

Status of Household Food Security in the Tea Gardens of Jalpaiguri District in West Bengal, India

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Abstract: The tea gardens of Jalpaiguri district located in Northern part of West Bengal, has been facing a severe crisis for the past couple of years. The situation is complex, with different versions and explanations, and indeed a vicious cycle of poverty affecting huge number of people involved in those tea gardens as workers. The growing trend of lockouts in the plantation farms leads to an abrupt reduction in income generation and ultimately food insecurity as well as malnutrition. The long tragedy of deprivation instigated a series of strikes and even cases of violent confrontations. Many Non Government Organizations conducted a number of studies on the issues related to tea gardens during last decade but a comprehensive index of food security was missing. In this study a food security index of the tea gardens have been prepared to explore the real scenario of the households, dependent on tea gardens, regarding their food security. It is evident that unrealistic and irregular wage pattern, inhuman living conditions and frequent closure of the gardens are the focal concerns of this turmoil. Professional management, development of wage and rationing system along with necessary government intervention is needed to address such a problem.

Keywords: food security index, government intervention, lockouts, malnutrition, vicious cycle of poverty

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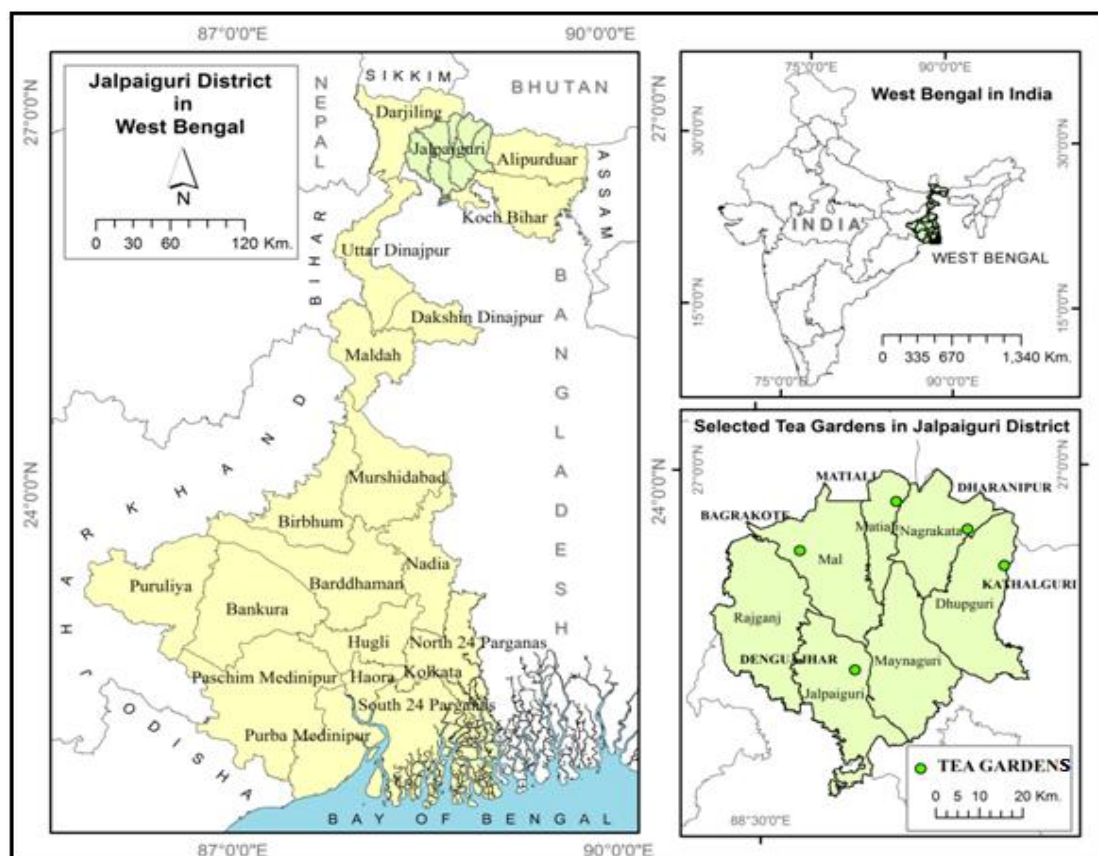
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I. INTRODUCTION

