

# LIVING WAGE REPORT

# RURAL KERICHO, KENYA

JUNE 2022

EMMA BLACKMORE • RICHARD ANKER • MARTHA ANKER • AZFAR KHAN



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# ABSTRACT

## LIVING WAGE REPORT RURAL KERICHO, KENYA

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**Abstract:** This report estimates a living wage for rural Kericho, which is one of the main tea growing regions of Kenya, using the Anker Methodology. Kericho is located in the South Rift of the Great Rift Valley approximately 256 km from Kenya's capital, Nairobi. Globally, Kenya is the third largest tea producer after China and India, and number one exporter of black tea in the world market. It is renowned for the quality of its tea, thanks to good climatic conditions, high altitudes, and fertile soils. In 2019, the tea sector in Kenya accounted for 25 per cent of total foreign earnings and 1.5 per cent of the country's Gross Domestic Product (GDP). Our estimate of a living wage for full-time workers in rural Kericho, Kenya is 26,932 KES (224 USD) per month. This is the wage necessary for a worker and their family to be able to afford a nutritious low-cost diet, healthy housing, adequate health care, education through secondary school for children, and all other essential expenses, plus a small margin for sustainability. This value was calculated for June 2022 and covers the tea growing regions across rural Kericho.

Any questions, comments, or observations about this study and the results it reports should be directed to the Anker Research Institute leadership:  
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**Keywords:** Living costs, living wages, Anker Methodology, Kenya, tea

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## ABOUT THE AUTHORS

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# SECTION I. INTRODUCTION

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## 1. BACKGROUND

This report estimates a living wage for rural Kericho, which is one of the main tea growing regions of Kenya. Kericho is located in the South Rift of the Great Rift Valley approximately 256 km from Kenya's capital, Nairobi.

Kericho was chosen as the study area for this Anker Living Wage Benchmark study based on multiple discussions with Rainforest Alliance and a large number of tea sector stakeholders. Kericho was selected, because it is by far the most important tea growing region west of the Rift Valley in terms of number of tea companies, number of employees, and volumes of production. Please note, we think that it makes sense for practical reasons to use the living wage estimated in this report for rural Kericho for all of the tea growing counties west of the Rift Valley. And although it is not likely that living costs are greatly different than those in rural Kericho for other tea growing counties West of the Rift Valley additional Anker Living Wage Benchmark studies would be needed to confirm this.

This study uses the Anker Methodology described in Anker and Anker (2017). The Anker Methodology has gained widespread acceptance among diverse stakeholders globally and has been used to estimate living wages in 46 countries in four continents involving a host of sectors, such as tea, cotton, apparel and footwear, jewellery, cocoa, coffee, sports goods, tobacco, bananas, palm oil, fruits and berries, and flowers.<sup>1</sup> It is important to note that an authentic Anker Methodology study and living wage estimate requires the quality control of the Anker Research Institute (ARI) – which this report has.

The main principles of the Anker Methodology (Anker and Anker, 2017) are the following:

**Transparency:** The Anker Methodology clearly sets out the principles and assumptions behind the living wage estimate, so that readers can understand, and have the possibility to question what workers can afford on a living wage, and how this living wage differs from the national minimum wage and the national poverty line wage.

**Normative basis:** The Anker Methodology estimates the living wage based on normative standards for nutritious food, healthy housing, adequate health care, and education of children through secondary school.

**Time and place-specific estimates:** Since the level of development, the costs of living, and the expected standards of living vary not only over time, but also across space within a country, the Anker Methodology calls for time and place-specific living wage estimates. These estimates are updated by inflation on an annual basis.

**International comparability:** The Anker Methodology living wage estimates are comparable between countries, because they are based on the same principles everywhere.

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1 All living wage reports in this series can be downloaded from here: <https://www.globallivingwage.org/>.

**Practical and modest cost:** The Anker Methodology uses a judicious mix of secondary data analysis and primary data collection and analysis, which results in reliable estimates at a modest cost.

**Comparison with prevailing wages:** The Anker Methodology has principles and guidelines for measuring prevailing wages, so that it is possible to compare them with a living wage and determine gaps between prevailing wages and a living wage. All forms of remuneration including in kind benefits are considered.

**Living wage reports are more than only a number:** Anker Methodology living wage reports do not just report a number, but also paint a picture of what it means to live on less than a living wage, and what the living standards would be for workers who would earn a living wage. This type of reporting facilitates effective stakeholder dialogue and value chain dialogue and is expected to help improve conditions for the people who carry out the hardest part of the work in the value chain.

## 2. LIVING WAGE ESTIMATE

Our estimate of a living wage for workers in rural Kericho, Kenya is 26,932 KES (224 USD) per month. This is the wage necessary for a typical family to be able to afford a nutritious low-cost diet, healthy housing, adequate health care, education through secondary school for children, and all other essential expenses, plus a small margin for sustainability. This value was calculated for June 2022 and covers the tea growing regions across rural Kericho. This Benchmark estimate applies to all workers in rural Kericho regardless of the sector in which they work, since living expenses and needs are independent of the sector of employment. We believe it would be appropriate to use the living wage estimated in this report for rural Kericho for all tea growing counties west of the Rift Valley for various practical reasons. The likelihood that living costs and expectations in other areas west of the Rift Valley are similar to those in rural Kericho; although, to confirm this, additional Anker Living Wage Benchmark studies would be needed.

## 3. CONTEXT FOR THE BENCHMARK STUDY – THE TEA SECTOR IN KENYA

In 2019, the tea sector in Kenya accounted for 25 per cent of total foreign earnings and 1.5 per cent of the country's Gross Domestic Product (GDP). The high contribution of tea to GDP is attributed to increases in the amount of tea produced and exported to the international market (KIPRRA, 2020).<sup>2</sup> According to the Food and Agriculture Organization of the United Nations (FAO), Kenya produced 575,509 metric tons of tea in 2020, as compared to 475,997 in 2019, at a value of 1,224,063,000 USD in 2020.<sup>3</sup> Production of tea has generally been on an upward trend for the last 20 years (see FAOSTAT, 2022).<sup>4</sup>

Globally, Kenya is the third largest tea producer after China and India, and number one exporter of black tea in the world market. It is renowned for the quality of its tea, thanks to good climatic conditions, high altitudes, and fertile soils. There are two systems of tea production in Kenya namely, the 'small-scale' sector with tea plucked

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2 <https://kippra.or.ke/fluctuations-in-market-earnings-for-tea-in-kenya-what-could-be-the-cause-and-remedy/>

3 <https://www.fao.org/faostat/en/#data/TCL>

4 <https://www.fao.org/faostat/en/#data/TCL>



predominantly by hand on farms owned by small farmers and processed by the Kenya Tea Development Agency (KTDA) and the 'large-scale' sector consisting of multinationals who own or manage estates and factories, as well as independently owned factories who secure tea from their own estates or from small-scale growers.

It is estimated that the small-scale tea, under the umbrella of KTDA, produces about 60 per cent of all tea. KTDA is managed by a professional services agency, and is indirectly owned by 570,000 tea farmers, through 66 tea factories. Lately, government policies have been introduced, focusing on a minimum price for small-scale grown tea, to protect the interests of the small-scale farmers.<sup>5</sup>

The remaining 40 per cent of tea produced in Kenya is produced by the 'large-scale' sector (KIPRRA, 2020).<sup>6</sup> Players in the sector include: Unilever (now Ekaterra), Finlays, and a number of independently, privately-owned factories and estates such as Williamson Tea, Kaisugu, and Mau Cooperative, some of whom belong to the Kenya Tea Growers Association (KTGA). In total, 17 tea growers belong to the KTGA. The KTGA aims to advocate for the interests of its members in the production and manufacture of tea and to promote harmonious industrial relations and ensure that its members provide decent work and incomes.<sup>7</sup>

The tea industry in Kenya is facing several challenges, including declines in global tea prices due largely to global oversupply<sup>8</sup>, and rising input and production costs due in part to rising fuel prices. These factors are driving tea estates and factories and KTDA to reduce production costs. Labour is a major production cost in tea as indicated by a 2016 report which states that labour costs make up 50-60% of all production costs.<sup>9</sup>

In terms of broader economic trends relevant to this study, it is important to bear in mind that living costs in Kenya, specifically food items and fuel, are at all-time high. In June 2022, the date this living wage study took place, Kenya was experiencing its highest rate of inflation over the previous two years.<sup>10</sup> These cost increases are explained by both domestic and external factors, including increased government taxes on everyday household goods such as cooking gas, fuel and food, in addition to a weak Kenyan shilling increasing the cost of imports. The increased costs of global logistics and transportation, and the war Russia war on Ukraine have also affected the cost of food globally.<sup>11</sup>

### 3.1 Labour and labour-related issues in the tea sector in Kericho

According to the Kenya Plantation and Agricultural Workers' Union (KPAWU), the tea sector in Kenya provides **formal** employment with a written contract to 40,000 people. Around 30% of those employed are women. A slight majority of these workers are thought to be employed by the large-scale sector as compared to the small-scale sector. In Kericho specifically, around 22,000 people are believed to be **formally employed** in the tea sector.

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5 <https://www.businessdailyafrica.com/bd/markets/commodities/traders-shun-kenya-tea-at-auction-cite-high-reserve-price-3831412>

6 <https://kippra.or.ke/fluctuations-in-market-earnings-for-tea-in-kenya-what-could-be-the-cause-and-remedy/>

7 <https://ktga.or.ke/about-ktga/>

8 [http://www.xinhuanet.com/english/2021-01/18/c\\_139678188.htm](http://www.xinhuanet.com/english/2021-01/18/c_139678188.htm)

9 <https://www.africanews.com/2016/06/29/kenyan-tea-growers-decry-high-labour-costs-in-the-sector/>

10 <https://www.businessdailyafrica.com/bd/economy/inflation-rises-to-27-month-high-as-spending-drops-3833924>

11 <https://www.bbc.com/news/world-africa-60485499>

It is important to note that there are a number of informal workers (mainly employed on small-scale farms) in the sector. There is, however, a lack of reliable data with which to estimate the number of informal workers.

In addition, the tea sector employs a number of subcontracted workers, provided to tea companies via employment agencies. These workers are a mixture of formal (i.e., under contract) and informal workers. One key informant estimated there to be possibly 10,000 of these workers, almost none of whom are unionised. Formal job roles include tea picking both by hand and by machine, grading and sorting tea, weeding and general field work, supervision of tea pickers and factory workers, factory work such as clerical staff, machine operators, drivers, watchmen (*askaris*), cooks, nurses and other medical staff (for on-estate clinics/dispensaries).

Being a perennial crop, tea is grown and harvested throughout the year. Tea requires constant picking – unlike coffee which has one or two distinct harvesting seasons – though there are seasons when more tea is available for picking (e.g., after the long rains) which affects the demand for workers. Similarly, climate change – specifically drought conditions – have affected the volumes of tea produced in Kenya, thereby affecting demand for labour.<sup>12</sup> Tea picking was traditionally done by hand in Kenya, to pick ‘two leaves and a bud,’ which is an important determinant of tea quality. Increasingly, however, tea estates are moving towards mechanised tea picking to reduce production costs. These machines reduce the overall number of workers needed to pick tea, and those who operate the machines tend to be men. Tea remains predominantly handpicked on smallholder farms by family and hired (but informal) labour. Machines are not yet widely used on small-scale farms, due to lack of access to finance to purchase these assets and small land sizes. However, according to key informants in the sector, a number of small-scale farmers and youth have started using small hand-held picking machines, facilitated by KTDA, on either their own farms or by providing services to others at a fee.

Workers in Kenya are guaranteed freedom of association under Article 36 in the Bill of Rights under the Kenyan Constitution.<sup>13</sup> Most formal workers in the tea sector are unionised and are members of the Kenya Plantation and Agricultural Workers’ Union (KPAWU). Consequently, the KTGA and workers represented by the KPAWU have signed Collective Bargaining Agreements (CBAs). These specify rates of pay for different categories of workers, hours of work, methods of payment of salaries, annual leave allowances, maternity/paternity leave, sick leave, compassionate leave, housing, in-kind benefits and an annual cash travel allowance. The Kenya Tea Development Agency (KTDA) and workers, also represented by KPAWU, have also signed a Collective Bargaining Agreement. KTDA employees are typically management, factory workers and some field staff who sort and collect tea from small-scale farmers or provide technical assistance to farmers. A number of additional CBAs exist in the tea sector – reportedly up to ten according to a representative from the Union – some between individual companies and KPAWU.

The KTGA-KPAWU CBA specifies the salaries and cash allowances for different types of workers. The salary for hand pluckers is set at 17,921 KES for 26 workdays a month. This implies 689 KES a day. In reality, hand pluckers’ salaries are uncertain; they are pro-rated to a day rate (17,921 KES/26 workdays a month = 689 KES a day) and are dependent on a minimum volume of tea picked (1,170 kg of green leaf a month, or 45 kg a day). “A hand plucker will be paid a monthly salary subject to an employee plucking 1,170 KGs a month. Any kg in excess or less

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12 <https://www.theeastafrican.co.ke/tea/business/tea-volumes-at-mombasa-auction-dip-3989062>

13 <https://en.unesco.org/creativity/policy-monitoring-platform/article-33-constitution-kenya>

*of 1,170 kg will be paid at an agreed rate shown above.”* On days with bad weather (e.g., hailstorms) or following a dry spell, the amount of green leaf tea available to pluck can be lower than the 45 kg required and is paid at a rate of 15.32 KES per kg. In these cases, the plucker will be paid less than 689 KES a day and, hence, possibly less than the stipulated 17,921 KES a month. On the other hand, it is possible for tea pluckers to get paid extra for plucking more than the daily minimum. Both of these possibilities are important to consider when determining the gap between prevailing wage and living wages as discussed below in section 14.

It is worth noting that machine operators using hand-held picking machines are not yet covered by a CBA, meaning that their rates of pay have not yet been formally set and their wages are not formally regulated in the same way as hand pluckers.<sup>14</sup> There is a lack of transparency on their wage rates. This is despite them constituting an increasing proportion of the workforce.

It is unclear what the salaries are of any workers on small-scale farms, since the wages of those workers were not included in the scope of this study (and they are almost always informal). However, Ergon Associates (2022) found that salaries for informal pluckers working on (mostly) small-scale farms ranged between 2,500 KES and 7,500 KES a month, which is well below CBA wages (see wage ladder section below).

In addition to mechanisation, estates and factories (involving both KTDA and KTGA members, as well as other companies in the sector) are lowering their labour costs through the outsourcing of labour and recruitment to employment agencies/subcontractors. The workers recruited by contractors are not yet subject to the CBA as they are technically employed by the employment agency rather than the tea company. This means that only basic standard labour laws around pay apply. In addition, some tea workers are believed to be informal (i.e., working without a contract and without mandatory NHIF contributions being made by the employer). One key informant we spoke to speculated that outsourced workers make up 20-30% of the tea labour force in Kericho. Anecdotal evidence suggest that they are paid above the agricultural minimum wage, but lower than the wages in the CBAs. KPAWU is pushing to have these workers join the union and thus be covered by the CBA, but a key informant we spoke to suggests that subcontracted employees are discouraged from doing so.

Another trend, in part linked to and facilitated by outsourcing, is casualisation of the labour force by employing workers on seasonal, rather than permanent contracts. This allows for flexibility in employee numbers to suit the needs of the business and to be able to reduce labour costs when production needs – such as picking – are lower.

### 3.2 Area of study

Kericho is the area of focus for this study. It was selected on the basis that it has a large concentration of large tea estates and in addition has a significant number of hired workers, as compared to other tea growing locations in Kenya (e.g., East of Rift). There is a significant volume of tea production in the region, and a range of different tea companies (large, medium and small), as well as locally and internationally owned.

The landscape is characterized by highly undulating terrain with rolling hills of varying steepness. Kericho offers good annual temperatures and altitudes for tea production. The area receives regular rainfall, though there are two rainy or cloudy seasons; the long rains of April to June, and the short rains of October to December,

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14 <https://ergonassociates.net/publication/rainforest-alliance-field-study-kenyan-tea/>

followed roughly from mid-December to March by a hot and dry season with cloudless and cold nights.<sup>15</sup> Kericho is predominantly rural in nature, with some small urban centres (Brooke, Litein, Momol). The largest town is Kericho Town, found in the northern part of the county with a population of 35,748 in 2022 according to World Population Review.<sup>16</sup>

During our research, we visited two independent tea companies (including factory and estate workers), a multinational company, and multiple factories linked to KTDA. Workers included in the primary data collection therefore included both factory and estate workers. Within Kericho County, we visited all major regions of the county including: Kericho Town, Momol, Litein, Kaptatet, Kaisugu, Tenduet, and Kymulot, over the course of 14 days. The choice of these locations in which to collect information on food prices, housing costs, health care costs and school costs was based on information provided to us by workers, from diverse tea producing companies, on where they live shop for food and medicines, and send their children to school. Our research also involved key informant discussions with sector stakeholders (factory managers, HR managers, representatives from KPAWU, KTDA and KTGA) and other relevant individuals (e.g., construction experts and constructors) before and after our fieldwork in June 2022. On some topics, such as healthcare and housing, additional telephone calls were made to workers and experts after the fieldwork.

## 4. CONCEPT AND DEFINITION OF A LIVING WAGE

The idea of a living wage is that workers and their families should be able to afford a basic lifestyle considered decent by society at its current level of development, without having to work overtime.

