelihoods	As inflation increases, purchasing power declines	Affects ability to afford basic necessities.
Low Pay and Wage Stagnation ↔ Livelihoods	Persistent low pay exacerbates inflation effects	Increases financial insecurity, making it hard to sustain families
Access to Social Security ↔ Livelihoods	Limited access to social security compounds inflation effects	Leaves workers vulnerable without safety nets during hardship
Exploitation ↔ Livelihoods	Workers facing exploitation have additional vulnerabilities	Diminishes quality of life and reduces livelihood options
Education and Skills Training ↔ Livelihoods	Lack of education reduces ability to seek better jobs	Perpetuates poverty and dependence on tea garden work

This conceptual framework illustrates the interrelated factors affecting the livelihoods of tea garden workers in Bangladesh.

1. Inflation: Rising prices diminish workers' purchasing power, making it harder for them to afford basic necessities. This directly impacts their overall quality of life and economic stability.
2. Low Pay and Wage Stagnation: Persistent low wages and stagnant income exacerbate financial insecurity, especially during periods of inflation,

further straining workers' ability to meet their basic needs.

3. Access to Social Security: Limited access to social security systems leaves workers without essential safety nets during economic hardships, increasing their vulnerability.
4. Exploitation: Workers facing exploitation endure harsh conditions and unfair treatment, further diminishing their livelihoods and perpetuating cycles of poverty.

5. Education and Skills Training: A lack of educational opportunities and skills training restricts workers' ability to pursue better employment options, perpetuating their dependency on low-paying tea garden jobs.

Together, these factors create a complex web of challenges that significantly impact the livelihoods of tea garden workers, making it difficult for them to escape poverty and achieve a sustainable quality of life.

METHODOLOGY

The investigation was conducted in the following methodological manners: A standard questionnaire was prepared after a thorough and detailed study of tea garden workers lifestyles and consultation with the people concerned; it has been used to select ten tea gardens for conducting primary survey. For Instance, to pay more attention and knowledge about the contemporary issues faced by tea workers, researchers interviewed them other than household surveys. The employee who had left the tea garden and joined elsewhere was interviewed by researchers using semi-structured questions.

Both qualitative and quantitative techniques of mixed method have been applied to ensure the fulfillment of the study. Information were collected from both primary and secondary sources. A desk review of secondary data and documents was conducted that presents an overall idea about the present situation. The study was conducted following the processes of document search, field visit and data collection, data consolidation and analysis and finally report writing.

Study Area

Sylhet region was the study area. In Sylhet region, Moulvibazar has the largest number of tea gardens, the second largest number of tea plantation is in Habiganj, and then Sylhet occupies the third position in respect of having the number of tea garden. Therefore, Sylhet, Moulvibazar and Habiganj were the study area.

Data Collection

Primary data

In this study, we utilized both survey and observation techniques. The survey method involved gathering data from respondents through a series of questions, which could take the form of a questionnaire or an interview. Data was collected directly from participants, who were selected purposefully while ensuring a balanced gender ratio. The participants included both permanent and temporary workers, as well as tea garden laborers and local residents who were not employed in the gardens. Additionally, we interviewed students and individuals from the outskirts of the tea

garden to gain insights into the job opportunities available outside this setting.

Secondary data

Secondary data were gathered from relevant books, articles published in reputable journals, newspapers, conference papers, reports, and more. Information was also obtained through informal discussions with several leaders and officials from tea gardens, which served as a source of secondary data. Additional secondary data were collected from reports by the plantation board, various associations, organizations, and different websites.

Sampling

This study followed the purposive sampling techniques. A total of 149 tea garden workers from 10 tea gardens purposefully were selected for this study. 15 workers were selected from each garden. Mirzapur Tea Garden, Rajnagar Tea Garden, Chotolekha Tea Garden, Shahbajpur Tea Garden, and Sirajnagar Tea Garden were selected from Moulvibazar. Surma Tea Garden, Teliapara Tea Garden, and Lalchand Tea Garden were selected from Habiganj. Finally, Lakkhatura and Malnichara Tea Garden were selected from Sylhet.

