



Living Wage Report

Rural Nilgiris

Tamil Nadu, India

Context Provided by Tea Estates

Study Date: July 2018

By: Sandhya Barge, Richard Anker, M.E. Khan and Martha Anker



Photo Courtesy: CORT



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ABBREVIATIONS

BLF	Bought Leaf Factory
CHC	Community Health Centre
CMSPGHS	Chief Minister Solar Powered Green House Scheme
CORT	Centre for Operations Research and Training
EWS	Economically Weaker Section
GDP	Gross Domestic Product
GLV	Green Leafy Vegetables
GLWC	Global Living Wage Coalition
GOI	Government of India
GSDP	Gross State Domestic Product
ICMR	Indian Council of Medical Research
ILO	International Labor Organization
K.G.	Kinder Garten
LIG	Lower Income Group
LPG	Liquid Petroleum Gas
LW	Living wage
MHUPA	Ministry of Housing Urban Poverty Alleviation Program
MoHFW	Ministry of Health and Family Welfare
NAWA	Nilgiris Adivasi Welfare Association
NFHS	National Family Health Survey
NFNH	Non-Food and Non-Housing
NGO	Non-Government Organization
NRHM	National Rural Health Mission
NSS	National Sample Survey
OPD	Out Patient Department
PDS	Public Distribution System
PHC	Primary Health Centre
PLA	Plantations Labour Act
PMAY-G	Pradhan Mantri Awas Yojana – Gramin Scheme
Sq. feet	Square feet
TOI	Times of India
UPASI	United Planters Association of Southern India
UPDS	Universal Public Distribution System
WHO	World Health Organization

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Globally the concept of 'Living Wage' has gained momentum. The concept conceives that a worker receives wages with which a decent life can be sustained. Supporting this, the study was commissioned by Rainforest Alliance as part of the Global Living Wage Coalition (GLWC) series on living wages. The GLWC brings together four standard setting organizations (Fairtrade International, GoodWeave International, Rainforest Alliance, and Social Accountability International) in partnership with ISEAL Alliance and Richard and Martha Anker.

The authors would like to thank Rainforest Alliance as a part of GLWC for giving us an opportunity to explore into the living wages for rural Nilgiris District, with a focus on the tea workers of the area. The support extended by Mr. Neelkant Pandhare, local representative of Rainforest Alliance at each and every step of data collection, greatly facilitated us in conducting the study. Deep insight of tea industry was gained on account of discussions held with key stakeholders like Planters Association members, NGOs, and tea estate management. Our sincere thanks to them for sharing their valuable understanding for the study and giving us the requisite time. Our heartfelt appreciation to management and staff of tea estates who participated in the study. Their wholehearted participation aided us in completing the study. We would also like to acknowledge and thank the tea workers, contractors, builders and community members whose unstinting contribution in sharing information made it possible for us to work on this report.

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Efforts put in by study team members and CORT team members is appreciated. We hope the findings from the report will be useful to all the stakeholders associated with tea industry as it provides revelations especially for tea workers of rural Nilgiris District.

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SECTION I. INTRODUCTION

1. BACKGROUND

This report estimates a living wage for rural Nilgiris District where tea has been cultivated since the middle of nineteenth century. Nilgiris District produces 46 percent of Tamil Nadu's tea and more than 50 percent of Nilgiris tea is exported. The living wage is estimated for rural Nilgiris District, with particular attention paid to the tea industry.

This study uses a methodology developed by Anker and Anker (2017). It is part of a series of studies done for the Global Living Wage Coalition (GLWC) to estimate living wages in developing countries based on an agreed definition and the Anker methodology. Each GLWC living wage study and estimate is made public. Living wage studies were recently completed or are now under way for GLWC using the Anker methodology across nearly 30 developing countries. The present study was undertaken by Centre for Operations Research and Training (CORT), India, a research and consultancy organization.

2. LIVING WAGE ESTIMATE

Our living wage for a worker in rural Nilgiris District is Rs. 11,422/- (\$164) per month. We estimate that this is only approximately between 5% and 13.5% more than the prevailing wage of many tea workers depending on size of their yearend bonus. It may be mentioned that we have used conservative assumptions to estimate living costs for a basic but decent living standard. In estimating food cost, utilization of free and subsidized food from the Public Distribution System (PDS) has been factored in as well as the savings on home cooked meals because of free school lunches.

Our living wage was estimated by first estimating the cost of a basic life style for a worker and her or his family. This involved adding up the cost of food (for a low cost nutritious diet), housing (for basic healthy housing), and other essential needs for a family that includes education of children through secondary school, decent health care, transportation, recreation, clothing, other essential needs, and a small margin for emergencies and unforeseen events. The estimated cost of this basic but decent life style was then defrayed

over the number of full-time equivalent workers per couple expected to provide support based on available secondary labour market data for rural Nilgiris District. Mandatory deductions from pay were then added so that workers earn sufficient take-home pay to afford a basic but decent life-style.

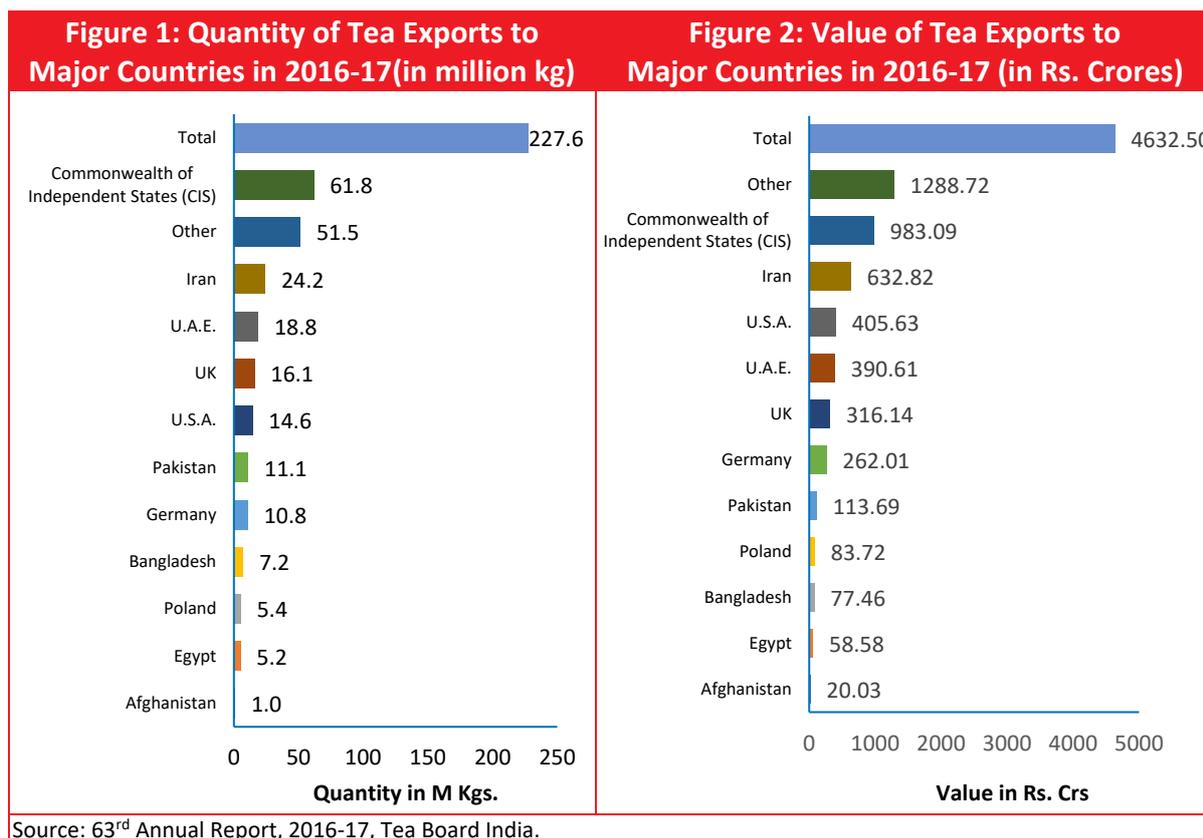
Considerable effort was put into making our living wage estimate. Findings from this report will be useful to key stakeholders like: employers and employer associations, trade unions, government, and standards setting organizations. A variety of data were collected on all essential components of living costs. This included a local market survey of food prices from places where workers purchase their food; interviewing workers and visiting workers' houses to understand housing conditions and the cost of housing and utilities.

Workers were also interviewed to assess the cost of children's education, and both public and private schools were visited to gather information on the costs to families of sending their children to school. Typical health seeking behaviour and costs incurred towards this was explored through discussions with workers. Among the secondary data used were the population census (GOI, 2011), NSS reports (GOI, 2014), nutrition survey report (NIN, 2011), and various other government publications. This included information from Indian Council of Medical Research (ICMR) that helped us to develop a nutritious low cost model diet in order to estimate local food costs; housing statistics from household surveys and censuses that helped us to develop a local healthy housing standard; household expenditure statistics that helped us to estimate non-food and non-housing costs; labor force and household survey statistics that helped us to estimate the number of full-time workers per family; and censuses and household surveys that helped us to determine a reasonable reference family size. Thus, our living wage study used mix methods of quantitative and qualitative approaches and primary and secondary data and triangulated all this information to arrive at a reasonable living wage estimate for rural Nilgiris District.

3. CONTEXT

3.1 Indian tea in world context

Globally, India is the second largest (23 percent) producer of tea in the world following China (43 percent). In 2016-17, a total of 1,250.49 million kg of tea was produced in India (Tea Board 2017). Tea exports were 227.6 million kg (Figure1) with a total value of Rs. 4,632.5 crores (Figure 2) as around 80 percent of tea is domestically consumed. Of the total quantity of tea exported in 2016-17, 77 percent of tea went to 11 countries (Figures 1 and 2).



3.2 Tea production in India

Tea cultivation started in India in the middle of the 19th century during the colonial era. Tea plantations are often very large and self-reliant in that they provide their workers with many in kind benefits such as estate housing, estate schools, estate dispensaries, and places of worship. Large estates with over 400 hectares of land for cultivation and with a labour force of over 800 to 1,000 workers are common, with a typical ratio of about 2-3 workers per hectare.

In 1951, Parliament passed the Plantations Labour Act (PLA) that applied to any land used or intended to be used for growing tea, coffee, rubber, cinchona or cardamom or any other plant which is 5 hectares or more in size and in which 15 or more workers are employed on any day of the preceding 12 months. The Plantations Act was intended to take care of labour welfare and regulate conditions for plantation workers, because the size of plantations and their isolation in 1951 were felt to make provision of many in kind benefits necessary. Subsequently, the Plantations Act has undergone amendments.

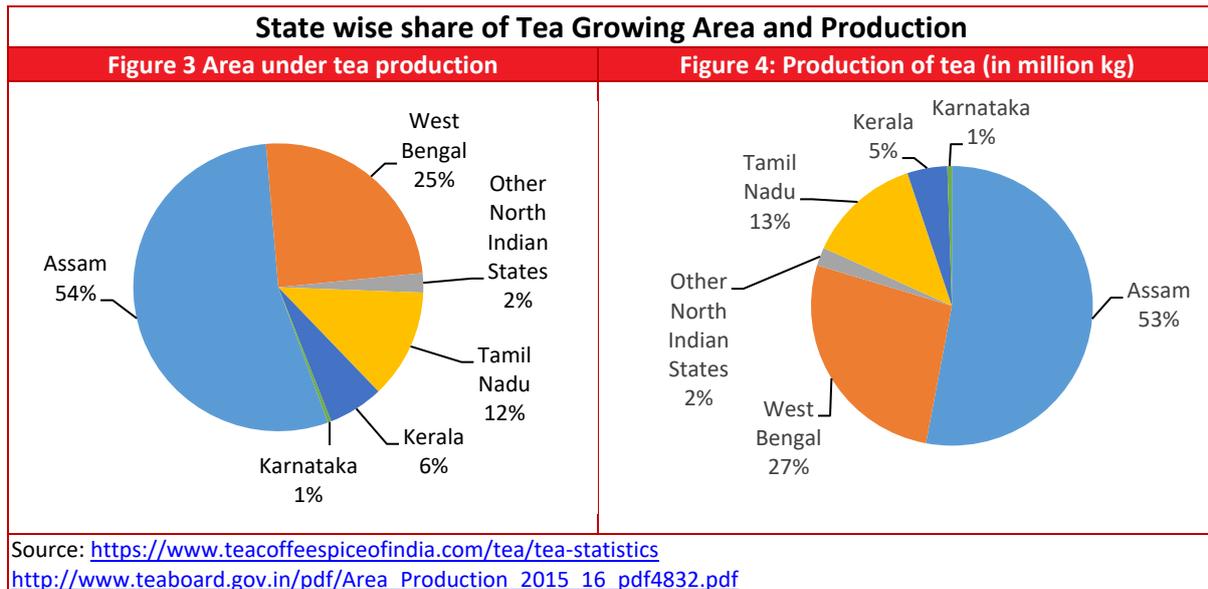
Complying with the Act, planters have to ensure social security and welfare schemes to its workers without contribution from the government and/or the employees. Over time, the effectiveness of social welfare schemes implemented by the plantations has been questioned. The cost incurred has affected production costs and competitiveness in international markets (Viswanathan P.K. and A. Shah, 2013; S. K. Bhowmik 2002; M. Tantri, 2017).

The past decade has seen a decrease in the tea cultivation area (TNN Dec 26, 2017). Corporate tea estates have shrunk by about 3,300 acres in the Nilgiris (about 2% of plantation crop area),

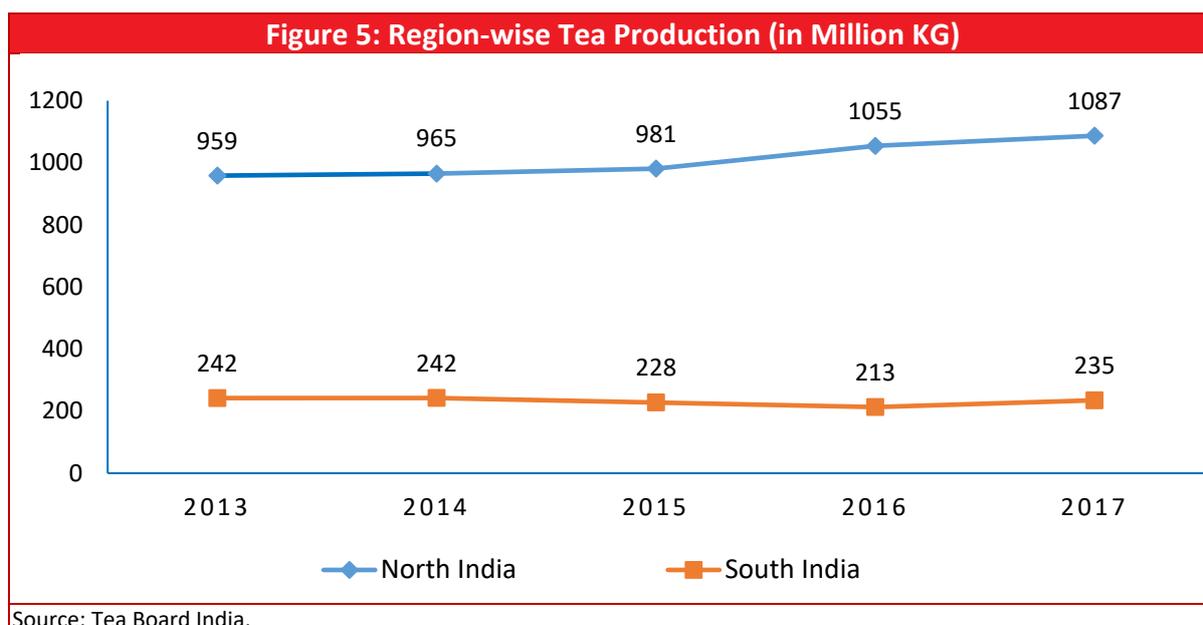
while the small tea gardens have come down by 24,000 acres (around 15% of plantation crop area). Some small tea growers are selling off their gardens to real estate promoters either due to losses or to earn quick money. Tea estates indicated to us that they face difficulty in hiring sufficient number of labourers and they are relying more and more on migrant workers from other states.

3.3 Importance of South India in Indian tea production

Tea is cultivated in 15 states in India with Assam, West Bengal, Tamil Nadu and Kerala being the major tea producing states. They account for 97 percent of total production in India. Figures 3 and 4 indicate the share of tea growing area and production by state.



The tea industry in India is broadly divided in two regions, namely North/Northeast India and South India. In December 2015, production of tea was around 81 percent in North/Northeast India (Assam 54 percent and West Bengal 25 percent), and 19 percent in South India comprised of Tamil Nadu, Kerala and Karnataka (Figure5). However, 39 percent of tea exported from India is from South India (Tea Board of India, 2016-17).



3.4 Tea production in South India and importance of Nilgiris District

Tea production in South India is mainly concentrated in hilly areas. Around 115,000 hectares of land is covered by tea in South India. Tamil Nadu produces around 68 percent of South India tea.¹ Within Tamil Nadu State, most tea production (55,000 of the 65,000 hectares for the state) is in Nilgiris District.

Nilgiris Tea is produced at an elevation from 1,000 to 2,500 meters above sea level. In this area, tea is grown round the year unlike in Assam where it is seasonal. More than 50 percent of Nilgiris tea is exported.

3.4.1. Importance of small tea growers in South India

According to the Tea Board of India, small growers accounted for 54 percent of total tea produced in Tamil Nadu in May 2018 (Table 1). As per Tea Board records, Tamil Nadu had 44,181 small growers as of March 2017.

Table 1: Estimated production in 2018 May (Quantity in million Kgs.)						
Region	2018 (Estimated)			2017		
	Big Growers	Small Growers	Total	Big Growers	Small Growers	Total
Tamil Nadu	6.72	7.73	14.45	6.31	12.51	18.88
South India	12.9	9.12	22.02	11.83	13.35	25.18
All India	56.89	54.93	111.82	62.33	61.18	123.51

Source: Tea Board India.

In India, growers having up to 25 acres (10.12 hectares) of tea are considered as small growers (Chang A. and Brattlof M., 2015). The majority of Nilgiris tea small growers are the *Badagas*, a relatively small local community of agriculturists with their own traditions, cultivating

¹ 65,000 hectares (56.5 %) is in Tamil Nadu, 40,000 hectares (34.8%) is in Kerala, and 10,000 hectares (8.7%) is in Karnataka.

traditional crops such as *samai*, *batha* and *ragi*. Under British influence they cultivated *English vegetables* and later moved on to tea. They were the dominant landholders even prior to when British-owned *tea and coffee plantations* developed.

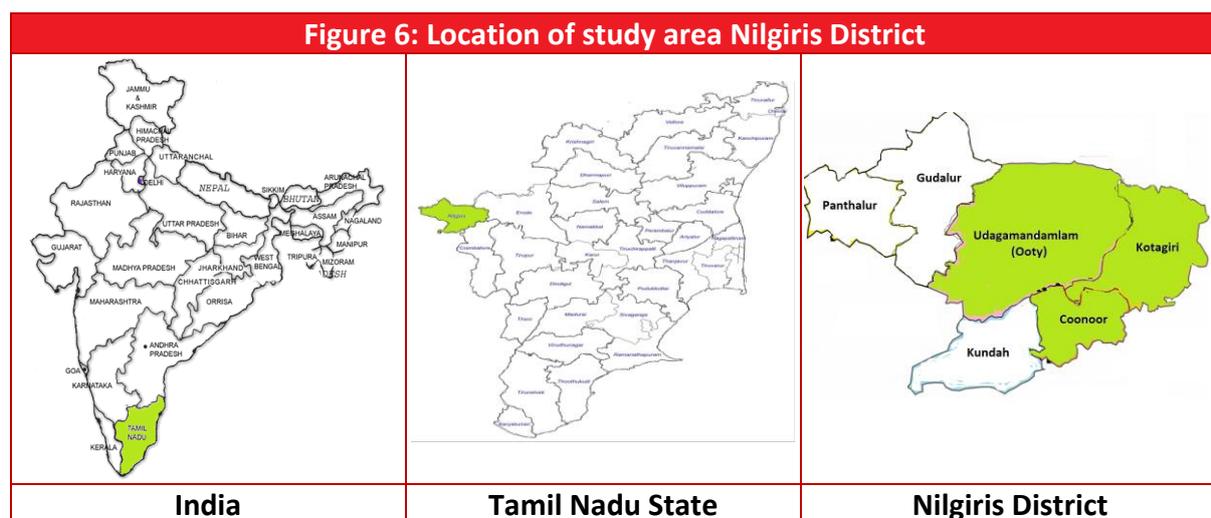
Small growers typically own less than a hectare of land. Green leaves from their land holdings are supplied directly to a “Bought Leaf Factory” (BLF) that are standalone and independent processing factories. There are around 147 BLF (TOI, 2017) in Nilgiris District.² To support small growers in their productivity and quality of tea, Tea Board of India set up a new Small Grower Directorate in 2013.

3.5 Profile of Nilgiris District and study area

The term Nilgiris means “Blue Mountains”. Ooty in Nilgiris District is known as "The Queen of Hill Stations". Nilgiris District is located in the north western part of Tamil Nadu State in Western Ghats (Figure 6) at an elevation of 900 to 2,636 meters above Main Sea Level (MSL). Sixty five percent of the district is above 1,800-2,500 meters. Percent urban is 59 percent. During summers Nilgiris serves as a resort for tourists.

Over one-half (56 percent) of the total area in Nilgiris District is forest. With a rolling and steep topography, 60 percent of cultivable land falls on slopes. Total geographical area is 254,381 hectares. Plantation crops like tea and coffee are the major crops which covers most of the agricultural area. Percentage of cultivated land devoted to tea is 74 percent.

Nilgiris District was selected as our study area, because 85 percent of tea production of Tamil Nadu State is grown in Nilgiris District. The tea estates are situated in rural areas and hence, the living wage estimate for Nilgiris District is applicable to rural areas of Nilgiris District as a whole. For the current study, we visited three large tea estates and one small tea estate who agreed to participate in our study. The tea estates participating in the study were located in Coonoor, Kotagiri, and Udagamandalam block of Nilgiris District, that is, in three out of the six blocks in the district (Figure 6).



² Some small growers also supply their leaves through middleman who serves as a leaf agent. Green leaf from these growers after processing at BLF, the ‘made tea’ is sold via scheduled auctions in Coonoor, Coimbatore and Kochi.