The definition of a living wage used in this study is the Global Living Wage Coalition definition:

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

**(Global Living Wage Coalition, 2016)**

The idea of a living wage is neither new, nor radical. The International Labour Organization Constitution (1919) states that “Peace and harmony in the world requires provision of an adequate living wage”, and the United Nations’ Universal Declaration of Human Rights (1948) states that “Everyone who works has the right to just and favourable remuneration ensuring for himself and his family an existence worthy of human dignity.”<sup>17</sup>

15 [https://www.researchgate.net/publication/325852627\\_Mapping\\_threats\\_to\\_agriculture\\_in\\_East\\_Africa\\_Performance\\_of\\_MODIS\\_derived\\_LST\\_for\\_frost\\_identification\\_in\\_Kenya%27s\\_tea\\_plantations](https://www.researchgate.net/publication/325852627_Mapping_threats_to_agriculture_in_East_Africa_Performance_of_MODIS_derived_LST_for_frost_identification_in_Kenya%27s_tea_plantations)

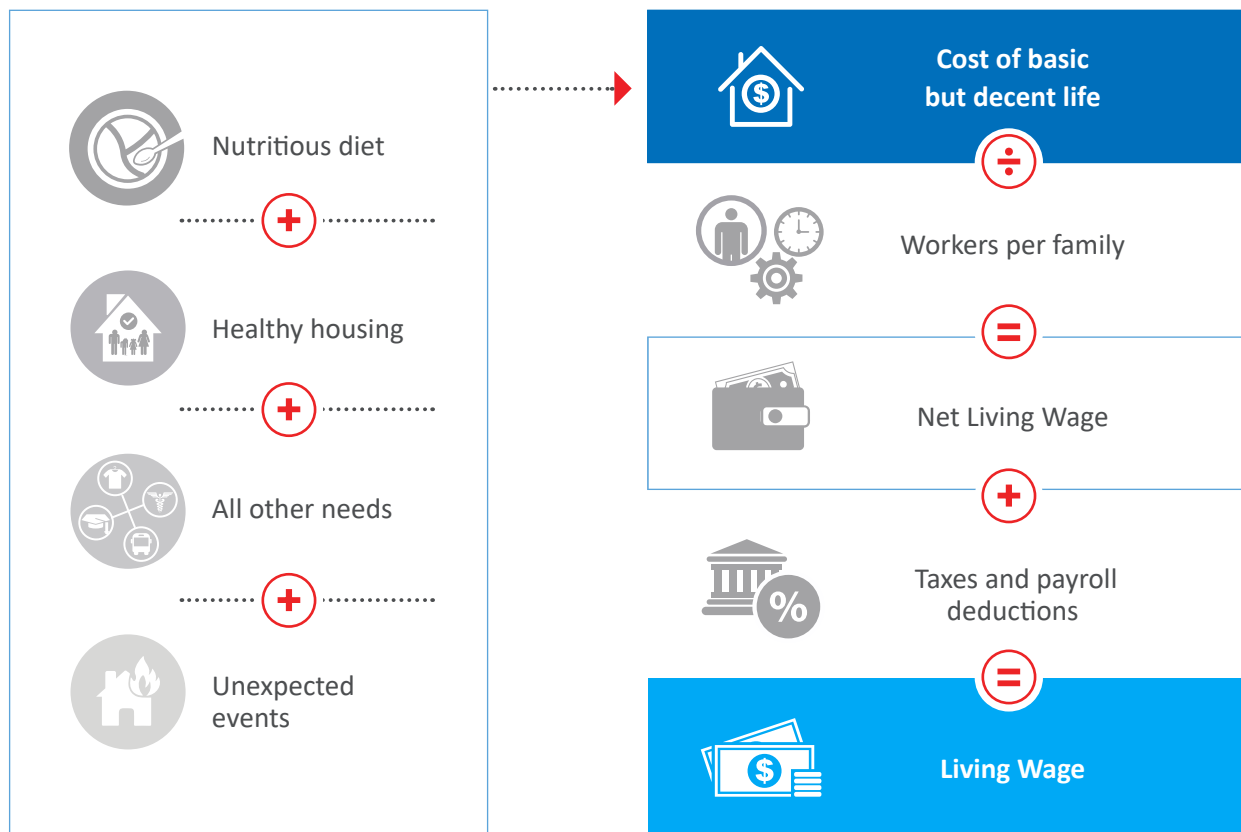
16 <https://worldpopulationreview.com/countries/cities/kenya>

17 <https://www.dinero.com/edicion-impresa/la-grafica/articulo/46-es-la-tasa-de-sindicalizacion-en-colombia/223012>

## 5. HOW LIVING WAGE IS ESTIMATED

Figure 1 below gives a broad overview of the Anker Methodology used to estimate the living wage.

**Figure 1. Components of a living wage estimate, moving from the cost of a basic but decent life to net living wage, and moving from net living wage to gross living wage**



Source: Adapted from Anker and Anker (2017).

The main steps involved are the following:

1. Determine the size and composition of a reference family in the area of interest. This is done using official information from the latest household and health surveys carried out by the National Statistical Institute.
2. Estimate the costs of a basic but nutritious diet for the reference family. Since food is usually the main expenditure item for agricultural workers, this step receives the most attention. It involves two main tasks: (i) develop a model diet, which complies with international recommendations concerning nutrition, but which is adapted to local preferences and possibilities, and (ii) estimate the costs of this diet, considering local shopping options and local food prices.
3. Estimate the costs of decent housing for the reference family. Since housing is usually the second biggest expenditure item for families, this step is also a priority. The rental values for decent housing were estimated using primary data as well as the user cost of owner-occupied housing.

4. Estimate the costs of all other essential needs and unforeseen events. Since food and housing typically are the main expenditures in low-income and middle-income countries, the remaining expenditures are estimated simply as a mark-up using household expenditure data gathered by the National Statistical Institute.
5. Determine the number of full-time workers per family. This is a number between one and two, depending mainly on local customs and local employment conditions. The number is calculated from the latest official household survey on adult male and female labour force participation rates, unemployment rates and part-time employment rates.
6. Estimate the Gross Living Wage, taking into account mandatory payroll deductions, and income taxes. This is done using official information about tax-brackets, as well as samples of payroll information.

Subsequent sections provide the details of these estimations for the case of rural Kericho in Kenya.

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

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There are five sub-sections in this section determining the following:

1. Food costs
2. Housing costs
3. Non-Food Non- Housing (NFNH) costs
4. Post-check of NFNH costs for adequate health care and children's education through secondary school because these are considered human rights in the Anker Methodology
5. Provision for unexpected events.

### 6. FOOD COSTS

Food costs for a reference family of two adults and three children were estimated by first developing a low-cost nutritious model diet consistent with local food preferences and relative food prices, and then calculating the cost of this model diet using local food prices we collected from a survey in the towns and villages where tea workers told us they usually shop for food.

The estimated cost of the model diet is KES 154.1 per person per day or KES 23,429 per family per month (i.e., 23,429 KES = 154.056 KES x (365/12) x 5). This corresponds to USD 1.28 per person per day or USD 195 per family per month. Details on how these estimates were arrived at are provided below.

#### 6.1 General principles of living wage model diet

A model diet in the Anker Methodology needs to meet WHO/FAO recommendations on nutrition in the most economical way possible, while at the same time being palatable and consistent with local food preferences, food availability, and relative food prices.

Specifically, according to Anker and Anker (2017) based on WHO guidelines, a model diet for a lower-middle-income country, such as Kenya, should fulfil the following:

- Number of calories in the model diet must be sufficient to cover the energy needs of the family members.
- Approximately 11-12% of calories must come from proteins for lower-middle-income country such as Kenya.
- Some dairy (which is rich in calcium and high-quality proteins) must be included in the diet, especially for children.
- 15–30% of calories must come from fats.
- 55–75% of calories must come from carbohydrates.
- 325 grams of vegetables and fruits and pulses per day must be included in the model diet to help provide sufficient micronutrients and minerals.
- Maximum 30 grams of sugar per person per day.
- Maximum 34 grams of oil per person per day.

## 6.2 Living wage model diet

The model diet was developed through an iterative process, facilitated by the Anker calorie requirement Excel program and Anker model diet Excel program that forms part of the Anker Methodology.

Development of our model diet for Kericho started by determining the average daily calorie requirement per person in the reference family of five persons, which turned out to be 2392 calories per person per day. This was estimated using the average height of adult men (170 cm) and adult women (159 cm) in Kenya.<sup>18</sup> Both adults were assumed to have a vigorous Physical Activity Level (PAL) as they reside in rural areas and typically participate in strenuous farm work, either as paid workers or on their own farms. This was confirmed during our fieldwork. Children were assumed to have moderate PAL as they are assumed to be in school.

While a model diet had been developed earlier for the Lake Naivasha Anker Living Wage Benchmark study, we felt that it was worth revisiting this based on more recent evidence from the Kenyan National Bureau of Statistics Basic Report on Wellbeing of 2015/16 on food preference. Between 2005/2006 and 2015/2016, maize flour has become more popular whereas maize grain has become less popular. Diets may now be more varied and include more processed foods, as this is a general trend in countries undergoing urbanisation and economic development (Kearney, 2010; Hawkes, 2007<sup>19</sup>).

We started our model diet for Kericho with the rural poverty line diet set by the Kenya National Bureau of Statistics based on the 2015/16 Kenya Integrated Household Budget Survey data. This diet was set by using food consumption of households attaining the 2,250 kilocalories (kcal) per person per day requirement set by the KNBS<sup>20</sup> for rural areas based on the 2015/16 KiHBS. This provided us with the general structure of food consumption in rural Kenya, although this diet is not nutritious beyond providing a sufficient number of calories.

This rural poverty line diet has more food items than our model diet (43 in the rural poverty line diet compared to 18 in our model diet). Our model diet instead includes an additional 12% cost to allow for workers to change what they eat from time to time and to simplify our food price data collection. To reduce overall food costs, we selected food items for each food group based on considerations of both popularity and affordability. We also excluded sodas and confectionaries since these are not a necessity. This gave us a starting point for our model diet. It is important to bear in mind that a living wage model diet exceeds this poverty line diet in terms of nutritional quality.

In our first round of changes to the poverty line model diet, we increased the number of calories to meet WHO standards. We estimated above that 2392 calories per person per day is required. We also increased the amount of milk because of its cultural importance/preference in Kenya, for example included in mixed tea (*Chai*), and its affordability as it is the cheapest form of animal protein. In addition, nutritional recommendations suggest that children should drink one to two cups a day in countries like Kenya. Our model diet, thus, includes one glass of milk a day for adults (used typically in tea) and two glasses of milk a day for children. Milk is culturally important in Kenya, particularly in Kericho, and is a relatively inexpensive source of animal-based protein.

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18 Average heights are taken from: <https://worldpopulationreview.com/country-rankings/average-height-by-country>

19 [https://www.researchgate.net/publication/45659699\\_Food\\_Consumption\\_Trends\\_and\\_Drivers](https://www.researchgate.net/publication/45659699_Food_Consumption_Trends_and_Drivers); <https://www.ifpri.org/publication/globalization-and-nutrition-transition>

20 <https://www.knbs.or.ke/download/basic-report-well-kenya-based-201516-kenya-integrated-household-budget-survey-kihbs/>



We also increased further the amount of protein in our model diet to be in line with WHO nutritional recommendations, since the rural poverty line diet was low on proteins. We increased the amount of beef to 36 edible grams per day (which is equivalent to three meals per week with a portion of 85 edible grams per meal). Eggs were increased to 2 eggs per week, since the 2 grams a day for egg in the poverty line model diet was very low (one egg typically weighs 44 edible grams, or 50 purchased grams<sup>21</sup>). This preference for egg was supported by our discussions with workers.

We included a variety of vegetables and fruits for nutritional reasons and because of the potential for significant variety in prices while bearing in mind preferences, availability, and affordability. Wheat flour (to make own chapatis, and *mandazis* (a donut)) was added compared to the Anker living wage Benchmark model diet for Lake Naivasha because there was a strong preference for these mentioned by workers during group discussions with both food items being made at home and eaten fairly regularly. Rice was also added for similar reasons of popularity as was confirmed during our fieldwork. We lowered the amount of sugar for health reasons. Use of oil is low in the Kenyan diet compared to other countries, which reflects the style of cooking and that most food items (e.g., maize) are not cooked with oil. For this reason, our model diet includes only 18 grams of oil.

The six fruits and vegetables in our model diet are expected to help capture the average cost of obtaining the necessary vitamins and micronutrients from fruits and vegetables. Thus, we include 43 edible grams of each of the following fruits and vegetables: green leafy vegetables, cabbage, onion, tomato, mango, and banana.<sup>22</sup> When added to the 65 grams of beans, we meet the Anker Methodology requirement of a total of 325 grams of fruits, vegetables and pulses (excluding potatoes) for lower-middle income countries.

- Maize is of central importance to the Kenyan rural diet in terms of grams and calorie provision. Though the chart above notes the growing popularity of maize flour, as opposed to maize grain which is then milled, we found a preference among workers for maize grain which they themselves take to be milled. Workers believed that the quality of self-milled maize is higher and it keeps them fuller for longer. For this reason, we took an average of prices for both self-milled maize flour (grain plus the costs of milling) and ready-milled maize flour which is typically bought from a mixture of supermarkets, small shops ('dukas') and open markets (ready-milled maize prices were on average 76 KES a kg versus 70 KES a kg for self-milled). There is a perception among workers that self-milled maize is more expensive than the ready-milled maize after milling costs are factored in, likely because it is difficult for workers to know the exact weight of maize grains that is typically sold and decanted in 'tins' (workers thought a tin would provide 2 kg of maize grains – although we found it typically provides a little more than two kilos when we weighed them and in addition we found that very little maize is lost in the milling process). We found that the weight of the maize grain sold by tin varied depending on how the seller filled the tin, meaning prices per kg were also somewhat variable (anywhere between 65 KES and 84 KES per kg).

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21 This is consistent with data on the typical size/weight of Kenyan eggs (indigenous rather than broiler, since the latter are more expensive): [https://www.researchgate.net/publication/326394552\\_Characterisation\\_of\\_physical\\_egg\\_qualities\\_in\\_indigenous\\_chicken\\_under\\_free\\_range\\_system\\_of\\_production\\_in\\_Western\\_Kenya](https://www.researchgate.net/publication/326394552_Characterisation_of_physical_egg_qualities_in_indigenous_chicken_under_free_range_system_of_production_in_Western_Kenya), <https://www.livestockkenya.com/index.php/blog/poultry/190-grading-quality-control-and-storing-of-eggs>. We used these weights to also determine the price per kg of eggs found in markets and shops. For example, if 1 egg costs 15 shillings, its price per kg would be 300 KES (i.e., 15/0.050). See table 1.

22 To simplify the model diet, the Anker Methodology generally uses equal number of grams of each fruit and vegetable. In reality, proportions and combinations of fruits and vegetables will differ and change over the year according to seasonal fluctuations in supply and prices.

- Beans are also important and eaten very often (most days and often two meals a day). Workers confirmed a preference for *rosecoco* beans, typically purchased from open markets, or for green grams (mung beans, which are a good source of protein and offer slightly more protein per edible gram than beans on average). Green grams are more expensive and so *rosecoco* takes up a larger proportion of the model diet.
- Use of oil is low in the Kenyan diet compared to other countries, which may reflect the style of cooking and that the bulk food item (maize) is not cooked with oil.
- Workers prefer green leafy vegetables (GLVs) (typically spinach, *skumawiki* or indigenous vegetables). They are typically used interchangeably in the diet, since availability varies by markets and season, and they make up an important part of the workers' diets and have high nutritional value. For this reason, we increased the number of grams of GLVs to 50 and used the average of prices collected for different green leafy vegetables. Cabbage is at times also consumed instead of other green leafy vegetables and is relatively low cost. Thirty-seven edible grams of cabbage was therefore included in the model diet. Onions and tomatoes were commonly mentioned by workers and relatively inexpensive and typically cooked with other vegetables. We kept the number of grams of onions and tomatoes at 43 grams.
- Workers demonstrated a preference among fruits for oranges, avocados, mangoes and bananas. Oranges are the most expensive of these options and provide less vitamin C than mangoes, so oranges were excluded. Avocados and bananas are very similarly priced, and widely available, and so for simplification's sake we included bananas.
- As stated above, milk is highly preferred in Kenya, for example in mixed tea (*Chai*), and it is a highly affordable source of animal protein – it is the cheapest form of animal protein in Kericho. In addition, nutritional recommendations suggest that children should be drinking one or two cups a day. Our model diet factors in one glass of milk a day for adults (used typically in tea consumption) and two glasses of milk for children. While this is higher than in most other Anker Benchmark living wage model diets, milk is culturally important in Kenya as well as being a relatively inexpensive source of animal-based protein. Workers we spoke to stated that they drink at least a cup a day.
- The poverty line diet has almost no eggs. From a nutritional perspective, eggs are an important source of protein and something that workers like. When they can afford it, they will eat one or two a week. For these reasons, we included two eggs per person per week in our model diet.
- Workers confirmed that they most commonly eat beef-on-the-bone, omena (small dried fish) and goat/mutton. Mutton is preferred due to a perception that it is 'cleaner' (i.e., free from medication that cows may receive to treat illnesses), but it is more expensive than beef-on-the-bone. Omena is an affordable source of protein but is eaten largely because of affordability and is not necessarily preferred. Beef-on-the-bone addresses considerations of cost/affordability and accessibility (being available at most butcheries) and so was included in our model diet.
- Kenyans use some salt in their cooking, and less often some herbs and spices. The 1% we included for salt, spices and condiments is similar to the approximately 1% households spend for these according to 2005/06 Kenyan Integrated Household Budget Survey data and 2010 urban CPI weights and we believe these remain unchanged in the typical Kenyan diet in 2022.

### 6.3 Food prices

Food prices were obtained from 26 sellers in 12 different locations across Kericho. For each food item, between 6 and 17 price points were taken depending on the food item and its availability. We excluded food prices that were unusually high or low (outliers), since these are less likely to be found and paid for by the average worker, before calculating the median price for each food item.

#### Common food items in Kericho



Maize grains ready to be milled at a posho mill.



Small shop 'duka' selling bread, sugar and other groceries.



Butchery selling goat and beef.

Common photo items in Kericho



Maize grains being sold at the side of a road in Kericho.



Fresh fruit and vegetables being sold on the roadside in Kericho.

## 6.4 Model diet and its cost

The following table indicates the contents and cost of our model diet.

**Table 1. Model diet and food costs before adjustment for seasonality of food prices and higher prices in study month**

Food items <sup>23</sup>	Purchased grams <sup>24, 25, 26</sup>	Edible grams	Median cost per kilo <sup>27</sup>	Cost <sup>28</sup>	Comments
<b>Cereals and grains</b>					Maize provides 51.7% of all calories. Price per kg is average of ready-made maize flour (e.g., from supermarkets and small shops) and maize kernels bought from markets that are taken by workers to small mills (with costs of milling included).
1) Maize flour	342	342	73	24.95	
2) Wheat flour	11	11	101	1.12	
3) Rice	19	19	130	2.45	Rice – moderate quality (not pishori).
					Standard wheat flour, typical affordable brands include EXE or Ajab.
<b>Prepared cereals</b>					Typically, white bread, sold pre-packaged at small shops or supermarkets. Usually, supermarket own brand or other brands such as Jolly or Supaloaf. Three slices per family member per week. Other processed bread substitutes (chapatis and mandazis) are made at home using wheat flour.
1) Bread	16	16	150	2.44	

23 Edible (consumed) quantity differs from purchased quantity for foods with inedible parts such as fruits and vegetables with inedible skin or stem; beef with bone; and egg with shell. Percentage inedible is drawn from United States Department of Agriculture (USDA) web site ([www.ndb.nal.usda.gov/ndb/foods](http://www.ndb.nal.usda.gov/ndb/foods)), apart from mango, since many workers in Kenya consume the skin (81% of the mango is therefore considered edible).

24 Number of calories, proteins, fats, and carbohydrates are estimated using USDA reported values per 100 grams for each of these.

