



Living Wage Report

Rural Guatemala

Central Departments:
Context Provided in the Coffee Sector
September 2016

By: Koen Voorend, Richard Anker and Martha Anker



Photo courtesy of – Koen Voorend

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|---|----|
| EXECUTIVE SUMMARY | 3 |
| ABOUT THE AUTHORS | 4 |
| ACKNOWLEDGEMENTS | 5 |
| SECTION I: INTRODUCTION | 6 |
| 1. Background | 6 |
| 2. Living wage estimate | 7 |
| 3. Context | 7 |
| 3.1. Guatemala and its economy | 7 |
| 3.2. The locations and methodological strategy for this study | 8 |
| 3.3. The Guatemalan coffee sector | 13 |
| 3.4. Methodological strategy on the ground | 16 |
| 4. Concept and definition of a living wage | 18 |
| 5. How a living wage is estimated | 19 |
| SECTION II: COST OF A BASIC BUT DECENT LIFE FOR A WORKER AND HIS OR HER FAMILY | 21 |
| 6. Food costs | 21 |
| 6.1 General principles of model diet | 21 |
| 6.2 Model diet for rural central Guatemala | 21 |
| 6.3 Food prices | 27 |
| 7. Housing costs | 28 |
| 7.1 Standard for basic acceptable local housing | 30 |
| 7.2 Rent for basic acceptable housing | 31 |
| 8. Non-food and non-housing costs | 35 |
| 9. Post checks of non-food and non-housing costs | 38 |
| 9.1 Health care post check | 39 |
| 9.2 Education post check | 41 |
| 9.3 Transportation post check | 43 |
| 9.4 Overview of NFNH costs | 45 |
| 10. Provision for unexpected events to ensure sustainability | 46 |
| SECTION III: LIVING WAGE FOR WORKERS | 48 |
| 11. Family size needing to be supported by living wage | 48 |
| 12. Number of full-time equivalent workers in family providing support | 49 |
| 13. Take home pay required and taking taxes and mandatory deductions from pay into account | 50 |
| SECTION IV: ESTIMATING GAPS BETWEEN LIVING WAGE AND PREVAILING WAGES | 52 |
| 14. Prevailing wages in Coffee Sector | 52 |
| 14.1 Basic wage, cash allowances and bonuses, and overtime pay | 52 |

| | |
|--|-----------|
| 14.2 In-kind benefits as partial payment of living wage..... | 53 |
| 15. Living wage in context and compared to other wages..... | 53 |
| 15.1 Wage ladder | 55 |
| 15.2 Wage trends | 56 |
| 16. Conclusions | 58 |
| REFERENCES | 63 |
| ANNEXES | 65 |

EXECUTIVE SUMMARY

This report estimates a living wage for Guatemala for September 2016 for rural areas of the Central Departments, focusing on agriculture, and specifically (although not exclusively) on the coffee sector. It was commissioned by UTZ, a member of The Global Living Wage Coalition, made up of 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 and Martha Anker. The study uses the Anker methodology (Anker and Anker, 2017), adopted by the Global Living Wage Coalition, that builds and improves on their earlier work on living wages published by ILO (see Anker, 2006a, 2006b, 2011). This methodology has been used so far to estimate living wage benchmarks for urban and rural areas in more than 25 locations globally, with many more studies underway.

This living wage study calculates the cost of a simple, but decent life, including a model diet that complies with WHO nutrition standards, and a housing standard that meets minimum international standards adapted for rural Guatemala. This report estimates the gross living wage for central rural Guatemala for September 2016 to be Quetzal (GTQ) 2,689 (US\$ 359) per month. This living wage estimate is considerably higher than average prevailing wages of year around formal sector workers in the rural coffee sector of Guatemala's Central Departments (around 60% higher than the closest estimate of prevailing wages) and the national poverty line wage (by around 50%). On the other hand, the living wage estimated is similar to government's monthly minimum wage for agriculture that assumes 30.42 workdays per month and only about 21% more than the minimum wage if one assumes 24 work days a month. However, most agricultural workers, including in the coffee sector, are paid on a piece rate basis and earn less than the minimum wage. The paper calls for making living wage an important objective for the coffee sector with the entire value chain participating in efforts to raise wages.

ABOUT THE AUTHORS

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Living Wage Estimates

Rural Guatemala

Central Valley Area

SECTION I

INTRODUCTION

1. BACKGROUND

This report estimates a living wage for rural areas in the Central Departments of Guatemala. It is part of a series of living wage reports for the Global Living Wage Coalition (GLWC) using a new methodology to estimate living wages in rural and urban areas around the world. It focuses on the central departments of Guatemala, because they are important departments for various agricultural products, particularly coffee, which is used as a sector for comparison to our living wage estimate. It cannot be stressed enough, however, that the Living Wage estimate is for the region and not exclusively for the coffee sector.

The living wage estimate in this report is based on a study of living costs in rural Central Guatemala. The study uses the methodology developed by Anker and Anker (2017). The methodology has gained wide-spread acceptance and has been used to estimate living wages in rural, urban and semi-urban areas around the world with 21 benchmarks in 11 countries already published by the Global Living Wage Coalition (GLWC) with additional reports underway. These studies have been commissioned by members of the Global Living Wage Coalition 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, with the shared mission to see continuous improvements in workers' wages, in the farms, factories and supply chains participating in their respective certification systems and beyond, and 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 a Living Wage.

The Global Living Wage Coalition sees the calculation and release of Living Wage benchmarks as the first step in a long-term process. The Coalition does not believe the benchmarks will or should supplant collective bargaining rights, but should serve as a replicable tool to support social dialogue between workers and employers. For many developing country producers, wages form an important part of the costs of production.

The present study was financially supported by UTZ. UTZ also provided logistical support for the fieldwork. The work of The Global Living Wage Coalition, including activities leading to this benchmark, was further supported by the Ministry of Foreign Affairs of the Netherlands, Directorate-General for International Cooperation (DGIS).

2. LIVING WAGE ESTIMATE

The estimate of a gross living wage for central rural Guatemala for November 2016 is Quetzal (GTQ) 2,689 per month (US\$ 359, using an exchange rate of 7.5 GTQ=1 US\$). The gross cash living wage per month needed after taking into consideration value of common in-kind benefits and the legally required productivity bonus of GTQ 250 (US\$ 33) per month (which is not taxed) is GTQ 2,439 (US\$ 325). Note that both of these gross living wage benchmarks include GTQ 118 (US\$16) for mandatory payroll deductions for the country's social security institute, the *Instituto Guatemalteco de Seguridad Social* (IGSS). These living wages were estimated for a family of 5 members, with 1.53 full-time workers per family, as is explained later in this report. Our net living wage (that is, take home pay required) is GTQ 2,572 (US\$ 343). Our gross living wage is slightly lower than government's monthly minimum wage for agriculture that assumes 30.42 workdays per month and only about 21% more than the minimum wage if one assumes 24 work days a month. It is between 60% and 100% higher than typical prevailing wages in the agricultural sector, including coffee, in the rural areas of Central Guatemala.

Measuring prevailing wages is quite difficult in Guatemala's agricultural sector because of how workers are typically employed and paid. Most workers are employed temporarily on a task basis, or on a piece rate basis, and do not work in one agricultural sector (e.g. coffee) the entire year. Nor do these piece rate workers work 30 days in the month, and therefore, even if they are paid the daily minimum wage on the days they work, their total earnings would be less than the government monthly minimum wage which assumes 30 days per month.

All details on the specifics of what costs are covered by our living wage estimates, and how that equates to a basic but decent standard of living as understood from international norms and local conditions, are provided in the sections below. In the following section, a brief description of the context and methodology, as well as the fieldwork strategy is provided. It is intended that this report present a transparent look at the inputs into the living wage estimate provided here, so that action on wages may be bolstered by an understanding of what goes into a proper normative and yet location-specific living wage estimate.

3. CONTEXT

3.1. Guatemala and its economy

Guatemala is a 108.9 square km country in Central America with 16.5 million inhabitants, of which just over half (52%) live in rural areas (World Bank, 2016). It is a multicultural, multi-

ethnic and diverse country with considerable climatic variety, ranked 128th on the Human Development Index, as a medium human development country. It is classified as a middle-income country (WB, 2016), with a per capita Gross Domestic Product of US\$ 7,063 in 2013 (HDR, 2015. 2011 PPP US\$). However, it is also one of the world's most unequal societies, with a Gini coefficient of income distribution of 0.55 in 2015 (CEPAL, 2015) and the lowest 20% of the population earns only 4.5% of national income (WB, 2016). Indeed, poverty is widespread with estimates around 59% of the population under the national poverty line in 2015 (WB, 2016), a slight increase from 56% in 2000. Also, life expectancy at 71.8 years is low compared to the other countries in the Central American region (e.g. Costa Rica: 79.4, Nicaragua: 74.9; Honduras: 73.1 and El Salvador: 73 years).

The country's economy has experienced slow but steady growth over the last five years, ranging between 3% and 4% per year above inflation. Inflation is currently relatively low at around 4.3% (2016 average) and has been quite stable over the 2010-2015 period, oscillating between 3% and 6%. Agriculture consists of approximately 10-13% of GDP (Guatemala Central Bank, 2016), but was the most important sector in terms of employment, providing work to 32% of Guatemala's 6 million workers 2014 (INE-ENEI, 2014). Guatemala's economy is highly informal, as 69.3% of the working population is employed in the informal sector. In rural areas, the informal sector employed 85% of workers in 2014 (INE-ENEI, 2014). Agriculture is by far the sector that absorbs the highest share of informal workers (42% of all informal workers). While unemployment was low in 2014, both nationally (2.9%) and in rural areas (1.4%), the underemployment rate (% of workers who works less than 40-hours per week) was considerably higher (42% in urban areas, 45% in rural areas). About 32% of the total number of underemployed worked in agriculture. Alarmingly, over 10% of children under age 15 participate in the workforce, a rate that is higher in rural areas (15%), strongly mediated by ethnicity (about 60% of child laborers are indigenous in rural areas), and 65% of child labor takes place in agriculture (INE-ENEI, 2014). Another important dimension of the Guatemalan economy is its dependency on emigration and remittances, especially to the United States, as shown by the high share of remittances in GDP. Remittances generated 10% of Guatemala's GDP in 2013.

3.2. The locations and methodological strategy for this study

Our living wage estimate covers coffee producing areas of Central Guatemala. The methodological strategy for this study consisted of three stages, all of which were directly conditioned by the Anker methodology for Living Wage benchmarks. The first stage involved use of secondary data, mainly from national household surveys, the important source being the National Survey of Life Conditions (INE - Encuesta Nacional de Condiciones de Vida – ENCOVI, 2014). As is common for Anker methodology Living Wage studies, secondary data was used to analyze the context and hypotheses for fieldwork, and to provide important input for the calculations of several of the elements that compose the Living Wage estimate, such as household size, composition of household expenditure, benchmarks for model diet, adequate housing standard, and non-food, non-housing costs.

The second stage involved fieldwork in Guatemala, to gather data on the model diet and its cost, the cost of decent housing, some non-food non-housing expenditures (like healthcare and education) and information on the prevailing wage. Fieldwork was conducted in early September 2016, with a team of three, and with support from UTZ the coordinating standards organization.

It was decided to focus on the coffee sector for context. This strategy allowed us to approach fieldwork sites through visits to farms, their administration and workers, who acted as important catalysts for access to information from the regions of interest. That is, there was no need to ensure a representative sample of farms, because the study does not aim to (only) study conditions on coffee farms, but rather to ensure access to people, shops, markets, houses etc., to understand the cost structure of life in the regions we visited for this study. As such, it was decided to focus not on one specific location in Guatemala, but to gather necessary information for several locations in the Central Departments during the fieldwork period. Information was collected in five diverse rural coffee producing locations, all within a range of about 150 km of Guatemala City. The choice of location, besides the need for locations to be rural areas in the central part of Guatemala, was determined by the contacts that the research team could make with farmers to get their cooperation. All farm visits and interviews occurred with the verbal consent of the administration, or the interviewee.

These contacts were made through UTZ, Anacafé and personal contacts. In total, five locations (see Table 1) were visited with primary data collected in each of these locations.

Table 1. Locations in Central Guatemala where primary data were collected on food prices, housing costs, and cost of health care, transport and children’s education for Living Wage benchmark fieldwork

| Location | Department | Coffee Region |
|------------------------------------|---------------|---------------|
| Ciudad Vieja, Antigua | Antigua | 3 |
| La Montañita, Sansare | El Progreso | 3 |
| Pueblo Nuevo Viñas | Santa Rosa | 4 |
| San Juan La Laguna, Atitlán | Sacatepéquez | 2 |
| Yepocapa, Acatenango | Chimaltenango | 3 |

Source: The authors

Yepocapa, also known as San Pedro Yepocapa, is a mid-sized rural town of about 35,000 inhabitants in the Chimaltenango Department. Located at 90 km from Guatemala City, it is about a three-hour drive to the west of Guatemala City. The town is located at the bottom of the Volcán del Fuego, at about 1,400 meters above sea-level, and coffee is grown on the slopes of the mountains around. The town has regular open-air markets on one of its main streets in the center, where also many shops and local vendors are concentrated, as well as the schools and clinics.

Figure 1. Yepocapa, Acatenango



Source: The authors

Sansare is a small rural town of about 11,000 inhabitants, 71km to the north east of Guatemala City. It is located in the El Progreso Department at 790 meters above sea level. The small center comprises of a main square with a few streets around it. This is where local vendors and small shops are concentrated. A 20-minute drive up into the adjacent mountains,

the small community of La Montañita is located. This comprises of a main dirt road winding upwards, with several houses located on both sides of the road. This is where coffee is grown, alongside black beans and some other crops.

Figure 2. La Montañita, Sansare



Source: The authors

San Juan La Laguna is a small town of just under 15,000 inhabitants located on the west end of the southern shore of the scenic Atitlan Lake, in the Sololá department. It is about 200 km west from Guatemala City, and 1560 meters above sea-level. To get there, one must travel to Lake Atitlan and either travel west around the shore, or take a boat taxi from Panajachel, the Lake's most visited town and transport hub. The picturesque center of the neat and orderly San Juan La Laguna comprises of local shops and a small market, but is increasingly influenced by tourist activity, with small souvenir shops being a common sight. Coffee production is very common on the steep slopes of the mountains surrounding the town.

Ciudad Vieja is a peri-urban colonial town of about 30,000 inhabitants in the Sacatepéquez Department, some 40 km south west of Guatemala City, at 1550 meters above sea-level. The town has a slightly more urban feel, with a central square and several streets with a lot of economic activity. The town is surrounded by agricultural area. For example, some of the

medium sized coffee plantations visited in the region were between Antigua and Ciudad Vieja.

Figure 3. Researcher in Ciudad Vieja, Antigua

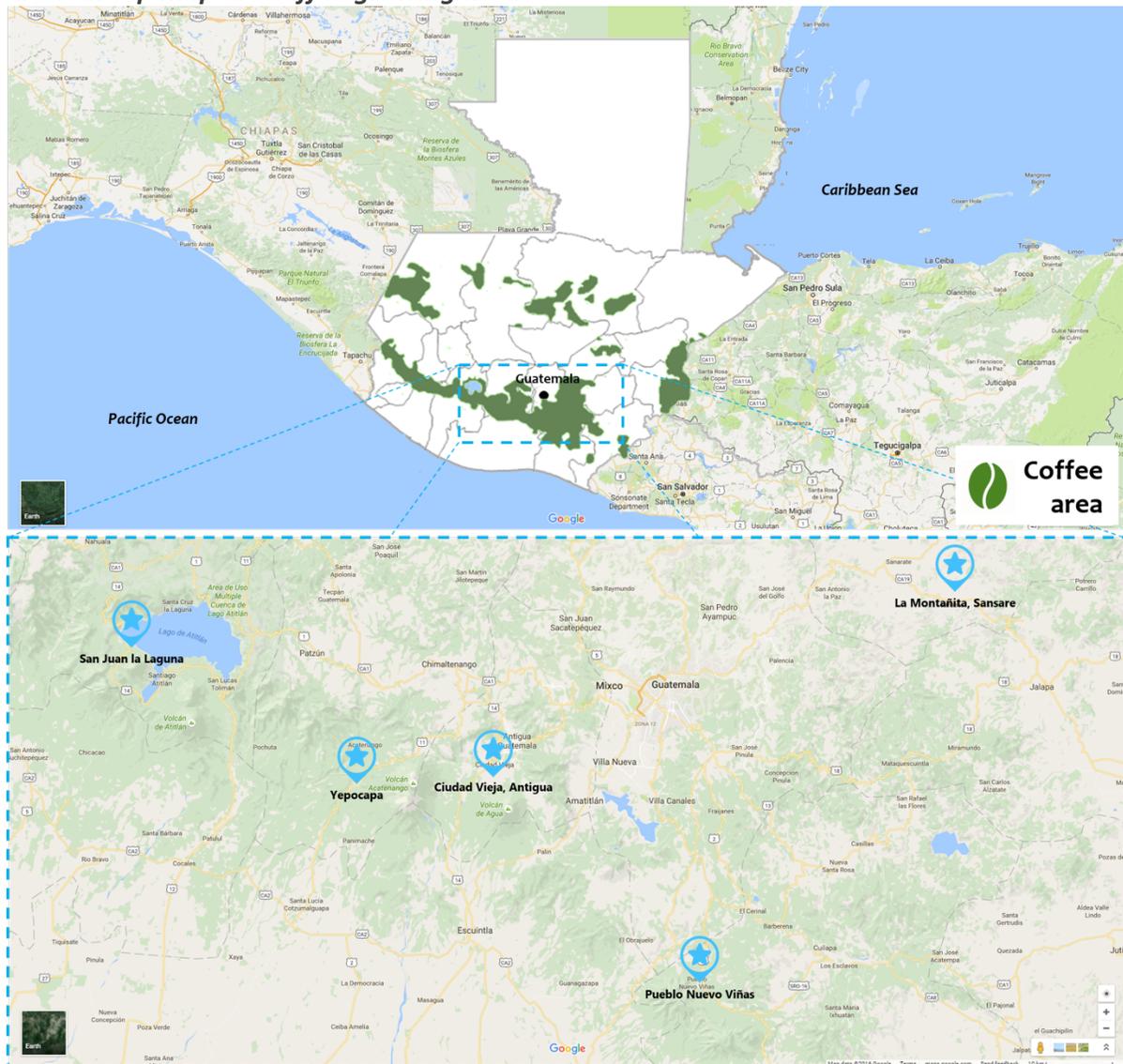


Source: The authors

Finally, Pueblo Nuevo Viñas is a town with a population of about 20,000 that lies 60 km south of Guatemala City, in the Santa Rosa Department. The town has a rural feel and seemed considerably poorer than some of the other locations. The town lies at 1270 meters above sea-level, and has a warmer climate than the other locations. Coffee plantations (and other crops) surrounded the town, but especially in the hillier areas around town.

