



# Living Wage Report

## Ghana

Lower Volta Area:

Context Provided in the Banana Sector

February 2017

By: Sally Smith with Martha Anker and Richard Anker



Photo courtesy of – Fairtrade International

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Sally Smith

## FOREWORD

Fairtrade is delighted to have supported this important research in the Lower River Volta region of Ghana, by Sally Smith, Martha Anker, and Richard Anker. Since 2013, Fairtrade has been supporting Living Wage estimations based on the Anker methodology, in an effort to better understand wage issues in the origins where Fairtrade has certified companies with hired labour. Promoting Living Wages is a main pillar of Fairtrade's strategy to improve the lives of workers and their families. In order to effectively promote a unified concept, definition and methodology for measurement of Living Wage, we at Fairtrade have been collaborating with other standard setting organisations in the Global Living Wage Coalition. This Living Wage research, like similar benchmark living wage studies in other countries previously supported by Fairtrade (including in other banana producing countries), is another fruit of that collaboration. We realize that value of any Living Wage benchmark as a catalyst for action depends to a large extent on how local stakeholders, particularly employers, and trade unions, see it. It is therefore significant that major Ghanaian trade unions representing agricultural workers have endorsed the outcome of this research. We also acknowledge and value the generous support in time and access given to this work by Fairtrade certified Banana producing companies located in the River Volta region and their open mind to this research and its results. Essential to any pathway towards wage improvement, is that producing companies and other supply chain actors are committed to a collective bargaining process of wage setting. We must stress however that payment of a Living Wage at the bottom of supply chains for banana should not exclusively be a concern for producing companies. Fairtrade takes the fundamental view that all actors along supply chains should work together and contribute to improved wages and better socio-economic conditions at the level of production. We at Fairtrade will continue to call on buyers, retailers and consumers of bananas and other products sourced from the Global South to step up and help achieve a decent standard of living for farmers and workers alike. We believe that this study offers a valuable contribution to the pursuit of that goal.

We are sure that readers will appreciate the considerable time and effort the authors put into estimating a realistic living wage for the banana growing region of Ghana, as well as the highly detailed, transparent and readable report they have written. The authors take readers on a journey of understanding of what it means to live in this area of Ghana and how much it would cost a typical family to live at a basic but decent standard and so how much banana workers need to earn to have a living wage. They also shed light on wages in the banana sector and in this case, the relative importance of in kind benefits and incentive cash payments as forms of remuneration. And, indicate that banana workers in Ghana have a strikingly high tax burden as they must pay considerable amounts of payroll and income taxes.

Wilbert Flinterman,  
Senior Advisor on Workers' Rights and Trade Union Relations,  
Fairtrade International

## ABBREVIATIONS

DHS	Demographic and Health Survey
FAO	Food and Agriculture Organization
GAMA	Greater Accra Metropolitan Area
GDP	Gross Domestic Product
GHS	Ghana Cedi
GLSS 6	Ghana Living Standards Survey Round 6
GLWC	Global Living Wage Coalition
JHS	Junior High School
KVIP	Kumasi Ventilated Improved Pit latrine
LFPR	Labour force participation rates
MDG	Millennium Development Goal
NFNH	Non-food non-housing
NHIS	National Health Insurance System
PHC	Population and Housing Census
PPP	Purchasing Power Parity
SHS	Senior High School
SSNIT	Social Security and National Insurance Trust
TFR	Total fertility rate
WHO	World Health Organization

# Living Wage Estimates

## Peri-Urban Ghana

### Lower Volta Area

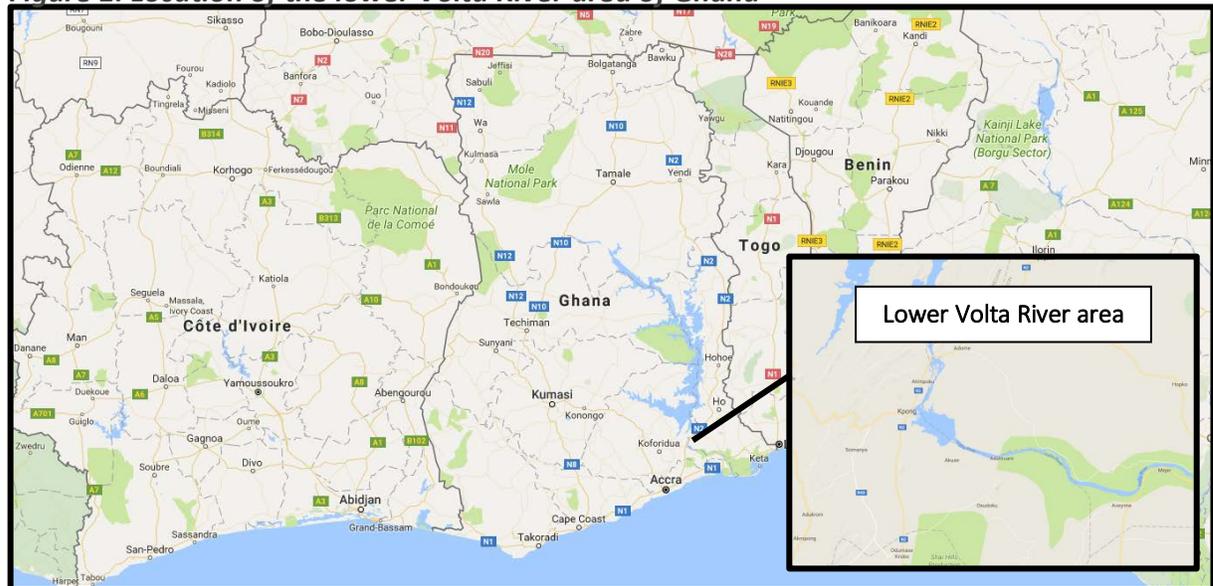
#### SECTION I

### INTRODUCTION

#### 1. BACKGROUND

This report estimates a living wage for the lower Volta River area of Ghana where bananas are produced for export. This is a relatively small geographical area within a few hours' drive from the capital, Accra, taking in parts of the Greater Accra Metropolitan Area (GAMA) as well as the Eastern Region and Volta River Region (see Figure 1). The majority of banana workers live in small towns and small settlements along the Volta River which are considered neither purely urban nor purely rural; rather, we categorise them as peri-urban.

**Figure 1: Location of the lower Volta River area of Ghana**



Source: Google Maps.

The living wage estimate in this report is based on a study of costs of living in these peri-urban areas. The study used the comprehensive methodology developed by Anker and Anker (2017) that builds on their earlier work on living wages published by the ILO (see Anker, 2006a, 2006b, 2011). The Anker methodology has gained widespread acceptance among diverse stakeholders globally and has been used to estimate living wages in rural, urban, and peri-

urban areas in 14 locations, with estimates publically released by July 2017 in 10 countries, including rural Southern Malawi, peri-urban flower growing regions of Kenya, rural Kenya, Central Dhaka in Bangladesh, surrounding satellite cities of Dhaka in Bangladesh, the Minas Gerais Region of Brazil, rural Vietnam, Ho Chi Minh City in Vietnam, the Ziway region in Ethiopia, urban Sialkot in Pakistan, rural Sialkot in Pakistan, rural Uttar Pradesh in India, rural Dominican Republic, and the Western Cape Province in South Africa. Most of these studies have been commissioned by the Global Living Wage Coalition (GLWC), which brings together Fairtrade International, Forest Stewardship Council (FSC), GoodWeave International, Rainforest Alliance (RA), Social Accountability International (SAI), Sustainable Agriculture Network (SAN), and UTZ, in partnership with the ISEAL Alliance and Richard Anker and Martha Anker. The shared mission of the GLWC is to see continuous improvements in workers' wages in the farms, factories and supply chains participating in the respective certification systems and beyond, and with the long term goal for workers to be paid a living wage. Each Living Wage Benchmark commissioned by the Coalition is made public to further this aim and to increase the opportunity for collaboration toward payment of living wages.

The present study was made possible through financial and logistical support from Fairtrade International, World Banana Forum, and IDH - the Sustainable Trade Initiative. Additionally, contributions from the Ministry of Foreign Affairs of the Netherlands supported activities which made this work possible. The findings were shared with stakeholders in the Ghanaian banana sector (banana companies, trade unions) during a validation meeting in Accra in September 2017. Their comments have been taken into consideration in finalising this report.

## 2. LIVING WAGE ESTIMATE

Our estimate of a living wage for the lower Volta River area of Ghana for February 2017 is GHS 1,028 (\$235<sup>1</sup>) per month, or GHS 47.45 (\$10.86) per workday<sup>2</sup>. This is the gross wage required for a basic but decent standard of living in the lower Volta River area. This is before consideration of in-kind benefits that workers receive which reduce the need for cash income. At the time of the study, general workers on banana plantations in Ghana earned an average gross cash wage of GHS 758 (\$173) per month for a standard 40 hour working week, when they receive the following: average cash allowances and bonuses received (production incentives, attendance bonus, annual bonus, rent subsidy) and the cash equivalent value of common in-kind benefits (transport, health care, subsidized lunch).<sup>3</sup> This equates to 74% of the living wage estimate. The highest paid 10% of general workers in the banana sector earned 80% of the living wage estimate, while the lowest paid 10% earned 67% of the living wage estimate.

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<sup>1</sup> Exchange rate for 18 February 2017 (midway through primary data collection) was 1 USD to GHS 4.37.

<sup>2</sup> Based on five workdays per week, which is a standard working week for banana workers in Ghana, excluding overtime.

<sup>3</sup> This is the average wage across all general workers in the banana sector, based on payroll data from the two companies which export bananas from Ghana (see section 3.2). We have aggregated the data from the two companies to respect the confidentiality and sensitivity of wage information. Company specific audits would need to be conducted in order to assess the extent to which wages meet our living wage estimate.

It is important to emphasize that the living wage estimate is a conservative figure based on minimum standards for decency in the local context, taking into account international conventions and standards in the 21st century. The rest of this report provides a detailed description of how our living wage was estimated, including sources of data and calculations used for arriving at the estimate. The report is detailed because it is critical that stakeholders consider the estimate to be credible and representative of costs in the Volta River area of Ghana, regardless of whether or not employers are able to pay this wage in practice in the near future. Transparency is also important because one tenet of the Anker methodology is that stakeholders and others should be able to query assumptions and calculations that went into the living wage estimate, to help ensure that the estimate is as reasonable as possible and receives as wide an acceptance as possible. Transparency will also help the ongoing process of stakeholder dialogue in relation to wage improvements in the Ghanaian banana sector.

### 3. CONTEXT

#### 3.1 Ghana as a lower middle-income country with high levels of rural poverty, and high levels of inflation

Ghana sits on the west coast of Africa between Ivory Coast and Togo. It has a population of 27.4 million people, of which just over half are located in urban areas<sup>4</sup>. Following a period of strong growth, it gained 'lower middle income' status in 2010, with GDP per capita increasing rapidly to \$1,370 in 2015<sup>5</sup>. The national poverty level fell from 56.5% in 1992 to 24.2% in 2013, with extreme poverty down to 8.4%.<sup>6</sup> However, inequality is on the rise and poverty remains prevalent in many areas - particularly rural areas and in the north of Ghana (see Figures 2 and 3).<sup>7</sup> In 2012/13 the rural population comprised 50% of the population but accounted for 78% of those in poverty.

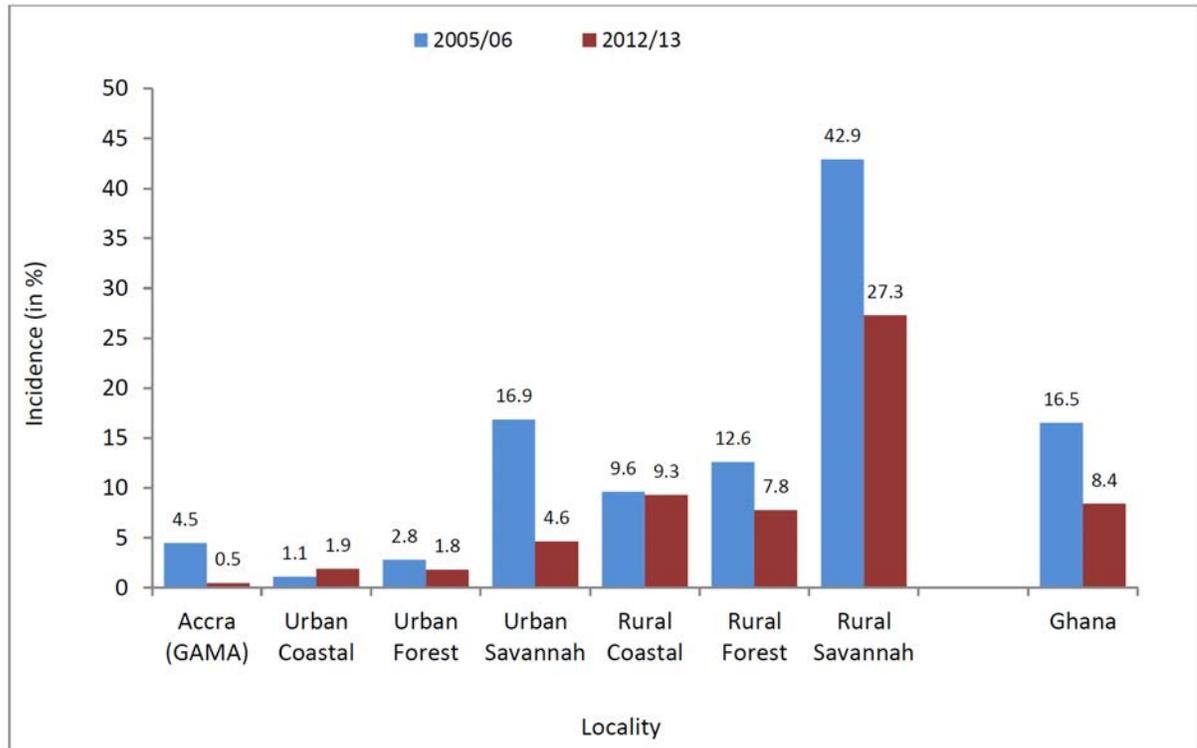
<sup>4</sup> CIA World Fact Book: <https://www.cia.gov/library/publications/the-world-factbook/geos/gh.html>.

<sup>5</sup> World Bank Development Indicators: <http://data.worldbank.org/country/ghana>.

<sup>6</sup> Cooke *et al.* (2016).

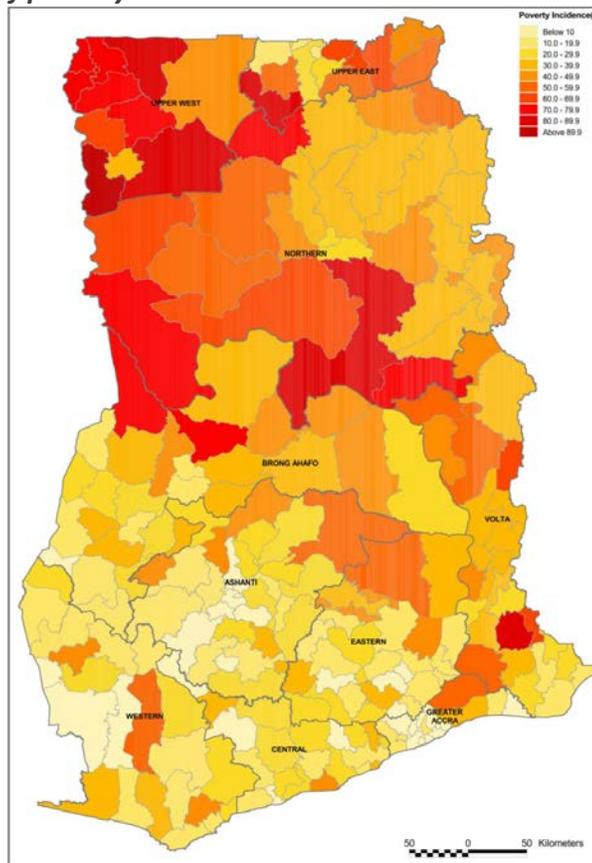
<sup>7</sup> *Ibid.*

**Figure 2: Extreme poverty incidence by locality**



Source: Ghana Statistical Service, 2014a.

**Figure 3: Distribution of poverty in Ghana**



Source: Ghana Statistical Service, 2015.

Living standards in Ghana have improved markedly over the past two decades, with government investments in social services and infrastructure enabling Ghana to achieve several Millennium Development Goal targets: halving extreme poverty (MDG 1A), halving the proportion of the population without access to safe water (MDG 7B), universal primary education (MDG 2A), and gender parity in primary school (MDG 3).<sup>8</sup> However, progress has been slower in relation to achieving full and productive employment (MDG 1B), equal share of women in non-agricultural employment and women's involvement in governance (MDG 3), reducing child mortality (MDG 4) and reducing maternal mortality (MDG 5). Primary and secondary education are in theory free, but in reality involve significant costs, comprising 15% of household expenditure in urban areas and 11% in rural areas<sup>9</sup>. This affects attendance, particularly at secondary level, with fewer than half of secondary school age children enrolled in school<sup>10</sup>. Health statistics also indicate that Ghana still has a long way to go in development terms; for example, malaria causes 8% of all deaths and almost 8% of children die before their

<sup>8</sup> NDPC and UNDP (2015).