25 Specific food items used to cost our model diet are foods that are low cost for each major food group.

26 Additional miscellaneous food costs are 17 percent. This consists of: (i) 1% for miscellaneous foods not listed in our model diet such as salt, spices, chicken stock cubes and condiments (with soft drinks, cakes and sweets excluded); (ii) plus 12% to allow for some variety (e.g., goat or chicken sometimes; sometimes green grams; more expensive vegetables and fruits sometimes; holiday meals sometimes; etc.); (iii) plus 4% for minimal waste and spoilage. The assumed 1% for salt, spices and condiments is similar to the approximately 1% households spend for these according to 2005/06 Kenyan Integrated Household Budget Survey data and 2010 urban CPI weights. Assumed 12% for variety is a conservative assumption. Assumed 4% for spoilage and waste is a conservative assumption.

27 Cost per kilo is based on prices observed in food markets and shops in various locations throughout Kericho in June 2022. Food prices for each food item included in model diet were collected from 6-26 sellers. Median of observed prices was used. Median price for green leafy vegetables is taken as the average of prices of skumawiki, indigenous vegetables and spinach which are all used interchangeably.

28 Cost for each food item was calculated by multiplying quantity purchased by cost per kg.

Food items <sup>23</sup>	Purchased grams <sup>24, 25, 26</sup>	Edible grams	Median cost per kilo <sup>27</sup>	Cost <sup>28</sup>	Comments
<b>Roots and Tubers</b>					
1) Potato	102	77	55	5.64	
<b>Pulses, legumes, beans</b>					
1) Average beans	45	45	141	6.36	Preference for rosecoco beans and green grams (mung beans), purchased either from the open market, or packets from the supermarket. Green grams slightly more expensive per kg so higher proportion of rosecoco beans are included in the model diet.
2) Mung beans	20	20	171	3.43	
<b>Milk</b>	384	384	67	25.73	Milk very important in Kericho and an affordable protein source, so two cups per day per child, and one cup per adult. Usually sourced from own cows, or neighbours selling milk, or small shops.
<b>Eggs</b>	14	13	300	4.29	Two eggs a week per adult and child. Important source of protein and other nutrients and less expensive per protein and per calorie than beef.
<b>Meat and fish</b>					
Beef-on-the-bone	45	36	500	22.49	Affordable and preferred meat. One serving (85 grams) three times a week per family member. Available from local butcheries.
<b>Leafy green vegetables</b>					
1) Green leafy vegetable	63	50	49	3.09	Grouped spinach, <i>skumawiki</i> and indigenous vegetables as typically used interchangeably by workers depending on preferences, availability and price. Eaten daily and preferred over many other vegetables. Cabbage another popular and affordable vegetable.
2) Cabbage	45	36	29	1.31	
<b>Other vegetables</b>					
1) Onions	48	43	174	8.36	Typically cooked with leafy green vegetables or cabbage.
2) Tomatoes	48	43	98	4.66	
<b>Fruits</b>					
1) Mangoes	53	43	45	2.41	Cheapest fruits and liked by workers. Mangoes cheaper than oranges and have more vitamin C.
2) Bananas	68	43	60	4.05	
<b>Oils and fats</b>	18	18	399	7.09	Blocks of oil is included, as cheapest type of oil. Branded oils are included rather than unidentifiable oils, however, to ensure safety.

Food items <sup>23</sup>	Purchased grams <sup>24, 25, 26</sup>	Edible grams	Median cost per kilo <sup>27</sup>	Cost <sup>28</sup>	Comments
<b>Sugar</b>	30	30	129	3.86	White or brown sugar acceptable. Whichever is less expensive in a shop or market is used. Kabras or supermarket own brand normally purchased from supermarkets or larger shops. Sometimes purchased from smaller shops.
<b>Tea</b>	1.6	1.6	367	0.59	Loose leaf tea preferred to mix with milk and water to make chai. No clear preference on brand, but all tea that is locally produced and packaged by local factories (sold either outside of factories at slightly reduced prices or in shops and supermarkets). Assume two cups of tea per adult per day (nothing for children).
<b>Total</b>				<b>134.35</b>	
Percentage added for salt, spices, sauces, and condiments				1%	Based on 2010 household expenditure data. Some salt used in the diet, but not large amounts of herbs and spices.
Percentage for spoilage & waste				4%	
Percentage added for variety				12%	
<b>Grand Total (including 17% Miscellaneous)</b>				<b>157.20 (1.31 USD)</b>	

**Note:** Cost of model diet indicated in this table was reduced by 2% because of seasonality in food prices whereby food prices are higher during the study month than is typical for the year (see section 6.3 below).

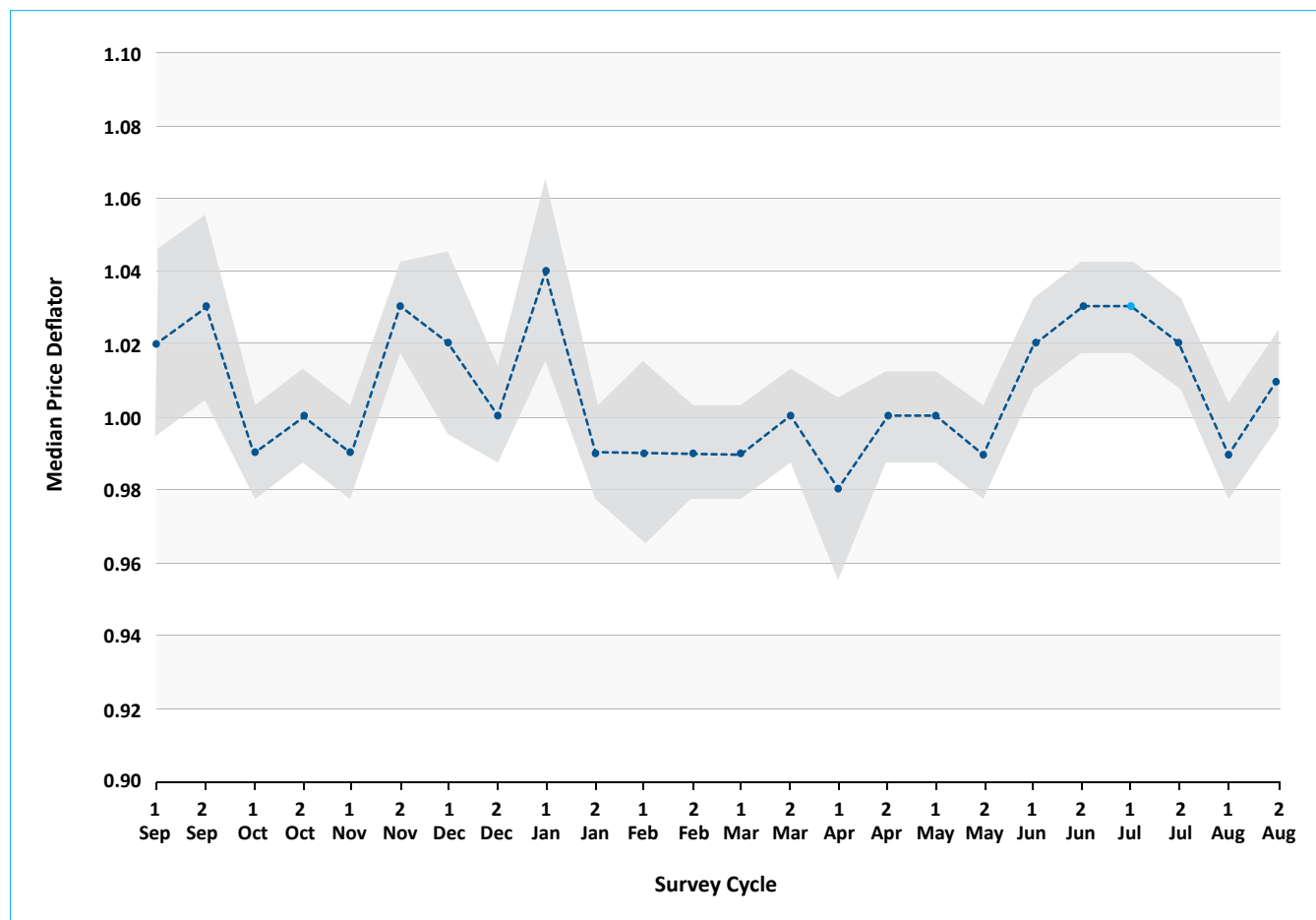
Our model diet meets WHO/FAO nutritional recommendations and is consistent with Kenya's level of development as well as being consistent with local food preferences, food availability and relative food costs. It has:

- 2,392 calories
- 11.6% of calories from proteins
- 21.3% of calories from fats
- 67.2% of calories from carbohydrates
- 325 grams of fruits and vegetables and legumes per day
- Two cups of milk per day for children
- 30 grams of sugar per day
- 18 grams of oil per day

## 6.5 Seasonality in food prices

Since we carried out our food price survey in the month of June 2022, we checked that food prices are not unusually high or unusually low in June due to seasonal variation in food prices. The Kenya integrated Household Budget survey report indicated seasonal variations in food prices over the year (see Figure 2).<sup>29</sup> Food prices are higher during September, November and December, and again in June and July. These months typically correspond to either seasons when crops are planted or are growing, rather than harvested, or to seasons or time periods where there are shortages of rainfall and therefore less abundance of food crops. This means that food prices in June are on average higher than is average for the year – by around 2-3% on average with a 95% confidence interval of around 1.5-4.0% (figure 2). For this reason, we reduced the cost of our model diet by 2% so that it represents more typically food prices for the year. This was done by reducing the overall cost of the model diet by 2% from 157.20 KES per person per day as found in table 1 to 154.056 KES per person per day. This is equal to 23,429KES a month for a family of 5.

**Figure 2. Seasonal variation in food prices (using KNBS Paasche index)**

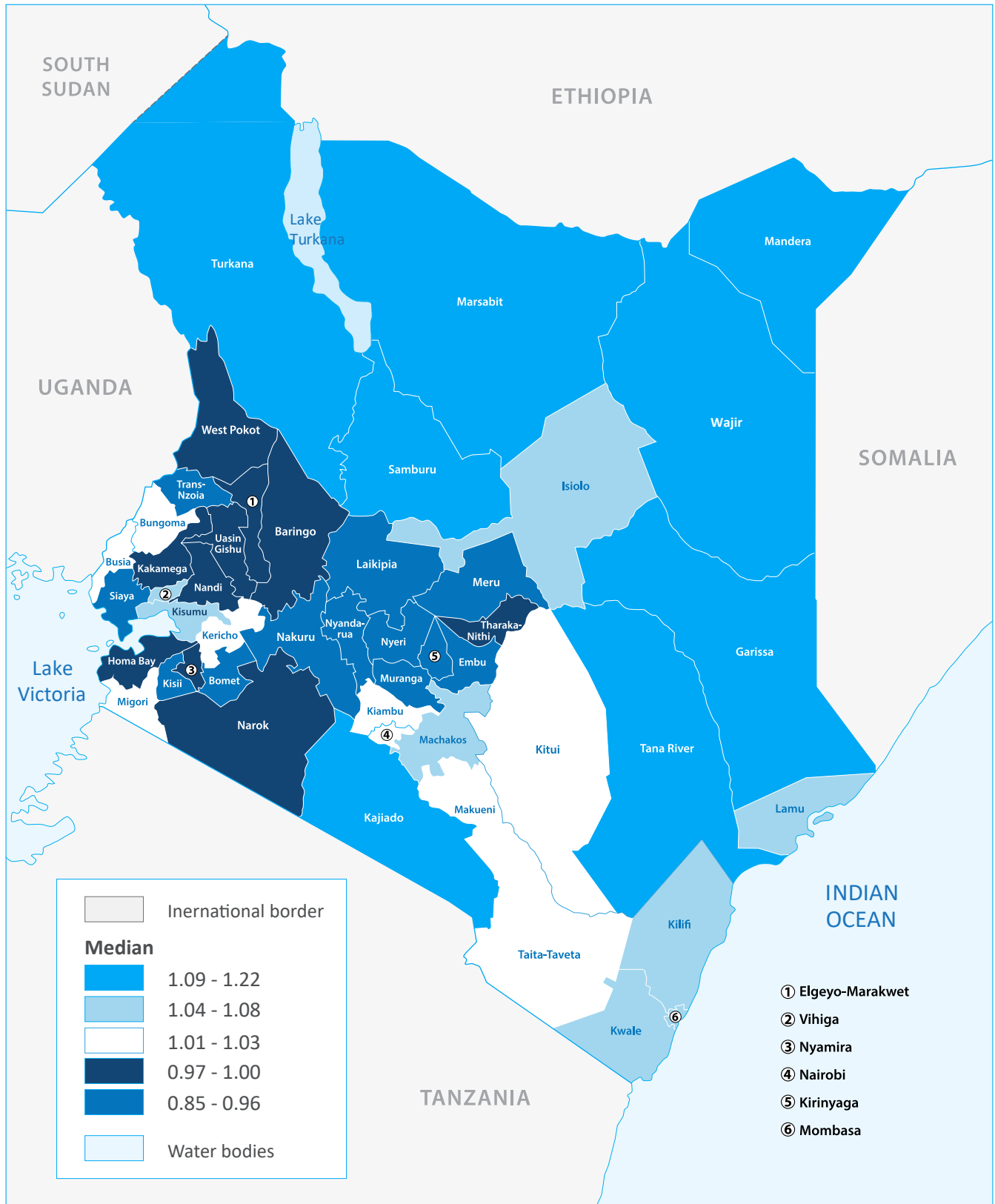


**Notes:** The dashed line is the median Paasche for each 2-week survey cycle, and the 95 per cent confidence interval is shaded.  
**Source:** 2015/16 Wellbeing survey (part of Kenya integrated Household Budget Survey).

<sup>29</sup> It is worth noting that according to the 2015/16 Wellbeing Survey (part of Kenya integrated Household Budget Survey), Kericho exhibited slightly above average food prices for Kenya with a median food price deflator between 1.01-1.03.



Figure 3. Food price deflator in Kenya, by county



Source: 2015/16 Wellbeing Survey (part of Kenya integrated Household Budget Survey).

## 7. HOUSING

To estimate the cost of locally acceptable healthy housing we first define a locally acceptable standard, and then find the monthly cost of housing that meets that standard. We estimate housing costs to be 3,542 KES per month and utilities to be 1,775 KES per month (30 USD and 15 USD respectively) for a total of 5,327 KES per month.

To determine a locally acceptable housing standard, we use international housing standards, housing standards from Rainforest Alliance, housing standards from the Kenya Housing Authority, and current housing conditions in Kericho country as indicated in the 2019 Housing and Population Census.

To estimate the cost of housing, we use the user costs of house ownership (that meets our standard) based on information from several builder experts/contractors and low-cost builders in Kenya. While we also obtained information on the cost of renting houses in urban and peri-urban locations in Kericho County using several different approaches, we concluded that these rental costs were not as relevant, because almost all families in rural Kericho own their home and do not rent. Utility costs were estimated by combining information from KNBS household surveys which we increased by inflation, and our own data collected from workers. As additional information, we provide an overview of the standard and quality of housing commonly provided to tea estates workers in section 7.2.

### 7.1 Standard for basic acceptable local healthy housing

#### *International standards*

The living wage should be sufficient to cover the rental costs of a home (or the user cost of owned housing if rentals are not common) that satisfies both minimum international housing standards as well as national standards and conditions. International housing standards are based on the following principles for adequate housing according to WHO, UN, and ILO (see Anker and Anker 2017):

- Durable structure
- Sufficient living space
- Access to safe water
- Access to sanitary toilet and washing facilities
- Adequate lighting
- Adequate ventilation
- Adequate food storage
- Separation from animal quarters
- Protection from cold, damp, heat, rain, wind or other threats to health, structural hazards and disease vectors

#### *Local housing standard of Rainforest Alliance and Kenya Housing Authority*

To help set our national/local healthy housing standard we also looked at housing standards from Rainforest Alliance and the Kenya Housing Authority.

**The Rainforest Alliance (RA) guidance** for housing and living conditions (2020) specifies that a house should have:

**Safe construction** at least:

- A dry floor raised from ground level in cement, stone, tile or wood floor or clay; clay floors may only be accepted if sealed and levelled.<sup>30</sup>
- Walls must be permanently built in either brick and cement, prefabricated panels, wood, clay, mud, soil, stone or metal, well-grounded and whose condition does not represent a risk to the workers.
- There must be a roof without leaks.

**Water and sanitation:**

- Availability of enough safe drinking water; at least 20 litres per adult per day and within 1km/30 minutes round-trip.
- The number of toilets or pit latrines, urinals, hand wash facilities and shower/bathroom facilities: 1 unit of each for a maximum of 15 persons. Hand wash facilities must consist of a tap and basin.
- Cooking areas with smoke ventilation.
- Enough lighting (daylight and artificial).

In terms of national standards, Kenya's National Housing Policy (2016), which references international standards, states that its minimum housing standard is:

"A structurally sound house with a minimum floor space of 7 square metre per member of the household with sufficient ventilation and lighting with access to basic amenities particularly water and sanitation".

### *Current housing conditions in Kericho country from the 2019 Housing and Population Census*

Table 2 below tabulates relevant housing quality variables for urban and rural regions in Kenya, and our study location Kericho County according to Kenya's 2019 Housing and Population Census. For easy reference, housing characteristics that are considered acceptable in our standard are shaded. From these data, we can see that Kericho County is quite above the rural average of Kenya in terms of housing construction and provision of amenities.

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<sup>30</sup> Dirt or clay floors are not acceptable under the Anker Methodology for reasons of health and maintenance.