All these locations are in important coffee producing regions in Central Guatemala. Following the National Association of Coffee Producers' administrative classification of seven coffee producing regions, the chosen locations are situated in three of these (Region 2, Region 3 and Region 4, see Section 3.3). In total, regions 2, 3 and 4 represent approximately 56% of total coffee production in Guatemala, and the five specific departments in which fieldwork was conducted make up for 39% of total production. That is, the locations used for this study are at the center of Guatemala's central coffee production. Also, as will be indicated throughout the rest of this document, the variability of food and housing prices and prevailing wages are quite limited, despite heterogeneity in climate, culture, ethnicity etc., giving the Living Wage benchmark in this report a reasonable level of robustness for the rural central areas of Guatemala. For the east and west regions of Guatemala, where coffee production is also important, some caution is necessary regarding applicability of our living wage estimate.

Figure 4. Coffee production regions in Guatemala, and fieldwork locations - Darker green areas in top map are coffee growing areas



Source: The authors with Google Maps.

3.3. The Guatemalan coffee sector

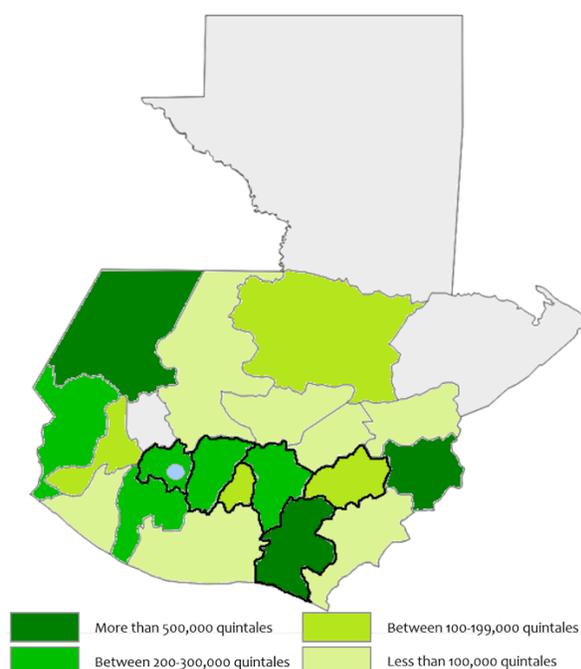
To place our living wage estimate in perspective, we compare it to one of Guatemala’s most important agricultural sectors: Coffee. Guatemala grows some of the world’s highest quality coffee (Danwatch, 2016). In 2015, Guatemala exported over 3.5 million 60kg bags of coffee, making it the 8th largest producer in the world (Anacafé, 2015). In the aftermath of coffee price crises in 1993 and 2001, Guatemala’s coffee economy changed drastically (Fischer and Victor, 2014: 156). In this period, the international price of “the commodity-grade washed”

Arabica coffee (*idem*), grown on Guatemala’s lower-altitude *fincas*, collapsed and this forced coffee growers to find other sources of income (*idem*). The country’s coffee industry moved “its production up into the higher altitudes where the high-quality [...] coffee would grow” (Fischer and Victor, 2014: 156), on the same high slopes where the poor, indigenous populations were living. This changed the landscape of Guatemala’s coffee industry. Where before coffee production was highly concentrated among large-scale producers, the last decades saw a proliferation of small coffee producers (at least 50,000 new growers in the last two decades, thereby doubling the number of coffee producers) (Fischer and Victor, 2014). As a response to the crises, and ensuing poverty in rural areas, the coffee sector (through Guatemala’s National Coffee Producer Association - Anacafé) focused its attention on achieving quality increases and price premiums, rather than increases in production, thereby steadily increasing profit rates since the early 2000s (Barth, 2009). Table 2 and Figure 5 report data on the volume of coffee production by departments for 2009. This is measured in number of *quintales*, which is the standard measure for coffee production in Guatemala. One *quintal* equals 100 pounds, or approximately 45.4 kg.

Table 2. Coffee production per department, 2009
(in bold departments of location for fieldwork)

| Department | Volume in quintales | % of total |
|----------------------|---------------------|-------------|
| Santa Rosa | 1,227,821 | 26.5 |
| Chiquimula | 776,130 | 16.7 |
| Huehuetenango | 593,616 | 12.8 |
| Suchitepéquez | 246,210 | 5.3 |
| Guatemala | 223,290 | 4.8 |
| San Marcos | 213,594 | 4.6 |
| Chimaltenango | 211,911 | 4.6 |
| Sololá | 201,776 | 4.4 |
| Alta Verapaz | 195,935 | 4.2 |
| Jalapa | 191,096 | 4.1 |
| Sacatepéquez | 135,617 | 2.9 |
| Quiché | 82,923 | 1.8 |
| Quetzaltenango | 80,785 | 1.7 |
| Jutiapa | 79,258 | 1.7 |
| Escuintla | 63,825 | 1.4 |
| Zacapa | 52,345 | 1.1 |
| El Progreso | 24,770 | 0.5 |
| Retalhuleu | 19,889 | 0.4 |
| Baja Verapaz | 13,251 | 0.3 |
| Total | 4,364,042 | 100 |

Figure 5. Volume of coffee production in Guatemala
(departments of locations for fieldwork are outlined in bold)



Source: The authors’ calculations based on Ministerio de Agricultura Ganadería y Alimentación (2013).

For administrative purposes, Guatemala's coffee production is divided into regions, instead of departments, which all produce Arabica coffee, at varying altitudes above 1,300 meters above sea-level. Unfortunately, data, such as the number of producers, is not always provided by departments, but by regions. Table 3 provides information on coffee production (2009), and the number of coffee farmers (around 2012) and the average number of *quintales* per farmer (as a proxy for the average size of the farm) by coffee region.

Table 3. Coffee production, number of producers and average quintal per producer, 2013 (in bold regions and departments of location for fieldwork)

| Region | Departments | Production volume in quintales* | | Number of coffee producers | | Average no. of quintales per producer |
|--------------|---|---------------------------------|------------|----------------------------|------------|---------------------------------------|
| | | Number | % | Number | % | |
| 1 | San Marcos y Quetzaltenango | 294,379 | 6.4 | 11,843 | 13.2 | 24.9 |
| 2 | Retalhuleu, Suchitepéquez y Sololá | 467,875 | 10.1 | 10,208 | 11.3 | 45.8 |
| 3 | Escuintla, Sacatepéquez, Chimaltenango, Guatemala, El Progreso | 659,413 | 14.2 | 12,072 | 13.4 | 54.6 |
| 4 | Santa Rosa , Jalapa y Jutiapa | 1,498,175 | 32.3 | 19,299 | 21.4 | 77.6 |
| 5 | Huehuetenango y Quiché | 676,539 | 14.6 | 14,075 | 15.6 | 48.1 |
| 6 | Alta Verapaz, Baja Verapaz, parte de Izabal | 209,186 | 4.5 | 16,707 | 18.6 | 12.5 |
| 7 | Zacapa, Chiquimula, parte de Izaba | 828,475 | 17.9 | 5,796 | 6.4 | 142.9 |
| Total | | 4,634,042 | 100 | 90,000 | 100 | 51.5 |

Note: * Data for 2009.

Source: Ministerio de Agricultura Ganadería y Alimentación (2013).

From the table, it is clear that the size of coffee farms in Guatemala varies from region to region (using *quintales* per producer as a proxy for this). Coffee production in the east of the country, around San Marcos and Huehuetenango, for example, is dominated by small producers (average 25 *quintales*), whereas in the south-western departments, the average farm is considerably larger (143 *quintales*). In the regions this study focuses on, farms tend to be small or medium-sized, ranging on average between 55 and 77 *quintales* per producer. Here, employment is mostly temporary. According to a survey done by Verité (2013) among a sample of predominantly small coffee farms in Guatemala, 79% of workers were temporary.

Over the last two decades, critical studies have raised concern over the labour conditions in Guatemala's agricultural sector in general, and the coffee sector in particular (COVERCO,

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15

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2000; ILO/UNICEF/WB, 2003; ILO, 2006; Verité, 2013; Danwatch, 2016). These concerns relate directly to the poor labour conditions of workers in agriculture, forced labor and child labor. Indeed, national survey data shows that 15.3% of children in rural Guatemala work, of which 46.5% work in agriculture (ENEI, 2015). Specifically, the coffee sector has been criticized for violations of labor laws, the most widespread of which is failing to comply with payment of the minimum wage (COVERCO, 2000; ILO/UNICEF/WB, 2003; ILO, 2006; Verité, 2013; Danwatch, 2016). These studies have found no direct relation of the use of child labor to the size of farms, or participation in standard programs. Indeed, “Just because a coffee plantation is wealthy and produces high-quality coffee does not mean that its working conditions are any different” according to Danwatch (2016: 6). Verité (2013: 4) warns that despite efforts to improve labor conditions, Guatemala’s “labor enforcement systems are compromised by corruption, a weak inspections system, and legal loopholes, which increases workers’ vulnerability to labor abuses”.

3.4. Methodological strategy on the ground

In terms of the methodology on the ground, generally, fieldwork started with a visit to the farm, where contact was made with the coffee producer or the farm administrator, and subsequently with workers. The principle objective of this first contact was to gain a general understanding of the regions’ agricultural sector, gathering a qualitative understanding of the prevailing wage, cash benefits and in-kind benefits, and subsequently to contact workers. However, information on wages in the sector was not the primary objective of the visit, as we needed information on the cost of life in the region and for this we needed assistance from workers. Therefore, usually we would coordinate visits to workers’ houses later that day to see the conditions of housing and gather information on rental prices. Then, the team visited local markets, shops and supermarkets, where not only the prices of different foods were collected, but often many of the items were bought (by locals), which allowed for accurate price per kg observations. In total, almost 300 different food prices were registered. The food items bought were often used to compensate workers for their time and hospitality when the team subsequently visited their houses, and proved a useful strategy to break the ice, and make people less wary of our intentions. Housing rental and building prices were obtained in the five locations. Finally, both experts in the field as well as people on the streets were consulted about these topics, but especially regarding healthcare, education and transport.

Considerable efforts were made to collect rich primary data. The initial wariness and resistance from organizations and coffee producers made it practically difficult to organize focus group discussions (FGDs) with workers to gain a better understanding of living standards and costs in the local area, so as an alternative strategy was implemented. The research team conducted as many unstructured interviews and discussions as possible with coffee producers, workers, and other individuals in and outside the coffee farms. These discussions gave insights into, for example, the food habits and preferences regarding consumption patterns (types of food, quantity, quality and frequency), and markets and

prices (date and time of shopping). This information, in turn, allowed us to cross-check information from secondary sources.

Figure 6: Researchers in the Field, Ciudad Vieja



Source: The authors

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An estimated cost for basic but decent housing was obtained through visits to various neighborhoods and rented houses in each of the fieldwork locations, and obtaining the cost of housing that met the minimum housing standard constructed for our living wage estimate. Moreover, for some important expenses such as education, health care, and transport, the researchers conducted rapid assessments through interviews with key informants, and people on the street, as well as by collecting prices from service providers.

As will be explained in each section below, we strived to make a very conservative estimate of living costs. For example, given the importance of maize tortilla in the local diet, for the model diet used in this Living Wage benchmark, we assumed that half of all tortillas were home-made, which significantly lowers their cost. While tortillas bought from other sources are more expensive than home-made tortillas, it would not be decent to expect families (and especially women) to make all the tortillas for daily consumption from scratch, because this is quite time consuming. By assuming that half of all consumed tortillas are home-made, the cost of tortillas in our model diet and therefore the food costs and our living wage were reduced. In fact, during fieldwork, it was confirmed that people indeed consume both home-made and already made tortillas.

4. CONCEPT AND DEFINITION OF A LIVING WAGE

The idea of a living wage is a normative one. Workers and their families should not have to live in poverty. But the idea of a living wage goes a step further. Not only should a living wage 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 can afford a decent basic life style considered acceptable by society at its current level of economic development. This wage should be earned in normal work hours without having to work overtime, and can never be generated through forced labor or child labor.

The idea of a living wage is neither new nor radical. Adam Smith (1776), considered the founder of classical liberal economics, wrote:

“No society can surely be flourishing and happy, of which far greater part of the members are poor and miserable. It is but 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.”

Similarly, American President Franklin D. Roosevelt (1933) wrote 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.”

While there is a growing consensus that it is necessary that workers receive a living wage, there was no agreed definition of living wage on a world basis in 2011 although there was an unrecognized general consensus on this (Anker, 2011). Since then, the methodology used in this report (Anker & Anker, 2017) and the Global Living Wage Coalition (GLWC) have provided a reliable way for defining and measuring a living wage. It assumes that a living wage is a right according to the international community; is place and time specific; is sufficient to meet the needs of a basic and decent standard of living of a typical family; and is earned during regular working hours. The following definition was agreed upon by the six standard setting organizations and ISEAL that comprise the GLWC:

Remuneration received for a standard workweek by a worker in a particular place sufficient to afford a decent standard of living of 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 presence of a robust and reliable methodology and a concrete definition allows for rigorous analysis of what the living wage for a specific time and place is. Consequently, it is hoped that different stakeholders at various levels of the value chain, as well as involved actors outside the value chain (like civil society, trade unions, NGOs, governments, etc.), will use this analysis and living wage benchmarks as a reference for setting wages (minimum wage, CBA negotiated wages, company and individual negotiated wages) and for determining poverty lines and rates and policies.

5. HOW A LIVING WAGE IS ESTIMATED

The living wage in the rural areas of central Guatemala is estimated based on the Anker Methodology. Anker and Anker (2017) provides a thorough explanation on the rationale of each component of the living wage and how it is estimated. This section will provide only a brief introduction on how the estimation is done for each part as depicted in figure 7.

To estimate living wage, costs of a basic but decent quality of life in a specific place must be known. To attain this basic but decent quality of life, one needs to have nutritious low-cost food; a decent basic house and utilities; funds to cover other basic costs such as health care, education, transport, communication, recreation and cultural activities and other ordinary participation in social life; and a little extra money to provide a buffer for emergencies and unexpected events. This should be estimated for a family by taking into consideration the typical number of full-time workers per couple as well as typical family size. The following figures 7-9 depict the entire process conducted to calculate a gross living wage.

To estimate costs for each component of basic needs such as food, housing, and utilities, secondary statistical data were combined with primary data collection in several locations

within rural areas of central Guatemala in September 2016. The estimates for each of these components will be discussed in detail in the following sections.

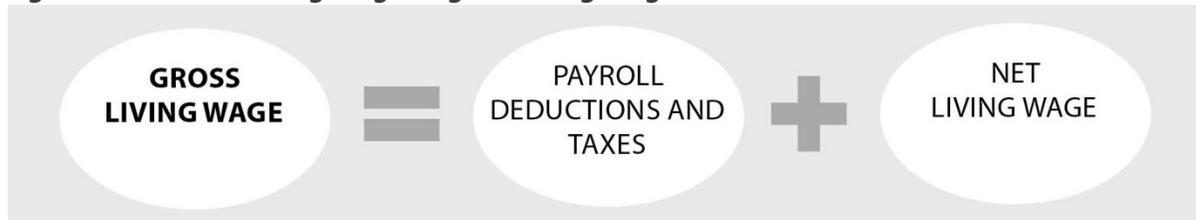
Figure 7: Components of a basic but decent life for a family



Figure 8: From cost of basic but decent life to net living wage



Figure 9: From net living wage to gross living wage



Source: Anker and Anker (2017).

SECTION II.

COST OF A BASIC BUT DECENT LIFE FOR A WORKER AND HIS OR HER FAMILY

6. FOOD COSTS

The cost of a simple, relatively inexpensive but nutritious model diet for rural central Guatemala was estimated at GTQ 10.76 (US\$ 1.43) per person per day for a reference size family of five people, two adults and three children. This represents GTQ 53.80 (US\$ 7.17) per day, or GTQ 1,636 (US\$ 218) per month for a typical size family. This estimate is based on food costs for a selection of food items that together make up for a balanced diet in terms of calories, proteins, fats, carbohydrates, and micronutrients, and is consistent with local food preferences. The sections that follow explain how this estimate was derived.