Tea plantation industry is one of the most important agro-based industries in India in terms of employment generation and foreign exchange earnings. West Bengal has 276 organized tea gardens, in which Jalpaiguri itself possesses 120, employing about six Lakh workers and it has been estimated that more than 2.5 million people are dependent on the tea industry. Nearly 32 percent land in the district is occupied by these tea gardens. The main economy of this district depends directly or indirectly on this industry (Lhamu, 2015) [1]. But, following the economic liberalization of the 1990s, the tea industry in the region has witnessed major crisis. Most of the gardens that became sick and closed after 2001 had experienced fall in production, with ageing tea bushes yielding lesser quantity of tea and often of inferior quality. According to an estimate, more than 50 gardens were closed between 2000 and 2007, affecting a huge section of the workforce (NTUI, 2011) [2]. A survey conducted in the closed gardens revealed that welfare schemes, the public distribution system, and basic amenities such as safe drinking water, healthcare, primary education, and electricity were practically non-existent (Chaudhury et al 2007) [3]. There are tea plantations in other Indian States, including Assam and Kerala but West Bengal has worse labour conditions (Bhadra, 1992) [4]. Most of the workers get the wage of ₹95.00 a day in cash, much lower than the United Nations \$2 a day threshold limit of extreme poverty. The closure of tea gardens has led to many starvation deaths in the past (Bhowmik, 2015) [5], as a result of prolonged hunger. Studies also show that 70 percent of the people in closed tea gardens are in an advanced stage of chronic energy deficiency (Biswas et al 2005) [6].

II. STUDY AREA

The present study highlighted the situation of Jalpaiguri district, covering 3386.16 sq. km, located in 'Dooars' region in the foothills of eastern Himalaya. The district is consisting of seven C.D blocks though most of the tea gardens are located in Mal, Matiali, Nagrakata, Dhupguri and Sadar block of the district. The district is situated between 26°15'47" N to 26°59'34" N and 88°23'02" E to 89°07'34" E having international border with Bhutan in the north. In this study five tea gardens have been selected, one from each block mentioned above namely Bagrakote Tea Garden of Mal block, Matiali Tea Garden of Matiali block, Dharanipur Tea Garden of Nagrakata block, Kathalguri Tea Garden of Dhupguri block and Denguajhar Tea Garden of Jalpaiguri Sadar block.



Map I. The Study Area

Source: NATMO, Govt. of India

III. HISTORICAL BACKGROUND

Most of the development and expansion in the tea growing area in Jalpaiguri took place in the early twentieth century before independence. In 1900, there were 67 tea estates in total Dooars region (Xaxa, 1985) [7]. Today this number stands at 150. By 1854 tea plantation was established in and around Darjiling and Kurseong region, as a small nursery for experiment. But by 1891 the number of tea gardens that emerged was around 113. (Sharma et al 2008) [8]. The rapid commercialization of tea garden brought about a change in demographic profile, with sudden influx of labour migrants (Griffiths, 1967) [9]. Today there are almost 235 tea gardens in Dooars covering an area of 81,338 acres under cultivation. They are descendants of poverty-stricken peasants and landless people from the neighboring States, who were recruited and brought by colonial planters more than 150 years ago to work exclusively on the plantations.

IV. OBJECTIVES

The major objectives of the study are:

- i) To explore the situation of income generation and pattern of expenditure of the tea garden workers
- ii) To analyze the pattern of food consumption of the workers and their family
- iii) To construct a comprehensive Food Security Index for the tea gardens

V. MATERIALS AND METHODS

The present study is based on both primary and secondary database. Secondary data have been mainly collected from various available reports and Department of Labour, Government of West Bengal. Primary data have been gathered through an extensive field survey in those tea gardens. 30 households from each garden have been chosen randomly from different worker lines and they were interrogated with a framed questionnaire.

Table I. Location and Status of the Surveyed Tea Gardens

Name of the Tea Garden	C.D Block	Status	Total Number of Households	Households Surveyed
Bagrakote Tea Garden	Mal	Sick	991	30
Matiali Tea Garden	Matiali	Good	950	30
Dharanipur Tea Garden	Nagrakata	Closed	261	30
Kathalguri Tea Garden	Dhupguri	Sick	1,112	30
Denguajhar Tea Garden	Jalpaiguri Sadar	Good	955	30

Source: Compiled by the authors

To analyze the nutritional status of the children under five years of age, height and weight have been measured and Body Mass Index (BMI) was calculated by the respective formula $BMI = \text{weight (kg)} / \text{height (m)}^2$. Daily Food consumption has been converted into calorie value following the Indian Council of Medical Research (ICMR) guideline. To calculate the Food Security Index (FSI) of the tea gardens eleven indicators have been chosen under three broad dimensions of food security i.e. availability, accessibility and utilization of food. To construct the FSI, at first the indicator values have been standardized after United Nations Development Programme (UNDP) formula to get the score of an individual indicator. Then simple arithmetic mean of the score has been calculated to get the composite score of one dimension.