The population of Nilgiris District is 735,071 (2011 census) with a male to female sex ratio of 1041. The population density is 288 persons per square kilometre. Table 2 presents selected indicators for the three southern states of India. All three states have higher literacy, and life expectancy at birth and lower infant mortality rates than India as a whole. Nilgiris District average literacy rate was 86 percent for the total population in 2011 with male and female literacy rates at 92 percent and 79 percent respectively, which is higher than the Tamil Nadu State average³. The District's life expectancy at birth of 77.9 years in 2013-14 is higher than the average of all the three states and India (Tamil Nadu 71 years, Kerala 75 years, Karnataka 69 years, and India 68.3 years).

Table 2: Selected indicators for Tamil Nadu, Kerala, Karnataka and India				
	Tamil Nadu	Kerala	Karnataka	India
Literacy rate (in %) ^a				
Female	73.4	92.1	68.1	64.6
Male	86.8	96.1	82.5	80.9
Total	80.1	94.0	75.4	73.0
Expectation of life at birth (in years) ^b				
Female	73.0	78.2	70.9	70.0
Male	69.1	72.2	67.2	66.9
Total	71.0	75.2	69.0	68.3
Infant Mortality Rate (2014) ^c	20.0	12.0	29.0	39.0
Sources:				
^a Office of Registrar General, India.				
^b http://www.censusindia.gov.in/Vital_Statistics/SRS_Life_Table/SRS_11-15/3.Analysis_2011-15.pdf				
^c Sample Registration System, Office of the Registrar General, India.				

Gross State Domestic Product (GSDP) per capita in 2017-18 at current prices and constant (2011-12) prices in all the three southern states were above all-India average (Table 3).

Table 3: GSDP per capita at current and constant price for 3 states in south India		
State	Current Prices 2017-18	At Constant (2011-12) Prices in 2017-18
Karnataka	205,813	158,176
Kerala	203,093	150,252
Tamil Nadu	190,659	145,597
All India (per capita GDP)	129,901	100,151
Source: Ministry of Statistics and Programme Implementation (http://statisticstimes.com/economy/gdp-capita-of-indian-states.php)		

As regards the percentage of people below the poverty line, Tamil Nadu had the lowest rate (7.05%) compared to Kerala (11.28%) and Karnataka (20.91%). Rates in these three states were also lower than the all-India average at 21.92% (Gol, 2013).

³ Almost similar are the findings from NFHS4 data (2015-16) for Nilgiris District which indicate women's literacy at 85.8% and men at 90.6%. In fact, these figures are higher than the average literacy rate in rural Tamil Nadu (2011) which is 73.5%, with males at 82.0% and females at 64.6%. Study conducted by N. P. Hariharan and S. Siva Kumar among 158 tea workers indicates that 75.3% of respondents are literate and 24.7% are illiterate. Among the male and female workers, about 96 % of male and 71.4 % of female workers are educated. (Source- A study on the economic status of workers in large tea estates with special reference to The Nilgiris District of Tamil Nadu in I J A B E R, Vol. 12, No. 3, (2014): 717-727).

According to Nilgiris District Human Development Report 2017, unpredictable weather and shortage of labour are serious issues confronting the District. Despite the steady influx of migrant labourers from states like Bihar, Odisha, West Bengal, etc., labor availability for tea plantations is an important issue.

4. CONCEPT AND DEFINITION OF LIVING WAGE

The concept behind living wage is that workers and their family should be in a position to lead a life style that is considered decent by society. Moving out of poverty, it will permit them to participate in social and cultural life at the current level of development. Earnings of living wage should be earned in normal working hours without putting in extra hours of overtime work. Definition of a living wage used in this report and accepted by the Global Living Wage Coalition (GLWC) and its members is as follows:

“Remuneration received for a standard work week by a worker in a particular [time and] place sufficient to afford a decent standard of living for the worker and her or his family. Elements of a decent standard of living includes food, water, housing, education, healthcare, transport, clothing and other essential needs including provision for unexpected events.”

5. HOW OUR LIVING WAGE IS ESTIMATED

As discussed in the earlier section, Anker methodology takes into consideration the basic elements of living based on international standards. Figure 7 indicates the elements of a basic standard of living for a family. Individual estimates of cost for a low-cost nutritious diet, basic decent healthy housing, education of children up to secondary school, decent health care and transportation as well as other essential expenses for personal care, clothing, recreation, etc. were summed up. In addition to this total cost, a small marginal cost was added to take care of any unforeseen events like illness/accidents or special occasions like marriage, family function, etc. This ensures that the family has some amount to take care of these events, without entering into any debt and remaining in perpetual poverty. This total cost for a decent quality life was used to estimate the cost for a typical family size in the area.

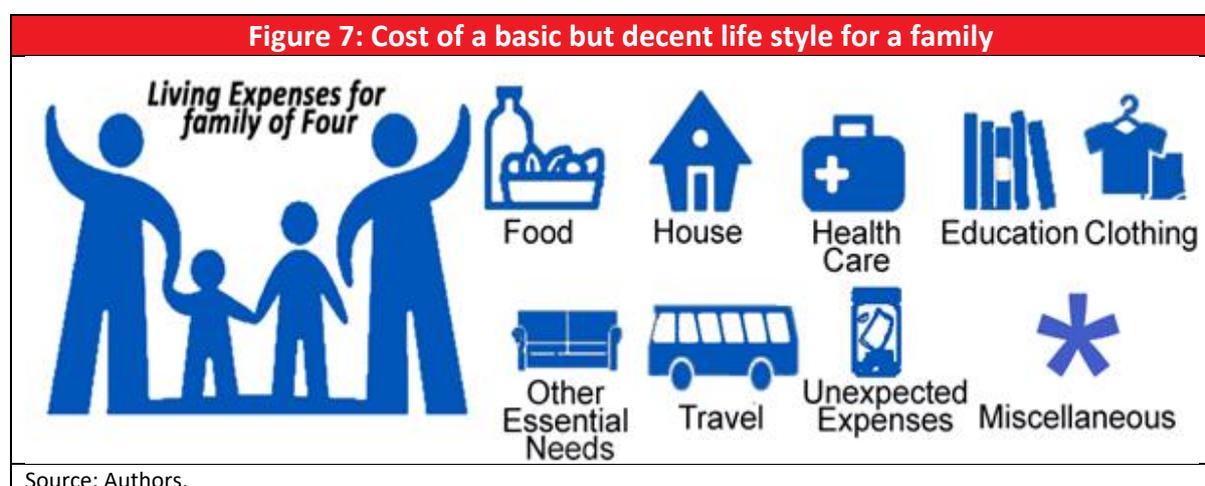
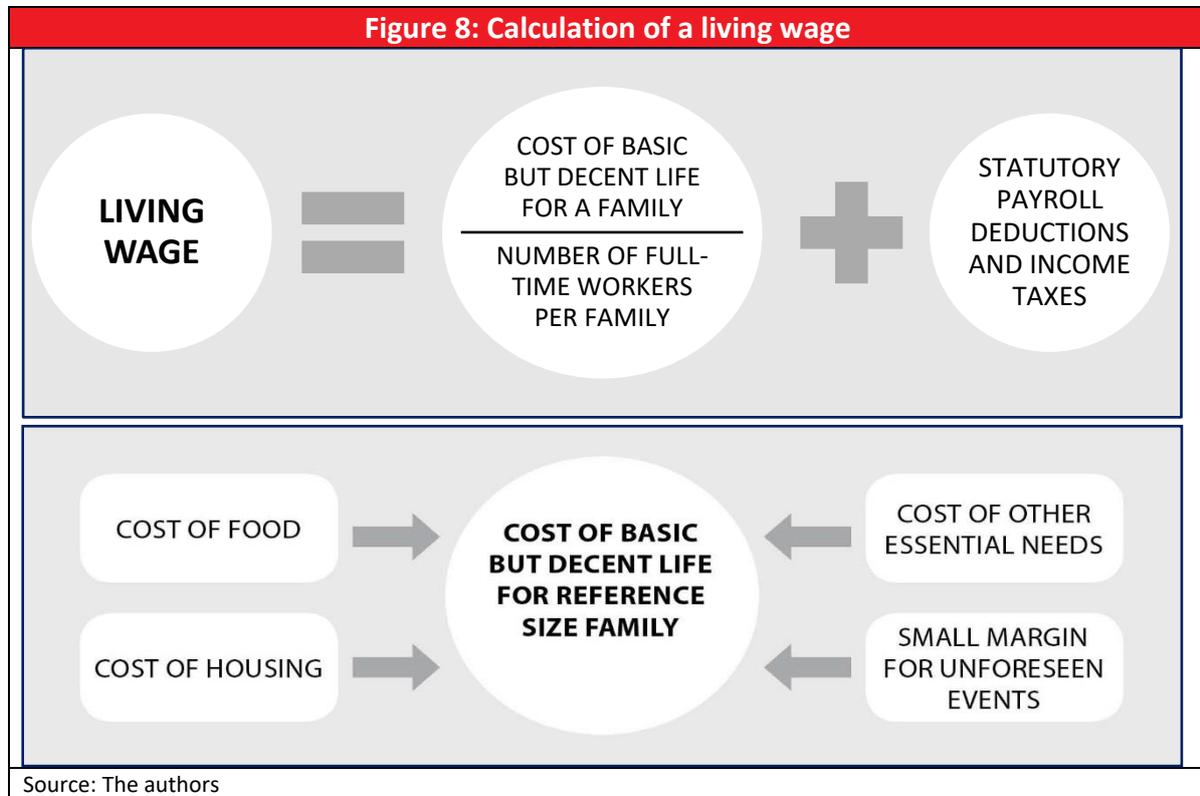


Figure 8 indicates how our living wage was estimated. The cost of a basic but decent life style was defrayed over a typical number of full-time equivalent workers per family in the area. Then, taxes and mandatory deductions from pay were added – so that the worker and his or her family earns enough take home pay to afford a basic but decent living in rural Nilgiris District.



5.1 Data Collection Methodology

Three large tea estates with 700-1,100 tea workers and one small tea estate (less than 10 hectares) were visited. Tea estates surveyed were all privately owned and probably certified by certifying bodies. The Anker living wage methodology did require detail discussions with estate management usually more than once or visits around the tea gardens to interact with tea workers and observe the amenities available. Hence, while willingness from the tea estate to give time and cooperation in giving the details was important, it was not essential. Primary data pertaining to local food prices, local housing costs, health care costs, education costs and other reasonable costs were collected around these estates. A combination of approaches was used to collect the primary data during June – July 2018. Following the analysis of data, this area was visited again to re-confirm the findings. Briefly the following steps were undertaken:

- Contacts and meetings were held with key tea stakeholders. This included United Planters Association of Southern India (UPASI), member of Tea Board, Nilgiris Planters Association, Nilgiris Adivasi Welfare Association (NAWA), and NGOs.
- Visits were made to three large tea estates and one small tea estate. In each of these estates, discussions were held with management including officials in-charge and finance personnel. Depending on the readiness of the estate management, site visits

to crèches, tea garden, hospital/clinics, tea workers houses, schools, anganwadi centres and shops were made.

- In-depth interviews were held with around 51 tea workers. This included 8 migrant tea workers who belonged to states other than Tamil Nadu. A semi-structured tool was used to interview workers. To interview workers, two local research assistants were hired and trained. From each tea estate beside the managing director, 10 or more tea workers were selected and interviewed in-depth. The interview of the workers helped in understanding their food habits, types of food products they usually purchased, frequency of food taken, housing information including rent and cost of utilities, and information on education and health care. This information also helped in planning the local food, housing and market surveys and the analysis of available secondary data such as survey and census data.
- In the large tea estates, visits were made to 37 residences of tea workers. This included five supervisor's residence. In addition, visits were also made to 11 residences of tea workers who were staying outside the large tea estate. The purpose of these visits was to observe housing and living conditions including measurement of room size, number of people living there, toilet and kitchen facilities, amenities available, material used for constructing the building/structure, and condition of the building. Besides, observation was also made on the locations where they lived, hygienic condition and accessibility to essential community amenities like road, electricity and portable water facilities.
- We also visited 7 decent houses that met with our decent living house standard. They were all located outside the premises of large tea estate, either within a village or in outskirts closer to main road or in small towns.
- Cost of construction of house was collected from the house owners. Discussions were also held with builders/contractors regarding the cost of construction of houses especially in the rural areas.
- Based on the responses from tea workers, markets where they most frequently shopped were visited.
 - The markets visited in towns were in the vicinity of the main bus stand (where buses from other towns/village drop/pick up passengers). People coming from rural areas usually walk to these markets to purchase foods. Shops in the markets are independent standalone shops either for grocery, vegetables, fruits, etc. Vegetables/fruits are both sold in shops as well as by vendors, hence all vegetables/fruits might not be available in the same shop.
 - Shops located in villages/around tea estate were also visited. Unlike to the shops in towns, these shops sold most of the food products as well as essential household items (e.g. grocery, vegetables, fruits, milk, snacks, soap, broom, etc.), except for non-vegetarian food items. Given the remote and distant location of tea estates, these shops met with the essential workers requirements.
 - Shops if located on tea estate were also visited.

- Discussions on health care issues was done with providers by visiting health clinics located in the large tea estates, government hospital (Primary Health Centre and Community Health Centre), two private practitioners, and four medical shops.
- Discussions on education issues were done with stakeholders in large tea estates and tea workers. Two private schools and three government schools were visited that were located both within tea estates as well as outside estates and children of tea workers were enrolled.

To complement the above findings and information, an extensive review of available literature and statistics related to household expenditures, demographic situation, labor force and labor market behaviour, housing conditions, and tea industry was done and used in this report.

It may be pointed out that the collection of information discussed above does not involve typical sample size coverage in the traditional sense as is required for household or enterprise surveys. The reason is that the Anker methodology, which is used to estimate the living wage for Nilgiris District, is not based on primary data collected in a new household survey, worker survey, or enterprise survey. Rather, the Anker methodology sets local decency standards for food and nutrition, healthy housing, adequate health care, acceptable children's education through secondary school for a typical family in rural Nilgiris District – and then determines how much each of these cost in rural Nilgiris District by visiting local food markets, houses, schools, and health clinics. The methodology also draws upon the available household expenditure data to help estimate the cost of all other costs that families have as well as adds some additional funds for emergencies.

SECTION II. COST OF A BASIC BUT DECENT LIFE FOR A WORKER AND THEIR FAMILY

6. FOOD COST

Food cost for a living wage for tea workers in Nilgiris District was estimated using local food prices and a low-cost nutritious model diet for a typical family of 4 persons (2 adults and 2 children).

6.1 General principles of our model diet

The following general principles were used to estimate cost of food for our living wage for Nilgiris District. The model diet needed to be:

1. Nutritious: (i.e. have sufficient calories as well as acceptable quantities of proteins, fats, carbohydrates, and fruits and vegetables) to help ensure that workers and their families have enough to eat and can be healthy.
2. Relatively low in cost yet a nutritious diet: This approach mimics how cost-conscious workers shop for food while maintaining nutritional standards.
3. Consistent with development level: For this reason, the model diet includes relatively low percentage of calories from proteins because proteins are expensive per calorie. At the same time, percent of calories from proteins meets WHO/FAO minimum requirements.
4. Consistent with local food preferences both in terms of local food availability and local food prices. This at times means that the choice of specific food items included in the model diet to represent each major food group is not always the least expensive food items in the major group.

6.2 Model diet

Our model diet has 2472 calories. This was determined using: (i) WHO recommended equations on calorie needs, (ii) average height of adults in Nilgiris, (iii) size and composition of the reference family (2 adults and 2 children), and (iv) physical activity level of family members. Given the nature of work on tea estates, we assumed that tea workers are engaged in non-mechanized estate work and so vigorous activity; we assumed that the worker's spouse is doing vigorous physical activity; and we assumed that children are doing moderate physical activity.

We then developed a model diet with 2472 calories by starting with the distribution of the number of grams of food consumption by major food group according to the NSS-558 report (GOI, 2014).

In the next step, we adjusted these quantities so that our model diet met WHO recommendations for number of calories, and macronutrients (proteins, fats, and carbohydrates), and quantities of fruits and vegetables to ensure sufficient micronutrients and minerals. Percentages of calories in our model diet were 10.7% from proteins, 22.8 % from fats, and 66.5 % from carbohydrates. The 325 edible grams of pulses, fruits and

vegetables included in the model diet helps to provide sufficient proteins and a variety of micronutrients and minerals.

Third, we adjusted this nutritious diet so that it was low in cost for a nutritious model diet by taking into consideration relative food prices. To keep the living wage model diet at lower cost, less costly food items were included for each food group taking care to ensure that the model diet provides the required balanced nutrition to the family. However, in certain cases when local food preferences are very strong, a preferred food variety was taken in place of a lower cost variety. For example, among different types of lentils, *Tur dal* and *Urad dal* are used by a majority of even poor workers in Nilgiris. The lower cost and most commonly used rice variety was selected. In this way, while food costs were kept to a minimum, local food habits were not neglected.

Fourth, we took into consideration utilization of Tamil Nadu's Public Distribution System (PDS).

Finally, we checked that the distribution of food costs in our model diet was not very different from the distribution of food expenditures according to the NSS-558 report (GOI 2014) or that differences were consistent with having a nutritious model diet. As expected, percentage of food expenditures for dairy products and eggs were higher in our model diet compared to those for actual food consumption, while expenditures for other food groups were fairly similar in our model diet and in actual expenditures according to NSS data.

Our model diet, shown in table 4, includes:

- 343 grams of rice per day. The quantity of rice is high, because it is the core food item in Nilgiris diet. It is consumed in all the meals including breakfast in the form of *Idili/Dosa*. Rice provides 50% of all calories in our model diet.
- Chicken is included in at least one non-vegetarian meal per week. In Nilgiris where adults do not consume as much dairy products as in other parts of India, chicken nutritionally contributes to providing high quality protein. Furthermore, consumption of chicken is consistent with local food habits in Nilgiris District. It is typical for workers to have non-vegetarian meals on weekends.
- One egg or egg omelet every day.
- 56 grams of pulses per day. Pulses (*Tur dal*) are traditionally prepared in a liquid form and generally consumed often thrice daily in breakfast, lunch and dinner. *Urad Dal* is used in preparation of *Idili/ Dosa* which is also consumed daily in breakfast.
- 1 cup of milk (240 ml) per day for children. Despite its cost, milk is needed for its nutrients required for a growing child. Also, one cup of milk is included for adults to add to their two cups of tea per day.
- 22 edible grams of potatoes per day. Potato is commonly included with vegetables in curries because of its easy availability and low cost.
- 325 grams of vegetables, fruits and pulses per day. Three common and inexpensive vegetables are included in addition to onion. Onion is included in the model diet, even

though it is not among the cheapest vegetables, because onion is used in cooking for all meals.

- One fruit per day, namely banana, is included as it is most commonly available around the year fruit.
- 20 grams of coconut per day is included, because it is common to use coconut in Tamil Nadu cooking.
- 22 grams of sugar per day (approximately 5 teaspoons).
- 26 grams of cooking oil per day (approximately 2 tablespoons).
- 2 cups of tea for adults as tea is moderately consumed in Nilgiris.
- 4% is added to food cost for spices, salt, condiments and sauces. This percentage is high for the world, but it is consistent with how food is prepared in Tamil Nadu. According to NSS-558 urban household income and expenditure survey data, spices including onion constitute 6% of food expenditure.

Table 4: Model diet and food cost per person per day using food prices observed in markets of Nilgiris District, June – July, 2018				
Food items ^c	Grams edible ^{a, b, g} (1)	Market cost (in Rs.) per kg ^e (2)	Cost per person per day ^f (3) = (1)x(2)	Comments (Diet is for average person in family of 4. Portions for adults are bigger than for children) ^h
Rice	343	45.0	6.56	Rice provides 50% of all calories. Rice is main part of Nilgiris diet and consumed in one form or the other as the main dish in all meals. Rice is available from PDS shops wherein 24 kg. is available for free every month. Additional rice required beyond 24 kg by family is purchased from market. Both the market and PDS prices have been taken into consideration.
Wheat (ata)	40	37.5	0.90	Consumed around once/twice in a week. Two kg per month is available from PDS for free. Both the market and PDS prices have been taken into consideration
Potato	22	40.0	1.17	Potato is least expensive root and tuber. Regularly used in curries and as stuffing for <i>Dosa</i> .
Tur dal	32	79.0	2.14	This pulse is strongly preferred and eaten daily in almost all meals. Each month, one kg is available and purchased from PDS at a subsidized rate (Rs. 30 per kg). Additional required amount is purchased from market at market rate of Rs. 79.0/- per kg. Cost per person per day is Rs. 1.90/- from market and Rs. 0.24/- from PDS.

Table 4: Model diet and food cost per person per day using food prices observed in markets of Nilgiris District, June – July, 2018				
Food items ^c	Grams edible ^{a, b, g} (1)	Market cost (in Rs.) per kg ^e (2)	Cost per person per day ^f (3) = (1)×(2)	Comments (Diet is for average person in family of 4. Portions for adults are bigger than for children) ^h
Urad dal	24	93.5	2.24	Not the least expensive pulse but included in model diet as it is strongly preferred and eaten even by the poor and used in the local preparation of <i>Idili/ Dosa</i> .
Milk	240	46.0	11.04	Fresh milk used. One cup (240ml) per day for children. For adults, one cup per day to add to tea.
Egg	44	100.0	5.00	1 egg per day. Egg is less expensive per protein than chicken or milk.
Chicken	36	188.00	1.07	Usually at least on Sunday.
Vegetable 1 (least expensive GLV)	55	40	2.81	Green leafy vegetables (GLV) Includes drumstick leaves, beetroot leaf, and tomato leaf. Currently, GLV are not consumed daily by tea workers because they are not widely available in local shops, as they are perishable items, and local shops do not get their supplies daily from the town markets. Prices of these vegetables was taken from shops/vendors in the town markets where they were available.
Vegetable 2 (2 nd least expensive non-GLV)	55	40.00	2.74	Eggplant is least expensive and most commonly used non-GLV. Besides its use as vegetable, it is also used in <i>sambhar</i> (dal) which is consumed more than once in a day.
Vegetable 3 (least expensive non-GLV)	55	25.00	1.52	Tomato is another relatively inexpensive and commonly used non-GLV.
Onion (vegetable cum spice)	55	25.00	1.54	Onion, a spice cum vegetable, is essential part of food preparation both in vegetables as well as <i>Sambhar</i> (dal).
Coconut	20	64.42	2.48	Commonly used in diet daily along with other food preparations as well as on its own, especially as <i>Chutney</i> (Sauce) with <i>Idili/Dosa</i> .
Fruits (banana)	55	52.50	4.54	Banana is least expensive fruit available year around year.
Cooking oil	26	90.00	2.34	Approximately 2 tablespoons per day. One liter of oil is available each month from PDS at subsidized price (Rs. 25/- per kg). Additional amount required is purchased from market. Both the market and PDS prices have been taken into consideration.
Tea	2	165.00	0.33	Packet tea is used. 2 cups of tea per day for adults.