**Table 2. Housing characteristics for urban and rural Kenya and Kericho County (% distribution of houses) and our local housing standard that meets international standard and considers current housing conditions**

Characteristics	Urban %	Rural %	Kericho County	Acceptable Rural Housing Standard
<b>Structure</b>				
Permanent (concrete/bricks/zinc)	NA	NA	NA – data not available	Permanent
Semi-permanent (either wall or roof not permanent)	NA	NA	NA – data not available	
Temporary (thatch roof & sundried bricks)	NA	NA	NA – data not available	
<b>Roof</b>				
<b>Corrugated iron</b>	<b>71.8</b>	<b>85.7</b>	<b>94.5</b>	Only first two considered acceptable – others are not considered durable (acceptable, make up the majority of houses)
<b>Concrete/tile</b>	<b>20.5</b>	<b>0.5</b>	<b>0.9</b>	
Thatch	0.6	7.9	0.1	
Other (specify) – dung/mud	0.2	1.3	0.5	
Grass/twigs	0.6	7.9	2.2	
Asbestos	2.2	0.9	0.9	
Tin cans	0.1	0.2	0.1	
<b>Floor</b>				
<b>Cement/tile</b>	<b>83.9 (63.3 + 20.6)</b>	<b>35.1 (31.3+3.8)</b>	<b>43.9 (39.2+4.7)</b>	Cement or tile acceptable (these make up the slight majority in Kericho). Earth and dung not considered acceptable because they are not healthy – although floor is acceptable if it is raised above ground and it is in good condition.
Earth (sand)/dung	12.0 (10.6+1.4)	63.5 (42.3+21.2)	54.1 (16.8+37.3)	
<b>Wood/parquet</b>	<b>1.1 (0.4+0.7)</b>	<b>0.5 (0.4+0.1)</b>	<b>0.6 (0.4+0.2)</b>	
Other (specify)				

Characteristics	Urban %	Rural %	Kericho County	Acceptable Rural Housing Standard
<b>Wall</b>				
<b>Cement/stone with lime/bricks</b>	<b>69.4%</b> <b>(31.6+29.3+8.5)</b>	<b>26.2%</b> <b>(6.6 + 8.4+11.2)</b>	<b>28.0%</b> <b>(9.9+5.1+13)</b>	First two categories acceptable if wood is durable and built/joint well (though this is rare). Mud with stone or stick, majority in Kericho, are excluded from standard as not considered healthy (presence of bacteria). Iron sheet is not acceptable due to its ability to become too warm inside.
<b>Wood (planks) + timber</b>	<b>3.0</b> <b>(0.7 + 2.3)</b>	<b>13.0</b> <b>(1.8+11.2)</b>	<b>19.1</b> <b>(3.1+16)</b>	
Mud with stone or sticks/manure	8.0 (5.6+2.4)	45.4 (41.2+4.2)	42.2 (40.6+1.6)	
Iron sheet	16.0	6.1	8.8	
Bamboo/grass/reeds	0.4	2.9	0.1	
Other (specify)				
Electricity	NA	NA	NA	
<b>Lighting source</b>				
<b>Electricity</b>	<b>88.4</b>	<b>26.3</b>	<b>44.9</b>	Kericho is well above average compared to other rural areas in its use of electricity and electricity was standard in all the houses we visited (both estate-provided housing and rentals). On this basis, we have included electricity in the standard.
Paraffin/kerosene	5.2 (0.2+2.2+2.8)	23.7 (0.4+9.4+13.9)	12.4 (0.2+5.9+6.3)	
Firewood	0.3	4.3	0.3	
Other				
Gas lamp	0.1	0.2	0.1	
Solar	2.4	29.9	20.9	
Torch solar charged	0.7	0.1	17.8	
Torch – dry cells	0.7	5.8	1.5	
Candle	1.8	1.0	1.4	

Characteristics	Urban %	Rural %	Kericho County	Acceptable Rural Housing Standard
<b>Cooking fuel</b>				
Wood	9.2	84.1	79.0	
Charcoal	17.7	7.7	8.9	
Kerosene	17.7	1.6	1.4	
LPG	52.9	5.6	9.5	
Electricity	1.7	0.4	0.7	Not relevant for housing standard.
Straw/shrub/grass				
Other				
Biogas	0.7	0.3	0.3	
Solar	0.0	0.2	0.1	
<b>Water source</b>				
<b>- Improved source</b>				
Piped into dwelling or yard	<b>42.0</b> <b>(18.1+23.9)</b>	<b>12.9</b> <b>(5.1+7.8)</b>	<b>19.2</b> <b>(9.1+10.1)</b>	
Public tap	<b>15.6</b>	<b>6.4</b>	<b>5.8</b>	
Borehole/tube well	<b>6.8</b>	<b>11.8</b>	<b>4.0</b>	
Protected well	<b>4.0</b>	<b>9.0</b>	<b>6.2</b>	Improved source only is acceptable.
Rainwater	<b>2.0</b>	<b>5.0</b>	<b>3.9</b>	Assume that anything unprotected (well, pond, etc.) cannot be considered safe source of water as could be contaminated.
Other (protected spring and bottled water)	<b>8.5</b>	<b>10.8</b>	<b>7.6</b>	
Water vendor	<b>16.7</b>	<b>3.3</b>	<b>2.1</b>	
<b>- Unimproved source</b>				
Unprotected well	0.5	4.0	2.0	
Unprotected spring/surface water	6.1 (0.3+2.6+0.8+2.4)	34.6 (3.7+25.8+4.9+0.2)	49.0 (5.0+42.3+0.9+0.8)	

Characteristics	Urban %	Rural %	Kericho County	Acceptable Rural Housing Standard
<b>Toilet facility</b>				
Pit latrine with slab	<b>34.4</b>	<b>61.7</b>	<b>69.8</b>	Pit latrine with slab is minimum standard (in good condition). Maximum of two families using (10 people).
Pit latrine without slab/open pit	4.4	12.5	13.7	
VIP toilet	<b>12.5</b>	<b>11.5</b>	<b>10.0</b>	
Flush toilet [main sewer + septic + cesspool]	<b>46.3</b> <b>(24.6+21.1+0.6)</b>	<b>2.1</b> <b>(0.3+1.7+0.1)</b>	<b>4.4</b> <b>(1.7+2.6+0.1)</b>	
No facility, bush	0.8	11.5	13.6	
<b>Number of rooms (or number of bedrooms)</b>				
1	56.0	27.6	30.7	Generally, 2 or less persons per room excluding kitchen and toilet and bath.
2	20.5	31.3	51.3	
3	13.4	26.2	10.9	
4+	9.6	14.6	7.0	
<b>Average number of square meters per dwelling</b>				
No information	NA	NA	NA	At least 36 square meters of living space as per international norm. Kenya's National Housing Policy (2016), which references international standards, states that its minimum housing standard is 'a structurally sound house with a minimum floor space of 7 square metre per member of the household with sufficient ventilation and lighting with access to basic amenities particularly' (7*5 = 35 metres square).

Characteristics	Urban %	Rural %	Kericho County	Acceptable Rural Housing Standard
<b>Consumer durables<sup>31</sup></b>				
Refrigerator	23.7	3.6	NA	Not relevant for housing standard.
Motorbike or scooter	9.4	13.0		
Car	15.4	5.3		
Television	67.1	37.6		
Mobile phone	95.8	86.3		
Radio	77.2	68.4		
<b>Number of windows</b>				
	NA	NA	NA	Adequate lighting and ventilation – usually at least 1 window per room – but not strictly applied.
<b>Ventilation</b>				
	NA	NA	NA	Generally, need a chimney or way of evacuating smoke if cooking is done indoors. Especially important when using wood or charcoal.
<b>Condition of building</b>				
	NA	NA	NA	In good state of repair.
<b>Environment</b>				
	NA	NA	NA	Not slum. No site hazard such as surface water, drainage, industrial pollution, flood zone.

Source: Kenya Population and Housing Census, 2019 (KNBS).

31 Taken from the Malaria Indicator Survey 2020 from Ministry of Health.



### Summary description of living wage housing standard for rural Kericho

In Table 3, we combine national and international minimum standards and current housing conditions in Kericho to develop our healthy housing standard for the study area.

**Table 3. Summary of living wage housing standard for rural Kericho**

Housing characteristics	International minimum requirements	Approximate % of houses in Kericho (from previous housing table)	Healthy housing standard for study area
<b>Materials</b>			
Walls	Durable material providing protection from elements	<b>47.1%</b> (28%: cement and stone, 19.1%: wood)	Durable walls such as stone and cement, wood (if in good condition, and well joined).
Roof	Durable material without leaks	<b>95.4%</b> (iron: 94.5% + concrete/tile: 0.9%)	Durable roof of zinc or cement or tiles, without leaks.
Floor	Durable material	<b>44.5%</b> (concrete and tiles: 43.9% + 0.6% wood)	Durable floor such as cement or tiles, wood if raised and in good condition.
<b>Amenities</b>			
Toilet	At least pit latrine with slab	<b>84.2%</b> (excludes bush, open latrine, bucket latrine)	Pit latrine (with slab) in good condition in close proximity to house and used by at most 10 persons (2 families).
Water	Safe water not far from home (maximum 30 minutes total collection time per day)	<b>40.7%</b> (excludes any water source that is unprotected)	Safe water (excludes anything that is 'unprotected') not far from home (maximum 30 minutes total collection time per day), fieldwork confirmed mainly achievable although some workers in their own housing collect water from an unprotected stream.
Electricity	Yes generally, but not required if not common in study area	<b>44.9%</b> (common source of lighting)	Dominant source of lighting after solar, and electrification levels are above average in Kericho as compared to other rural areas. Fieldwork confirmed that all workers we visited have electricity in their houses.

Housing characteristics	International minimum requirements	Approximate % of houses in Kericho (from previous housing table)	Healthy housing standard for study area
<b>Ventilation &amp; Lighting</b>			
Ventilation quality	Good ventilation. Especially important when cooking indoors		Good ventilation. Especially important when cooking indoors.
Lighting	Adequate		Adequate
Number of windows	Sufficient for adequate lighting and ventilation		Sufficient for adequate lighting and ventilation – 1 or 2 windows per room. Most workers' rooms have 1 window per room, though two is achievable.
<b>Living Space</b>			
Number of square meters of living space	≥30 sq. m. (increases with economic development)		Min 36 m <sup>2</sup> for family of 5 (almost same as Government standard of 35 m <sup>2</sup> ). 36-48 m <sup>2</sup> is Anker Methodology standard for a family of five for lower-middle income countries.
Number of rooms	≤ 2 persons per room excluding kitchen and toilet		2-3 rooms and a separate kitchen (not in sleeping or living areas) and toilet.
Kitchen location	If kitchen is inside house, adequate ventilation for cooking needed		If kitchen is inside house, adequate ventilation for cooking needed.
<b>Condition</b>			
	In good state of repair		In good state of repair.
<b>Environment</b>			
	Not a slum		Minimum standard
	No site hazards such as: surface water drainage, industrial pollution, danger of landslides, flood zone		Minimum standard

To summarise the above, our local healthy housing standard is:

- Durable floor such as cement (stone, tile, or wood floor if raised above the ground and in good condition)
- Durable walls such as stone or cement (wood or prefabricated materials if in good condition and considered durable and well joined)
- Durable roof of iron/zinc or cement without leaks
- Sufficient number of windows for adequate lighting and ventilation (1 and preferably 2 windows per room)
- Pit latrine with slab in good condition in close proximity to house and used by at most 10 persons, or two families (or VIP toilet or flush toilet)
- Electricity
- Safe water source
- Kitchen area separate from sleeping quarters and with good ventilation if inside house
- Minimum 36 square meters of floor space
- Building in reasonable condition
- Safe outside environment

The above housing standard exceeds current housing conditions typically found in rural Kenya. This is necessary to ensure healthy and decent housing as stipulated in international conventions and by international organizations. For example, according to data from 2019 Kenya Housing and Population Census, only 35.1% of households in rural areas have a concrete floor. This is slightly higher in Kericho at 43.9% and an improvement over the 26% of people who had cement floors according to the 2005/06 Kenyan Integrated Household Budget Survey. Only 13.6% people in rural areas (and 14.4% in Kericho) have a flushing toilet or a ventilated improved pit toilet (10% in 2005/06), though 69.8% have a pit latrine with slab in Kericho. Only 33.7% of people in rural areas have piped water, borehole or protected well (a decrease from 38.0% in 2005/6), with Kericho having slightly lower levels of these water sources at 29.4%. In rural areas and in Kericho, most people get their water from unprotected rivers, springs, lakes or ponds (which cannot be considered safe). 26.3% of homes in rural Kenya have electricity as their main lighting source, a significant increase from the 8% in 2005/06. Kericho is above average for rural areas with 44.9% of homes having electricity.

## 7.2 Housing conditions of tea workers in Kericho

Few workers rent a house in Kericho County, especially rural Kericho, including tea workers. Many tea workers live in housing provided by an estate with their spouse and children, although some live in their own house in their village, and many workers who live on a tea estate also own their own house in parallel in their home village. Housing provided by the tea companies is important from a livelihoods and wellbeing perspective, because many tea estates are large and travel to work from outside the estate can be time consuming and resource demanding. Housing provided by tea estates is also important from a business point of view in order to ensure a stable and on-time workforce. Tea factories are often more accessible (e.g., located near a major road or closer to towns), but this varies from company to company and place to place. The houses provided by tea companies typically meet the basic standard we have set for decent housing, mainly because the number of tea workers has declined, and this has increased the availability of larger houses that in the past were reserved for supervisors (more information is provided on this below).

As mentioned above, some tea workers also own their own house in Kericho County, which is where their family resides, but choose to live in the company housing during the work week. Other workers (e.g., supervisors, factory workers) live in their own houses all of the time. There are very few migrant workers in Kericho, which

in part also explains the lack of a housing rental market for tea workers specifically – rental is more common for university students and teachers. For those tea workers who own their own house, most were built using earth that was then plastered, as is common in rural areas, or using concrete. They typically do not meet our housing standard on some respects (e.g., plastered earth is not acceptable due to health issues and difficult to maintain). In addition, it is common for families to collect water from unprotected streams, which does not meet our housing standard. Others have access to a borehole, use water vendors or harvest rainwater.

### Photos of local housing



Pit latrine with slab that meets our standard.



Separate cooking area inside house on a tea estate that meets our standard. Note firewood being used for cooking.

## 7.3 The cost of healthy housing in the Kericho area

### *Background on home ownership and rentals in Kericho*

According to the 2019 Kenya Population and Housing Census (Volume IV), 74.3% of people in Kericho County own their own house, while 25.7% rent. Of those who own their own house, 96.3% of people constructed their own house, while 1.1% purchased and 2.6% inherited the property. The rental market appears to be found overwhelmingly in urban centres (smaller or larger towns) or near to major roads. Rental houses are not common in the more rural areas such as where tea estates or farms are found.

To estimate the cost of housing, we use estimations of user cost for house ownership (that meets our healthy housing standard) based on information from a number of builder experts/contractors in the area and low-cost builders in Kenya (plus maintenance costs). We also obtained information on the cost of renting houses in urban

and peri-urban locations using a housing survey as additional information source to give an idea of an upper limit for housing costs (based on rental cost in small urban areas). Utility costs were estimated using a combination of sources: information obtained from the 2015/16 KNBS household survey adjusted for inflation, our own data collected from worker surveys, and additional secondary data.

Housing costs for our living wage were estimated by summing the cost of: (i) user costs for ownership of an acceptable house that meets our healthy housing standard; and (ii) utility costs (water, electricity, and cooking fuel). See section 7.5 below.

#### **7.4 Rental costs in small urban areas**

For rental houses we visited, many met – and exceeded – our standard other than on size. All rented houses we visited in the towns had concrete floors, concrete walls and a concrete or *mbati* (iron) roof. Most of these houses exceeded our healthy housing standard in that they had piped water into the house, and some had a flushing toilet that was found in a small bathroom area within the house. Others had tap water next to the house. Water sources included government provided water, boreholes, or water vendors. Some of the rented houses we visited had a sufficient number of rooms (2-3), to allow for separation of sleeping areas and cooking areas; however, others had spaces that were only divided by curtains, even though the overall size of the house was sufficient to create separate rooms if additional walls had been added. The houses had sufficient ventilation with one window in each room (and sometimes two) and small ventilation shafts. All houses visited had electricity.

We visited 18 houses in different locations in Kericho County – areas mentioned by workers that are popular for rental. The houses were found mainly in medium-sized small towns (Kericho town, Brook Centre, Litein) or near to major roads. The sample of houses visited was found mainly through ‘snowballing’ via workers who had participated in Focus Group Discussions and mentioned people they knew who lived in houses that meet our healthy housing standard or were mentioned by landlords. Via those houses, we were put in touch with other tenants or landlords or shown multiple houses. We also saw some houses advertised for rent during our travels for fieldwork.

Few houses we visited met our standard precisely on every respect. Some aspects of our housing standard were exceeded (e.g., flushing loos and piped water inside the house or a very high quality of finishing which would not be necessary for decency) while other aspects were not met (mainly on size). As such, we did not find many houses with the cost of rent for a basic acceptable house with 36 square meters of living space. However, we could get an idea of an upper limit on rental costs for rural healthy houses by calculating the trimmed mean cost per square meter of the acceptable houses (excluding size criteria) we visited and multiplying this by the minimum floor size of 36 square meters specified in our healthy housing standard. Before doing this calculation, we excluded houses when they had a particularly high quality of finish that far exceeded our decency standard as well as houses that were far below our housing standard besides size (e.g., those without a separate kitchen and additional sleeping areas), see table 4 below.

Using the trimmed mean of remaining rental values reduced the influence of outliers. The trimmed mean rental cost per square meter was 196 KES after excluding unacceptable houses and houses that far exceeded our healthy housing standard. This equates to 7,056 KES per month for a housing unit of 36 m<sup>2</sup>. However, keep in mind that all of the houses included in this calculation have piped water and flushing toilets inside which is well above our healthy housing decency standard. Table 4 below presents the houses we surveyed.

**Table 4. Characteristics, size, and cost per square meter of rental houses visited**

HH No. and Location.	Acceptable Standard? (No/Yes)	No. of Rooms	Living space (M <sup>2</sup> )	No. HH members	Rental costs or monthly maintenance costs for owned housing	Cost per M <sup>2</sup> Roof (good = concrete slab, or iron sheet)	Quality of Dwelling			Comments
							Walls (good = concrete walls and painted)	Floor (good = cement or tile in good condition)	Floor (good = cement or tile in good condition)	
1 Kericho Town	No – slightly too small, but exceeding on some aspects	3	32	4	8,000	250.00	Good	Good	Good	Property too small to meet the standard entirely. However, water and washroom inside the house exceeding the standard. Separate kitchen.
2 Litein Town	No – slightly too small, but exceeding on some aspects	3	30	1	6,500	216.67	Good	Good	Good	Property too small to meet the standard entirely. But water and washroom inside the house, with separate kitchen.
3 Litein Town	Yes, and exceeds in some respect	4	36	3	6,500	180.56	Good	Good	Good	Water and washroom inside the house with separate kitchen, exceeds standard on that respect. Size meets standard.
4 Litein Town	No, too small, but exceeding standard on some aspects	3	20	4	6,300	315.00	Good	Good	Good	Water and washroom inside the house, with separate kitchen. However, house small in size. Much smaller than the house above, but closer to the main road (hence the similar price). Excluded from trimmed mean calculation of rental cost because of high quality of finish (tiling, paints, kitchen cabinetry, etc.).