Food cost per day per person of the model diet:

= GTQ 10.76 (US\$ 1.43)

6.1 General principles of model diet

The general principles used to establish a model diet for rural Central Guatemala were the following. First, the diet should be nutritious, that is, contain a sufficient number of calories, proteins, fats, carbohydrates, and micronutrients. For this, World Health Organization (WHO) standards were used as a reference, in accordance with the Anker methodology. This includes acceptable macronutrients (10-15% of calories from proteins, 15-30% calories from fats, and 55-75% calories from carbohydrates) and micronutrients. Second, the model diet should also be consistent with local food preferences, to ensure that the food items therein can and will be consumed, and should be expressed in number of portions easily understandable. Finally, the model diet should be as low in cost as possible for a nutritious diet. The model diet for rural Central Guatemala contains 2,246 calories per person. This was estimated using Schofield equations (used by WHO in their technical reports), assuming coffee workers (like most agricultural workers) have a vigorous physical activity level, while other family members have a moderate level of physical activity.

6.2 Model diet for rural central Guatemala

To estimate the model diet, the Anker methodology includes tools to determine the number of calories required per person, and how this requirement can be translated into a model diet that meets WHO/FAO nutritional standards for not only the number of calories, but also the percentage of calories from macronutrients (proteins, fats, and carbohydrates), and amounts of fruits and vegetables to help ensure sufficient micronutrients.

For rural Central Guatemala, our model diet started with the latest poverty line diet based on consumption patterns in rural Guatemala (Monroy, Rodríguez and Toledo, 2012). From there, adjustments were made. Firstly, the number of food items was reduced from 33 to 22 to make it simpler, and second, the quantity of certain food items was reduced or increased depending on the nutritional values, and WHO/FAO maximum and minimum standards for certain food items (e.g. a maximum of 30g of sugar a day). Finally, during fieldwork, the model diet was validated in the different locations to make sure it was palatable. Indeed, the food items in the proposed model diet were widely consumed in the fieldwork locations for this study. For these items, food prices were collected. The cost of our final model diet was increased slightly by small percentages consistent with estimates for middle income countries like Guatemala, to account for variety in the diet (and thereby compensate for the lower number of food items) (11%), especially important for fruits and vegetables, minimal spoilage (4%), and salt/spices/sauces/condiments to make the diet palatable (1%).

In Table 4, the model diet is presented. The model diet consists of products that are widely available across the 5 fieldwork locations, and that, after consulting with local workers, and buyers and sellers in markets, shops and supermarkets, appeared to be consumed regularly. It contains fewer food items than the food poverty diet (22 items, versus 35 items) (Monroy, Rodríguez and Toledo, 2012), but this is compensated for by adding a 11% for variety. The Living Wage (LW) diet was constructed by starting with the poverty line (poverty line) diet, which was based on a national food consumption survey and thus reflects actual consumption (Monroy, Rodríguez and Toledo, 2012). This poverty line diet was adjusted to ensure compliance with the minimum nutritious standard. Also, much care was taken to keep the costs of the model diet as low as possible, while respecting local food preferences and nutritional requirements. The specific food items used to represent each major food group in our model diet are those that are widely available, of acceptable quality, and least expensive based for their food group on our local market survey of food prices (see next section on food prices).

For example, maize tortillas are widely consumed across Guatemala. Given its popularity, tortilla's high share in total calories was respected when making the model diet (42%). However, we based the price of tortillas partly on the cost of home-made tortillas. This was done by asking several women about the amount of tortillas they made, and quantity of each ingredient they needed to make that amount of tortillas. From this, an average amount of tortillas per set of ingredients was calculated. Then, the costs of these required ingredients were checked in markets and other venues. With this information, the cost of making a home-made tortilla (not considering the woman's time or cost of cooking fuel) was calculated. This gave a relatively robust price of 8 cents of a GTQ per tortilla, or GTQ 2.39 per kilo. Tortillas on the street generally come in packages of four and are sold for GTQ 1. Assuming a package contains 4 average sized tortillas, this translates into an average price of GTQ 7.45 per kilo for purchased tortillas¹. However, it is not reasonable to assume all tortillas are home-made,

¹ This per kilo price is consistent with the GTQ 7.61 per kilo used to calculate the poverty line diet.

given the large volume of tortilla consumption in Guatemala and the considerable amount of time it takes to make tortillas at home. This would put a lot of pressure on predominantly female unpaid labor performed at home. In other words, it does not seem fair to expect women to prepare all the tortillas necessary to feed Guatemalan families. Instead, the assumption was made that half of all tortillas consumed were bought from vendors on the street or in shops, and the other half were made at home. Then, the average price of a kilo of tortilla (combining home-made tortillas and tortillas bought on the street) is GTQ 4.92 which is the price we used to estimate the cost of tortillas in our model diet. Or, in other words, we estimated an average tortilla to cost 17 cents of a Quetzal.

In Annex A1, a detailed comparison of our model diet with the reference poverty line diet is presented.² Here, it suffices to present the most important differences.

² Note that the food prices used for our model diet are almost always lower than those used to calculate the cost of the poverty line diet. This is because for the latter, average prices between rural and urban areas are used, as well as average prices for different food items. In contrast, for the living wage model diet, we used the cheapest acceptable food products in rural areas, on the condition that they were of decent quality (rotten products, for example, would be unacceptable). In all, the model diet complies with local food preferences, and with nutritional standards set by WHO/FAO.

| <i>Table 4. Composition of the model diet, prices of food items in GTQ, and cost of the model diet</i> | EDIBLE GRAMS | PURCHASED GRAMS | COST PER KILO | COST | COMMENTS |
|--|---------------------|------------------------|----------------------|-------------|--|
| Maize tortilla | 458 | 458 | 4.92 | 2.25 | 13 average sized tortillas per day. 42% of calories come from maize tortillas. Half purchased and half prepared at home. |
| Rice | 32 | 32 | 8.04 | 0.26 | 1 meal of rice per week: 1 ¼ cups of rice per family per week. |
| White bread | 16 | 16 | 14.82 | 0.24 | Half a roll (average 32.5g) of white bread per person, per day. |
| Pasta/Spaghetti | 29 | 29 | 12.25 | 0.35 | 1 package of pasta per person per week (200g). |
| Potato | 26 | 35 | 5.07 | 0.18 | 2 pounds of potatoes per family per week. |
| Plantain | 16 | 25 | 5.51 | 0.14 | 4 plantains (of 225g) per family, per week. |
| Black beans | 70 | 70 | 11.80 | 0.83 | 2.5 servings (of 28g) per person, per day. |
| Milk | 130 | 130 | 4.00 | 0.52 | 1 small cup per child (200ml) + 50 ml per adult per day. |
| Cheese, white (cow milk) | 6 | 6 | 36.65 | 0.21 | 1/8 th of cheese (200g) per family, per week. |
| Chicken eggs | 23 | 26 | 18.51 | 0.48 | 3 eggs per person, per week. |
| Chicken, 50% white meat no bones, 50% fresh with bones | 24 | 35 | 21.28 | 0.74 | 2 meal portions of chicken per person, per week. |
| Beef, w bone (for cooking) | 9 | 11 | 33.40 | 0.38 | ¾ meal portion per person, per week. |
| Cabbage | 43 | 53 | 1.97 | 0.10 | 4/5 of a regular sized cabbage (2300g) per family, per week. |
| Macuy | 43 | 53 | 9.05 | 0.48 | 7.5 bushes of macuy (250g each) per family, per week. |
| Tomato | 43 | 47 | 6.80 | 0.32 | 3.5 pounds of tomatoes per family, per week. |
| Onion | 43 | 47 | 5.61 | 0.26 | 3.5 pounds of onion per family, per week. |
| Banana | 43 | 66 | 2.83 | 0.19 | Just over 2 bananas (of 140g each) per person, per week. |
| Orange | 43 | 58 | 4.85 | 0.28 | 1 and 1/3 average sized oranges (240g) per person, per week. |

| <i>Table 4. Composition of the model diet, prices of food items in GTQ, and cost of the model diet</i> FOOD | EDIBLE GRAMS | PURCHASED GRAMS | COST PER KILO | COST | COMMENTS |
|--|---------------------|------------------------|----------------------|--------------|---|
| Oil (vegetable) | 31 | 31 | 16.02 | 0.49 | Two tablespoons (14g each). |
| Sugar | 30 | 30 | 7.29 | 0.22 | Maximum allowed by WHO: 7.5 teaspoons. |
| Coffee | 7 | 7 | 22.03 | 0.15 | 2 cups per day for 2 adults, and 1/4 cup per day per child. |
| Incaparina | 11 | 11 | 20.56 | 0.22 | 1 glass of incaparina per person per week. Need approx. 1 big tablespoon, per glass (15 g). |
| Daily cost of model diet | | | | 9.27 | |
| Percentages added for salt, spices and condiments (1%), spoilage and waste (4%) and variety (11%) | | | | 1.48 | |
| Total cost of model diet | | | | 10.76 | |

Source: The authors

The quantity of maize tortillas was largely respected compared to the poverty line diet, as was the amount of rice. The living wage diet allows for less bread than the poverty line diet, and more pasta which was almost doubled. This was done to allow for a bit more variety in the type of meals consumed per week, while keeping costs low. The quantity of potato and plantain was also increased slightly. These are both inexpensive sources of calories and carbohydrates. While the amount of black bean consumption was brought down slightly as compared to the poverty line diet, the living wage diet does allow for more than 2 servings, which would be considered high in other regions of the world, for reasons of palatability. However, in Central America in general, and Guatemala, black beans are very popular, people enjoy eating them, and they are a cheap source of protein.

Meat consumption was largely left unchanged, although for the living wage diet only two meat items were considered: chicken meat and beef with bone. Meat provides a rich source of necessary proteins and minerals. However, meats are relatively expensive. Therefore, the living wage diet did not increase the quantity of meats substantially, and limited it to 2 and $\frac{3}{4}$ meal portions per person per week. For chicken, 50% is assumed to be the cheaper imported white (and frozen) chicken, 50% the fresher and locally preferred “yellow” chicken with bones. For beef, only the least expensive of the meats were included. In the poverty line diet, there are other varieties of meats that make it slightly more expensive.

The poverty line diet has unacceptably low consumption of dairy products, so one small cup of milk per child per day was introduced, and a little bit extra for adults for their coffee. In total, this meant 130 ml of milk per person, per day for the living wage diet where the poverty line diet has no consumption of milk. Fresh cow cheese was left almost unchanged in the living wage diet as compared to the rural poverty line diet (6 versus 4 grams, respectively). In the living wage model diet, we allowed for about 200 grams of cow cheese per week for a reference family of 5, or just under 6 grams per person per day, because it is a good non-meat source of protein, as well as calcium, Vitamin D and other minerals. However, it also relatively expensive, so it was decided to increase the amount of cheese only slightly. The number of eggs was brought down from 4 to 3 eggs per person, per week. Furthermore, the poverty line diet had unacceptably low levels of fruits and vegetable consumption, so these were also brought up considerably to comply with WHO minimum levels. Sugar consumption was brought down to the maximum allowed level of 30 grams per person per day recommended by WHO.

It is worth noting that that the cost of our living wage model diet and the poverty line model diet are the same when they use the same food prices (see Annex A1). This implies that the difference in the cost of the living wage and poverty line model diets is due to the different food prices used.

6.3 Food prices

All food prices were collected in local markets (see figure 10), where most local workers and their families did their shopping. Also, local shops and supermarkets were visited. All these venues corresponded to where people told us they regularly did their shopping. In three locations, there were not many different providers of food items, and in one location there was no local market. In all locations, many food prices for each food item were collected. Most of these prices were obtained by asking the vendors, or simply by observing the price tags. However, some food items were purchased. Purchasing food items allowed the research team to weigh food items, and obtain average weights per item and cost per kilo, and calculate (or rather confirm) wastage (from taking away the skin, for example). Consequently, for each location, prices data that were outliers were excluded, after which a trimmed mean was taken for the prices of the five locations. While obviously, there was some variation in prices for different food items, overall these variations were not large.

Since we collected food prices in September, there is an implicit assumption that these prices are representative of food prices throughout the year. Given planting and harvest seasons for a variety of crops, there is no reason to believe that September is an abnormal month. In general, in the Guatemalan Central Areas, the climate conditions allow for a fairly constant production of food items and we found that most food items are abundant throughout the year (not so in the periphery of the country), and while prices of specific food items do fluctuate slightly, it seemed reasonable to assume that such fluctuations do not alter the food costs considerably. Indeed, harvest seasons for most crops runs through several months of the year, and even several times per year. Rice, for example, is harvested from August through December. Black beans are harvested twice a year, in February-May and August through December. Similarly, yellow maize is harvested in the first and third trimester of the year, while white maize extends even longer periods. Crops like tomato, onion and cabbage are harvested during at least half the year, and potato is harvested during 7 months, including September. In all, there is no reason to believe that in the month during which the fieldwork was carried out is an abnormal month in terms of fruit and vegetable availability. Therefore, it is assumed that the prices collected are representative for the year. Also, there is substitution of certain food items which might be more expensive at a certain point in the year, for another, cheaper food item. This is especially true for fruits and vegetables, of which there was abundant supply in the fieldwork locations considered in this discussion, in the end no adjustments were made for seasonality.

Figure 10. Photos of local food markets



7. HOUSING COSTS

Housing costs are estimated by summing up the costs of rent for an acceptable dwelling, utility costs, and possibly minor repairs and maintenance. In this, the Anker methodology differs from the usual methodology to measure living wages and poverty lines where all non-food costs (including housing costs) are estimated in one go, based on secondary data. In the Anker methodology, housing costs are separated from the non-food costs black box, and are based on a basic but acceptable standard, and not actual spending patterns. This is a novel methodological strategy that avoids reproducing poverty consumption patterns, and provides better estimates of the cost of acceptable housing especially in countries where housing conditions for workers is poor at present as well as in countries where the cost/value of owner occupied housing is not considered in household expenditure statistics. In the Guatemalan context, this is particularly important because in its high poverty context, many houses do not live up to a minimum standard acceptable by the WHO, UN-HABITAT and others.

For the rural areas of the Central Departments in Guatemala, the minimum standard for housing as described in the next section, is estimated to cost about GTQ 700 (US\$ 93) for

rent, for a reference size family of 5, two adults and three children. This amount represents the average rental price for an acceptable house over the five locations visited for fieldwork.

People in the visited regions typically live in small houses, with a small living room, one or two bedrooms and a separate (often outside) kitchen area. Most houses are about the size of the social housing standard, of about 40 m². Walls are typically made of brick or prefabricated cement, although wood and plaster (adobe) were also quite commonly encountered. Zinc roofing was most common, but the state of the zinc laminas varies a lot. Some of the houses we visited had holes in the walls and roofing. Most houses have electricity, but typically the wiring is done by the inhabitant, with exposed cables and only few connections. Water is provided by the local municipality, but its provision is not constant (there are regular water cuts) and in some places, it was not even considered potable. Indeed, although fieldwork focused on houses that did seem to meet the standard, as will be explained below, we encountered many houses that cannot be considered decent. Many houses in the regions we visited were in poor repair, some with walls made of wood planks or plaster (adobe), and holes that do not provide optimal protection from the elements. In several of the houses we visited, there was no ceramic, cement or even wood flooring, but just earth.

During fieldwork, we set out to find houses that did meet the standard. Rental prices were collected by visiting houses in the fieldwork sites, asking around where rental prices were available, and asking around for rental prices for houses with the minimum conditions. Rental prices varied between locations, as did the conditions of houses with similar rental prices. Rental markets were not always well developed, in which case fieldwork focused on the few references of rental houses available, and asking for rental price estimates of houses that met the minimum conditions of the housing standard. All in all, as will be detailed below, the amount of GTQ 700 per month gives a reasonable estimate for rental costs, which would allow for a decent housing standard in the five locations the team visited.

The amount of GTQ 700, does not include utility, maintenance and repair costs, which were estimated average about GTQ 200 (US\$ 27) per month. This gives a total of GTQ 900 (US\$ 120) per month for housing, thereby representing 22% of total expenditure, very much in line with what secondary data suggests for the 40th percentile of income distribution for Guatemala's rural areas (23.9%). Below, some photos are presented of the types of housing that were encountered during fieldwork. Of these, only the (blue) house in the bottom right corner meets our minimum standard, while the house of the top left corner barely meets it. The other two are unacceptable by all standards.

