

Original Article

# Human Development Index (HDI) among Tea Plantation Workers of Dooars

<sup>1</sup>Sandeep Sundas, <sup>2</sup>Dr. Subrata Saha

<sup>1</sup>Asst. Professor, Dept. of Economics, Kaliyaganj College & Ph.D Research Scholar, Raiganj University.

<sup>2</sup>Associate Professor, Dept. of Economics, Raiganj University.

Received Date: 27 April 2023

Revised Date: 08 May 2023

Accepted Date: 12 May 2023

Published Date: 17 May 2023

**Abstract:** In one of a kind words, HDI is a measure of Life expectancy measures at birth, Adult literacy rate and the favored of living condition measured by using the gross national income. The rank for HDI tiers from zero to one. The transition of HDI rank is placed due to the enhancement in residing condition, exercise of convenient hygienic sanitation, fitness standards and literacy rate. United Nations Development Programme (UNDP) ranks global areas in 4 tiers of development; Very High HDI, High HDI, Middle HDI and Low HDI. The transition is realized if the birth and demise rates are low. Life expectancy is based on factors like availability of prolonged foods grains, greater scientific offerings and applicable sanitation. Proper sanitation now not totally make bigger the environmental stipulations then once more moreover will lengthen the productiveness as the human beings are a total lot plenty much less susceptible to illnesses and thereby contributing multiplied to the broad income of the country. The tea plantation industry workers suffers more than one problem. Lower wages, inadequate sanitation and drinking water and most importantly very poor educational attainment which ultimately reduces their standard of living. This paper tries to locate out about human development index of tea plantation workers focusing on developing the life expectancy with the aid of bettering the tremendous of existence and enhancement over health and sanitation and thereby growing the base of living. A random sample preference of a hundred and twenty tea plantation personnel households are chosen for the study.

**Keywords:** HDI, sanitation, life expectancy, literacy, standard of living, tea plantation workers.

## I. INTRODUCTION

According to the United Nations Development programme, Human Development Index is a measure of three indices. UNDP rank the country in a scale ranging from zero to one. HDI is a measure of Life expectancy measured at birth, Adult literacy rate measures through ability of the range of school/college going literates and spherical appreciated of living measured by means of way of the utilization of the gross national income. The HDI value of India in 2008 was 0.467 which rose to 0.519 in 2010, further rose to a meager 0.554 in 2012, 0.586 in 2014 and 0.647 in 2018.[1] According to UNDP India ranked 132<sup>nd</sup> out of 191 countries and territories in 2021 compared to 131<sup>st</sup> rank among 189 countries and territories in 2020 report in HDI measurement.[2] The fall in the India's HDI value from 0.645 in 2019 to 0.633 in 2021 is due to the falling life expectancy from 69.7 years to 67.2 years as mentioned in the report. Moreover, the report claimed the drop of expected years of schooling from 12.2 years to 11.9 years in 2020 report and mean years of schooling rose a meager 6.7 years from 6.5 years in 2020 report.[3] In accordance to the 2014 Human Development Report (HDR) launched on 24 July in Tokyo, the human Development Index (HDI), a measure derived from existence expectancy, schooling tiers and incomes, barely grew from 0.700 in 2012 to 0.702 in 2013. West Bengal HDI Value was 0.641 in 2019 and ranked 28<sup>th</sup> out of 36 states and union territories. [4] Darjeeling rank 4<sup>th</sup> in HDI when one of variety areas of West Bengal district is measured and the value is 0.65. The HDI for India used to be recorded as 0.624 in 2015. Between 1990 to 2015, existence expectancy of life prolonged by means of 10.4 years, mean years of schooling rose with by 3.3 years and predicted years of educating prolonged with 4.1 years. The gross earnings per capita accelerated by about 223.4 percent.[5] The notion of HDI was first brought into light by Dr. Mahbub-ul-Haq in 1990 which described human development as enhancement that lets in and enhance people's selections and their lives respectively. Use to rank countries globally in 4 tiers of human development. Access to resources, education and health are the key areas of human development. It is the composite statistic of life expectancy, literacy and per capita income. Countries having Very high HDI tiers from 0.8 to 0.9, High HDI with 0.5 to 0.70, Medium HDI between 0.5 to 0.69 and Low HDI between 0.4 to 0.5.[6]

The indices of HDI is moreover associated to every other, life expectancy, literacy and standard of living. To prolong the existence life expectancy, elements like sanitation and health are no longer to be ignored. Proper sanitation and drainage practices which consists of having get the access to perfect latrines facility and warding off the use of toilets in open space, in



one-of-a-kind words, open defecation leads to distinctly a fluctuate ailments like worm disease, infections, diarrhoea and so forth can be curbed with the useful resource of practicing hygienic behavior can for this reason make large the welfare of the human beings and thereby also conducive for developing the life expectancy. Now if the sanitation and fitness factors are checked, life expectancy can be improved. Secondly, with the aid of having a balanced diet plan and fending off oily and junk food elements can reduce the risk of coronary heart associated troubles which is related with having terrific focal thing which in flip depends upon on the enhancement in educational opportunities. With less inclined to ailments the productiveness of the employees will increase and thereby, will increase the diploma of income. Hence, all the three indices of HDI are hooked up on every and each other. Considering the HDI one at a time for male and female will end up indispensable as women's welfare is moreover mirrored with the get access to latrines at home, minimum inconvenience in fetching the consuming water, and focal point that is useful resource of talent of ability of imparting instructional probabilities at their convenience through educational opportunities. Poor sanitation leads to ailments like cholera, diarrhoea, dysentery, hepatitis A, typhoid, polio etc. that minimizes human welfare, social and financial enhancement.[7] Women are at the higher risk of no longer concentrating on the proper sanitation. The repercussion of now no longer having get entry to accelerated sanitation facility in specific to female can also in addition create a difficulty of sexual violence that can continue away from freedom of action and have an effect on equal opportunities. Secondly, there is excessive correlation between the availability of tightly closed water- accelerated sanitation and girl health. Women's choose of water, sanitation and hygiene if ignored, they can no longer participate equally in the society.[8]

