European Economic Letters
ISSN 2323-5233
Vol 11, Issue 1 (2021)
http://eelet.org.uk

Occupational Health and Safety Complications with Tea Workers in Assam

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ABSTRACT: The possible dangers to the safety and health of tea plantation employees in their workplace are referred to as Occupational Hazards. By evaluating work that requires human capacities or standards defined in the research literature, the stressfulness of a professional worker's manual actions is assessed. A work is considered harsh if its demands surpass capabilities or established norms, posing a risk of workplace health hazards. In a rising nation like India, when a vocational worker is accessible at a lower cost with restricted employment possibilities, deviations from the skills or norms are typical. Furthermore, a worker's goal is to maximize his profits by putting himself under severe working circumstances for economic reasons. Long working hours, insufficient rest intervals, and other factors harm employees' health. Physical, mechanical, chemical, biological and socio-psychosocial reasons expose tea plantation workers to a variety of hazards in the workplace. The current study aims to examine the numerous occupational health dangers experienced by tea plantation workers in Assam, as well as the safety precautions adopted by them. Tea plantation labourers had to make a living in unsanitary and cruel situations, and such a lifestyle pattern would regularly expose them to serious infections. Various criteria such as income, worker education levels, medical facility availability, personal cleanliness and sanitation, and general analysis of dissimilar occupational health concerns have all been engaged into account when the study's conclusions were reached. The study was mostly done with the use of primary data acquired via a questionnaire. A total of 228 Tea plantation employees, both male and female, were questioned using Random Sampling Techniques.

Keywords: Health Problems, Safety, Tea Plantation, Workers, Workplace.

1. INTRODUCTION

In the present time, everyone knows that tea is a popular beverage that is consumed all over the world. Species of flowering plant is a kind of tea plant is used to make it. The tea plant (Camellia sinensis) was first cultured in China some 200 years ago when the verdures were administered and the infusion was consumed. Tea is currently the most popular plant-based drink on the planet. Tea is grown in more than 30 nations and regions worldwide, including Bangladesh, India, China, Indonesia, Georgia, Iran, Malawi, Japan, Malaysia, Taiwan, Tanzania, Sri Lanka, Kenya, Thailand, Uganda and Turkey [1]. Agriculture is a risky job that requires you to labour in challenging and often dangerous conditions. The precise occupational dangers that plantation workers face differ from one plantation to the next [2]. Tea is one of the most labour-intensive crops grown on plantations. On average, labour accounts for roughly 60% of the total cost of production. Plantation work is primarily manual.

Tea plantations in India have made a substantial influence on the socioeconomic development of the people of India's tea-growing zones. In addition to giving employment to the workers, the tea sector contributes knowingly to the national and state economies by enriching the foreign exchange reservoir and the state exchequer [3]. Assam, Tripura, West Bengal, Kerala, Karnataka and Tamil Nadu are the major tea-growing states nowadays. Himachal Pradesh and Uttaranchal, though to a lesser amount, are outmoded tea-growing states. Tea plantations have also recently sprouted in states like Manipur, Sikkim, Arunachal Pradesh, Nagaland, Bihar, Meghalaya, Orissa, and others. Mizoram also has the potential for commercial tea plantation development.

With regular pruning and plucking, the Assam diversity, the single-stem tree varying in height from 20 to 60 feet (6.03 to 18.01 metres) and having various sub-varieties, has a 40-year monetary lifecycle [4]. The sensitive light-leaved Assam, the less-tender-dark-leaved Assam, the hardy Burma and Manipuri kinds, and the extremely large-leaved Lushai are the five basic subvarieties recognised by the tea grower. During its second flush in the Upper Assam, the dark-leaved Assam plant yields particularly excellent grade "golden tip" teas when leaves are highly young.