Quantitative Method: An empirical specification of the relationship between the inflation and its impacts on tea garden workers' daily lives was constructed. Then, ordinary least squares (OLS) regression was performed. Additionally, marginal effects from the logistic regression were carried out to identify factor-specific effects on the dependent variable.

Qualitative Method

Key Informant Interview (KII): The KII method was used to get in-depth information about the impact of inflation and constraints on increasing workers wages. A total of 10 key informant interviews (KII) were conducted with specialists of this sector, government policymakers, and officials of the Bangladesh Tea Board and Tea Research Institute.

In-depth Interview (IDI): IDI were used to get in-depth information regarding the assessment of the present socio-economic condition of the tea garden workers. A total of 10 tea plantation workers were selected for the purpose of completion of IDI.

Focus Group Discussion (FGD): The FGD method was used for the assessment of the effects of inflation on the daily lives of the tea garden workers in Sylhet, and whether there is any threat posed to the industry in Bangladesh. A total of 4 FGDs were conducted with the tea garden workers and community leaders. One FGD was conducted of 10-12 participants.

Summary Statistics**Table 1: Summary Statistics**

Variables	(1) N	(2) mean	(3) sd	(4) min	(5) max
Household ID	149	185	43.16	111	259
Relationship with HH Head	149	1.624	0.500	1	3
Household size	149	5.248	1.461	2	8
Age of Household Head	149	47.11	10.54	22	70
Religion of HH Head	149	1.919	0.273	1	2
Number of School Going Children	149	0.926	0.616	0	2
Number of Male Workers	149	1.772	0.689	0	5
Number of Female Workers	149	1.349	0.646	0	3
Type of Dwelling	149	2.074	0.466	1	3
Education of HH Head	149	1.128	0.469	1	3
Work Experience	149	3.805	0.475	1	4
Daily Wage	149	170.5	8.883	168	278
Social Safety Net	149	1	0	1	1
Electricity Connection	149	1	0	1	1
Bank Account of HH Head	149	1.966	0.181	1	2
Sources of Drinking Water	149	5	0	5	5
mrexp	149	1,011	130.5	851	1,346
mwexp	149	1,213	183.9	1,002	1,500
mlexp	149	979.9	308.7	650	1,400
mmexp	149	629.3	263.3	351	999
mfexp	149	475.4	196.2	250	738
moexp	149	481.1	152.2	320	700
mrexp_inf_adj	149	1,358	161.8	1,114	1,648
mwexp_inf_adj	149	1,789	193.8	1,503	2,096
mlexp_inf_adj	149	2,030	238.7	1,700	2,397
mmexp_inf_adj	149	1,182	139.8	1,000	1,398
mfexp_inf_adj	149	796.1	146.5	600	998
moexp_inf_adj	149	794.2	300.7	470	1,200
mfoodexp	149	7,648	674.4	6,163	8,962
mnfexp	149	1,266	382.6	900	1,999
mcexp	149	219.9	45.17	152	297
mhexp	149	0	0	0	0
muexp	149	312.3	56.76	204	400
v53	149	389.7	35.42	300	450
v54	149	812.8	74.70	700	950
mcexp_inf_adj	149	581.8	80.80	450	700
mhexp_inf_adj	149	0	0	0	0
muexp_inf_adj	149	564.2	25.41	500	600
v58	149	938.2	206.3	700	1,200
v59	149	1,313	148.3	1,150	1,500
Distance to the Market	149	2.030	0.668	1	3
FSS	149	2.409	0.493	2	3
Gender of HH Head	149	0.463	0.500	0	1
Monthly Wage	149	5,116	266.5	5,040	8,340

Table 1 displays summary statistics of the key variables for our study. The final sample size is 149. The average household size is about 6 and the size varies from 2 to 8. The minimum age of the household head is 22 and the maximum is 70 and average age is 48. The number

of male workers and the number of female workers is approximately same within a household. The daily minimum wage is 168 taka per person and the daily maximum wage is Tk. 278. The distance from the tea garden to the market varies from 1 km to 3 km.