The lack of clean drinking water, sanitation and hygiene choices in households and health-care facilities decreases the well-being and retard development. Women are at vulnerable stage if they are sanitation oblivious. With admire to education attainment amongst tea plantation workers, the research evidence is found that women's/mother's education attainment has a direct effect and influence on the education attainment of the children of workers.[9] The terrible sanitation and education possibilities have a direct bearing on the welfare of the personnel and moreover their condition of living. According to the Plantation Labour Act 1951, there are provisions involving the education, health and sanitation, scientific facilities, drinking water and availability of canteen and crèches facility interior in the tea estate which most of the tea plantation workers are oblivious to. Research justifies that most of the tea plantation worker especially women are unaware of their rights and lack essential scientific choices. This is in the vital due to decrease teaching attainment and lack of consciousness amongst girl human beings and consequently most of the women employees have been superstitious.[10] However the stipulations of personnel fluctuate with respect to one of range types of workers. Permanent tea plantation workers who generally resides within the tea estates and employed for the period of the year, the Casual/Temporary workers who had been absolutely employed for the dimension of the plucking season which lasts from March to November and deprived of unique benefits other than wage that the permanent workers receives and Small Growers who had been self- employed with the useful aid of growing tea in the their very personal land and technique via the organized tea industry. Researchers have identified that that permanent tea plantation workers are greater off in phrases of employment attention and generally taking place of living, however, small growers have larger asset possession in difference to the particular two varieties of labourers. Small growers hold elevated of manufacturing property assets like cow, pig, goat, hen and so on than the consumption assets property like television, cell phone and so on in order to cope up with the uncertainty of income.[11] The availability of essential amenities of life services is the accountability of management. The tea plantation worker children were also seen dropouts of school and colleges. The financial constraints and the quest to better employment opportunity outmigration of children are common. [12]

West Bengal is the second largest producer of tea in India with the concentrated area of tea manufactured in West Bengal are Darjeeling hills, Terai and Dooars. Dooars has the maximum number of tea gardens in North Bengal region. With the successful experimentation of tea plantation at Darjeeling during the British company during 1840's and after the commercial tea production in 1852 at Tukvar, Steinthal and Alooari by Dr Cambell a civil surgeon of the Indian Medical Service.[13] The extension of tea plantation was then carried at Terai region in 1862 at Champta by James White Pioneer in tea plantation experiment and the first Dooars tea garden in 1876 at Gazulduba.[14] There are 450 tea gardens in North Bengal with most of the tea gardens concentrated in Dooars region.[15] The Dooars region employs huge labour force comprising of Adivasis, Nepali and Rajbanshi. There are 154 tea gardens in the Dooars that employs nearly 3.5 lakh workers.[16]

The tea plantation workers faced lot of exploitation and are compelled to work and stay in isolated places within the tea estates. The tea plantation workers suffer from more than one problem. Some of them includes very poor literacy rate, no land rights to the workers, poor medical and drinking water facility, lack of educational opportunity to the workers and their children, minimum wages, no alternative source of income, primitive methods of cooking, lack of sanitation and hygiene, unclean toilets at the working places etc. To sum up, the Plantation Labour Act 1951, which was introduced to monitor the workers welfare and to minimize all forms of exploitations is not properly implemented. The workers are very poor in educational attainment with majority having only elementary levels of education and their children were seen either not studying at all or massive school and college dropouts are very much oblivious to their rights. Poverty is the basic reason why

the school dropouts rates among tea plantation workers children is very high. Furthermore poor access to safe sanitation, medical facilities, educational opportunities and access to clean drinking water will deteriorate their living conditions.[17] As a matter of fact, the children are also not in a position to continue their school and higher education mainly due to financial constraints and lack of family planning in the household. As a result, the outmigration of workers both boys and girls for better employment opportunities to cities and abroad is seen.[18] Moreover, the girl were married early and dropped from their formal education. The sanitation and hygiene is a concern among the tea plantation workers. Lack of proper sanitation and latrines leads to defecate in open eventually caught up with various contagious diseases. The lack of education can be correlated for not having better sanitation and hygiene practice at home since the ill effects of sanitations and hygiene is not known. Further with very poor wages and insufficiency to manage the household expenditure by the tea plantation workers also compel them to either migrate to other occupation or allow their children to migrate for better employment opportunity to help the family members financially. Therefore the development of the worker and their children is compromised with lack of all basic amenities of life.

The calculation of HDI is the composite statistic of the entire three indicators

On an average the life expectancy measured for India was 66.22 years and for United States is 78.74 years.[19] This is a very important measure of human development index. This paper aims to investigate the HDI of tea garden workers. The tea plantation workers were selected in and around the four tea estates of Dooars region randomly. 120 households for that matter were randomly selected from 4 randomly selected tea gardens of Dooars and an information relating to the three different indices were collected.

**Table1: Human Development Index Rank of India**

Year	HDI	Rank of India	Total Countries
1990	0.427		
2000	0.493		
2010	0.579	135	169
2011	0.588	135	187
2012	0.597	134	
2013	0.604	134	187
2014	0.616	130	188
2015	0.624	131	
2016	0.630	131	
2017	0.640	131	
2018	0.642	131	
2019	0.645	131	

Source: computed from Human Development Report and business standard report

The rise in the value of HDI may be due to the demographic transition. The demographic transition is transition from high birth and death rates to low birth and death rates when an economy moves from pre-industrial stage to industrial stage. Stage 1 which is a pre-industrial stage where birth and death rates are high followed by Stage 2, where the death rates starts declining due to the availability of food, proper sanitation etc. This stage is for the developing countries. Stage 3 is for the developed countries where the birth rate starts falling due to urbanization, contraception and increase in wages and finally the Fourth stage is the developed stage where birth and death rates are low.[20]

Bad sanitation and dirty water leads to the spread of contagious diseases. In fact, the fifth biggest killer especially on women worldwide that causes more deaths than AIDS, Diabetes and Breast cancer. Nearly 8 lakh women die every day because they lack access to proper toilets and drinking water facility.[21] More than 1 billion women around the globe, do not have access to a safe private toilets while 370 million one in 10 do not have access to clean water.[22] From 2010 to measure HDI more comprehensively HDI also presents four other composite indexes. The inequality adjusted HDI, The Gender Development Index- compares males and females HDI values, The Gender Inequality Index- Highlight women empowerment and The Multi-dimensional Poverty Index- measures non-income dimension in poverty. The GDI and GEI both were developed in 1995 and MPI was developed in 2012.

**Table 2: Indices of HDI with respect to men and women.**

	Male	Female
HDI	0.671	0.549
Life Expectancy	66.9 Years	69.9 Years
Means Years of Schooling	8.2 Years	4.8 Years
GNP Per Capita	\$8897	\$2184

Year	Expected Years of Schooling	Mean Years of Schooling
2016	12.3 Years	6.4 Years
2017	12.3 Years	6.4 Years

Source: *Human Development Report 2016*

## II. REVIEW OF LITERATURE

Sharma (2005) studied the socio-economic status of tea garden labours and found full violation of PLA 1951. The study revealed that every household or the other have complaints of diseases and inadequate drinking water. Moreover, the household are completely oblivious to health planning. Additionally, majority of the workers still prefer to cook in firewood.