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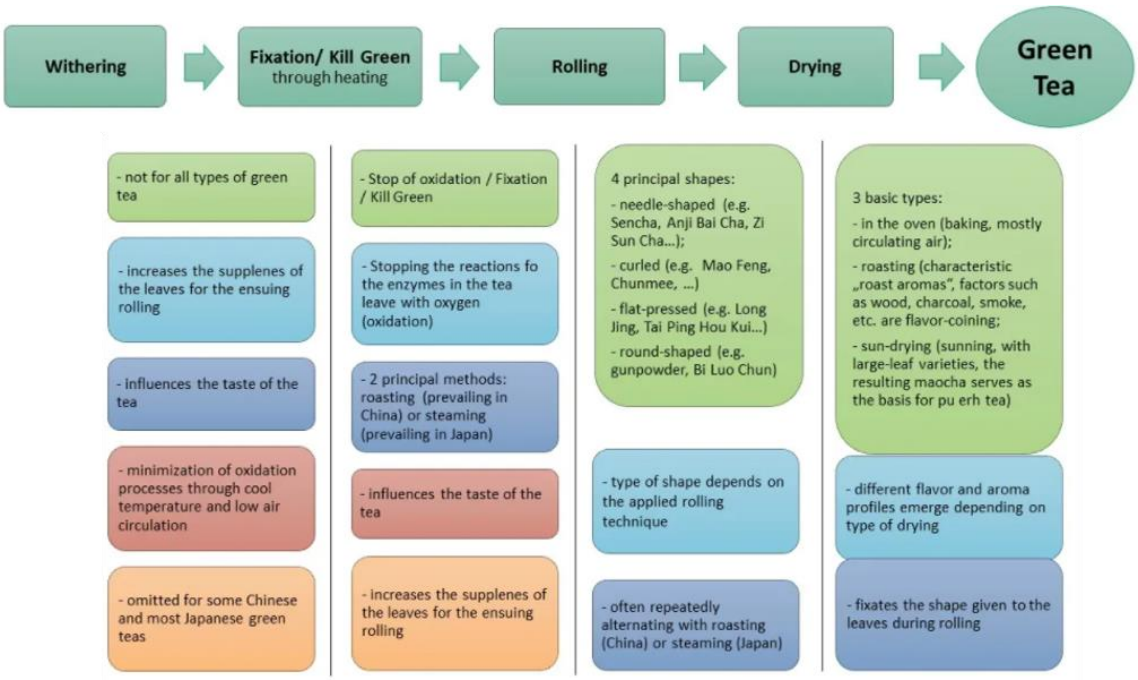

Figure 1: This will help to understand the process of the tea plantation.

Figure 1 shows the basic steps for the tea plantations which help to understand the making process of tea. The Cambodian variant is a single-stems tree that grows to about 16.02 feet in height and has been unsurprisingly crisscrossed with other species [5], [6]. The complete shrubberies of the tea plants vary in size and shape conferring on the variability, ranging from 1.5 to 10 inches in length, with the China variety actuality the shortest and the Lushai subvariety being the biggest [7][8]. The majority of tea is managed in multi-story facilities that resemble gigantic wooden huts. Trucks regularly deliver the tea, which is transported through the facility using conveyor elevators and belts [9].

Green tea is selected and placed in a "steamer" to be heated as soon as possible. This softens the tea so it may be rolled. The tea hasn't been fermented in any way. Withering eliminates moisture from the leaves while keeping them supple and flexible. Following that, the tea is rolled rather than smashed to preserve the fragrant oils that give tea its flavour [10]. While the teabags are being rolled, juice pours out and fermentation occurs [11]. After wrapping, the tea is fermented further by being placed in a cold, wet environment to speed up oxidation, converting the tea from green to brilliant copper in the procedure. The amount of oxidation that occurs is based on how long the tea is fermented, which affects whether the tea is green, black, oolong, or another variation [12].

The copper leaf turns black in black tea as the water content is reduced to 3% by precisely regulated driers. Stopping fermentation and cutting off oxidation at the exact right time is the essential and the most difficult component of making superb tea [13]. Finally, the "made tea" is graded and separated into commercial grades before being sent. Size and quality, as well as the height at which they are cultivated, define the grades. Tea is sorted into different sizes using machines with trays that shake the tea [14], [15].

Workers on the tea plantation are responsible for plucking and other tasks linked to the upkeep of the plantations and their tea trees. Hoeing, weeding, bush cutting, and drainage are among them. Tealeaves are plucking and small maintenance chores are mostly done by women. The guys also pluck tea shrubberies, nevertheless, they are also involved in hard agricultural work. Adolescents do similar tasks to adults and are also involved in pesticide squirting, which can be damaging to their health. So, tea is made by some labor-intensive techniques. Workers in tea plantations, like those in any other industry, confront a variety of occupational dangers. Biological and chemical elements, and adverse working circumstances, are the greatest threats to tea plantation employees in this business.