HH No. and Location.	Acceptable Standard? (No/Yes)	No. of Rooms	Living space (M <sup>2</sup> )	No. HH members	Rental costs or monthly maintenance costs for owned housing	Cost per M <sup>2</sup> Roof (good = concrete slab, or iron sheet)	Quality of Dwelling			Comments
							Walls (good = concrete walls and painted)	Floor (good = cement or tile in good condition)	Floor (good = cement or tile in good condition)	
5 Litein Town	No, too small, no room separation and no separate kitchen	2	32	6	4,000	125.00	Good	Good	Good	Two big rooms; however, no separate kitchen area, and no wall separations between living and sleeping. Toilet and water outside the house but within the compound. Row of dwellings. Excluded from trimmed mean calculation of rental cost as below standard.
6 Litein Town	Exceeds Standard	6	120	6	10,000	83.33	Good	Good	Good	Water and washroom inside the house with separate kitchen. Dwelling big in size. In a flat. Further from the road than the one below, hence lower price despite larger size. Excluded from trimmed mean calculation of rental cost as far above standard.
7 Litein Town	Exceeds Standard	4	64	4	15,000	234.38	Good	Good	Good	Water and washroom inside the house with separate kitchen. Dwelling big in size. In a flat. Closer to the road than the one above, hence higher price. Also, newer than the one above.
8 Molmol	No, below the standard on size and no separate kitchen area	2	32	5	2,000	62.50	Good	Good	Good	Two separate rooms, water and toilet outside. More than 10 people sharing a toilet. No separate kitchen area. Rural setting. Excluded from trimmed mean calculation of rental cost as below standard.

HH No. and Location.	Acceptable Standard? (No/Yes)	No. of Rooms	Living space (M <sup>2</sup> )	No. HH members	Rental costs or monthly maintenance costs for owned housing	Cost per M <sup>2</sup> Roof (good = concrete slab, or iron sheet)	Quality of Dwelling			Comments
							Walls (good = concrete walls and painted)	Floor (good = cement or tile in good condition)	Floor (good = cement or tile in good condition)	
9 Kapkelek Centre	No – slightly too small, but exceeding on some aspects (washroom)	1	25	2	6,000	240.00	Good	Good	Good	Small for a family of 5, washroom and kitchen area inside the house.
10 Brook	Exceeds the Standard	3	64	5	7,000	109.38	Good	Good	Good	Water and washroom inside the house with separate kitchen. Dwelling big in size. In a flat.
11 Brook	Exceeds the Standard	4	72	6	10,000	138.89	Good	Good	Good	Water and washroom inside the house with separate kitchen. Dwelling big in size. In a flat.
12 Brook	No, too small, no room separation and no separate kitchen	1	25	4	3,000	120.00	Good	Good	Good	One big room, no separate kitchen area, no wall separations. Toilet and water outside the house but within the compound. Row of dwellings. Excluded from trimmed mean calculation of rental cost as below standard.
13 Brook	No, too small, but exceeding standard on some aspects	3	28	5	5,500	196.43	Good	Good	Good	Water inside the house with separate kitchen area. Toilet outside.
14 Kericho Town	Nearing the standard, but too small, exceeds in some respects	1	22.5	2	7,000	311.11	Good	Good	Good	Small for a family of 5. Washroom (flushing loo) and kitchen area inside the house. Excluded from trimmed mean calculation of rental cost because of high quality of finish (tiling, paints, kitchen cabinetry, etc.)



HH No. and Location.	Acceptable Standard? (No/Yes)	No. of Rooms	Living space (M <sup>2</sup> )	No. HH members	Rental costs or monthly maintenance costs for owned housing	Cost per M <sup>2</sup> Roof (good = concrete slab, or iron sheet)	Quality of Dwelling			Comments
							Walls (good = concrete walls and painted)	Floor (good = cement or tile in good condition)	Floor (good = cement or tile in good condition)	
15 Kericho Town	Exceeds standards in some respects	4	36	4	10,000	277.78	Good	Good	Good	Water and washroom inside the house with separate kitchen (and flushing toilet). Excluded from trimmed mean calculation of rental cost because of high quality of finish (tiling, paints, kitchen cabinetry, etc.).
16 Kericho Town	Slightly too small and exceeds in other respects	3	33	4	8,500	257.58	Good	Good	Good	Water and washroom inside the house with separate kitchen (and flushing loo).
17 Kericho Town	Yes, exceeds in all aspects	4	56	8	16,000	285.71	Good	Good	Good	Water and washroom inside the house with separate kitchen (and flushing toilet). Excluded from trimmed mean calculation of rental cost because of high quality of finish (tiling, paints, kitchen cabinetry, etc.).
18 Kericho Town	Yes, exceeds on size and facilities inside house	4	49	5	8,000	163.27	Good	Good	Good	Water and washroom inside the house with separate kitchen (and flushing toilet).

Another way to get an estimate of rent for a house that doesn't far exceed our healthy housing standard would be to use the lowest rental cost per square meter for an acceptable house from the 18 houses we visited. This is equal to 5,878 KES for 36 square meters (i.e., 163.27 per square meter x 36 square meters) for rental cost per month. The figure of 5,878 KES is well within the ranges mentioned by a number of key informants as indicated below (the variation/range being attributed to how urban the context in which the housing is situated is, how close to a road, etc.).

We also asked key informants how much rent they would expect to be charged for a house that meets our standard (landlords, factory and estate managers, and workers). The lowest amount mentioned for a house that meets our basic standard was 4,000 KES a month, while the upper limit mentioned by key informants was 15,000 KES for more convenient (i.e., more urban, near major roads) locations. Most key informants mentioned ranges of between 5,000 KES to 8,000 KES a month, see table 5 below. They also explained the difficulty of finding properties to rent in more rural locations.

**Table 5. Price range for rental mentioned by key informants (workers, factory managers, landlords and caretakers)**

Key informant number	Price range mentioned (KES)
1	8,000-15,000
2	6,500
3	8,000
4	6,000-6,500
5	5,000-6,000
6	5,000
7	4,500-10,000
8	7,000-10,000
9	6,000
10	4,000
11	8,000-15,000
12	5,000- 8,000

It is also interesting to note that a large tea company in the area, which provides houses that typically meet our housing standard values their housing in-kind benefit at 5,605 KES a month based on how much it costs them. However, it is important to bear in mind that this may be an overestimate, because the number of workers on large tea estates has decreased in recent years and this affects the calculation of the per worker cost of tea company housing. In addition, we do not have any information on how this large tea estate determined its estimated cost for estate housing.

## 7.5 User cost of owner-occupied housing

Because of the difficulty of finding rented houses in rural areas, since most workers and inhabitants in rural Kericho county build and own their own house, we obtained data on the cost of building a house that meets our healthy housing standard for Kericho. We also estimated the number of years such a house will last before

needing to be rebuilt ('service life'). We spoke to 10 knowledgeable individuals based largely in the Kericho area who are engaged in building houses. This included 'fundis' (those who mainly repair buildings), building contractors, construction managers, and workers who had recently paid for their own housing to be built which met our healthy housing standard. This allowed us to understand the cost of building a house that meets our standard in Kericho and the number of years for which it would last without needing to be rebuilt. We relied mainly on information from individuals whose daily job involved building houses (rather than just doing repairs). Based on the median of these estimates, the total cost of building a house (including materials and labour) that meets our housing standard is 1,000,000 KES (around 8,320 USD) and the median service life mentioned by key informants is around 40 years. This gives us an estimate of a depreciation cost of 2,083 KES a month (i.e.,  $1,000,000/40/12$ ). The costs of maintenance and repairs need to be added to this. We assumed an annual maintenance cost of 1.75% of the total value of the house, which equates to 1,458 KES a month (note that typical maintenance and repair costs range between 1% and 2% in lower-middle income countries, and Kericho receives quite a bit of rainfall). Combined, these equate to a monthly user cost of 3,542 KES a month.

## 7.6 Utilities

### 7.6.1 Electricity

Many workers and residents in Kericho have access to electricity which is used for lighting their homes, and some use electricity for TV and radio and charging of mobile phones. Most are connected to KPLC (government provided electricity) and are on pre-paid meters (or for tea estate housing on a monthly standing charge to the tea estate of 240 KES a month). Monthly standing charges for KPLC were abolished in 2018. Electricity fees are charged on top on this, based on actual usage per Kilowatt. To determine electricity costs, as electricity is included in our local housing standard, we investigated this using four different approaches.

A first approach used our own housing survey of 18 tenants who reported electricity costs. We excluded households with appliances which use heavier loads of electricity that are not common in the study area and not required as part of our housing standard for decency – such as microwaves, refrigerators and electric showers because they give a false impression of typical electricity costs. The median electricity costs of the remaining households were around 560 KES a month.

A second approach used electricity costs for workers living in houses provided by the tea companies but paying for their own electricity. They spend on average between 260 KES and 600 KES a month depending on usage. The majority of workers with families mentioned spending around 450 KES per month including the standing charge for electricity provided by the tea estates of 240 KES (which is paid regardless of quantity of usage). The spending of 450 KES a month is likely to be on the low side since tea workers living on the estates do not have many appliances.

A third approach used the average per capita usage of electricity in Kenya of between 13 and 15 kilowatts a month.<sup>32</sup> If we take the middle of this range of 14 KW per person per month, this is equal to 70 KW a month for a family of 5. Kenya Power and Lighting Company charges approximately 1,530 KES a month for 70 KWs of

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32 <https://energysustainsoc.biomedcentral.com/articles/10.1186/s13705-019-0201-8>; <https://data.worldbank.org/indicator/EG.USE.ELEC.KH.PC?locations=KE>; <https://www.enerdata.net/estore/energy-market/kenya/>

electricity, including all relevant fees and taxes.<sup>33</sup> Since this data includes high-income households with many electrical goods, this is likely a large overestimate of what is needed for basic decency.

A fourth approach for determining electricity costs is the government 2017 Household Survey. Households at the 40<sup>th</sup> percentile of the household consumption expenditure distribution spent around 50.30 KES on electricity in 2015/16. Since less than half of households in Kericho county have electricity (44%), this implies around 100 KES per month in 2017 for electricity for households that had electricity. This equates to around 138 KES per month in mid-2022 considering inflation in utility prices since 2019. This is clearly an underestimate based on what we know workers use in practice and what low-intensity electricity users in Kericho use.

In summary, we have four different estimates of electricity costs based on four different approaches to estimating these costs. The first two estimates are based on electricity costs according to workers and they are around 500 KES per month. The third and fourth approaches yielded estimates that were either much too high (in the case of approach 3) or much too low (in the case of approach 4). Given that estimates from approaches 1 and 2 are modest and estimates from approaches 3 and 4 are unrealistic, we decided to round up the results from approach 1 by a small amount and use a conservative estimate of 600 KES per month.

### 7.6.2 Cooking fuel

Most workers we surveyed in our local survey of households and housing use liquefied petroleum gas (LPG) gas to cook their food, although some, particularly those with access to free firewood from forests surrounding tea estates use wood and or charcoal. According to household survey data, LPG use is not very common in the country or in Kericho County. Also, according to Kenya's Ministry of Energy, approximately, 70% of households in Kenya still use a type of woodstove as either their primary or secondary cook stove, with a greater prevalence of 92% in rural areas.<sup>34</sup> According to the 2019 Kenya Population and Housing Census, only 9.5% of households in Kericho County use LPG as their main cooking fuel. The main fuel in Kericho County is firewood. LPG is a safer and cleaner cooking fuel, with fewer potential impacts on forests, but according to our own household and worker surveys LPG is considerably more expensive as a source of fuel than firewood or charcoal (households mentioned spending between 3,000 KES and 4,000 KES a month on LPG for a family of five). For reasons of cost, and extent of usage and our housing standard providing for separate cooking space from living and sleeping spaces to ensure health and safety, we have excluded LPG estimates from our utilities' calculations.

As stated earlier, some tea workers are able to collect firewood for free (not considering the value of their time) from surrounding areas or within tea estates. However, many in Kericho County have to purchase charcoal and firewood. Of those who purchase charcoal or firewood, workers mentioned costs between 600 KES and 2,000 KES a month for a family of 5. On average, the workers we surveyed spend in total of 940 KES per month for firewood or 1,100 KES a month if they use charcoal for a family of 5. In practice, families often mix and match fuel types. The median of these two figures is 1,020 KES a month.

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33 <https://www.stimatracker.com/>

34 Republic of Kenya Ministry of Energy. 2019. **Kenya household cooking sector study**. Assessment of the supply and demand of cooking solutions at the household level. [https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKewiimdK3g-MH5AhXQXfEDHcWdCCUQFnoECAUQAQ&url=https%3A%2F%2Ffeedadvisory.com%2Fwp-content%2Fuploads%2F2020%2F09%2FMoE-2019-Kenya-Cooking-Sector-Study-compressed.pdf&usg=AOvVaw27dFtwLvgdGf\\_iDTJ8y1my](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKewiimdK3g-MH5AhXQXfEDHcWdCCUQFnoECAUQAQ&url=https%3A%2F%2Ffeedadvisory.com%2Fwp-content%2Fuploads%2F2020%2F09%2FMoE-2019-Kenya-Cooking-Sector-Study-compressed.pdf&usg=AOvVaw27dFtwLvgdGf_iDTJ8y1my)

This is much higher than according to 2017 KBS household survey data (484 KES when updated for inflation from the date of household survey until the date of this study). The fact that many people collect firewood for free, as a number of tea workers do, likely explains the low fuel expenditure in the household survey. We think that it is reasonable to more than double this survey reported cost to at least 968 KES a month. This more closely resembles the amounts that workers told us that they spend when obtaining cooking fuel from the open market. Thus, we feel that a cooking fuel cost of 1,000 KES is reasonable.

### **7.6.3 Water**

Some workers spend nothing on water, choosing to collect from streams, but which are unprotected and therefore do not meet our decency standard. In other cases, landlords provide tap water into the plots or houses (from city council water, boreholes, or vendors, or rainwater harvesting) at no additional cost. In other cases, as shown in the housing data we collected, tenants pay for tap water. However, many of those we visited in the towns have flushing toilets which use considerable water. For this reason, we excluded the cost estimates of water for houses with a flushing toilet. This left us with only two useful estimates for water costs – with an average of 625 KES spent a month for a family of 5 for those who incur water costs. This result is interesting but clearly not robust.

Therefore, we also investigated how much households spend on average for water according to government household survey data. This is 44 KES per month for households at the 40<sup>th</sup> percentile of the consumption distribution (updated by inflation to the study month of June 2022). However, according to these household survey data, 51% of the households obtain water from unprotected, likely unsafe, water sources (usually sources that don't involve any direct costs such as unprotected wells, streams, dams, ponds and springs). Furthermore, many households with an acceptable water source that we surveyed do not pay for their water since it is factored into the cost of their rent by landlords. This means the data in the household survey on water costs greatly underestimates the cost of obtaining safe water.

Taken together, we have two estimates of water costs. We have one estimate of 625 KES which is an overestimate and probably a rather large overestimate; and we have a second estimate of around 175 KES (which is around 4 times the 44 KES from the household survey to take into consideration how few households in Kenya pay for water excluding opportunity time expenses) which could still be an underestimate. In light of these two quite different estimates, we decided to use 175 KES per month to be conservative. Note that this is only around USD 1.5 per month or USD 18 per year for water.

### **7.6.4 Total utility costs**

In total, using the information discussed above, households spend approximately 1,775 KES on utilities. This consists of 600 KES for electricity, 175 KES for water, and 1,000 KES for cooking fuel. This is around 4% of family living costs for a living wage which is quite reasonable given that the share of utilities in household expenditure is around 3.2% according to 2017 government household survey data given that many households in Kericho County do not have any electricity, water or cooking fuel costs.

### **Conclusion total cost of housing**

Based on a number of factors such as the difficulty we faced in finding rental houses in rural areas or rental houses in urban areas that didn't far exceed our healthy housing standard, we estimated the user cost figure for owned housing of 3,542 KES a month plus 1,775 KES for utilities for a total housing cost of 5,317 KES per month.

## 7.7. Standard of housing on tea estates

Estate housing was pretty standard across the two tea companies and locations we visited. Housing is usually allocated by a housing committee (nominated by workers) based on assessment of family size. Because of a declining workforce, there is typically good availability of houses on these two large tea estates and most families are able to access a house with two or three rooms. Supervisor housing is of the highest quality, being the largest, and many are now available to normal workers due to decreases in the number of workers.

The characteristics of houses provided by the two large tea estates that we visited can be described as follows:

- Concrete walls, floors and concrete or iron sheet roofs
- Typically, two to three rooms, with separate sleeping area(s)
- Pit latrine near to the house, used by two families at most. Some houses (in the past dedicated to supervisors, but now used by others due to oversupply) had flushing latrines within the house
- Separate cooking area, with window(s)
- Most rooms have one window each
- Good ventilation (small ventilation shafts throughout the house – small slits above windows and doors). Although some workers close these to retain heat and gain some space, there are signs that cooking smoke has stained walls and ceilings suggesting that ventilation could be improved in these areas
- Tap water next to the houses with treated water provided for free by the tea company
- Electricity (paid for by workers – a standard connection fee, and tokens based on usage)
- Most houses in good condition on the exterior (well painted), though one or two had some damp and mould issues in the roof from possible leaks
- In one or two of the houses visited by the research team, the houses were a little small as compared to the standard
- As reported by workers and families, maintenance and/or repairs are undertaken by estate caretakers or contractors at the cost of the tea company
- The interior of the houses generally required a new coat of paint

It is important to bear in mind that we only visited housing on two large estates so conditions on other estates may fall below the above noted conditions.

## 8. NON-FOOD NON-HOUSING COSTS

While food and housing account for the main part of expenditures for a typical household, there are other essential expenses that are needed as well. Health care and education are considered human rights in the Anker Methodology, and people also need to spend money on clothing and footwear, personal hygiene, transportation, communications, certain durable goods, etc. Whereas food and housing costs are estimated based on normative standards for a nutritious diet and healthy housing standards, non-food and non-housing (NFNH) costs are estimated as a mark-up based on an estimated ratio of NFNH costs to food costs for households out of poverty according to data from a large household expenditure survey.

A four-step approach was used to estimate NFNH costs for the Kericho. First, we used the detailed data on household expenditures from Kenya's 2015/16 Integrated Household Budget Survey conducted by the Kenya National Bureau of Statistics. In Step 2, we adjusted some of the expenditure groups in order to be consistent with the Anker Methodology (Anker and Anker, 2017). This involved excluding expenses considered unnecessary

for a living wage (e.g., tobacco and private transport), moving alcohol expenditures out of the food expenditure group into NFNH because alcohol is not included in our model diet. This also involved moving part of expenditures for meals purchased away from home out of the food expenditure group and into NFNH because only part of the cost of these meals is for the food in these meals (other costs are related to preparation and overheads in running a restaurant or food outlet).

In Step 3, we used these adjusted household expenditure data for households at the 40<sup>th</sup> percentile of household expenditure distribution (where we expect people earning a living wage to be located in terms of household expenditure levels) to estimate the NFNH/Food ratio. This ratio is 0.558 for Kericho County. We then calculated the preliminary NFNH costs for our living wage by multiplying the adjusted NFNH to Food expenditure ratio by the cost of the living wage model diet to give us a **preliminary NFNH cost per household per month of 13,074 KES** (i.e., 0.558 times model diet cost of 23,439 KES. Step 4 of the Anker Methodology involves a rapid post check for health care and education costs, to ensure that sufficient funds are available for these crucial items since they are considered human rights in the Anker Methodology. When the amounts included for these in the preliminary NFNH are too low, the amounts included for health care and education are increased.