Khawas (2006) studied the standard of tea garden of labourers in Darjeeling. The study highlighted that majority of the tea plantation workers have completed their elementary level of education. The study also poses some serious loopholes why the percentage of workers attaining higher education level keeps decreasing as stages of education approach towards higher level. Furthermore, the level of education of the children of the workers at higher level seems satisfactory in the study.

Sahoo, Konwar and Sahoo (2010) analyzed the tea plantation workers status of health and their consciousness on health. The study observed majority of the workers have suffered from poverty and malnutrition in terms of calorie intake. There is a huge disparity between actually required and intake of protein and carbohydrate among workers and their families. The study asserts that due to deficiency in nutritional intake, the health of the workers deteriorate and get caught to various diseases. The study also revealed that workers are oblivious to health planning.

Thapa (2012) analyzed the development of tea plantation workers and attempted to comparatively distinguish between permanent, casual and small tea growers in tea plantation region of Darjeeling. Health, education and basic necessary amenities of life to analyze the standard of living are the broad indicators made in the study. The researcher attempted to establish a relationship between assets ownership and standard of living. The study brought light to the fact that permanent workers are better off in terms of employment while the small growers are comparatively better in asset ownership. The health standard as observed in the study was quite moderate and acceptable level of education of the children of the workers.

Borah (2013) made a study relating to the rights of women workers in tea gardens of Assam and observed that their health and living condition was not satisfactory at all. Lack of literacy among women workers make them oblivious to their rights and they have a tendency to practice superstitious beliefs. The study also made an observation that the women workers are also oblivious to health planning, lacks health care facility and maternal benefits.

Bosumatari and Goyari (2013) studied the level of education attainment among women tea plantation workers in Assam. The study highlighted that the women and girls lack literacy following the fact that either the schools were not properly maintained or complete unavailability of school within the tea estate. The study revealed that early marriages of girl children also lead to discontinue their education. The study found that education of the mother has direct relationship on the level of education of their children.

Saikia, Mishra and Mishra (2014) attempted to study the living condition and education attainment of tea plantation workers and their children of Sarusarai, Assam. The study highlighted huge percentage of school dropout among tea plantation workers children. The study revealed bitter residing standard, poor accessibility of education and poor sanitation and drinking water.

Swatahsiddha Sarkar (2019) studied the migration history of people in tea plantation during colonial period and also focused on the outmigration of tea plantation workers and the younger population from tea estate. The study discusses the detailed history of workers brought to tea plantation sector were mistreated and lacks basic amenities then and tries to justify why out-migration occurred as a result of exploitation, wages below the standard minimum wages level and lack of other basic benefits.

## III. OBJECTIVES OF THE STUDY

1. To analyze the life expectancy of the respondents.
2. To observe the health and sanitation standards among the respondents.
3. To investigate the trends of literacy rate.
4. To explore the overall standard of living of the respondent.

## IV. STUDY AREA

The study is conducted after selecting four tea gardens randomly from Dooars area and therefore, randomly selecting workers household from each tea garden making a total sample of 120 workers. The selected tea gardens from Dooars region are Bhogotput tea garden, Kurti tea garden, Leesh River tea garden and Lakhipara tea garden.

**V. METHODOLOGY**

The study is basically a combination of primary and secondary data. 120 random respondents selections were made and a questionnaire was prepared for the purpose of collecting the data from respondent directly from the field of enquiry. However, secondary data were also analyzed to make a comparison.

**VI. RESULTS AND DISCUSSION**

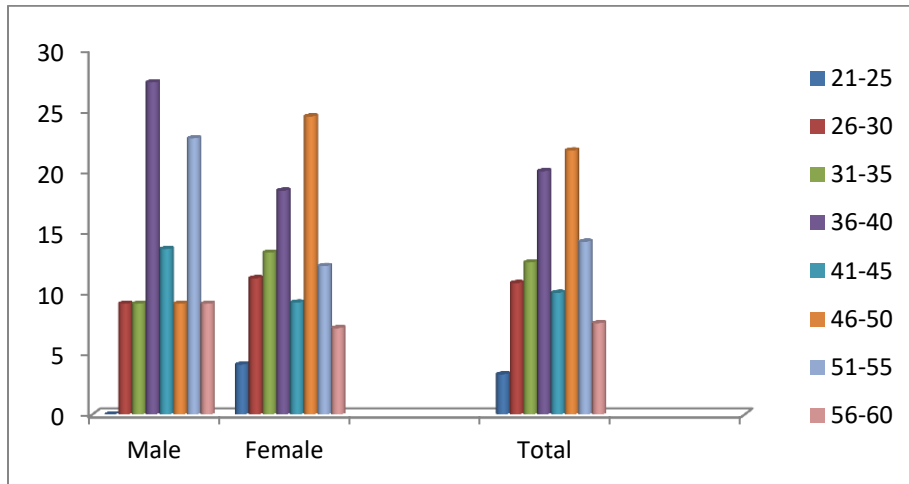
**A. Investigating the Life Expectancy Measure:**

One of the indicators of Human Development Index, life expectancy, is the main source of upgraded sanitation and health. With improved sanitation one may stay fit free from diseases and which may also increase the life expectancy. Poor sanitation is the reason for the diseases like cholera, diarrhea, dysentery, hepatitis A, typhoid and polio etc. reducing human well-being. Moreover, diarrheal deaths are amongst the biggest cause due to inadequate sanitation.[23]

According to UNDP life expectancy varies from 20-85. Standard life expectancy is 85 years. Life expectancy index= $(LE-20)/(85-20)$

Suppose a country say x life expectancy is 70 years but standard or the ideal life expectancy is 85 years so to calculate life expectancy index for country x we use the above formula  $(70-20)/(85-20) = 0.77$

With the aid of field survey data regarding the age of the respondents at randomly selected tea gardens, the following data were observed and it is also evident in the figure below.



**Fig 1: Figure showing the age of the respondents at various tea gardens**

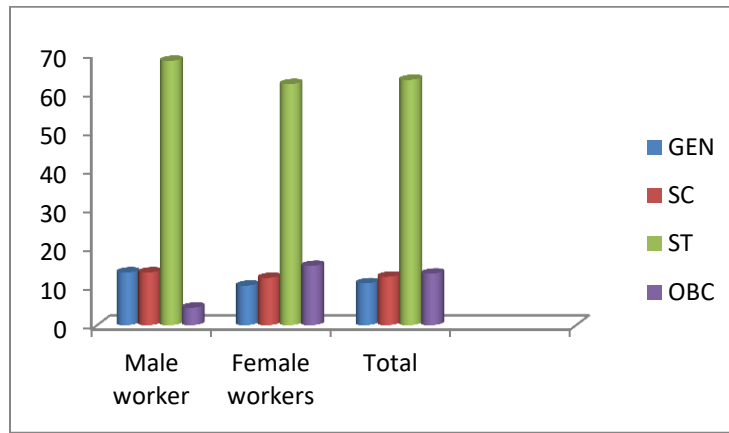
(Source: Field Survey 2022)

Majority of the workers age varies between 46-50 years and it is estimated at 22 percent approximately. 14 percent of the respondents' age varies between 51-55 years. 20 percent of the workers age varies between 36-40 years. Approximately 13 percent and 11 percent workers age varies between 31-35 years and 26-30 years respectively. Nearly 8 percent workers age varies between 56-60 years and 3 percent of the workers age varies between 21-25 years.