Workers on tea plantations encounter difficulties in assuring workplace safety, and health, and breathing tea dust causes mutually acute and chronic respiratory ailments. Accidents occur as a result of the tea plantation industry's dangerous behaviors or practices. They can also be caused by the lack of safety equipment or supplies being given to them. The production of the tea plantation is inextricably related to the safety and health of the employees. The focus is on getting the most production from the workers, and they don't seem to mind, while management considers their safety procedures. Workplace safety and health have a significant influence on overall industrial productivity. Workers' safety and health must be prioritized in labor-intensive industries such as the tea industry, where laborers are illiterate,

untrained, and ravenous, while also attempting to increase production. Tea plantation workers are unprotected from a lot of occupational procedures for healthiness and the safety-risks.

Workers on the tea plantations are not sufficiently educated to deal with any eventuality. Even they are unaware of the dangers that exist in their working environment. Even though the management is concentrating on how to get the most output from workers during working hours, the management is focusing on how to provide a healthy and risk-free working environment. Even if government officials do not place a higher priority on environmental concerns, they do not require management to take preventive steps to confirm the safety of their employees. Occupational health is concerned with the deterrence of sickness and the preservation of the greatest level of physical, mental, and the social-well-being among employees in all fields. The Joint WHO Committee on Occupational Health gave the subsequent explanation. "Health promotion should be intended to enhance and maintain a high level of physiological, mental, as well as social well with other workers in all occupations, to inhibit workers from becoming ill as a result of their workplace practices, to ensure that all staff in their jobs from health effects, and to position and sustain employees in an occupational setting that is adjusted to their physiological and behavioural capabilities." One of the main aims of occupational safety is to create a safe "workplace environment" to safeguard workers' health and boost productivity.

2. LITERATURE REVIEW

Eloise M. Biggs et al. explained about the following is a summary of the facts on tea production in Assam, India. Tea growers submitted surveys, and tea employees participated in focus group discussions. These figures are for the state's four primary tea-growing areas (North Bank, South Bank, and Upper-Assam). They showed the characteristics of both small and large tea producers (4 10 ha) and small (o 10 ha) tea estates and supplement Biggs by showing fertilizer use, landscape-management tactics, healthcare providing, and enlightening amenities inside homesteads, and illustrating tea workers' livelihood aspects. The producer’s responses to the queries are also given. For additional information on the study by which these data were acquired, see understanding tea environment of Assam: the number of co perspectives into Livelihoods in a changing environment [16].

Chandan Kumar Sharma et al. discussed Tea estates in the northeast Indian state of Assam, which were established by the British colonial administration in the mid-nineteenth century, and significantly altered the area's socio-economic profile. However, it had an energizing effect on the state's rural economy. The plantation sector, which was controlled by British businesses, saw few native planters, but a part of Assamese peasants had historically engaged in small-scale tea growing in their homeland. Many Indian entrepreneurs joined the plantation business after India's independence, owing to the departure of British planters. Due to a shortage of cash, Assamese entrepreneurs found it difficult to replicate this. The number of small planters in Assam has increased dramatically over the last two decades, resulting in a significant shift in the state's rural socioeconomic milieu [17].

M. Vijayabaskar et al. explained about despite persistent demand, the plantation industry, particularly tea, is in a "crisis," jeopardizing the livelihoods of workers and small producers. We expand the elements contributing to this 'crisis' in the tea sector, as well as what we regard as problematic in the institutional reaction to this 'crisis,' and thus in assuring better lifestyles for laborers, based on secondary research. They notify that the crisis is the result of changes and lapses in governance regimes, as well as a failure of capital to make long-term investments in the industry. Author point to governance flaws such as capital flight in big plantations without assuring adequate livelihoods for workers, casualization of employment, reliance on small farmer models, and a concentration of marketing power in tea value chains that leaves little possibility for value transfer. As a result, the study presents a critique of several of the policy shifts' principles. They argue that the plantation economy's viability cannot be reduced to commodity-specific interests alone. Biodiversity, gender, land grab politics, land titling, and ecological sustainability are all emerging as similarly essential components of the plantations debate. A value chain strategy that emphasizes 'upgrading' as a means of securing improved lives must thus acknowledge the role of local ecologies in the generation of values and the existing sustainability of plantation crop economies. Most interventions in the plantation economy follow a productivity logic, which may need to be reconsidered. Finally, we consider a few micro-level measures that might lead to a 'high road' approach to addressing the situation [18].