Result Analysis

Table 2: Ols Estimates (Dep Variable: Monthly Food Expenditure)

VARIABLES	(1) OLS
Household Size	6.028 (57.96)
Gender of HH Head	118.7 (117.8)
Age of HH Head	-10.18 (7.324)
Religion of HH Head	294.8* (164.5)
Number of School Going Children	-25.59 (91.66)
Number of Male Workers	63.05 (110.5)
Number of Female Workers	74.71 (117.4)
Dwelling Type	580.4*** (155.7)
Education of HH Head	81.81 (153.8)
Work Experience	-24.57 (181.7)
Daily Wage	8.289*** (2.974)
Constant	4,671*** (1,008)
Observations	149
R-squared	0.168

Table 2 shows the Ordinary Least Square (OLS) regression estimates of regressing household level covariates on monthly food expenditure. The coefficient of dwelling type is highly statistically significant at 1% level. The coefficient of daily wage is also highly

statistically significant at 1% level. It implies that one unit increase in daily wage has associated with more than 8 unit increase in monthly food expenditure. The coefficient of the religion of household head is only significant at 10% level.

Table 3: OLS Estimates (Dep Variable: Monthly Non-Food Expenditure)

Linear regression	Number of obs	=	149
	F(11, 137)	=	38.15
	Prob > F	=	0.0000
	R-squared	=	0.1882
	Root MSE	=	358.31

mnfexp	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]
hysize	-.1619097	36.26657	-0.00	0.996	-71.87656 71.55274
gender_hhead	4.781847	66.42355	0.07	0.943	-126.5662 136.1298
age_hh_head	-9.175146	4.351084	-2.11	0.037	-17.77912 -.5711766
religion_hh_head	163.7211	94.28534	1.74	0.085	-22.72164 350.1639
no_school_going_child	13.53183	51.83236	0.26	0.794	-88.96309 116.0267
no_male_workers	32.74438	57.20881	0.57	0.568	-80.3821 145.8709
no_female_workers	73.29887	64.6183	1.13	0.259	-54.47937 201.0771
dwelling_type	289.0624	88.61907	3.26	0.001	113.8243 464.3005
educ_hh_head	102.6705	106.5323	0.96	0.337	-107.9898 313.3308
work_experience	46.32124	116.9661	0.40	0.693	-184.9711 277.6136
daily_wage	6.092573	1.583742	3.85	0.000	2.960832 9.224315
ssn	0	(omitted)			
electricity	0	(omitted)			
_cons	-716.8483	531.5019	-1.35	0.180	-1767.857 334.16

Table 3 shows the OLS estimates taking monthly non-food expenditure as a dependent variable. The coefficient of dwelling type is highly statistically significant at 1% level. The coefficient of daily wage is also highly statistically significant at 1% level. It implies that one unit increase in daily wage has associated with more than 6 unit increase in monthly food expenditure. The coefficient of the age of household head is only significant at 5% level.