Majority of male tea plantation workers age varies between 36-40 years around 27 percent, followed by workers with age ranging between 51-55 years which is estimated as 23 percent approximately, followed by workers with age varying from 41-45 years and is estimated at 14 percent approximately. The workers with age ranging between 26-30 years, 31-35 years and 46-50 years each is estimated at around 9 percent.

The women tea plantation workers majority of the workers age varies between 46-50 years estimated as 25 percent approximately, followed by workers age varying between 36-40 years estimated as 18 percent, 13 percent and 11 percent of women workers age range between 31-35 years and 26-30 years respectively. 12 percent of the workers age range between 51-55 years.

Regarding the caste category of the workers it was observed that majority of the respondents or tea plantation workers in selected sample of tea estates belongs to schedule tribe community. The following figure (fig. 2) will illustrate the findings.

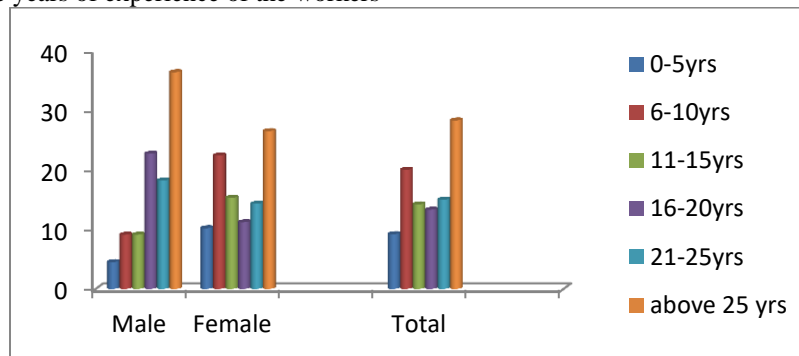


**Fig 2: Figure showing caste category of workers.**

Figure 2 highlights the caste category of the tea plantation workers. The tea plantation workers at Dooars tea estate from the selected 4 tea estates the majority of the belongs to the Schedule Tribe (ST) which is observed as around 63 percent followed by the workers belonging to the Other Backward Caste (OBC) around 13 percent and Schedule Caste (SC) workers estimated as 12.5 percent. The least number of workers belong to General caste estimated around 11 percent. Among the male and female tea plantation workers, majority of the men and women workers belongs to Schedule Tribe community estimated as 68 percent and 62 percent respectively. The Schedule Caste men and women workers were respectively 14 percent and 12 percent approximately. The general men and women workers were approximately 14 percent and 10 percent respectively. The OBC men and women workers were approximately 5 percent and 15 percent respectively.

From the field survey it was observed that plantation workers who belonged to the Schedule Tribes community at 4 tea gardens at Bhogotpur Tea estate, Kurti Tea estate, Leesh River tea estate and Lakhipara tea estate are respectively 92 percent, 50 percent, 51.4 percent and 66.7 percent.

Let us now see the years of experience of the workers



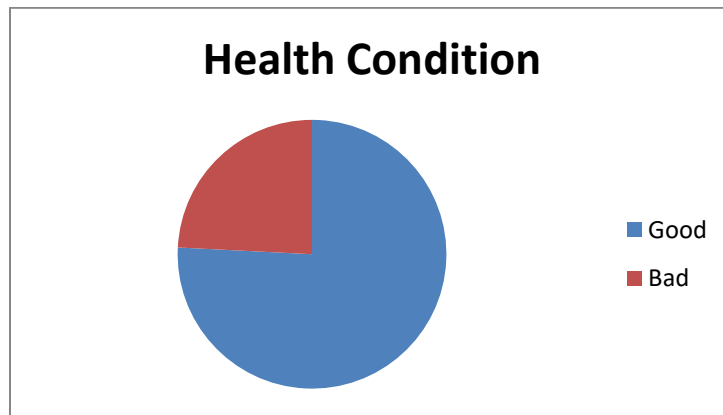
**Fig 3: Figure showing the years of service of the workers at various tea gardens of Dooars.**

Figure 3 will analyze the term of service of the tea plantation workers. Looking at the years of employment in tea plantation, majority of the workers were employed for more than 25 years, followed by workers employed between 6-10 years and is estimated as 28 percent and 20 percent respectively. 15 percent, 14 percent and 13 percent of the workers employed since 21-25 years, 11-15 years and 16-20 years respectively. The men and women workers employed in the tea plantation since 25 years and above were calculated as approximately 36 percent and 27 percent respectively. 21-25 years of service for men and women tea plantation workers were respectively calculated as 18 percent and 14 percent. 23 percent and 11 percent of men and women workers service period ranges between 16-20 years respectively and 9 percent and 22 percent of the men and women workers in tea plantation workers service ranges between 6-10 years respectively.

Respective tea gardens the tea plantation workers working for more than 25 years are nearly 40 percent, 33.3 percent, 17.1 percent and 26.7 percent at Bhogotpur, Kurti, Leesh River and Lakhipara tea estates respectively. Moreover some of the workers have been working since 15 years of age and their service have reached almost very near to 40 years. Workers working in the tea gardens from 21 to 25 years also shows a very significant number. To be precise, 28 percent, 6.7 percent, 8.6 percent and 20 percent workers respectively in four tea gardens Bhogotpur, Kurti, Leesh River and Lakhipara are working since 21-25 years. This shows that the workers are working in the tea estates since a very long time and their health condition doesn't seem very deteriorating.

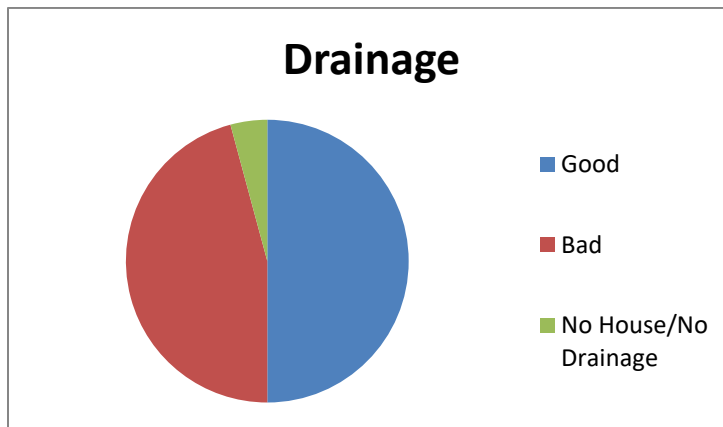
With the aid of the field survey, it has been observed that the workers working for more than 25 years is in majority. Some of the workers are working in the tea plantation at Dooars for more than 40 years. The retirement age of the workers is 58 years but some of the workers were found employed even after retirement as temporary workers.