Figure 11. Photos of local housing



Housing that barely meets minimum standard



Unacceptable housing



Unacceptable housing



Acceptable housing

7.1 Standard for basic acceptable local housing

The standard for basic acceptable housing for Guatemala was arrived at based on four sources, which mutually reinforced one another. First, the WHO, other international organizations and international covenants and conventions set minimum principles for healthy housing which include adequate living space, ventilation, light etc., and which do not allow certain conditions, such as earth flooring (Anker and Anker, 2017). Second, based on secondary data for rural Guatemala, predominant actual housing conditions were determined. This data is presented in Annex A2. Third, a minimum standard for social housing for rural Guatemala was consulted. This social housing model is a product of work by Habitat (*Hábitat para la Humanidad*), often in cooperation with local municipalities. The minimum size of the house, of 36 m² from this social housing standard was used. It was assumed, after fieldwork, that another 4m² was needed for a small separate (often outside, but roofed)

kitchen. Finally, during fieldwork, observation was used to determine whether the determined standard was representative for the region of interest. As a result, the basic, but minimum acceptable standard for housing for our reference family of 5 includes the following as indicated in Table 5:

Table 5. Minimum housing standard for rural Guatemala.

| Element | Minimum standard |
|--|--|
| Structure, Roof and Floor | <ul style="list-style-type: none"> - Permanent structure and walls: made of concrete, cement and bricks. Zinc is unacceptable. - Roof: made of corrugated iron without leaks - Floor: made of cement or tiles |
| Electricity, and cooking fuel | <ul style="list-style-type: none"> - Lighting source: electricity is standard, as it seems to be most common in the rural areas of interest. - Cooking fuel: Firewood as a minimum acceptable standard, as it is most common in the areas of interest. Gas is also acceptable, of course, but less common. |
| Water source and toilet | <ul style="list-style-type: none"> - Water: Piped into dwelling or yard - Toilet facility: minimum acceptable standard is a pit toilet with slab. Flush toilet to sewage system also acceptable, but less common. |
| Number of rooms: Number of m ² | <ul style="list-style-type: none"> - Two bedrooms - One (small) living room - 36 m² + 4 m² outside kitchen, consistent with the minimum standard of social housing |
| Other: | <ul style="list-style-type: none"> - Minimum one window per room - Roof or ceiling at least at 2 meters, although ceiling is not a must. Not common to have ceiling, but just the roof. - Safe food storage: separate area - Minimum indoor pollution from cooking: separate space for cooking, or good ventilation - No site hazards - No garbage on the street |

Source: The authors.

7.2 Rent for basic acceptable housing

In the five fieldwork locations, in total 22 houses were analyzed, of which 15 were visited and inspected, and 7 more were observed from the outside, and detailed questions about the conditions, size and materials were asked to the owner or person renting the house. In 3 of the 5 locations, the rental market was not well developed. In these locations, houses were

generally owned. There were, however, rental options which most people knew well, because these communities were generally small. Methodologically, then, we set out to gather data on these rental options, and complemented this by asking people to estimate how much rent they would pay for a house that meets our minimum standard. In most cases, however, people knew the exact rental prices for the (few) houses in their neighborhood, and the conditions of the house, which were consequently checked by the research team where possible. Given the size of the communities, we assumed that rental estimates were accurate. In 2 of the 3 locations, especially Ciudad Vieja and to a lesser extent San Juan La Laguna, there was a better developed rental market. Here we followed a similar strategy for rental prices for different houses. In all locations, as many house visits were made as possible. This depended much on the willingness to let a member of the research team enter the house.

During fieldwork, given the difficulty of gaining access to people's houses without prior introduction, it was decided to prioritize houses that seemed to meet the standard, and determine prices for these references. In contrast, subpar options, like one room renting, or houses that from first observation would not meet the standard, were given less priority. Therefore, in the list of houses in Table 6, below, there are more houses that meet the standard than those that don't.

Table 6. Rented housing units visited and observed, and their costs

| Acceptable standard? | Rent in local currency | Size & rooms | Comments |
|--|------------------------|--|--|
| Pueblo Nuevo Viñas | | | |
| Yes | 1,500 | 70m ² LR, 2BR, K (+5m ²) | Good house, large. Cement structure, separate kitchen, modern toilet. Meets standard. |
| No | 1,000 | 30 m ² LR, 2 BR, K | Rental estimate. Cement structure, cement floor. Meets all the conditions, good construction, but slightly too small. |
| Yes | 800 | 36 m ² 2 BR, K (+3m ²) | Rental estimate. House good condition. No living room, but small roofed porch. Outside flush toilet to latrine, cement floor and walls. Social housing standard. |
| Yes | 700 | 60 m ² LR, 2 BR, K (+4m ²) | Relatively large cement house in good condition. Outside latrine in good condition. Separate kitchen. Cement brick structure, cement floor. |
| Ciudad Vieja, Antigua (peri-urban town) | | | |
| Yes | 900 | 60 m ² L, 3 BR, K (+4m ²) | Rental estimate. House unfinished, but in good condition. Spacious rooms, no real closed living room, but a roofed living space. Rooms with window. Latrine toilet outside, separate kitchen area. |

Table 6. Rented housing units visited and observed, and their costs

| Acceptable standard? | Rent in local currency | Size & rooms | Comments |
|---------------------------|------------------------|---|--|
| Yes | 700 | 54 m ² 2 BR, K (+4m ²) | Antigua. No living room, small porch. Relatively large rooms, and terrace. Separate kitchen. Flush toilet to latrine, walls in good condition. Animals present, but separate from house. |
| No | 600 | 40 m ² LR, 1 BR, K | Old house, walls in deterioration, although still acceptable (plaster coming off). Small, and dark. Only one window, and one bedroom. |
| Sansare | | | |
| No | 1,200 | 65 m ² LR 2BR, K | Rental estimate. Bigger house, good conditions for one bedroom, not for second: earth floor and wall. Adobe structure. Water cuts. |
| Yes | 600 | 36 m ² LR, 2 BR, K (+3m ²) | Rental estimate. Minimum social housing, meets standard. Separate latrine and kitchen. Water cuts. |
| Yes | 500 | 36 m ² LR, 2 BR, K (+3m ²) | Basic, cement brick house, based on social housing. Latrine acceptable. Minimum living space. |
| Yepocapa | | | |
| Yes | 1,000 | 40 m ² LR, 2 BR, K (+4m ²) | Minimum size, kitchen separate. Brick structure, cement floor. Meets standard. |
| Yes | 1,000 | 50 m ² LR, 2 BR, K (+3m ²) | Meets all the standards, brick structure, good condition roof, cement floor. Separate kitchen, latrine in good state, with slab. |
| Yes | 600 | 40 m ² LR, 2 BR, K (+3m ²) | Cement house, in acceptable but not great conditions. Barely acceptable latrine with seat and slab. Meets standard, but only barely. |
| No | 500 | 24 m ² 1 Room | Shared latrine. Small separate kitchen. Too small. Earth floor. |
| No | 500 | 30 m ² LR, 1 BR | Only one bedroom, too small. Walls in poor quality state. |
| No | 300 | 38 m ² 2 Rooms | No real living space outside rooms. Earth floor, unacceptable latrine (although separate). Kitchen separate. Earth floor. |
| San Juan la Laguna | | | |
| Yes | 1,500 | 55 m ² 2 BR, K (+5m ²) | House combined with small shop. Rental estimate. Good condition, luxurious compared to standard. |

Table 6. Rented housing units visited and observed, and their costs

| Acceptable standard? | Rent in local currency | Size & rooms | Comments |
|---|------------------------|--|--|
| Yes | 800 | 36 m ² 2 BR, K (+3m ²) | Rental estimate. House good condition. No living room, but small roofed porch. Outside flush toilet to latrine, cement floor and walls. Social housing standard. |
| Yes | 750 | 40 m ² 2 BR, K (+5m ²) | Rent. House fair condition. Small living room, with small porch. Outside flush toilet to latrine, cement floor and walls. Social housing standard. Relatively old. |
| No | 600 | 40 m ² 2 BR, K (+3m ²) | Rental estimate. House not in optimal condition, partly adobe walls. Needed repair. One room (used for storage) with semi-earth floor. Dark, not adequate ventilation. Relatively old. |
| Average price of acceptable housing per m², in GTQ | | | 17.5 |
| Estimate of average monthly cost of acceptable housing according to standard (40m²), in GTQ | | | 700 |

Source: The authors.

An average price per m² was calculated based on the per m² price of acceptable houses. On average, the per m² rental price of an acceptable house was estimated at GTQ 17.5. If the absolute minimum living space is used as a reference (36m²), with a separate small kitchen of 4m², this would imply 40 m² total, consistent with the minimum size of acceptable housing. That would translate into a rental estimate of GTQ 700. Considering the rental estimates of the different fieldwork locations (GTQ 700, 700, 600, 600, and 750 - or GTQ 670 on average for lowest rent observed for acceptable housing in the five locations), it is considered that GTQ 700 would be enough for a decent basic house.

7.3 Utilities and other housing costs

For utility and other housing costs, the research team asked workers for electricity and water utility costs in the five different locations. In each location, between three and five references were documented. There was quite some variability regarding these costs, depending on the municipality. Water utility costs, for example, ranged from GTQ 40 per year in Yepocapa, to GTQ 300 per year in Sansare, La Montañita. However, in all locations but one, water cuts were quite normal and people did mention having to pay additionally for bottled water during such cuts. We decided to assume about GTQ 30 *per month* for water, which should cover the cost of public water provision, plus a small amount for the purchase of bottled water when necessary.

Similarly, electricity costs ranged from GTQ 900 to 1,500 per year. However, in the households we visited, this cost reflects an extremely conservative amount of electricity usage. Houses typically had very few electrical appliances. Many houses lacked a refrigerator,

and many did not have a television. The use of such appliances should be possible to afford on a Living Wage. Therefore, it was decided to estimate the electricity cost per reference family at just over the high end of the range collected during fieldwork because families earning a living wage will have more electrical appliances. This seemed more in line with electricity consumption in non-poor households. The estimate we used for electricity was therefore GTQ 1,600 per year, or about GTQ 130 per month.

Finally, the estimates for routine maintenance and repairs depend very much on the initial state of the house, and were generally low. Given that the state of many houses in the regions we visited was not in good repair, it was decided to reserve a small amount of about GTQ 40 per month for maintenance and repair, in the understanding, that for such housing to meet or maintain the acceptable standard, such maintenance and repair costs are expected to occur yearly. Yet, this is a conservative estimate, it assumes repairs and maintenance can be done by the person living in the house, and does not imply hiring labor. In Table 7, the summary of the costs of acceptable housing are presented.

This amount is arguably a conservative estimate, based on fieldwork across five locations. That is, in some slightly poorer locations it might leave a larger margin (for example in Pueblo Viñas) than in other, slightly more expensive regions (for example, Ciudad Vieja). In all, with this estimate of GTQ 900, we feel that the cost of a very basic, but decent standard of housing can be covered in the locations visited.

Table 7. Overview of average housing cost estimates for decent standard of living

| Item | Monthly cost in GTQ |
|------------------------------|---------------------|
| Rent | 700 |
| Water costs | 30 |
| Electricity costs | 130 |
| Repair and maintenance costs | 40 |
| Total costs per month | 900 |

Source: The authors.

8. NON-FOOD AND NON-HOUSING COSTS

Non-food and non-housing (NFNH) costs are estimated in a different way than food costs and housing costs. Whereas food costs and housing costs are estimated based on normative standards - nutritious diet and healthy housing standard – NFNH costs are based mainly on secondary data and current household expenditures in rural Guatemala according to recent household expenditure survey data. This is done because it would be too difficult and time consuming to decide on appropriate standards and prices for the many NFNH needs of families that includes clothing and footwear; furniture and household equipment; health care; education; recreation and culture; transportation, telephones; personal care; etc.

However, since health care and education are considered human rights around the world, separate enquiries and post checks are done for these and NFNH is increased when necessary to make sure that sufficient funds are included in our estimate of NFNH needs for these human rights.

Non-food non-housing (NFNH) costs for rural Guatemala were estimated in five steps. In step 1, a preliminary estimate of NFNH costs was made based on current expenditure patterns in rural Guatemala according to data from the 2014 National Survey on Life Conditions (INE-ENCOVI, 2014). This approach, which relies on a variant of Engel's law,³ is simple and provides a preliminary estimate of the cost of all NFNH needs. As such, the approach avoids having to make a long list of NFNH needs and then finding the cost for each of these, as is common in other estimates of living wages (Anker, 2011) and poverty lines (Anker, 2006b)⁴. Because the incidence of poverty in rural Guatemala is high, and we did not want to reproduce spending patterns related to poverty, it was decided to use household expenditure data for rural Guatemala for households at the 40th percentile of the income distribution as a reference for the preliminary NFNH estimate. This is a conservative assumption given that the rural extreme poverty rate is 35% using the government's national poverty line benchmark (ENCOVI, 2014). Step 2 adjusts for the fact that meals eaten away from home are included within the food expenditure group in Guatemala statistics. Part of the cost of eating away, should remain in the cost of food, whereas the taxes, profits and service should go into the NFNH costs. For Guatemala, after consulting several vendors and local restaurants (with mostly family labor), it was estimated that 40% of the selling price of food consists of profit, taxes and service costs. Approximately, the other 60% are food costs. Step 3 excludes tobacco and part of alcohol expenditures, since they are deemed unnecessary for a decent living standard. Concerning the latter, the secondary data showed that 3.9% of income for the 40th percentile of income distribution in rural Guatemala is spent on alcohol. It was decided to allow only for half of that amount, just under 2%, to be reasonable. Steps one through three gave the following information on the distribution of household spending, summarized in Table 8.

³ Engel's law is from 1857 and states that the percentage of total expenditure that households spend for food decreases as household income increases (see Anker 2011).

⁴ For step 1, the Anker methodology deviates from standard poverty lines and living wage methodologies that estimate all non-food costs in one group (Anker, 2006a, 2006b, and 2011). That is, in the Anker methodology, housing costs are taken out of the residual non-food category, and are estimated based on normative standards for decent healthy housing (see previous section). The remaining costs for NFNH needs are then based on secondary data, not using normative standards.

Table 8. Distribution of household spending in 40th percent of income distribution in rural Guatemala

| Expenditure Group | 40th percent of income distribution % Expenditure |
|--|--|
| Food (including value of food in meals taken away from home) | 43.35 |
| Housing | 23.90 |
| NFNH | 28.21 |
| <i>Health</i> | <i>0.95</i> |
| <i>Education</i> | <i>3.20</i> |
| <i>Transport</i> | <i>4.66</i> |
| <i>Other legal costs</i> | <i>0.41</i> |
| <i>Other household costs</i> | <i>12.51</i> |
| <i>Meals taken away (40% for taxes, profits and service)</i> | <i>3.08</i> |
| <i>Household contents and appliances</i> | <i>1.47</i> |
| <i>Half of % alcohol allowed</i> | <i>1.95</i> |
| Out (tobacco + half of alcohol) | 4.55 |
| Total | 100 |

Source: The authors based on INE-ENCOVI, 2014.

From this, step 4 calculates the cost of each NFNH element in GTQ included in a preliminary estimate of NFNH cost. These are calculated by multiplying the NFNH-Food ratio of 0.65 from secondary data (i.e. 28.21/43.35) by the cost of the living wage model diet. For the reference family, the monthly cost of the model diet is GTQ 1,636 (US\$ 218). Total monthly preliminary estimate of NFNH cost, then, is GTQ 1,065 (US\$ 142) per month. This preliminary estimate is based on secondary data, and includes funds for clothing and footwear; household furniture, contents and appliances; health care; education; transportation; communications; recreation and culture; eating away from home; and miscellaneous goods and services such as insurance, bank services, and personal care.

However, this preliminary estimate of NFNH costs must be critically analyzed as will be explained in detail in section 9. Indeed, the last step takes a critical look at healthcare, education and transport spending, based on fieldwork data, to determine if the cost estimates for these items in secondary data largely correspond to the actual costs for decency - and where needed, adjustments are made, adding additional funds to ensure adequate funds for these human rights. As will be shown, some adjustments for healthcare, and education in total NFNH spending are made, while the cost of transport is not adjusted.

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

Blind and uncritical use of an extrapolation method to estimate NFNH costs based solely on secondary data runs the risk of underestimating amounts required for NFNH needs that meet a decent standard. Therefore, it is particularly important to make sure that there are sufficient funds available for health care and education, as these are considered internationally as human rights. Table 9 shows the monthly amounts of spending on health, education and transport if the percentages indicated by secondary data would be translated into monetary values using the model diet cost as a reference.

Table 9. Monthly household spending estimate on NFNH elements (health, education, transport) based on secondary data, before fieldwork adjustments

| NFNH Major Expenditure Group | % of total household expenditure (ENCOVI, 2014) | Monthly amount in GTQ included in preliminary cost (GTQ 1,636) |
|-------------------------------------|--|---|
| <i>Health</i> | 0.9 | 36 |
| <i>Education</i> | 3.2 | 121 |
| <i>Transport</i> | 4.7 | 176 |

Source: The authors' calculations based on INE-ENCOVI, 2014.

For example, total spending on healthcare by the rural 40th percentile household is unreasonably low at 0.9%, and does not represent the real cost of a decent standard of healthcare access. This percentage in secondary data translates into only GTQ 36 (US\$ 4.8) per month for a reference family of five. Similarly, total monthly education costs for the reference family, which represent 3.2% of total spending, would amount to GTQ 121 (or US\$ 16) per month. Indeed, fieldwork results showed that typical costs for decent health care and decent education are higher than what secondary data suggest. After fieldwork, it was deemed necessary to elevate these percentages, given that even the most moderate estimates of costs from our fieldwork were higher than what secondary data implied. In other words, spending on these items as captured by secondary data underestimates the costs of decent standards for healthcare and education. In contrast, the costs of adequate transport were consistent with secondary data.

During fieldwork, workers and others were asked how much they generally spend on healthcare, and whether public healthcare was available and if so, what kind of services were absent and which were included. Price references were also gathered from service providers. Also, while access to public education (at least for primary education and - albeit to a lesser extent- secondary education) in the fieldwork locations seemed to be quite widespread, this does not mean education is completely free. Often an initial enrollment fee is charged, or

monthly payments for school meals are necessary. Finally, the costs to the family of school uniforms, shoes and materials, and the cost of a school meal were included in these inquiries. In the following sections, each post check adjustment is explained in more detail.