#### Step 1:

The 2015/16 Kenya integrated Household Budget Survey (KiHBs), which is the latest available, presents expenditure data for five household expenditure quintiles (quintiles divide a population into five equal groups of 20 per cent each of households based on the expenditure distribution ranking from the lowest to the highest). This means that the third quintile includes the median or average household in terms of expenditures. These expenditure data are shown in table 6 below. It includes 20 different expenditure groups.

Of note is that the percentage of household budget spent on food decreases as income increases, as would be expected according to Engels' law (see Anker, 2011). Rental cost shares have no clear increasing or decreasing trend with income level, although the highest rent share is for the wealthiest quintile. The percentage of household spending on health care increases somewhat with income level, suggesting that as income levels increase, so does people's ability to access private health care. Household spending on education is especially sensitive to income, with the education expenditure share increasing from 2.8% for the first quintile to 16.4% for the fifth quintile. See table 6 below.

**Table 6. CPI expenditure shares (%), by household expenditure group for Kericho**

	Q1	Q2	Q3	Q4	Q5
Expenditure (%)	Poorest				Wealthiest
Food and non-alcoholic beverages	63.5	56.9	53.0	50.2	31.8
Food away from home	4.1	2.8	2.0	1.5	1.5
Alcohol	1.9	2.9	1.6	2.1	1.1
Tobacco	1.2	0.3	0.2	0.1	0.1
<b>Housing</b>	<b>12.9</b>	<b>11.5</b>	<b>11.5</b>	<b>13.3</b>	<b>20.6</b>
Actual and imputed rent, and maintenance repairs	10.3	8.6	8.0	9.7	16.0
Utilities water	0.2	0.0	0.3	0.4	0.3

	Q1	Q2	Q3	Q4	Q5
Expenditure (%)	Poorest				Wealthiest
Utilities refuse	0.0	0.0	0.0	0.0	0.0
Utilities electricity	0.1	0.3	0.3	0.6	0.8
Utilities fuel	2.2	2.2	2.4	1.8	1.4
Housing services	0.0	0.3	0.4	0.7	2.1
Hotel	0.0	0.1	0.0	0.0	0.3
Health care	0.9	1.2	1.6	2.0	1.9
Private transport	0.0	0.2	1.2	0.9	3.6
Public transport	4.2	7.9	7.7	6.4	6.9
Communication	0.6	0.6	1.1	0.6	1.2
Recreation	0.1	0.5	0.4	0.7	1.1
Education	2.8	5.2	8.1	11.7	16.4
Clothing and footwear	2.2	3.7	3.9	3.4	3.0
Household furnishings	0.7	0.8	1.5	0.7	1.7
Miscellaneous	5.0	5.5	6.1	6.4	8.8
<b>Total expenditure</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Source: KiHBs 2017.

### Step 2:

Some adjustments to these expenditure patterns are needed in order to calculate the NFNH/Food ratio according to the Anker Living Wage Methodology. A summary of these adjustments is made in Table 7 below.

The first adjustment is to remove tobacco (typically cigarettes) from consumption altogether, as it is neither necessary, nor desirable. According to the Household Budget Survey, tobacco consumption in Kenya is fairly limited, reaching a maximum of 1.2% for poor households, and amounting to 0.1% of expenditure for the high-income quintile. This expenditure is moved to a category of eliminated items.

The most important adjustment is to move the service and profit part of food eaten away from home from the food expenditure group to the NFNH expenditure group. According to Anker and Anker (2017), the share of the costs of meals away from home for the food in these meals in most low-income and lower middle-income countries such as Kenya constitutes about 30%, and we use this share for our calculations. Thus, we transfer 30% of the food eaten out to the NFNH expenditures category keeping 70% in the food category. Alcohol is moved from the food group to NFNH. We do this because these expenses are not part of the model diet developed in Section 6, but neither do we want to rule this out altogether. The final adjustment we make is for private vehicle ownership, which is not considered necessary for decency. Following Anker and Anker (2017), we assume that people with a private vehicle could save about 50% by switching from a private vehicle to public transportation. This means that we transfer half of private transportation – which is very low in Kenya – to the eliminated category “Excess private transportation cost”.



**Table 7. Adjusted expenditure shares and NFNH/food ratios, by income group for Kericho**

	Q1 (poorest)	Q2	Q3	Q4	Q5 (wealthiest)
<b>Food (including 70% of meals away from home)</b>	<b>66.4</b>	<b>57.8</b>	<b>54.8</b>	<b>51.6</b>	<b>32.9</b>
<b>Housing</b>	<b>12.9</b>	<b>11.5</b>	<b>11.5</b>	<b>13.3</b>	<b>20.6</b>
Rent	10.3	8.5	8.1	9.7	16.1
Utilities and services	2.6	3.0	3.4	3.6	4.6
<b>Non-food non-housing (including 30% of meals away from home)</b>	<b>19.6</b>	<b>29.6</b>	<b>33.1</b>	<b>34.8</b>	<b>44.6</b>
half of private transportation	0.0	0.8	0.4	0.2	1.8
Public transport	4.2	7.8	7.7	6.5	6.9
Communication	0.6	0.6	1.1	0.6	1.2
Recreation	0.1	0.5	0.4	0.7	1.1
Education	2.8	5.3	7.9	11.8	16.4
Clothing and footwear	2.2	3.7	3.9	3.4	3.0
Household furnishings	0.7	0.7	1.5	0.7	1.7
Miscellaneous	5.0	5.5	6.1	6.4	8.8
30% of food away from home	1.2	0.8	0.6	0.5	0.5
Alcohol	1.9	2.5	1.9	2.1	1.1
Health (medicines)	0.9	1.2	1.6	1.9	1.9
Hotels	0.0	0.1	0.0	0.0	0.3
<b>Eliminated expenses</b>					
Tobacco	1.2	0.2	0.3	0.1	0.1
Excess private transportation cost	0.0	0.8	0.4	0.2	1.8
<b>NFNH/Food ratio</b>	<b>0.29</b>	<b>0.50</b>	<b>0.61</b>	<b>0.68</b>	<b>1.36</b>
<b>40th Percentile (average of Q2 and Q3) for Kericho</b>	<b>0.558</b>				

Note: KiHBs includes only expenditure on medicines in health care.

Source: adapted by authors from KiHBS 2017.

As expected, the NFNH/Food ratio increases quite a lot with income level. For the living wage estimate, we use the ratio for families that have enough income for a decent, but frugal standard of life. For this reason, the NFNH/Food ratio is calculated for the 40th expenditure percentile of households. Thus, this is done using an average of the second and third quintiles that are for 20-40 percentile and 40-60 percentile. This is 0.558 for Kericho. Multiplying this by the monthly cost of food for our model diet for our reference family of 5 gives us a per month preliminary cost for NFNH per household of 13,074 KES (i.e., 23,429 KES x 0.558).

## 8.1 Post checks for health care and education

According to data from the 2015/16 KNBS Household Budget Survey, households at the 40<sup>th</sup> percentile of the household expenditure distribution (averages of Quintiles 2 and 3) spend on average 6.6% of their expenditure on education, and 1.4% on health care.<sup>35</sup> The purpose of this section (Step 4 of the NFNH calculations) is to verify that the spending indicated by the secondary data is indeed enough to secure adequate health care for the worker and her/his family and education for his/her children through secondary school, since these are considered to be human rights in the Anker Methodology. As indicated in Table 8, 22.2% of NFNH expenditure is for education and 4.7% of NFNH expenditure is for health care and as a result KES 2,902 and KES 615 are included respectively in the preliminary NFNH estimate for these. This is a relatively high percentage for education and a relatively low percentage for health care from an international perspective.

**Table 8. Health care and education amounts included in preliminary NFNH estimate**

Item	% of household expenditure	% of NFNH expenditure	Amount (KES/month) when NFNH costs are KES 13,074
Health care	1.4	1.4/29.9 = 4.7%	615 KES
Education	6.6	6.6/29.9 = 22.2%	2,902 KES

### 8.1.1 Education post check

Education is very important to Kenyans and highly valued. Workers we spoke to confirmed that all their children attend both primary and secondary school, and where parents can, they will invest financially in their children's education to ensure their children are able to access quality education. University education in Kenya is also highly valued, but rare. Only 3.5% of the population is educated to tertiary level.<sup>36</sup> For this reason, we do not include the costs of tertiary education in the living wage benchmark for Kericho.

Primary school enrolment rates are high in Kenya. Almost all children attend primary school (93% before COVID-19) and girls in 2020 constituted 49% of all students. In 2020, the rate of completion of primary school stood at 94.6%. The primary to secondary school transition rate stood at 91.0 per cent in 2020. Secondary school enrolment rates, however, are much lower (UNICEF, 2022).<sup>37</sup>

According to the government's 2021 economic survey<sup>38</sup>, in 2020, there were 47,295 registered pre-primary schools in Kenya: 62% of these were public, and 38% were private. Similarly, of primary schools (32,437 in

35 In the classification of non-food expenditures, healthcare only included medication (anti-worms, liver salts and other anti-acids, cold tablets/cough syrup, balms, vaccines, contraceptives, multivitamin/other medicine, fever/pain killers, anti-malaria medicine, cod/halibut liver oil, ARVs, epileptic drugs, insulin, hypertension, antidepressant drugs, asthmatic drugs). Education included: tuition fees, books & other materials, uniform, boarding fees, transport, contribution for school building or maintenance, extra tuition fees, examination fees, PTA and other related fees, pocket money and shopping, 'other expenses'.

36 <https://www.statista.com/statistics/1237796/distribution-of-population-in-kenya-by-highest-level-of-education-completed/>

37 <https://www.unicef.org/kenya/education>

38 [https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKewjV0fj5I4f5AhWZWEHThHAREQFnoECAIQAAQ&url=https%3A%2F%2Fwww.knbs.or.ke%2Fwp-content%2Fuploads%2F2021%2F09%2FEconomic-Survey-2021.pdf&usg=AOvVaw0wJ\\_neRe3FJe3McRrPA3fD](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKewjV0fj5I4f5AhWZWEHThHAREQFnoECAIQAAQ&url=https%3A%2F%2Fwww.knbs.or.ke%2Fwp-content%2Fuploads%2F2021%2F09%2FEconomic-Survey-2021.pdf&usg=AOvVaw0wJ_neRe3FJe3McRrPA3fD)

total), 72% were public schools, while 28% were private institutions. Private secondary schools are rarer; of all secondary schools (10,413 in total in 2020), only 12% are private. In terms of student numbers, 14% of primary school students attend private school, while 86% attend public schools. 6% of students are enrolled in private secondary schools, with the remainder (94%) in public schools. Public education is therefore very common in Kenya – nevertheless there are still costs involved in sending children to public schools as indicated below, and education cannot be considered to be completely free of charge.

Kenya’s educational system is transitioning from a system with 2 years of pre-primary school, eight years of primary school and four years of secondary school to a new system adopted in 2018 consisting of two years in pre-primary level, six years in primary school (from grade one to six) and six years of secondary school which includes junior secondary school (three years) and senior secondary school (three years).<sup>39</sup> The first cohort of students that are part of the new system concluded fifth grade in early 2022. In May 2022, students finished their final year of primary school, before transitioning to junior secondary school.<sup>40</sup>

Our estimate of school costs is based on the older system of 10 years of pre-primary and primary school, and 4 years of secondary school, since that was the basis on which cost information was provided to us by workers and school staff because most children remain in the old system. Average annual school costs should not alter significantly under this new system with children spending more time in secondary school and less time in primary school. However, there are marginal costs increases for parents annually because secondary school is more expensive than primary school on average because of costs associated with boarding.

The Government of Kenya has allocated significant budget to education and aims to get a 100% transition rate from primary to secondary school (the rate currently stands at 91%). However, there are quality issues within the education system, such as poor-quality teaching and large class sizes.<sup>41</sup> Some schools lack funding from government to maintain buildings to a decent standard, and to cover all the costs of textbooks and teaching materials, despite these technically being provided by government. In addition, many parents contribute to improving the student-to-teacher ratio through the payment of ‘parent-teacher fees’ (PTA fees).

To ensure quality education – that is relevant for the normative nature of a living wage – it is evident that parents need to contribute some funds to public schooling. Indeed, the ability to pay costs associated with education remains a key determinant of children staying in school.<sup>42</sup> Although tuition is free in public schools, there are direct and indirect costs such as food, examination fees, exercise books and uniforms which can represent a large part of the family income for the poor ([theconversation.com](https://theconversation.com)).<sup>43</sup>

### *Primary school costs*

As noted by workers, head-teachers and factory managers during our individual and group discussions, there are many costs associated with primary schooling: uniform, games kit, shoes, bag, notebooks, pens and pencils,

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39 <https://www.theafricareport.com/183289/kenyas-new-curriculum-on-the-spot-as-campaigns-hot-up/>

40 <https://www.theafricareport.com/183289/kenyas-new-curriculum-on-the-spot-as-campaigns-hot-up/>

41 <https://www.unicef.org/kenya/education>

42 <https://www.tandfonline.com/doi/abs/10.1080/03057925.2013.796816?journalCode=ccom20>

43 <https://theconversation.com/how-to-keep-kenyan-children-in-school-longer-its-not-only-about-money-157461>

continuous assessment, and examination fees. In some schools, parents are also required to purchase textbooks, which are supposed to be provided for by government but funding for these is often insufficient. Parents also typically face a one-off fee for registering their child at a school, although this is small. Some students may also face travel costs – some of the workers mentioned quite significant costs – though many students also walk to school.

### *Secondary school costs*

There are substantial costs involved in sending children to public secondary schools. The fees associated with secondary public schools depends on the scores children receive and which public schools are subsequently allocated to them by government. National schools are allocated to pupils with the best results, county for the second-best, sub-county for third best, and so forth. Pupils are selected from various locations around the country to attend these different schools, and thus some pupils have to travel far from home to attend a national school. The majority of secondary schools are boarding schools, with costs involved in boarding, food and some tuition. There are also transport costs incurred to get children to and from school at the start and end of term and during half terms. Day secondary schools are less common and thought by workers to be associated with poorer quality education.

### *Overall school costs*

We discussed schooling costs with workers during focus group discussions. We conducted 12 in total and there were typically at least 3-4 workers in each group who had children at school. We also visited 11 different schools to get an idea of annual costs. While we visited some private primary schools and got some information from parents on those costs, we exclude private schools from our cost estimates below on the basis that private school is not essential for decency.

It is clear that there are many costs involved for parents in sending their children to public primary schools, particularly where public schools request a variety of additional funds from parents to ensure the quality of education. We feel that children of workers earning a living wage should be able to afford to send their children to quality public primary school. Similarly for secondary schools, we asked parents and visited schools (interviewing head teachers or deputy heads) to get an idea of the costs involved in sending them to school. As mentioned, these costs are typically higher than for primary schools because of boarding.<sup>44</sup>

Workers mentioned costs for primary school (including the years at pre-primary) of between 4,125 KES to 31,183 KES a year. The higher costs tended to be due to higher monthly travel costs. Travel costs can indeed be high when parents send their children further afield to better managed public schools. For secondary schools, costs mentioned by workers and school management ranged between 10,000 KES (for a day school) to KES 61,500 (for a boarding school) per year.

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<sup>44</sup> Due to schools being closed during Covid-19, some fees were higher than usual (e.g., for additional tutoring), and because schools had added an extra term (4 instead of 3) to allow students to catch up. We excluded these extra Covid-related costs on the basis that they are not ordinary or typical and so we worked on the basis of the normal three term year.

The median monthly cost for primary school according to workers and head teachers is 816 KES per month. For secondary school, the median monthly cost estimated by workers and head teachers is 2,233 KES. Total cost per month for education for the reference family with 3 children is then 2,849 KES (table 9). This is very similar to the 2,902 KES a month included in our preliminary NFNH estimate for education for our reference family. This means that enough is included for education in our preliminary estimate of NFNH costs, and for this reason, we do not make a post check adjustment for education.

**Table 9. Average annual cost per student for public schooling based on discussions with workers and key informants**

	Pre-primary and primary	Secondary
Total annual cost (average) (1)	(816 pm x 12) = 9,792	(2,233 pm x 12) = 26,796
School level	Primary	Secondary
Number of years in each level (2)	10	4
Total cost (3) = (1) x (2)	97,920	107,184
Average cost per child per year (4) = (3)/18	5,440	5,955
<b>Average cost for reference family per month (5) = (4) x number of children in reference family/12</b>	<b>1,360</b>	<b>1,489</b>

### 8.1.2 Health care post-check

Public health care is available in Kenya via the National Hospital Insurance Fund (NHIF) for formal sector workers who contribute monthly to NHIF (via their employer).<sup>45</sup> Despite this, some funds are needed for decency for formal sector workers to access private facilities and pharmacies, since public facilities can be located in distances far from patients and medications or specific tests are often unavailable. It can be more affordable for workers to visit a private facility than to have the travel costs associated with travel to an NHIF facility. In addition, workers at times have to make co-payments to NHIF facilities, since certain services (such as medicines, laboratory tests and radiological tests) are often unavailable from the NHIF providers, or because the services are not covered by NHIF.<sup>46</sup>

In this post check, we make a rough estimate of the amount of funds needed to have adequate health care for formal sector workers contributing to NHIF for typical routine illness such as malaria, chest infections, cold, flu, stomach issues which were typically mentioned by workers we spoke to as reasons for visiting health care facilities. The following estimate of this cost is based on: (i) assumptions about how many times per year that workers and their families typically visit different types of health care facilities (ii) cost per visit to private health care facilities and (iii) cost of medications per year.

45 Informal workers can contribute to the NHIF, but not many do. See section on informal workers.

46 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7116659>

It is important to note that most of the following discussion and analysis is for formal sector workers, such as many workers on large tea estates or employed by KTDA, who contribute and belong to NHIF. It is also important to note that costs for adequate health care are higher for the many informal workers in Kericho County who do not belong to NHIF (see below). Indeed, many Kenyans rely heavily on private health care. This is indicated by the fact that out-of-pocket health care expenditures are on average USD 20.27 per person per year in Kenya according to the World Bank which is equivalent to around 2,400 KES per person per year in out-of-pocket payments for health care.<sup>47</sup> This works out to be on average around 1,000 KES per month for a family of 5 persons.