Table 4: Model diet and food cost per person per day using food prices observed in markets of Nilgiris District, June – July, 2018				
Food items ^c	Grams edible ^{a, b, g} (1)	Market cost (in Rs.) per kg ^e (2)	Cost per person per day ^f (3) = (1)x(2)	Comments (Diet is for average person in family of 4. Portions for adults are bigger than for children) ^h
Sugar	22	40.00	0.88	Roughly 7 teaspoons per day. Two kg of sugar at subsidized price (Rs. 25/- per kg) is available each month from PDS for a family. Loose sugar is used (as less expensive than packaged sugar). Both the market and PDS prices have been taken into consideration.
Total of aboveⁱ			58.70 (\$0.88)	
Total (including miscellaneous costs) ^{d, i}			69.85 (\$1.05)	
Total (reduced by value of free school lunch) ^{k, i}			66.68 (\$1.00)	

Notes: pd indicates per day. pw indicates per week. GLV indicates green leafy in vegetable. ^a Edible (consumed) quantity differs from purchased quantity for foods with inedible parts such as fruits and vegetables with inedible skin or stem; chicken with bone; and egg with shell. Percentage edible is drawn from USDA-NAL database ^b Number of calories, proteins and fats are estimated using USDA NAL databases for nutritional values per 100 grams for each food item. ^c Specific food items used to cost our model diet are foods that are lower in cost for each major food group except for pulses. ^d Additional miscellaneous food costs are 19%. This consists of: (i) 4% for salt, spices, sauces and condiments not listed in our model diet (with soft drinks, cakes and sweets excluded); this percentage is similar to the 6% (that includes onion) of urban household income and expenditure according to NSS-558 report; (ii) plus 11% to allow for some variety (e.g. more meat sometimes; more expensive varieties of rice, vegetables and fruits sometimes; holiday meals sometimes; etc.); (iii) plus 4% for minimal waste and spoilage. ^e Cost per kilo is based on prices observed in local food markets where workers shop. ^f Cost for each food item was calculated by multiplying quantity purchased by cost per kg. ^g In addition to having a sufficient number of calories (2472), our model diet meets WHO recommendations for proteins (10-15% of all calories), fats (15-30% of all calories), and carbohydrates (less than 75% of all calories). 10.7% of calories in the model diet are from proteins, 22.8% are from fats and oils, and 66.5% are from carbohydrates. ^h Calories required by adult males, adult females and children were calculated using Schofield equations recommended by WHO/FAO. Then, average number of calories required per person for our reference family of 4 was calculated which turned out to be 2472. ⁱ Exchange rate used to convert Rs. to USD was Rs. 68.44 as found when food price data were collected. ^k Free school lunch means that fewer meals need to be prepared at home. This reduces the cost of home prepared meals.

Table 4 indicates food cost per person per day for our model diet. Nineteen percent is added to this cost for additional miscellaneous food costs. These costs cover salt, spices and condiments (4 percent), wasted and/or spoiled food (4 percent), and ensuring a minimum variety of food items (11 percent) (see Anker and Anker, 2017).

Cost of our model diet for a family of four people came to Rs. 69.85 per person per day as shown in table 4. However, children attending school receive a free meal (for 220 school days a year). These free meals provided by schools reduce the number of meals that need to be prepared at home and therefore food costs for families. Assuming that lunch accounts for 40 percent of daily food costs and that children eat less than adults as according to WHO equations, we used the following formula, as recommended by Anker & Anker (2017), and an

Excel program developed by Anker and Anker (2017) to calculate the cost of meals not needing to be prepared at home by age of the child:

Value per day of home cooked meals for family not needing to be prepared because of free school lunches = Number of children in family × value per day of a lunch for children not prepared at home × (220 school days per year/365 days per year) × (10 years that children have free school lunch / 18 years of childhood)

In Nilgiris District, free meals are provided in school to students from standards I-X. Free midday meals has been introduced in Tamil Nadu since 1982. Since 2014, they provide 13 kinds of variety menu in all districts. Calories, food items, etc. has all been fixed. In other words, for children aged 5 to 14 years. Our estimate is that the replacement value of the free lunch to families is Rs. 6.34/- per meal on average per child. By applying the above formula (which indicates amount saved by the family because children are not eating lunch at home on school days), this comes to Rs. 12.69/- per day for two children on average (when defrayed over all 18 years of childhood, and when the proportion of school days during the year are considered). This means that the avoided cost per person for the family of 4 is on average Rs. 3.17/- per day (i.e. Rs. 12.69/- divided by 4 persons in the family). This amount is subtracted from food costs per person per day indicated by our model diet in Table 4. After this is done, food cost per person per day comes to Rs. 66.68/-. The final step is to calculate monthly food costs for a family of four, which works out to be Rs. 8,113/- (Rs. 66.68/- per person per day × 4 persons in family × 30.42 days per month).

6.3 Food prices

To estimate the cost of our model diet, the research team collected food prices from places where workers typically shop. Tea workers live on large tea estates or outside the estate in nearby rural areas. Given the terrain and the remoteness of the residence, some large tea estates have a provision/PDS shop within their estate premises, which can be accessed and used only by estate workers. For many purchases, however, tea workers have to go outside estate premises. Outside the tea estates boundary at strategic points such as bus stops or village/houses if located, small markets or shops are available which stock most household provisions including vegetables/fruits. In addition, tea workers go to the nearest town markets for purchases mainly on weekends, using public transport. In these nearby towns, markets are located close to the main bus stand. These markets have separate clusters of shops that sell groceries, vegetables, fruits, pharmaceuticals, etc. Occasionally, vendors also sit on the roadsides selling limited items. Based on our survey of the markets commonly used by tea workers, the following table indicates the availability of essential food items that are regularly used by the workers. An 'x' in table 5 indicates availability of a food item.

Table 5: Venues where workers buy different foods					
Food group	Specific foods	Public Distribution Shop (PDS) availability	Grocery store within estate	Grocery store outside the estate in nearby village	Shops in nearby town in market near bus stand
Cereals/Grains	Rice/wheat	x	x	x	x
Root or tuber	Potato		x	x	x
Pulses	Lentils	x	x	x	x
Dairy	Milk		x	x	x
Eggs	Egg		x	x	x
Meats	Chicken			x	x
Fruits & vegetables			x	x	x
Sugar		x	x	x	x
Oil		x	x	x	x
Tea		x	x	x	x
Comments on food shopping pattern		In one large estate visited, PDS shop was within the estate, while in other estates visited it was outside estate boundaries in a nearby village.	Grocery store located within estate premises for only one large estate that we visited.	Usually located along roadside outside estate such as at a bus stop. Unlike stores in towns, these shops stock everything, including groceries, vegetables, fruits, curd, bread, snacks, etc.	Located in towns around main bus stand. Shops were often standalone shops (i.e. vegetables only, fruit only, etc.)

The median price across marketplaces for each individual food item is considered as the market price which we use to determine the cost of our model diet. In determining the price from a market for each shop that sold a variety of different qualities or quantities of a food item (e.g. different types of rice), we considered the least expensive acceptable variety for each food item sold as the representative price for that food item for that shop. We then took the average of the representative prices of that particular food item across shops in a market as the market representative price of that food item. For a market with many vendors (rather than shops), we averaged the price of each item over several vendors to get the representative price for the market. Then we took the median price for each food item over all markets.

6.4 Public Distribution Shops (PDS)

Discussions with tea workers indicated that they regularly get food from PDS shops.⁴ Locally, these shops are also known as fair price shops and ration shops. In Tamil Nadu, wheat, rice, dal, oil, and sugar along with other essential commodities are sold through these shops at a price lower than in the market.

⁴ Government of India, established Public Distribution Shops in June 1947 to distribute subsidized food and non-food items to India's poor under the Ministry of Consumer Affairs, Food and Public Distribution.

To avail the benefits of the Public Distribution System (PDS), a family should have a ration card which basically serves as an identity card indicating that the family is a resident of a particular state. Through the joint assistance of both central and state government, PDS shops are operational throughout India. In Tamil Nadu, the state government is implementing a Universal Public Distribution System (UPDS) and no exclusion is made based on income criterion of family; it is available to all card holders. PDS shops in Tamil Nadu were further made friendly by the state's then Chief Minister by providing rice free of cost to all eligible card holders since 1st June 2011.

PDS shops are open every day from 9:00 a.m. to 6:00 PM, with a one-hour break for lunch, except on Friday which is the weekly holiday. Each month, a family having a ration card is eligible for 24 kg of rice and 2 kg of wheat free of cost, as well as 2 kg of sugar at Rs. 25 per kg, 1 kg of Tur dal at Rs. 30 per kg, and 1 kg of cooking oil at Rs. 25 per kg.

Considering the quantity of food which a family is eligible for monthly from PDS and the number of grams required as per our model diet, we considered both the subsidized prices at PDS and market prices. Thus, the extra amount of food required above what is available from PDS shops used prices from our market survey as discussed above to calculate the cost per person per day of our model diet.

It may be mentioned that on account of availability and utilization of PDS food items either at a subsidized rate or for free, amount saved per person per day based on our model diet is Rs. 12.50. For a family of 4 members it is Rs. 1521 per month.

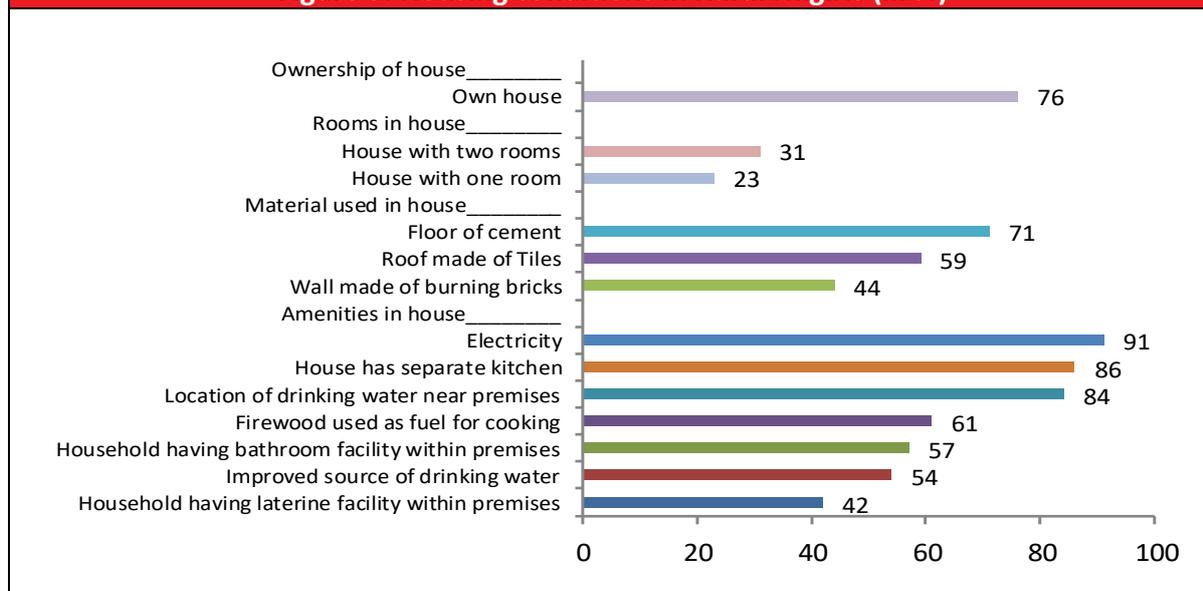
7. HOUSING

7.1 Local standard for basic acceptable housing

Housing is one of the three traditional basic needs of humanity (food, housing, and clothing). Healthy housing is included in the International Covenant on Economic and Social Rights, ILO Recommendation No. 115 Concerning Workers' Housing, and WHO Principles of Healthy Housing, as well as in the UN-HABITAT definition of urban slum housing. For this reason, housing costs in this report are determined separately from other living costs based on what it costs for basic healthy house in rural Nilgiris. Healthy housing requires adequate space, safe water and sanitation, durable structure that protects against the elements, condition of the material used must be in good condition, and adequate lighting and ventilation.

7.2 Current housing conditions in rural Nilgiris District

Based on the 2011 Census of India, Figure 9 and Table 6 indicate housing conditions in rural Nilgiris District. Housing conditions are generally good. Around three-quarters (76 percent) of the houses were owned houses, with only 13 percent rented houses. Slightly less than half of dwellings had three or more rooms (46 percent). Floors were cement in 71 percent of houses, and 59 percent of houses had a roof made of tiles. Walls were often made of burnt brick or cement (52 percent).

Figure 9: Housing conditions in Rural Nilgiris (in %)

Table 6: Housing conditions and materials used in rural and urban Nilgiris District (in %)

Particulars	Total	Urban	Rural
Condition of households			
Good	62.4	61.7	63.3
Liveable	35.6	36.4	34.6
Dilapidated	2.0	1.9	2.1
Material of Roof			
Machine made Tiles	44.0	40.5	48.9
Concrete	22.7	24.2	20.8
G.I./Metal/Asbestos sheets	18.2	20.5	15.2
Handmade Tiles	10.5	10.6	10.4
Others (Grass/Thatch/Bamboo/Wood/Mud etc.)	4.4	4.3	4.8
Material of Wall			
Burnt brick	43.7	43.8	43.6
Mud/Unburnt brick	27.3	29.1	24.9
Stone packed with mortar	13.5	12.5	14.8
Concrete	7.8	7.5	8.3
Stone not packed with mortar	4.7	4.2	5.2
Others (Grass/ Thatch/ Bamboo, etc., Plastic/ Polythene, Wood, G.I./Metal/Asbestos sheets)	3.0	2.9	3.2
Material of Floor			
Cement	69.2	67.9	70.9
Mud	20.9	20.1	22
Mosaic/ Floor tiles	8.1	10.1	5.5
Others (Wood, bamboo, burnt brick, stone)	1.8	1.9	1.5
Number of Dwelling Rooms			
One room	21.8	21.3	22.5
Two rooms	31.1	31.2	30.9
Three rooms	22.6	24.3	20.3
Four rooms and above	23.3	21.9	25.2

Source: 2011 Census of India, Directorate of Census

As regards basic amenities (Table 7), the main source of drinking water was treated tap water in over half (54 percent) of the households, with 93 percent of drinking water located within or near the premises. Electricity was the main source of lighting for almost all households (91

percent). Availability of toilet facility within the households was 42 percent. Firewood was used as cooking fuel in majority of the houses (61 percent). Cooking was largely done inside the house (93 percent) with a separate kitchen available in 86 percent of houses. Most houses were permanent structures (72 percent) with 63 percent of houses in good condition.

Table 7: Amenities available in households of rural and urban Nilgiris District (in %)

Particulars	Total	Urban	Rural
Main Source of Drinking Water			
Tap water from treated source	60.1	64.3	54.3
Tap water from un-treated source	18.9	14.7	24.6
Covered/Un-covered well	14.3	14.1	14.7
Others (Handpump/Tubewell/Borehole/Spring/River/Canal/Tank/Pond/Lake)	6.7	6.8	6.4
Location of drinking water source			
Near premises	70.8	61.1	84.0
Within premises	21.4	30.6	8.9
Away	7.7	8.3	7.1
Main Source of lighting			
Electricity	90.6	90.5	90.7
Kerosene	8.7	8.9	8.5
Others	0.4	0.4	0.4
No lighting	0.3	0.3	0.4
% of households having Toilet facility			
Within the premises	51.9	58.9	42.3
Not within the premises	48.1	41.1	57.7
Source: 2011 Census of India, Directorate of Census: www.censusindia.gov.in/2011census/hlo/hlo_table_Tamil_Nadu.html			

7.3 Living wage living space standard

To get an idea about the living space available in houses, we gathered information on minimum living space for: (i) tea estate houses according to Plantations Act; (ii) poor and low-income families in Tamil Nadu government housing programs, and (iii) government programs for low-income families in other lower middle income countries such as India.

As per the Plantations Labour Act (PLA) 1951, employers have to provide and maintain housing accommodation in the plantation for every worker and his or her family. Workers residing outside the plantation, after completing six months of continuous service in the tea estate, can express a desire in writing to reside on the plantation and as per the PLA 1951 the worker has to be accommodated.

The Plantations Act allows the State Government to set the standard and specification of the accommodation to be provided, selection and preparation of sites for the construction of houses, size of such plot, etc. Government of Tamil Nadu, under the Tamil Nadu Plantation Labour Rules (1955) set the standards and specification of houses for plantation workers.

These standards were last revised in 1991 including in terms of size (Box 1).

Box 1
Labour and Employment Department G.O.(D)No.79 Dated: 01-04-1991
Minimum standard laid down

Each unit shall have:

- A living room not less than 78 sq. ft. (8' x 9'.9") with a loft
- A Passage 9 sq. ft. (3' x 3.3)
- A Bedroom 100 sq. ft. (10' x 10')
- Veranda 32 sq. ft. (8' x 4')
- Kitchen 43.5 sq. ft. (6' x 7'.3") with a loft
- Bathroom 14 sq. ft. (4' x 3'.6") with ventilator
- Washout latrine (W/L) 10.5 sq. ft. (3' x 3'.6") with ventilator (2'.6" x 1'.8")
- 3 windows one each for bedroom and living room in 3' x 4' and one for kitchen 2'.6" x 4'
- 3 doors, each one to living room, bedroom and kitchen in 3' x 6'.6"
- 2 sky lights (glass tiles or any other type) for allowing light into the living room
- Flooring of the quarter shall be of cement
- The minimum height of room shall be 9'.3"
- The existing area wise practice in roofing shall be followed
- Two build-in open cup-boards one in the living room and the other in the kitchen
- Two smoke tiles in the roof of the kitchen
- Proper drainage shall be made to keep the area in properly drained condition by constructing pucca drains. The silage water shall be drained to a distance of at least 50 feet from the lines.
- Latrines: Each house would have attached latrine
- Water supply: At least one tap for each line of 8 houses shall be provided. The tap should not be at a distance of more than 200 feet from the lines. If wells are provided, the water from these shall be certified as fit for human consumption by the health authorities.

Housing size standards used by the Tamil Nadu government for poor households and low-income households are shown in Table 8. Around 300 square feet is the standard for the government 2011 'Solar Powered Green House Scheme' for the poor in rural areas. (https://www.tnrd.gov.in/schemes/st_cmspghs.php). The Pradhan Mantri Awas Yojana – Gramin (PMAY-G) scheme has a minimum of 25 square meters (269 square feet), with attached toilet, built of material that can withstand the natural climatic condition and minimum maintenance for 30 years. The Ministry of Housing Urban Poverty Alleviation Program (MHUPA) uses 300 square feet for the poor (EWS) and around 500 square feet for low-income (LIG) households.

Plantation housing units must be at least approximately 287 sq. ft. carpeted area including outside veranda, bathroom, and washout latrine (Labour and Employment Department, Tamil Nadu G.G. No. 79, 1991). The term carpet area refers to the available floor area within the house that can actually be covered by a carpet. Besides specifications of the size of the rooms and the basic amenities, the order also mentions that the revised 1991 specifications would apply to new houses that would be constructed in future.

A review of literature on living space standards of governments for lower-income households in developing countries in Anker and Anker (2017) found that less than 30 square meters (323

square feet) is unusual. According to this review, around 30 square meters is a typical norm for low income households in low-income countries, and 36-60 square meters is a typical norm for middle-income countries with 36-48 square meters typical for lower-middle income countries and 40-60 square meter typical for upper-middle income countries.

Given that India is now a lower-middle-income country, we decided to use a living space standard of 388 square feet (36 square meters) which is at the low end of typical norms for lower-middle income countries. This standard is also consistent with the standard used for tea plantations (287 square feet) in light of the fact that this plantation standard was set almost 30 years ago when India was a low-income country. Our standard is also consistent with other living space standards for India when one considers that workers earning a living wage would not be among the EWS or poor but would be in the low-income group.

Living wage house living space standard is “carpeted” floor size of 388 sq feet (36 sq meters)

Table 8 Recommendations on minimum floor size for different income groups under different acts and scheme of India		
S.No.	Income group ^a	Size
Solar Powered Green House Scheme (CMSPGHS) (2011)		
1	Poor in rural areas	300 sq. feet
Pradhan Mantri Awas Yojana - Gramin (earlier known as Indira Awas Yojana (2016-17)		
1	Rural area	269 sq. feet
GoI, Ministry of Housing and Urban Poverty Alleviation (MHUPA) (2011)		
1	Economically Weaker Sections (EWS)	Minimum 300 sq. feet super built up area Minimum 269 sq. feet carpet area
2	Low Income Groups (LIG)	Minimum 500 sq. feet super built up area Maximum 517 sq. feet carpet area
KPMG (2011)		
1	Economically Weaker Sections (EWS)	Up to 300 sq. feet
2	Low Income Groups (LIG)	300-600 sq. feet
Jones Lang Laselle (2012)		
1	Economically Weaker Sections (EWS)	Minimum 250 sq. feet carpet area
2	Low Income Groups (LIG)	300-600 sq. feet carpet area
Notes: ^a Definitions of annual household income levels in 2011 for EWS was less than Rs. 150,000, and LIG was Rs. 150,000-300,000 These ranges would be higher in Rupees in 2019 because of inflation. ^b Super built up area is typically around 25% greater than carpeted area.		

7.4 Rural Nilgiris local housing standard used in this report

Based on the above information, our local healthy housing standard for rural Nilgiris District is:

- Permanent structure in good condition
- Walls made of burnt brick or cement
- Roof made up of red tiles, or concrete, or sheet metal
- Floor made of cement, or mosaic, or tiles
- Minimum carpeted floor size of 388 sq. feet (36 square meters)
- Separate kitchen area in the house

- Adequate ventilation and lighting in rooms
- Electricity
- Piped or potable safe water supply in the house or in close proximity
- Toilet facility (flush toilet or pit toilet with slab) available within house or in close proximity of house

7.5 Visiting houses of tea workers

As discussed in an earlier section, tea estates in India must provide houses to its workers in accordance with the 1951 Plantation Act. Tea workers residing on tea estates live in houses that are mainly row/line houses. Typically, these line houses are spread across various parts of tea estates.