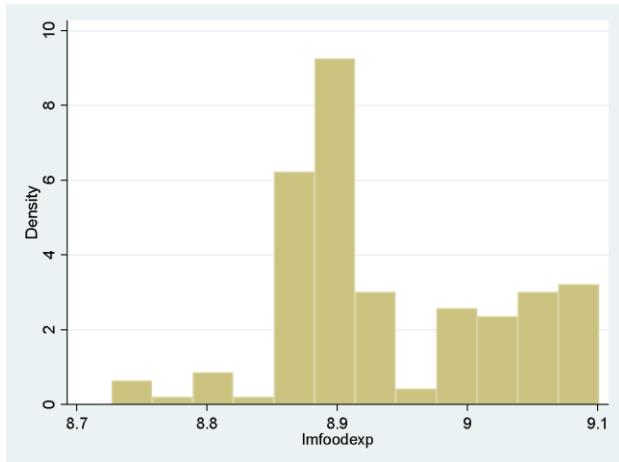


Figure 1: Histogram of log of Monthly Food Expenditure

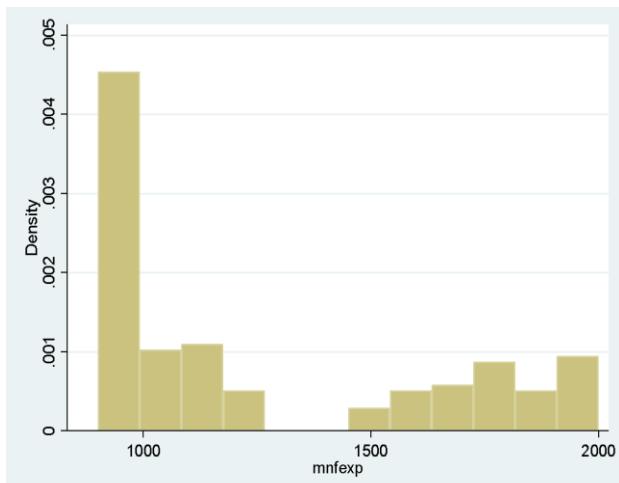


Figure 2: Histogram Monthly Non-Food Expenditure

Both Figure 1 and Figure 2 exhibits that both monthly food and non-food expenditures are highly skewed and non-normally distributed.

Due to their social and economic disadvantages, tea workers in Bangladesh have a hard time finding other jobs. They are compelled to accept low-wage labour on tea plantations in Bangladesh, where they will endure brutal mistreatment. Because they live and work on tea plantations, the public treats them with disdain and avoids interacting with them because they are usually from lower caste backgrounds. Since they belonged to the less privileged segments of society, they were not granted legal property rights in Bangladesh. The only people who set aside land for homes and farms where they can grow a few crops for a living are permanent employers. Employee housing is provided by the employer.

Employees of tea plantations use open areas for defecation and frequently they suffer from fever, diarrhoea, intestinal and respiratory disorders and child malnutrition. The health benefits are terrible. Most of them use complementary and alternative medicine. Primary school is attended by the children of tea plantation workers, but because of the high expense, they are unable to pursue higher education. Their daughters marry early, while their sons start working as tea labourers. Employers do not provide any facilities for the education of tea workers because they do not want to permanently lose cheap labour because a worker's child will usually become a worker. Tea garden workers suffer from severe malnutrition. They don't make enough money to support their whole family. Rations are their main source of income. The workers coping strategies in their living conditions could be described by the following diagram. In this exhibit, the changing food habits is the main coping strategies to maintain life of tea garden workers. The second-best coping strategy is borrowing. Their findings are very similar to our study with the exception that saving erosions and relying on aid are absent in our study.