<sup>9</sup> Ghana Living Standards Survey Round 6 (GSS, 2014b).

<sup>10</sup> Ghana Ministry of Education (2015a, 2015b).

fifth birthday<sup>11</sup>. A National Health Insurance System (NHIS) was established in 2003, funded by a 2.5% Value Added Tax, 2.5% of Social Security and National Insurance Trust (SSNIT) contributions, and out of pocket premiums for non-SSNIT contributors. However, enrolment in NHIS has stagnated at around 50% of the population, and even groups exempt from contributions (such as children and pregnant women, and the extreme poor) do not always enrol in, or renew their membership of, the scheme.<sup>12</sup> This leaves many people either paying for private health services or simply not accessing health care on a regular basis.

High levels of inflation in Ghana also affect standards of living, with increases in earnings often not keeping up with the rising cost of food and services. The annual inflation rate averaged 17% from 1998 to 2017, and at the time of the study (February 2017) stood at 13.2%.<sup>13</sup> Inflation for non-food goods and services has been particularly high in recent years, with hikes of 89% in water fees and 59% in electricity costs prompting a public outcry in late 2015.<sup>14</sup>

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### **3.2 Banana industry concentrated in lower Volta River area Ghana**

Ghana is a small player in the global banana market, but exports increased sharply from 3.9 tonnes in 2000 to 56.1 tonnes in 2012<sup>15</sup> as a result of a large new plantation being established in 2003. Although bananas are grown for domestic consumption across many areas of the country, export banana production is concentrated in the lower Volta River area (see Figure 1), under the management of two companies: Golden Exotics Limited (a subsidiary of French multinational Compagnie Fruitière SA) and Volta River Estates Limited. Between them, the two companies employ around 2,700 workers (in bananas).

Levels of poverty in the districts where banana workers live range from 15% of the population in the Lower Manya Krobo municipality to 52% in North Tongu district and 55% in Shai Osu Doku district, reflecting the more rural nature of the latter areas (see Table 1). Agriculture, forestry and fishery dominate the local economy in this area, and the majority of people are self employed with no employees. Many grow crops for both domestic consumption and sale in local markets, including maize, cassava, yam, cocoyam, groundnuts, rice and oil palm. Small scale fishing is also a major occupation for people living on the banks of the Volta Lake.

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<sup>11</sup> World Health Organization (2015).

<sup>12</sup> Agyepong *et al.* (2016). The cost and inconvenience of the annual renewal process has been found to be a major factor limiting uptake, alongside other factors including quality and responsiveness of service providers.

<sup>13</sup> <http://www.tradingeconomics.com/ghana/inflation-cpi>.

<sup>14</sup> <http://uk.reuters.com/article/ghana-utilities-hike-idUKL8N13W4GW20151207>.

<sup>15</sup> FAO (2014).

**Table 1: Characteristics of the districts where banana workers live**

Region	District	Poverty incidence <sup>16</sup>	% employed in agriculture, forestry & fishery <sup>17</sup>	% self employed without employees <sup>18</sup>
Greater Accra	Shai Osu Doku	55%	46%	60%
Eastern	Yilo Krobo	16%	41%	73%
Eastern	Lower Manya	15%	20%	65%
Eastern	Asuogyaman	20%	46%	63%
Volta	North Tongu	52%	57%	72%

Source: Ghana Statistical Service.

Opportunities to engage in full time waged employment are in short supply, making the jobs created by the banana industry of significant value for the local population. Both banana export companies are fully unionized, with collective bargaining agreements negotiated every two to three years. This provides workers with stable, year round employment and a range of wage and non-wage benefits. Since both companies export the majority of their bananas as Fairtrade certified, workers also have access to additional benefits linked to the Fairtrade Premium. A recent study found that banana workers had a low probability of falling below the national poverty line.<sup>19</sup> However, most do not rely solely on their work on banana plantations for income, with own account farming, fishing and petty trade commonly undertaken to supplement their wage income. Furthermore, only around half of workers have savings<sup>20</sup>, suggesting many workers may fall into debt when faced with unexpected costs.

#### 4. CONCEPT AND DEFINITION OF A LIVING WAGE<sup>21</sup>

The idea of a living wage is that workers and their family should not have to live in poverty. But a living wage should do more than simply keep workers and their families out of poverty. It should also allow them to participate in social and cultural life. In other words, wages should be sufficient to ensure that workers and their families are able to afford a basic life style considered decent by society at its current level of development. Workers should receive a

<sup>16</sup> Poverty headcount reported for each district in Ghana Poverty Mapping Report (GSS, 2015).

<sup>17</sup> Taken from District Analytical Reports produced by Ghana Statistical Services in 2014, using 2010 Population and Housing Census, available at: <http://www.statsghana.gov.gh/DistrictReport.html>.

<sup>18</sup> Ibid.

<sup>19</sup> Van Rijn *et al.* (2016). This study used the Progress out of Poverty Index (PPI) to calculate the risk of falling below the poverty line - see bibliography for link to the full report and methodology.

<sup>20</sup> Ibid.

<sup>21</sup> This section and others related to the concept and principles of estimating a living wage are based on the Ankers' living wage manual (2017) and extracts from other living wage benchmark reports by Richard and Martha Anker.

living wage in normal work hours without having to work overtime, and without having to supplement their income with other economic activities. The following definition of a living wage has been agreed to by the Global Living Wage Coalition (GLWC) and its members<sup>22</sup>.

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

The idea of a living wage is not new. Nor is it a radical idea. In 1776 Adam Smith wrote, “No society can surely be flourishing and happy, of which far greater part of the members are poor and miserable. It is equity besides that they who feed, clothe and lodge the whole body of the people should have such a share of the produce of their own labour as to be themselves well fed, clothed and lodged.” Pope Leo XIII in a Papal encyclical *Rerum Novarum* (1891) stated, “Remuneration must be enough to support the wage earner in reasonable and frugal comfort. If through necessity, or fear of worse evil, the workman accepts harder conditions because an employer or contractor will give no better, he is the victim of fraud and injustice.” American President Franklin D. Roosevelt wrote in 1933 that “Liberty requires opportunity to make a living – a living decent according to the standard of the time, a living which gives men not only enough to live on but something to live for.” 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>23</sup>

## 5. HOW A LIVING WAGE IS ESTIMATED

Key principles of the Anker methodology for estimating a living wage include:

**Transparency:** The assumptions used to estimate a living wage are clearly stated, so that all the stakeholders understand how living wage benchmarks are estimated, and what workers and their families would be able to afford if they earned a living wage.

**Normative basis:** The living wage estimate is based on normative standards for nutritious food, healthy housing, adequate health care, and education of children.

**Time and place specific:** The living wage estimate is based on a realistic estimation of costs calculated specifically for a given time and place, taking into account differences between

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<sup>22</sup> The Global Living Wage Coalition consists of Fairtrade International, Forest Stewardship Council, Goodweave, Rainforest Alliance, Social Accountability International (SAI), Sustainable Agriculture Network (SAN), and UTZ in partnership with the ISEAL Alliance and global living wage experts Richard Anker and Martha Anker.

<sup>23</sup> See Anker (2011) for how other historical figures, international bodies, NGOs, governments and others describe the concept of a living wage.

rural and urban areas. Therefore living wages increase with economic development and rising incomes.

**Internationally comparable:** The living wage methodology is internationally comparable as the benchmarks are based on the same principles everywhere.

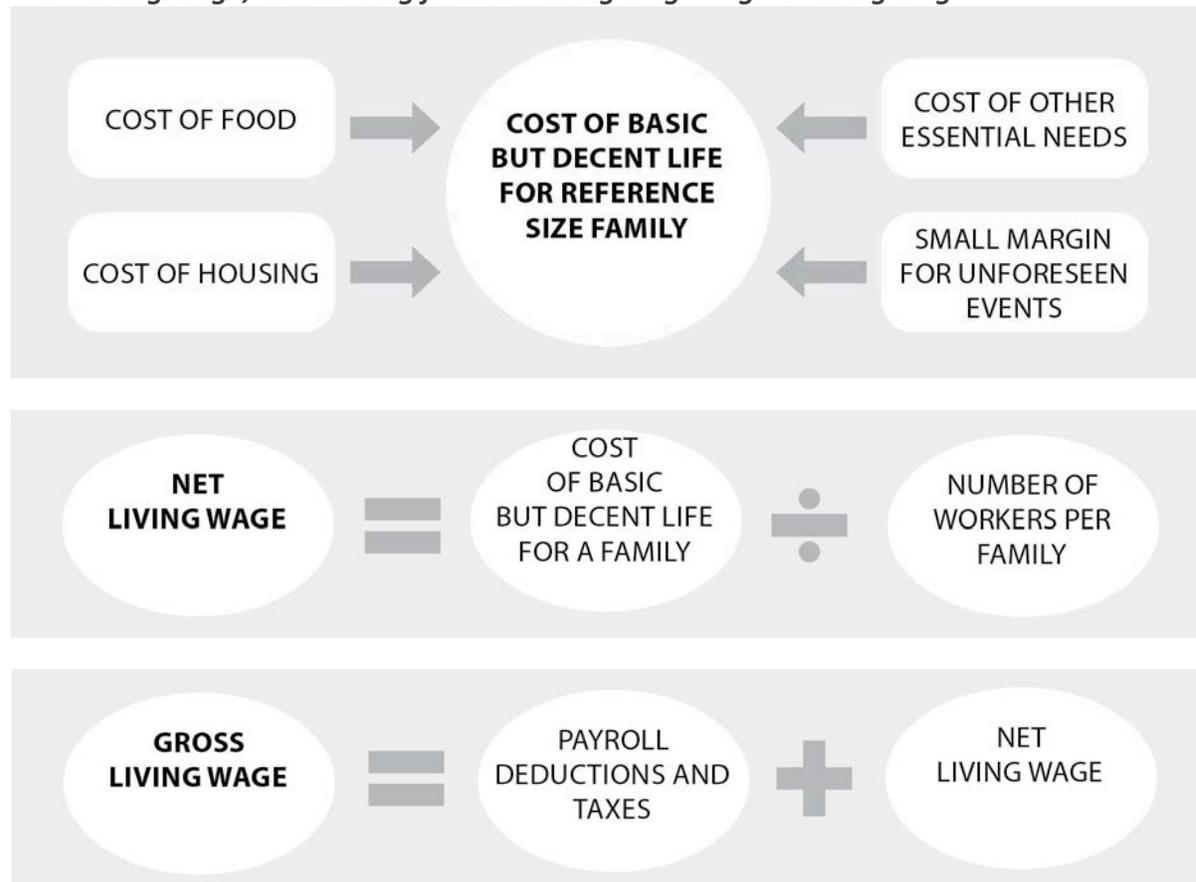
**Practical and modest cost:** The living wage methodology is practical and relatively inexpensive, while sufficiently rigorous, as it uses a judicious mix of secondary data analysis and primary data collection and analysis.

The methodology also includes principles and guidelines for measuring prevailing wages in an industry or company, and determining if workers earn a living wage. This involves taking into consideration all forms of remuneration, including fair and reasonable value of benefits paid in-kind and cash allowances. Remuneration received as a result of working overtime hours is excluded.

Normally separate living wage estimates are calculated for rural and urban areas, to account for differences in costs and expenditure patterns. For example, households in urban areas tend to spend a higher proportion of their income on housing and transport. However, this was not considered practical nor necessary for the present study, given (i) the relatively small geographical area covered, (ii) the size of the banana industry and fact that workers on a single plantation doing the same work could not be paid different wages, (iii) fieldwork indicated that living costs for workers did not vary greatly by where they live in relation to food (the most important component of a living wage estimate) as they tend to buy from the same markets. We therefore decided to estimate a living wage for the type of peri-urban area where the majority of banana workers live. We consider this to be a relatively common living situation for Southern Ghana, where urbanization is on the rise, which we hope will enhance the usefulness of our living wage estimate for other industries and areas of Ghana.

Figure 4 illustrates the steps followed to estimate the living wage for the Volta River area. The first step was to identify the key factors that contribute to a decent living as defined globally, but allowing for certain adjustments based on the local conditions. Living costs were estimated by summing up separate estimates of cost for a low cost nutritious diet, basic decent healthy housing, education of children through secondary school, decent health care, transportation, and all other necessary expenses such as for clothing, furniture, recreation, personal care, etc. A small margin above this total cost of a basic but decent life style was then added to help provide for unforeseen events such as illnesses and accidents or special occasions like marriage or funerals, to help ensure that common unplanned events do not easily throw workers into poverty. After the total cost of a basic but decent quality life for a typical family in the area was estimated, this cost was defrayed over the typical number of full-time equivalent workers per family in the area to arrive at the net living wage. The gross living wage was determined by adding payroll deductions and income taxes to the net living wage.

**Figure 4: Components of a living wage estimate, moving from cost of a basic but decent life to net living wage, and moving from net living wage to gross living wage**



Source: Anker & Anker (2017).

## 5.1 Sources of data

The living wage estimate is based to a substantial extent on secondary data from high quality studies undertaken by the Ghana Statistical Service, multilateral institutions (e.g. WHO, UNICEF) and academics. Key sources of national level statistics included: Round 6 of the Ghana Living Standards Survey (GLSS 6), carried out in 2012 to 2013; the 2010 Population and Housing Census (PHC); the 2014 Ghana Demographic and Health Survey (GDHS); and the 2011 Multiple Indicator Cluster Survey (MICS). These studies provide detailed information on household expenditure, standards of living, and education and health care services, broken down by urban and rural areas and by region.<sup>24</sup> This information was complemented with

<sup>24</sup> The use of secondary data was somewhat complicated by the fact our study area included a mix of rural and urban locations, and crossed over three administrative regions (GAMA, Eastern and Volta River) and two agroecological zones (coastal and savannah). This meant that there was no one subset of statistics which applied specifically to the study area. As such, some calculations were done separately for rural and urban statistics, or for each administrative region, and an average of the resulting values was taken to be representative for the area in question.

thematic studies at country or regional level which provided additional contextual information and statistics, such as the FAO's nutritional profile and UN-Habitat's housing profile for Ghana.

Primary data collection was undertaken for the purposes of gathering up to date information related to costs for a nutritious diet and decent housing in the specific context of the lower Volta River area. Information was also gathered to cross check secondary data on education and health care expenditure, to ensure that the amounts allowed for in the living wage estimate for these are sufficient. This involved gathering food price data from multiple markets, stores and street traders; visiting a range of residential areas to find out about housing costs; and talking to staff in schools and health care professionals in hospitals, clinics, pharmacies and chemical stores. This data collection was guided by discussions with banana workers about where they live and shop, what kinds of food they prefer, and their experiences related to health and education services. Comprehensive data was also gathered from the banana companies in relation to wages and in-kind benefits. The fieldwork took place from 13 to 24 February 2017, involving the lead researcher and two field assistants from the local area.

## SECTION II

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

## 6. FOOD COSTS

Food cost for a living wage for the lower Volta River area was estimated using local food prices and a low cost nutritious model diet for Ghana for a reference family size of 4.5 persons (2 adults and 2.5 children)<sup>25</sup>. **The estimated cost of the model diet was GHS 5.36 (\$1.23) per person per day.** This implies GHS 734 (\$168) per month per family. Full details on how this estimate was arrived at are provided below.

### 6.1 General principles of model diet

The following general principles were used to establish the model diet that we used to estimate food costs for our living wage for the lower Volta River area. Our model diet needed to be:

- i. **Nutritious** (i.e. meets WHO recommendations as regards having sufficient calories as well as acceptable quantities of proteins, fats, carbohydrates, and fruits and vegetables) to help ensure that workers and their families have enough to eat and can be healthy.
- ii. **Relatively low in cost for a nutritious diet.** This approach means that relatively inexpensive foods are included in the model diet in order to reflect how cost conscious workers shop for food while maintaining nutritional standards.
- iii. **Consistent with Ghana's development level.** For this reason, our model diet includes a relatively low (but nutritionally acceptable) percentage of calories from proteins since proteins are expensive per calorie. At the same time, percent of calories from proteins meets WHO/FAO minimum requirements.
- iv. **Consistent with local food preferences, local food availability and local food costs.** For this reason our model diet includes considerable amounts of maize, cassava and dried fish, which are low cost foods which are eaten regularly in Ghana, as well as smaller amounts of more expensive but nevertheless popular foods, such as perfumed rice, bread and tomatoes.

### 6.2 Model diet

The model diet we used to estimate a living wage for the lower Volta River area is shown in Table 2. It was developed through an iterative process, starting with Ghana's Ministry of Health Dietary and Physical Activity Guidelines (2009). Adjustments were made to bring the

<sup>25</sup> In Section II of this report, an explanation is given for how the reference family size was calculated.

diet more in line with actual consumption<sup>26</sup> using GLSS 6 data on food expenditure, FAO's Food Balance Sheet<sup>27</sup> and Nutrition Country Profile<sup>28</sup>, and research reports with information on food consumption and nutrition in southern areas of Ghana<sup>29</sup>. Further adjustments were made to ensure that the diet provides recommended amounts of macronutrients (protein, fat, carbohydrate) and micro nutrients and minerals. The final set of adjustments were based on taking into consideration food costs in the lower Volta River area, to arrive at a nutritious but affordable diet for workers and their households.