Research Question:

- To determine the tea plantation employees' vulnerability to various health conditions and to analyze the preventative measures that have been implemented for them.
- To learn more about the many occupational health risks that tea plantation workers encounter.
- To determine the impact of tea plantations employees' health concerns on their job and social life.
- To make recommendations for reducing the health risks that tea plantation employee’s face on the job.

3. METHODOLOGY

3.1 Design:

A total of 228 labourers were picked from three tea-producing districts in India's Assam state. These employees' jobs include plucking, trimming, fertilizer spreading, and pesticide spraying, overseeing plantation actions, and transporting leaves/loads, among others.

3.2 Sample and Instrument:

The research is based on both primary and secondary sources of information. The structured questionnaire approach was used to acquire primary data. Three districts, Dibrugarh, Jorhat, and Tinsukia, were chosen for primary data collecting composition and concentration on tea crops. In this study, the researcher takes a sample of 228 labourers from the tea production organization in Assam from three different cities.

3.3 Data Collection:

Table 1 demonstrates that the bulk of the respondents are female, with 55 percent being female and 55 percent being male.

Table 1: Gender Classification Which Finds the Frequency and Percentage.

Gender	Frequency	Percentage	Cumulative Percent
Female	100	55	100
Male	128	55	43
Total	228	100	

According to Table 2, they justify the marital status of the workers which they divided into four different levels married, unmarried, single, and widow. According to the data above, the majority of tea plantation employees are female and between the ages of 18 and 30, with the majority falling between the ages of 31 and 50. According to the report, just two workers are male and under the age of 18 years old. Among the responders, 34 are in the age bracket mentioned in Table 3.

Table 2: Martial Status of the Workers Works in tea plantation.

Marital Status	Frequency	Percentage	Cumulative Percent
Married	140	65	90
Unmarried	18	3	100
Single	60	27	27
Widow	10	7	98
Total	228	100	

Table 3: Age of workers working in Tea Plantation and Gender-based.

Count		**Age of workers work in Tea Plantation**				**Total**
Cross Tabulation		**Above 51Years**	**31-50 Years**	**18-30 Years**	**Below 18 years**	
Gender	**Female**	35	26	34	2	97
	Male	0	51	80	0	131
Total		35	77	114	2	228

Table 4: Level of the Job Fulfilment of the workers in the tea plantation.

Response	Frequency	Percentage	Cumulative Percent
Dissatisfied	49	13	35
Highly Dissatisfied	31	22	14
Neutral	47	20	56
Highly Satisfied	35	15	85
Satisfied	67	30	100
Total	228	100	

According to the data, 67 workers are content with their jobs, 35 workers are extremely satisfied with their job, 47 workers did not voice their views, 49 workers are dissatisfied with their jobs, and only 31 employees are extremely dissatisfied with their jobs. Table 4 represents job fulfillment which helps to understand how many people were highly dissatisfied, dissatisfied, highly satisfied, and satisfied in this tea production organization.

3.3.1 Occupational Health Threats and Safety Methods:

Table 5: Personal habits of the tea plantations workers.

Habits	Frequency	Percentage	Cumulative Percent
Alcohol	97	43	43
Tobacco	95	42	85
Smoking	35	15	100
Total	228	100	

Table 5 shows the majority of the employees (15%) have a smoking habit, 43 percent of the workers have an alcohol habit, and 42 percent of the workers have a tobacco habit.

Table 6: Chemical Hazard affected workers in tea plantation.

Factors	Frequency	Percentage	Cumulative Percent
Gastro Intestine	38	15	15
Allergy Diseases	78	35	50
Skin Diseases	112	50	100
Total	228	100	

Above that the table indicated the proportion of employees impacted by chemical dangers. According to Table 6, 50% of workers are afflicted by skin disorders, 35% by allergy difficulties, and only 15% are pretentious by gastrointestinal problems.