After getting three composite score for three dimensions, weighted arithmetic mean of three dimensions was calculated, because of having unequal number of indicators under one dimension. Thus the total score for a tea garden have been computed. Then the ranking have been made as higher the total score higher the rank.

Primary and secondary data have been depicted through different cartographic techniques and Arc GIS 10.2.3 software has been used for preparation of thematic map. Analysis and interpretation was made to give the study a final shape.

VI. CONCEPTUAL FRAMEWORK

The concept of food security has been evolved through time from 1943 to present date as food security is a complex and multidimensional phenomenon. Though the term ‘Food Security’ was defined from different angle of discussion, the definition coined in World Food Summit (WFS), 1996 have been accepted unanimously. In WFS ‘Food Security’ has defined as “Food Security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life” (FAO, 2001) [10].

At the household level, food security refers to ability of the household to secure, either from its own production or through purchases, adequate food for meeting the dietary needs of all members of the household. Households are food secure when they have year-round access to the quantity and variety of safe foods to lead active and healthy lives.

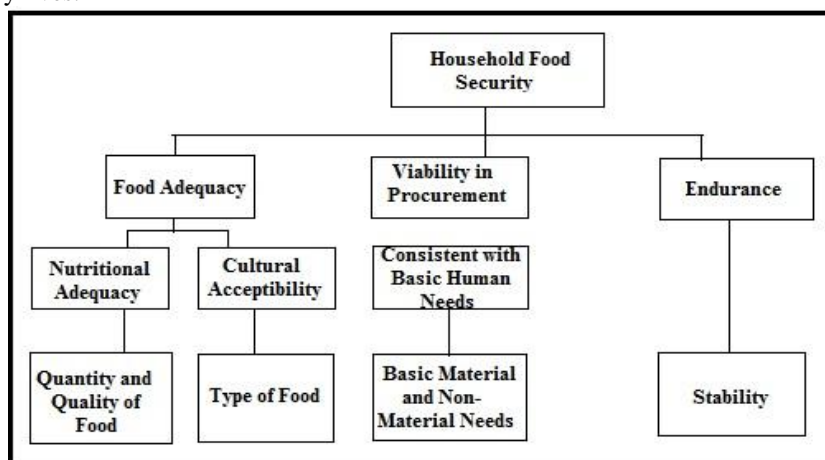


Figure I. Household Food Security: A Conceptual Working Model

Source: Eide et al, 1986[11]

VII. RESULTS AND DISCUSSION

Throughout the study especially during the field survey, the hardship of livelihood of the tea garden workers has been observed. The simple, honest and hard workers want to live a simple life with their family. They just want simple regular food, some medical support during emergency and a small but repaired house to live. But these small and minimum requirements are not fulfilled by the feudalistic system of plantations, where betrayal of ‘Plantation Labour Act’ happening again and again.

7.1 Income Generation

It has been claimed that employment conditions in the tea industry of West Bengal are highly exploitative as the wages of workers in West Bengal is the lowest among all tea-growing states in the country (Bhowmik 1981). To compensate for low wages, employers are supposed to ensure non-cash provisions such as subsidized rations for wife and two dependent children, two and half piles (A specific quantity) of firewood for each permanent worker per year; and *pucca* or non-*pucca* houses. Additionally, a worker is entitled to free medical care, safe drinking water, electricity, transport, support for children’s education, crèches, house repairs, and so on, according to the Plantations Labour Act of 1951. The wages of a tea garden worker is ₹ 122.50 in

West Bengal, which is below the minimum wages of agricultural labour, i.e. ₹ 206. As the wages are very low the workers cannot afford even the basic needs of their life. But the workers actually get ₹ 92 in hand as rest of the wage is generally deducted for Provident Fund (PF) and other facilities and they got work for 24 days a month. As a result a worker can earn merely ₹ 2,200 in a month to sustain the life of all the members, dependent solely on him or her in the family.