Our model diet has 2338 calories. This was based on Schofield equations<sup>30</sup> that are widely used to estimate calorie needs based on age, sex, height<sup>31</sup> and activity level<sup>32</sup>, and the size and composition of our reference family. We assume that workers on banana plantations have a heavy physical activity level as their work involves strenuous tasks and they also engage in physically demanding work outside of working hours (e.g. own account farming, collecting water and firewood, processing raw food, etc.). The second adult in the household and all children are assumed to have a moderate activity level, based on the types of paid and unpaid work and other activities that adults and children engage in on a daily basis (e.g. farming, petty trade, carrying out household chores, walking to school, etc.). Percentages of calories from protein (10.9%), fats (23.7%) and carbohydrates (65.4%) meet minimum WHO/FAO standards for a nutritious diet. The 300 grams of fruit, vegetables and legumes included in the diet helps to provide a variety of micronutrients and minerals, while also taking into account the relatively high cost of such foods and that achieving the WHO/FAO daily recommended level of 400 grams per day is unrealistic for a lower middle income country like Ghana.<sup>33</sup>

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26 Dietary guidelines typically do not give much consideration to food costs, and can therefore be more expensive than is warranted for estimating a living wage. Using data on actual consumption of different kinds of foods helps to adjust for this as well as takes into consideration food preferences.

27 See: <http://ghana.opendataforafrica.org/bbyzsob/ghana-fao-stat-food-nutrition-and-food-security>.

28 FAO (2009).

29 Frimpong (2013), Osei-Asare (2013), Nti (2008).

30 See: [https://en.wikipedia.org/wiki/Schofield\\_equation](https://en.wikipedia.org/wiki/Schofield_equation).

31 Average height for adult women in Ghana was taken from Subramanian et al. (2011). A standard ratio of 1 to 1.08 for adult female to adult male heights was used to arrive at the height for Ghanaian men.

32 This is in line with the daily calorie requirements for adults and children used by the Ghana Statistical Service, cited in Frimpong (2013), namely 2900 calories for adults, 2250 for children 6-17 years, and 1150 for children under 6 years. Assuming a reference family of 2 adults, 1.5 children aged 6-17 and 1 child aged under 6, this gives an average of 2294 calories per household member.

33 See Anker and Anker (2017) for a full discussion of this topic. They recommend 300g of fruit, vegetables and legumes per day in low income countries, and an additional 25g per day for each increase in the level of development, with 400g only for high income countries. Ghana is a lower middle income country, which would imply a recommendation of 325g of fruit, vegetables and legumes. We included only 300g for two reasons: (i) fruits and vegetables are expensive in Ghana and not consumed in large quantities as part of the typical Ghanaian cuisine; (ii) the model diet includes 59g of plantain which, as a starchy vegetable, is not counted towards the recommended quantity of fruits and vegetables, but is nutritionally almost identical to bananas - the other fruit which we considered including (in addition to oranges) on the basis of being an affordable, widely available fruit. On this basis we decided that 300g would be an acceptable quantity of fruits, vegetables and legumes for the model diet for Ghana.

Our model diet includes:

- High quantities of maize and cassava as they are inexpensive sources of calories and central to the Ghanaian diet, for example as *kenkey*, *banku*, *fufu*, *gari*, and *koko*.
- Small quantity of rice, enough for around two large servings per week, as it is popular but relatively expensive.
- Two slices of bread per day for adults, and one slice for children, even though it is relatively expensive, as this reflects typical consumption among workers.
- Enough meat and fish for at least one serving per day, but mainly in the form of dried, salted or smoked fish as this is the cheapest source of animal protein.
- Relatively small amount of milk per day (only ½ cup per day for children and ¼ cup per day for adults).
- 2 eggs per week.
- Moderate amounts of yam or cocoyam and plantain, as they are inexpensive and a central part of the Ghanaian diet.
- Small amounts of groundnuts and cowpeas as they are good sources of protein but typically not eaten daily.
- The least costly vegetables available locally, with the exception of tomatoes which are included due to their use in most Ghanaian soups and stews, and cocoyam leaves, which are included in small quantities as they are used to make the popular *kontomire* stew.
- The least costly fruit available year round, namely oranges. Other fruits such as mangoes and papaya are eaten when in season, but were scarce at the time of the fieldwork and therefore it was not possible to establish a representative price for them.
- 30 grams of oil for cooking, which is quite high but realistic for the Ghanaian cuisine. Palm oil was selected, as the most frequently used cooking oil in the area.
- A standard amount of sugar (6 teaspoons per day) for sweetening food and drinks.
- One cup of Milo per week. This is the most popular hot drink in the study area, with tea and coffee not widely consumed and so not included in the model diet. However, Milo is expensive and therefore not affordable on a daily basis.

It should be noted that the amount of milk included falls well short of recommended guidelines for good nutrition, particularly for young children and pregnant women<sup>34</sup>, but is deemed realistic given fresh milk is not available locally and powdered milk is very expensive. Even so, milk represents close to 10% of the cost of the model diet. The reduced quantity is

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34 Ghana's Ministry of Health Dietary and Physical Activity Guidelines (2009) recommend two to four servings of milk per day for adults and children. This is in line with nutritional guidelines worldwide (see Anker, 2017).

also justified by the fact that dried fish are frequently consumed whole including bones (as very small fish), which provides an alternative source of calcium.

To allow workers and their families some variation in what they eat, including occasional consumption of high cost foods (including fresh fish and chicken), 10% was added to the cost of the model diet. An additional 2% was added to cover spices and condiments, such as garlic, ginger, chilli, salt and stock cubes, all of which are used for making soups and stews. Finally, 3% was added to account for spoilage and wastage, which is a conservative amount given that worker households rarely have a fridge.

**Table 2: Model diet and estimated food cost per person per day for the lower Volta River area of Ghana, February 2017 using local food prices where workers shop**

Food item <sup>a</sup>	Edible grams <sup>b, c, d, e</sup> Per day	Cost per KG <sup>f</sup> Purchased grams, GHS	Cost per person per day <sup>g</sup> , GHS	Comments <sup>h</sup>
Maize	235	1.66	0.39	Maize provides 28% of calories. Cost based on price of corn dough.
Rice	28	4.98	0.14	Small amount as expensive. Cost based on preferred varieties of rice.
Bread	42	5.76	0.24	Allowed 2 slices per day for adults, 1 slice per day for children.
Cassava	169	1.50	0.25	Cassava provides 19% of calories. Cost based on price of cassava dough.
Yam or cocoyam	46	2.50	0.14	Yam and cocoyam served as a side dish and used as an ingredient in <i>fufu</i> .
Plantain	59	2.23	0.20	Plantain served as a side dish, eaten as a snack, and used as an ingredient in <i>fufu</i> .
Groundnut paste	20	10.21	0.20	Allowed for 2 groundnut soups per week. Groundnuts also eaten as a snack.
Cowpeas (black eyed beans)	17	6.42	0.11	Cowpeas are most common beans, typically eaten 1-2 times a week.
Milk (powdered)	12	39.81	0.49	1/2 cup per day for children, 1/4 cup for adults. Used powdered as fresh not available.
Eggs	14	10.95	0.17	2 eggs per week.
Dried fish	28	18.40	0.52	Dried, smoked and salted fish are a good source of nutrients, cheaper than fresh fish or meat, and typically eaten daily. Dried fish cheapest per edible gram.
Beef and offal	7	18.46	0.12	1 serving per week of fresh beef mixed with offal to reduce cost.
	7	14.83	0.12	
GLV: Cocoyam leaves	15	5.49	0.10	Cocoyam leaves used for <i>kantomire</i> stew but relatively expensive. Cabbage is cheaper, so allowed more.
Cabbage	35	3.32	0.15	
Garden eggs (eggplant)	50	4.40	0.27	Garden eggs and okra both used for stews. Garden eggs cheaper in survey.
Tomatoes	25	6.65	0.18	Fresh tomatoes and tomato paste used daily in Ghanaian cuisine.
Tomato paste <sup>i</sup>	7	10.61	0.07	

Food item <sup>a</sup>	Edible grams <sup>b, c, d, e</sup> Per day	Cost per KG <sup>f</sup> Purchased grams, GHS	Cost per person per day <sup>g</sup> , GHS	Comments <sup>h</sup>
Onions	35	3.94	0.15	Onions used daily in Ghanaian cuisine.
Oranges	75	1.44	0.15	Oranges are the cheapest fruit across the year.
Palm oil	30	8.54	0.26	Palm oil most frequently used cooking oil.
Sugar	30	4.59	0.14	7 teaspoons of white sugar per day .
Milo	3	30.00	0.09	Tea and coffee not consumed. Allowed only 1 cup of Milo a week given high cost. Cost is average for a 400g tin.
<b>Total per person per day, GHS</b>			<b>4.68</b>	
<b>Total with 15% added for misc. costs <sup>i</sup>, GHS</b>			<b>5.36</b>	
<b>Total cost per person per day in USD <sup>k</sup></b>			<b>1.23</b>	

Source: The Author

Notes: GLV indicates green leafy vegetables

<sup>a</sup> Specific food item(s) used to represent each food group are the lowest cost food item(s) per edible gram found in the market survey, taking into account the local cuisine and worker preferences to ensure acceptability of the model diet. <sup>b</sup> Edible (consumed) quantity differs from purchased quantity for foods with inedible parts, such as fruits and vegetables with inedible stem or skin, egg with shell, or fish with head, tail and scales. The percentage edible for each purchased food is taken from the FAO's West African Food Composition Table (2012). <sup>c</sup> Number of calories, proteins, carbohydrates and fats per 100 grams for each food item are estimated using the values reported in the FAO source noted above, supplemented by the United States Department of Agriculture (USDA) online nutritional values database ([www.ndb.nal.usda.gov/ndb/foods](http://www.ndb.nal.usda.gov/ndb/foods)). For corn dough and cassava dough the nutritional values were based on a ratio of 80% corn flour/cassava flour to 20% water. For beef offal the nutritional values for kidney were used to represent the mixed bag of offal which is purchased in Ghana. <sup>d</sup> In addition to having a sufficient number of calories (2338), our model diet meets WHO recommendations for proteins (10-15% of all calories), fats (15-30% of all calories) and carbohydrates (less than 75% of all calories). Approximately 11% of calories in the model diet are from proteins, 24% are from fats and oils, and 65% are from carbohydrates. <sup>e</sup> Calories required by adult males, adult females and children were calculated using Schofield equations recommended by WHO/FAO, taking into account adult height, levels of physical activity for adults and children. The average number of calories required per person for our reference family of 4.5 was calculated, giving an average of 2338 per person. <sup>f</sup> Cost per kilo is based on prices observed in venues where workers shop (markets, container stores, table top stores etc). <sup>g</sup> Cost for each food item was calculated by multiplying purchased quantity (not edible grams) by cost per kilo. <sup>h</sup> Diet is for an average person in a family of 2 adults and 2.5 children. Larger portions are allowed for adults. <sup>i</sup> 7 grams of tomato paste is equivalent to 28 edible grams of fresh tomatoes. <sup>j</sup> 2% was added to food cost for salt, chilli, garlic, ginger, other spices and stock cubes which are widely used in the local cuisine. This is in line with the percentage of household expenditure which is allocated to 'spices' in the Ghana Living Standards Survey Round 4 (the last survey which gave a separate figure for spices); 3% added as a conservative estimate of wastage and spoilage; 10% added to allow for variety in the diet and occasional consumption of higher value food items. <sup>k</sup> Exchange rate used to convert Ghana Cedis to USD was 4.37, the official exchange rate for 18 February 2017 (midway through primary

### 6.3 Local food prices

To estimate the cost of our model diet, we collected food prices from places where workers typically shop for each food item, so that the cost is based on what workers actually pay. In total we collected prices from 169 different vendors. This included vendors in open air markets (all food items), container stores and table top stores (dry goods, bread, small quantities of fresh foods), stores selling fresh fish and meat, and itinerant traders (dried fish, bread) (see photos below for the different kinds of venues visited). We went to the two largest markets where workers tend to stock up on all foods at weekends - Agomanya and Juapong - as well as two smaller markets in areas where large numbers of workers live and where they tend to buy smaller quantities - Akuse and Asogyaman (Akrade). We purposely did not include the market at Akosombo, as workers informed us that this was the most expensive market due to being in a somewhat wealthier area. Prices were also collected from container stores, table top stores and street traders in these locations, as well as in Adome, Asutsuare, Kpong, Small London, Somanya, South Senchi and Volivo. This gave us coverage of the different types of areas where workers live, from relatively small communities like Volivo and Small London, to small towns like Somanya and Kpong.

As can be seen in the photos below, vendors in Ghana often sell foods pre-packaged into small plastic bags or containers. Even when selling food loose, they do not sell by weight - rather they sell by quantity, such as five tomatoes for GHS 2, or three onions for GHS 1. This meant that we had to weigh typical quantities of food which workers purchase (including small, medium and large quantities) and then calculate the average cost per kilo. We used an electronic scale for doing this, as can be seen on the bench in the photo of the street trader above. We also had to collect prices from several vendors in each market, as there was variation in the quantity sold at each price. For example, one vendor may sell four large garden eggs for GHS 1, while another may sell six small garden eggs for the same price. For some food items we also collected prices for different qualities or varieties, such as different varieties of rice, and different brands of tomato paste, and different types of bread (sugar bread, tea bread and butter bread). This enabled us to base costs on the least expensive acceptable variety/brand of each food item.

Food prices were rigorously analysed to arrive at a representative price per edible gram for each food item in the model diet. This involved calculating average prices across vendors, based on the lowest cost per kilo for each vendor. Interestingly, it was often not cheaper to buy larger quantities of food, such as bigger jars of groundnut paste, larger bottles of palm oil, or higher quantities of dried fish. This is likely to be a result of both vendors and buyers not being conscious of the weight of goods and the relationship between weight and price per kilo. However, very small quantities purchased from container stores and table top vendors did tend to be more expensive, and it was assumed that workers earning a living wage would not need to buy such small quantities. Having said that, they would also not necessarily buy in bulk, due to not having fridges or surplus space for storage. As such, the smallest and largest quantities of food items were usually excluded from the analysis.

**Types of venues where workers purchase food and where price data was collected**



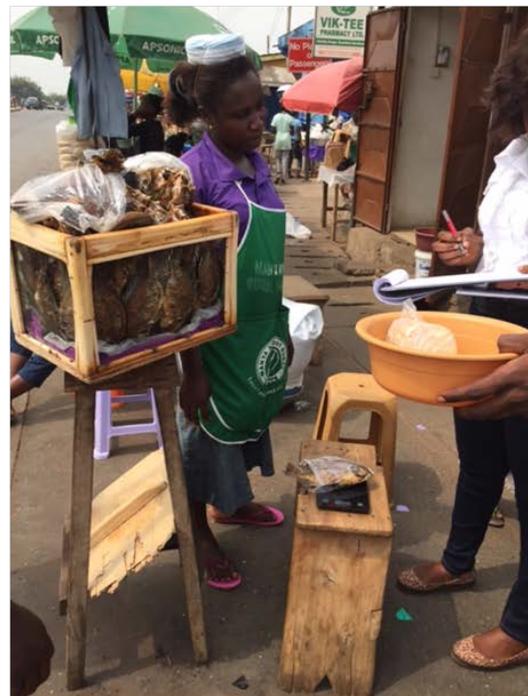
Market stall



Container store



Table top vendor



Street trader

Source: The Author

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## 6.4 Adjustment of food prices for seasonality

Finally, some adjustments were made to account for variation in food prices due to seasonality. Information on the extent of seasonality in prices for popular foods in Ghana was

taken from a World Bank analysis of wholesale food prices from 2006 to 2011<sup>35</sup>. This indicated particularly high seasonality in prices for maize, plantain, tomatoes and oranges, and some seasonality for rice, cassava and cowpeas. In addition, retail prices for all foods included in the Consumer Price Index basket of goods were mapped for each month from January 2011 and to December 2012, using data from the Ministry of Food and Agriculture<sup>36</sup>. This allowed us to determine the extent to which February prices are representative of average prices across the whole year, and also pick up on seasonality for food items not included in the World Bank analysis (e.g. onions). In general, it was concluded that February prices are neither the highest nor the lowest for the year, but are somewhat leaning towards the low side. We need to take into account that workers are likely to avoid paying the highest prices by storing foods which are less perishable (such as maize and rice), buying lower quantities when prices are high, and/or replacing food items which are expensive with lower cost foods. However, this is less possible with foods which are highly perishable and not easily replaced in the Ghanaian diet. The result is that we decided to make a small adjustment only to the prices for plantains, tomatoes and onions, increasing the representative price by 10% in each case.