Altogether, we visited 48 houses of tea workers, out of which 37 were on the tea estate and 11 were outside the tea estate (Table 9). Out of the 37 houses we visited on three estates, 32 were tea worker houses and five belonged to supervisors. Though the living space of estate houses of supervisors was much bigger (median of 344 square feet) than those of workers (median of 244 sq. ft), both types of houses were below our local housing standard (388 sq. ft). Among the 37 houses we observed on tea estates, the age of houses ranged from less than 5 years to as far back as the 1950s and 1960s.

Although the housing provided to workers by estates is free of charge, some tea workers stay outside the tea estate and we visited some of their houses. In the process, 11 tea workers' houses outside the estates were visited. These were located in different rural areas of Nilgiris District. The houses of tea workers staying outside the tea estate, actually turned out to be owned by them only. Effort was made to assess what would be the rental value of housing that meets our living wage standard for healthy housing. Brief description of each house we visited and observed is given in Annexure 1.

Houses of tea worker on the large tea estates were mainly line houses. Each line house had around five units. Construction of each of the units in a line house is similar in nature. They mainly have two rooms, of which one was used as a kitchen. Schematic figures of these households are given in Annexure 2.

Table 9: Key features of tea worker houses visited by their location

	Houses on tea estates		Houses outside tea estate
	Tea workers	Supervisors	Tea workers
Total number of houses observed	N=32	N=5	N=11
Rent for house	Free	Free	Self-owned
Number of rooms			
2 Rooms	25	-	4
3 Rooms	6	3	6
4 or more Rooms	1	2	1
Mean	2.25	3.60	2.73
Median	2.00	3.00	3.00
Average carpeted area (in sq. feet)			
Mean	252	350	314
S.D.	50	108	85
Median	240	344	282
Separate kitchen available in house	32	5	11
Availability of toilet			
Inside house	5	3	1
Outside house	27	2	10
Drinking water facility			
Inside house	18	2	10
Outside house	14	3	1
Cost of electricity per month (in Rs.)			
Mean	97*	150	175
Median	75	163	175
Cost of gas (in Rs.)			
Mean	805**	815	847
Median	808	805	850

Notes: * Cost for first 100 units is free from Tamil Nadu State Electricity Board. Utilization of electricity beyond 100 units is chargeable.
** Gas cylinder, which is typically consumed in 2-3 months. Family receives Rs. 150/- to 200/- subsidy from the Tamil Nadu government that is deposited in the bank directly.

The average carpeted area of the tea worker houses we visited on large tea estates was 252 sq. ft., which is around 88 % of the standard norm set by the Plantation Act (287 sq. ft.). The size of the houses we observed varied from 190 sq. ft. to 356 sq. ft. Twenty-one houses had carpeted area less than 287 sq. ft., while 11 tea estate houses had a carpeted area above 287 sq. ft. (74 % of the required living wage housing space). None of the tea worker estate houses we observed were large enough to meet our living wage study standard of 388 square feet (36 square meters). In contrast, the tea workers' owned houses outside the estate had an average carpeted area of 314 sq. ft. ranging from 228 sq. ft. to 444 sq. ft. Supervisor houses on tea estates were close to being large enough in size as per our living wage size standard (350 sq. ft. on average), but even here among the five such houses we observed, two (250 sq. ft. and 264 sq. ft.) of them were smaller than the Plantations Act standard for living space and also did not meet the other acceptable living wage housing characteristics standards. Among the remaining three houses, 2 of them had carpeted area more than Plantation Act standard (344 sq. ft. and 370 sq. ft.), but they were smaller than our living wage standard. Only one house had a bigger carpeted area (521 sq. ft.) than our living wage standard. Overall, the average carpeted size of tea estate houses was 265 sq. ft. which is also less than the Plantation

Act norm set in 1991 for houses. Only 14 houses (37 percent) we visited had a carpeted area more than 287 sq. ft. And, only one house met our criteria of decent living wage house size. Walls are made of brick, while the floor is cemented. Consistent with the local weather conditions, roofs are slanting with wooden beams, over which red tiles rest. The estate maintains and replaces tiles when they get damaged. To prevent pieces of tiles falling from wear and tear and wind, residents of many houses have tied a plastic sheet just below the wooden beams like a false ceiling. All the houses observed have a separate room used as kitchen. Kitchen usually has a smoke pipe for ventilation purposes. Rooms have window with wooden panes. Observation indicated that due to cold weather in the area, windows are kept closed. In fact, even the gap between the sloping roof and walls if any, is typically packed up with either plastic/gunny bag/cloth etc. to prevent cold wind from entering. In the process, even during the day, rooms are relatively dark as daylight enters into the room only if the door of the house is open.

Seven tea worker houses visited and all 5 supervisors' houses visited had more than 2 rooms. Some of these line houses were constructed in recent decades, as some of them had windows with glass pane. As per the information from estate management, only 10 to 20 percent of the houses in the estate had windows with glass panes. The average number of rooms in tea workers' houses was two, while the supervisors' houses had three to four rooms.

With regard to availability of basic amenities, toilets are largely located outside the houses. However, location of these varied. Independent toilet facilities were generally present immediately outside the house of tea worker houses residing outside the tea estate, as well as for some of the houses within the tea estates. Observations revealed that tea estate line house toilets were located approximately 25 to 35 meters away in a row which caused a problem at night because of the uneven terrain although workers have adjusted to this.

Tap water was the main source of drinking water and was available inside the house in around half of the houses observed on large tea estates, and in all houses except for one among those observed outside the tea estate. Remaining half of the tea estate houses collected water from taps located outside their house, but in close vicinity. Residents do have to store water in vessels. Water is available for free both on the estate as well as outside.

7.6 Housing data from interviews

Data collected through observation of tea workers' houses were supplemented through findings available from individual interviews with tea workers (Table 10). 51 interviews were conducted. Findings on key features of houses from these interviews more or less corroborate the observation data from visits to houses. Among the 19 staying outside the tea estate, 17 were owned houses while 2 were a rented house. Monthly rent paid by these tea workers was Rs. 1,000/- and Rs. 4,000/-. The tea worker paying Rs. 1,000/- as rent each month was staying in a house consisting of one room and kitchen, while the worker paying Rs. 4,000/- rent had one living room, one bedroom, a separate kitchen, and a prayer room. Toilet facility and drinking water facility were available within the house for both of these rented houses.

Table 10: Key features of houses from interviews of tea workers staying within or outside tea estate

	<i>Within tea estate</i>	<i>Outside tea estate</i>
Total Number of individuals	N=32	N=19
Ownership of house		
Free	32	-
Rented	-	2
Owned	-	17
Number of rooms		
2 Rooms	21	1
3 Rooms	11	18
Rent paid per month (in Rs.)		
1,000	-	1
4,000	-	1
Roof material		
Concrete	1	14
Tiles red	31	4
Others	-	1
Wall material		
Cemented	24	18
Stones	8	0
Other	-	1
Floor of house		
Cemented	30	17
Tiles	0	2
Others	2	0
Room well ventilated	27	19
House has separate room used as kitchen	30	18
Toilet facility		
Toilet within house	1	3
Independent toilet outside the house	19	15
Shared toilet between 2-3 houses outside	2	-
Public toilet	10	1
Source of drinking water is tap water	32	19
Location of source of water		
Tap available within the house	7	4
Located immediately outside the house	20	10
Common tap located at a distance from house	5	5
Fuel used for cooking		
Gas	23	18
Gas and Firewood	23	17
Firewood	8	1
Cost of cooking gas*(in Rs.)		
Mean	817	834
Median	808	850
Cost of electricity **per month (in Rs.)		
Mean	70**	160
Median	55	150
Notes: *Gas cylinder is consumed in 2-3 months. Family receive a subsidy of Rs. 150/- to 200/- from the Tamil Nadu government that gets deposited in the bank. ** Cost for first 100 units is free from Tamil Nadu State Electricity Board. Utilization of electricity beyond this is chargeable.		

7.7 Tea estate management's perspective about tea workers' house

Complying with the Plantation Act, tea estate management indicated that they provide workers of their respective estates with amenities as stipulated in the Plantation Act guidelines. Two of the three large estates visited in this study shared information on certain expenses that they incurred for housing. Estates undertake repair work as and when required or requested by the worker. White washing of the houses was taken up once in a year.

As regards to the cost incurred by the estate towards maintenance of houses, one estate which had 229 line houses indicated that last year annual line repair and whitewash expenses incurred by the estate came to Rs. 1,235/- per year and so around Rs. 100/- per month per line house unit. Two months prior to our visit, they had constructed 18 new houses for tea workers. Cost of construction incurred per unit was Rs. 230,000/-. This did not include land cost.

A second large tea estate with 1,054 line housing units and 44 independent houses also shared housing cost details. Overall, expenses for 2018-19 incurred by the estate per line house came to Rs. 2,100 /- per year and so around Rs. 175/- per month. As per the estate's estimate, the monthly market rental value per line house unit is Rs. 1,500/-, while the independent houses on average would rent for Rs. 20,000/-. However, as discussed earlier baring a few exceptions, none of the tea estate houses we saw or visited or were told about, matched our healthy housing standard in large part because of inadequate living space.

7.8 Rent or rental equivalent value of basic acceptable houses

The usual way to determine the cost of decent house would be to visit rented houses that meet with our standard of decent healthy housing. As mentioned earlier, only 13 percent of houses in rural Nilgiris District are rented houses (2011 census). This made it difficult to follow this approach.

For this reason of limited number of families staying in rented houses in rural Nilgiris, we used a combination of approaches to estimate monthly cost of acceptable housing. We looked at: (i) rental cost of the few decent rented houses we could find, and (ii) cost to build a basic acceptable house using assumptions for its service life expectancy and maintenance cost to determine a user cost equivalent rental value. The second approach included collecting information on construction cost for a decent house near to our living wage housing standard through discussions with builders, owners, and tea estate management.

7.9 Rent for more or less basic decent healthy houses

We visited five more or less decent houses (Table 11) in addition to the two rented houses we learned about in interviews with workers noted earlier that rented for Rs 1,000/- (one room plus kitchen) and Rs. 4,000/- (three rooms plus kitchen) (Table 10). Rent ranged from Rs 1,750 to Rs. 5,000 per month for these 5 visited houses. Rent of these houses varied depending on whether they were located: (i) inside a village in the village centre, or (ii) in a village close to the main road, or (iii) in a small town. Rents were highest in small towns (Rs. 4,000/- and Rs. 5,000/-) and lowest in village centre away from a main road (Rs. 1,750/-). Rent in the main block/district headquarter town was still higher at Rs. 8,000/- to Rs. 10,000/- per month. If we exclude the houses in a small town (on the assumption that tea workers stay

within accessible distance to tea gardens and hence would stay in rural village), the average (median) rent is Rs. 2,750/- (Rs. 2,500/-) per month.

Table 11: Rent of decent house		
Location of rented houses	Carpeted area (in sq. ft.)	Rent per month (in Rs.)
Village centre	477	1,750
Village on main road	472	2,500
Village on main road	294	4,000
Small town	465	5,000
Small town	355	4,000
Average (all)	412 (SD=83)	3,450
Median (all)	465	4,000
Average for village (excluding houses in small towns)	414 (SD=103)	2,750
Median for village (excluding houses in small towns)	472	2,500

It is also necessary to add the opportunity cost of the 6 months advance deposit which owners usually require from renters. This is equivalent to around Rs. 150/- per month in opportunity cost assuming an annual interest rate of 12% and a monthly rent of Rs. 2,500/- per month.

7.10 User cost value of owned house at our local healthy housing standard

The user-cost rental equivalent for a basic decent house can be estimated using reasonable assumptions on: (i) service life of the house to help determine annual depreciation cost, and (ii) annual repair and maintenance costs. For this calculation, we assumed a service life of 40 years⁵ and annual maintenance and repair costs of 2 percent in light of the weather conditions in Nilgiris where there is considerable rainfall which reduces service life and increases maintenance and repair costs.

Among the four decent houses we visited that were self-owned, we collected information on the construction cost incurred (Table 12). We also asked builders how much it would cost per square foot to construct a 300-400 square feet house (Table 12).

Table 12: Estimation of rental value of self-owned decent house visited			
Location of decent house	Carpet area (in sq. ft.)	Construction cost per sq. ft. (in Rs.)	Rental value of house per month (in Rs.) *
House 1-Inside a village	477	1,677	3,000
House 2-Inside a village	304	1,414	1,800
House 3-Inside a village	350	1,343	1,763
House 4-Outside a town	300	1,400	1,575
Average	358	1,459	2,034
Median	327	1,407	1,781

*Estimation of current rental value of the decent house considers 40 years of service life and annual maintenance/repair costs of 2 percent per year. It also assumes no land cost and no mortgage interest cost.

⁵ 40 years of service life seems reasonable in light of the 30 years of service life expected for the house of the Pradhan Mantri Awas Yojana. This is also a reasonable assumption according to Anker and Anker (2017).

Considering construction costs incurred according to households, the user cost equivalent monthly rent for a decent house works out to be Rs. 2,034/- per month, however their carpet area is slightly less (358 sq. ft.) than our required 388 sq. ft. size. Assigning the same cost per sq. ft., rental equivalent value for our decent house size of 388 sq. ft. works out to be Rs. 2,204/- per month.

Table 13, presents the estimate of construction cost per square feet as reported by builders. Cost ranged from Rs. 1,500/- to Rs. 1,750/- per sq. ft. in urban areas, while in rural areas it varied from Rs. 1,364/- to Rs. 1,600/- per sq. ft. Discussing on the variation in the cost between urban and rural areas, builders indicated that building costs were high in rural areas on account of the high transportation cost incurred in bringing building materials from plains areas to rural areas on the hills which are usually in the interiors and away from the main road.⁶

Using these construction cost, the average estimated rental equivalent value of our decent house works out to be Rs. 2,245/- per month. This rental equivalent estimate from builders is very close to the value estimated from actual houses constructed (Rs. 2,204/-).

Information was also collected from large tea estates regarding the cost of construction of tea workers houses in their estates and if they had been completed in the recent past. The cost per square feet mentioned by two large tea estates was Rs. 820/- and Rs. 1,025/-. This cost is significantly less than that mentioned by builders and owners who had constructed their houses. Some reasons for this lower cost per square feet could be because these are line houses, possible use of available labour on the estate, etc. Hence, these tea estate construction costs are not used in our rental equivalent cost estimation below.

Table 13: Estimation of rental equivalent value of decent house based on construction costs according to builders

Location of construction of house	Cost per sq. ft. (in Rs.)	Estimated rental value of house per month (in Rs.) *
Urban	1,545	2,248
Urban	1,750	2,546
Urban	1,500	2,183
Rural	1,364	1,985
Rural	1,500	2,183
Rural	1,600	2,328
Average (All)	1,543	2,245
Median (All)	1,523	2,215
Average (Rural)	1,488	2,165
Median (Rural)	1,500	2,183

*Calculation is based on: (i) living space for decency of 388 square feet; (ii) assumption that houses have 40 years of service life; (iii) annual maintenance/repair costs of 2 percent of construction cost; (iv) no land cost; and (v) no mortgage interest costs.

It is important to note, however, that the above monthly rental equivalent values of around Rs. 2,200/-discussed above in this section are very conservative estimates as they assume that there are: (i) no land costs, and (ii) no mortgage interest payments. Obviously, rental equivalent value would be higher if either of these two factors would be taken into consideration.

⁶ While a resident of a village mentioned to us that it would cost him Rs. 1,300/- per sq. feet, this amount (which is much less than the amount mentioned by builders/contractors) does not take into account any profit margin and perhaps does consider some free labor.

7.11 Utilities and other housing costs

Utility cost indicated above were fairly similar both according to our observation of houses (Table 9) and individual interviews (Table 10) with workers. For cooking, both cooking gas supplied in LPG cylinder and firewood are used. Generally, firewood is freely and easily available in the estate in form of dried wood/branches which workers collect on their way back home. A gas cylinder is available for Rs. 825/- on which government offers a subsidy of Rs. 175/- per cylinder. Thus, workers get gas in a subsidized rate of Rs. 650/- per cylinder which generally lasts for two and half months. In other words, cooking gas costs them around Rs. 260/- per month while firewood is collected free of cost.

With regard to the reported electricity cost per month, there is no user cost for the first hundred units of electricity used. This expense is borne by the electricity department themselves. Subsequent to that depending on the usage, electricity cost is incurred. Costs incurred by workers staying in the tea estate houses was less (Rs. 84/- per month on average) than for those staying outside the estate (Rs. 168/- per month on average). We considered Rs. 168/- as the average cost for electricity each month, as except for the size of the houses (small often) we felt that electricity usage was normal and met our decent standard.

No cost is incurred for water, as it is available free of cost to the workers, irrespective if their house is located inside or outside a tea estate. Thus, total utilities cost per month is Rs. 428/- consisting of Rs. 168/- for electricity and Rs. 260/- for LPG.

7.12 Summary of housing costs

This section presents information on housing conditions in rural Nilgiris District according to census data. Information was also presented on the size and amenities of houses of tea estate workers who live inside and outside of tea estates based on visits to tea estates and nearby villages and towns. Housing amenities in rural Tamil Nadu are in general reasonably good. A majority of houses have concrete or tile roofs, brick walls, cement floor, improved source of drinking water, and electricity. However, housing on tea estates we visited do not generally meet our local healthy housing standard set for a living wage. Indeed, estate houses we visited often do not meet the standard set by the Plantation Act for Tamil Nadu in terms of size. For example, the typical size of a tea worker estate houses we visited is 254 sq. ft. which is smaller than the norm set by the 1991 amended Plantation Act of 287 sq. feet (and our living wage standard of 388 sq. feet). These tea estate houses were generally decades old and undergo repair/maintenance by the estate as and when required.

We estimated that the rent per month in a village outside a tea estate for a decently constructed basic dwelling with adequate size of approximately 388 square feet and basic amenities would be around Rs. 2,500/- per month. This estimate is based on several corroborating pieces of evidence. The median monthly user cost of the few village houses with close to or more than our 388 sq. ft. living space standard that we visited was Rs. 2,500/- . The user cost equivalent value of a basic house with 388 sq. ft. was around Rs. 2,200/- per month based on building costs according to builders and owners and reasonable assumptions about service life of such a basic house and typical maintenance and repair costs. This Rs. 2,200/- is, however, a very conservative estimate as it assumes that there aren't any land costs or mortgage interest payments. This estimate for rent of Rs. 2,500/- per month is much

less than the rent for houses located in towns. It is also more than what the tea estate management thought that the rental value would be for a tea estate line house unit of Rs. 1,500/- per month which is below our living wage healthy housing standard. Beside this, we estimated that utility costs are Rs. 428/- per month, and there is an opportunity cost of Rs.150/- per month associated with the advance payment which renters must give to their landlord owner.

8. NON-FOOD AND NON-HOUSING COSTS

Non-Food and Non-Housing (NFNH) costs are estimated in a different way than food costs and housing costs. Whereas food costs and housing costs are estimated based on normative standards (nutritious diet and healthy housing standard), NFNH costs are estimated to a large extent based on secondary data on household expenditures in rural Tamil Nadu from the most recent NSS Household Expenditure Survey (NSS-2010/11). This strategy is adopted, because it would be too difficult and time consuming to decide on appropriate standards and prices for all NFNH needs of families that includes clothing and footwear; furniture and household equipment; health care; education; recreation and culture; telephones; personal care; etc. However, since health care and education are considered human rights around the world, separate enquiries and post checks are done for these with NFNH changed, if necessary, to make sure that sufficient funds are included in NFNH for these human rights.

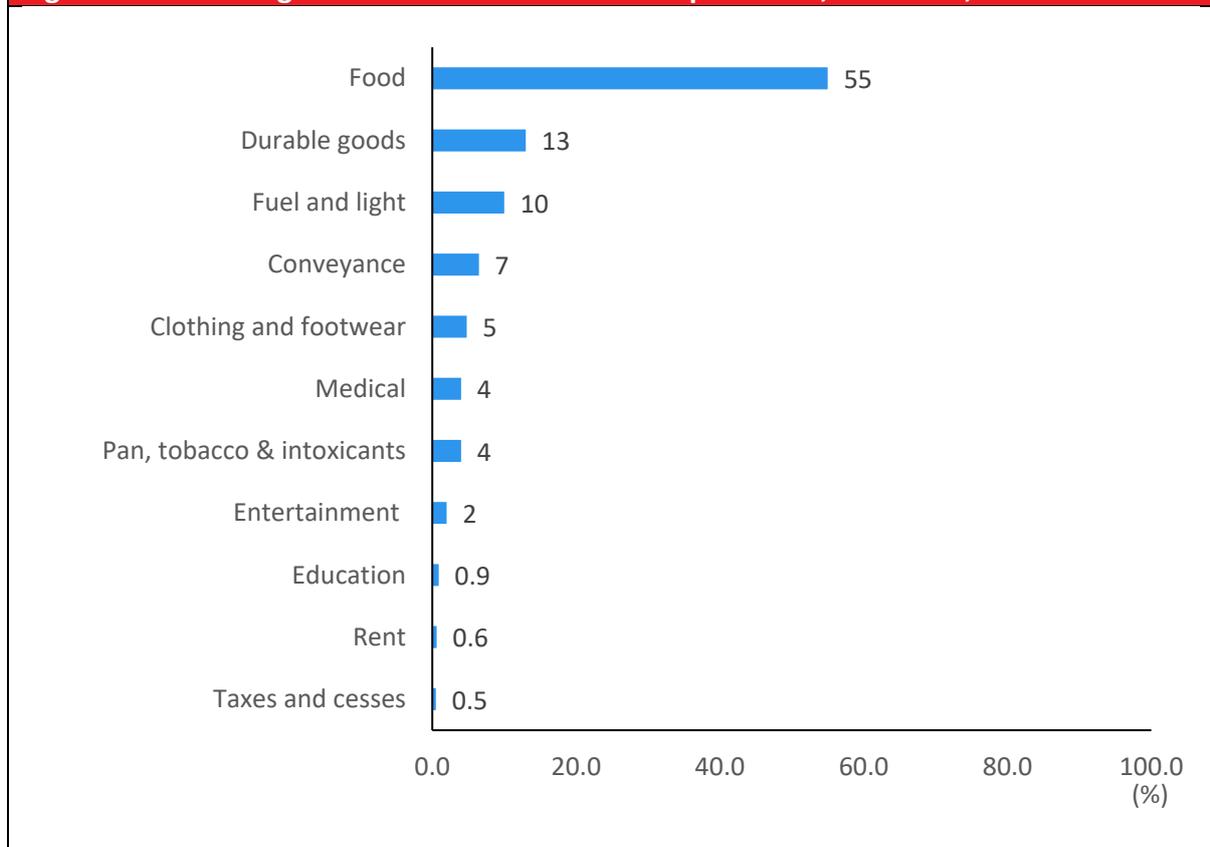
Non-Food Non-Housing (NFNH) costs for rural Nilgiris were estimated in three steps. In step 1, a preliminary estimate of NFNH costs was made based on current expenditure patterns in rural Tamil Nadu according to data from the 2010/11 Household Income and Expenditure Survey (NSS-2010/11). This approach, which relies on a variant of Engel's law,⁷ is simple and provides a preliminary estimate of cost of all NFNH needs. It is worth mentioning that such a simple approach, where cost of all non-food needs is estimated in one go, is often used to estimate living wages (Anker 2011) and poverty lines (Anker, 2006b), including India poverty lines. In the approach used by us, we divided non-food needs and costs into two components comprising of housing cost which is estimated based on normative standards of health housing and all NFNH needs. The approach has several advantages over the usual approaches. First, it uses a normative standard for decent housing which is very important because many workers in tea estates and rural areas of Nilgiris live in substandard housing and this is reflected in household expenditure statistics. Second, since housing cost is the most important determinant of differences in living costs between areas within countries, it becomes easier to estimate separate living wages for different areas. We used these household expenditure data for Tamil Nadu for households at the 4th decile of the rural household expenditure distribution for this calculation. The Anker methodology suggests using data for household in the 30th to 50th percentile of the income distribution for a developing country. Step 2 looks more carefully at health care and education costs to determine if funds included for these in NFNH from steps 1-2 are sufficient for decency - and then adds additional funds for these if required to ensure adequate funds for these human rights. In case of rural Nilgiris, an adjustment does not turn out to be necessary on account of

⁷ Engel's law is from 1857 and states that the percentage of total expenditure that households spend for food decreases as household income increases (see Anker 2011).

good Tamil Nadu government policies and programs as well as the Plantation Act which takes into account the welfare and social security of tea workers.