Let us now clubbed this age category range of the plantation workers with their health status to analyze whether the workers are keeping in good health or their health condition are uneven. We will try to analyze the following figure (fig 4) which is conducive for the study of life expectancy. The tea plantation workers suffers from many health hazards and every household have at least one member who have consulted doctors seeking treatment since the tea plantation regions not all the estate have well equipped medical facilities. Moreover, firewood cooking is mostly preferred among tea plantation households.[24]



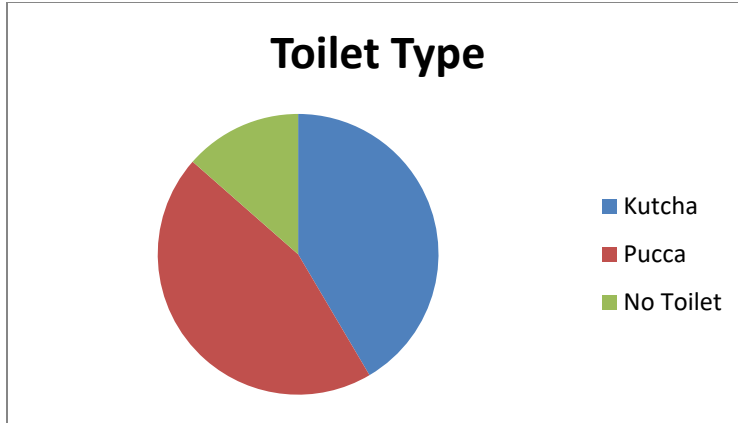
**Fig 4: Figure showing the health status of the workers.**

The health condition of the workers were observed from the study to be satisfactory. 76 percent of the workers have good health. However 24 percent of the workers have bad health condition. The most common diseases among the workers as found from the study were high blood Pressure, Gastric, back pain, Sugar, leg problem and the uncommon diseases were eye problem, piles, thyroid, heart, allergy, stone hernia, TB, paralysis.



**Fig. 5 showing the drainage condition among the tea plantation household**

The drainage condition among the tea plantation workers household is depicted in figure 5. 50 percent of the workers have good drainage, 46 percent have bad sanitation and 4 percent no drainage at all because they do not have any house.



**Fig. 6 showing the type of toilet among the workers**

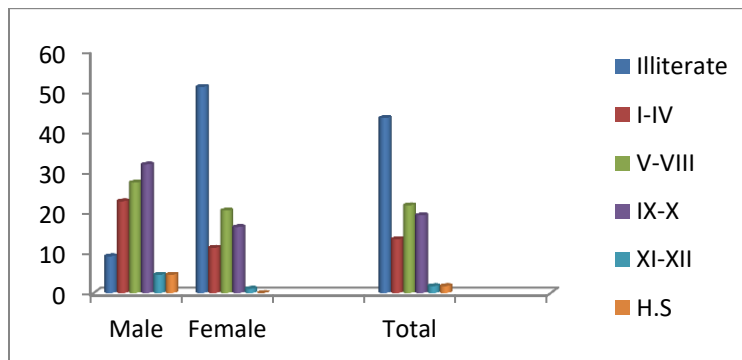
Nearly 41 percent have kutchha type of toilet with no proper treatment of waste disposal and 44 percent have toilet with septic tank. 13 percent of the workers do not have toilet at all and they defecate in an open field.

From above figures (fig. 4, fig.5 and fig. 6) covering the health, sanitation and drainage it is observed from field survey that Bhogotpur, Kurti and Leesh River tea estates have a considerable percentage of workers still using not desired level of sanitation which is reflected by the access to kutchha type of latrines or toilet. To state precisely the percentages are approximately 56 percent, 46.7 percent and 51.4 percent respectively. However, majority of workers around 86.7 percent at Lakhipara tea estate have access to pucca toilet. Moreover open defecation is also quite prevalent due to the insight that some workers do not have access to toilet at all. Bhogotpur, Kurti, Leesh River and Lakhipara tea estates the evident percentage of workers deprived of toilet were 32 percent, 16.7 percent, 8.6 percent and 3.3 percent respectively. Looking at the drainage condition, 60 percent, 26.7 percent, 100 percent of the workers household have very bad drainage at Bhogotpur, Kurti and Leesh River tea estates respectively. The health condition of workers however calculated from the study that has adverse health conditions at four tea estates were 32 percent, 13.3 percent, 34.3 percent and 16.7 percent respectively at Bhogotpur, Kurti, Leesh River and Lakhipara tea estates.

Now let us examine the education attainment of the respondents and their wards. With education comes the awareness which enables an individual to take decisions and fights against all odds and exploitations. But it was observed that the workers education attainment in the plantation industry is very pathetic. Not only does the education of the parent influence the education of their wards, but it also brings a sense of responsibility among the parents to educate children with the best means available.

**B. Investigating the education among workers and their children**

Education is one of the most important indicator and an important goal to be achieved in Sustainable Development Goals as Proposed by UNDP. The tea plantation workers lacks education and are oblivious to their right. Furthermore, the minimum calorie, protein and carbohydrate intake are also not known in the household due to illiteracy and ignorance as a result the workers suffers malnutrition.[25] We will now analyse the education attainment of the workers and their children. We will also focus on the enrollment of workers and their children at higher education level.