## 7. HOUSING COSTS

Housing costs for our living wage were estimated by summing the cost of: (i) rental of a basic acceptable dwelling; (ii) utility costs (electricity, other lighting, water, cooking fuel). It was assumed that landlords pay the cost of routine repairs and maintenance. **We estimated housing costs for the lower Volta River area to be GHS 217 (\$49) per month for the reference size family**, comprised of GHS 100 (\$23) for rent, GHS 40 (\$9) for electricity and other lighting, GHS 27 (\$6) for water, and GHS 51 (\$12) for cooking fuel. Details on how we arrived at the estimate are given below.

### 7.1 Local standard for basic acceptable housing

Adequate housing is considered a right according to the international community, as set out in Article 25 of the 1948 Universal Declaration of Human Rights: "Everyone has the right to a standard of living adequate for health and well-being for himself and for his family, including food, clothing, housing and medical care and necessary social services." This is recognized by the government of Ghana in the 2015 National Housing Policy (p.11):

*"The right to an adequate standard of living is of central importance for the enjoyment of all economic, social and cultural rights. The right to housing applies to everyone irrespective of gender. Government shall take whatever steps necessary for achieving the full realization of the right to adequate housing."*

<sup>35</sup> Gilbert *et al.* (2016).

<sup>36</sup> 2012 is the last year for which a full dataset on retail prices is publicly available.

International and national standards are based around the following principles for adequate housing:

- 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

In Ghana there is currently a severe shortage of housing, particularly in urban areas, leading to widespread over-crowding - almost half of households in Ghana occupy a single room<sup>37</sup>. There is less over-crowding in rural areas, but 57% of dwellings are constructed from non-durable materials (earth or mud brick walls) compared to 10% in urban areas.<sup>38</sup> Access to safe water is good - 77% of households have access to improved sources of water, with a further 9% using bottled or sachet water for drinking, but sanitation remains a major problem with 54% of households either having to use public toilets, which are often shared by a large number of people and in poor condition, or having no access to toilet facilities at all (i.e. they go to the toilet in the bush, beach or field).<sup>39</sup>

There are several factors underlying the lack of adequate housing in Ghana, including: (i) population growth alongside rapid urbanization, with the proportion of the population living in urban areas increasing from 35% in 1984 to 52% in 2010; (ii) housing has never been a large component of government economic planning, with past governments successively failing to get a housing policy off the ground<sup>40</sup>, which means that as well as having insufficient housing stock, building codes and standards are outdated and there are no effective regulatory and monitoring mechanisms for housing; (iii) a legacy of rent controls and low income levels among the populace limit private sector investment in housing (for rent or for sale); (iv) various supply side limitations including land cost and accessibility, lack of access to credit,

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<sup>37</sup> UN Habitat (2011) and GLSS 6 (GSS, 2014b). In urban areas 53.5% of households occupy a single room, while in rural areas the figure is 45.4%. The percentage of households with two rooms is 26.5% in urban areas and 27% in rural areas.

<sup>38</sup> GLSS 6 (GSS, 2014b).

<sup>39</sup> 2010 Population and Housing Census (GSS, 2013).

<sup>40</sup> A National Housing Policy was finally launched in 2015, but it is unclear how effective this is being in increasing the stock of housing.

and high cost of building materials.<sup>41</sup> The dominance of customary land tenure in Ghana, operated through chiefs and family heads, is another limiting factor as it is not secure enough to attract bank lending. Most formal sector housing built in recent years has been oriented towards the growing middle classes, with the majority of new dwellings built 'informally' by individuals in collaboration with small-scale, local contractors on land obtained from traditional leaders. Although there is critical need for public and private investment in low cost, decent quality housing, these factors mean there are insufficient incentives at present.

Part of the living wage concept is that worker households should be able to afford decent and healthy housing, as defined by international standards but adapted to local housing conditions. The first step in estimating the cost of decent and healthy housing is to establish a normative standard for decency for the location in question, which can then be used to estimate the rental value of adequate housing (see next section). Table 3 shows the local standard we developed for the lower Volta River area, which was based on minimum international standards and national statistics for housing conditions in the locality<sup>42</sup>, in the absence of a national standard<sup>43</sup>.

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<sup>41</sup> UN Habitat (2011); Ghana National Housing Policy (2015).

<sup>42</sup> The main source of national statistics used was the GLSS 6, which breaks urban data down into 'GAMA' and 'urban excluding GAMA', and rural data into 'rural coastal', 'rural forest' and 'rural savannah'. The data for 'urban excluding GAMA' and 'rural coastal' were considered most representative for the lower Volta River area. GAMA data were not used as they are highly skewed by living conditions in Accra, which, as a densely populated urban area, are quite different from our study area (58% of the population of GAMA live in Accra). 'Rural savannah' was also not used, even though part of the study area classifies as savannah, as these data are skewed by higher levels of poverty in northern Ghana which represents the bulk of the savannah area. The GLSS 6 also provides a breakdown of data by region, with the Eastern Region and Volta River Region considered to be the most representative of the study area, i.e. excluding GAMA for the reasons given above.

<sup>43</sup> Considerable effort was made to find a national housing standard which could be used as the benchmark for decent housing, but the government does not currently have such a standard and NGOs such as Habitat for Humanity were unable to provide one either. The housing standard used by Rainforest Alliance for Ghana was referred to, but otherwise the authors fell back on international standards as summarized in the living wage manual (Anker and Anker, 2017).

**Table 3: Local housing standard for the lower Volta River area**

Housing characteristics	International minimum standards	Local housing standard for lower Volta River area
<b>MATERIALS</b>		
Walls	Durable material providing protection from elements	Walls made of cement block, concrete or brick, in decent condition.
Roof	Durable material without leaks	Roof made of metal sheet or tiles, no leaks.
Floor	Durable material	Floor made of cement, concrete or tiles, in decent condition.
<b>AMENITIES</b>		
Toilet	At least pit latrine with slab	Pit latrine with slab, KVIP or flush toilet, clean and acceptable drainage and depth. Public toilet acceptable if meets standard, is only shared by a few households and is close to home.
Water	Safe water not far from home	Safe water not far from home (no more than 30 minutes total collection time). Safe sources: piped into dwelling or nearby, public tap, borehole/ pump/ tube well, protected well or spring.
Electricity	Not required	Mains electricity required, as 87% households in 'other urban' areas and 61% of households in 'rural coastal' areas have electricity.
<b>VENTILATION &amp; LIGHTING</b>		
Ventilation quality	Good ventilation	≥ 1 window per room. Ceiling height no less than 2m.
Lighting	Adequate	Mains electricity required, but acceptable to use torches and kerosene lamps during power outages.
Number of windows	Sufficient for adequate lighting and ventilation	≥ 1 window per room
<b>LIVING SPACE</b>		
Number of square meters of living space	≥30 m <sup>2</sup>	≥ 36 m <sup>2</sup> living space for a family of 4.5 (floor area of usable rooms, including covered porch area). This is consistent with international standards for a lower middle income country, but allows porch space to be included as living

Housing characteristics	International minimum standards	Local housing standard for lower Volta River area
		space which is not typical but is realistic given lack of spacious housing in Ghana.
Kitchen location	If kitchen is inside house, adequate ventilation for cooking needed	If cooking inside or on porch, adequate ventilation is required (especially when using wood or charcoal stoves)
<b>CONDITION</b>	In good state of repair	In good state of repair
<b>ENVIRONMENT</b>	Not a slum No site hazards such as: surface water drainage, industrial pollution, danger of landslides, flood zone	Not a slum. No animals in or near house. No site hazards such as: surface water drainage, industrial pollution, danger of landslides, flood zone

Source: The Author

## 7.2 Local housing survey

In order to estimate the rental cost of decent and healthy housing, we visited 19 dwellings in areas where workers reside, ranging from more rural locations (Atabui, Obedekope, Volivo) to resettlement areas and very small towns (Akrade, Asutsuare Estate, Natriku, Small London), to larger towns (Agomanya, Somanya). Around half of the dwellings visited were rented by banana workers who we met during focus group discussions, from whom we had gathered details of where they lived and whether they rented or owned their homes, so that we could then select a sample to visit. The rest were found by asking workers to provide examples of neighbours and community members living in rental accommodation that might meet the local standard, as in general we found that the housing workers lived in did not. This was important as the purpose of the exercise was not to assess workers' housing, but to find out how much it would cost for them to live in housing of an adequate standard.

The table below gives a summary of the dwellings visited and indicates whether they met the local housing standard or not. Seven of the 19 dwellings met the standard, although in one case this was only a result of taking into consideration the possibility of renting an additional room in the compound. The table gives the reasons why other dwellings did not meet the standard, with further details provided below. The table also shows the rental costs for each dwelling including - where information was available - the number of years of rent which people had to pay in advance and the date when they paid this advance (section 7.3 gives more details about this system of advance payments).

**Table 4: Summary of rented housing visited in the Lower Volta area**

Acceptable standard? <sup>a</sup>	Rent per month (GHS)	Size and rooms <sup>b</sup>	Comments
<b>Housing in more rural areas</b>			

Acceptable standard? <sup>a</sup>	Rent per month (GHS)	Size and rooms <sup>b</sup>	Comments
No	50 (2016) 1 yr advance	69.4 m <sup>2</sup> LR, 2 BR, K, porch	Spacious detached house in good condition, but walls are made of mud brick and pit latrine doesn't have slab.
Yes	60 (2015) 2 yr advance	44.7 m <sup>2</sup> LR, BR, porch	Semi-detached house in good condition. KVIP shared with 2 other households. Community borehole 50m from house.
Yes	80 (2017) 1 yr advance	40.6 m <sup>2</sup> LR, BR, K, shared porch	Compound house. Good condition and facilities. Kitchen not well ventilated, but in separate building and cooking mostly done outside.
No	170	57.2 m <sup>2</sup> LR, 2 BR, K, BathR	Large, well constructed detached house but landlord does not allow use of onsite toilet so shares pit latrine with neighbours - no slab, not deep enough, no shelter. Use river water for drinking.
<b>Housing in peri-urban areas</b>			
No	35	12 m <sup>2</sup> BR, porch	Compound house. Inadequate space. Uses public toilet, shared with too many households and not clean.
No	50	22.8 m <sup>2</sup> BR, porch	Semi-detached house. Inadequate space. Poor quality pit latrine - no slab, not deep enough, no roof.
No	40 (2016) 1 yr advance	26.4 m <sup>2</sup> BR, porch, shared K	Compound house in good condition, but inadequate space and 1 toilet shared between 5 households
No	60 (2014) 3 yr advance	34.5 m <sup>2</sup> LR, BR, porch	Semi-detached house in good condition. Almost meets standard, but not enough space. Likely to be at least GHS 20 per month more at current prices.
No	80	22.9 m <sup>2</sup> BR, porch, shared K	Compound house. Inadequate space. Uses public toilet, shared with too many households and not clean.
No	80 (2016) 2 yr advance	43 m <sup>2</sup> LR, BR, K	Spacious detached house in good condition, but mud brick walls and toilet shared by many households.
Yes	100 (2016) 2 yr advance	74.6 m <sup>2</sup> LR, 2 BR, K, BathR	Semi-detached house. Good condition and facilities. Rent low for size of house because knows owner.
Yes	120 (2017)	39.9 m <sup>2</sup> LR, BR, porch	Compound house. Newly constructed. 6 KVIPs shared between 15 households. Piped water to compound.

Acceptable standard? <sup>a</sup>	Rent per month (GHS)	Size and rooms <sup>b</sup>	Comments
Yes	160 (2017)	38.6 m <sup>2</sup> LR, BR, K, shared BathR	Compound house. Very good condition, built 3 years ago with good facilities. (Banana company rents the block for senior staff.)
<b>Housing in more urban areas</b>			
No	20 (2015) 2 yr advance	6.5 m <sup>2</sup> BR, shared hallway	Compound house. Inadequate space. Uses public KVIPs, shared by too many households and poor condition
No	35 (2016) 1 yr advance	13.9 m <sup>2</sup> BR, porch + shared courtyard	Compound house. Inadequate space. KVIP currently locked as some tenants have not paid fee.
No	50 (2016)	30.7 m <sup>2</sup> BR, shared LR, K and BathR	Apartment in walled compound. Good condition and facilities, but inadequate space. Part of compound still under construction, so rent currently low.
No (Yes with additional room)	60 (2017) 1 yr advance (90 with additional room)	25.8 m <sup>2</sup> LR, BR, porch	Compound house. Inadequate space, but otherwise acceptable standard. Additional room would cost GHS 30 more.
No	60 (2016) 2 yr advance	27.9 m <sup>2</sup> LR, BR, porch	Compound house. Good condition, but inadequate space and 1 toilet shared between 11 households.
Yes	160 (2016) 1 yr advance	71.5 m <sup>2</sup> LR, 2 BR, K, BathR, porch	Detached house. Very spacious, good condition and facilities. Rent considered low by tenant.

**Notes:** <sup>a</sup> Dwelling is considered of acceptable standard if it meets all the criteria contained in the local decent housing standard. <sup>b</sup> Size of dwelling is the total floor area for all rooms, including covered porch areas, but excluding walls. LR stands for living room, BR is bedroom, K is kitchen, and BathR is bathroom.

One of the main factors which prevented housing from meeting the standard was a lack of adequate living space, which affected nine of the dwellings visited. Most workers visited occupied just one or two small rooms, typically as part of a compound house or a semi-detached house. Adults and children were often crammed together in one room to sleep, with those in single rooms dividing the room into a sleeping area and a living space by hanging a sheet across the middle. Covered porch areas were an important part of the living space; as well as sitting on the porch, people often cook there using gas or charcoal stoves as they didn't have a separate kitchen area. In more rural areas the living space tended to be larger, but walls were more often made from mud brick<sup>44</sup>, which is not considered a durable material and therefore does not meet the standard for decency.

<sup>44</sup> We only visited two dwellings with mud brick walls, as in general we asked to visit workers and their neighbours who live in houses with concrete walls, since we knew that mud brick houses would not meet the standard.

**Local housing of different standards**



House with mud brick walls



Good construction but insufficient space



Decent housing



Decent housing

Source: Authors

Lack of adequate sanitation was another key factor in not meeting the standard, relevant in 9 of the 19 dwellings visited. Several households were reliant on public toilets, and although they were sometimes well constructed (i.e. KVIPs), they were typically shared by large numbers of people and not well maintained. Other households were using basic pit latrines which were not deep enough, did not have a concrete slab and/or did not have any cover, meaning they were unhygienic, unsafe and lacked privacy. In contrast, dwellings with adequate sanitation had well-constructed and well-maintained pit latrines or KVIPs, or occasionally flush toilets, which were only shared by a few households at most.

Another issue for some dwellings was a lack of proper ventilation of smoke from charcoal or wood stoves. Air pollution from smoke is a major cause of death and disease in countries where people cook inside with wood, dung, coal or other traditional fuels, principally among women and young children.<sup>45</sup> Cooking out in the open greatly reduces the risk, and in many

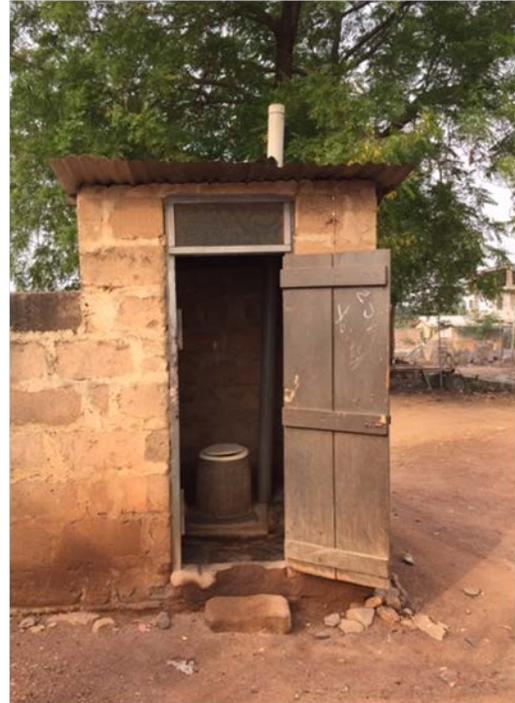
<sup>45</sup> WHO, 2006.

cases this is what households were doing. However, in others cooking took place inside rooms with either no windows or only very small openings to let out the smoke.

### *Sanitation and cooking facilities*



Poor quality pit latrine



KVIP



Cooking area with inadequate ventilation



Adequately ventilated cooking area

## **7.3 Estimated rental cost for decent housing**

Based on the information gathered through the local housing survey, we estimate that workers in peri-urban areas would need to pay on average around GHS 100 per month to rent housing which meets the local housing standard. This takes into account several factors:

- Renters are typically required to pay up to three years rent in advance to secure housing. Rental rates are relatively low in Ghana, due to decades of rent control, so landlords charge rent in advance as a way to increase the net present value<sup>46</sup>. As such, many of the rents shown in Table 4 are below what would be charged in 2017.
- Rental costs tend to be higher the more densely populated an area is, as living space is at a premium, and this was born out in our local housing survey (with exceptions). For example, we found examples of decent housing in rural areas for GHS 60 and GHS 80 per month. However, the majority of workers in the banana industry live in peri-urban areas, so not the most urban but nor the most rural areas. The living wage estimate is based on the 'average' worker, and as such we allow for rental costs in the mid range.
- The rental cost of decent housing in the survey was sometimes artificially low as a result of renters having a personal relationship with the landlord. These rents need to be adjusted upwards to reflect real costs.