### *Number of visits to outpatient facilities per person per year*

According to the Kenya Health Expenditure and Utilization Survey (2013), 87.3 percent of the respondents who had been ill during the 4-week recall period reported that they had consulted a healthcare service provider as an outpatient. This means that most Kenyans consult a health care provider when they are ill. On average, there were 3.1 visits to outpatient facilities per person per year according to the 2013 survey.<sup>48</sup> In addition this survey found that “It is common for individuals who are ill to buy or use drugs that were prescribed for similar earlier episodes or buy drugs from chemists without a prescription.”<sup>49</sup> In addition, medications are often unavailable in NHIF-funded facilities, and workers may have exceeded the cost limit of their coverage, and thus workers using NHIF facilities are often forced to pay out-of-pocket expenses. Therefore, for adequate health care, some funds are also needed for routine medications.

Based on these data and recommendations in the Anker Methodology of 3-4 visits to a health facility and the 2013 survey indication of 3.1 visits per year to outpatient facilities, we assume 3 visits to an outpatient facility per person per year plus purchases of medicines from a pharmacy or chemist. For decency for formal sector workers living in rural areas, we assume that 1.5 outpatient visits a year to public health care facilities and 1.5 visits a year to private health care facilities. Private facilities are often located in more convenient locations for many rural workers than NHIF facilities, to which transport costs can be prohibitive, and play a role in filling healthcare needs in private facilities. Also, NHIF does not cover certain treatments and medications can be out of stock.

### *Cost of consultations to private providers and for common medicines*

The many workers we spoke to indicated that the cost of consultations to private providers varies between 300 KES and 1,000 KES a visit, depending on the facility and the illness and the lab tests required). We used a typical amount of around 800 KES (around USD 7) per visit for seeing a health care provider at a private facility including necessary lab tests.

We asked workers during focus group discussions and subsequent phone calls how much they spend on medication on average on a monthly or annual basis. Workers mentioned that typical medications such as painkillers, antibiotics, anti-malarials, deworming medication, and cough syrups for children, costs on average 300 KES a month for a family of five. We also visited several chemists and private medical facilities to validate these costs. Medications are often unavailable in public facilities.

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47 <https://data.worldbank.org/indicator/SH.XPD.OOPC.PC.CD?locations=KE>

48 2013 Kenya Household Health Expenditure and Utilisation Survey, p 12.

49 Ibid page 13.

**Table 10. Typical out of pocket health expenses needed for adequate health care for formal tea workers and their families belonging to NHIF**

Type of facility	Number of visits per family member per year	Cost per person per year	Total costs for family of 5 per year	Total costs for family per month
Public facility	1.5	0	0	
Private facility	1.5	1,200	6,000	500
Costs for typical medications such as painkillers, antibiotics, anti-malarials, deworming medication, and cough syrups for children including visits to chemists only		720	3,600	300
<b>Total costs per family per month</b>				<b>800</b>

Table 10 shows the typical expenses of a formal sector worker and family for basic adequate health care. Based on the above assumptions on number of visits to health care facilities and cost per visit to private clinics, public clinics and pharmacies, we estimate a total monthly cost per family for health care of 800 KES per month. This estimate of 800 KES needed for healthcare is greater by 185 KES than the 615 KES which is included in the preliminary NFNH estimate for healthcare. This difference is partly due to the fact government statistics on health care expenditures by households only include medications. For that reason, we increased the amount included for healthcare by 150 KES to more closely resemble what we found during our fieldwork and post-check, while remaining conservative.

### *Informal workers*

It is important to keep in mind that not all that many Kenyans are covered by the NHIF. According to Mbau et al. (2020), only 15.8% of all Kenyans are covered by this insurance scheme.<sup>50</sup> As a result, the majority of Kenyans access their health care through private facilities, or wait until illnesses reach an advanced stage and they have no other choice but to visit a public health care facility.<sup>51</sup> It is argued that a main reason for the low coverage is that the premium rates for the informal sector possible contribution (where 70% of people are employed) are unfair and unaffordable.<sup>52</sup> The premiums are fixed over quite large income ranges, unlike in the formal sector where they are graduated according to income. Proportionally speaking, however, in both the formal and informal sector, low-income earning population groups contribute a higher percentage of their income towards the premiums than higher income earning groups.<sup>53</sup>

It is clear from the above discussion, that informal workers would need larger sums than formal workers to cover larger out of pocket expenses associated with accessing adequate health care.

50 <https://equityhealthj.biomedcentral.com/articles/10.1186/s12939-019-1116-x>

51 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7565744/#!po=1.66667>

52 <https://equityhealthj.biomedcentral.com/articles/10.1186/s12939-019-1116-x>

53 <https://equityhealthj.biomedcentral.com/articles/10.1186/s12939-019-1116-x>

## 9. PROVISIONS FOR UNEXPECTED EVENTS TO ENSURE SUSTAINABILITY

Unforeseen events and expenses can quickly force workers into poverty and debt from which it is difficult to recover. For this reason, it is common when estimating a living wage to add a small margin above the cost of the basic quality life allowed for by a living wage. Without such a margin, a living wage is not sustainable (Anker and Anker, 2017). The Anker and Anker (2017) methodology adds 5% to living cost to cover unexpected events. Using this recommended value, we add KES **2,098** (USD 17) per month per family to cover unexpected events.



## SECTION III. LIVING WAGE FOR WORKERS

### 10. REFERENCE FAMILY SIZE

Living wage is a family concept, and, for decency, a living wage should be sufficient to support a typical size family in the location where workers live and work. The larger the size of the family, the larger a living wage would be needed to support it (Anker and Anker 2017). In this report, we use a **reference family size of five (two adults and three children)**. This choice is based on several pieces of information as described below.

First, the total fertility rate (TFR) for Kericho is 4.0 according to the 2014 Demographic and Health Survey (DHS).<sup>54</sup> We estimate that the total fertility rate for rural Kericho is 4.13.<sup>55</sup> This is just above the total fertility rate for Kenya as a whole (at 3.9) and lower than for rural Kenya as a whole (4.5). This is much higher than for urban Kenya (3.1). To update this TFR for 2014 to the present, we used the downward national trend from 2014 to 2020 in TFR for Kenya which is 3.5/3.9.<sup>56</sup> Thus, we multiplied the  $TFR_R$  for Kericho for 2014 by the national trend from 2014 to 2020 and this gave us a  $TFR_R$  of 3.71 for rural Kericho (i.e.,  $4.13 \times (3.5/3.9) = 3.71$ ).

We then adjusted downward the rural Kericho total fertility rate for child mortality. This is 45 deaths per 1000 live births as reported in the 2014 Demographic and Health Survey (KNBS) for the Rift Valley area (where Kericho is located). More recent mortality rate data are available from the UN, but they are for all-Kenya rather than for Rift Valley. For this reason, we used actual estimate from 2014 for Rift Valley, which is anyway very close to more recent UN estimate for Kenya. Using a child mortality rate of 45 per 1,000 live births, we get a mortality adjusted total fertility rate of 3.54 for rural Kericho. This implies a reference family size of around 5.5.

A second source of information for determining an appropriate reference family size is the average household size for rural Kenya. We used data from the Demographic and Health Survey (2014) previously noted. When we excluded one-person households (which are not relevant for the living wage, which is a family concept) and especially large households with more than eight members (which are probably extended families with possibly more than 2 earners) from this dataset, we found a rural average household size of 4.58.

Combined, these two data sources (mortality adjusted total fertility rate and adjusted average household size) suggest a reference family size of 5 (two adults and three children). This is in between the mortality adjusted total fertility rate and adjusted average household size indicated above. It should be noted that although we use a reference family consisting of a father, a mother and three children for the purpose of the living wage estimate, in reality family compositions can be more complex.

54 Available at: <https://dhsprogram.com/publications/publication-fr308-dhs-final-reports.cfm>

55 TFR for 2014 for Kericho is 4.0, and 90% of Kericho's population is rural. This implies that the TFR for rural areas of Kericho (TFR<sub>R</sub>) is 4.13.

$$\begin{aligned} \%R \times TFR_R + \%U \times TFR_U &= 4 \text{ with } TFR_U/TFR_R = 3.1/4.5 \\ .90 \times TFR_R + .10 \times TFR_U \times 3.1/4.5 &= 4.0 \\ \text{and } TFR_R &= 4.0 / (.90 + 3.1/4.5) = 4.13 \end{aligned}$$

56 <https://www.worldometers.info/demographics/kenya-demographics/>, which uses data from UN Population Division, World Bank and OECD.

**Table 11. Household size by number of members in rural Kenya**

Number of persons in household	Rural Kenya
1	13.4%
<b>2</b>	<b>10.2%</b>
<b>3</b>	<b>14.1%</b>
<b>4</b>	<b>17.0%</b>
<b>5</b>	<b>15.2%</b>
<b>6</b>	<b>10.9%</b>
<b>7</b>	<b>7.8%</b>
<b>8</b>	<b>5.2%</b>
9+	6.2%
Average household size	4.90
<b>Average household size excluding 1-person households and households with more than 8 members</b>	<b>4.58</b>

Source: Authors' own calculations based on data from DHS (2014).

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

For a family living in rural Kenya, it is reasonable to expect more than one member to be gainfully employed and jointly support the family through earning income. For this reason, the Anker Methodology used in this report assumes that the number of workers supporting the family ranges between one and two. The reason this is less than 2 is because there are often some adults who are not in the labour force for various reasons such as for child care or care for other family members, disability or illness, or other reasons; other adults are unemployed; and others do not work full-time work throughout the year.

The number of full-time workers in the reference family was estimated using a combination of data from the KNBS Labour Force Basic Report (2015/16) and the 2021 KNBS Quarterly Labour Force Report.<sup>57</sup> From information provided by KNBS Labour Force Basic Report and Quarterly Labour Force Report, we obtained rural labour force participation rates (LFPRs), rural unemployment rates, and part-time employment rates for prime working ages 25-59 years. We used the formula given below to determine the probability of a person in prime working age being a full-time worker. Part-time work is defined as working fewer than 40 hours a week.

57 [https://www.knbs.or.ke/download/quarterly-labour-force-report-2021\\_quarter\\_1/](https://www.knbs.or.ke/download/quarterly-labour-force-report-2021_quarter_1/)

Thus, the proportion of full-time equivalent work per prime working age (25-59) adult is 0.74:

$$\text{Adult LFPR} \times (1 - \text{unemployment rate}) \times (1 - [\text{average part-time employment rate} \div 2])$$

**Table 12. Data on labour force participation rates, unemployment rates and part-time employment rates for males and females ages 25-59, rural Kenya**

	National rural
Rural labour force participation rate (LFPR) (25-59)	86.24%
Rural unemployment rate (25-59)	5.02%
<b>Part-time employment rate</b>	
Women (25-59)	25.33%
Men (25-59)	11.85%
Average	18.59%

Sources: KNBS Labour Force Basic Report (2015/16) and the 2021 KNBS Quarterly Labour Force Report.

Thus, if we assume that one member of the family is employed full-time for the whole year, such as on a tea farm (since as the Anker Methodology explains, “a living wage is concerned with a situation in which at least one adult worker in the reference family is working”), there are 1.74 full-time equivalent workers in the reference family.

## 12. TAKE HOME PAY REQUIRED AND TAKING TAXES AND STATUTORY DEDUCTIONS FROM PAY

In Kenya, workers must contribute to the National Social Security Fund (NSSF) and the National Hospital Insurance Fund (NHIF). Legislation around the (NSSF) contributions has undergone transformation following the enactment of the NSSF Act 2013. However, as of June 2022, implementation of the new Act awaits a verdict of a pending court case.<sup>58</sup> The court case has been pending for some time, without resolution, and employers continue with the old rates since there is no clear legal basis on which employers are required to pay the new rates.<sup>59</sup> For this reason, we use the NSSF contributions as per the provisions of the old Act (i.e., KES 200 for employee and KES 200 for employer). Concerning NHIF, workers earning a living wage fall into the salary bracket of between 25,000 and 29,999 KES a month, and thus pay 850 KES a month.<sup>60</sup>

58 <https://taxsummaries.pwc.com/kenya/individual/other-taxes>

59 A number of key informants (employers and unions) confirmed the old rates are being applied. The new rates proposed range between KES 300 and a maximum of KES 1,080 per month during the first year – depending on earnings – and a contribution of 6% of their wage during the following years

60 New NHIF rates which were gazetted on 06.02.2015 and which took effect from 01.04.2015: <https://bit.ly/3tdkO9c>

Finally, income tax is collected as a Pay As You Earn (PAYE) system (which means that tax is assessed each month considering that annual income is 12 times that month's income). To determine the amount of income tax for our living wage, we used an online tax calculation tool to calculate the PAYE.<sup>61</sup> It is important to note that this takes into consideration a personal tax relief for PAYE of KES 2,400 per month and an NHIF relief of 15% of an individual's NHIF contribution. This is as per the provisions of the Kenya Finance Act 2021. As such, the mandatory payroll contributions (NHIF and NSSF) and income tax (PAYE after personal relief) are shown in table 13.

**Table 13. Mandatory payroll deductions and income tax paid on living wage**

Wage components	Amount in KES
Net Living Wage	225,327
NSSF	200
NHIF	850
PAYE	555.75
<b>Gross Living Wage</b>	<b>26,932</b>

## 13. LIVING WAGE IN CONTEXT: WAGE LADDER

This section provides information on how our estimated living wage compares with other important wage indicators, such as the national rural poverty line wage, the World Bank international poverty line wage, and the minimum wage. We used a wage ladder. We also compare our living wage to wages being paid in the tea sector according to two major Collective Bargaining Agreements signed between the Kenya Plantation and Agricultural Workers Union (KPAWU) with KTGA, and KTDA.

It is important to keep in mind that the following **wage ladder analysis is indicative only and so for expositional purposes only** – its purpose is to demonstrate the **possible size of living wage gaps**. It is not intended to be used for auditing purposes with regard to prevailing wages, but rather for only **generalisation purposes** and to understand the degree of effort that may be needed to close the living wage gap in the Kenya tea industry. This means that this wage ladder **does not** indicate living wage gaps for **particular companies**. For that, it is necessary to do individual company audits, because the amount of work provided each month to workers and the **value of in-kind benefits provided vary company by company**.

### 13.1 Poverty line wages and minimum wage

The national rural poverty line wage was determined by multiplying the rural Kenya poverty line of 3,252 KES per adult equivalent unit for 2015/16<sup>62</sup> by our reference family size of 5 expressed

61 <https://www.pna.co.ke/resources/payee-tax-calculator/>

62 As stated in the 2015/16 Wellbeing Survey (part of Kenya Integrated Household Budget Survey): <https://www.knbs.or.ke/download/basic-report-well-kenya-based-201516-kenya-integrated-household-budget-survey-kihbs/>.

in adult equivalent units (3.2 adult equivalent units using the OECD equivalence scale).<sup>63</sup> We then divided this by the number of full-time earners in the family (i.e., 1.74). This yielded an amount of 5,981 KES per month for 2015/16. We increased this by inflation to the month of our study (June 2022).<sup>64</sup> This gives us a national rural poverty line of 8,833 KES a month.

The World Bank poverty line wage was calculated in a similar way as the national rural poverty line wage. We first estimated income per capita at the World Bank 3.65 PPP<sup>65</sup> poverty line for a lower-middle income countries such as Kenya using the PPP for 2021 of 46.41 reported by the World Bank. Thus, the World Bank poverty line wage was determined to be:

***14,808KES (3.65 PPP per person per day x 46.41 KES for PPP x 30.42 days in the month x 5 persons in family) / 1.74 full-time workers in family).***

The national minimum wage for unskilled workers in the agricultural sector in Kenya is 7,545 KES.<sup>66</sup> There is a large gap between our living wage and the World Bank poverty line wage for Kenya, the national rural poverty line wage, and the national agricultural minimum wage. Our living wage is 3.2 greater than the Kenya rural poverty line wage, 1.8 times higher than the World Bank poverty line wage, and 3.6 times higher than the agricultural minimum wage.

### 13.2 In-kind benefits on tea estates in Kericho

The tea sector provides more in-kind benefits than other sectors. This is particularly true for larger and longer-standing tea estates that are KTGA members. Since in-kind benefits can reduce the cash income workers require to be able to afford a basic but decent living standard, it is recognized in national laws and ILO Conventions that it is acceptable to consider their value when determining prevailing wages and so gap to living wage (see Anker and Anker, 2017). On the other hand, how to value in-kind benefits is very controversial since workers and employers often disagree on their value as partial payment of wages.

For this reason, national laws and ILO Conventions typically refer to the concept that the value of in-kind benefits as partial payment of wages needs to be “fair and reasonable” to both workers and employers. As a result, national laws and ILO Conventions consider and recommend different ways to value in-kind benefits such as cost to employer, market value, and value to workers. Based on such laws and Conventions, the Anker Methodology recommends using the smallest of three common valuation methods (employer costs, market price, and value to workers) mainly because workers do not have agency to decide if they would prefer in-kind benefits provided or cash.

63 <https://www.oecd.org/els/soc/OECD-Note-EquivalenceScales.pdf>. The OECD equivalence scale assigns a value of 1 to the first household member, 0.7 to the second adult household member, and 0.5 to each child.

64 Inflation rate data used are from the Kenya Bureau of Statistics (KBS). We used the average CPI index for the period between when the household survey data were collected (September 2015 to August 2016) and June 2022.

65 <https://data.worldbank.org/indicator/PA.NUS.PRVT.PP>

66 <https://wageindicator.org/salary/minimum-wage/kenya/2230-agricultural-industry>

Common in-kind benefits in the large tea sector of Kenya are said to include the following according to key informants we spoke to:

- Housing on the tea estate (the quality of which is discussed in more length in the housing section).
- Clean water for those living in an estate house.
- Access to free firewood collection (which is used for cooking and heating) from tea estate forests.<sup>67</sup> Note that we do not consider a value for this in-kind benefit as appropriate as partial payment of living wage for two reasons. First, it has no cost to estates, and second workers themselves have to spend considerable time to collect and prepare the wood for burning.
- Meals for those working in the field such as tea pluckers who cannot access their homes or markets at lunch time. A relatively small and simple meal is typically provided according to key informants, normally consisting of beans, maize and sometimes avocado. These meals are not given to those working in factories or collection centres who are able to access retailers or their own homes during lunch breaks. One major tea company in Kericho we spoke to estimates that around 45% of the workforce receive meals on a full-time basis (i.e., 5 days a week).
- Maintenance of local government-run public school buildings and grounds (which typically suffer from insufficient public funding) as well as in some cases provision of materials. Note that one major tea company in Kericho we spoke to estimates that around 78% of students in the schools they support are children of tea workers, with the remaining 22% coming from surrounding communities. This means that the cost of this in-kind benefit per worker to the tea estate in this example would need to be reduced by 22%.
- Health care clinic (dispensary) for tea workers (and not for their family members). These clinics are typically staffed by a nurse and lab technician, or a doctor in some cases. Treatments, tests and medicines are provided by clinics for free. Some tea estates also provide transportation to medical centres when more advanced care is needed with referrals typically made to a public facility covered by National Health Insurance Fund (NHIF). Note that the extent to which estate clinics are for the treatment of workplace injuries and illnesses rather than for outside of work personal illnesses and injuries needs to be considered when determining their value as partial payment of living wage. And according to key informants we spoke to, estate clinics are mainly for the treatment of workplace-related health issues of workers. Combined, these health care services reduce the cash expenses workers face for health care and are appropriate to consider as partial payment of living wage. However, their value for this purpose is limited by their only being for workers and not their families as well as their being mainly for workplace health issues.
- Provision of land for kitchen gardens to workers to enable them to grow food for self-consumption. Note that we do not think that it is appropriate to consider this as partial payment of living wage for the same reasons indicated above for collection of firewood from estate forests (i.e., no cost to estates and need for considerable time expenditure by worker families).
- Childcare facilities and services. This is an acceptable in-kind benefit as partial payment of living wage (see Anker and Anker 2017). It is important to keep in mind, however, that this is not all that common an in-kind benefit in the tea sector in Kenya according to key informants we spoke to.