9.1 Health care post check

Guatemala has elevated levels of out-of-pocket (OOP) expenditure for health care. For the country, the World Bank reported OOP expenditure as 52.2% of total expenditure on health in 2014. The public health system is weak. Coverage of the country's public health insurance is very low. In 2011, the coverage of the Guatemala's Social Security Institute (*Instituto Guatemalteco de Seguridad Social* or IGSS) was only 17.5% (USAID, 2015). Private insurance is below 5%, and while there are NGO initiatives to provide coverage, about 75% of the population is uninsured (USAID, 2015). However, while coverage of insurance is low, it does not necessarily exclude uninsured patients from access to health services, at least in the fieldwork locations in Central Guatemala. Indeed, in all locations we visited, there was a local public clinic available, with a nurse present at least five days a week. These clinics also have general practitioners, who attend patients in those communities at least once a week. For these doctor's consults, people are often not charged, or if they are, the fee is generally low (about 20 GTQ). The services provided by these clinics only provide medical coverage for basic ailments, and generally the provision of medicine is low. Therefore, even for basic medicine, if the local clinic runs out of stock (which seemed to be quite common), the patient must purchase medicine from a private pharmacy. Also, for more serious treatments, in all locations save for Ciudad Vieja, Antigua, the patient would have to be relocated to a (public) hospital in a larger community, town or city. While these more complicated health services generally did not imply a cost for the patient directly, patients were expected to pay (about 50 GTQ) to cover the expenses of the ambulance ride. In all, such practices mean that in 2015, health spending in Guatemala was "dominated by the private sector (4 percent of GDP), mostly (83 percent) household out-of-pocket spending" (USAID, 2015: 8), whereas public expenditure for healthcare was only 2.3% of GDP (USAID, 2015).

There is not much data on the number of times per year people visit a doctor in Guatemala. From fieldwork, people confirmed that they made use of public clinics, but it did not become clear how often they sought health services. The few secondary sources available suggest that use of health services in Guatemala is extremely low. A study by PAHO (2012) indicates that, despite positive developments in "institution building, child health, and prevention of communicable diseases" (p.135), the health system performs rather poorly. According to Martins et al. (2013), only six out of ten Guatemalans with acute illness acquired the medicines prescribed by a health provider, substantially lower than in Nicaragua (76%) and Honduras (87%). According to PAHO (2012), only six out of ten non-poor people seek health services when they are ill, whereas among the poor only three out of ten do so. Similarly, administrative records of clinical statistics of a US sponsored clinic in Nueva Santa Rosa (GFMM, 2011), quite close to the area of study in this report, shows that among adult men and women, 40% and 60% of patients visited the clinic only once in the last year, respectively,

and about 15-20% of surveyed patients did not visit before in the past year. Similarly, among children around that clinic, only about half visited the clinic in the past year.

However, such estimates do not reflect what is necessary for a decent standard regarding healthcare access. We assume 3.5 visits to a local health provider such as clinic, doctor, or pharmacy per person, per year are required or 3-4 visits per year (see Anker and Anker, 2017), which means 17.5 healthcare visits per year for a family of five members to ensure a decent standard of healthcare. This would imply a major improvement from current healthcare practices in terms of contact with health services. We assume that 2.5 visits per person per year are to public clinics, with the remaining 1 visit assumed to be made to a pharmacy. There is a common pattern in developing countries whereby people often go to pharmacies for less severe illnesses (Anker and Anker, 2017).

The average cost of a clinic appointment could conservatively be set at a minimum of GTQ 20 (less than US\$3) per clinic visit based on costs we found in local clinics. For medication cost, we assume that medicine is not available in the public clinic 2/3rds of the time, and would have to be bought in private pharmacies. To determine the cost of medicine, pharmacies were consulted to give price quotes for the most popular medicine for the most common ailments (respiratory infections, diarrhea, parasites, stress, colds and flues, etc.) which were found to be typically around GTQ 100. Using the above information and assumptions, on average, a reference family would have to buy medicine 12.5 times a year (i.e. as a result of 2.5 visits each for 5 persons), at an average cost of GTQ 100 per purchase. An overview of how estimated health costs were calculated is given in Table 10.

The total estimate for yearly health costs per reference family is GTQ 1,583 (US\$211). This is GTQ 132 (US\$18) per month, considerably higher than what secondary data suggested at GTQ 36 (US\$5). That means that the amount for healthcare must be adjusted upward significantly, as secondary data underestimate the costs of decent healthcare services. It should be stressed that our estimate is quite conservative as it assumes only a few clinic visits per year at a low cost, and no major health complications. Also, it assumes that the medical treatments people need are not too complicated and expensive. This assumption is very conservative given that “Guatemala is heavily burdened by communicable, maternal, neonatal, and nutritional diseases” (USAID, 2015: 6). Therefore, the healthcare post check implies an increase of the healthcare costs by around GTQ 100 (US\$13) per month. The need for a substantial upward adjustment for healthcare costs is not surprising given the very low percentage indicated as spent by rural Guatemala households in secondary data.

Table 10. Overview of estimate of healthcare costs per reference family

| Health services per reference family | Yearly Costs in GTQ |
|---|---------------------|
| 1. Visits to clinic/hospital | |
| Number of hospital/clinic visits per year (2.5 visits per person x 5 persons) | 12.5 |
| Average cost of visit to public clinic, in GTQ | 20 |
| Total cost of visits to hospital/public clinic, in GTQ | 250 |
| 2. Cost of medicine | |
| Medicine after visit to public clinic/hospital (2 out of 3 clinic visits x 2.5 visits x 5persons) | 8.33 |
| Medicine bought directly from pharmacy (1 visit x 5 persons) | 5 |
| Average cost of medicine per visit, in GTQ | 100 |
| Total cost of medicine purchased per reference family (5 members) | 1,3333 |
| Total: Minimum yearly healthcare costs for reference family | 1,583 |

Source: The authors.

9.2 Education post check

Guatemala is the country with the lowest education coverage rates in Central America. In a region where the challenge of formal primary school coverage is largely tackled, participation in Guatemala's 6-year primary school program was relatively high in 2013, at 95%. However, the attendance rate for the final primary grade was only 71% (UNICEF, 2015a), and only 33.5% attained this grade at the official age (UNICEF, 2015b). The rate of continuation to secondary education is low (46%) (UNICEF, 2015a). Secondary education consists of 3 years of basic lower secondary education, and 2 or 3 years of diversified higher secondary education, depending on the subjects studied. Overall, more "than half of all children remain excluded from timely access, the highest rate in the Central America. A key bottleneck is the insufficient number of public secondary schools across the country, which account for 42.6 per cent of all schools" (UNICEF, 2015b: 3). Thus, when considering an education post check, it should be kept in mind that any adjustments are aimed to enable families to pay the expenses of the current public-school system up until and including secondary education, but that the Guatemala school system does not provide quality education by international standards. Also, it is important to note that transport costs for children (that are not considered in this education post check), while low for the more widely available primary schools, increases significantly for secondary education, since students must travel larger distances to get to school. Transport costs for school are included in transportation expenditures in the secondary data.

Fieldwork data confirmed the pattern of general and widespread primary school enrolment. Most people with children in rural Guatemala we spoke with for this study, confirmed that their children went to a public primary school. The enrolment fee itself was generally low, if charged at all. For our living wage estimate, we assume there is no enrollment cost and no monthly school fee for public school, because most public schools do not charge such fees although some do.

Parents are expected to pay for school food programs, be it in monetary terms (generally low cost for basic food services, of about GTQ 2 a day per child to cover the cost of the food) or through in-kind services, by expecting parents to prepare the food. Thus, this represents a typical cost of around GTQ 360 per child per year for covering expenses related to the school food programs. Indeed, parents we spoke to generally paid for this food service, or it was organized in the community and parents had to participate in the buying and preparation of food. Considering the meals were generally very basic (maize tortillas with beans, and maybe some rice), this meal was considered to not add much to the dietary nutritious standard set in our model diet and was more of a snack than a meal, although school lunches did have some value in reducing cost of food prepared at home. For this reason, we counted only half of the GTQ 2 cost for lunch per student per school day as the additional cost of education in this post check.

In addition, schools expect parents to pay for school uniforms, sports uniforms (for which we assume a conservative average of two uniforms a year), plus daily shoes, sport shoes and a school bag. During fieldwork we asked families for all these costs related to schooling, and documented prices in shops and markets for several of these items. For primary school, the costs of uniforms, school bags, shoes etc., were estimated to be around GTQ 480 per child per year. We then assumed these costs increase by a conservative percentage of 20% for secondary education. The estimate for school materials (pens, pencils, notebooks, etc.) is estimated conservatively to be about GTQ 300 per child per year for primary school, which we also assumed to go up by 20% between primary and secondary education.⁵ Finally, the cost of transportation to and from school is not considered here, because it is included in transportation costs in the secondary data. Table 11 presents these average costs by education level, from which an average school cost is calculated.

To calculate the average annual cost of education per child, the average cost per level is multiplied by the number of years a student would be in that level. The costs of the three levels are then all added up, and divided by the 18 years of childhood⁶. In total, average yearly

⁵ Although school uniforms and shoes are included in the clothing and footwear expenditure group and school materials are included in the recreation and culture expenditure group in the COICOP international classification as well as Guatemala household expenditure statistics, and therefore expenditures for these should theoretically already be included in the preliminary NFNH estimate, we felt that it was none-the-less appropriate to include minimal amounts for these in our post check for education in light of the low post primary school enrolment rates in Guatemala.

⁶ Average annual education cost per child: $((6*960) + (3*1,116) + (3*1,116)) / 18 = 692$.

school costs are estimated to be GTQ 692 (or US\$ 92) per child per year. For a reference family of 5, of which the three children attend the public-school system, this would imply an average cost of GTQ 2,076 (US\$ 277) per year, or GTQ 173 (US\$ 23) per month.

This GTQ 173 is considerably higher than what secondary data suggest (GTQ 121), and implies the need for an upward adjustment of about GTQ 50 per month for education. Again, these estimates are quite conservative.

Table 11. Overview of Estimate of Average Yearly Education Costs per Reference Family

| Education services per child | Yearly Costs in GTQ | | |
|---|---------------------|---------------------------|----------------------------|
| | Primary (1) | Lower secondary (2) | Higher secondary (3) |
| School food cost | 180 | 180 | 180 |
| Uniform, schoolbag and shoes* | 480 | 576 | 576 |
| School materials* | 300 | 360 | 360 |
| <i>Total: Yearly education costs per child per level</i> | <i>960</i> | <i>1,116</i> | <i>1,116</i> |
| <i>Number of years per level</i> | <i>6</i> | <i>3</i> | <i>3</i> |
| Total education cost per child per level | 5,760 | 3,348 | 3,348 |
| Total costs | | | In GTQ |
| <i>Total cost of education per child (4) = (1)+(2)+(3)</i> | | | <i>12,456</i> |
| <i>Average yearly cost of education per child (18 yrs) (5) = (4)/18</i> | | | <i>692</i> |
| Average yearly cost of education for reference family (6) = (5) x 3 children | | | 2,076 |

* It was assumed these costs increase by 20% between primary and secondary school.

Source: The authors.

9.3 Transportation post check

Finally, the costs of transportation were considered. The secondary data suggests that 4.7% of households' budgets go to costs of transportation, which would be about GTQ 2,292 (or US\$ 306) per year in the preliminary NFNH estimate. To evaluate whether this amount is reasonable, we talked to workers and asked them about transport. Generally, workers lived close to the farm and either walked or used public transport. It was not common to come across workers with their own means of transportation. Sometimes, transport was provided by the farm, but in all cases that we analyzed, the workers were charged a small fee, either directly or it was subtracted from their daily pay. In two of the five locations, the cost of such daily transportation was GTQ 5. However, given that not everybody uses such transport, it seems reasonable to assume that each worker pays at least GTQ 3 per day to cover

transportation costs to and from the farm. This is GTQ 900 for a worker per year. Otherwise, it seems reasonable to add GTQ 250 to cover expenses of going to markets (52 weeks, once a week at GTQ 2 = 104), visits to families (every two months at GTQ 10 = 60), and a few trips outside the immediate vicinity of a person's home, which are usually more expensive, depending on the distance (4 trips at GTQ 20 = 80).

The living wage must cover the costs of transportation for other family members too. For the spouse, we can assume a lower transportation cost because most daily activities are performed closer to home. However, it seems reasonable to allow for small yearly amounts for transportation costs to visit family in other areas, health facilities, work, markets and grocery stores. To cover for these expenses, we always assume that low cost transportation is used; for the spouse, GTQ 404 total is reserved.

Children have only low transportation costs outside those related to education. We assume that the primary school children attend is relatively close and can be reached by foot, which was generally the case in the communities we visited, and therefore does not imply an additional transport cost. For secondary school, however, we assume a cost of GTQ 3 per school day (180 school days per year). That is, for six years of secondary school, households pay GTQ 540 for school transport a year. Over a child's 18-year lifespan, this means a yearly amount of GTQ 140 (or US\$ 19). Again, to allow for occasional visits to family, and other trips outside their home town, we allow for GTQ 100 per child. Table 12 summarizes these decisions.

Table 12. Overview of Estimate of Average Yearly Transportation Costs per Reference Family

| Transportation | Frequency (days per year) | Average cost per trip in GTQ | Total average cost in GTQ |
|--|--|---|--|
| Worker 1: | | | |
| To and from work | 300 days | 3 | 900 |
| Market visits | 52 | 2 | 104 |
| Visits to family | 6 | 10 | 60 |
| Other trips | 4 | 20 | 80 |
| Total | | | 1,144 |
| Spouse: | | | |
| Transport related to household and secondary job | 160 | 1 | 160 |
| Market visits | 52 | 2 | 104 |
| Visits to family | 6 | 10 | 60 |
| Other trips | 4 | 20 | 80 |
| Total | | | 404 |
| Children: | | | |
| Average yearly transport cost for education | | | 140 |
| Visits to family | 6 | 10 | 60 |
| Other trips | 2 | 20 | 40 |
| Total per child | | | 240 |
| 3 children | | | 720 |
| Total: Yearly transport costs | | | 2,268 |

Source: The authors.

In the above analysis, our estimate for transportation costs is not substantially different from what secondary data suggest, and therefore, in light of the approximate nature of our post check estimate, it was decided to make no post check adjustment for transport.

9.4 Overview of NFNH costs

In the previous three sections, post check adjustments to healthcare, education and transportation expenses were explained. Table 13 summarizes the initial and adjusted amounts based on secondary data and our fieldwork, respectively.

Table 13. Post-check adjustments for monthly amounts spent on healthcare, education, and transport

| NFNH Expenditure group | Original % of all household expenditure in secondary data | Monthly amount in preliminary NFNH in GTQ | Post-check monthly amount in GTQ | Post-check adjustment in GTQ (rounded) |
|------------------------|---|---|----------------------------------|--|
| Health | 0.9 | 36 | 132 | 100 |
| Education | 3.1 | 121 | 173 | 50 |
| Transport | 4.7 | 176 | 187 | 0 |

Source: The authors.

As can be seen from the table, there are substantial post check adjustments for healthcare and education compared to what secondary data indicate is being spent on these items. This suggests that even at the 40th percent of the household income distribution in rural Guatemala, people do not spend enough to ensure decent standards of healthcare and education access. This is not surprising, given that the low levels of social security coverage for healthcare and the high school dropout rates reduce amounts for these in the secondary household expenditure data. It is important to underscore that our fieldwork post checks are very conservative estimates by any measure. For transport, the difference between the secondary data and post check amounts is too small to make an adjustment.

10. PROVISION FOR UNEXPECTED EVENTS TO ENSURE SUSTAINABILITY

Since large unforeseen expenses and events can quickly throw workers with a basic life style into poverty and debt from which they may not be able to recover, it is common when estimating a net living wage to add a small margin above the cost of a basic quality life to allow for unexpected events. Margins of 5 and 10 percent are the most common in living wage methodologies (Anker, 2011). There are many events of this type faced by workers and their families in Guatemala such as illnesses, accidents, funerals, etc.

It was decided to use a 5% margin for sustainability for rural Guatemala to allow for unforeseen emergencies. This percentage is recommended in the Anker methodology and has been used in living wage studies in other countries. Note that interest and debt payments are ignored in our calculations. It is assumed that a living wage would be sufficient to enable workers to stay out of crippling debt. The distribution of the costs of a basic, but decent life in rural central Guatemala, then, is summarized in Table 14.

Table 14. Monthly cost structure of basic, decent life in rural Guatemala

| Item | GTQ | USD |
|--|--------------|------------|
| PART I. FAMILY EXPENSES | | |
| Food cost per month for reference family (1) | 1,636 | 218 |
| Food cost per person per day | 10.76 | 1.43 |
| Housing costs per month (2) | 900 | 120 |
| Rent per month for acceptable housing | 700 | 93 |
| Utilities and minor repairs per month | 200 | 27 |
| Non-Food Non-Housing – Estimate after post check adjustments (3) | 1,215 | 162 |
| Non-Food Non-Housing - Preliminary estimate | 1,065 | 142 |
| Health care post check adjustment | 100 | 13 |
| Education post check adjustment | 50 | 7 |
| Transport post check adjustment | 0 | 0 |
| Additional 5% for sustainability and emergencies (4) | 188 | 25 |
| Total household costs per month for basic but decent living standard for reference family (5) [5=1+2+3+4] | 3,938 | 525 |

Source: The authors.