Based on this analysis, and the examples of decent housing visited, we consider GHS 100 per month a reasonable amount to allow for in the living wage estimate. This does not mean that all workers would need to pay this much, and some workers may need to pay more, depending on where they live. There is also the issue that decent housing is in short supply in Ghana, with over-crowding the norm rather than the exception. But we did come across several examples of new low cost housing which has been constructed in areas where workers live. In addition, the government of Ghana is in the process of building high quality social housing for 224 banana worker households, using funds from the European Union aimed at supporting the banana export industry<sup>47</sup>. This will help with the supply of low cost, decent housing for banana workers, and hopefully also stimulate demand for construction of further housing of this type in the area.

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#### **7.4 Utilities and other housing costs**

We estimated the cost of utility and other housing costs using a combination of secondary data and information gathered through the local housing survey and discussions with workers. The costs fall into three main areas: electricity and other lighting; water; and cooking fuel. Other costs are minor, such as the cost of replacing light bulbs, or not the norm, such as fees for using a toilet in a compound. We were told that landlords cover the cost of anything other than minor maintenance and repairs.

All the houses visited were connected to mains electricity. The average cost per household was GHS 37.50 per month, excluding houses with only one room (as this would not be

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<sup>46</sup> UN Habitat (2011).

<sup>47</sup> This is part of the EU's 'Banana Accompanying Measures' to improve the competitiveness of the export banana industry in African, Caribbean and Pacific countries in the face of tariff preference erosion in the European market and therefore increased competition with Latin American producers. The housing is being built in partnership with Golden Exotics Limited.

adequate for decent housing) and a large house with exceptionally high electricity cost of GHS 160 per month. During focus group discussions, workers said they paid between GHS 30 to GHS 60 per month. In addition, most households reported expenditure on batteries and/or kerosene for lamps or torches, as blackouts are common in Ghana, typically occurring several times a week for at least a few hours, if not days at a time.<sup>48</sup> Expenditure on batteries and/or kerosene averaged GHS 2.54 per month according to households interviewed.

In the local survey the most common source of water for both drinking and general use was piped from a neighbour's house (eight households), followed by piped inside or outside the house (five households). In three cases, households used a community pipe or borehole, and in two others they used river water even for drinking. All water was paid for (except river water) and usually collected daily in buckets and stored in large plastic barrels (with lids). The average cost was GHS 5.91 per household member per month, giving an average of GHS 26.60 for a family of 4.5 people. During focus group discussions workers reported paying between GHS 10 and GHS 30 per month.

Cooking fuels used by households in the survey were gas (four households), gas and charcoal (six households), charcoal (three households), charcoal and wood (four households), and wood (one household). Average expenditure on fuel was GHS 11.27 per household member per month, giving an average of GHS 50.72 for a family of 4.5 people. Workers reported paying between GHS 50 and GHS 60 per month.

This gives a total of GHS 117.36 per household per month as an estimate for expenditure on utilities from our local housing survey. We compared this with an estimate derived using secondary data on household expenditure, which are based on a representative sample of households across Ghana (unfortunately this data is not disaggregated by locality). The GLSS 6 found that across Ghana 7% of household expenditure was on utilities (comprising electricity, gas and other fuels, water supply and miscellaneous services related to dwelling<sup>49</sup>), compared to 46.7% on food and non-alcoholic beverages. The estimated cost of our living wage model diet is GHS 734, which would imply GHS 110.02 per household per month for utilities (i.e.  $7\%/46.7\% \times \text{GHS } 734$  cost of model diet). This is very similar to our estimate of GHS 117.36 from the local household survey so we did not change this estimate.

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<sup>48</sup> Blackouts due to insufficient power supply is a well known problem in Ghana, with blackouts experienced on 159 days in 2015. See: <https://phys.org/news/2017-02-ghana.html>

<sup>49</sup> Utilities represent 7.9% of cash expenditure, but the GLSS 6 calculates that cash makes up 88.6% of household expenditure, with the imputed value of non-cash expenditure accounting for 11.4%. This would imply utilities represent 7% of all expenditure.

## 8. NON-FOOD AND NON-HOUSING COSTS

Food and housing make up the majority of household expenditure in Ghana, but there are a range of additional costs which a living wage needs to cover, including: health care, education, transport, furniture and household equipment, clothing and footwear, personal care, mobile phones, and recreation and culture. It would be too complex and expensive to estimate the cost of all these items separately, so they are grouped together as 'non-food non-housing' costs and estimated using secondary data on current expenditure patterns. Cross-checks are done using primary data for important expenditure groups, such as health and education, to ensure that the amounts included for them are sufficient for decency. This is necessary as current expenditure may be limited by low wages.

**We estimated all non-food non-housing costs for the lower Volta River area to be GHS 533 (\$122).** Below we describe the steps taken to arrive at this estimate.

The first step was to calculate the ratio of non-food non-housing (NFNH) expenditure to food expenditure using the most recent Ghana Living Standards Survey data (GLSS 6). Given differences in expenditure patterns for rural and urban areas, we did separate calculations using data for 'urban areas excluding Accra' and for 'rural coastal' areas, as the most representative groups for the lower Volta River area<sup>50</sup>. Table 5 below shows that the mean unadjusted NFNH to Food ratio was 0.67 for rural coastal areas, and 1.04 for urban areas excluding GAMA. This compares to 0.88 for all Ghana.

The second step was to eliminate expenditure that is considered unnecessary for a decent standard of living, and adjust for expenditure that is categorised by GLSS 6 incorrectly for the living wage methodology. For Ghana, this meant two things: (i) funds for tobacco were removed as unnecessary (which were anyway very small as few people in Ghana smoke); (ii) a proportion of funds for 'catering services' was transferred from food costs to non-food costs. The latter was necessary as the model diet assumes all food is prepared at home, and so we needed to remove from food costs the part of that expenditure which relates to service provision (i.e. related to caterers' labour, overheads and profit margin).<sup>51</sup>

The next step was to adjust for the impact of household income on expenditure patterns. Ideally we would have used data for households at the 30th percentile of the expenditure distribution. This is because the proportion spent on food decreases as income increases ('Engel's Law'<sup>52</sup>), and average expenditure across all income groups is skewed by the expenditure of wealthier households. We consider expenditure patterns for households at

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<sup>50</sup> A previous footnote provides more detail on the rationale for this.

<sup>51</sup> In Ghana this expenditure typically relates to purchase of prepared foods like *Kenkey* or *Banku* with soup or stew, which may be eaten at a street or market stall or bought readymade to eat at home. We assumed that 40% of the cost of such meals related to the service provision, based on an assessment of ingredients and analysis carried out for previously living wage benchmarks.

<sup>52</sup> See Anker (2011b) for a more detailed explanation of Engel's Law and the implications for estimating a living wage.

the 30th percentile to be the most appropriate reference for banana workers in the lower Volta River area earning a living wage, as these are households on a relatively low income but not below the poverty level. Unfortunately, data disaggregated by percentile of the household expenditure distribution were not available separately for rural and urban areas. Instead we adjusted the average rural and urban NFNH to Food ratios downwards by 25% to be reflective of 30th percentile households for each geographic area.<sup>53</sup>

These adjustments resulted in a NFNH to Food ratio of 0.87 for urban areas excluding GAMA, and 0.55 for rural coastal areas (see table 5). For practical reasons, given the context of the lower Volta River area and the banana industry in Ghana (see section 3), we decided to use the average of these two figures to estimate the living wage for peri-urban areas, i.e. 0.71. This gave us a preliminary estimate of GHS 521 (\$119) for non-food non-housing costs (i.e. 0.71 ratio × GHS 734 for food). We then looked specifically at the costs for health care and education in the lower Volta River area, to check that the funds allowed for these human rights and important areas of expenditure were sufficient. This resulted in an increase in the NFNH estimate by GHS 12 per month, to GHS 533 (\$122), as described in the next section.

**Table 5: Ratio of non-food non-housing expenditure to food expenditure using GLSS 6 data for different localities and groups**

Locality	% expenditure on Food	% expenditure on Housing	% expenditure on non-food non-housing	Unadjusted NFNH: Food ratio	Adjusted NFNH: Food ratio for 30th percentile
Urban excl. GAMA	42.8	12.6	44.6	1.04	0.87
Rural coastal	54.5	9.0	36.4	0.67	0.55

Source: GLSS 6 and authors' calculations.

## 9. POST CHECKS OF NON-FOOD AND NON-HOUSING COSTS

### 9.1 Health care post check

According to national statistics, out of pocket expenditure on health care represents a very low percentage of household expenditure - only 1.4% of cash expenditure in urban areas and 1.9% in rural areas. Based on our model diet estimate and NFNH to Food ratio, our preliminary estimate for expenditure on health care is GHS 18 per household per month in urban areas

<sup>53</sup> Expenditure patterns by quintile in the GLSS data indicate a 25% difference between the mean NFNH to Food ratio for all Ghana (0.88) and the NFNH to Food ratio for 2nd quintile (20th-40th percentile) households (0.66). This 25% difference is similar to that found in other countries (see Anker and Anker 2017). The 2nd quintile is taken as a proxy for 30th percentile households. This 25 percentage difference was assumed to be representative for all localities.

(excl. GAMA), and GHS 17 in rural coastal areas<sup>54</sup>. This low cost relates to the fact that 77% of people in urban areas and 52% of people in rural coastal areas have health insurance, almost all as part of the national health insurance scheme (NHIS)<sup>55</sup>. However, according to the GLSS 6, the NHIS was used to cover medical costs in just 48% of visits in urban areas (excl. GAMA), and 25% in rural coastal areas. This implies that even if most workers and their family members are covered by health insurance, it is reasonable to include some funds in the living wage calculation for out of pocket expenses for health care. This was confirmed during interviews with banana workers and staff in health care facilities, who said that: (i) not all medical costs are covered by the NHIS and patients are often asked to pay 'top up' fees even for treatments or medicines which are supposed to be free; (ii) workers often buy medicines in pharmacies or chemical stores which are not reimbursable under NHIS, either for convenience (e.g. they buy from places which are close to home) or because they believe they will be more effective (e.g. they believe a branded drug is better than the generic version prescribed under the NHIS).

To estimate the typical cost of health care in the lower Volta River area, we looked at data on the percentage of people who reported being ill in two weeks preceding the GLSS 6 survey (14.4% in urban areas excluding GAMA; 14.9% in rural coastal areas). Taking the average across the two areas, this implies approximately four episodes of illness or injury per person per year, and therefore approximately 18 illness episodes per year for our reference size family. Of people reporting an illness or injury, 67.6% of people in urban areas consulted a health practitioner, and 69.1% in rural coastal areas. Again taking the average, this implies approximately 12 visits to health practitioners per year for our reference size family. Of those who visited health practitioners, around half consulted a government health facility and half a private health facility, but the latter did not necessarily mean they automatically had to pay as many private facilities accept NHIS patients. Around half went to a hospital, 19% to a clinic, 4% to a pharmacy, and 24% to a chemical store (a store without a pharmacist where medicines can be purchased). This implies approximately 8 visits to hospitals or clinics and 4 visits to pharmacies or chemical stores per year for our reference size family.

To gauge the cost per visit for these different types of healthcare facility, we first obtained information from one of the main government hospitals used by banana workers on the top 10 illnesses they treated in 2016. These were (in order): rheumatism; respiratory tract infection; anaemia; peptic ulcer; acute eye infection; diarrhoea; urinary tract infection; malaria; HIV/AIDS; pneumonia. We then visited public and private hospitals, clinics, pharmacies and chemical stores in different locations to ask about costs related to treating the top five illnesses on this list, plus malaria (as this is a major cause of death in Ghana). In each case, we asked about costs for registration, consultation, laboratory tests and medicines for people who are insured as well as the uninsured, including unofficial top up fees.

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<sup>54</sup> This calculation requires adjusting the percentage of cash expenditure spent on health to be a percentage of all household expenditure (actual and imputed). This translates into 1.3% for urban areas and 1.6% for rural areas, based on 92% of all expenditure being cash in urban areas, compared to 86% in rural areas. This gave the percentage of all NFNH costs which are for health as 2.8% for urban areas and 4.2% in rural areas.

<sup>55</sup> GLSS 6 (GSS, 2014b).

Based on the information gathered, and assuming workers and family members are all insured<sup>56</sup>, we estimate an average of GHS 360 per year per household for out of pocket health care expenses, or GHS 30 per month. The basis for this estimate is shown in Table 6 below.

**Table 6: Estimate of out of pocket health care expenditure for people with NHIS health insurance**

Type of provider	Average out of pocket cost per visit (GHS)	# visits per year per family	Total cost per year for reference size family (GHS)
<b>Hospital/ clinics</b>			
Consultation/ registration fee	5	8	40
Medicine	20	8	160
Laboratory test	5	4	20
Hospital treatment	50	1	50
<b>Pharmacy/ Chemical store</b>			
Medicine	20	4	80
Laboratory test	5	2	10
<b>Total</b>			<b>360 per year</b> <b>30 per month</b>

Source: Based on information from staff at health care facilities in the lower Volta River area, and GLSS 6 for number of visits per person per year.

This estimate of health care costs suggests that insured households may need to spend around GHS 12 per month more than the funds we allowed for in our preliminary estimate based on secondary data (i.e. GHS 18 per month in urban areas excluding GAMA, and GHS 17 in rural coastal areas). We decided to **allow an extra GHS 12 (\$3) per household per month for health care expenses**. We believe this to be a conservative amount based on primary and secondary information on out of pocket expenses incurred even by people with insurance.

<sup>56</sup> All banana workers are SSNIT contributors and so can enrol in the NHIS for free. The companies pay their annual NHIS renewal fee. The NHIS renewal fee is also covered for family members, either by the company or by the Fairtrade Premium.

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## 9.2 Education post check

Schooling in Ghana is structured as follows:

- v. Pre-school: 1 year nursery (age 3-4) plus 2 years kindergarten (age 4-6). Kindergarten is considered part of basic education and is compulsory
- vi. Primary: 6 years (age 6-12)
- vii. Junior Secondary School (known as Junior High School, JHS): 3 years (age 12-15)
- viii. Senior Secondary School (known as Senior High School, SHS): 3 years (age 15-18). SHS may be as general, technical, vocational, business or agricultural institutions

National enrolment data indicate that the majority of children in Ghana attend public school rather than private school, particularly at secondary level. School attendance rates reported by Ministry of Education show that net enrolment is high for kindergarten and primary school at around 91% for both boys and girls, but below 50% for both junior and senior secondary school (and somewhat lower for girls than boys).<sup>57</sup> In general, the public education system faces a number of challenges, including a lack of financial and material resources, inadequate school infrastructure, shortage of qualified teachers (particularly in rural and remote communities), and a lack of credible and reliable data on student and teacher performance.<sup>58</sup> These challenges are reflected in the fact that nearly half of workers spoken to during fieldwork said they sent their children to private schools for kindergarten, primary and JHS levels, in spite of the additional costs.

Discussions with workers indicate that education-related expenses constitute a major part of their annual costs. This is in line with national statistics which show that 10.6% of all household cash expenditure in Ghana is on education - a high percentage relative to other countries. On inspecting the data, we see that this is partly explained by the fact that a wide range of costs are covered in Ghana household expenditure statistics as part of this 10.6%, including clothing, books, transport, food, PTA contributions, expenses on extra classes, and in-kind expenses. Our preliminary estimate of education related expenditure based on these figures is GHS 188 per month for urban areas (excluding GAMA) and GHS 96 per month for rural coastal areas.<sup>59</sup>

According to information gathered from workers and school officials, education-related costs<sup>60</sup> for government schools in the study area are around GHS 583 per child per year in kindergarten, GHS 1,027 in primary school, GHS 1,234 in junior high school, and GHS 1,921 in senior high school. However, lunch money makes up a significant proportion of this, as parents send their children to school with GHS 1 to 3 per day to buy lunch (depending on

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<sup>57</sup> Ghana Ministry of Education (2015a, 2015b).

<sup>58</sup> UNESCO (2015).

<sup>59</sup> As for our estimate of expenditure on health care, these figures are based on calculating the percentage of all NFNH costs which are for education, and then multiplying this percentage by our estimate of NFNH costs.

<sup>60</sup> Includes school registration and other fees, extra classes, transport, food, uniforms, books, bags and other school supplies, and PTA contributions.

their age). The living wage estimate assumes that all meals are prepared at home. Rather than removing this expenditure from the estimate of education costs, it is preferable to calculate the value of children's lunches based on the model diet (which varies by age due to different calorie requirements), and then reduce the estimated expenditure on education by the replacement cost of those meals. This brings the figures down to GHS 335 per child per year in kindergarten, GHS 687 in primary school, GHS 703 in junior high school, and GHS 1,389 in senior high school.