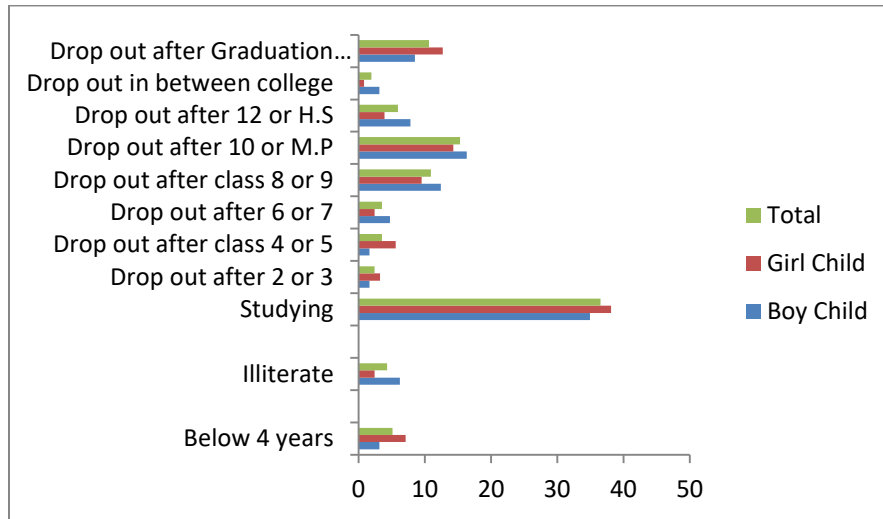


**Fig. 7: Figure showing the education attainment of the workers in percentages across various tea gardens of Dooars. Source: Field survey 2022.**



Majority of the workers were illiterate which is nearly 43 percent. Among the illiterates' workers, the percentage of women tea plantation worker is the maximum which stood at 51 percent. The workers who have studied from 5-8 were meager 22 percent among whom the percentage of men and women workers were observed as 27 percent and 20 percent respectively. The workers who have obtained education till their elementary level was estimated as 13 percent and the percentage of men workers stood maximum which is 23 percent compared to women workers which is 11 percent only. The workers who have studied from class 9-10 were 19 percent and again the percentage of men workers is higher compared to women workers. The respective percentage of men and women studying from 9-10 is 32 percent and 16 percent. Meager 2 percent each approximately have studied till 11 or 12 and higher secondary level.

Tea estate wise data as it was observed at Bhogotpur tea estate which has a maximum percentage of illiterate respondents accounts for 80 percent. The percentage of illiterates respondents in tea gardens such as Kurti, Leesh River and Lakhipara are respectively observed as 46.7 percent, 31.4 percent and 23.3 percent. Bhogotpur tea estate has the maximum percentage of illiterates. Fewer respondents' percentages however attended schooling up to class 10 and their percentages in the four tea gardens under study was observed as 4 percent, 27 percent, 23 percent and 20 percent.



**Fig. 8: Figure showing the school/college dropout of the workers children in percentages across various tea gardens of Dooars. Source: Field survey 2022.**

Out of 255 children, 129 were boy children and 126 were girl children. It is very pathetic to observe that the tea plantation workers children approximately 4 percent are illiterate, and the percentage of tea plantation workers children enrollment at higher education level graduation and post -graduation is estimated at approximately 10 percent and 0.8 percent respectively. The children of the plantation worker who had completed their secondary and higher secondary level were calculated as 8 percent and 6 percent respectively. The children of the workers presently going to colleges after completing their higher secondary level was 6 percent approximately. The education level of girl children show a better figure compared to boy children even at higher education level.

The education attainment among the children of workers was not very promising. There were huge percentages of school and college dropouts among the children of workers mainly due to migration to big cities in search of better employment opportunities. Not only does the children migrated within the country but some have migrated even abroad. The wage of the workers were very low and therefore, the workers children are compelled to move out in search of employment to help their family financially. Moreover, the girl children were also seen moved out for employment and some have dropped and got married at an early age.

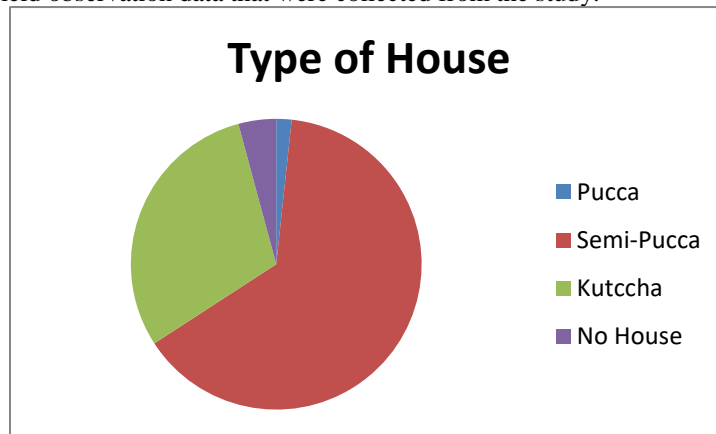
Figure 8 shows the dropout rate of the children of the tea plantation workers. Among the children of the workers nearly 37 percent of the children were currently studying among whom 35 and 38 percent of the boy and girl children are studying at present. Rest had either dropout or not studying at all. Majority 15 percent and 11 percent of the workers children had dropped their studies after either 10 or secondary examination and class 8 or 9 respectively. Nearly 6 percent of the children had dropped after class 12 or higher secondary level. The children who had dropped after graduation and post-graduation level were estimated as 11 percent approximately.

The children's currently studying were observed in the field survey of 4 tea gardens Bhogotpur, Kurti, Leesh River and Lakhipara were respectively 12 percent, 33 percent, 50 percent and 50 percent. Approximately 12 percent of the respondents' wards were illiterate at Bhogotpur tea estate while 1.4 percent at Leesh River. At Bhogotpur and Leesh River tea gardens all the respondents interviewed were women. Hence comparative difference can be analyzed. The women respondents at Leesh River are better off compared to Bhogotpur tea estate respondents in terms of education attainment and also in terms of education attainment of their children. The respondents' children that dropped after either class 10 or matriculation or equivalent examination in four tea gardens were respectively observed as approximately 11 percent, 16 percent, 15 percent and 21 percent. Some children who had got back status in the matriculation examination did not continue since then. The wards who have dropped after class 12 or Higher Secondary examination or equivalent examination at Bhogotpur, Kurti, Leesh River and Lakhipara tea estates were respectively 6 percent, 5 percent, 4 percent and 7 percent. Some of the wards have also dropped while attending college and did not complete their college education. Such percentages of wards were 3 percent, 5 percent and 2 percent respectively in Bhogotpur, Kurti and Lakhipara tea estates respectively. Finally the percentages of graduates were observed as 8 percent, 13 percent, 6 percent and 18 percent respectively in Bhogotpur, Kurti, Leesh River and Lakhipara tea estates.