SECTION III

LIVING WAGE FOR WORKERS

11. FAMILY SIZE NEEDING TO BE SUPPORTED BY LIVING WAGE

Living wage is a family concept. This is clearly shown by the ILO comprehensive review of living wages (Anker, 2011). The need for a living wage to support a family is also included in the living wage definition of the Global Living Wage Coalition (see Section 4 above). It is, therefore, necessary to determine an appropriate family size for rural Guatemala for estimating a living wage.

In this living wage study, a family size of 5 persons (two adults and three children) is used for rural Guatemala. This family size is based on information on: (i) fertility rate and child mortality rate and the number of surviving children women in rural Guatemala typically have, and (ii) average household size in rural Guatemala. The total fertility rate for rural Guatemala is 3.7 for 2014-15 (INE - ENSMI, 2015). When under-five child mortality of around 44 per 1000 births is considered (loss of about 0.09 births), the number of children born and surviving to age 5 is around 3.6 for rural Guatemala. This adjusted fertility rate implies an average family size of over 5 (2 adults and more than 3 children). However, when the average household size in rural Guatemala is considered, it seems more prudent to work with a family size of 5.

The Anker methodology recommends also calculating average household size excluding single person households (that definitely do not include children) and very large households (that are almost always extended family households in which there is a high likelihood of having more than 2 workers) which is a scenario that is not contemplated when a living wage benchmark is estimated. Therefore, we calculated average household size excluding households with one person and very large households with more than 8 persons (i.e. more than 2 + total fertility rate + 3 persons). The average household size for households with between 2 and 8 persons (HH₂₋₈) is 4.7, just under 5, based on INE-ENCOVI (2014) data.⁷

Therefore, it seemed that a family of five persons, with two adults and three children, is a reasonable average reference family for this study.

⁷ It is worth noting that the high prevalence of female-headed households in Guatemala (25.1% of all households in Guatemala according to World Bank Indicators) reduces average household size while generally not allowing the possibility of more than one adult worker in such households.

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

Given that the living wage is a family concept, it is appropriate to expect more than one adult in a family to provide support through work⁸. Therefore, it is necessary to determine the number of full-time working adults per reference family that provide financial support.

In this report, we use 1.53 full-time equivalent workers per family to estimate the living wage for the rural Central Guatemala area. This means that the monthly cost of a decent but basic living standard for a family of 5 persons of GTQ 3,938 is divided by 1.53 to determine our take home pay required to pay for the cost of a basic but decent life style, without considering any taxes and payroll deductions. That is, the net monthly living wage rural Central Guatemala is GTQ 2,572 (US\$ 343). To determine this number of full-time equivalent workers per couple to use to estimate a living wage, data was gathered for rural Guatemala on: (i) labor force participation rates (LFPR), (ii) unemployment rates, and (iii) number of hours worked to determine the extent of part-time employment. From these data, the likelihood of full-time employment is calculated as follows:

$$\text{Likelihood of full-time employment} = \text{LFPR} \times (1 - \text{unemployment rate}) \times \text{Proportion of full-time hours worked}$$

For labor force participation rates, we used ILO LABORSTAT (2017) which reported these for the age group 25+, unlike INE-ENIE (2016), which reported these for ages 15 years and older. Labor force participation rates are high for men age 25+ in rural Guatemala (92.3%) as is common in rural areas all over the world⁹. Labor force participation rates for women age 25+, however, are quite low, at 33.4% (ILO LABORSTAT, 2017)¹⁰. This rate, however, most likely underestimates the actual level of female labor force participation. The problem with rural Guatemala data we think is that work done by women is mostly informal, often done from home, combined with unpaid reproductive work, and often temporary related to seasonal demand, for example during coffee picking season. In addition, in agriculture, the male head of household is often the only registered worker, and the labor force activity of his wife and children who “help” often goes unrecorded and unrecognized in labor statistics (Verité,

⁸ Although child labor is quite common in rural (agricultural) Guatemala (see Section 3), the Anker living wage methodology does not consider child labor acceptable. Therefore, in our living wage benchmark calculations, it is assumed that there is no child labor to be consistent with the decency concept of a living wage.

⁹ Ages 25-59 are used because many of those younger than age 25 are still be in school and are less likely to have families of their own; and many persons over age 59 are retired and/or have adult age children.

¹⁰ It is worth noting that reported labor force participation rates vary slightly year by year in Guatemala - especially for women undoubtedly because of the difficulty of measuring women's often informal economic activity. Reported LFPR for women ages 25+ for rural areas was: 33.4, 32.3, 33.4, and 37.2 for 2016, 2015, 2014, and 2013 respectively (only recent years with rates reported by ILO LABORSTAT). Reported LFPR for men ages 25+ for rural areas was: 92.3, 93.6, 92.8, and 92.9 for 2016, 2015, 2014, and 2013 respectively.

2013). This probably means that women’s informal economic activity is not fully captured by labor force surveys and labor statistics.

However, it was considered too arbitrary to adjust national statistics on female labor force participation rates even though they may be too low, the informal labor practices in agriculture justify working with low female LFPRs. For this reason, the ILO LABORSTAT data were used without any adjustment to calculate the likelihood of full-time employment. For unemployment rates, we used 1.6% for men and 3.2% for women as these were those reported for rural areas (INE-ENIE, 2016). For the part-time employment, we calculated the proportion of full-time hours (48) worked per week (INE-ENIE, 2016). In Table 15 these data are summarized.

Table 15. Estimate of percentage of adults who are full-time equivalent workers for Rural Guatemala

| Variable | Age group | Rural | | |
|---|-----------|--------|--------|-------------|
| | | Men | Women | AVERAGE |
| Labor force participation rate (ILO, LABORSTAT, 2017) | 25-59 | 92.30 | 33.40 | |
| Unemployment rate (INE-ENIE, 2016) | 25-59 | 0.0160 | 0.0320 | |
| Part-time employment rate * | 15+ | 0.8995 | 0.7665 | |
| Estimated percentage of persons working full-time ** | 25-59 | 81.70 | 24.78 | 53.2 |
| * Calculated based on INE-ENIE (2016), as the proportion of full-time hours (48) that men and women work. | | | | |
| ** Calculated as: LFPR × (1-Unemployment rate/100) × proportion of full-time (48) hours worked). | | | | |

Source: The authors, based on ILO LABORSTAT (2017); INE-INIE (2016).

Using the data from Table 15, the likelihood of full-time employment around the year for men and women between 25-59 years in rural Guatemala is estimated to be 0.53. This implies for our living wage benchmark estimate, 1.53 full-time equivalent workers per household for rural Guatemala, when one adult in a family is a full-time year around worker such as on a plantation.

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

For the gross living wage estimate, it is necessary to consider all income tax and mandatory deductions from pay to ensure that a living wage paid by an employer provides sufficient take home pay for the worker, so that he or she has sufficient disposable income to be able to afford the decent standard of living set in this benchmark, for him or herself and the reference family.

In Guatemala, in formal labor relations in the private sector, the most important mandatory payroll deduction for workers is for the Guatemalan Institute for Social Security (IGSS) of 4.83%. For this report, in the calculations of our living wage we assume the IGSS deduction is made and that workers are registered in the social security institute. The employer pays another 12.76% over a worker's salary, but this is not considered for the calculation of the living wage, as this is a business expense and does not affect the worker's gross salary.

Income taxes in Guatemala are 5% over the first GTQ 300,000 per year after deductions, and 7% for any additional income. However, to calculate the taxable income, a yearly amount of GTQ 48,000 for personal expenses is deducted, as are the worker's contributions to the IGSS. For example, a worker who earns net GTQ 3,500 per month, an amount significantly above the living wage estimate, would have a yearly income of GTQ 42,000. Once deductions are subtracted (GTQ 48,000 + GTQ 1,884 for the IGSS), his taxable income is GTQ -7,884. In other words, workers in the agricultural sectors would not be expected to pay income tax, even if they earn a living wage. Thus, over the net living wage, a typical agricultural worker with a formal labor contract pays 4.83% of his or her wage for IGSS and no income tax.

SECTION IV

ESTIMATING GAPS BETWEEN LIVING WAGE AND PREVAILING WAGES

14. PREVAILING WAGES IN COFFEE SECTOR

14.1 Basic wage, cash allowances and bonuses, and overtime pay

Employers must pay a monthly lump sum cash allowance of GTQ 250 per worker as a productivity bonus for workers in the private sector. This extra amount is not subject to payroll tax. Also, employers must pay a bonus in the form of a 13th month, commonly known as *Aguinaldo*, and another one in July of each year called the Annual Bonus for Workers of the Private and Public Sector, which consists of a one-time payment for fixed workers of 100% of the going monthly salary. The latter Bonus is also known as Bono 14. These bonuses are obligatory payments under Guatemala law, and therefore these cash allowances and payments should be considered when analyzing prevailing wages in the coffee sector - when work arrangement is formal and a worker is permanent.

However, the most common labor relations in agriculture in general, and the coffee sector in particular, is informal and so does not come with these cash allowances and bonuses. The most common form of remuneration in most agricultural sectors, and small and medium size coffee farms in particular, is piece rate. In the coffee sector, workers generally get paid based on the number of *quintales* (1 quintal is 100 pounds) they pick, or by a specific task, usually expressed by the area of the plantation covered (when cleaning the plantation), or number of sacks (when fertilizing). Secondary studies suggest that most workers do not receive cash allowances or bonuses for such piece rate work (Danwatch, 2016; Barth, 2009; Verité, 2013), something we also found during our fieldwork as well. Overtime payments are also non-existent in such cases, given the amount paid is determined by the piece, and thus a worker's productivity. Also, most agricultural and coffee workers are temporary workers. In a survey done by Verité (2013), 79% of coffee workers had a temporary employment status.

To calculate the cash basic living wage, we decided to include the GTQ 250 productivity bonus since we found that the productivity bonus of GTQ 250 per month is usually paid in its entirety if the worker is not absent from work in the entire month. In contrast, previous studies and our own fieldwork both strongly suggest that 13th and 14th month bonuses are not given to most coffee workers because they are often paid on a daily piece rate basis for the 3-4 months of the year when they work. Indeed, according to Verité (2013), only 1 in every 4 workers in the coffee sector is paid the Bono 14 and *Aguinaldo*. Therefore, when estimating our cash living wage per month, we do not include on a prorated basis the 13th and 14th month bonuses.

In section 15, secondary information on prevailing wages is compared to our living wage estimate. All comparisons with our monthly living wage estimate are made under the assumption that the GTQ 250 Bonus is paid, but that the 13th and 14th month bonuses are not. For large farms with mostly permanent workers, the cash monthly living wage could be around 16% lower at around GTQ 2,031 (US\$271) because many workers on such farms would receive the 13th and 14th month payments.

14.2 In-kind benefits as partial payment of living wage

In-kind benefits were not included in any of our calculations of the cash living wage in this study, because they are not a common form of payment in the coffee sector in Guatemala. Some farms offer housing for their workers, but this has become less and less common with the proliferation of smaller sized farms in Guatemala. Also, during our fieldwork, we found that in the cases when workers lived in housing provided by the farm, they were charged market rates for rent. We also found that transport service to and from the farm was not often provided and when it was that workers were charged for this service. Generally, it was subtracted from the daily piece rate they earned that day. For these reasons, it was decided to not include in-kind benefits as partial payment of the living wage, as they seemed uncommon and when provided workers generally paid for them.

However, it is important to note that on larger farms in Guatemala (not so common in the central departments of the country) in-kind benefits might be important to take into consideration as partial payment of the living wage. Larger farms also sometimes provide workers with housing at no cost, or at a subsidized low cost, but this housing is often substandard and for seasonal workers who live without their families in these houses. Also, during harvest season, larger farms often provide workers with some food (generally a couple of meals of beans per day) (Verité, 2013).

15. LIVING WAGE IN CONTEXT AND COMPARED TO OTHER WAGES

In this section, we provide context for our living wage estimate. To compare our living wage to prevailing wages, we use secondary references for prevailing wages in the agricultural/coffee sector. First, we used the minimum wage for agricultural workers. The minimum wage per month for agricultural workers was calculated in two ways. There was the government indicated minimum wage per month which is determined by multiplying 365/12 (i.e. days per month) times the daily minimum wage (plus the GTQ 250 productivity bonus). As this is unrealistic for most coffee workers who are paid on a daily basis, we calculated an alternative, and more realistic minimum wage per month for coffee workers by multiplying the daily minimum wage by 24 workdays per month. While legally in Guatemala, workers should receive payment on his or her free day and on sick days, in practice this does not seem the case. Indeed, a major challenge faced by the coffee sector seems to be that minimum wages are generally not being paid as according to Verité (2013) around 79% of coffee workers received less than the minimum wage.

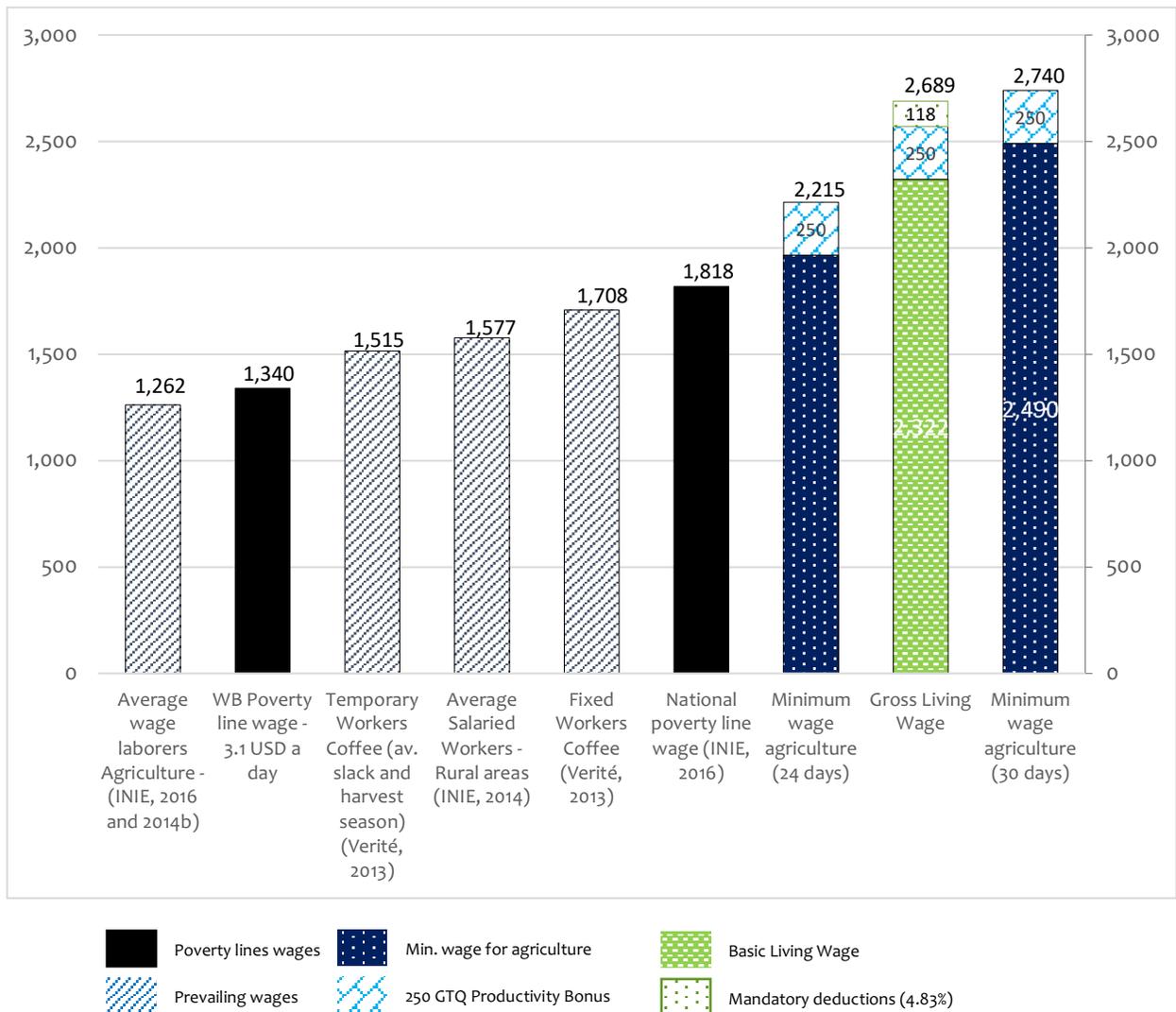
Second, we used international and national poverty line wages. These poverty lines were converted to poverty line wages for the reference family by multiplying by five (number of family members) and dividing by the same number of full-time equivalent workers in reference family of 1.53. The international poverty lines were furthermore converted from PPP dollars to Quetzales based on purchasing power parity conversion for consumer prices.

Third, we used data from secondary sources on prevailing wages in agriculture, and where available in coffee, for temporary and fixed workers. These prevailing wage estimates come from different sources. Based on a survey of 372 coffee workers, Verité (2013) reports average monthly wages for temporary workers during slack (GTQ 1,353, adjusted for inflation) and harvest season (GTQ 1,677, adjusted for inflation). We took an average of the two for temporary workers, of GTQ 1,515 (US\$ 202). Verité also reports GTQ 1,708 (US\$ 227, adjusted for inflation) for permanent workers. These amounts refer to gross wages and represent the amount that employees were paid, and therefore already include the GTQ 250 productivity bonus. Also, from this amount, in theory a worker must pay his or her own contribution to the social security system. Probably the most representative information comes from the National Statistics Institute (INE, 2016 and 2014b) in the results from the National Survey of Income and Employment (INE-ENIE, 2016) which reports a national average monthly income of GTQ 1,574 (US\$ 210) for salaried workers in rural areas. Based on information from 2014, wage laborers in agriculture earn only about 80% of that average wage, or about GTQ 1,260 (INE-ENIE, 2014b and 2016). These are gross wages, and already include the GTQ 250 Productivity Bonus.