According to the NSS-2010/11, households in the 4th decile of the rural Tamil Nadu household expenditure distribution spend 54.9 % on food and non-alcoholic beverages, 10.6 % on housing⁸, and 34.5 % on NFNH. Based on these data, the NFNH/Food ratio would be 0.62 (Table 6). Before using these data, we (i) excluded *pan* and tobacco, because these are not considered as needed for decency, while a small percentage for alcohol has been considered, and (ii) moved part of meals eaten away from home that is for the services, overheads and profit in these meals to NFNH because our model diet that is used to estimate food costs assumes that all meals are prepared at home⁹ (Table 14). Thus, the adjusted NFNH/Food ratio to 0.63.

Figure 10: Percentage distribution of household expenditure, 4th decile, rural Tamil Nadu



⁸ One reason why the percent spent for housing (10.6%) is so low is because India household expenditure statistics assume that there is no cost or value for owner occupied housing in rural areas and as a result only 0.6% for rural rents is included in housing costs along with 10.0% for utilities in NSS statistics.

⁹ We assumed that 70% of the cost of meals away from home is for the food in these meals and 30% is for services, overheads, and profit. This is a typical assumption for situations in developing countries where meals away from home are purchased from informal types of establishments (Anker and Anker, 2017).

Table 14: Non-food non-housing to food ratio

Estimating NFNH to Food ratio with adjustments using NSS 2010/11 household expenditure data from 4 th decile households of the rural Tamil Nadu household expenditure distribution				
Major expenditure group	Secondary data		Adjustments	
	Sub-major expenditure group	4 th decile of household expenditure distribution (% expenditure)	Adjustments explanation	% after adjustment
Food & non-alcoholic beverages				
	Food & non-alcoholic beverages	51.5	No adjustment	51.5
	Meals taken away from home	3.4 ^a	Subtracted 30% for services, overhead, and profit in meals	2.4
Total food		54.9		53.9
Housing (includes rent and utilities)		10.6		10.6
Alcohol, tobacco, pan				
	Alcohol	2.1	No adjustment	2.1
	Tobacco and pan	1.6	Excluded	0
Clothing and footwear		4.8	No adjustment	4.8
Durable Goods		0.9	No adjustment	0.9
Health Care		4.0	No adjustment	4.0
Education		0.9	No adjustment	0.9
Transport		6.5	No adjustment	6.5
Entertainment		2.0	No adjustment	2.0
Meals taken away from home		0.0	Added amount subtracted from food	1.0
Miscellaneous goods & services		11.7	No adjustment	11.7
Total NFNH		34.5		33.9
NFNH/Food ratio		0.62		0.63
Notes: ^a Percentage of food and non-alcoholic beverage expenditure for meals away from home is based on data for rural all-India for deciles 30-40% of households (6.2%) because data for rural Tamil Nadu for deciles 30-40% households were not available; percentage for all rural Tamil Nadu households was not much different at 9.1%.				

9. POST CHECKS ON NON-FOOD AND NON-HOUSING COSTS

This section looks in more depth at the cost of education and decent health care in rural Nilgiris to see whether funds included in our preliminary estimate of NFNH for these human rights are sufficient. If funds for these are not sufficient, NFNH is increased based on other available information. It should be noted that the preliminary estimate of NFNH costs per month for our reference family of 4 persons in rural Nilgiris is Rs. 5,111/- (\$73). This includes around Rs. 138/- (\$2) per month for education and Rs. 603/- (around \$9) per month for health care (Table 15).

Table 15: Education and health care amounts included in preliminary estimate of Non-food and Non-housing (NFNH) costs

Item	% of all household expenditure	% of NFNH expenditure	Amount (Rs. per month) when preliminary NFNH costs are Rs. 5,111/-
Education	0.9	0.9/33.9 = 2.7 %	138
Health care	4.0	4.0/33.9 = 11.8%	603

9.1 Education Post Check

Education is one of the fundamental factors of development. Education is also considered a human right in the Anker methodology. Countries cannot achieve sustainable economic development without substantial investment in human capital. Recognizing the importance of education, the Tamil Nadu State Government has placed an important focus on expansion of education, significantly improving the quality of education imparted and ensuring that educational opportunities are available to all segments of the society. Literacy rate has more than doubled in Tamil Nadu in the past 50 years. It has increased from 36 percent in 1961 to 80 percent in 2011 which was better than all-India figures (73 percent). While several factors could have contributed to this, more inputs have gone for primary education. The literacy rate in the Nilgiris District as per 2011 census was 86 percent, with male literacy at 92 percent and female literacy at 79 per cent. In 2013-14, the gross enrolment ratio in primary education in the Nilgiris District was 99.9 percent. District male and female enrolment ratio were 98.0 per cent and 97.6 percent respectively.

Ensuring that children enrol in school, the Tamil Nadu government has various initiatives. In all Government schools, education is completely free from Lower K.G. to 12th class. Tuition fees are not charged. In addition, students also get uniform, books, bags, shoes and one meal in the afternoon. In government colleges, tuition is also free.

Government primary schools are located on tea estates as well as in nearby village. According to statistics on school attendance, most students in rural Tamil Nadu attend a public school. We also found this to be so for tea workers. Among the 51 tea workers we interviewed who had a total of 42 children who were presently studying in school/college, 34 of them were going to a government school.

Box 2: Private school fee structure as per Government norm in 2017 – 2018		
Class	Amount (in Rs.)	USD
Pre K.G. / U K.G.	6,150	88
I –V	9,000	129
VI- VIII	11,000	158
IX –X	14,000	201

Based on discussions with tea workers and key informants, we found that public schools in Tamil Nadu are considered to be of acceptable quality. For all of the above reasons, we considered that attendance in public schools was acceptable for decency, also given the quality and different initiatives undertaken by Tamil Nadu government. It is evident from the data for children of tea workers and the secondary literature that this is the current situation. ASER report of 2005 indicates that 78 percent of children 6 to 14 years studying in Tamil Nadu are in government schools.

According to statistics on household expenditures from the NSS 2010-11, despite Government schools being technically free, 0.9% of household expenditure is spent for education. This is probably in large part for fees incurred for private tuition classes. This percentage is low from an international perspective.

The amount for education included in our preliminary NFNH estimate is Rs. 138/- (\$2) per month. We decided for several reasons that this amount was sufficient for children's education and therefore a post check adjustment for education was not needed. First, attendance in government schools was common and the norm in Nilgiris District. This was confirmed by our rapid assessment which indicated that 86 percent of children of tea workers attend government schools. This high percentage is also found in secondary survey data. Second, discussions with tea workers and key informants indicated that government schools are accessible and of acceptable quality. Third, costs for public school are very low.

9.2 Health Care Post Check

Government of India is committed to the goal of 'Health for All'. This entails universal access to equitable, affordable and quality health care services to its population which is accountable at the same time responding to the needs of the people through accessible quality health care. This is evident from various key policy documents (MoHFW, GOI, 2012, 2013 and 2017). These initiatives come under the overarching National Health Mission implemented by the government. Within this, the National Rural Health Mission (NRHM) reaches out to the rural population focusing on both infant and maternal health ensuring universal access to public health services, water, sanitation & hygiene, immunization, and nutrition. Comprehensive primary health care focuses on both prevention and control of communicable and non-communicable diseases. The mission also attempts to revitalize local health traditions by mainstreaming AYUSH and promoting healthy life styles. At state level, Tamil Nadu State Health Mission was constituted to achieve the objectives of NRHM (National Health Mission-Tamil Nadu 2010).

Network of public health facilities are available reaching out to even remote rural villages. In addition to facility-based services, outreach initiatives undertaken through the Village Health Nutrition Day and School Health Programme envisages provision of preventive, promote and curative health services.

According to the National Family Health Survey-4 (Tamil Nadu, 2015-16), 74% of health care visits in the past year by households in rural Tamil Nadu were to public health sector facilities which is free, while 26 percent of visits were to private facilities. For this reason, we feel that it is appropriate for most of the health care needs of workers to be provided by public facilities.

Funds for health care included as a part of the preliminary NFNH estimate costs is approximately Rs. 603/- (\$9) per month. To help determine if this amount is indeed sufficient for decent health care, we asked tea workers during the field study in Nilgiris about how often they fell ill recently and the type of facility where services were sought including the cost of medicines and consultancy fees incurred by them. Tea estates provides health services through health facilities located within their premises (Annexure 3). Further, discussion with

the Medical Officer of Public Health facility in both Primary Health Centre (PHC) and Community Health Centre (CHC) revealed that there was a heavy case load of patients in OPD. Some of the common health problems that the tea workers came with included arthritis, body ache, headache, skin infection – black pigmentation, fever, back pain, shoulder pain, tinea pedis (long hours of standing in wet, shoes and socks get wet, which leads to fungal infection), psoriasis, bronchitis, stress, sinus, and asthma problems especially among males working in the factory. The CHC has a special room with appropriate amenities and infrastructure to cater to poison cases. Poison is mainly organo-phosphorous poison. According to the doctors, in the tea estate clinics only symptomatic treatment is given and then they send the patient to nearest PHC. All treatment is free of cost in these facilities.

Practice of Siddha system of treatment (an indigenous medical system popular in South India) was also observed. Even the government health system has an AYUSH medical officer appointed in the facility, who is trained in this system of medicine. Wherein they provide treatment through acupuncture even for chronic problems. Massaging of various kinds of oil is also done, especially for different aches. According to a provider, “20 -30 percent of the workers will have arthritis problem by the time workers are 40 - 45 years. They do not sit. It is a continuous standing work from 7 -8 a.m. in the morning till 5 – 6 p.m. in the evening. Even the supervisor will not sit. This leads to all kind of aches, body pain. Only if the pain is in excess will they give painkillers and injection.”

According to 31 workers we interviewed across the three large tea estate visited, for any health problem for themselves or their family members, they seek services from the estate hospital. All services from the estate clinic are free of cost for the tea workers as well as their immediate family members. But just in case they have to go to another facility outside the estate for treatment, the incurred cost is reimbursed by the estate. Around 13 tea workers also mentioned that they sought services from Government hospital as it is free. Only the transportation charge of bus is incurred which was reported to range between Rs. 6/- to Rs. 9/- (around \$0.10) for one way.

Four tea workers also reported utilization of private practitioners’ service, where the consultancy fee ranged between Rs. 150/- to Rs. 200/- (around \$2-\$3). In addition, they might have to pay for medicine, incurring expenses in the range of Rs. 200/- to Rs. 400/- (\$3-\$6) per visit. On average, this works out to be around Rs. 475/- (\$7) per visit.

Doctors from the public health facility also opined that the out of pocket expense for the tea workers per month would be around Rs. 300/- to Rs. 500/- (\$4-\$7) mainly incurred towards the treatment of workers’ children. They feel that treatment in private clinics is better. “Not many private clinics are in Kotagiri, they go to Mettupalayam which is about 40 kms away. This place is flourishing with private doctors. Private Doctors will charge Rs. 100/- to Rs. 200/- (\$1-\$3) as consulting charges. Medicines have to be purchased from Chemist shop.”

Based on the data and information from the tea estate facility, public health facility and tea workers, it is evident that the public and estate health services were available and free of cost. It was also evident that tea workers mainly used free public or tea estate facilities and these facilities were considered to be of acceptable quality. Some workers, however, did incur

health care cost on account of visiting a private practitioner and this ranged from around Rs. 400/- to Rs. 475/- (about \$6) per visit. This estimated health care cost is very conservative as it only includes costs for routine illnesses and non-work injuries and does not consider the cost of serious illness or non-work injury.

The above conservative estimate for routine health care costs of Rs. 238/- (about \$3) per month (i.e. Rs. 475/- per private visit x 1.5 private visits per person per year x 4 family members / 12 months) is less than the amount included in our preliminary NFNH estimate for health care (Rs. 603/- (about \$9) per month) even when we assume that each family member goes to a private provider one to two times per year. This small amount estimated to be needed for health care makes sense as our rapid assessment estimate assumes that most health care is availed from public facilities and that the private health care accessed is for routine health care only and does not include cost of any major illness or injury. Hence, it is clear that no post check adjustment is needed for health care expenses.

10. PROVISION FOR UNEXPECTED EVENTS TO ENSURE SUSTAINABILITY

Unforeseen expenses and events can quickly throw workers living at a basic life style into poverty and debt from which they may not be able to recover. When estimating a living wage, it is common to add a small margin above the cost of a basic quality life to allow for unexpected events (Anker, 2011). We use a 5% margin for sustainability for rural Nilgiris to allow for unforeseen emergencies as is recommended in the Anker methodology. It may be noted that interest and debt payments are ignored in our calculations. It is assumed that a living wage would be sufficient to enable workers to stay out of crippling debt.

SECTION III. LIVING WAGE FOR WORKERS

11. FAMILY SIZE NEEDING TO BE SUPPORTED BY LIVING WAGE

Living wage is a family concept. ILO comprehensive review of living wages (Anker, 2011) clearly demonstrates this. As indicated earlier, the typical living wage definition of the Global Living Wage Coalition specifically mentions the need to support a family on a living wage. One of the key factors that influences a living wage is, therefore, the family size. Hence, it becomes pertinent to determine an appropriate family size for rural Nilgiris District for estimating a living wage for the District.

We use a family size of 4 persons (two adults and two children) to estimate our living wage for rural Nilgiris. This family size is based on information on: (i) total fertility rates and child mortality rates and the number of surviving children women in rural Nilgiris are now typically having, and (ii) average household size in rural Nilgiris.

Fertility has been falling over the decades, with the total fertility rate in Tamil Nadu going from 2.65 in 1990 to 1.6 in 2016. The total fertility rate for rural Tamil Nadu is 1.7 and urban is 1.6 as per SRS (2016). When under-five child mortality of around 23 per 1000 births (SRS 2016) is taken into consideration, the average number of children surviving to age 5 in rural Tamil Nadu is a little less than 1.5. This adjusted total fertility rate implies a family size of less than 4 (2 adults and around 1.5 children).

Average household size in rural Nilgiris District is around 3.6 according to the 2011 Census. When average household size is recalculated for families with 2 to 7 members (i.e. after excluding one-person households that definitely do not include children, and very large households with 8 or more members that almost assuredly are extended families generally with more than 2 working age adults), adjusted average household size is found to be 3.4 according to 2011 Census data. However, median household size is 4, as is the modal household size.

Based on these facts, we decided that a reference family size of 4 (2 adults and 2 children) is quite reasonable for rural Nilgiris District. Median household size is 4, as is the modal household size. Although 4 is higher than the mortality adjusted total fertility rate based family size (around 3.7) and the adjusted average household size (around 3.4), it is common for couples in Tamil Nadu to have 2 children. Besides, using less than 2 children per couple would not allow for population reproduction without massive immigration.

12. NUMBER OF FULL-TIME EQUIVALENT WORKERS IN FAMILY PROVIDING SUPPORT

As living wage is a family concept, it is appropriate to expect more than one adult in a family to provide financial support through work.¹⁰ How we determine the number of full-time working adults per couple in our reference family is explained in this section.

¹⁰ One assumption of the Anker living wage methodology is that children do not work and provide support for the family. This assumption is consistent with the decency concept of a living wage.

To determine an appropriate number of full-time equivalent workers per couple for rural Nilgiris District, we estimated separately the probability of males and females working full-time over the year, and took the average of these two values to represent this probability for a couple. To do this, we used: (i) information from the 2011 Census for rural Tamil Nadu on age and sex specific workforce (which is labor force minus unemployment)¹¹ participation rates, (ii) information from the 2011 Census on age and sex specific marginal employment rates (in terms of number of months over the year that workers work), and (iii) assumptions on male and female part-time employment rates (in terms of less than full-time work hours during days and weeks when working). Rates for ages 25-59 are used, because these are the prime working ages. This age group purposely excludes younger ages when many are still in school and older ages when many are retired.

According to 2011 Census data for rural Nilgiris District, 94 % of men ages 25-59 and 71.6% of women ages 25-59 work during the year (82.8% for a couple). Taking into consideration likelihood of not working throughout the year - what Indian statistics call marginal workers (i.e. those who work less than 3 months during the year, or work 3-6 months during the year) - the percentage of males and females 25-59 working throughout the year reduces to 90 % for men and 67.9 % for women 25-59 (79 % for a couple). Adjusting these values for what we feel are reasonable assumptions on the likelihood that men (10%)¹² and women (20%) are part-time workers during months when they are working, reduces these values to 85.5 % for men and 61.1 % for women (73.0 % for a couple), which we rounded to 0.73 for a couple.

The number of full-time equivalent workers per family used to estimate our living wage was then estimated by adding 1.0 (since we are concerned with a situation where there is assumed to be a full-time tea worker in the family¹³) to the average proportion of full-time work per couple estimated above (0.73) to arrive at 1.73 full-time equivalent workers in the reference family. Note that 1.73 is higher than what was found for Tiruppur (1.58) which is probably due to the high workforce participation rates of female as tea workers in rural Nilgiris District.

13. TAKE HOME PAY REQUIRED AND TAKING TAXES AND STATUTORY DEDUCTIONS FROM PAY INTO ACCOUNT

The living wage estimated above should enable workers to be able to afford a basic but decent living standard for rural Nilgiris District. This should be looked at as required net take-home pay. However, the living wage which needs to be earned needs to take into account that workers contribute to social security which reduces their take home pay. Because of low earnings, workers do not reach the income group who have to pay income tax. However, a minimum professional tax is deducted. Furthermore, workers have a 12.5 % deduction

¹¹ This approach only appears to differ from the typical approach used in the Anker methodology that uses: (i) labor force participation rates; (ii) unemployment rates; and (iii) part-time employment rates. The approach used here for India does not use unemployment rates, because India reports workforce participation rates that excludes unemployment.

¹² A usual assumption in Anker methodology for the part-time employment rate for men is 5% in the absence of any information. However, since it is known that underemployment of men is common on tea plantations of South India, we increased the part-time employment rate for men to 10%.

¹³ Work is available throughout the year for tea workers, around 300 days per year according to large tea estate managers.

towards Provident Fund on cash earnings. Considering our net living wage is Rs. 9,894/- (\$142), this implies Rs. 1,528/- (\$22) in mandatory deductions (Rs. 1,413/- for Provident Fund and Rs. 115/- for professional tax), and so a gross living wage of Rs. 11,422/- (\$164).

SECTION IV. ESTIMATING GAPS BETWEEN LIVING WAGE AND PREVAILING WAGES

14. WAGE

Determining the gap between the prevailing wage and living wage is an important component of LW studies. The wage gaps estimated helps to understand the level of effort that will be required to fill the gap say in period of six years. Further, past changes in wages over time could help in measuring the direction where wages are leading besides being an input to various stakeholders including government to minimum wage fixing. It also gives a bargaining point to the union leaders.

According to ILO Convention 95 (1949) “wage means remuneration or earnings however designated or calculated capable of being expressed in money term”. Further, according to ILO Convention 100, “remuneration includes the ordinary, basic or minimum wage or salary and any additional emolument whatsoever payable directly or indirectly whether in cash or kind by the employer to the worker and arising out of worker’s employment”. The possible components of wage as listed by Anker and Anker (2017) could possibly include:

1. Basic wage including cost of living adjustment
2. Cash allowances and bonuses
3. In kind benefits
4. Productivity bonuses
5. Overtime pay (not included for comparison to living wage)
6. Pay premiums for holiday’s, weekends, night work (not included for comparison to living wage)
7. Fringe benefits
8. Deferred bonuses such as end of year bonus, severance payment, and provident fund, and pension (not included for comparison to living wage if received more than one year later).

Thus, to get a clear picture of the wage received by workers, it is necessary to look into all component of pay.

In the context of India and state law, The Plantation Labour Act of 1951 and Tamil Nadu Plantation Labour Rules 1955 provide guidelines for the welfare of labour and also regulates the conditions of work in tea plantations. Given the fact that tea plantations are considered as a commercial agricultural crop, the rules and regulations of both Ministry of Agriculture and Ministry of Commerce and Industry are applicable. Its production and exports fall within the ambit of agricultural exports. But for issues of labour related provisions it is categorized as industrial

Box 2
Acts other than PLA Applicable to Plantation Labourers

Industrial Disputes Act 1947
Minimum Wage Act 1948
Employees Provident Fund Act 1952
Maternity Act 1961
Payment of Bonus Act 1965
Payment of Gratuity Act 1972
Source: Tantri Malini L, 2017

sector, and hence it becomes mandatory for plantations to protect the workers' welfare and social security (Tantri, 2017).