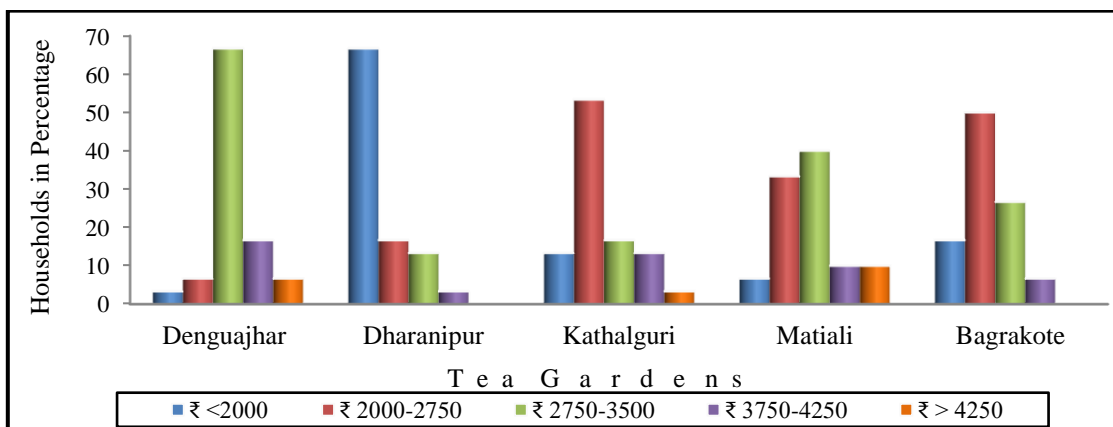


Figure II. Monthly Average Income Level of the Households in the Tea Gardens *Source: Primary Data, 2016*

From the fig. II, it is evident that being a closed garden Dharanipur have worse situation regarding income generation, where most of the households can merely earn ₹ 2,000 per month. Rapid occupational shift is conspicuous in the garden to sustain livelihood. Denguajhar and Matiali tea gardens are well managed and the wage is paid regularly, so most of the workers are able to earn up to ₹ 2,500 to ₹ 3,000 from the garden. Those families having more than one earner have better scope of income. Irregular wage payment in Bagrakote and Kathalguri enforce the workers to earn only ₹ 2,000 to ₹ 2,200 on an average in a month.

The job assignment under ‘Mahatma Gandhi National Rural Employment Guarantee Act’ (MGNREGA) is also very irregular. The workers merely get a chance to work 15-30 days a year under this scheme. The delayed payment process, political intervention and administrative lacunae have made the situation more difficult. In presence of low wage pattern in the tea gardens, proper implementation of MGNREGA can play a vital role to make provision of more income for the workers to survive.

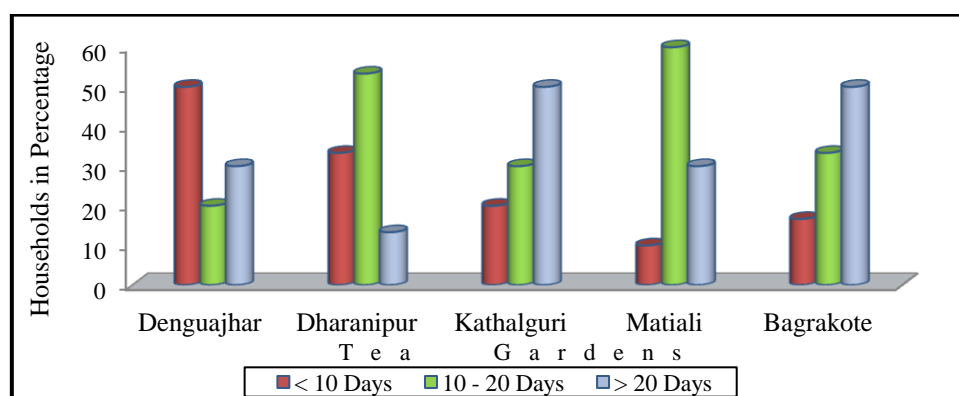


Figure III. Implementation of MGNREGA in the Tea Gardens *Source: Primary Data, 2016*

The pattern of income generation suggests that, it is quite impossible to live a healthy life depending on the wage. Because of an existing rule that only one member from a household can get a job in the garden and also for non availability of work in surrounding areas, the situation is deteriorating. As a result despite being skilled plantation workers, now they have to take job under different contractors as construction labour or gatherer of building materials from the river bed. Trafficking of boys and girls in the disguise of household helping hand is happening frequently.