15.1 Wage ladder

Figure 12 provides a wage ladder that compares our living wage to poverty line wages, the minimum wage, and prevailing wages. All prevailing wage estimates were, where necessary, adjusted for inflation to 2016. The figure includes two poverty line wages, one from the World Bank international poverty line and one based on national poverty lines. There are five different estimates of prevailing wages. First, an average of the prevailing wages for temporary workers in the coffee sector, and another for fixed workers (Verité, 2013). Second, the average prevailing wage of salaried workers in rural areas as well as the average wage of agricultural workers (INE-ENIE, 2016). Note that these include other agricultural occupations outside coffee, but constitute a good comparison because they refer to salaried work. Third, an average wage for wage laborers in agriculture (INE-ENIE, 2016 and 2014b). Finally, the minimum wage per month is included as an important reference to compare to our living wage estimate. It is calculated in two ways as explained above.

Figure 12: Wage Ladder for Rural Central Guatemala



Source: The authors.

Note: When a source is for a year before 2016, it was increased by inflation to 2016.

Value of in kind benefits is not included as partial payment of our living wage, because in the coffee sector they are not common and when provided farms usually charge for them. However, when farms in the coffee sector or farms in other sectors provide free in-kind benefits of personal value to workers, this could be considered partial payment of a living wage.

As can be seen from Figure 12, the gross living wage is much higher than most estimates of prevailing wages, adjusted for inflation until 2016.¹¹ The gross living wage is GTQ 2,689 (US\$

¹¹ Inflation rate has recently been around 4% inflation a year (Central Bank of Guatemala, 2016).

359), of which GTQ 250 (US\$ 33) constitutes a productivity bonus that is not taxed, and GTQ 118 (US\$ 16) are the mandatory payroll deductions for the national social security system.

This comparison paints a picture of a situation where current wages are far below a living wage. The gross living wage of GTQ 2,689 is about 70% higher than average income for salaried workers in Guatemala's rural areas, and about 57% higher than the estimate for fixed coffee workers in the coffee sector. The living wage is 77% higher than the average wage for temporary coffee workers, and 113% higher than the average wage for agricultural wage laborers.

The large gap between the living wage and the prevailing wages clearly reflects the low wages in the agricultural sector rather than extravagant standards for the living wage estimate, as throughout this report rather conservative assumptions of a basic but decent living standard were used. This observation is also supported by the fact that all of these prevailing wage estimates are below the national poverty line wage, which helps explain the high incidence of poverty in Guatemala. Even permanent coffee workers, who earn the highest prevailing wages in the coffee sector, earn 6% less than the national poverty line wage.

Interestingly, our living wage is not that much different than the minimum wage for agriculture. It is slightly lower (1.9%) than the government's monthly minimum wage which is calculated by multiplying the daily minimum wage rate by 30.42 (i.e. 365 divided by 12) and it is only 21% higher than a more realistic monthly minimum wage that assumes 24 paid days per month.¹²

One of the Guatemalan agricultural sector's biggest challenges is to formalize labor relations and ensure minimum wages are paid – although it is worth noting that Guatemala has an unusually high agricultural minimum wage which is close to our estimate of a rural living wage. Independent studies like Verité (2013) have noted the challenge of minimum wages not being paid (78% of workers interviewed in the coffee sector by Verité (2013) did not earn the minimum wage).

15.2 Wage trends

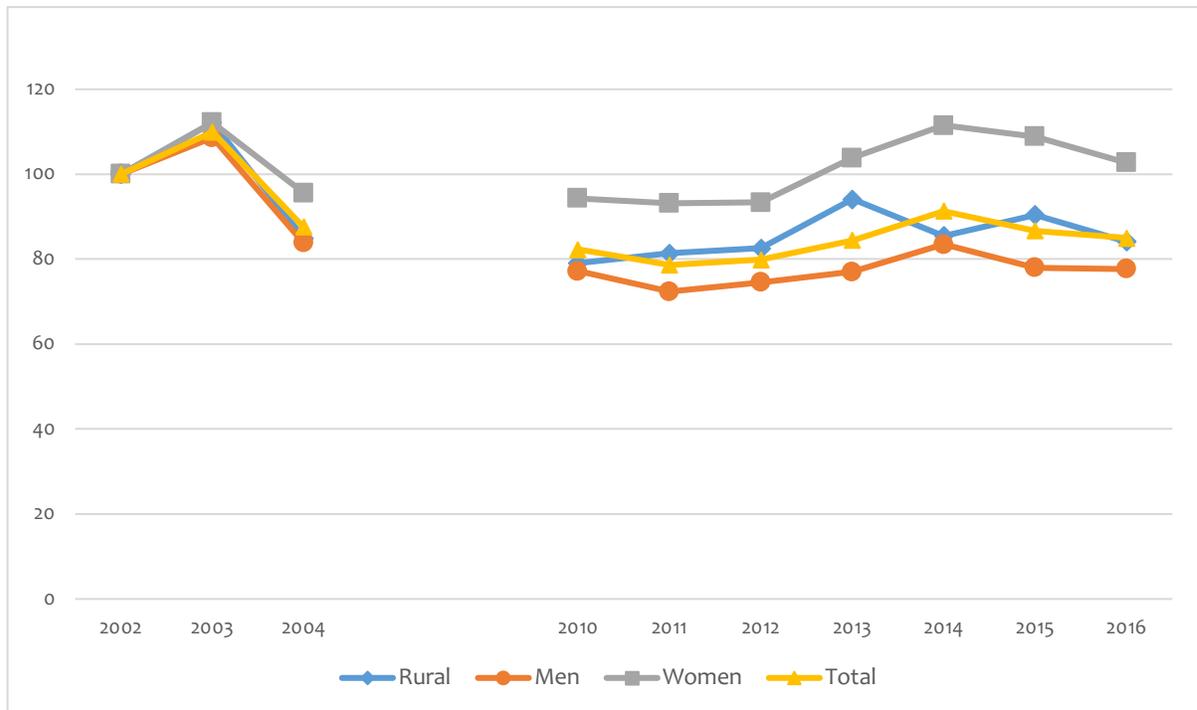
This section analyses recent prevailing wage trends, to put the previously discussed wages in perspective. For this, Figure 13 shows real wage trends (i.e. wages adjusted for inflation) for the periods 2002-2004 and 2010-2016, for which the National Statistics Institute reports data. Unfortunately, there are no data reported for the 2005-2009 period. These wage data are indexed to 2002 to see how real wages have evolved over the last 15 years.

Figure 13 shows that real wages adjusted for inflation have fallen slightly since 2002. From 2002 to 2010, wages have fallen by about 20% in real terms. Between 2010 and 2014, real

¹² While employers must legally pay for Sundays, given the informality of labor relations in the agricultural sector, and the use of piece rate payment schemes, this does not happen in practice. 24 paid days per month allows for paid national holidays and paid leave days as established by the Guatemalan law.

rural wages slowly rose, but fell again since then. In general, real wages have not recovered to 2002 levels. The only exception is women’s wages, which had a smaller initial decrease until 2012, and a subsequent increase. In 2016, real wages for women are 2.7% higher than 2002 levels. That is, women’s real wages have been catching up a little bit compared to men’s. It is important to note, however, that women in Guatemala in 2016 still earn on average about 15% less than men (the gap was 24% in 2010).

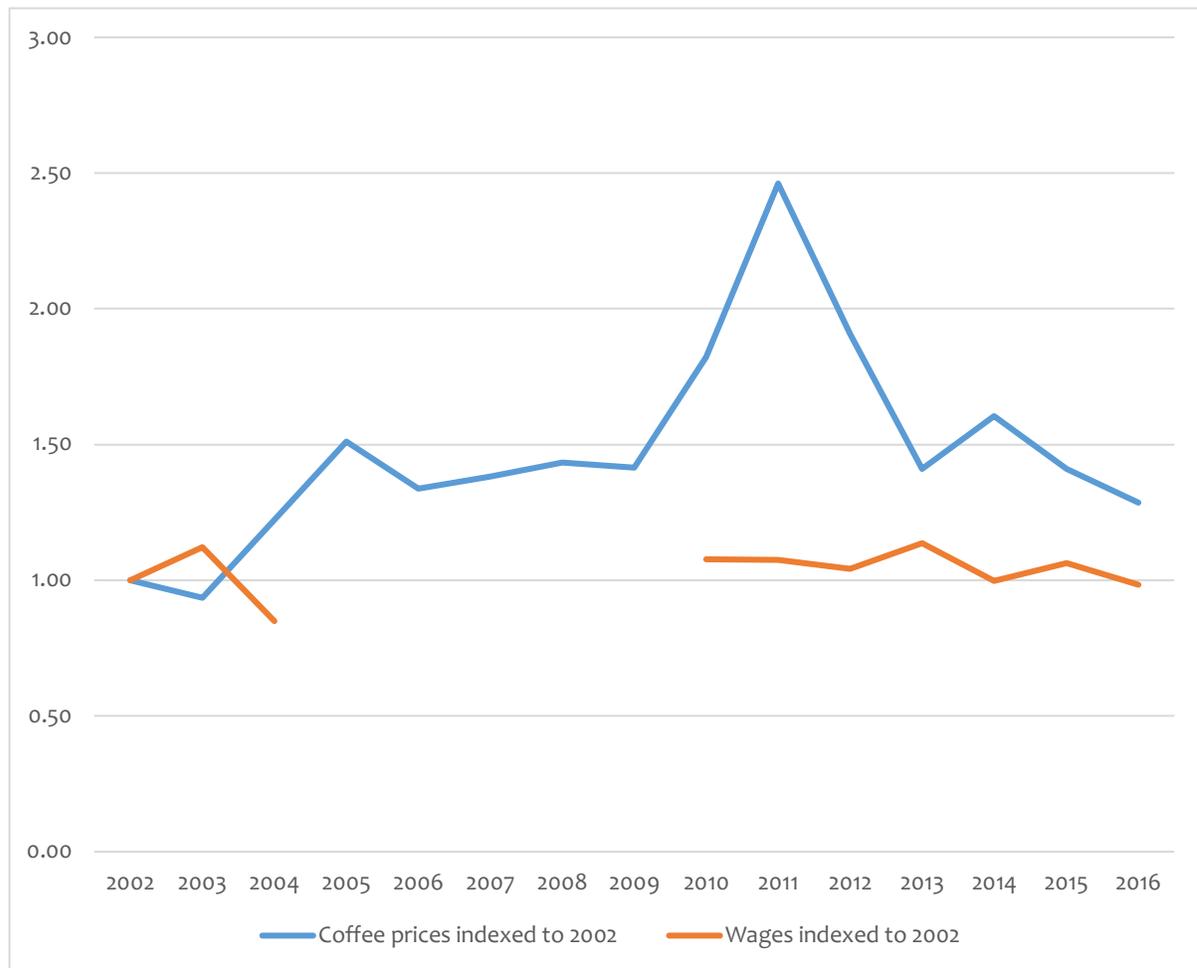
Figure 13. Real wage trends in Guatemala, 2002-2016 (2002=100)



Source: The authors’ calculations based on ENEI Estadísticas, <http://www.ine.gob.gt/index.php/estadisticas>.

Figure 14 compares changes in the real average rural wage with changes in the real coffee price in GTQ received by growers in Guatemala (ICO, 2016) for the same 2002-16 period. Values for both variables are indexed to 2002 so that change is easy to observe. Real coffee prices in GTQ adjusted for inflation (converted at yearly exchange rate) went up by around 30% between 2002 and 2016, and were much higher for a considerable part of this period (more than doubling at one point). At the same time, the real wages of workers in rural areas decreased slightly. This situation – stagnant or decreasing real wages of workers despite increasing real coffee prices - is a bit unsettling.

Figure 14. Real wages and real coffee prices adjusted for inflation, indexed to 2002



Source: The authors’ calculations based on ENEI Estadísticas, <http://www.ine.gob.gt/index.php/estadisticas> and International Coffee Organization, http://www.ico.org/coffee_prices.asp?section=Statistics.

16. CONCLUSIONS

This report has presented a living wage estimate for the rural areas of Guatemala’s Central Departments, with a special (but not exclusive) focus on coffee, where about 46% of total coffee production in Guatemala is concentrated. Table 16 provides a summary of the details of the living wage estimate. The fieldwork focused on 5 regions in central Guatemala to make our living wage estimate generalizable for rural Central Guatemala. Table 17 provides some of the key assumptions used to make our living wage estimate.

The net living wage estimate for the rural areas of Central Guatemala is GTQ 2,572 (US\$ 343). When mandatory payroll deductions for the public social security system are added, this means a gross living wage of GTQ 2,689 (US\$ 359).

Our living wage is much higher than prevailing wages in agriculture including in the coffee sector (using prevailing wages reported in other studies) - between 60% and 100% higher than average prevailing wages in agriculture and coffee sector. The large gap between prevailing wages and our living wage reflects the low wages received by workers in agricultural sectors, as documented by other independent studies, and not an extravagantly high living wage. As demonstrated throughout this report, we used conservative assumptions to estimate living costs. For example, prices per kilo of most items of the model diet used to estimate food costs are lower than the food prices used to calculate the national poverty line. Also, we assumed that half of all tortillas in the model diet were made at home, at a much lower cost than buying them on the street or in a shop. And, we used acceptable low-cost rice, fruits, vegetables, meats (with mostly chicken, the cheaper of the meats), etc. The housing standard used to determine housing costs was quite basic considering that it allowed for a tin roof, an outside latrine toilet, and only 40 square meters of living space for a family with five persons. Thereby, the housing standard follows the local social housing standard, which is an absolute minimum for decent living.

Other indications that our living wage is not extravagant are that: (i) our living wage per month is similar to the statutory minimum wage per month for agricultural workers according to government (which assumes 30.42 days of paid work per month) and only around 21% higher than the minimum wage per month assuming 24 workdays per month, which is more realistic; and (ii) only around 50% higher than a poverty line wage. The small difference between the living wage and the minimum wage reflects one of the main challenges in Guatemala's agricultural sector which is informalization of labor relations and minimum wage not often being paid because agricultural workers are often paid by piece rate.

The large gap between actual wages and the living wage explains why many workers in rural areas live in substandard housing and often forgo essential activities such as healthcare and education for their children. Appropriate mechanisms need to be worked out to narrow the gap between living wages and prevailing wages if agricultural workers are to be able to afford a better living standard and eventually a decent living standard. It is of utmost importance to make the payment of a living wage an objective of the entire value chain, as employers alone cannot be expected to cover the costs that paying a living wage implies. Also, private and public initiatives could make more of an effort to provide inexpensive, basic, but decent housing, following the minimum social housing standard in Guatemala. It would also help if free and quality transportation to work (such as some farms already have) is replicated by more farms as long as this is free to workers. This would help coffee workers to rent less expensive homes and commute from more distant workplaces without paying anything from their pocket for transport. Establishing free or cheap day care centres for preschool children, which would enable women to participate more in the (formal) labour market would also help, as would an improved public health system that would reduce out of pocket expenditure on healthcare.

This report shows that serious efforts are needed to increase wages, a challenge which would be considerably easier to tackle if more workers were formalized as they would then be sure to receive the minimum wage. Efforts to raise wages in the coffee sector need to involve the entire value chain and cannot only be the sole responsibility of coffee producers, since they are also under intense pressure from international buyers to keep costs low - although trends in the past 15 years as regards wages (more or less unchanged or slightly falling after adjusting for inflation) and coffee prices in GTQ (increasing after adjusting for inflation) indicate that there may be some room for improvement at the farm level.

Table 16. Monthly cost structure of basic, decent life in rural Guatemala

| Item | GTQ | USD |
|---|--------------|------------|
| PART I. FAMILY EXPENSES | | |
| Food cost per month for reference family (1) | 1,636 | 218 |
| Food cost per person per day | 10.76 | 1.43 |
| Housing costs per month (2) | 900 | 120 |
| Rent per month for acceptable housing | 700 | 93 |
| Utilities and minor repairs per month | 200 | 27 |
| Non-food non-housing (NFNH) costs per month taking into consideration post checks (3) | 1,215 | 162 |
| Preliminary estimate of NFNH costs | 1,065 | 142 |
| Health care post check adjustment | 100 | 13 |
| Education post check adjustment | 50 | 7 |
| Transport post check adjustments | 0 | 0 |
| Additional 5% for sustainability and emergencies (4) | 188 | 25 |
| Total costs per month for basic but decent living standard for reference family (5) [5 = 1+2+3+4A+4B] | 3,938 | 525 |
| PART II. LIVING WAGE PER MONTH | | |
| Net living wage per month (6) [6 = 5/# full-time workers] | 2,572 | 343 |
| Statutory deductions from pay (7) ^a | 118 | 16 |
| Gross living wage per month (8) [8 = 6+7] | 2,689 | 359 |
| PART III: CASH (BASIC) LIVING WAGE ASSUMING WORKERS RECEIVE TYPICAL BONUSES AND BENEFITS IN COFFEE INDUSTRY | | |
| Value per month of common in-kind benefits in industry or establishment (9A) | 0 | 0 |
| Value per month of common cash allowances and bonuses and benefits in an industry or establishment (9B) ^b | 250 | 33 |
| Net cash (basic) living wage assuming workers receive typical in-kind benefits, cash allowances, bonuses, and benefits in an industry or establishment (10) [10 = 6 - 9A - 9B] | 2,322 | 310 |
| Gross cash (basic) living wage assuming workers receive typical in-kind benefits, cash allowances, bonuses, and benefits in an industry or establishment (11) [11 = 8 - 9A - 9B] | 2,439 | 325 |

Notes: ^a Statutory deductions from pay include 4.83% for IGSS, Guatemala's Social Security Institute.