**C. Investigating the Standard of living among tea garden workers household**

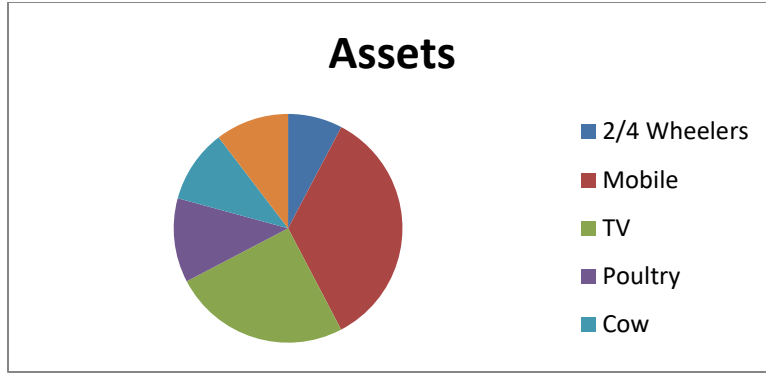
Finally the income aspects of the workers need to be considered. It is worth considering the fact that the wages of the workers in the tea plantation industry is very low. The wage is lower than the minimum subsistence level. On an average maximum respondent family members were observed as 4 members. Had the family members depend on the income of only one worker working in the tea garden, there life would have been very miserable. So all those arguments regarding the dropouts of the workers wards to help their family financially is justified then and now. Moreover, some respondent earn extra on yearly basis from their production assets like cow, goat, pig, hens etc. The expenditure of the respondents can be categorized in various heads. Expenditure on essentials like food items, expenditure on non-essential, expenditure on health, expenditure during festivals and expenditure on education of wards were various expenditure by the respondents. Income is not compatible with the expenditure if only the income from the tea gardens were considered. These expenditure can only be compatible if the entire family income is merged. The wage of the worker is Rs. 202 per day including Rs. 9 per day as ration allowance at the time of collection of data. Various tea gardens pay their workers in various modes. Some pay on weekly basis, some pay every fortnight while some pay on monthly basis. Sundays are off for the workers but while giving wages, Sunday is not included even for permanent workers i.e. the worker gets wages for only 26 days with four Sundays excluded in a month. Moreover, 12 percent of their monthly wages is deducted as their contributions in the provident fund. What is left in the hand of the workers is very low with which they can't enjoy a decent standard of living. Therefore most of the workers standard of living is quite pathetic and the plight of the workers goes unnoticed and unheard since decades.

Let us now see some field observation data that were collected from the study.



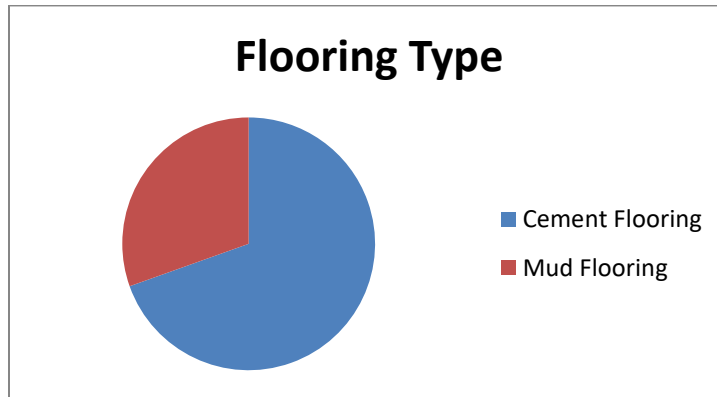
**Fig. 9 House type of worker**

The house is the necessity for the worker. The condition of houses were pathetic with long delayed and pending renovations work to be carried by the management it was observed that meagre 1.7 percent of the workers have pucca type of houses. Majority of the workers have semi-pucca house estimated at 64 percent and 30 percent of the workers have kutchha type of house. However, approximately 4 percent of the workers do not have their house at all. The state government has now announced the chai sundari scheme which is a housing scheme for the tea plantation worker.



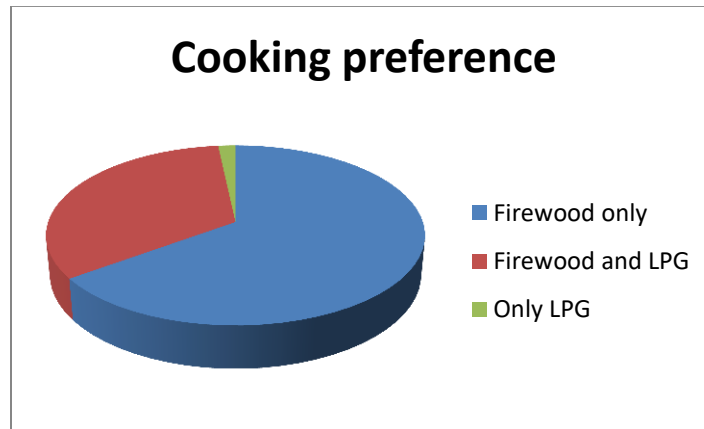
**Fig. 10 Asset profile**

The assets of the workers were worked as follows. 75 percent and 54 percent of the workers have access to mobile phones and Television respectively. Nearly 17 percent of the workers have either 2 or 4 wheelers. The production assets hens, cow and goat the ownership to 26 percent, 23 percent and 23 percent workers respectively.



**Fig. 11 House flooring type**

67 percent of the workers have cement flooring. This is because majority of the workers have semi-pucca type of house with cemented flooring but the wall and the floor are not in very good condition. There are leakages and crack in the wall, roof and flooring.



**Fig. 12: Mode of cooking by worker household**

From the above figure, it is evident that majority of the workers cook in firewood around 65 percent, followed by the worker household family cooking in a mix of firewood and LPG and it is 33 percent and the worker household cooking in LPG only stands at 2 percent approximately.