7.2 Pattern of Expenditure on Food

Income level of the workers cannot afford a highly nutritious food to the family members. After spending seventy to eighty percent of their entire income they can only manage two square meals of food a day. Sometimes it also becomes tough to arrange even that. After examining their consumer expenditure pattern it

has been revealed that they have not enough money to procure nutritious food in their daily food habit. From fig. IV it is clear enough that, major part of the total expenditure for food is spent for buying cereals like rice and wheat only. So, the entitlements of Public Distribution System (PDS) are not enough to feed all members of the family. As majority of the workers came under the purview of *Antyodaya Anna Yojana* (AAY) under National Food Security Act (NFSA), they get only 35 kg cereals including rice and *atta* for the whole family irrespective of the family size. They have little money left to buy other essential food items like pulses, fish or meat, milk and fruits along with vegetables. They spend only 10 to 20 percent of their total expenditure sometimes less than 10 percent to buy animal protein like milk, fish and meat apart from fruits.

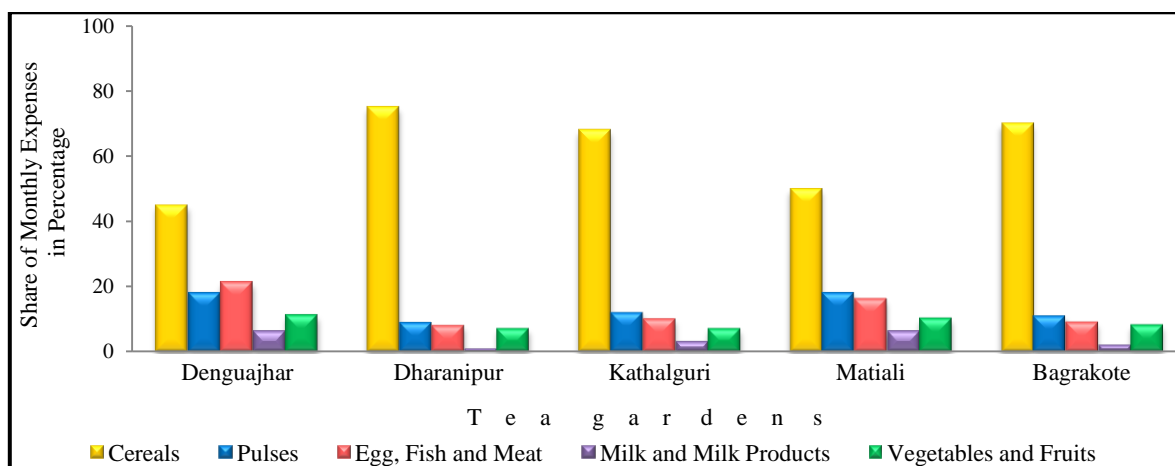


Figure IV. Trend of Average Expenditure on Different Food Items in the Tea Gardens

Source: Primary Data, 2016

The precarious scenario of carbohydrate based food habit due to low purchasing power is conspicuous almost in every tea garden. In closed tea garden like Dharanipur the situation is worse with a huge due for payment. In Denguajhar and Matiali the situation is slightly better. They spend some little more for pulses and other nutritious food items. In fact, the income of a tea garden worker falls far short of dream of a wholesome food.

7.3 Consumption of Food and Food Habit Analysis

An average daily meal of the workers is composed of rice and *roti*, partially provided as food rations by the State Government, and very occasionally supplemented with pulses and vegetables. Meat, chicken or fish intake is sparse or almost non-existent in all tea gardens irrespective of their status. The food rations provided are insufficient and often the cereals are not fit for consumption due to their questionable quality.

Table II. Trend of Food Consumption in the Surveyed Tea Gardens- A Case Study

Identity of the Respondents	Name of the Tea Garden				
	Bagrakote	Denguajhar	Dharanipur	Kathalguri	Matiali
Name of Head of the Family	Raju Kujur	Ramen Lohar	Biren Oraon	Kartik Mahali	Kashinath Beck
Household Size	Adult – 3 Children - 4	Adult - 3	Adult – 2 Children - 3	Adult – 3 Children - 3	Adult – 2 Children - 2
Food Items	Average Monthly Household Consumption				
Food Grains	Rice – 32 kg Atta – 20 kg	Rice – 28 kg Atta – 36 kg	Rice – 24 kg Atta – 32 kg	Rice – 30kg Atta – 30kg	Rice – 40 kg Atta – 15 kg
Pulses	2 kg	1 kg	1 kg	1.5 - 2 kg	2 kg
Potatoes	4 kg	4 kg	4 kg	20 kg	20 kg
Other Vegetables	20 kg	20 kg	4 kg	12 kg	12 kg
Chicken or Fish	Fish – 1 kg Chicken – 1 kg	4 kg	500 gm	2 kg	Fish – 2 kg Chicken – 1 kg
Egg	24 pc	20 pc	12 pc	24 pc	24 pc
Cooking Oil	1.5 kg	2 kg	400-500gm	2 kg	2 kg
Milk	7.5 kg	7.5 kg	1 kg	7.5 kg	N.A
Fruits	2 kg	1 kg	300 gm	2 kg	3 kg
Snack Items	N.A	Muri and tea in	Muri	Muri-	N.A

		evening	occasionally	Chanchur with tea	
Calorie Value of Food per Capita per Day	⇒ 1,465 Calorie	2,464 Calorie	1,172 Calorie	1,775 Calorie	2,755 Calorie