The next step is to estimate the monthly cost to households for education for our reference family. This is calculated by multiplying the cost per year in each level of school by the number of years spent at that level, then dividing the total of these amounts by 18 years to arrive at an average cost per year over the 18 years of a child's life. This amount is then multiplied by the 2.5 children in our reference family to arrive at an estimated cost of GHS 128 per month for education. This amount is between the amount estimated using national statistics for rural coastal areas (GHS 96) and the amount estimated for urban areas excluding GAMA (GHS 188). Given that (i) workers live across urban, peri-urban and rural areas, (ii) the percentage of household expenditure for education is already high compared to other countries, and (iii) the post check is based on a limited amount of primary data, we feel there is **no strong argument to adjust the education component of the estimate for NFNH costs**.

**Table 7: Post check estimate of education related costs for reference family based on primary data collection**

	Kindergarten	Primary	JHS	SHS	Total
	GHS/ year	GHS/ year	GHS/ year	GHS/ year	
Average expenditure per student per year	335	687	703	1389	-
Number of years in level	2	6	3	3	-
Annual cost per student x number of years in level	670	4122	2109	4167	11,068
Average cost per student per year over 18 years	-	-	-	-	614.89
Average cost per child per month	-	-	-	-	51.24
<b>Average cost for education for family with 2.5 children</b>	-	-	-	-	<b>GHS 128.10 per month</b>

Source: Based on data obtained from workers and key informants in schools.

## 10. PROVISION FOR UNEXPECTED EVENTS TO ENSURE SUSTAINABILITY

Unforeseen events and expenses, such as accidents, illness or death of family members, can quickly throw workers living a basic lifestyle into poverty and debt from which it is often difficult to recover. For this reason it is common when estimating a living wage to add a small margin above the cost of a basic quality life to allow for unexpected events. It is also common to include some funds to allow for some discretionary spending. Margins of 5% and 10% are the most common. For the Anker living wage methodology, a 5% margin on the basic cost of living is generally recommended.

Workers in the banana industry in Ghana receive a number of protections as a result of collective bargaining agreements. This includes: paid sick, maternity and annual leave; redundancy payments; gratuity payments on retirement or when retiring on medical grounds; and contributions to the cost of funerals for workers and close family members. Workers can also access interest-free loans in the form of advances on their wages. These factors reduce the risk of indebtedness due to unforeseen events, which is an argument for reducing the margin. On the other hand, it is the norm in Ghana for people to provide financial support to parents and other relatives if they have the means to do so, and it would be socially unacceptable not to. The majority of workers we spoke to said they provide support to other family members; examples of the type and amount of support included: GHS 50 as and when needed to enable parents to travel to funerals; GHS 50 to 100 per term or per year to cover school costs of nieces, nephews, siblings or grandchildren; GHS 50 to 100 per month for parents to cover general costs.

Given this context, we decided that a 5% margin on top of basic costs is appropriate. This equates to **GHS 74 (\$17) per month for unexpected events and discretionary spending**. Note that interest and debt payments are excluded from the living wage calculation, as it is assumed that a living wage would enable workers to stay out of crippling debt.

## SECTION III

# LIVING WAGE FOR WORKERS

## 11. FAMILY SIZE NEEDING TO BE SUPPORTED BY LIVING WAGE

Living wage is a family concept, as indicated in the definition of a living wage given at the start of this report. It is therefore necessary to determine an appropriate family size for the lower Volta River area.

**We use 2 adults and 2.5 children as the reference family size for our living wage.** This is based on (i) the number of children that women in Ghana typically have ('total fertility rate') and the survival rate of children, and (ii) average household sizes, as explained below.

The total fertility rate (TFR) for the lower Volta River area is around 4.4 children, taking into account differences between urban and rural areas, and between the regions of Ghana. The 2010 Population and Housing Census reported that women in urban areas have on average 4 children, compared to 5.3 children in rural areas, while the 2014 Demographic and Health Survey (DHS) gave the figures as 3.4 for urban areas and 5.1 for rural areas.<sup>61</sup> Regional data give a TFR of between 4.2 and 4.8 for the Eastern Region and between 3.9 and 4.5 for the Volta River Region<sup>62</sup>, which supports our use of an average of around 4.4 children for the lower Volta River area.

Not all of these children survive; between 6% and 7% of children die before their fifth birthday in urban Ghana, and between 8% and 9% in rural areas.<sup>63</sup> Adjusting for these deaths, we calculated that women in the lower Volta River area have around 3.7 surviving children on average. We then took into account that not all these children will be under 18 at the same time and still dependent on parents, giving us a figure of between 2.5 and 3 dependent children for households in the lower Volta River area<sup>64</sup>.

The 2010 national census found an average household size of 4.2 people in urban areas, and 4.5 people in rural areas, excluding 1 person households (that do not have any dependents) and especially large households (that are likely to have several earners). This is in line with a survey carried out by Wageningen University with banana workers in Ghana, which found a mean household size of 4.07 persons across both plantations, but 5.05 for the plantation which was established earlier and where workers were on average older.<sup>65</sup> The more established plantation provided us with figures on the number of dependents which their

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<sup>61</sup> A third source of data was the 2011 Multiple Indicators Cluster Survey (MICS) which reported total fertility rates of 3.3 for urban areas and 5.5 for rural areas. This gave an average across the three sources of data of 4.4.

<sup>62</sup> The GAMA region was excluded as it was not considered representative of the study area.

<sup>63</sup> Under five mortality rates in the Eastern and Volta River regions are between 6% and 9%.

<sup>64</sup> This takes into account median spacing between births in Ghana, which the 2014 DHS puts at 41.6 months in urban areas and 38.2 months in rural areas (average 3.3 years between births).

<sup>65</sup> van Rijn *et al.* (2016).

workers currently have: 13% have no child dependents, 9% have 1 child dependent, 16% have 2 child dependents and 62% have 3 or more child dependents.

Considering all of the above, we concluded that a reference family size of 4.5 persons would be reasonable for the living wage in the lower Volta River area.

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

As living wage is a family concept, and our reference family has two adults, it is appropriate to expect more than one adult in the family to provide support through work.<sup>66</sup> **We use 1.78 full-time equivalent workers per couple to estimate our living wage.**

This figure is based on labour force participation rates (LFPR) in Ghana, which are high for both men and women in the 25-59 year age group<sup>67</sup>. According to the GLSS 6 Labour Force report, around 94% of all adults aged 25 to 59 years are actively engaged in the labour market, i.e. either working or looking for work (see Table 8). Only around 3.4% of economically active people in this age group are unemployed, with the rate for women slightly higher than for men. However, a substantial proportion of employed people work less than full time. Around 22% work less than 35 hours a week in urban areas, compared to 34% in rural areas.

Using these figures, we calculated the likelihood of males and females aged between 25 and 59 years being in full-time equivalent employment, using the following formula:

$$\text{Likelihood of full-time employment} = \text{Average adult LFPR} \times (1 - \text{unemployment rate}) \times (1 - 1/2 \text{ part-time employment rate})$$

The resulting probabilities were 0.79 in urban areas, 0.78 in rural areas, and 0.78 for all Ghana. We therefore took 0.78 as the likelihood of the second adult in our reference family being in full-time equivalent employment, giving a total of 1.78 full-time equivalent workers per family assuming that the one family member works full time such as on a banana plantation.

**Table 8: Average labour force participation, unemployment and underemployment rates by location**

	Urban	Rural	National
(1) Average of labour force participation rates for men and for women aged 25-59 years	92.3%	96.2%	94.1%

<sup>66</sup> An assumption of the Anker methodology is that children do not support the family financially through work. This is consistent with the decency concept of a living wage.

<sup>67</sup> Younger and older adults are excluded from this analysis as they are disproportionately less likely to be economically active, mainly due to either being in education or having retired.

(2) Average of unemployment rates for men and for women aged 25-64 years	4.0%	2.6%	3.4%
(3) Average of time-related underemployment rates for men and for women aged 25-59 years	21.9%	34.3%	27.8%
(4) Average full-time equivalent workers aged 25-59 years	0.79	0.78	0.78

Source: GLSS 6 Labour Force module.

### 13. CASH ALLOWANCES AND BONUSES AND IN-KIND BENEFITS AS PARTIAL PAYMENT OF A LIVING WAGE

Around the world, companies often provide cash bonuses and allowances and in-kind benefits to workers which reduce the amount needed for the basic cash wage. This includes benefits like housing and housing allowance, meals at work, transport services or allowances, health care, childcare facilities, and schooling for children, as well as annual bonuses, attendance bonuses, and production incentives (when earned during normal working hours, working at a reasonable pace). In order to be considered as partial payment of a living wage, a cash bonus or allowance or in-kind benefit must meet all the following criteria:

- i. Regular and received within a year and in a way that workers can count on receiving the benefit.
- ii. Considered of benefit and value to workers for themselves or their families' personal use.
- iii. In kind benefit meets minimum standard, in line with the decency concept of a living wage.
- iv. Guaranteed - not at the discretion of employer.
- v. Customary for an industry when estimating typical prevailing wages for an industry.

The cash equivalent value of qualifying in-kind benefits for our living wage estimate is calculated using the following principles and rules:

- Value of an in-kind benefit should not exceed its cost to employer.
- Value of an in-kind benefit should not exceed its replacement cost to workers, if they purchased it on the market.
- Value of free meal should not exceed cost of replacing equivalent meal prepared at home.
- Value of in-kind benefit cannot be lower than an alternative cash allowance option offered to workers, when such an option is available.
- When an in-kind benefit is not free, the cost to workers needs to be subtracted.
- The maximum total value all in-kind benefits is 30% of living wage, with a 15% maximum for housing and 10% maximum for each other benefit.

- Value of an in-kind benefit should not exceed amount included in living wage for the item.
- Value of an in-kind benefit should not exceed amount allowed by law when specified.

In the Ghanaian banana industry, there are a number of cash bonuses and allowances and in-kind benefits which qualify as partial payment of a living wage. Qualifying benefits are: production incentives, attendance bonus, annual bonus, rent subsidy, transport services, health care, subsidized lunch at work and food subsidy. These are benefits which are received by 'general workers', who work in banana production and/or in processing and packing bananas into boxes ready for shipping, and account for 84% of all employees on the company payrolls for January 2017. General workers are therefore taken as our reference for estimating a living wage, in terms of average wages and benefits received by workers in the banana sector.

Below we set out how we calculated the average value of each benefit, including equivalent cash value for in-kind benefits. The nature and value of each benefit varied by company. Unless stated otherwise, our calculation of the average value involved: (i) multiplying the average value of the benefit per worker in each company by the number of general workers at the company, based on payroll data for January 2017<sup>68</sup>, (ii) summing up the totals for each companies, (iii) dividing the total amount by the total number of workers in both companies to come up with an average for the industry. This allowed us to estimate the average value of cash allowances and bonuses and in-kind benefits received by general workers in the Ghanaian banana sector, which could then be taken into consideration as partial payment of a living wage.

- Production incentives:** General workers earn cash incentives based on their performance, aimed at boosting productivity. These incentives are earned by the majority of workers within the standard 40 hour working week and are therefore included as part of the prevailing wage<sup>69</sup>. The average production bonus earned by general workers in January 2017 was GHS 177.
- Attendance bonus:** General workers receive a cash bonus based on attendance. The average value of the attendance bonus across all general workers was GHS 9 in January 2017<sup>70</sup>.
- Annual bonus:** General workers receive the traditional 13th month salary in December, which has a pro rata value of GHS 36 per month for the average basic salary.

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<sup>68</sup> When calculating average cash allowances and bonuses received by general workers, we have assumed that January 2017 is a typical month.

<sup>69</sup> In one of the companies, normal working hours included 35 standard hours and 4 overtime hours per week. Given this is less than the maximum 40 working hours stipulated in the CBA, the overtime hours were considered equivalent to a production bonus.

<sup>70</sup> For one of the companies, the attendance bonus is paid at the end of the year based on the number of days of unauthorized absence or sick leave during the year. The value used for that company was a pro rata monthly rate based on attendance in 2016 (for general workers who worked all 12 months of the year).

- iv. **Rent subsidy:** One of the companies began giving workers a rent subsidy of GHS 20 per month in January 2017. This is well below the GHS 100 per month in the living wage estimate for rent, and therefore allowable in full as the equivalent value of this benefit to workers for this company. The other company does not provide a rent subsidy. Across both companies, the average cash value of the rent subsidy for general workers was GHS 16.
- v. **Transport:** One of the companies provides a transport service to and from work for the majority of workers, while the other only provides transport to workers on one of their five plantations. Transport services are provided because of the difficulty of finding sufficient numbers of workers living in the proximity of the banana plantations. For the first company, the cost of this service to the company (GHS 304 per worker per month) far outweighed the amount included for transport for the entire family in the living wage estimate, which is GHS 77 per month. The fact the company is willing to pay this much is an indication of the difficulties faced in finding workers locally, or finding workers willing to pay for transport themselves. Information gathered from workers and transport providers in the area indicated that it would cost workers between GHS 42 and GHS 294 per month to commute to work, other than for the small proportion who are close enough to walk or cycle. Since (i) the value of an in-kind benefit cannot exceed the amount included in the living wage for this, and (ii) other family members are likely to need to pay for transport, for example, to go to the market or school, we decided to use GHS 50 as the equivalent cash value for transport as partial payment of a living wage in this company. The remaining cost to the company for transport is considered part of the cost of doing business.
- vi. For the other company the cost of the transport services was just GHS 8 per worker per month, once the cost was spread over all workers. The equivalent cash value of the in-kind benefit for this company was therefore taken as GHS 8.
- vii. Across both companies, the average cash value of transport for general workers was GHS 42 per month.
- viii. **Health care:** Both companies have onsite medical staff who dispense basic medicines and refer workers on to government facilities where necessary. Both also pay the annual NHIS renewal cost for workers and reimburse them for out of pocket medical expenses for medicines and treatments not covered by the NHIS (so long as the company doctor approves the treatment sought and received). One of the companies also pays the annual NHIS renewal fee and reimburses medical expenses for workers' spouses and up to four children each. The average monthly cost per worker of providing these health care benefits in 2016 was GHS 44 for one of the companies, and GHS 25 for the other.<sup>71</sup> The amount allowed for out of pocket health care costs in the living wage estimate was GHS 29, which is therefore taken as the

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<sup>71</sup> 2% of the health care costs of companies is for NHIS registration cards, between 30% and 54% is for reimbursement of medical bills, and between 68% and 45% is for the plantation clinic. The difference in medical costs between the two companies is due to differences in clinic costs, and the fact that only one of the companies reimburses expenses for workers' family members.

- maximum allowable value of the benefit. As such, the equivalent value of health care was taken as GHS 29 for one company, and GHS 25 for the other. Across both companies, the average cash value of healthcare for general workers was GHS 28.
- ix. **Subsidized lunch:** One of the companies subsidizes the cost of a large, nutritious lunch for workers, for which caterers charge GHS 4.50 per day. Workers pay 21% (GHS 0.95), the company pays 30% (GHS 1.35) and the Fairtrade Premium pays 49% (GHS 2.20). The company did an impact assessment to explore the benefits of providing workers with lunch and found attendance improved by as much as 80%, as workers are not getting sick so frequently, and because now the cost of meals is deducted from their salary at the end of the month, they don't stay at home to earn cash to buy food. Receiving a meal at work is therefore clearly of value to both workers and the company. As the living wage estimate assumes all meals in the model diet are prepared at home, we need to calculate the replacement value of the meals taken at work. Using recipes for typical lunches obtained from the caterer, and food price data gathered during fieldwork, we calculated an average replacement value of GHS 3.40 per meal. This is higher than the GHS 2.88 allowed in the model diet for a nutritious lunch for adults with vigorous activity levels. However, GHS 3.40 is considered a reasonable value given the size of lunch which is served. As the company only pays 30% of the cost, the value of the in-kind benefit to workers is taken as GHS 1.02 per day, or GHS 20 a month (based on 240 working days per year<sup>72</sup>).
  - x. The other company gives workers a lunch subsidy of GHS 2.62 per day worked, up to a maximum of 21 days per month (GHS 55 per month). The company pays 32% of this (GHS 0.84 per day, or GHS 18 per month), with 68% paid out of the Fairtrade Premium. As this is below the amount allowed in the living wage estimate for a lunch prepared at home, the GHS 18 per month is taken as the equivalent value of the food subsidy for this company.
  - xi. Across both companies, the average cash value of subsidized lunch for general workers was GHS 20.

To sum up, on average a general worker receives GHS 238 (\$54) per month in cash allowances and bonuses (production incentives, attendance bonus, annual bonus, rent subsidy) and the cash equivalent of GHS 90 (\$21) per month in in-kind benefits (transport, health care, subsidized lunch). This gives **an average of GHS 328 (\$75) per month in cash allowances and bonuses and in-kind benefits** across all general workers in the Ghanaian banana industry, which we can take as partial payment of a living wage.

#### 14. TAKE HOME PAY REQUIRED TAKING MANDATORY DEDUCTIONS FROM PAY INTO ACCOUNT

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<sup>72</sup> This excludes days when workers are on leave, as they would not receive a meal on those days. The number of days leave ranges from 17 days to 25 days, depending on the length of service. 20 days was taken as an approximate average.