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67 Note that the use of solid fuels is considered a health hazard by the World Health Organization which indicates that 'The use of solid fuels in households is associated with increased mortality from pneumonia and other acute lower respiratory diseases among children, as well as increased mortality from chronic obstructive pulmonary disease, cerebrovascular and ischaemic heart diseases, and lung cancer among adults.' <https://www.who.int/data/gho/indicator-metadata-registry/imr-details/318>

### 13.3 KTGA CBA wages including a fair and reasonable value of in-kind benefits

The wage ladder below includes the lowest prevailing wages in the Collective Bargaining Agreements between the Kenya Plantation and Agricultural Workers Union (KPAWU) and: (i) KTGA and (ii) KTDA. These prevailing wages are illustrative only, partly because there are numerous CBAs in the tea sector and partly because many tea workers are not covered by a CBA. The lowest paid job under the KTGA-KPAWU CBA is ungraded staff (field employees and hand pluckers). Their cash wage in the CBA was last increased in 2021.

To this cash wage, we added what we consider to be fair and reasonable values (for both workers and employers) of common in-kind benefits provided by large tea companies. This is indicated below. However, before proceeding to indicate how we valued common in-kind benefits in the tea sector, it is necessary to make it very clear that we did not do a thorough investigation of the value of in-kind benefits provided by tea estates. For example, we did not see tea estate financial records of their costs for providing in-kind benefits; nor did we do a survey of market prices. Rather, we relied on speaking to a few key informants and we did limited observations. This means that the values of in-kind benefits indicated below are approximate only.

Second, the type or quality of common in-kind benefits varies tea estate by tea estate. This means that the values indicated below may be too high or too low for a particular tea estate. Third, not all workers receive all of the common in-kind benefits provided by an estate. For example, only those working in the fields, such as tea pluckers, receive lunch. This means that our following estimates of the value of in-kind benefits as partial payment of living wage is likely to be on the high side for some workers.

Our valuations for expositional purposes of common in-kind benefits provided by large tea estates are as follows. Before proceeding, it is important to emphasize again that the value of in-kind benefits provided to workers **varies from company to company**, because the existence and quality of these benefits varies from company to company. This means that for auditing purposes, each company needs to be treated separately. None-the-less, we feel that it is possible to make informed and fair and reasonable valuations for the purposes of generalisation in the wage ladder (see Anker and Anker 2017 and 2017a).

1. Tea estate housing is valued at the housing cash allowance option stipulated in CBAs which tea workers receive when estate housing is not available. This is 2,688 KES for general workers (i.e., 15% of the base salary of 17,921 KES), and 2,775 KES in the case of general factory workers (i.e., 15% of 18,503 KES). This is 72% and 73% respectively of the amount included in our family expenses for the cost of owner-occupied housing plus water of 3,717 KES. However, it is important to keep in mind that many tea workers living in an estate house also have housing costs related to maintaining a separate house they own back in their own village. In addition, workers do not have ownership of their estate housing, so that once they are no longer working on the estate they need to move. Therefore, estate housing could fairly be considered as worth less than equivalent owner-occupied housing elsewhere.
2. Workplace health clinic care is valued at the replacement value of 115 KES a month. This estimate is based on: (i) how much worker families spend on health care included in the living wage estimate (765 KES), (ii) assumption that the worker can reasonably be assumed to be responsible for 1/5<sup>th</sup> of the health care costs of the reference family of 5, and (iii) the tea estate clinic covers 75% of all of the health care costs of the tea estate worker. The quality of health care services provided by estates varies significantly from estate to estate. We have therefore taken a conservative estimate.
3. Simple workplace lunch for those working in the field (which are perhaps half of tea estate workers such as tea pluckers and field hands) is valued at 859 KES per month for these workers. This is how much we estimate this free lunch would save these field workers by having to prepare fewer meals

at home. For this, we used the cost of an equivalent lunch in our model diet prepared at home.<sup>68</sup> Also, keep in mind that providing free lunch to those working in the field is also of benefit to tea estates and so in a sense partly a business expense since otherwise it is likely that some or many workers would not have sufficient energy to effectively carry out their work, or would lose out on working time traveling back to their homes for lunch when in more distant locations on the estates.

4. Access to free firewood collection from estate forests and providing land for a kitchen garden are considered as having zero value for purposes of comparison of prevailing wages to living wage, because there is no cost to employers for these as well as because growing food and collecting and preparing firewood are time consuming for workers.
5. Maintenance and care of government school buildings and provision of a crèche are not considered here, mainly because only some tea estates do these, and in any case, they are not a major cost to tea estates, especially when this cost is averaged out among all tea workers and community members. Of course, these should be considered for estates that provide them.

Based on the above, we estimated the value of the most common in-kind benefits provided by large tea estates (housing and water, health clinic, and meals) to be 3,662 KES per month for general estate workers (e.g., tea pickers) and 2,775 KES for general factory workers. Of course, this value will differ in reality for each tea estate. For example, one large tea estate told us that in-kind benefits costs are 7,000 KES per month per worker – and so considerably more than our estimate. This is a clear example of why separate audits of tea estate are needed and not only to verify the veracity of the costs of in-kind benefits to the estate but also the appropriateness of only using employer costs to value in-kind benefits.

When our estimated value for in-kind benefits is added to the KTGA-KPAWU basic wage for ungraded worker salary (field employees and tea pickers) which is the lowest in the CBA, the gap between the lowest prevailing wage and our living wage Benchmark is around 25%. It is important to keep in mind that this gap is for the lowest paid workers and that many workers are paid more than this, although not every worker receives a free lunch.

It is important to mention that pay per month of hand tea pluckers is uncertain because piece rate payment is an important part of their pay. Firstly, it is not clear if tea pluckers always receive the daily prorated base salary of the 17,921 KES per month specified in the CBA. According to employers and the language in the CBA, tea pluckers receive this minimum daily pay even when there is insufficient green leaf available to pick on any given workday and as a result it is not possible for workers to pick the minimum volume of tea picked required (45 kg).

In contrast according to some key informants we spoke to, workers are paid below the CBA daily rate in some cases when they do not pick 45 kg despite the CBA rule on this. Second, this system of piece rate pay for tea pluckers means that tea pluckers can also earn more than the CBA daily wage when they pluck more than 45 kg in a given day. As a result, wages for tea pluckers can vary significant between companies and workers – with wages possibly falling below the monthly figure of 17,921 KES as well as possibly rising considerably above this. This means that the prevailing wage value indicated in the wage ladder is indicative only.<sup>69</sup>

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68 We estimated the value of lunch for tea pluckers at 859 KES per month. This is the replacement value of a similar lunch prepared at home for a vigorous adult. It assumes that lunch provides 25% of daily calories in our model diet for a vigorous adult, informed by the size and quality of estate meals. It is 45.80 KES per day x 45 weeks of work (i.e., 52 working weeks – 8 weeks of paid leave, public holidays and sick leave in a year) x 5 workdays per week / 12 months.

69 Note that the prevailing wage value in the wage ladder includes the cash value of the annual leave travel allowance.



### 13.4 KTDA wages and cash benefits

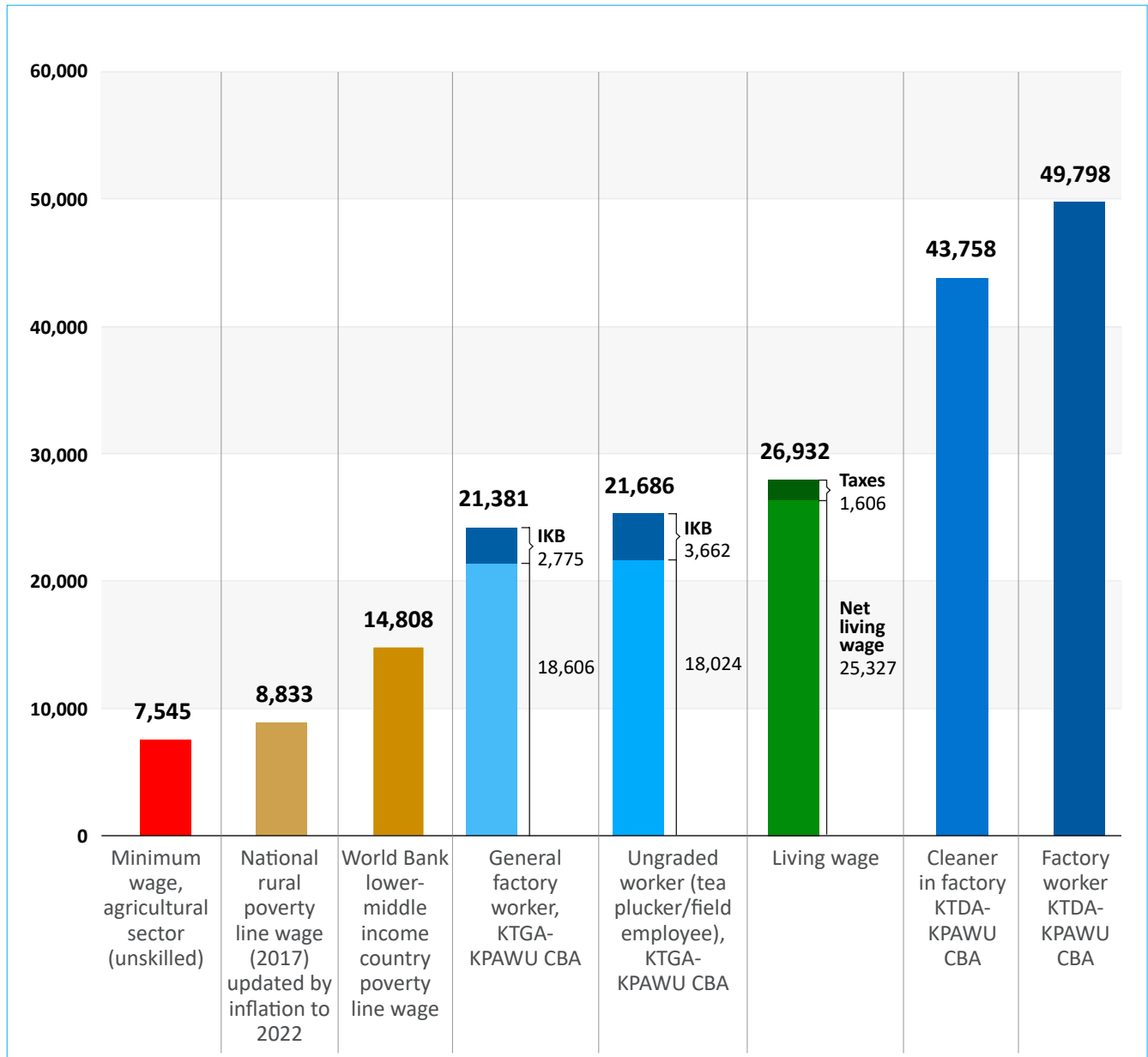
The lowest paid job under the KTDA-KPAWU CBA is cleaner/messenger/loader/gardener and ‘spanner boys’. This wage is included in wage ladder below. As a point of further comparison, we also included in the wage ladder the salary of factory workers, since they are the most common worker covered by this CBA. These wages are for 2022, as they include the 6% annual increase for 2022 specified in the CBA. These wages include basic wage plus cash benefits (housing and annual leave travel allowances) specified in the CBA, but do not include the value of in-kind benefits, since none are provided by KTDA or specified in its CBA.

All workers covered by the KTDA-KPAWU CBA (i.e., those working in the factories) are being paid well above our living wage Benchmark. This study did not obtain information on the wages of workers hired by small-scale farmers belonging to KTDA, although evidence from a recent study<sup>70</sup> suggests they are paid just above, or just below the national minimum wage and hence have a large gap to the living wage. Nor were we able to obtain information on wages for sub-contracted workers, which key informants we spoke to indicated are below our living wage Benchmark. These subcontracted workers make up around 20-30% of the overall tea sector workforce in Kericho according to key informants we spoke to. Also, mechanical harvester workers, who are known to make up a growing proportion of the workforce, are not yet covered by a CBA, and are being paid less than the living wage benchmark according to key informants we spoke to.

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70 Ergon et al., 2022. <https://ergonassociates.net/publication/rainforest-alliance-field-study-kenyan-tea/>

**Figure 4. Kenya wage ladder for rural Kericho (in KES per month), June 2022**



**Notes:** <sup>a</sup> Wages of individual tea pluckers can deviate significantly from the value shown in figure 4, since tea pluckers can pick more or less than the CBA's daily kg target.  
<sup>b</sup> The lowest wage in the KTGA-KPAWU CBA includes the basic wage plus cash benefits specified in the CBA and our estimate of fair and reasonable values for common in-kind benefits.  
<sup>c</sup> Poverty line wages were estimated for a family size of 5 with 1.74 full-time equivalent workers.  
<sup>d</sup> KTGA-KPAWU CBA wages include our estimate of fair and reasonable values for common in-kind benefits.  
<sup>e</sup> IKB means in kind benefits.

## 14. CONCLUSIONS

Our estimate of a living wage for rural Kericho, Kenya is 26,932 KES (224 USD) per month. This is the wage necessary for a typical family in rural Kericho with 1.74 full-time equivalent workers and two adults and three children to be able to afford a low-cost nutritious diet, healthy housing, adequate health care, education through secondary school for children, clothing and all other essential expenses plus a small additional amount for emergencies and sustainability (see summary in table 14). This value is for June 2022 and covers the tea growing regions across rural Kericho.

The gross living wage (aka living wage) consists of the net living wage (which is the take home pay required by a worker so that her/his family can afford a basic but decent standard of living) and mandatory payroll deductions and income tax due on the living wage.<sup>71</sup> Our living wage is much higher than the agricultural minimum wage as well as the national poverty line wage and the World Bank poverty line wage. Our living wage is around 3.6 times the agricultural minimum wage, 3.1 times the national rural poverty line wage, and 1.8 times the World Bank poverty line wage for Kenya.

We estimate for expositional purposes (since tea estates differ in the quality and types of in-kind benefit provided) that wages for many workers on large tea estates covered by the KTGA CBA are around 25% less than our living wage after taking into consideration our estimate of the value of common in-kind benefits of estates such as housing and water, health care, and lunch. However, it is important to keep in mind that the gap to living wage of hand pluckers of tea is uncertain because they are paid on a piece rate basis and have a required piece rate quota of 45 kg a day as well as the possibility of earning extra income through bonuses for picking more than 45 kg a day.

In contrast, workers who are directly employed by KTDA and fall under its CBA are receiving a wage (including cash benefits) which is substantially higher than the living wage (by round 40%). It is also important to keep in mind that the value of in-kind benefits varies across estates, and this will affect the gap to living wage for specific tea estates.

Despite the often relatively positive story on payment of a living wage in the tea sector indicated above, there are remaining areas of concern regarding payment of a living wage. These include:

- The numerous outsourced employees of large estates and KTDA who are not unionised or covered by a CBA, and some of whom may not be under contract. We have strong reason to believe that these workers are being paid at lower rates than workers covered by CBAs in the sector.
- The hand-pluckers of tea who are paid per day based on achieving a minimum quantity of tea and so in essence sometimes being paid on a piece-rate basis, which makes progress towards living wage difficult because of the uncertainty of income while needing assured income to support daily living costs.
- The mechanised tea pluckers who are not yet covered by a CBA, despite the increasing mechanization of tea plucking.

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<sup>71</sup> A related concept is living income for small farm families which is the net income they need to earn to afford a basic but decent standard of living, after paying all farm operating costs, including imputed value non-family labour, irrigation, fumigation, fertilizers, materials, transportation, and the rental value of land and production facilities. This living income is the total living costs indicated in table 14.

- The many informal workers employed by small-scale farmers who are paid near or below the national minimum wage for agriculture which is itself well below a living wage.

**Table 14. Summary calculations of the living wage Benchmark for rural Kericho, Kenya per month (in KES and USD per month)**

	KES	USD <sup>a</sup>
<b>PART I: Family living expenses</b>		
<b>Food cost per month for reference family (1)</b>	<b>23,429</b>	<b>195</b>
Food cost per person per day	154.06	1.28
<b>Housing costs per month (2)</b>	<b>5,317</b>	<b>44</b>
User cost of owner-occupied housing per month	3,542	30
Utility cost per month	1,775	15
<b>Non-food non-housing costs (NFNH) per month taking into account post-check adjustments (3) = (3A) + (3B) + (3C)</b>	<b>13,224</b>	<b>110</b>
Preliminary estimate (3A)	13,074	109
Healthcare post-check adjustment (3B)	150	1
Education post-check adjustment (3C)	0	0
<b>Additional amount for emergencies and sustainability (5%) (4)</b>	<b>2,098</b>	<b>17</b>
<b>Total living costs per month for basic but decent living standard for reference family size (5) = (1) + (2) + (3) + (4)</b>	<b>44,068</b>	<b>367</b>
<b>PART II: Living wage per month</b>		
<b>Net living wage per month (6) = (5)/1.74 full-time workers</b>	<b>25,327</b>	<b>211</b>
<b>Statutory deductions from pay (7) = (7A) + (7B)</b>	<b>1,606</b>	<b>13</b>
Statutory payroll deductions (7A)	1,050	9
Income tax (7B)	555.75	3
<b>Gross living wage per month (8) (8) = (6) + (7)</b>	<b>26,932</b>	<b>224</b>

Notes: <sup>a</sup> USD values are indicative only, because the USD exchange rate is volatile.

**Table 15. Key assumptions used in the study**

Variable	Value
Date of study	June 2022
Exchange rate of Kenyan shilling to USD	120 KES = 1 USD
Number of full-time workers per couple	1.74
Reference family size	5
Preliminary NFNH to Food ratio (at 40th percentile of household expenditure distribution)	0.558

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