Table 7: Psycho-Social Hazard affected workers in the tea plantations.

Factors	Frequency	Percentage	Cumulative
Job Stress	89	40	40
Quality of work life	31	13	53
Working Condition	45	21	64
Working Stability	62	26	100
Total	228		

The above table shows that the majority of employees are influenced by job stress (40%), 26 percent are pretentious by working steadiness, 26 percent are pretentious by working conditions, and 21 percent are impacted by employee engagement Table 7.

3.4 Data Analysis:

The majority of the respondent is female i.e., 55% and only 55 % are male. The majority of tea plantation employees are married, with 65 being married, seven being widows, and three being unmarried. Only two employees are males and respondents were aged less than 18 years. The preponderance of plantation workers is females and respondents were aged 18-30 years, as well as the majority of them will be in the age group of 31-50years. 34 workers outside the number of individuals that participated, beyond the age of 51. The study also showed that women are always the ones that perform the majority of the job. The majority of employees, 42 percent, have a smoking habit, 43 percent have an alcohol habit, and 42 percent of the workers have a cigarette habit. Workers' perspectives on an accident that occurred on the job 91 workers believe the disaster happens practically every time, 60 workers believe it happened almost every time, 57 workers believe it happens rarely, 11 workers believe it never happened, and then only 6 workers believe it does not occur in the workplaces during working time. The workers' exposure to chemical dangers The majority of employees are plagued by skin disorders, with 50% being impacted by skin diseases, 35% by allergy difficulties, and just 15% being affected by gastrointestinal problems. The workers' psychological and social risks The majority of workers, 40 percent, are influenced by job stress, while 26 percent are influenced by job stability, 21 percent are influenced by working conditions, and 13 percent are influenced by work-life quality.

4. RESULTS AND DISCUSSION

Both male and female employees must be adequately rewarded and motivated. Tea plantation employees should be educated about their rights because they are often exploited due to their lack of education. Workers must offer a minimum wage to maintain their quality of living. Workers should be provided with the necessities of life, such as better working conditions and salary rates. Tea plantation workers must be inspired to keep working and to stay focused on the task at hand. Female workers' working hours must be reduced, and they must be provided with rest time in between shifts. Tea estate workers must be motivated to meet the demands and desires of everyday workers. Workers on tea plantations must raise knowledge about the dangers of using alcohol and other goods. Raincoats are required for tea plantation workers to shield themselves from the rain. Hand gloves have been provided by the tea plantation to protect their hands. Safety precautions must be provided by the tea plantation employees. Estates should give basic medical support to their employees, and estate clinics should improve their amenities, as well as provide improved medical treatment by appointing trained and knowledgeable medical professionals. The tea plantation workers must provide preventative procedures for the worker, such as raincoats to protect them from the rain (the workers have stated that they prefer to wear full body suits), head umbrellas to protect them from rainy and sunny seasons, face shields to protect their face images while splashing the plant, and hand shield to prevent their hands while spraying the plant.

5. CONCLUSION

The current study aims to discover the occupational health risks faced by tea plantation employees in Assam. People are thought to be more contented if they are happy in their jobs. Workers express their reactions to their occupations using rating scales, which is the most prevalent method of measuring. In India's labor-intensive industrial sectors, worker health is a critical concern. In this context, an endeavor was made to analyze the occupational health dangers of tea plantation employees and to apply safety to eliminate these hazards. It has been found that women perform the majority of the job. The majority of the employees are women. They put in between 40 and 50 hours every week. The workers are supplied with minimal facilities by the management. The majority of the employees' members of the family work in the tea industry, and it's been noted that most of them have left because of the low pay. The majority of employees are engaged in the harvesting process, which is largely done by women. They must wear hand shields to prevent their hands. Male workers conduct the cleaning and pest control operations, as well as the fertilization procedure, and they must wear a protective mask or shield for safety. Because pruning is primarily done by professional people, workers are related to the process. The majority of the workforce on the tea estate are permanent employees, with only a few contract workers who are not supplied with any benefits. There is no correlation between the duration of work and the age of the employees. It also means that employees have a lower salary, i.e. less than 10,000 per year, and must work longer hours. The employees are really happy with their working hours.

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