Source: Primary Data, 2016

Poor purchasing power compels the workers to buy only low-cost vegetables like potatoes and to skip meals whenever deemed necessary. Workers often have to choose between buying enough food and paying for medication or their children's education. Lack of nutritious food is most severe in all tea plantations surveyed during the study. Most of the families in Dharanipur garden take food only once a day, and their regular meal consists mainly of rice and salt, mixed often with tea flowers and leaves collected from the plantation. In other gardens the inhabitants generally consume two square meals a day through lunch and dinner. The concept of breakfast or any tiffin in the evening is almost nonexistent in many of the tea gardens. So, after examining the pattern of food intake it is evident that, most of the households consume only inadequate carbohydrates derived out of cereals in their menu. Thus presence of protein and fat in their food is highly irregular while malnutrition is very common phenomenon among the people of all ages in the tea gardens.

7.4 Health Care Facilities

There are serious complaints about the quality of health services provided, including the medicines given. Considering that tea garden workers are exposed to several occupational diseases such as tuberculosis and that they live far away from the government hospitals, the absence of proper medical facilities, including qualified doctors, is a matter of major concern. It is obvious that if basic and life-supporting facilities are not available in the tea gardens, other facilities like crèches, proper sanitation will also be non-existent. Among others, the most contentious issue for stakeholders is the non availability of safe drinking water and electricity. Parents and children of all labour lines complain about insufficient and poor quality of drinking water provided to them by the company managements. For example, Kathalguri tea garden has only one source of drinking water, provided by the management. About 6,727 persons are dependent on the single source of water which is located at a distance of three km from some households. The upper line *basti* collect their drinking water from a nearby *jhora* which is full of dolomite particles. So it is not surprising enough that the tea garden workers became vulnerable to some major diseases like alzheimer's, diabetes and formation of stone in kidney.

7.5 Status of Food Security in the Tea Gardens

The workers are totally dependent on the tea garden (Chakraborty, 2013) [12]. The workers' dependence becomes most obvious when plantation farms close down and these helpless people have nowhere to go and without any savings, these tea garden workers are forced to reduce their food intake. Some family members (inclusive of children and adolescents) may migrate or manage to take up any sort of irregular job available near the plantation while others no other option except starve to death.

To find out the food security status of the tea gardens, an attempt has been made to prepare a comprehensive Food Security Index (FSI). Through such a mechanism most important trio of food security (Availability, Accessibility and Utilization of Food) has been analyzed taking eleven different indicators which cover almost every possible dimensions of food security.

After analyzing the indicators of food security it has been observed that, Denguajhar tea garden takes the lead in all three composite scores as well as in total score and ranked first among the tea gardens surveyed. In Dharanipur there are maximum number of residents, who are unable to consume adequate dose of calorie, followed by Kathalguri and Bagrakote. In reality, type of calorie consumption is directly related with status of the garden concerned because of the fact, monthly earning of the workers in closed garden like Dharanipur is negligible. With larger family size Bagrakote receive lowest quantity of per head PDS entitlements, whereas Kathalguri gets maximum. PDS entitlements are essential to survive in a situation of acute and chronic hunger in those tea gardens. But it has been observed during the field investigation that Dharanipur workers did not get their entitlements for a prolonged period. Not only the quantity of entitlements is a matter of concern but the quality of grains is also an alarming factor. The rice and *atta* provided through PDS are often not suitable for consumption. Home grown livestock is a major source of essential protein for the workers. But lack of proper training, non availability of government subsidy and absence of essential infrastructure have made the situation difficult for them.

Monthly average household income and expenditure on food is also fluctuating from garden to garden. Where Denguajhar and Matiali have recorded higher level of income as well as expenditure, Bagrakote, Kathalguri and Dharanipur have recorded lower purchasing power due to low monthly income. The average expenditure of ₹ 2,000 per month is not enough for a household comprising of four to five members to sustain

healthy and nutritious food habit. So, high income generation reflected in higher purchasing power is the only way out for the tea garden workers. Literacy and awareness of the workers along with their family members is also a matter of concern. Due to this low level of awareness the workers have been exploited since the inception of the plantation farms having colonial legacy. Exploitation of labour in terms of payment of low wage, long working hour, deprivation from essential facilities are common phenomena in all tea gardens under survey.