There are various mandatory deductions from wages which reduce the amount of take home pay workers receive. These need to be taken into account when calculating a living wage, to ensure that workers have sufficient net income to cover their living costs.

All banana workers must be registered with the Social Security and National Insurance Trust (SSNIT) which provides contributors with state pensions, disability pensions, survivor grants, and health insurance. Workers contribute 5.5% of their basic salary as SSNIT payment, while employers contribute 13%. There are two additional deductions from wages stipulated in the collective bargaining agreements between the banana companies and trade unions. The first is for the Provident Funds which companies run (effectively private pension schemes), to which workers contribute 5% or 6% of their basic salary each month. The other deduction is for trade union dues, which equates to 2% of workers' basic salary each month. Across all general workers in the banana industry, these deductions amount to an average of 12.7% of basic wages.

In Ghana personal income tax is charged on taxable income according to the rates in Table 9. Taxable income includes basic wages, overtime, and cash allowances and bonuses (excluding the annual bonus), after deductions for SSNIT and Provident Fund have been made. According to payroll data for January 2017, basic pay for general workers on the banana plantations ranges from GHS 366 to GHS 528 per month, depending on the company and an individual worker's occupation and salary grade (more details on prevailing wages are provided in the next section). This means that all banana workers are subject to income tax at the 5% and 10% rates, and some workers are subject to the 17.5% rate – even at their current income which is often significantly lower than our estimate of a living wage, as indicated below.

**Table 9: Personal income tax bands and rates in Ghana**

Chargeable income per month (GHS)	Rate (%)	Tax (GHS)	Cumulative chargeable income (GHS)	Cumulative tax (GHS)
First 216	NIL	NIL	216	NIL
Next 108	5	5.40	324	5.40
Next 151	10	15.10	475	20.50
Next 2,765	17.5	483.88	3240	504.38
Exceeding 3,240	25			

This is a remarkably high level of deductions from pay for relatively low income levels, with workers paying up to 31% in taxes and other deductions for wages over GHS 475 (\$109) per month. This has a significant impact on their take home pay, and increases the after tax value of cash allowances and bonuses and in-kind benefits which are not subject to tax. It also raises the question (for the Government of Ghana) of whether tax bands are appropriate given current costs of living, especially given high rates of inflation which imply tax bands should be revised regularly to ensure they adequately reflect increases in costs of living.

The table below provides a summary of our calculation of the net and gross living wage estimates for banana workers in the lower Volta River area, based on the reference family size, number of workers per family, value of in-kind benefits and mandatory deductions from pay. **Our estimate of the gross living wage required for a basic but decent standard of living is GHS 1028 (\$235) per month.** Assuming that workers receive typical cash allowances and bonuses and in-kind benefits in the banana industry, with average cash value of GHS 328 per month, we estimate that workers would need to earn a basic wage of GHS 700 (\$160) per month in order to have a decent standard of living.

**Table 10: Calculation of the net and gross living wage estimates for the lower Volta River area**

PART 1: FAMILY EXPENSES	GHS	USD <sup>a</sup>
<b>Food cost per month for reference family (1) <sup>b</sup></b>	<b>734</b>	<b>168</b>
Food cost per person per day	5.36	1.23
<b>Housing costs per month (2)</b>	<b>217</b>	<b>50</b>
Rent per month for acceptable housing	100	23
Utility costs and minor repairs per month	117	27

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<b>Non food non housing (NFNH) costs per month taking into consideration post checks (3)</b>	<b>533</b>	<b>122</b>
Preliminary estimate of NFNH costs <sup>c</sup>	521	119
Health care post check adjustment	+12	3
Education post check adjustment	-	-
<b>Additional 5% for sustainability and emergencies (4)</b>	<b>74</b>	<b>17</b>
<b>Total costs per month for basic but decent living standard for reference family (5) [5 = 1+2+3+4]</b>	<b>1,558</b>	<b>357</b>
<b>PART 2: LIVING WAGE PER MONTH</b>		
<b>Net living wage per month, based on 1.78 workers per family (6)</b> <b>[6=5/ 1.78]</b>	<b>875</b>	<b>200</b>
Mandatory deductions from pay, excluding personal income tax (7A) <sup>d</sup>	70	16
Personal income tax (7B) <sup>e</sup>	83	19
<b>Gross living wage per month (8) [8=6+7A+7B]</b>	<b>1,028</b>	<b>235</b>
<b>PART 3: CASH (BASIC) LIVING WAGE ASSUMING WORKERS RECEIVE TYPICAL IN KIND BENEFITS, AND TYPICAL CASH ALLOWANCES AND TYPICAL BONUSES AND BENEFITS IN THE BANANA INDUSTRY</b>		
Value per month of common in kind benefits in the banana industry (9A) <sup>f</sup>	90	21
Value per month of common cash allowances and bonuses and benefits in the banana industry (9B) (list in notes to table) <sup>g</sup>	238	54
<b>Net cash (basic) living wage assuming workers receive typical in kind benefits, cash allowances, bonuses, and benefits in the banana industry (10) [10=6-9A-9B]</b>	<b>547</b>	<b>125</b>
<b>Gross cash (basic) living wage assuming workers receive typical in kind benefits, cash allowances, bonuses, and benefits in the banana industry (11) [11= 8-9A-9B]</b>	<b>700</b>	<b>160</b>

Source: Authors' calculations.

Notes:

<sup>a</sup> Exchange rate GHS 4.37 to USD used to calculate USD values. This was the rate on 18 February 2017, which was midway through the period when primary data was collected. Ghana Cedis and USDs were

rounded to the nearest value for presentational purposes. <sup>b</sup> Reference family size is 2 adults and 2.5 children. <sup>c</sup> Based on an estimated ratio of non-food non-housing costs to food costs of 0.71 for peri-urban areas in the lower Volta River area. <sup>d</sup> Mandatory deductions from pay are social security and national insurance (SSNIT), Provident Fund contribution, and trade union dues, which on average equate to 12.7% of basic pay for general workers in the banana industry. Average deductions have been calculated on the assumption that workers received typical cash allowances and bonuses and in-kind benefits for the banana industry (see above), which reduces the basic pay on which deductions are calculated. <sup>e</sup> Personal income tax is levied on gross income after mandatory deductions, including overtime and cash allowances and bonuses, excluding the annual 'thirteenth month' bonus and in-kind benefits. There are progressive tax bands from 0% on income up to GHS 216, to 17.5% on income over GHS 475. Average income tax has been calculated on the assumption that workers received typical cash allowances and bonuses and in-kind benefits for the banana industry (see above), which reduces the taxable income on which income tax is calculated. <sup>f</sup> Common in-kind benefits are transport services valued at GHS 42 on average across all banana workers, health care valued at GHS 28, and lunch subsidies valued at GHS 20. <sup>g</sup> Common cash allowances and bonuses are production incentives (average GHS 177 across all banana workers), attendance bonus (average GHS 9), annual bonus prorated to monthly value (average GHS 36) and rent subsidy (average GHS 16).

## SECTION IV

# ESTIMATING GAPS BETWEEN LIVING WAGE AND PREVAILING WAGES

It is important to put living wage estimates into context by comparing them with other wage and economic indicators, and observing how far prevailing wages, minimum wages, and poverty line wages are from a living wage. In this section we first provide an overview of prevailing wages in the Ghanaian banana industry, and then look at how our living wage estimate for the lower Volta River area compares to these wages as well as to other wage and economic indicators for Ghana.

### 15. PREVAILING WAGES IN THE BANANA INDUSTRY

Basic wages in the Ghanaian banana sector are determined through negotiations between the banana companies and the relevant trade unions - currently the Industrial and Commercial Workers Union (ICU) for one of the companies, and the General Agricultural Workers Union (GAWU) for the other. This involves agreeing a salary structure according to occupational level and grade<sup>73</sup>, and negotiating wage increments annually on the basis of company performance, inflation and other relevant factors. As indicated previously, our analysis of prevailing wages in the banana industry is focused on general workers who make up 84% of all workers. Below we provide general details of wages and benefits received by general workers, but do so in aggregate form in order to respect the confidentiality of this information for the companies concerned.<sup>74</sup>

Basic wages for general workers for a standard working week range from a minimum of GHS 325 (\$74) per month to a maximum of GHS 530 (\$121) per month. Payroll data indicate that the average basic gross salary for general workers in January 2017 was GHS 430 (\$98) per month.<sup>75</sup> For the lowest paid 10% of general workers, the average basic wage is GHS 365 (\$84) per month. For the highest paid 10% of general workers, the average basic wage is GHS 490 (\$112) per month.

In addition to basic wages, general workers receive a range of cash allowances and bonuses, as well as in-kind benefits, which qualify as partial payment of a living wage. The nature and cash value of each these benefits (production incentives, attendance bonus, annual bonus, rent subsidy, transport services, health care, food subsidies) is detailed in section 13 of this

<sup>73</sup> Grades are largely based on years of service, although workers may be re-graded for good performance.

<sup>74</sup> The two companies currently exporting bananas from Ghana are significantly different in terms of size and scope, with one being a multinational, vertically integrated company with production in several countries, and the other a much smaller business. The wages and benefits received by workers at each company also differs, as collective bargaining agreements are negotiated at the company level. As a result, audits to assess payment of living wages by banana companies in Ghana need to be done on a company by company basis.

<sup>75</sup> This figure is based on summing the average wage multiplied by the number of general workers for each company, and then dividing by the total number of general workers across both companies.

report. The average value of the benefits across all general workers in the banana industry is GHS 328 (\$75) per month.

Summing up these figures we arrive at an **average gross wage of GHS 758 (\$173) per month for general workers in the banana industry, including benefits**. The lowest paid 10% of general workers receive an average of GHS 693 (\$159) and the highest paid 10% of general workers receive an average of GHS 818 (\$187).

Mandatory deductions for SSNIT (5.5%), Provident Fund (5% or 6%) and trade union dues (2%) are calculated using the basic wage, with an average deduction of GHS 55 (\$13) per month (GHS 46 for the lowest 10% and GHS 62 for the highest 10%). Income tax is levied on the gross wage after mandatory deductions, including all cash bonuses and allowances except the annual bonus. The amount of income tax on the average gross wage including benefits is GHS 38 (\$9) per month (GHS 28 for the lowest 10% and GHS 48 for the highest 10%). This gives an **average net (take home) wage of GHS 665 (\$152) per month, including benefits** (GHS 618 for the lowest 10%, GHS 708 for the highest 10%).

As stated previously, these figures are all based on averaging the wages and benefits received by workers across banana export companies in Ghana. Since the actual wages, cash allowances and bonuses and in-kind benefits received by workers varies by company, future audits of banana companies in Ghana to assess whether a living wage is paid will need to be done on a company by company basis.

## 16. WAGE LADDER AND COMPARISON OF PREVAILING WAGES TO A LIVING WAGE

To get a sense of how our living wage estimate for the lower Volta River area compares with prevailing wages in the banana industry, and with other wage and economic indicators for Ghana, we prepared the wage ladder shown in Figure 5. We based our wage ladder on the following reference points for comparison:

- i. **Minimum wage:** The minimum wage in Ghana is GHS 8.80 per day (since 1<sup>st</sup> January 2017). Monthly minimum wages are based on 27 working days<sup>76</sup>, which equates to GHS 238 gross wage per month. This is an extremely low wage which, as we can see from the national poverty lines below, would not even allow people to meet their basic food needs.
- ii. **National poverty line wages:** Ghana uses two poverty lines: an upper one, below which an individual is considered to be unable to meet all their food and non-food needs, and a lower poverty line, below which an individual is considered unable to

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<sup>76</sup> We have used 27 days to calculate the weekly wage as this is in line with national law, but this is an unrealistic assumption for daily workers because it means that workers must work more than 6 days per week throughout the year. In addition, they would not have any annual leave, sick days, or public holidays off, unless they were paid for these, which seems unlikely for minimum wage workers.

- even meet their food needs.<sup>77</sup> The upper poverty line was set at GHS 1,314 per adult per year for 2013, and households below this level are referred to as living in poverty. The lower poverty line was set at GHS 792 per adult per year, and households below this level are referred to as living in extreme poverty.
- iii. To make a comparison with the living wage, we need to convert the poverty lines into wages by multiplying by the number of adult equivalents in our reference family size<sup>78</sup> and dividing by the number of full-time earners in family. This gives an upper poverty line net wage of GHS 233 per month, and a lower poverty line net wage of GHS 140 per month, in 2013. Adjusting for inflation to our study month<sup>79</sup>, this gives an upper poverty line wage of GHS 414 and lower poverty line wage of GHS 249 in February 2017.
  - iv. **World Bank international poverty line wages:** The World Bank uses \$3.10 PPP (purchasing power parity) per person per day as its absolute poverty line, and \$1.90 PPP as its extreme poverty line. The latest implied PPP conversion factor for Ghana is 1.38<sup>80</sup> which gives an absolute poverty line of GHS 4.28 per day, and an extreme poverty line of GHS 2.62 per day. Converting this into monthly wages for a family of 4.5 with 1.78 income earners, this equates to an absolute poverty line wage of GHS 329 per month, and an extreme poverty line wage of GHS 201 per month.
  - v. **Average wages by occupation:** The Ghana Living Standards Surveys report average monthly earnings for different occupations, including both cash and in-kind earnings. According to the GLSS 6, average monthly earnings for skilled agricultural and fishery workers was GHS 263. Earnings were substantially higher for men at GHS 346 compared to GHS 127 for women, perhaps indicating more full-time work for men. Taking into account inflation since 2012/2013, this would be equivalent to around GHS 467 gross income per month in February 2017, with men earning GHS 615 and women earning GHS 226. Monthly earnings were highest for legislators and managers at GHS 1,081, which is equivalent to around GHS 1,921 in February 2017. Plant machine operators and assemblers earned an average of GHS 662, equivalent to GHS 1,176 in 2017, and service and sales workers earned GHS 490, equivalent to GHS 871 in 2017.

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<sup>77</sup> Cooke *et al.* (2016).

<sup>78</sup> The number of adult equivalents used to calculate national poverty lines uses household composition data and a calorie-based scale which recognizes that babies and young children require fewer calories than adults (GSS, 2014). The average adult equivalent ratio for children aged 0 to 17 is 0.71 adults. This gives us a reference family size of 3.78 adult equivalents ((0.71 x 2.5 children) + 2 adults).

<sup>79</sup> We assume 4 years of inflation since the GLSS 6 survey took place, and used annual CPI inflation rates for 2013 to 2016 to calculate the February 2017 values. Inflation rates were sourced from the IMF's DataMapper (<http://www.imf.org/external/datamapper/PCPIPCH@WEO/GHA>), which gave rates of 11.7% for 2013, 15.5% for 2014, 17.2% for 2015, and 17.5% for 2016.

<sup>80</sup> The most recent official World Bank PPP conversion factor for Ghana was 1.23 for 2015 (<http://data.worldbank.org/indicator/PA.NUS.PRVT.PP?locations=GH>). Adjusting for inflation in Ghana and the United States (comparator country), this gives an implied PPP of 1.38 for December 2016 ([https://www.quandl.com/data/ODA/GHA\\_PPPEX-Ghana-Implied-PPP-Conversion-Rate-LCU-per-USD](https://www.quandl.com/data/ODA/GHA_PPPEX-Ghana-Implied-PPP-Conversion-Rate-LCU-per-USD)).