For minimum wage, Plantation Labour Act (PLA) defines working hours for adult workers as 48 hours in a week. The Act underlines both the statutory and non-statutory provisions as part of regulating the working conditions across plantations as well as the welfare of plantation labourers. There are two types of provisions spelt out under 'statutory' needs, namely, health and welfare. It is mandatory for the plantation to provide crèches, recreational facilities for workers and children, housing accommodation, and protective clothing against rain and cold for workers free of cost.

14.1 Prevailing wage

"Wages" has the meaning assigned to it in clause (h) of Section 2 of the Minimum Wages Act, 1948 (11 of 1948) of a cash wage. The daily minimum wage in the Tamil Nadu tea estate is based on the bipartite settlement arrived at between Nilgiris Plantation Association and the Nilgiris Planation Trade Union¹⁴. Following each quarter, dearness allowance is adjusted. The daily wage of workers reported by the three large estates we visited were almost identical at around Rs. 308/- (Rs. 308.95/-, Rs. 308/-, and Rs. 308.70/-). In addition, we also looked into cash allowances, in kind benefits, productivity bonus, pay for holidays, fringe benefits, and deferred payments. Each of these is discussed separately in the following paragraphs.

14.1.1 Estimate of daily wage (including daily incentive pay) on days worked

Variation across the estates was observed regarding the minimum quantity of tea leaf that had to be plucked daily. In one large estate, the minimum a tea plucker had to pluck was 32 kg for hand plucking and 35 kg for shear plucking. In another tea estate, the base minimum output was fixed depending on the yield of tea per hectare per month. For example, for a yield of 401 to 800 kg per hectare per month, the base minimum output was 27 kg per day for a worker. In the small estate we visited, a worker had to pluck minimum 26 kg of tea leaves per day. Irrespective of the season, workers are motivated to pluck maximum daily.

Table 16: Estimated leaf plucked and daily wage including incentive for over plucking of tea leaf

	Peak months	Lean months
Average leaf plucked (in kgs)		
1 st large estate	75	45
2 nd large estate	80	50
Small estate	59.6	37.8
Average daily wages (in Rs.)		
1 st large estate		
Hand plucking	351.1	324
Shear plucking	341.9	318.4
2 nd large estate		
Hand plucking	364.85	323.35
Shear plucking	360.35	320.95
Small Estate	325.08	307.69
Average daily wage amount including productivity bonus (in Rs.)	348.66	318.88

Source: Collected by authors in field visits to tea estates.

¹⁴ Nilgiri Planters' Association, revision of wages, under Rule 25 (1) of T. N. Industrial Disputes Rules, 1958, Memorandum of settlement under section 18(1) of the Industrial disputes Act 1947, arrived at Coonoor, on 3rd May, 2017.

Information was also collected from three estates on the average amount of tea leaf plucked during both peak season (April, May, June, September, October, and November) and lean season (July, August, December, January, February, and March) months. Based on these details, we estimated the average amount earned by a worker daily during peak and lean months (Table 16). Average daily wage earned by tea pluckers worked out to be Rs. 348.66/- during peak months and Rs. 318.88/- during lean months. Average of these for the year is Rs. 338/- per workday. This estimation seems to be realistic as during discussions with managers it was mentioned that on an average a worker receives Rs. 330/- to Rs. 340/- per day over a year.

14.1.2 Number of working days and paid days in a year

Permanent workers are eligible for 14 days earned leave in a year, 9 days of festival/national holidays and 14 days sick leave which is sanctioned only when the doctor/staff nurse at the estate clinic certifies it. On the days that workers are sick, they are eligible for $\frac{3}{4}$ of daily wages, whereas for other holidays it is the daily wages. Earned leave may or may not be availed by all workers. In the large tea estates that we visited, workers belonging to states other than Tamil Nadu and residing on the estate premises mentioned that they do not take leave every year. Our rough estimate is that about 70-80 percent of tea workers are from other states.¹⁵ Hence, for our estimation of working days and paid days contributed by holidays/leave, we have included all 9 national/festival holidays and taken an average of 7 days of sick leave and 10 days of earned leave. This gives a total of 287 paid working days in a year (313 days excluding Sundays less 9 paid public holidays, 7 paid sick leave days, and 10 earned leave days). We estimate that this consists of 150 working days during peak season months (157 days excluding Sundays less 4 paid public holidays, 3 paid sick leave days, and no earned leave days) and 137 working days during lean season months (156 days excluding Sundays less 4 paid sick leave days, 5 paid public holidays, and 10 earned leave days).

14.1.3 Estimated prevailing monthly wage excluding end of year bonus and in kind benefits

Considering the above estimates of daily wages and number of working days and paid days per year, the monthly salary works out to be Rs. 8,627/- (\$124) (Table 17). This does not yet take into consideration the value of the end of year bonus and in kind benefits which vary considerably across tea estates, which are discussed below.

Table 17: Estimation of monthly wages before considering monthly value of annual bonus and in kind benefits			
	Number of days paid	Daily wages (in Rs.)	Total annually (in Rs.)
Peak season days working	150	349	52,350
Lean season days working	137	319	43,703
Public holidays	9	308	2,772
Sick leave	7	231	1,617
Earned leave	10	308	3,080
Total earnings per year			103,522
Earnings per month on average excluding value of end of year bonus and in kind benefits			8,627

¹⁵ Based on our discussions with workers, they seem to visit their native place once in two to three years.

14.2 End of year bonus and other deferred payments

At the end of the year, workers receive an annual bonus. Minimum annual bonus given must be 8.33 % of the basic pay. Bonus actually given by the large estates we visited to its workers in the past five years ranged from 8.33% to 20.0 % (Table 18). The average of the same over the past 5 years works out to be 18%. It would be logical to use as a value for the yearend bonus (i) 8.33% because that is the legally guaranteed percent, or (ii) 18% because that is the average percent over the last 5 years and only in one year, one of the two large estates visited gave less than 18% in the past 5 years. We decided to report two prevailing wages in this report, one using 8.33% and another using 18%. Again, the percentage used would vary by estate in an audit and so therefore the gap to a living wage would vary by estate depending on what percent is more or less guaranteed to workers every year.

Table 18: Annual bonus given as percent of annual basic wage, 2014-2018

Year	Estate 1	Estate 2	Small estate
2018	16	20	20
2017	8.33	19	
2016	20	19	
2015	20	19	
2014	20	19	
Average	16.9	19.2	

Other deferred benefits that workers are also entitled to are gratuity and provident fund. Gratuity bonus and provident fund are given on retirement if someone has worked a minimum of five years with their present employer. We do not include gratuity in prevailing wage for comparison to our living wage, because it is not available for ongoing daily expenses, but is received only when a worker decides to discontinue his/her service and has worked for more than five years or is retiring from work. Same is true for provident fund which is also a deferred benefit.

14.3 In kind benefits

As discussed earlier, the Plantation Act lays down norms for tea estates which they have to provide to their tea workers. This includes housing, water, health facility, creches, and tea. This section determines fair and reasonable values for these in-kinds benefits. Two estates shared the expenses that they had incurred in the previous year towards house maintenance, water provision to houses, crèche, health care services, and tea. Analysis of the same per worker indicates wide variation in the costs incurred by these two estates (Table 19). This indicates that when auditing is done against a living wage that the gap to a living wage of tea estates will differ estate by estate.

14.3.1 Housing

For workers living on the tea estate, houses are free. This is obviously of value to the workers who are living there. However as discussed in the earlier housing section, none of the estate

Table 19: Expenses of tea estates incurred per worker per month for in kind benefits (in Rs.) according to two large tea estates

	Estate 1	Estate 2
House maintenance	137	50
House depreciation	240 (estimated by authors)	
Water	65	8
Health care services	358	87
Creche	184	54
Other (raincoat, blanket, tea*)	172	124
*Cost of tea per worker per day in estate 1 is Rs. 6.20/- and Rs. 2.50/- in estate 2.		

houses for tea workers we visited met our local living wage healthy housing standard. Findings given in the housing section above indicate that the average size of the tea worker houses we visited was 254 sq. ft. instead of the carpeted area of 388 sq. ft. in our local housing standard. We estimated that the rental value of employer provided estate houses is around 60% of the rent for village healthy housing (see section on housing). It is only to be expected that the rental value of estate line housing units is much lower than rent for decent village houses outside of an estate, since estate housing is at a lower standard.

When considering the value of an in kind benefit as partial payment of a living wage, it is appropriate to consider the employer's costs, since it is not appropriate for employers to profit from providing a benefit to workers (Anker and Anker 2017). Two large estates indicated their maintenance expenses which were mainly for repairs and colouring of the house. On account of relatively older houses on one estate, this estate probably incurred more costs in maintaining its housing. The costs indicated by these two estates (Rs 137/- and Rs. 50/- per month per worker on average) are quite low - possibly due to the bare minimum maintenance which is undertaken avoiding major renovation. Reported costs for providing water were Rs. 65/- and Rs. 8/-. Based on this information, we decided to use Rs. 100/- for the value of estate housing maintenance which is roughly the average of house maintenance of the two large farms visited (and also considering that water is available for free to all households in rural Nilgiris District).

Figure 11: Snap shot from an estate row house indicating the date of construction



To this reported amount of around Rs. 100/- per month towards maintenance in housing cost, we decided to add an additional amount to approximate depreciation costs. Estimating this is not easy in part, because estate houses are generally quite old and so in a sense already largely depreciated from an actuarial point of view and so it is difficult to know their current value. We used the following assumptions to estimate approximate depreciation cost for estate houses: (i) value of an estate line house is one-half of the value of a new estate house in view of their age and condition; (ii) cost of constructing a new line house unit is Rs. 900/- per sq. ft. as indicated by estates; (iii) size of a line house unit is 254 sq. ft. as observed in visits to estates, and (iv) service life is 40 years. Based on these assumptions, depreciation is approximately Rs. 240/- per month ($0.5 \times 254 \times 900/40/12$). Taken together reported costs plus depreciation, the value of housing is Rs. 340/-.

14.3.2 Health care

All the tea estates we visited had health care facility within their estate premises. This was utilised by tea workers and their family members. Ambulance service is available on the estate to shift the patient, if required in emergency, outside. However, wide variation prevailed in terms of hospital/clinic costs to the tea estates. For example, there were wide differences per worker in the number of beds in hospital, field dispensary, availability of full-time doctor, staff nurse, lab technician, etc. across the estates. Reported cost per worker ranged from Rs. 87/-

for one large estate to Rs. 358/- for the other large estate. This large variation could be explained in part because of differences in the facilities provided. For example, one estate has a hospital with 40 beds + 3 dispensaries and a full-time doctor, lab technician, pharmacist, etc. The other large estate has one dispensary and one full-time nurse and visiting doctor. Further, the cost estimations may have been underreported by the estates since estate costs should include facility maintenance cost, electricity cost, etc. and these were not mentioned. Also as elaborated above in the health care section, in case the estate clinic cannot cope up in meeting with the health services required, the patient is shifted to hospital outside the estate. This cost if incurred by the worker is reimbursed to the worker by the estate. This cost should be included as part of health care cost to estates but may not have been included in the information which we were provided. On the other hand, Government health facility services are available and free and utilised by workers. Given all of these considerations, we decided to consider the value of health care in kind benefit as Rs. 250/- per month (which is slightly more than the average of how much estates indicated as their costs) in recognition that some estate health care expenses do not appear to have been included.

14.3.3 Crèches

As per the PLA, every plantation wherein fifty or more women workers are employed or were employed on any day of the preceding twelve months, or where the number of children aged six or less year of women workers is twenty or more, the plantation has to provide and maintain suitable rooms for the use of young children of such women workers. All three of the estates we visited had crèches on their premises. Number of crèches per estate varied from 3 to 8, with the total number of children varying from 50 to 159. Crèches functioned from Monday to Saturday from 8:00 AM. to 5:00 PM. They were equipped with toys, playground, and sleeping arrangements for children. Milk and nutritional food were provided to all children. In one estate, milk was provided by the crèches twice daily. Other meals were brought by the children. In all the crèches we visited, more than 90 percent of children were of migrant workers.

Given the variation in the amenities and services available in the crèches, the cost per worker varied between the two estates that provided us with information (Rs. 184/- for one estate and Rs. 54/- for the other estate). Cost was calculated per worker, although not all workers will have a child in a crèche. We assumed that the value of creche was Rs 120/- per worker (approximate average of costs for two large estates).

Figure 12: Snap shots from Creche on meal schedule and time table



Crèche in Tea Estate



Crèche in Tea Estate

DATE	TIME	MEAL	REMARKS
01.01.2018	07.30 AM	RECEIVING CHILDREN	ALL CHILDREN PRESENT
01.01.2018	08.00 AM	BRUSHING TEETH, FRESHENING UP AND CHANGE INTO UNIFORM	ALL CHILDREN PRESENT
01.01.2018	08.30 AM	BREAKFAST	ALL CHILDREN PRESENT
01.01.2018	09.30 AM	LEARNING TIME	ALL CHILDREN PRESENT
01.01.2018	11.00 AM	PLAY TIME	ALL CHILDREN PRESENT
01.01.2018	12.30 PM	LUNCH	ALL CHILDREN PRESENT
01.01.2018	01.30 PM	REST TIME	ALL CHILDREN PRESENT
01.01.2018	03.00 PM	PLAY TIME	ALL CHILDREN PRESENT
01.01.2018	04.00 PM	SNACKS	ALL CHILDREN PRESENT
01.01.2018	05.00 PM	CHANGE INTO PERSONAL CLOTHES & DEPART FROM CRECHE	ALL CHILDREN PRESENT

Crèche Feeding Schedule and Menu

TIME	ACTIVITY
07.30 TO 08.00 AM	RECEIVING CHILDREN
08.00 TO 08.30 AM	BRUSHING TEETH, FRESHENING UP AND CHANGE INTO UNIFORM
08.30 TO 09.30 AM	BREAKFAST
09.30 TO 11.00 AM	LEARNING TIME
11.00 TO 12.30 PM	PLAY TIME
12.30 TO 01.30 PM	LUNCH
01.30 TO 03.00 PM	REST TIME
03.00 TO 04.00 PM	PLAY TIME
04.00 TO 05.00 PM	SNACKS
05.00 PM	CHANGE INTO PERSONAL CLOTHES & DEPART FROM CRECHE

Crèche Time Table

14.3.4 Other in kind benefits

Tea estates provide blankets and raincoats to the worker every year. We do not consider protective clothing in our calculation of the value of in kind benefits because raincoats are work-related and not for the personal use and benefit of workers. We do not consider blankets, because they are of relatively low value when prorated over a year.¹⁶

Estates provide tea to workers twice daily. Cost of the tea per worker per day according to two large estates was Rs. 6.20/- and Rs. 2.50/- and according to a small estate this was Rs. 2.30/-. The estate with the higher cost provided tea with milk, while the other two estates with the lower cost provided only black tea. Note that jaggery is used instead of sugar in tea as it is considered to provide warmth to the body. For expositional purposes, we valued tea as partial payment of our living wage as Rs. 60/- per month (approximate cost per day for the two estates which do not provide milk in the tea). However, note that the value of tea would be around Rs. 150/- per month for the large estate which includes milk in tea.

14.3.5 Total value of in kind benefits

The total estimated value of in kind benefits (house maintenance and depreciation, health care, crèche, and tea) works out to be Rs. 770/- per month (i.e. Rs. 340/- for housing + Rs.

¹⁶ The Tea Act directs the Tea Board to help in securing better working conditions towards improvement of amenities and incentives for workers. Education stipends to children of tea plantation workers is one of the welfare schemes of the Tea Board. To encourage education among the children of tea plantation workers, the Tea Board grants stipends from elementary/primary stage up to graduation level courses. Under the scheme, tuition fees and hostel charges (including boarding and lodging) are paid on the basis of actual costs subject to a maximum ceiling of Rs. 40,000/- (\$573) per annum per student consisting of Rs. 20,000/- (\$286) for tuition fees and Rs. 20,000/- (\$286) for hostel charges (effective from 01-04-2007). One of the study estates mentioned that during the current year approximately 30 workers had applied for a stipend from the Tea Board. Following the submission of forms, it takes a few months before the money gets approved. We do not consider this benefit as partial payment of a living wage, because it is not very large when considered its value per tea worker.

250/- for health care + Rs. 120/- for creche + Rs. 60/- for tea). As per the national laws and ILO wages conventions (Anker and Anker 2017), the value of an in kind benefit as partial payment for living wage has to be fair and reasonable to all stakeholders and not exceed the cost to employers of providing these benefits. It is important, however, to keep in mind that the value of in kind benefits actually differs estate by estate and so the possible gap to payment of the living wage actually differs across estates. Value for in-kind benefits calculated could – and does - actually differ from employer to employer. We did not find them to be substandard except for houses being too small. Very sub-standard benefits will also not work in the interest of employer. Availability of acceptable in-kind benefits meeting the workers requirements facilitates in holding them to work on tea estate for longer duration, as they also serve as spokesperson to get other workers to join them on the estate to work. Turnover of workers on tea estate is less in such cases.

14.4 Total pay

Total remuneration works out to be Rs. 10,843/- per month on average for tea workers of large estates when 18% annual end of year bonus is “guaranteed in practice” and Rs. 10,066/- per month when the legal 8.33% end of year bonus is used. This total pay consists of Rs. 8,005/- cash earnings for working days, Rs. 622/- cash earnings for nonworking days, Rs. 1,446/- (or Rs. 669/-) for end of year bonus, and Rs 770 / for in kind benefits. These are illustrative amounts, since pay varies by estate depending on in kind benefits provided and practice on end of year bonus.

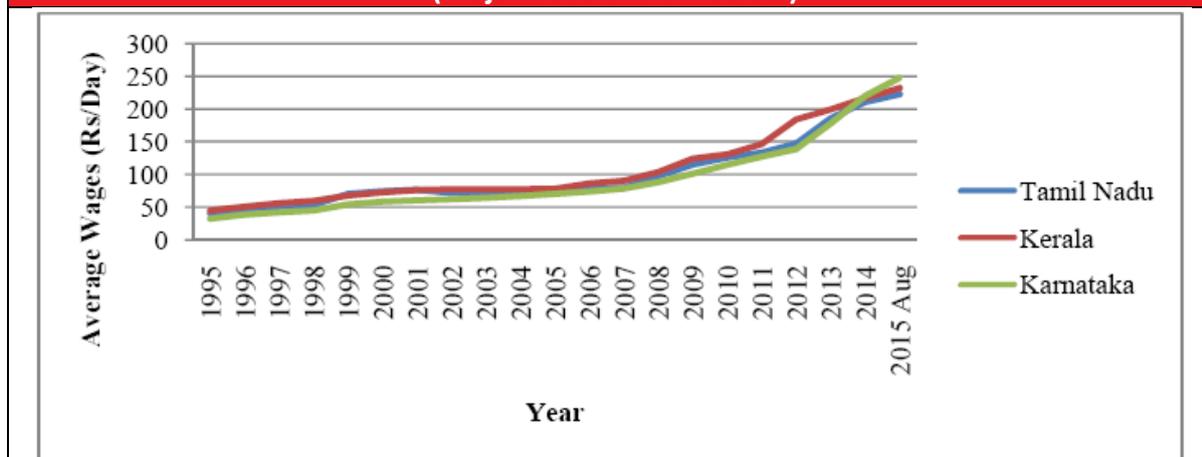
14.5 Limitations of the prevailing wage data

The total prevailing pay estimated above is based on data shared by the tea estates visited for the study. It could be argued that since this information does not come from a random sample of estates, the estimated prevailing pay could be either an over or under estimate. There are limitations in our estimation of prevailing wage. Across the estates, differences prevail on the cut-off point used for minimum quantity of tea needing to be plucked in a day, amount paid for every additional kilo of tea plucked, and quality and value of in-kind benefits. The number of days workers actually work during peak and lean seasons may also vary. Despite this, it is reasonable to draw tentative conclusions about tea estate prevailing wages and gaps to living wage, because there are considerable similarities in practice in wage payments across tea estates and differences are not all that great in practice.

15. WAGE TREND

Figure 13 illustrates the wage trend of average daily wage rate among tea plantation labour between 1995 and 2015 (Tantri Malini L, 2017). In 1995, the wage of around Rs. 45/- gradually increased over the years until 2012, after which there was a relatively steep rise. As discussed earlier, there was a further increase in the daily wage to Rs. 308/- in 2018. This implied an increase of 46.5 percent since 1995 in real terms adjusting for inflation over these 23 years.

Figure 13: Trends in the Average Wage Rate of Tea Plantation Labour (Major South Indian States)



Note: Wage of around Rs. 45/- in 1995 is equivalent to Rs. 181.74/- in 2015 considering inflation between 1995 and 2015. Actual wage in 2015 was around Rs. 220/-. This implies that wages rose in real inflation adjusted terms by around 21% in this 20-year period.

Source: Tantri Malini L, 2017.

16. WAGE LADDER

This section indicates how our estimated living wage compares to other prevailing wages in tea sector, poverty line wages for rural Tamil Nadu, and other wage benchmarks for Tamil Nadu (figure 16.1).

16.1 Rural Tamil Nadu poverty line wage

Poverty line for rural Tamil Nadu for 2011/12 was Rs. 1,081.94/- per person per month. This is Rs. 4,327.76/- for a family with 4 members. Dividing this by number of full-time workers per family of 1.73, we get a rural Tamil Nadu poverty line wage equal to Rs. 2,502/- per month. Increasing this poverty line wage for inflation rate in India between 2012 and 2018¹⁷, the revised 2018 rural Tamil Nadu poverty line wage works out to be Rs. 3,867.96/-per month.

16.2 World Bank poverty line wage

We calculated the wage implied by the World Bank poverty line of \$3.20 per day for a lower middle-income country like India.¹⁸ This works out to be Rs. 4,647/- (i. e. 20.65 PPP for India x 3.20 PPP x 4-person family size x 365/12 days per month/1.73 full-time workers per family).

16.3 Average wages in other sectors and occupations in Tamil Nadu

For comparison to our living wage, we used average wages in Tamil Nadu for four generally low skill occupations and sectors. These are agricultural labourers, shop and commercial establishments, hotels and restaurants, and taxi drivers.

¹⁷ The average annual inflation rate in this period was 6.42 percent.

¹⁸ The World Bank recently changed its international poverty lines. It now considers India as a lower-middle-income country and so its \$ 3.20 PPP per person per day poverty line is relevant for India in 2018. Previously, the World Bank used its \$1.90 PPP poverty line for low-income countries for India.