^b Common cash allowances and bonuses include a productivity bonus of GTQ 250 per month.

Table 17. Key values and assumptions for a living wage estimate

| Key values and assumptions | Comments |
|---|---------------------------------------|
| Location and industry | Central Departments and Coffee sector |
| Exchange rate of local currency to USD | 7.5 GTQ = 1 USD |
| Number of full-time workdays per month | 24 |
| Number of hours in normal workweek | 48 |
| Number of workers per couple | 1.53 |
| Reference family size | 5 |
| Number of children in reference family | 3 |
| Preliminary ratio of non-food non-housing costs to food costs | 0.65 |

Source: The authors.

REFERENCES

- Anacafé (2016). A Day in the Life. Working for Anacafé, Guatemala's Coffee Association. <http://www.perfectdailygrind.com/2016/08/day-life-working-anacafe-guatemalas-coffee-association/>. Ciudad de Guatemala: Anacafé.
- Anker R. (2006a). Living wages around the world: A new methodology and internationally comparable estimates. *International Labour Review*. Vol 145 no 4.
- Anker R. (2006b). Poverty lines around the world: A new methodology and internationally comparable estimates. *International Labour Review*. Vol 145. No 4.
- Anker R. (2011). Estimating a living wage: A methodological review. *Conditions of Work and Employment Series No. 29*. International Labour Organization. Geneva.
- Anker, R. and Anker, M. (2017). *Living Wages Around the World: Manual for Measurement*. Northampton, MA, USA: Edward Elgar Publishing.
- Asociación de Trabajadoras del Hogar a Domicilio y de Maquila (ATRAHDOM) (2010). *Las Mujeres en el Mercado laboral Guatemalteco*. Ciudad de Guatemala: ATRAHDOM.
- Barth, J. (2009). *Taste, Ethics and the Market in Guatemalan Coffee. An Ethnographic Study*. D.Phil. in Geography. Oxford: University of Oxford.
- CEPAL (2016). CEPALSTAT. Santiago de Chile: CEPAL.
- Commission for the Verification of Codes of Conduct (COVERCO) (2000). *Trabajadores del café en Guatemala: Un estudio de condiciones laborales y de vida en las fincas del café*. <http://www.coverco.org.gt/PDF/Trabajadores%20de%20Caf%C3%A9%20en%20Guatemala,un%20estudio%20de%20condiciones%20laborales%20y%20de%20vida%20en%20fincas%20del%20caf%C3%A9;%20Guatemala%202000.pdf>.
- Danwatch (2016). *Bitter Coffee*. Copenhagen. Danwatch.
- Deguate (2013). <http://www.deguate.com/infocentros/ecofin/guatemala/economia/indicadores-economicos/producto-interno-bruto.php#.WAWVFuArKUK>
- Fischer, E. and Victor, B. (2014). High-End Coffee and Smallholding Growers in Guatemala. *Latin American Research Review*, Vol. 49, No. 1.
- Glenn Falls Medical Mission Foundation (2011). *Typical Clinical Statistics*. <http://gfmfmf.org/clinical-stats.htm>. Accessed 30-01-2017.
- Guatemala Central Bank (2016). <http://www.banguat.gob.gt/>. Ciudad de Guatemala: Banco de Guatemala.
- ILO (2006). *Trabajo Infantil Y Pueblos Indigenas*. Primera edición 2006. http://white.oit.org.pe/ipec/documentos/guatemala_indigenas.pdf.
- ILO (2016), ILOSTAT (2016). ILO Statistics and databases. <http://ilo.org/global/statistics-and-databases/lang--en/index.htm>. Accessed 02-05-2017.

- ILO/UNICEF/World Bank (2003). Understanding Children’s Work in Guatemala” Report prepared for the Understanding Children’s Work Project, a research co-operation initiative of the International Labour Organisation, UNICEF and World Bank, March 2003. http://white.oit.org.pe/ipec/documentos/gua___national_report.pdf.
- Instituto Nacional de Estadística (INE) (2014a). Encuesta Nacional de Condiciones de Vida (ENCOVI) 2014. Ciudad de Guatemala: INE.
- Instituto Nacional de Estadística (INE) (2014b). Encuesta Nacional de Empleo e Ingresos (ENEI) 2-2014. Ciudad de Guatemala: INE.
- Instituto Nacional de Estadística (INE) (2015). Encuesta Nacional de Salud. Materno Infantil, 2015. Guatemala: Guatemala City.
- Instituto Nacional de Estadística (INE) (2016). Encuesta Nacional de Empleo e Ingresos (ENEI) 2-2016. Ciudad de Guatemala: INE.
- Ministerio de Agricultura Ganadería y Alimentación (2013). *El agro en cifras 2013*. Dirección de Planeamiento. Ciudad de Guatemala: MAG.
- Martins IC, Luiza VL, Bastos LA, and Ross-Degnan D. Access to medicines for acute illness in middle income countries in Central America. *Rev Saúde Pública* 47(6):1069-79. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4206104/>. Accessed Aug. 4, 2016.
- Monroy, M.; Rodríguez F. and Toledo, P. (2012). Diseño de la nueva canasta básica de alimentos de Guatemala. *Perspectivas em Nutrición Humana* 14 (2): 125-144.
- Pan American Health Organization (2012). *Health in the Americas – Guatemala*. PAHO/WHO.
- UNDP (2015). Human Development Report – Indicators 2015. New York: UNDP.
- UNICEF (2015a). The State of the World’s Children Report 2015 Statistical Tables. New York: UNICEF.
- UNICEF (2015b). Guatemala Country program document 2015-2019. New York: UNICEF.
- USAID (2015). Guatemala Health System Assessment. Maryland: USAID.
- Verité (2013). Research on Indicators of Forced Labor in the Supply Chain of Coffee in Guatemala. Amherst, USA: Verité.
- World Bank (2016). http://databank.worldbank.org/data/views/reports/ReportWidgetCustom.aspx?Report_Name=CountryProfile&Id=b450fd57. Washington: The World Bank.

ANNEXES

Table A1. Comparison of the Living Wage Model Diet (LW) and the Poverty Line diet (PL)

| Food item | Purchased grams | | Difference | Energy per person (Kcal) | | | | Cost per Kilo | | Final cost | | | |
|---|-----------------|-------------------|------------|--------------------------|-----------------|-------------------|-----------------|---------------|-------------------|---------------|----------------|-------------------|----------------|
| | LW Model Diet | Poverty Line Diet | | LW Model Diet | % of total Kcal | Poverty Line Diet | % of total Kcal | LW Model Diet | Poverty Line Diet | LW Model Diet | % in total GTQ | Poverty Line Diet | % in total GTQ |
| Maize tortilla (in LW: 50% home-made, 50% bought elsewhere) | 458 | 430 | 28 | 943,1 | 42,0 | 877,1 | 38,1 | 4,92 | 7,61 | 2,25 | 24,3 | 3,27 | 25,7 |
| Rice | 32 | 28 | 4 | 115,7 | 5,2 | 101,4 | 4,4 | 8,04 | 10,65 | 0,26 | 2,8 | 0,30 | 2,4 |
| White bread, francés | 16 | 7 | 9 | 45,7 | 2,0 | 22,1 | 1,0 | 14,82 | 17,17 | 0,24 | 2,6 | 0,12 | 1,0 |
| Other bread (sweet) | | 28 | -28 | | | 105,6 | 4,6 | | 14,35 | 0,00 | 0,0 | 0,40 | 3,2 |
| Pasta/Spaguetti | 29 | 15 | 13 | 106,0 | 4,7 | 56,2 | 2,4 | 12,25 | 17,83 | 0,35 | 3,8 | 0,27 | 2,1 |
| Potatoe | 35 | 28 | 7 | 20,0 | 0,9 | 21,6 | 0,9 | 5,07 | 7,83 | 0,18 | 1,9 | 0,22 | 1,7 |
| Plantain | 25 | 16 | 8 | 19,5 | 0,9 | 19,7 | 0,9 | 5,51 | 4,57 | 0,14 | 1,5 | 0,07 | 0,6 |
| Black beans | 70 | 80 | -10 | 242,9 | 10,8 | 273,9 | 11,9 | 11,80 | 14,35 | 0,83 | 8,9 | 1,15 | 9,0 |
| Milk | 130 | | 130 | 79,3 | 3,5 | 0,0 | 0,0 | 4,00 | 10,40 | 0,52 | 5,6 | 0,00 | 0,0 |
| Cheese, white (cow milk) | 6 | 4 | 2 | 15,1 | 0,7 | 10,9 | 0,5 | 36,65 | 54,35 | 0,21 | 2,3 | 0,22 | 1,8 |
| Chicken eggs | 26 | 34 | -9 | 33,3 | 1,5 | 50,3 | 2,2 | 18,51 | 16,67 | 0,48 | 5,1 | 0,57 | 4,5 |
| Chicken (50% white, no bones, 50% yellow, whole) | 35 | | 35 | 52,6 | 2,3 | 0,0 | 0,0 | 21,28 | | 0,74 | 8,0 | 0,00 | 0,0 |

Living Wage Report for Rural Central Valley Area of Guatemala

| Food item | Purchased grams | | Difference | Energy per person (Kcal) | | | | Cost per Kilo | | Final cost | | | |
|--|-----------------|-------------------|------------|--------------------------|-----------------|-------------------|-----------------|---------------|-------------------|---------------|----------------|-------------------|----------------|
| | LW Model Diet | Poverty Line Diet | | LW Model Diet | % of total Kcal | Poverty Line Diet | % of total Kcal | LW Model Diet | Poverty Line Diet | LW Model Diet | % in total GTQ | Poverty Line Diet | % in total GTQ |
| Chicken, (yellow, whole) | | 30 | -30 | 0,0 | 0,0 | 65,1 | 2,8 | | 29,78 | 0,00 | 0,0 | 0,90 | 7,1 |
| Beef, w bone | 11 | 9 | 2 | 30,6 | 1,4 | 20,7 | 0,9 | 33,40 | 25,00 | 0,38 | 4,0 | 0,22 | 1,7 |
| Other meat | | 11 | -11 | | | 28,4 | 1,2 | | | | | 2,36 | 18,6 |
| Cabbage | 53 | 4 | 49 | 10,6 | 0,5 | 0,9 | 0,0 | 1,97 | 3,00 | 0,10 | 1,1 | 0,01 | 0,1 |
| Macuy | 53 | 10 | 44 | 19,1 | 0,9 | 4,3 | 0,2 | 9,05 | 6,70 | 0,48 | 5,2 | 0,06 | 0,5 |
| Tomato | 47 | 27 | 20 | 8,9 | 0,4 | 5,7 | 0,2 | 6,80 | 7,83 | 0,32 | 3,4 | 0,21 | 1,7 |
| Onion | 47 | 11 | 36 | 19,1 | 0,9 | 5,0 | 0,2 | 5,61 | 5,65 | 0,26 | 2,9 | 0,06 | 0,5 |
| Other veggies | | 23 | -23 | | | 23,5 | 1,0 | | | | | 0,66 | 5,2 |
| Banana | 66 | 26 | 41 | 37,8 | 1,7 | 22,7 | 1,0 | 2,83 | 3,70 | 0,19 | 2,0 | 0,09 | 0,7 |
| Oranges | 58 | 17 | 41 | 20,0 | 0,9 | 7,9 | 0,3 | 4,85 | 7,17 | 0,28 | 3,0 | 0,12 | 0,9 |
| Oil (vegetable) | 31 | 29 | 2 | 272,0 | 12,1 | 256,2 | 11,1 | 16,02 | 21,20 | 0,49 | 5,3 | 0,61 | 4,8 |
| Sugar | 30 | 46 | -16 | 115,2 | 5,1 | 176,9 | 7,7 | 7,29 | 7,17 | 0,22 | 2,4 | 0,33 | 2,6 |
| Coffee | 7 | 2 | 5 | 0,1 | 0,0 | 4,6 | 0,2 | 22,03 | 76,30 | 0,15 | 1,6 | 0,16 | 1,3 |
| Incaparina | 11 | 16 | -5 | 39,4 | 1,8 | 58,0 | 2,5 | 20,56 | 18,70 | 0,22 | 2,4 | 0,30 | 2,3 |
| Other food items | | 133 | -133 | | | 81,9 | 3,6 | | | | | 0,01 | 0,1 |
| Total | | | | 2,246 | 100 | 2,301 | 100 | | | 9,27 | 100 | 12,71 | 100 |
| Added 16% to LW model diet and PL diet (11% for additional variety, 4% for minimal spoilage, and 1% for salt, spices and condiments) | | | | | | | | | | 1,48 | | 1,91 | |
| Final Cost of Diet in GTQ | | | | | | | | | | 10,76 | | 14,61 | |

Source: Authors.

Note: When LW model diet uses PL food prices, its cost is the same as the cost of the PL diet. This implies that difference in the cost of the model diets is due to food prices used.

Table A2. Housing conditions in Guatemala, according to secondary sources (2014)

| Characteristics | Urban | Rural | One of our locations of interest: Chimaltenango |
|--|-------|-------|--|
| | % | % | % |
| Structure | | | |
| Permanent (concrete and bricks, no zinc) | 77,4 | 47,6 | 85,3 |
| Semi-permanent (either wall or roof not permanent) | 14 | 18,7 | 11,4 |
| Temporary (thatch roof & sundried bricks) | 8,5 | 33,7 | 3,3 |
| Roof | | | |
| Corrugated iron | 69,5 | 82,7 | 73,3 |
| Concrete/tile | 25,2 | 5,5 | 22,4 |
| Thatch (natural materials) | 0,2 | 3,5 | 0,0 |
| Fibrolit, Ricalit or asbestos (fibrocement) | 1,0 | 0,6 | 2,5 |
| Other | 4,1 | 7,7 | 1,8 |
| Floor | | | |
| Cement/tile | 61,9 | 50,4 | 65,8 |
| Cerámica, mosaico, terrazo | 20,7 | 8,2 | 16,2 |
| Earth/dung | 16,2 | 39,6 | 16,6 |
| Wood | 0,4 | 1,3 | 0,4 |
| Other | 0,8 | 0,5 | 1,0 |
| Walls | | | |
| Cement/stone/brick | 75,5 | 47,1 | 82,4 |
| Wood planks | 5,5 | 18,8 | 2,8 |
| Iron sheet | 6,3 | 3,1 | 11,0 |
| Bamboo/wood & mud | 1,1 | 2,5 | 1,9 |
| Bajareque | 0,7 | 3,2 | 0,5 |
| Other (Zinc, adobe) | 10,9 | 25,3 | 1,4 |
| Lighting source | | | |
| Electricity | 93,3 | 77,4 | 95,6 |
| Battery | 8,4 | 20,9 | 5,8 |
| Candle | 31,3 | 53,9 | 16,2 |
| No electricity | 6,7 | 22,6 | 4,4 |
| Cooking fuel | | | |
| Firewood | 57,6 | 92,0 | 59,2 |
| Charcoal | 7,1 | 1,8 | 8,1 |
| Kerosene | 1,2 | 4,7 | 0,7 |
| Gas | 64,6 | 22,8 | 69,2 |
| None | 0,9 | 0,6 | 0,5 |
| Water source | | | |
| Piped into dwelling or yard | 88,5 | 62,1 | 92,8 |

Table A2. Housing conditions in Guatemala, according to secondary sources (2014)

| Characteristics | Urban | Rural | One of our locations of interest: Chimaltenango |
|--|-------|-------|--|
| | % | % | % |
| Public tap | 0,7 | 3,4 | 2,1 |
| Protected well (Un pozo) | 6 | 19,7 | 0,7 |
| River or stream (Un río o quebrada) | 1,1 | 9,4 | 0,0 |
| Other source (Lluvia, camión cisterna, hidrante) | 3,7 | 5,4 | 4,4 |
| Toilet facility | | | |
| Pit latrine without slab/open pit | 17,3 | 53,7 | 8,1 |
| Flush toilet | 8,4 | 10,8 | 5,2 |
| Alcantarillado sanitario (flush toilet to sewage system) | 66,6 | 12,5 | 80,1 |
| Septic tank (flush toilet as well) | 5,5 | 11,5 | 5,0 |
| No facility, bush | 2,2 | 11,5 | 1,7 |
| Number of rooms (or number of bedrooms) | | | |
| 1 | 28,6 | 40,2 | 22,3 |
| 2 | 26,6 | 31,8 | 29,1 |
| 3 | 22,2 | 16,5 | 22,3 |
| 4+ | 22,6 | 11,5 | 26,3 |
| Consumer durables | | | |
| Refrigerator | 53,2 | 29,3 | 4,7 |
| Washing machine | 15,7 | 3,3 | 0,5 |
| Motorbike/motor scooter | 16,2 | 13,6 | 1,0 |
| Car | 21,4 | 12 | 18,6 |

Source: ENCOVI Guatemala 2014 Database, INE.