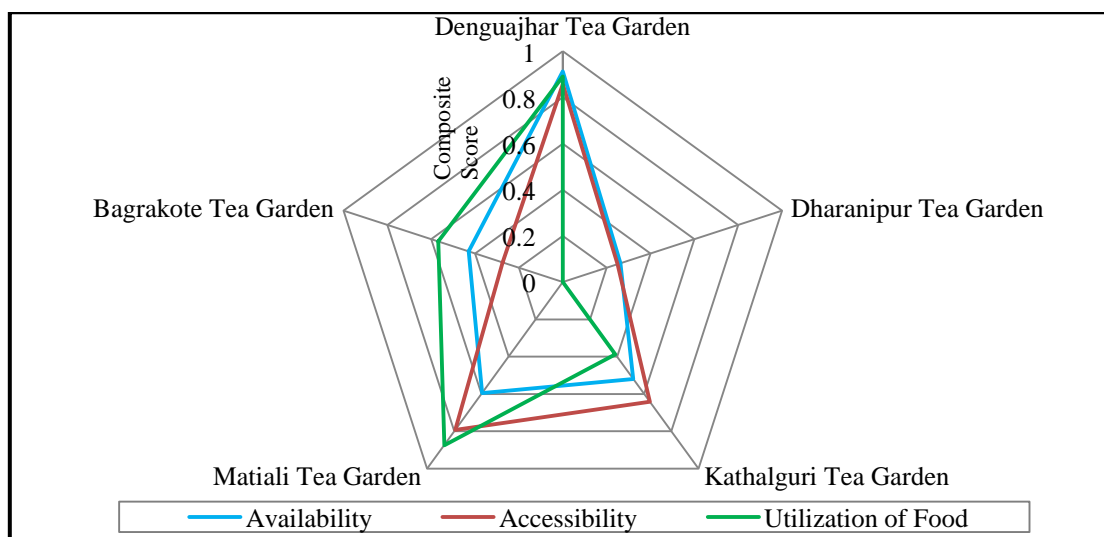


Figure V. Status of Three Major Dimensions of Food Security in the Tea Gardens
Source: Computed by the authors based on primary data, 2016

Table III. Construction of Food Security Index (FSI)

Name of the Tea Gardens	Dimensions of the Index													Total Score	Rank	
	Availability				Accessibility					Utilization of Food						
	Scores of Indicators			Composite Score	Scores of Indicators				Composite Score	Scores of Indicators						Composite Score
	AV1	AV2	AV3		AC1	AC2	AC3	AC4		UT1	UT2	UT3	UT4			
Denguajhar	1	0.7380	1	0.9127	1	1	0.7197	0.7126	0.8581	0.9970	0.5673	1	1	0.8911	0.8849	1
Dharanipur	0	0.1176	0.6719	0.2632	0	0	0	1	0.2500	0	0	0	0	0	0.1627	5
Kathalguri	0.2596	1	0.3000	0.5199	0.5415	0.6324	0.5887	0.8016	0.6411	0.7453	0.5145	0.5405	0.4222	0.3880	0.5160	3
Matiali	0.9308	0.8556	0	0.5955	0.7470	0.8676	1	0.5547	0.7923	1	0.9658	0.7297	0.8000	0.8739	0.8739	2
Bagrakote	0.4434	0	0.8438	0.4290	0.3123	0.4559	0.3288	0	0.2742	0.8118	1	0.2162	0.2444	0.5681	0.5681	4

Source: Col. 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15: computed by the authors based on Primary Data, 2016. Col. 9: computed by the authors based on data provided by Labour Directorate, Government of West Bengal, 2016

Table IV. Indicators and their Code

Food Security Index		
Dimensions	Indicators	Code Used
Availability	Monthly Per Capita Availability of Food Grains from Public Distribution System	AV1
	Percentage of people Consuming Less than 2100 Kcal. Per Day	AV2
	Percentage of Households have some kind of livestock	AV3
Accessibility	Average Monthly Household Income in Rupees	AC1
	Average Monthly Expenditure on Food	AC2
	Literacy Rate In Percentage	AC3
	Average Number of Dependent Population on a Worker	AC4
Utilization of food	Percentage of Households Having Access to Safe Drinking Water	UT1
	Percentage of Households Having Latrine in the Premises	UT2
	Percentage of Children Under Five Years of Age Having B.M.I Lower than Normal	UT3
	Prevalence of Anaemia Among Women in Percentage	UT4