## VII. CONCLUSION

The tea garden workers seems fit with respect to their health condition and workers with various age categories are observed working in the tea estate. The mean age of the male workers in the study area is observed as 43.5 years and that of female workers is 41.8 years. The median age of the male and female workers in the study area are observed as respectively 42.2 years and 41.3 years. The workers in the study area majority have working experience more than 25 years. With respect to sanitation services and health the data observed are below satisfactory level with only nearly 44 percent have safe toilet with proper disposal. Rest of the household either defecate in open space or toilet is of kutchha type therefore, the health of the workers and the household members at risk which eventually result in deteriorating health condition and decrease life expectancy. Furthermore, drainage condition is good for only half of the sample household selected randomly. With respect to literacy rate, the illiterates' workers are the maximum accounting to nearly 43.3 percent. The education attainment at higher level among tea garden workers is not satisfactory. The education attainment of the children of the workers is not very good either. Only 36.5 percent are studying and 32 percent children of the workers have dropped school between classes 8 and 12/H.S. only 10.6 percent of the children have completed graduation and MA together. Asset possessions of the worker household also shows the level of deprivation to some extent. Only 54 percent of the worker household have possession of TV and 75 percent possess mobile phones. Certain household have Livestock or production assets as an alternative mode of income. It is high time that the workers misery be heard while the tea industry is a source of livelihood for nearly 3 lakh workers working in the industry and with around 10 lakhs populace indirectly dependent on the industry. There are various problems that the workers face presently. The expected years of living among the tea plantation workers as observed in the study seems okay along with majority of the tea plantation workers health conditions at a unimaginably good standard but while education index is checked the figures speaks adversely. As observed in the study the education attainment of tea plantation workers and their children at higher level is seemingly very low the development of the populace depending on tea industry is compromised. In order to take rational decision in the household and to remain free of exploitation and having basic rights education is important. Thirdly, the wages of the workers is very low. Moreover, the permanent workers get paid for 26 days only in a month excluding Sunday's pay. The asset profile of the workers were also not decent. With fewer tea plantation workers having the ownership over cow, goat and hen which fetch them some extra income, their living condition is miserable. Some of the household have more than one permanent worker working in the tea plantation which would compensate their cost of essential items. Had there been only one earning member in the family, the life of the worker and their family members would have been very pathetic. Major thrust area concerning the tea plantation workers were Illiteracy, lower wages, sanitation and hygiene oblivious, unaware worker rights, medical facility, housing, drinking water, cooking source etc. were some of the common problems of the tea plantation workers. The effort should be made to make at least the children of workers educated with better educational opportunities and take responsibility related to financial obligations of the worker if any, provide better housing, sanitation and drinking water facility. The workers development in terms of income is another very important concern. There needs to be urgent interference from the government to provide them with land rights, minimum wages suitable for maintaining a healthy standard of living, basic amenities requirement etc. only through the interference of the government and the Tea Board of India, a planned development can be formulated and executed. Moreover, the plan developed policy for the workers welfare can be inspected in regular intervals and finally the plan needs to be evaluated to check its efficiency.

There has to be regular awareness programs that needs to be carried out through the management to aware the workers regarding the essentials of keeping the environment clean, safe and clean sanitation and drainage and drinking water. Some workers were seen addicted to alcohol which ruins their health standards. Alcohol is also a reason of all the disturbances at home, domestic violence which has a strong psychological effect on the children of the workers. There has to be a constant effort from the management regarding the abstaining consumption of alcohol among the workers.

Tea is the most privileged industry with millions of people earning their livelihood from this sector. The demand of tea is massive but the one who helps grow, manufacture and process these tea also needs to be taken care of because labour is one of the most important factor of production. If labourers are taken better care then the outcome can be seen in terms of production of tea.

## VIII. REFERENCES

- [1] [en.wikipedia.org/wiki/List\\_of\\_Indian\\_states\\_and\\_union\\_terretories\\_by\\_Human\\_Development\\_Index](https://en.wikipedia.org/wiki/List_of_Indian_states_and_union_terretories_by_Human_Development_Index)
- [2] Business standard, September 8, 2022
- [3] ibid
- [4] ibid
- [5] Human Development Index Report 2015.
- [6] HDI trend 1990 to 2017, Human Development Report.
- [7] Report by World Health Organization, 14th June 2019
- [8] Global Health Observatory Data
- [9] Educational status of Tea Plantation women workers in Assam, Dipali Bosumatari and Phanindra Goyari, 2013
- [10] HDI trend 1990 to 2017, Human Development Report.

- [11] Report by World Health Organization, 14th June 2019
- [12] Global Health Observatory Data
- [13] Educational status of Tea Plantation women workers in Assam, Dipali Bosumatari and Phanindra Goyari, 2013
- [14] Rights of women workers in the tea garden of Assam, Nayana Borah, 2013
- [15] Employment status and human development of tea plantation workers in West Bengal, Namrata Thapa, 2012
- [16] Living condition of Tea Garden labour of Sarusarai Tea Garden of Jorhat District, Assam, Sangita Saikia, Supriyo Mishra and Bandita Mishra, 2014
- [17] Status of tea garden labourers in eastern Himalaya: a case of Darjeeling tea industry, Vimal Khawas, 2016
- [18] [en.wikipedia.org/wiki/Dooars-Terai\\_tea\\_gardens](http://en.wikipedia.org/wiki/Dooars-Terai_tea_gardens)
- [19] [en.wikipedia.org/wiki/North\\_Bengal\\_Tea\\_Industry](http://en.wikipedia.org/wiki/North_Bengal_Tea_Industry)
- [20] Ibid(14)
- [21] Living condition of Tea Garden Labours of Sarusarai Tea garden of Jorhat district, Assam, Sangita Saikia, Supriyo Mishra and Bandita Mishra, 2014
- [22] Labour migration in the Tea Plantation: Colonial and Neo-Liberal Trajectories of Plantation Labour in the Dooars tea belt of West Bengal, Swatahsiddha Sarkar, 2019
- [23] Census 2012.
- [24] The Demographic Transition, Warren Thompson, 1929.
- [25] Development Organization WaterAid, March 6, 2015.
- [26] Water AID March 6, 2015
- [27] Report by world health organization, 14th June 2019.
- [28] Sociology of Indian Tea Industry- A case study of inter-ethnic relationship, Khemraj Sharma, 2005
- [29] Health Condition and Health Awareness among Tea Garden Labourers: A case study of Tea Garden in Tinsukia District of Assam, Dukhabandhu Sahoo, Konnaki Konwar and Bimal Kishore Sahoo, 2010
- [30] Namrata Thapa, Employment Status and Human Development of tea plantation workers in West Bengal, Routledge, India. (2012) 82-108
- [31] Khemraj Sharma, Sociology of Indian tea industry (A study of inter-ethnic relationship), Mittal Publication. (2005)
- [32] Vimal Khawas, Status of tea garden labourers in eastern Himalaya: a case of Darjeeling tea industry, Non- ICIMOD Publication. (2006)
- [33] Nayana Borah, Rights of women workers in the tea gardens of Assam, International Multidisciplinary Journal. 2(2) (2013) 128-131
- [34] Swatahsiddha Sarkar, Labour migration in the tea plantations: Colonial and Neo-Liberal Trajectories of Plantation labour in the Dooars tea belt of West Bengal
- [35] Dukhabandhu Sahoo, Konnaki Konwar, Bimal Kishore Sahoo, Health condition and health awareness among tea garden labourers: A case study of tea garden in Tinsukia District of Assam, The IUP journal of Agricultural Economics. 0(4) (2010)
- [36] Dipali Bosumatari, Phanindra Goyari, Educational status of Tea Plantation women workers in Assam- An empirical analysis, Asian Journal of Multidisciplinary studies. 1(3) (2013)
- [37] Sangita Saikia, Supriyo Mishra and Bandita Mishra, Living condition of Tea Garden Labours of Sarusarai Tea garden of Jorhat district, Assam. (2014)
- [38] Census 2012
- [39] Tea Board of India annual reports.
- [40] Human Development Reports.
- [41] World Health Organization Report.
- [42] Global Health Observatory Data Report.
- [43] Report on Development Organization Water AID, March, 2015