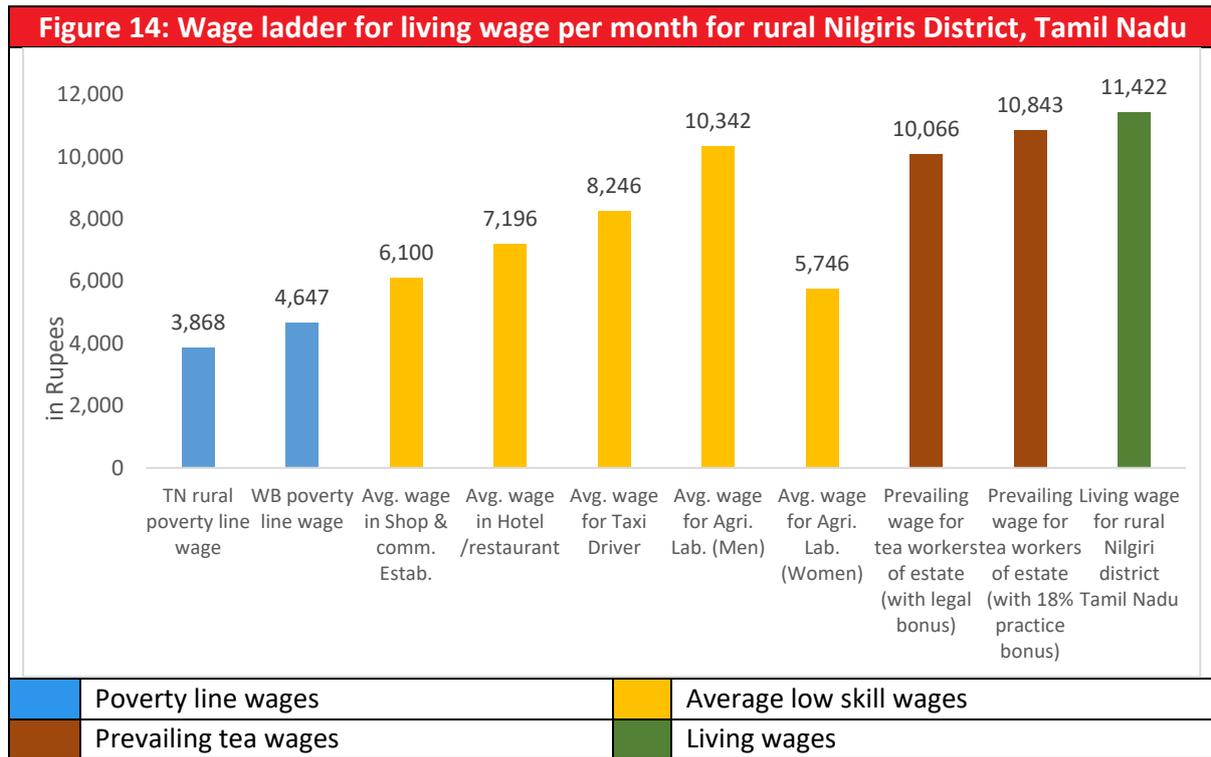


Figure 14 provides a wage ladder that compares our living wage to average wages in Tamil Nadu for other sectors and occupations as well as rural Tamil Nadu and World Bank poverty line wages. Our living wage is 39% more than the average wage for Tamil Nadu taxi drivers, 59% more than average wage for restaurant workers, and 87% more than average wage for commercial shop workers. In case of agriculture labourers, there is a very large gender difference in wages. Average agricultural wage for men is around 10% less than our living wage (although it is important to consider that work in the agriculture sector is not generally available for all 12 months), but the average agricultural wage for women is around 50% of our living wage thereby indicating a major gender difference in wages. Our living wage is around 3 times (295%) more than the rural Tamil Nadu poverty line wage and around 2.5 times (246%) more than the World Bank poverty line wage for lower-middle income countries such as India.

As discussed above, the monthly prevailing wages of tea workers of large estates includes an annual yearend bonus prorated to a monthly value as well as value of in-kind benefits. Our estimated living wage is around 13.5% percent more than the prevailing wage in tea estates when only the legally required annual yearend bonus is paid and around 5% more than prevailing tea sector wages when a more typical 18% yearend bonus is paid by large tea estates.

It may be reiterated that our living wage estimate includes provident fund and ESIC payroll deduction using rules in force during our study and primary data collection in 2018 and so we do not consider the reduction in ESIC contribution that came into effect after our study.

It is also worth noting that subsequent to our fieldwork, Finnwatch (2019) indicated a living wage of Rs. 16,000 for Tamil Nadu tea workers based on the views of 60 tea workers from 3 Nilgiris tea plantations who were asked how much they thought they would need to earn to cover their living costs. The central trade unions in 2019 demanded Rs. 20,000 per month as a necessary national minimum wage (The Economic Times, 2019). Despite both of these figures being much higher than our living wage, by 40% and 75% respectively, in our view, they are actually reasonably similar to and consistent with our findings for rural Nilgiris of Rs. 11,422 as explained below – if both the tea workers questioned in the Finnwatch report and the central trade union demand indicate the income which families need each month assuming that there is one worker per family. We think that it is likely that the 60 tea workers interviewed by Finnwatch would have interpreted the question about their needs as how much the family needs and not how much they personally need to earn after considering that their spouse is working and earning 78% of a living wage each month. If our interpretation is correct, this would mean that the estimate of Rs. 16,000 from the Finnwatch report is similar to and a little below our estimate of Rs. 17,116 for family living expenses for decency. Similarly, we feel that the trade union demand of Rs. 20,000 is not much different from our Rs. 17,116 estimate of family living expenses for decency given that our estimate is for rural areas and the trade union demand is for all-India including urban areas and large cities; in addition, this trade union demand is probably based on the idea that a minimum wage should be sufficient for each worker be able to support his or her family at a decent standard.

17. CONCLUSIONS

Table 20 provides details of our living wage estimates for rural Nilgiris District in Tamil Nadu State where tea production and large tea estates are very important. Some key assumptions used to make these living wage estimates are provided in Table 21.

Our living wage for rural Nilgiris District is Rs. 11,422/- (\$164) per month. Based on information from a few tea estates, we estimate that this living wage is around 5% to 13.5% more than the prevailing wages of tea workers on large tea estates depending on the size of the yearend bonus (assuming an 18% yearend bonus that seems common in practice or the 8.33% yearend bonus required by law). There are a number of possible explanations for this relatively small gap to a living wage for tea workers in rural Nilgiris District.

Firstly, it is undoubtedly due to in part to the existence of collective bargaining agreements between employers and trade unions.

Secondly, the relatively small gap to a living wage for tea workers in Nilgiris District may be due in part to the conservative assumptions we used in this report to estimate our living wage and the cost of a basic but decent living standard. Thus, the model diet we used to estimate food costs includes only one cup of milk per day, 36 grams of chicken per day (which could be for one big meal on weekends with around ½ pound of chicken or three meals per week each with an 85 gram portion of chicken), and low cost acceptable varieties of rice, pulses, fruits, vegetables, etc. For houses costs, we considered a decent house to need only 388 sq. ft. (36 square meter) of living space for a family of 4 (2 adults and 2 children).

Third, there are various Tamil Nadu government policies that reduce living costs to families. For example, the cost of our model diet and food prepared at home is reduced by the Public Distribution System which provides free or subsidized food including rice, wheat, sugar, cooking oil, and dal. The cost of food prepared at home is further reduced, because children in Tamil Nadu receive free mid-day meals in school and consequently the cost of preparing these meals at home is avoided. Furthermore, living costs for families are lowered by the availability of free and good quality public health care and public schools. In addition, water is free and cost of cooking gas and electricity are subsidized in Tamil Nadu.

Despite conservative assumptions and good government policy, our living wage estimate is still considerably higher than wages outside the tea sector. Our living wage is around 2.5 times higher than the Tamil Nadu poverty line wage and around 3.0 times higher than the World Bank poverty line wage for lower middle-income countries such as India. Our living wage is around 40% more than the average wage for Tamil Nadu taxi drivers, around 60% more than the average wage for restaurant workers, around 90% more than the average wage for commercial shop workers, and around 100% more than the average wage for female agricultural workers although only around 10% higher than for male agricultural workers (although it is necessary to keep in mind that work in the agriculture sector is not generally available for all 12 months during the year). Our estimate of family living expenses for decency we think is reasonably similar to the amount stated in a Finnwatch 2019 report, as well as the recent recommendations of the central trade unions for a national minimum wage.

Since large tea estates fall within the gambit of the Plantation Act, large tea estates must by law provide extensive in kind benefits to their workers such as housing, health care services, and creche. However, we found that the quality of in kind benefits varies across tea estates. In addition, we found that estate line housing is not only well below our living wage local healthy housing standard in terms of size (388 square feet or 36 square meters) but also generally below the Plantations Act 1991 standard (287 square feet) as well as often being quite old. It is clear that housing conditions on tea estates need improvement and its standard brought up-to-date to take into consideration that India is no longer a low-income country and Tamil Nadu is relatively developed for India.

Since most large tea estates are involved in exporting tea to higher income countries, we feel that raising wages in the tea sector in Nilgiris to a living wage should involve the entire international value chain given the international competitiveness of tea. Standard setting and certifying NGOs such as Rainforest Alliance, Fairtrade International, Social Accountability International, and Ethical Tea Partnership, which have living wage in their codes of practice should help in developing programs with the value chain to reach the worthy goal of a living wage for tea workers in Nilgiris.

In closing, it is important to point out that the value of a living wage increases over time along with inflation in order to ensure that the living wage keeps its purchasing power. This means that the living wage estimated in this report will be somewhere around 10% higher and so perhaps somewhere around Rs. 12,600 in June 2020 when this report is published.

Table 20: Summary calculations of Living Wage		
PART I. FAMILY EXPENSES	Local currency (In Rupees)	USD (\$)
Food cost per month for reference family (1)	8,112	116
Food cost per person per day	69.85	1.00
(Free school meals) Replacement value of free school meals per family per day	12.69	0.18
Food cost per person per day adjusted for replacement value of free school lunch	66.68	0.95
Housing costs per month (2)	3,078	44
Rent per month for acceptable housing	2,500	36
Opportunity cost of interest on 6 months advance rent payment required ^d	150	2
Utility costs per month	428	8
Non-food non-housing (NFNH) costs per month taking into consideration post check adjustments (3)	5,111	73
Preliminary estimate of NFNH costs per month	5,111	73
Health care post check adjustment	0	0
Education post check adjustment	0	0
Additional amount (5%) for sustainability and emergencies (4A)	815	12
Additional possible amount (usually 5%) for extended family support (4B)	0	0
TOTAL LIVING COSTS PER MONTH FOR BASIC BUT DECENT LIVING STANDARD FOR REFERENCE FAMILY SIZE (5) [5=1+2+3+4A+4B]	17,116	245
PART II. LIVING WAGE PER MONTH		
NET LIVING WAGE PER MONTH (6) [6=5/# full-time workers]	9,894	142
Statutory deductions from pay (7)	1,528	22
Statutory payroll deductions that are a % of pay (7A) ^a	1,413	20
Income tax (7B)	0	0
Other statutory deductions from pay (7C) ^b	115	2
GROSS LIVING WAGE PER MONTH (8) [8=6+7]	11,422	164
WHEN LIVING WAGE STUDY HAS AN INDUSTRY OR ESTABLISHMENT FOCUS		
PART III: CASH (BASIC) LIVING WAGE PER MONTH WHEN WORKERS RECEIVE COMMON IN-KIND BENEFITS AND COMMON CASH ALLOWANCES AND BONUSES IN INDUSTRY OR PARTICULAR ESTABLISHMENT		
Prorated value per month of common in-kind benefits in industry or establishment (9A) ^c	770	11
Prorated value per month of cash yearend bonus allowances and bonuses in industry or establishment (9B)	669 (1,446)**	10* (21)**
Net cash (basic) living wage per month when workers receive common in-kind benefits, cash allowances and bonuses in industry or establishment (10) [10=6-9A-9B]	8,455* (7,678)**	121* (110)**
Gross cash (basic) living wage per month when workers receive common in-kind benefits, cash allowances and bonuses in industry or establishment (11) [11=8-9A-9B]	9,983* (9,206)**	143* (132)**
* Value assumes workers receive 8.33% annual yearend bonus required by law.		
** Value in brackets assumes workers receive a common 18% in practice yearend bonus for large estates.		
Notes: ^a Provident Fund is 12.5% of pay. ^b Professional tax. ^c Common in kind benefits are housing, health care, creche, and tea. ^d Represents the opportunity cost of the six months advance deposit usually required to rent.		

Table 21: Key values and assumptions	
Date of study	June-July 2018
Exchange rate of Indian Rupees to US\$	69.82
Number of full-time workers per couple	1.73
Number of full-time workdays per month	26
Number of hours work in normal week	48
Reference family size	4
Number of children in reference family	2
Preliminary NFNH to Food ratio	0.63

ANNEX 1. DESCRIPTION OF HOUSES

Condition of tea worker houses visited and observed in large tea estates of Nilgiris			
Acceptable standard?	Rent in local currency	Size (in sq. feet) & rooms	Comments
Yes	Free	320 sq. ft LR, BR, K	Line house on tea estate. Wall and floor are cemented. Roof is sloping made up of red tiles. Conditions of these are good. Kitchen has ventilation facility for smoke from kitchen. Electricity is available 24 hours. Drinking water is available daily, free of cost and is stored in vessel. Toilet is outside the house, pit latrine with slab. Condition is good. House owns a TV and 2 mobile phones.
Yes	Free	320 sq. ft LR, BR, K	Line house on tea estate. Wall and floor are cemented. Roof is sloping made up of red tiles. Conditions of these are good. Kitchen has ventilation facility for smoke from kitchen. Electricity is available 24 hours. Drinking water is available daily, free of cost and is stored in vessel. Toilet is outside the house, pit latrine with slab. Condition is good. House owns a TV and 2 mobile phones.
Yes	Free	320 sq. ft LR, BR, K	Line house on tea estate. Wall and floor are cemented. Roof is sloping made up of red tiles. Conditions of these are good. Kitchen has ventilation facility for smoke from kitchen. Electricity is available 24 hours. Drinking water is available daily, free of cost and is stored in vessel. Toilet is outside the house, pit latrine with slab. Condition is good. House owns a TV and 2 mobile phones.
No	Free	300 sq. ft LR, BR, K	Line house on tea estate. Walls and floor are cemented. Roof is sloping made up of red tiles. Condition of roof tiles is not that good, gets more damaged during rains, which is replaced by company on complaining. Kitchen is separate. There is window in dwelling and ventilation was good. Electricity is always available. Drinking water is availed from tap located outside the house. It is stored in closed vessel and is supplied every day. No need to purchase water. Toilet is located outside, away from the house in rows. It is a pit latrine, but there is no ventilation. There are insect problems. Overall condition is fair.
No	Free	300 sq. ft LR, BR, K	Line house on tea estate. Walls and floor are cemented. Roof is sloping made up of red tiles. Condition of roof tiles is not that good as it is damaged. During rains there is seepage problem, but the estate replaces it on complaining. Door is wooden, but it is weak. Kitchen is separate. Electricity is always available. Drinking water is availed from tap located outside the house. It is stored in closed vessel and is supplied every day. No need to purchase water. Toilet is located outside, away from the house in rows. It is a pit latrine with no ventilation, poor condition. Own a TV and 2 mobiles. Overall condition is fair.
No	Free	300 sq. ft LR, BR, K	Line house on tea estate. Walls and floor are cemented. Roof is sloping made up of red tiles. Condition of roof tiles is not good. Separate kitchen is. Electricity is always available. Drinking water is availed from tap located outside the house. It is stored in closed vessel. No need to purchase water. Toilet is located outside, away from the house in rows. It is a pit latrine with no ventilation, poor condition. Own a TV and 3 mobiles. Overall condition is fair.

Condition of tea worker houses visited and observed in large tea estates of Nilgiris			
Acceptable standard?	Rent in local currency	Size (in sq. feet) & rooms	Comments
No	Free	232 sq. ft R, K,	Has one room of 10 x 12 ft. and kitchen of 10 x 8 ft. It has a verandah in front of 4 x 10 ft. Wall and floor is cemented, while the roof has red tiles laid out on wooden beams. Room has a window, but it seems to be permanently closed with wooden pane. Drinking water is collected from the tap located outside the house and stored in closed vessel. They will boil the water and then use it for drinking. Toilet is located outside the house but attached to the house. Pit toilet had cracks. Electricity was always available.
No	Free	356 sq. ft R, K, Veranda is covered and used as a room	One room is of 10 x 12 ft, second room is 10 x 8 ft. In addition to these rooms, they have covered the veranda from the front and have also extended and covered the area on the backside of their house. This gives them an additional use of 156 sq. ft. However, walls of the extended area are of tin, while the first two rooms had cement walls. Drinking water is available through a tap outside the house. On account of extension, they have the entrance to the toilet from inside the house. Both the front and backside were neat and clean.
No	Free	228 sq. ft R, K	House has two rooms of 12 x 10 ft and 12 x 9 ft. The smaller one is used as a kitchen. Electricity is always available and tap is the source of drinking water, located outside the house. Toilets are located outside away from the house.
No	Free	228 sq. ft R, K	House has two rooms of 12 x 10 ft and 12 x 9 ft. Small room is used as kitchen. Electricity is available and tap is the source of drinking water. Toilets are located outside the house.
No	Free	228 sq. ft R, K	House has two rooms of 12 x 10 ft and 12 x 9 ft. The larger one serves as living /bedroom and the smaller one is used as a kitchen. Electricity is always available. Drinking water is availed from the tap located outside the house. Toilets are located outside the house.
No	Free	270 sq. ft R, K, Veranda in front is covered	In front of the room (10 x12 ft), the veranda is covered towards the front side with walls made up of tin. This also serves as a room to be used by house. Room walls and flooring are cement, and the roof is 'A' shape, with red tiles resting on wooden beams. Condition of these are fair. Tap located outside the house serves as the source of drinking water. Toilet is located away from house, not clean. Doors were not in good condition; the outer half tin doors were broken.
No	Free	206 sq. ft R, K	This house is a line house. It has two rooms of 12 x 10 ft and 10 x 7 ft. Electricity is available. Drinking water is available inside the house. Water is free. Toilet is located outside the house.
No	Free	206 sq. ft R, K	This house is a line house. It has two rooms of 12 x 10 ft and 10 x 7 ft. Electricity is available. Drinking water is available inside the house. Water is free. Toilet is located outside the house.
No	Free	206 sq. ft R, K	This house is a line house. It has two rooms of 12 x 10 ft and 10 x 7 ft. Electricity is available. Drinking water is available inside the house. Water is free. Toilet is located outside the house.
No	Free	206 sq. ft R, K,	This house is a line house. It has two rooms each of 12 x 10 ft and 10 x 7 ft. Walls and floor are cemented with tile roof. Electricity is available. Drinking water is available inside the house. Water is free. Toilet is common located away from the house.
No	Free	206 sq. ft R, K	This house is a line house. It has two rooms of 12 x 10 ft and 10 x 7 ft. Electricity is available. Drinking water is available inside the house daily. Water is free. It is stored in closed vessel. Toilet is common, located away from the house.

Condition of tea worker houses visited and observed in large tea estates of Nilgiris			
Acceptable standard?	Rent in local currency	Size (in sq. feet) & rooms	Comments
No	Free	206 sq. ft R, K	This house is a line house. It has two rooms of 12 x 10 ft and 10 x 7 ft. Electricity is available. Drinking water is available inside the house daily. Water is free. Toilet is common located away from the house.
No	Free	280 sq. ft R, K, Veranda covered	House has a room (10 x12 ft.), kitchen (8 x10 ft) and a veranda (10 x 8 ft) which is covered and used as a room. It had a window with glass pane but was covered from inside with a blanket being used as a curtain. Roof of the room had plastic sheet as a false ceiling, however it was torn from a side. Above this was the asbestos sheet in A shape resting on wooden beams. Tap water was available inside the house. Toilets are located away from the house in a row.
Yes	Free	290 sq. ft. LR, BR, K	Living room is of 10 x 7 ft leading to a bedroom (10 x 10 ft) and then a kitchen (10 x 8 ft). This leads to a bathroom and toilet each of 5 x 4 ft. Walls, roof and floor are cemented. Electricity is always available. Indoor pipe water is available daily. Toilet is inside the house.
Yes	Free	290 sq. ft. LR, BR, K	House has a living room of 10 x 7 ft, bedroom (10 x 10 ft) and a kitchen (10 x 8 ft). This leads to a bathroom and toilet each of 5 x 4 ft. Walls, roof and floor are cemented. Electricity is always available. Indoor pipe water is available daily. Toilet is inside the house.
Yes	Free	290 sq. ft. LR, BR, K	House has a living room 10 x 7 ft, followed by a bedroom (10 x 10 ft) which leads into a kitchen (10 x 8 ft). Bathroom and toilet each of 5 x 4 ft are approached from Kitchen. Walls, roof and floor are cemented. Electricity is always available. Indoor pipe water is available daily.
No	Free	244 sq. ft. LR, BR, K	Basically 2 rooms each of 10 x 7 ft. and 10 x 8 ft. Each room also has bed and is used for sleeping. Kitchen of 10 x 7 ft leads to a bathroom (6 x 4 ft). House has electricity facility, with tap water inside the house. Toilet is outside the house.
No	Free	244 sq. ft. LR, BR, K	2 rooms of 10 x 7 ft. and 10 x 8 ft. Kitchen of 10 x 7 ft leads to a bathroom (6 x 4 ft). House has electricity facility, with tap water inside the house. Toilet is outside the house.
No	Free	244 sq. ft. LR, BR, K	Basically 2 rooms of 10 x 7 ft. and 10 x 8 ft. Kitchen of 10 x 7 ft leads to a bathroom (6 x 4 ft). House has electricity facility, with tap water inside the house. Toilet is outside the house.
Yes	Free	352 sq. ft. LR, BR, K	House has a living room (10 x 8 ft), bedroom (10 x10 ft) and kitchen (17 x 8 ft). Bathroom, toilet is available inside the house. Roof is also made up of concrete material and it is sloping.
No	Free	240 sq. ft. R, K,	House has two rooms, with one being used as a kitchen. Condition of roof, walls and floor is fair. House has electricity, with drinking water being available outside the house. Drinking water is stored in closed vessel. Toilet is situated outside the house, condition of which is fair.
No	Free	240 sq. ft. R, K	House consist of two rooms of 10 x 12ft and 12 x 5 ft. They have enclosed extra portion in front of the house of 4 x 11 ft. Bathroom is of 4 x 4 ft. Toilet is located outside the house at a distance in a row. House receives regular electricity supply. Drinking water is available through a tap located outside the house.
No	Free	196 sq. ft. R, K	House has two rooms (10 x 12 ft. and 12 x 5 ft.) with a bathroom of 4 x 4 ft. Toilet is outside the house. Drinking water is also brought from outside.
No	Free	196 sq. ft. R, K	House has two rooms (10 x 12 ft. and 12 x 5 ft.) with a bathroom of 4 x 4 ft. Electricity is always available. Toilet is outside the house. Drinking water is also brought from outside the house and is available on all days.