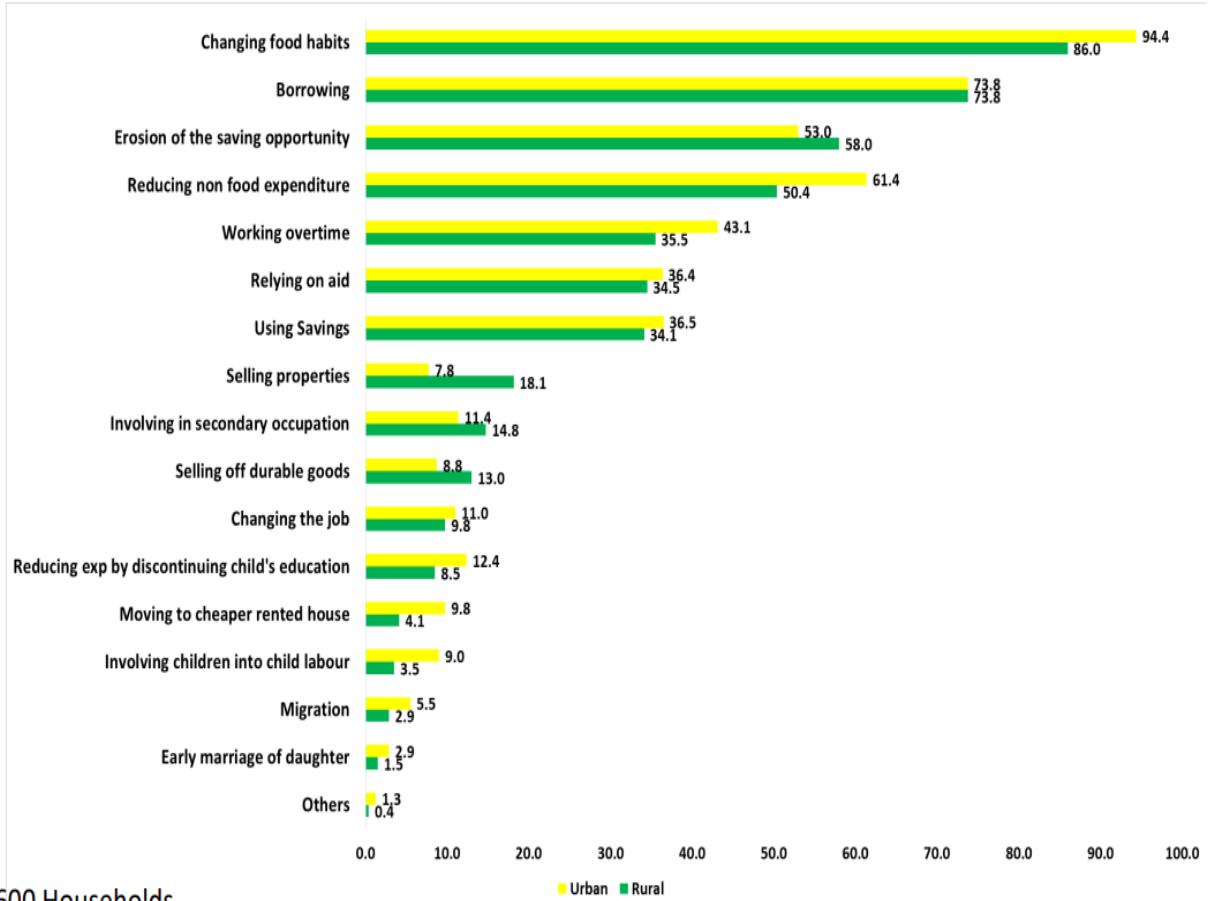


Figure 3: Coping Strategy of House
Source: SANEM Study on Tea Workers (2023)