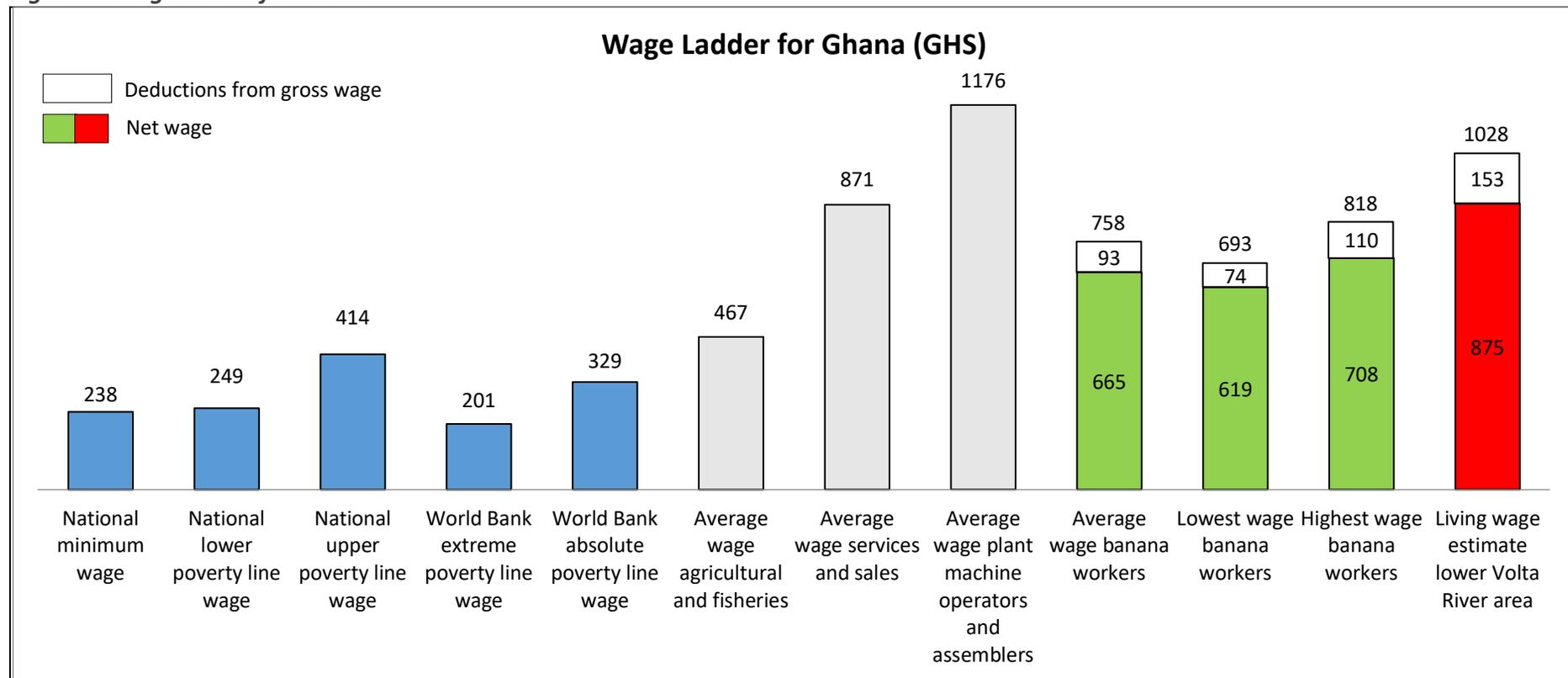
As we can see from the wage ladder, our living wage estimate for the lower Volta River area is higher than most of the reference points. It is over four times the minimum wage in Ghana and more than double the upper national poverty line wage. However, it is GHS 148 less than the average monthly earnings for plant machine operators and assemblers, and only GHS 157 more than average earnings for services and sales workers.

Our estimate of the average prevailing wage for general workers in the banana industry is GHS 758 (gross), taking into consideration the value of common cash allowances and bonuses and in-kind benefits. This is 74% of the living wage estimate, with a gap of GHS 270 (\$62) between the average wage and the living wage estimate. The lowest paid 10% of general workers are earning approximately 67% of the living wage, while the highest paid 10% are earning approximately 80% of the living wage.<sup>81</sup>

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<sup>81</sup> Again it should be noted that there may be general workers who are earning wages which are closer to the living wage, and others who are further away from it, as all figures represent averages across the industry rather than figures calculated on a company specific basis.

Figure 5: Wage ladder for Ghana



**Notes:** All wages except poverty line wages are gross wages, and workers might have to pay income tax on these wages (though not if they earn the minimum wage as it is below the threshold for income tax); National poverty line wages are based on lower and upper poverty lines for 2013 adjusted for inflation to 2017; World Bank poverty line wages are based on the extreme poverty line of \$1.90 PPP per day and absolute poverty line of \$3.10 PPP per day, using the PPP conversion factor for Ghana adjusted for inflation to end of 2016; Occupational wages are based on monthly earnings reported in the GLSS 6 (2012/2013 data) and adjusted for inflation to 2017; Wages for banana workers are averages for general workers and are inclusive of typical cash allowances and bonuses and in-kind benefits; Living wage estimate is the wage workers need to earn for basic but decent life, assuming a family size of 2 adults and 2.5 children, with 1.78 full-time adults earning income in the family.

## 17. CONCLUSIONS

Our estimate of a living wage for the lower Volta River area of Ghana for February 2017 is GHS 1,028 (\$235) per month, or GHS 47.45 (\$10.86) per workday<sup>82</sup>. This is the gross wage required for a basic but decent standard of living in peri-urban areas, before deductions for income tax and other mandatory deductions such as SSNIT, Provident Fund and trade union dues. We estimate that workers would need a net cash wage (take home pay) of GHS 875 (\$200) per month for an average family of 2 adults and 2.5 children in the lower Volta River area, assuming that 1.78 adults in the family are earning income on a full-time basis.

At the time of the study, general workers, who account for 84% of all workers on banana plantations in Ghana, earned an average gross cash wage of GHS 758 (\$173) per month for a standard 40 hour working week, taking into account the average value of cash allowances and bonuses (production incentives, attendance bonus, annual bonus, rent subsidy) and the cash equivalent value of in-kind benefits (transport, health care, subsidized lunch).<sup>83</sup> This equates to 74% of the living wage estimate, with a gap of GHS 270 (\$62) per month. The highest paid 10% of general workers in the sector earned 80% of the living wage, while the lowest paid 10% earned 67% of the living wage.

It must be emphasized that our living wage estimate is based on conservative assumptions, taking the local context into consideration and using a well thought through and rigorous methodology. Our calculations of living costs are based on high quality national and international statistics and academic publications, combined with information gathered locally from management and workers at banana plantations and from food sellers, school officials, health care workers, transport providers, and other members of the communities where workers live. We allow for a healthy but low cost diet using the kinds of foods workers already eat, with nearly 50% of calories coming from maize and cassava. We allow for only one serving of fresh meat or fish a week, with dried, salted or smoked fish on other days, and other protein coming from low cost sources such as beans and groundnuts. Our local standard for decent housing allows shared use of toilets and piped water with other households, and includes covered porches in the calculation of living space in recognition that living space is at a premium in Ghana. We also assume workers send their children to state schools not private schools, and that all family members are covered by the national health insurance scheme.

While our living wage estimate is over four times the national minimum wage (GHS 238 per month), and more than double the national poverty line wage (GHS 414), these wages are clearly insufficient for any degree of decency in Southern Ghana, where costs have been rising

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<sup>82</sup> Based on five workdays per week, which is a standard working week for banana workers in Ghana, excluding overtime.

<sup>83</sup> As stated previously, this is the average wage across all general workers in the banana sector, based on payroll data from the two export banana companies in Ghana. Data is aggregated to respect the confidentiality and sensitivity of wage information. Company specific audits would be needed in order to assess the extent to which wages paid by either company meet our living wage estimate.

with economic development and urbanization over the past two decades. The fact that our living wage is less than the average earnings of machine operators and assemblers (GHS 1,176), and relatively similar to average earnings for people in sales and services (GHS 871), suggests that it is not unreasonable for a peri-urban area only a few hours from the capital city.

Given the export banana industry provides full time, stable employment throughout the year, and is 100% unionized, with good industrial relations between the banana companies and the relevant trade unions, it is somewhat surprising that there is a significant gap between prevailing wages and our living wage. However, the living conditions of general workers we visited during the fieldwork indicate that what they are currently earning is insufficient for a basic but decent standard of living. Many live with their families in just one or two small rooms, hanging up sheets to separate living and sleeping areas. They often use public latrines which are far from their houses and/or in a poor condition. Although rents paid are relatively low, water and electricity costs have increased substantially in recent years and equate to around 10% of the average take home pay. Likewise, although state education is in theory free, households are spending over 10% of their income on education related costs, including school supplies, uniforms, fees for extra classes and contributions to school costs. Although many workers supplement their wage income with other economic activities, including farming, fishing and petty trade, the concept of a living wage is that this should not be necessary in order to afford a decent standard of living.

The gap between prevailing wages and our living wage cannot be attributed to high rates of inflation in Ghana, averaging 17% since 1998, since annual wage increments negotiated between the unions and banana companies have been at least as high as inflation in recent years. More probably they reflect a combination of low wages in the agricultural sector generally, and intense competition in the global banana industry which suppresses prices and makes it more difficult for producers to increase wages.<sup>84</sup> For wages in the Ghanaian banana sector to increase, all actors in banana value chains need to acknowledge the root causes of low wages, and work together to find sustainable solutions. This includes retailers, importers and distributors, producers, trade unions, the Government of Ghana, and authorities in importing countries. The construction of high quality, low cost housing for workers by the government in partnership with one of the banana companies, with funding from the EU, is a good example of one such solution. Our hope is that this report, and our estimate of a living wage in the banana producing region of Ghana, will help stimulate the search for others.

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<sup>84</sup> For a discussion of price pressures in European markets and their impact along banana value chains, see: BASIC (2015), [http://www.makefruitfair.org/wp-content/uploads/2015/11/banana\\_value\\_chain\\_research\\_FINAL\\_WEB.pdf](http://www.makefruitfair.org/wp-content/uploads/2015/11/banana_value_chain_research_FINAL_WEB.pdf). The World Banana Forum (<http://www.fao.org/world-banana-forum/en/>), a multi-stakeholder initiative coordinated by FAO, has also highlighted challenges related to market competition and the distribution of value in banana value chains.

## BIBLIOGRAPHY

- Agyepong, I., Abankwah, D., Abroso, A., Chun, C., Dodoo, J., Lee, S., Mensah, S., Musah, M., Twum, A., Oh, J., Park, J., Yang, D., Yoon, K., Otoo, N., and Asenso-Boadi, F. (2016). **The “Universal” in UHC and Ghana’s National Health Insurance Scheme: policy and implementation challenges and dilemmas of a lower middle income country.** *BMC Health Services Research*, 16:504:  
<https://bmchealthservres.biomedcentral.com/articles/10.1186/s12913-016-1758-y>.
- Anker, R. and Anker, M. (2017). **Living wages around the world: Manual for measurement.** Edward Elgar, London: <http://www.e-elgar.com/shop/living-wages-around-the-world>.
- Anker, R. (2011a). **Estimating a living wage: A methodological review.** Conditions of work and employment series, No 29. ILO, Geneva.
- Anker, R. (2011b). **Engel’s law around the world: 150 years later.** Working Paper Series 247. Political Economy Research Institute, University of Massachusetts, Amherst.
- Anker, R (2006a). **Living wages around the world: A new methodology and internationally comparable estimates.** *International Labour Review*, 145 (4).
- Anker, R. (2006b). **Poverty lines around the world: A new methodology and internationally comparable estimates.** *International Labour Review*, 145 (4).
- BASIC (2015). **Banana value chains in Europe and the consequences of Unfair Trading Practices:** [http://www.makefruitfair.org/wp-content/uploads/2015/11/banana\\_value\\_chain\\_research\\_FINAL\\_WEB.pdf](http://www.makefruitfair.org/wp-content/uploads/2015/11/banana_value_chain_research_FINAL_WEB.pdf).
- Cooke, E., Hague, S., and McKay, A. (2016). **The Ghana Poverty and Inequality Report.** ASHASI, UNICEF, University of Sussex:  
[https://www.unicef.org/ghana/Ghana\\_Poverty\\_and\\_Inequality\\_Analysis\\_FINAL\\_Match\\_2016\(1\).pdf](https://www.unicef.org/ghana/Ghana_Poverty_and_Inequality_Analysis_FINAL_Match_2016(1).pdf).
- Food and Agriculture Organization (2009). **Nutrition Country Profile, Republic of Ghana:** <ftp://ftp.fao.org/ag/agn/nutrition/ncp/gha.pdf>.
- Food and Agriculture Organization (2012). **West African Food Composition Table:** <http://www.fao.org/documents/card/en/c/238ce5e9-acd5-5cb2-8442-6498506aee1c/>.
- Food and Agriculture Organization (2014). **Banana Market Review and Banana Statistics 2012-2013:** <http://www.fao.org/docrep/019/i3627e/i3627e.pdf>.
- Frimpong, S. (2013).** Urbanization and Pattern of Urban Food Consumption in Ashanti Region, Ghana: Implications for Food Security. *Journal of Economics and Sustainable Development*, 4 (9):  
<http://iiste.org/Journals/index.php/JEDS/article/view/6487>.

- Ghana Ministry of Education (2015a).** Report on Basic Statistics and Planning Parameters for Basic Education in Ghana 2014/2015:  
<http://www.moe.gov.gh/emis/EMIS%20BASIC%20EDUCATION%20DATA/Basic/2014-2015/Basic%20Report%202014-2015%20No.1.pdf>.
- Ghana Ministry of Education (2015b).** Report on Basic Statistics and Planning Parameters for Senior High Schools in Ghana 2014/2015:  
<http://www.moe.gov.gh/emis/EMIS%20BASIC%20EDUCATION%20DATA/Secondary/2014-2015/SHS%20Report%202014-2015%20No.1.pdf>.
- Ghana Ministry of Health (2009). **Dietary and Physical Activity Guidelines for Ghana:**  
[http://rhnp.gov.gh/admindox/DIETARY%20AND%20PHYSICAL%20ACTIVITY%20GUIDELINES%20FOR%20GHANA%20Final%20draft%202\\_akdits%20\(2\)\\_5Feb10\[1\]\[1\].pdf](http://rhnp.gov.gh/admindox/DIETARY%20AND%20PHYSICAL%20ACTIVITY%20GUIDELINES%20FOR%20GHANA%20Final%20draft%202_akdits%20(2)_5Feb10[1][1].pdf).
- Ghana Ministry of Water Resources, Works and Housing (2015). **National Housing Policy:**  
<http://www.mwrwh.gov.gh/index.php/publications/category/13-publications>.
- Ghana Statistical Service (2011). **Ghana Multiple Indicator Cluster Survey with an enhanced Malaria Module and Biomarker:**  
[https://www.unicef.org/ghana/Ghana\\_MICS\\_Final.pdf](https://www.unicef.org/ghana/Ghana_MICS_Final.pdf)
- Ghana Statistical Service (2013). **2010 Population and Housing Census, National Analytical Report:**  
[http://www.statsghana.gov.gh/docfiles/2010phc/National\\_Analytical\\_Report.pdf](http://www.statsghana.gov.gh/docfiles/2010phc/National_Analytical_Report.pdf).
- Ghana Statistical Service (2014a). **Poverty Profile in Ghana (2005 - 2013):**  
[http://www.statsghana.gov.gh/docfiles/glss6/GLSS6\\_Poverty%20Profile%20in%20Ghana.pdf](http://www.statsghana.gov.gh/docfiles/glss6/GLSS6_Poverty%20Profile%20in%20Ghana.pdf).
- Ghana Statistical Service (2014b). **Ghana Living Standards Survey Round 6 (GLSS 6), Main Report:** <http://www.statsghana.gov.gh/glss6.html>.
- Ghana Statistical Service (2015). **Ghana Poverty Mapping Report:**  
<http://www.statsghana.gov.gh/docfiles/publications/POVERTY%20MAP%20FOR%20GHANA-05102015.pdf>
- Ghana Statistical Service, Ghana Health Service, and The DHS Program (ICF International) (2015). **Ghana Demographic and Health Survey 2014:**  
<https://dhsprogram.com/pubs/pdf/FR307/FR307.pdf>.
- Gilbert, C., Christiaensen, L. and Kaminski, J. (2016). **Price seasonality in Africa: Measurement and extent.** Policy Research Working Paper 7539. World Bank Group, Africa Region:  
<http://documents.worldbank.org/curated/en/498741467998767669/pdf/WPS7539.pdf>.
- Osei-Asare, Y. B. (2013). **The effects of food price increases on urban household food commodities expenditures in Ghana.** *Journal of Economics and Sustainable*

- Development*, 4 (6):  
<http://www.iiste.org/Journals/index.php/JEDS/article/viewFile/5225/11059>.
- National Development Planning Commission and United Nations Development Programme (2015). **Ghana Millennium Development Goals 2015 Report**:  
[http://www.gh.undp.org/content/dam/ghana/docs/Doc/Inclgro/UNDP\\_GH\\_2015%20Ghana%20MDGs%20Report.pdf](http://www.gh.undp.org/content/dam/ghana/docs/Doc/Inclgro/UNDP_GH_2015%20Ghana%20MDGs%20Report.pdf).
- Nti, C. (2008). **Household dietary practices and family nutritional status in rural Ghana**. *Nutrition Research and Practice*, 2 (1), 35-40:  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2815306/>.
- Subramanian, S. V.; Özaltın, E.; Finlay, J. E. (2011). **Height of Nations: A Socioeconomic Analysis of Cohort Differences and Patterns among Women in 54 Low- to Middle-Income Countries**. *Public Library of Science*, 6 (4).
- Van Rijn, F., Judge, L., Fort, R., Koster, T., Waarts, Y. and Ruben, R. (2016). **Fairtrade certification in the banana hired labour sector**. LEI Wageningen UR, The Netherlands: [https://www.wur.nl/upload\\_mm/d/e/9/8d34a466-9c6e-4853-a627-47be4753a256\\_2015-056%20Rijn\\_final.pdf](https://www.wur.nl/upload_mm/d/e/9/8d34a466-9c6e-4853-a627-47be4753a256_2015-056%20Rijn_final.pdf).
- UNESCO (2015). **Education for All 2015 National Review: Ghana**:  
<http://unesdoc.unesco.org/images/0023/002314/231429e.pdf>.
- UN-Habitat (2011). **Ghana Housing Profile**: <https://unhabitat.org/books/ghana-housing-profile/>.
- World Health Organization (2006). **Fuel for life: Housing energy and health**:  
<http://www.who.int/indoorair/publications/fuelforlife/en/>.
- World Health Organization (2015), **Ghana: WHO statistical profile**:  
<http://www.who.int/gho/countries/gha.pdf?ua=1>.