Source: Compiled by the authors

Two major components of a healthy life i.e. access to safe drinking water and sanitation has been compromised in all tea gardens spread over several decades. As a result different health related problems like low B.M.I among all residents of the labour line, especially among the children under age of five prevails. The female workers are backbone of this industry but throughout the last century they have become victim of acute anaemia due to deficiency in minerals and vitamin embedded in their food habit. Dharanipur and Bagrakote have more anaemia patients in comparison to that of other tea gardens. Due to non-availability of proper health care facilities and nutritious food specifically in time of pregnancy and breast feeding the mothers and their children become prone to different reproductive disorders.

As food security involves three of its dimensions, i.e. availability, accessibility and utilization of food, it has been observed in the tea gardens that development or deterioration in these aspects directly affect overall scenario of food security.

VIII. SUGGESTED MEASURES

To get rid of such severe conditions different Government entities, NGOs, tea garden owners, effective trade unions, workers and individuals have to work together and thereby develop a systematic management system of the gardens (Rasaily, 2013) [13]. If the garden runs smoothly without suspension or closure, then all the stakeholders can sustain despite ups and downs in the market. Some steps have to be adopted by different entities to win over the prevailing situation. In a nut shell these are as follows:

- I. Government has to ensure that wages of the tea garden workers are in conformity with the 'Minimum Wages Act' (MWA) and are duly paid with full transparency by the owners of the tea gardens.
- II. Urgent attention is needed for the closed tea gardens that have been abandoned by the owners; in this context, the Government of India and State Government have the obligations to provide immediate support to the workers to guarantee the provision of food rations. Both the governments have to ensure that unpaid wages, gratuity and provident fund are duly paid by the tea garden owners and to prosecute those owners who fail to fulfill their legal obligations.
- III. Both the governments have the liability of providing adequate facilities to the workers for making provisions of safe drinking water and sanitation, medical and educational infrastructure, regular supply of electricity and livable housing in case of closed and abandoned estates too.
- IV. Transformation of the closed tea gardens into cooperatives of workers managed by themselves can be an effective management alternative.
- V. Different Government schemes like NFSA, MGNREGA, Integrated Child Development Scheme (ICDS), National Social Assistance Programme (NSAP), Mid Day Meal Scheme (MDMS) etc. have to be implemented properly.
- VI. Government and the owners of the tea gardens shall implement an effective health care policy for the workers through construction new hospitals, recruitment of fresh medical officers along with trained nurses. Proper pre natal and post natal care should be provided to the women workers to create an ambience of mutual trust.
- VII. The rationing system need to be modified. Cooperatives of the workers may be appointed as dealers of rationing in collaboration with the garden owners to bring transparency and accountability in Public Distribution System.
- VIII. The trade unions have to be more responsible to make the workers aware about their proper right and have to create an environment of healthy work culture in which the tea gardens can run smoothly without any 'Bandh' or 'Hartall'. The garden owners will have to take the onus of not opting for closure or lay-off.
- IX. It was opined by several respondents that the Government could treat tea plantation as part of the afforestation programme, since the quality of green cover provided by the tea plantations dotted with trees would be better than the natural forests rendering justice to soil conservation on one hand and economic benefits for the society on the other. (Sankrityayan 2006) [14].
- X. Government organizations and NGOs shall put a hawk eye on social and legal protection against discrimination of women and girls, throughout their life cycle in general and against human trafficking, child labour, under age and forced marriage in particular.

Providing comprehensive and universal social security to the tea garden workers can really change the scenario of acute and hidden hunger, food insecurity and malnutrition among most of the tea garden workers and their members of the family.

IX. CONCLUSION

The overall study brings out the fact that, tea garden workers are at the mercy of the garden owners and management. For generations, they have been tied to tea plantations and thereby, reduced to the level of bonded-workers; without ownership of the land they have been working and living on without any alternative sources of livelihood. The hunger and food insecurity of the people is prevailing all along the green lush undulating landscape irrespective of the status of the tea garden; good, sick or closed. The chronic violation of human rights in tea plantations requires a structural change. Widespread unawareness and illiteracy have profound impact on the labour psychosis. The venture of the government to develop the region as a hotspot of tourism should also have a focus on providing opportunities to these down to earth people who have lost their livelihood to destiny. Higher income generation thus assuring higher purchasing power can only provide them a secure life style which is which is free from hunger and malnutrition.

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