Condition of tea worker houses visited and observed in large tea estates of Nilgiris			
Acceptable standard?	Rent in local currency	Size (in sq. feet) & rooms	Comments
No	Free	190 sq. ft. R, K	House has a room of 10 x 12 ft. and kitchen of 10 x 7 ft. Kitchen has a chimney for the smoke to go out. Walls and floor are cemented with red tile roof. It has electricity and receives water through a tap inside the house. Toilet is located outside the house.
No	Free	190 sq. ft. R, K	House has a room (10 x 12 ft.) and kitchen (10 x 7 ft.). Walls and floor are cemented with red tile roof. It has regular electricity and receives water through a tap inside the house. Toilet is located outside the house.

Sq. ft is Square Feet; R is Room; LR is Living Room; K is Kitchen; BR is Bedroom.

Supervisor/Mechanic house observed on large tea estate			
Acceptable standard?	Rent in local currency	Size (in sq. feet) & rooms	Comments
No	Free	250 sq. ft R, K and veranda	This line house was constructed 8 years ago. This house has flat roof of concrete with tiles fitted on that. Presence of tiles prevents seepage of water in the concrete. Room has a window with glass pane. So, daylight comes inside. Both the front and back doors have a half tin door. During rainy season, it prevents the direct lashing of water on wooden door. Toilet is located away in a row.
Yes	Free	521 sq. ft LR, 2 BR, K, Veranda	LR and 1 BR were each of 10 x 10 ft. and 12 x 10 ft. Veranda was closed from front, as well as divided from middle so as to serve as second BR of 10 x 6 ft. Kitchen of 6 x 10 ft was separate. Tap water was available inside the house. House had a bathroom and toilet inside.
Yes	Free	344 sq. ft 2 R, K	House has a room of 10 x 7 ft and 10 x 10 ft. In each room, bed was there. Wall and roof are of cement. These houses have been constructed 8 years back and hence the residents are asked not to burn wood inside the house. Source of drinking water is tap located little away from the house outside. Toilet is located inside the house.
No	Free	264 sq. ft R, K, Veranda	Walls and floor are cemented, while the roof is of red tiles. Kitchen is separate, drinking water is brought from outside, toilet facility is outside the house whose condition was fair. Electricity is always available.
Yes	Free	370 sq. ft. LR, B, K, Veranda	The house has a covered veranda in front of 5 x 18 ft. and a LR of 8 x 8 ft. LR had a fire place also. Bedroom was of larger size 10 x 10 ft. Separate kitchen (10 x 8 ft) is available. House has bathroom /toilet inside the house.

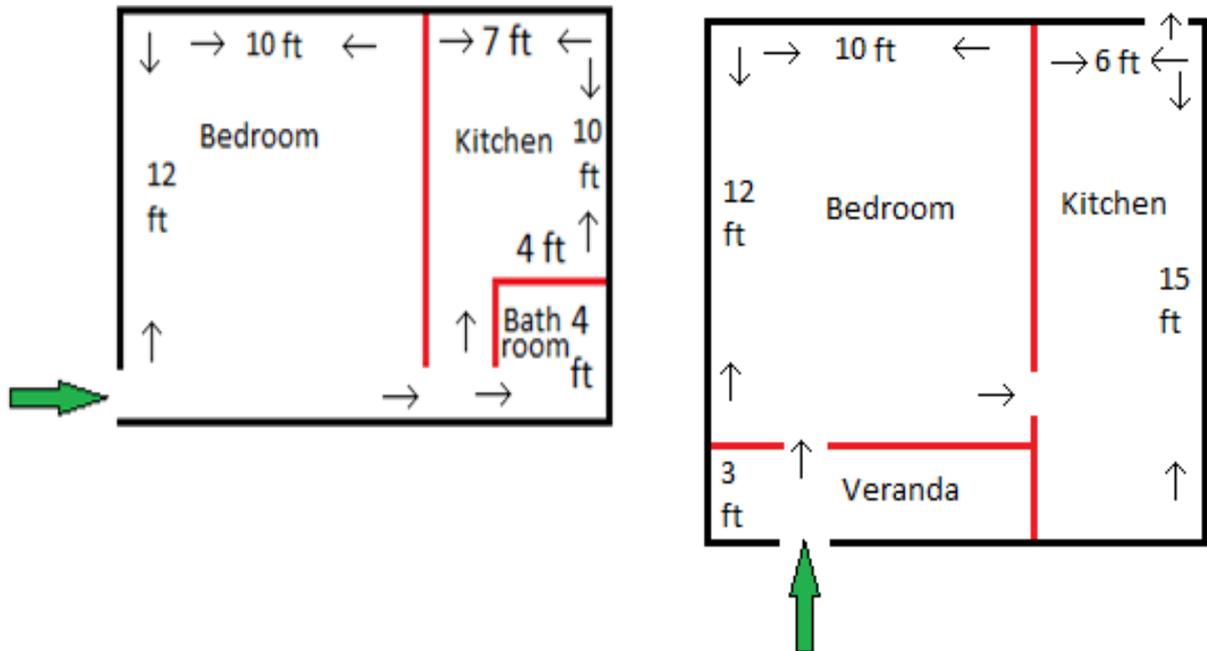
Tea workers houses observed outside the large tea estate			
Acceptable standard?	Rent in local currency/Self own	Size (in sq. feet) & rooms	Comments
Yes	Own	441 sq. ft. LR, 2BR, K	House is located in a Bagada community village. Has a living room, 2 bedrooms, and kitchen. House was well constructed of concrete. Roof had sloping tiles. Toilet was located outside in front of the house across the road.
Yes	Own	228 sq. ft. LR, BR, K	Living room is 10 x 8, bedroom is 10 x 10 ft and kitchen is 8 x 6 ft. The house is under final finishing of construction, but flooring was complete with tiles; roof and wall are concrete. Electricity is there. Indoor tap water is available and toilet is outside in front of the house.

Tea workers houses observed outside the large tea estate			
Acceptable standard?	Rent in local currency/Self own	Size (in sq. feet) & rooms	Comments
Yes	Own	240 sq. ft. LR, BR, K	This house is also in a village and is made up of concrete material, with red tiles for roof. Size of the rooms are living room 8 x 8 ft, bedroom 12 x 8, and kitchen 10 x 8. Kitchen has provision for both gas and wood burning chulha. Smoke goes out through a pipe in the corner. Drinking water is available inside the house. For drinking, they drink warm water. Toilet is built just outside a little away from the front door.
Yes	Own	282 sq. ft. LR, B, K and Puja prayer room	This was a Bagada community house. LR is 8 x 9 ft, BR is 11 x 9 ft, K is 5 x 5 ft, and a worship room is 9 x 6 ft. The puja room door was kept closed and opened only for worship. House had bathroom inside the house and toilet was just outside in front of the house. Staying there since 1964. In last 6 years, only 10 new houses have been constructed here.
No	Own	212 sq. ft. LR, B, K and Puja prayer room	Room on entrance is of 10 x 10 ft, with a smaller room of 5 x 10 ft. adjoining to it. Both rooms are also used for sleeping. House has a worship room of 5 x 4 ft, door of which was kept closed. Individual toilet and bathroom are located outside the house separately. Water has to be carried from a distance. As the house is located on a raised hillock, source of water is available at a lower height. Drinking water comes in the tap once in two days or sometimes twice a week. There is stream flowing by, from which water is collected for other household activities. Clothes are washed near this source only. Approximately 10 rounds are done daily for collecting water.
Yes	Own	412 sq. ft. LR, BR, K, store room	Living room is of approx. 6 x 8 ft.; bedroom is 16 x 11 ft.; kitchen is 10 x 10, adjoined to a store room of 8 x 8. Toilet/bathroom is immediately outside the house of 6 x 4 ft. Tap water is available inside the kitchen.
Yes	Own	444 sq. ft. LR, 2 BR, K	House has 2 bedrooms each of 10 x 12 ft and a living room of 8 x 8 ft. Separate kitchen of 10 x 10 ft is available. It has a separate toilet and bathroom inside the house. Walls and floor are cement. Roof of the house is concrete. Electricity is always available. Piped tap water is available within the house.
Yes	Own	344 sq. ft. LR, BR, K	House has a living room (10 x 10 ft.), bedroom (14 x 10 ft) and a kitchen (8 x 10 ft). A 6 x 4 ft. bathroom is available inside the house, while the toilet is outside. Piped tap water is available inside the house, but the toilet is located outside. Roof, wall and floor are concrete. Pit toilet is located outside the house
No	Own	260 sq. ft. LR, BR, K	House has two rooms each of 10 x 10 ft. Separate kitchen of 6 x 6 ft. Piped drinking water is available inside the house, but the toilet is located outside. Slab in the toilet was damaged.
Yes	Own	312 sq. ft. LR, BR, K	House has a living room (10 x 10 ft.), bedroom (14 x 10 ft) and a kitchen (8 x 6 ft). A 6 x 4 ft. bathroom is available. House has electricity facility always, as well as piped tap water inside the house. Toilet is located outside the house. Wall, floor and roof are concrete.
Yes	Own	280 sq. ft. LR, BR, K	House has a living room (10 x 10 ft.), bedroom (12 x 10 ft) and a kitchen (6 x 6 ft). Electricity facility is there. Piped drinking water is accessible inside the house. Wall and floor are of cement, but the roof is made up of tiles. Toilet is located outside the house.

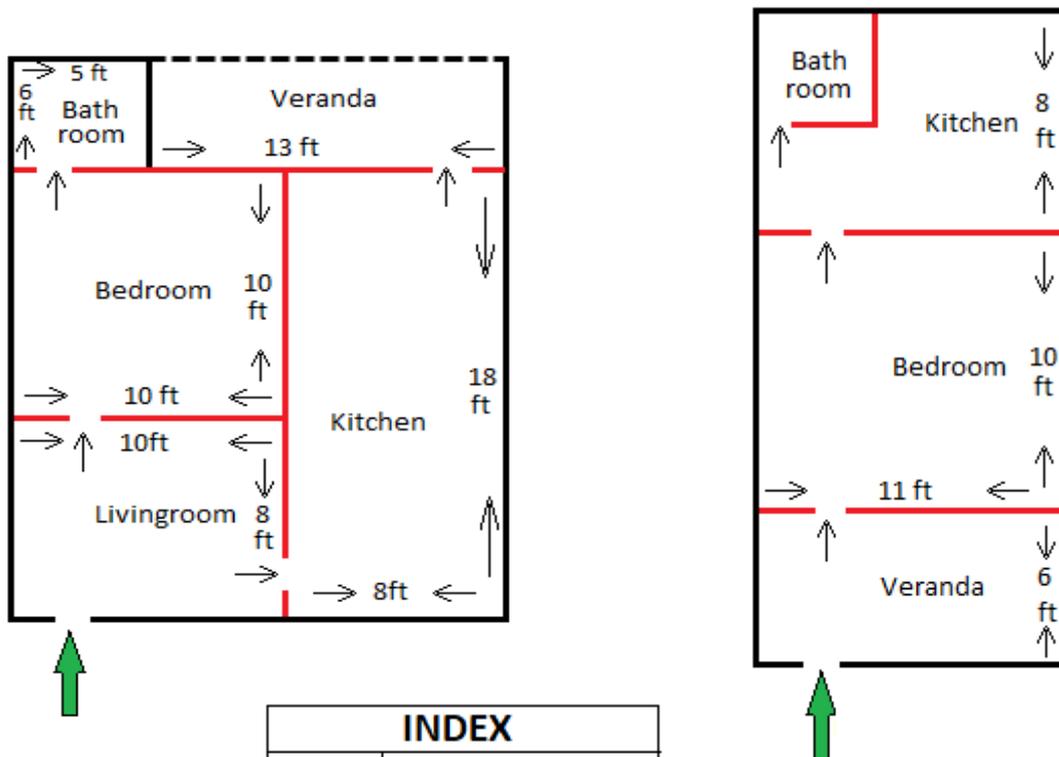
Decent houses visited outside large tea estate			
Acceptable standard?	Rent in local currency or Self owned	Size (in sq. feet) & rooms	Comments
Yes	Own	477 sq. ft. LR, BR, K	Living room (10 x8 ft.), bedroom (10x10 ft), kitchen (18x10 ft) and 2 bathroom/ toilet (4x7 ft and 4x4 ft) with a veranda in front. House is constructed recently with the latest material using cement and brick. Roof is concrete and flat. Floor has the latest tiles, even the kitchen platform has the latest decorative tiles. Both the toilet/bathroom had tiles. For cooking gas is used. Electricity connection is there. Water is available from the village reservoir.
Yes	Own	472 sq. ft. LR, BR, K	Living room (10x10 ft.), bedroom (15x10 ft.), kitchen (8x14 ft), toilet/bathroom (6x5). Veranda in front. This house is outside the village on the main road itself. Has a flat concrete roof. Water source is inside the house. Gas cylinder is used as fuel for cooking runs for around 2 months. Electricity bill comes once in two months.
Yes	Own	304 sq. ft. LR, BR, K	Living room (10x10 ft.), bedroom (12x10 ft.), kitchen (7x7 ft), toilet/bathroom (7x5 ft.). Material used is recent construction material. Roof is flat. Uses both gas and firewood (brought from estate during work). Cylinder for two months. No electrical appliances. Electricity units within 100 units. No electricity bills. Water from common village tap.
Yes	Own	350 sq. ft. LR, BR, K	Living room (10x10 ft.), bedroom (15x10 ft.), kitchen (5x12 ft), toilet/bathroom (8x5 ft.). Veranda in front. Uses Gas cylinder for cooking. One cylinder lasts two to three months. Firewood used too. Electrical appliances used iron and immersion heater. Electricity bill Rs. 100 -200 for 2 months.
Yes	Rented	465 sq. ft. LR, BR, K	Living room (17x10 ft.), bedroom (16x10 ft.), kitchen (10x10 ft), toilet/bathroom (7x5 ft.). House is on first floor, has glass pane windows in all the rooms and is well lighted. Gas is used for cooking. Electricity is there. Rent is Rs. 5,000 per month. Required an advance of Rs. 20,000/-.
Yes	Own	300 sq. ft. LR, BR, K	Living room (10x10 ft.), bedroom (10x10 ft.), kitchen (10x6 ft). Toilet/bathroom (4x4 ft.) is located immediately outside the house. Veranda in front 6 x4 ft. Total area is approximately 300 sq. ft. For cooking gas is used. Electricity and water connection are there.
Yes	Rented	355 sq. ft. LR, BR, K	Living room (10x12 ft.), bedroom (10x12 ft.), kitchen (10x8 ft), toilet/bathroom (7x5 ft.). Rent is Rs 4,000/-. Had taken advance of Rs. 15,000/-. House has glass pane windows and is well lighted. Gas is used for cooking. Electricity is there.

ANNEX 2

SCHEMATIC SKETCHES OF TEA WORKERS HOUSES LOCATED IN LARGE TEA ESTATES IN LINE HOUSES

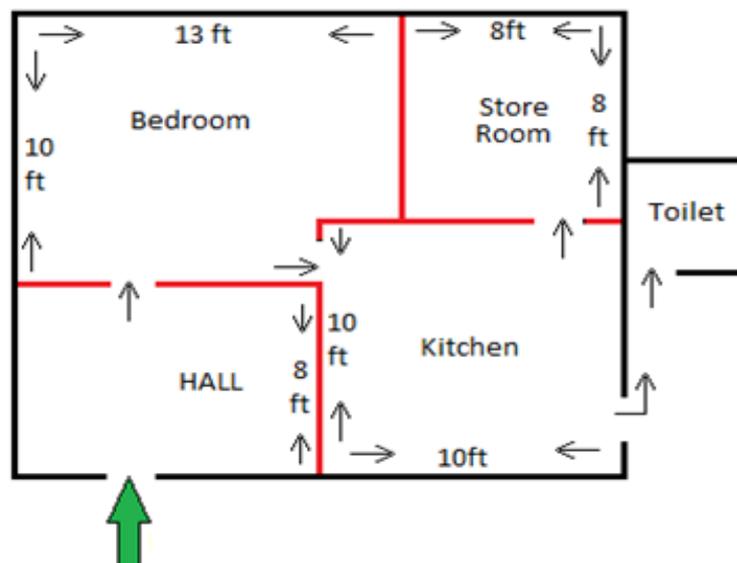
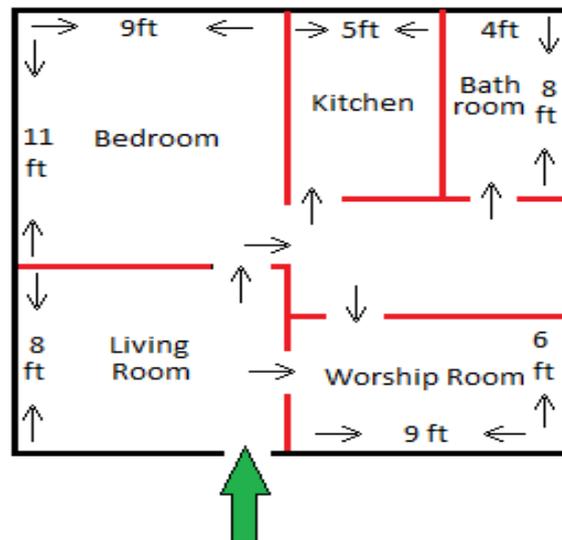
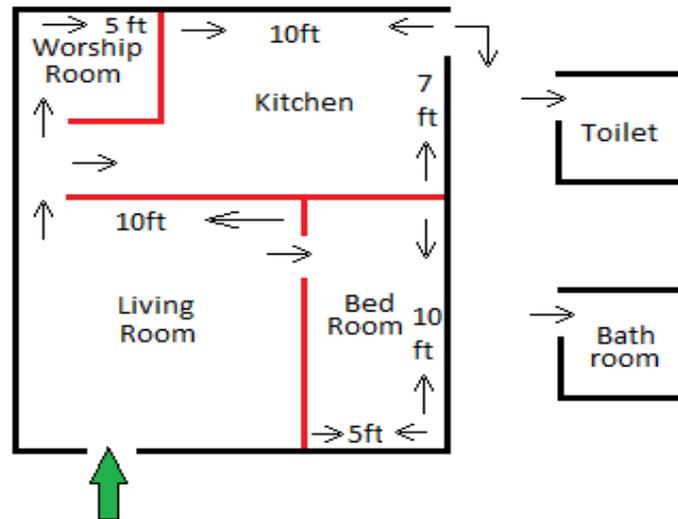


SKETCHES OF SUPERVISOR HOUSES IN LARGE ESTATE



INDEX	
	Entrance Of The House
	3.6 ft of Wall

HOUSEHOLD SKETCHES OF TEA WORKERS HOUSES - OUTSIDE ESTATES



ANNEX 3. PROVISION OF MEDICAL FACILITIES AS PER THE PLANTATION ACT

As per the Plantation Act, under the 'health' provision the employer needs to provide and make available medical facilities to its workers and their families. The Act further adds, in case "any plantation medical facilities are not provided and maintained as required", the cost can be recovered by the defaulting employer. In addition, they also have to arrange for clean drinking water and fair number of conveniently located latrines and urinals separately accessible for males and females. As per the amended PLA (2010), every plantation has to take care of its workers safety with respect to use, handling, storage, and transport of insecticides, chemicals and toxic substances. Periodical medical examination of workers exposed to insecticides, chemicals and toxic substances are required along with their maintenance of detail health records.

In all the three tea plantations estates visited, each had their own health facilities within their premises. However, variation existed in terms of health facility functioning. For instance, in one estate, the health facility was a complete hospital set up with availability of full-time doctor, nurses, pathology and x-ray facility. While in another estate, a full-time resident nurse along with a pharmacist were there, with a visiting doctor attending the health facility on fixed days. For normal ailments, the nurse was equipped to provide the requisite services. In case the available facility service cannot cope up in giving the services, they provided ambulance service and referred the patients to government health facility. In the third estate we visited, the hospital had 50 beds facility. It was well equipped with x-ray, scanning, pathology laboratory, pharmacy, operation theatre as well as dental services. Five specialist doctors visited on fixed days. If any cost is incurred in seeking treatment, the same is reimbursed by the estate.

Glimpse from a health clinic located in a tea estate

Clinic has a full-time nurse and a pharmacist. Doctor visits on Monday, Wednesday and Friday from 4:30 to 6:30 p.m. Dispensary was opened by Late Chief Minister of the State in 2015. The building is well constructed with latest building material. It has dressing room, pharmacy, check-up, doctor's room, separate ward for males and females with three beds each. Each month, on an average, 520 to 540 patients are checked in OPD. Only tea estate workers and their family members can avail the services from this facility. All treatment is free of cost for the workers of the estate.

Some of the common problem with which the workers come to the facility includes blood pressure, diabetes, cold, fever, dysentery, anaemia, acute respiratory infection, skin infection, insect bite, etc. This clinic has provision for giving only first aid and treat minor ailments. It provides referral slip according to the case and refers them to the nearest PHC which is 3 kms. away or Government hospital in Coimbatore, Ooty or Coonor. This year in the last six months, 6 cases had to be referred. For emergency cases, vehicle is provided by the estate to shift the patient to the referral hospital. In case, any cost is incurred by the patient in these hospitals, it is reimbursed by the estate.

Women come regularly for ANC check-ups. For routine immunization of children, ANM from the PHC comes on 1st Wednesday of every month.

Maternity leave is of 42 days in pre and 42 days in post, thus totalling to 84 days. For these many days, the worker will get the wages of Rs. 308.70 per day. In case of a more serious injury, which requires suture, one week leave is given. For viral fever, that requires antibiotics to be given, 5 days leave is sanctioned.

There are yearly medical check-ups for the following categories of workers: Spraying - Pathological test; Drivers – Eye test; Sweepers – ECG, pathological test and x-ray.

Typhoid vaccine is given once in three years to all the factory workers.

Water testing of all wells in the estate is taken up.

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