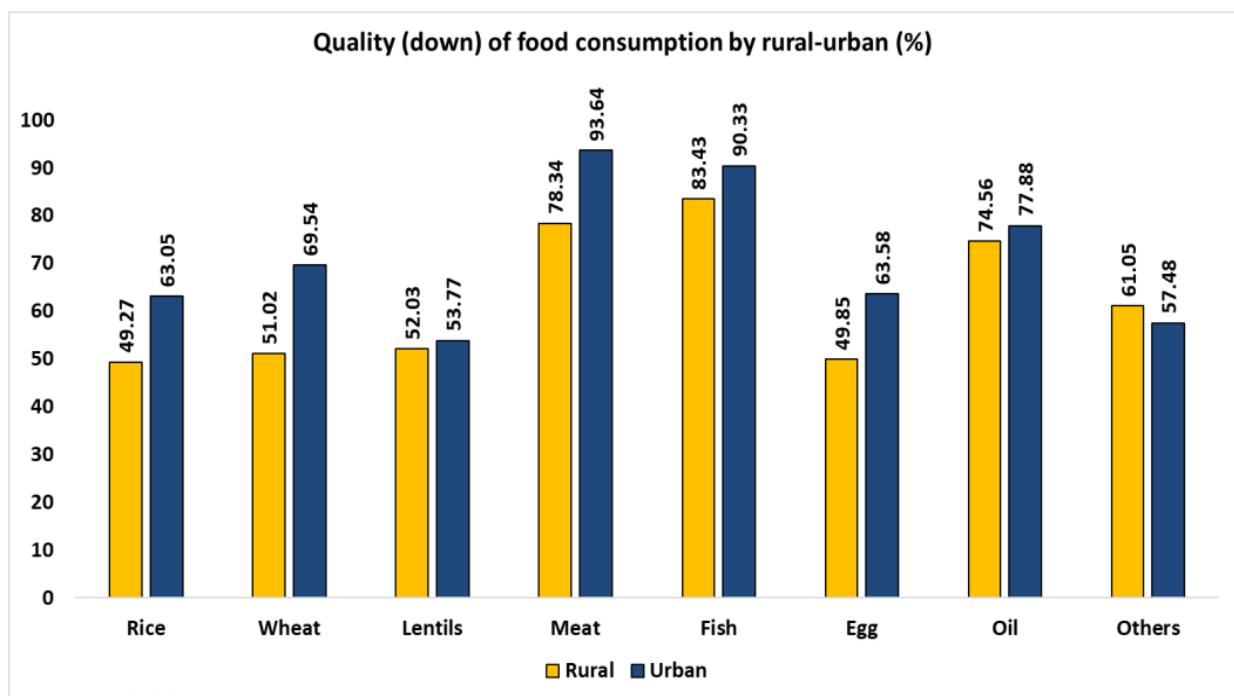


Figure 4: Coping Strategy through Rural-Urban Areas
(Source: SANEM Study on Tea Workers (2023))

Figure: Poorer households are switching to low quality food: Urban households are switching more than rural households.

CONCLUSION

When compared to other nations, Bangladesh's tea garden workers' standard of living is miserable. They still lack access to education, a better living, and other amenities. They struggled throughout their lives. Tea plantation workers and union officials both think that education is crucial to fostering community growth. Rather of working as tea garden labourers, they all voiced a strong wish for their children to get an education and find job outside. A significant number of them expect their kids to work in tea gardens and go to school. The vast majority of those surveyed were unhappy that educated members of tea workers community do not get formal jobs easily. Tea workers in Bangladesh face significant challenges in finding alternative employment due to their social and economic disadvantages. They often have no choice but to accept low-paying jobs on tea plantations, where they endure harsh treatment. Living and working on these plantations, they are frequently looked down upon by the general public, who tend to avoid interacting with them, as many come from lower caste backgrounds. Their origins in the poorer segments of Bangladeshi society have resulted in a lack of legal property rights. Only their permanent employers provide land for housing and small farms, allowing them to grow a few crops for sustenance. The employer also supplies housing for the workers. Due to the declining wages in the tea garden industry, many individuals are engaging in various activities both within and outside the gardens. Lacking education, they and their children are compelled to work in the tea gardens. However, since tea gardens provide free housing, nearly all plantation workers wish to maintain some connection to the garden. While there are numerous job opportunities available outside the gardens, they find themselves unable to take advantage of them. Based on the findings, the following suggestions are proposed to enhance their livelihood status.

Inflation diminishes the purchasing power of workers, resulting in heightened food insecurity, limited access to healthcare, and increased dropout rates in education. The combination of low wages and the rising costs of essential goods and services creates a challenging cycle of poverty that is hard to break. Additionally, inflation worsens the financial instability of tea garden workers, who frequently depend on debt to manage the higher cost of living. Although workers' unions are making efforts to tackle these issues through wage demands, the deep-rooted inequalities in the tea industry hinder their success. To

effectively address the effects of inflation on tea garden workers, there is a need for more significant wage reforms, social protection initiatives, and access to financial services that cater to the specific needs of this vulnerable population. The findings of the study reveals that the current inflation will have a great negative impact on the livelihoods of tea garden workers, which may pose a threat to the industry.

Conflict of Interest Statement

The authors declare no conflicts of interest.

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