LIVING WAGE REPORT

RURAL CIBAO NORTE, DOMINICAN REPUBLIC

(WITH FOCUS ON BANANA PRODUCING AREAS)

MARCH 2022

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ABSTRACT

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This report estimates a living wage for rural Cibao Norte, the northern region of the Dominican Republic. Although the focus was on the banana industry, the living wage applies to the entire region regardless of industry – as all workers in a given location have the same cost of living. This report is part of a series of living wage reports for the Anker Research Institute using the Anker Methodology to estimate living wages in rural and urban areas around the world. Our estimate of a gross living wage (aka living wage) for the rural Cibao Norte region, for March 2022, is Dominican Republic Pesos (RD$) 25,540 (US$ 461) per month (using an exchange rate of RD$ 55.39 to 1USD [1]).

Any questions, comments, or observations about this study and the results it reports should be directed to the Anker Research Institute leadership:
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SECTION I. INTRODUCTION

1. BACKGROUND

This report estimates a living wage for Cibao Norte, the northern region of the Dominican Republic. This region is characterized as mostly rural, although it has urban dynamics in the centers. However, the study focuses on the rural area, since the fieldwork was especially dedicated to study the dynamics surrounding banana plantations in this region. Besides that, we believe that these estimates can be generalized to the Northern and Eastern regions of the country, as we will explain later in this report. All calculations were done using the Anker living wage Methodology described in Anker and Anker (2017), whereby secondary data from existing household surveys are combined with primary data collected during fieldwork, as is typical for Anker Living Wage Benchmark studies (see Global Living Wage Coalition website for examples www.globallivingwage.org).

This report is part of a series of living wage reports for the Anker Research Institute using the Anker Methodology to estimate living wages in rural and urban areas around the world. Many of these studies have been commissioned by members of the Global Living Wage Coalition (GLWC) which brings together lead members Fairtrade International, Rainforest Alliance (RA), and Social Accountability International (SAI) and other sustainability standards, in partnership with the ISEAL Alliance and the Anker Research Institute. All these studies use the methodology described in Anker and Anker (2017), which has gained widespread acceptance and has been used to estimate living wages in rural and urban areas around the developing world. The GLWC's shared mission is to provide high quality and consistent knowledge and information about living wage levels as well as to foster implementation, and impact necessary for stakeholders of all types to collaborate in a non-competitive environment toward wage increases globally in the farms, factories and supply chains participating in their respective certification systems and beyond, with the long-term goal for workers to be paid a living wage.[2]

This report is the first time a new Anker Living Wage study has been carried out as a follow-up of a previous study (of 2013) in the same region (rural Cibao Norte). While the original 2013 study has been regularly updated for inflation to 2017 and 2019 by the Anker Research Institute, these updates do not consider the considerable economic development of the Dominican Republic since 2013. Therefore, inflation updates alone do not suffice to reflect the current, higher levels of decency expected by workers which go up with economic development level. The Anker & Anker (2017) Methodology foresees this need to periodically redo and re-estimate Benchmark living wages for locations every 5-10 years, depending on how dynamic economic and social change has been. In the Dominican Republic's case, almost ten years after the first study in 2103, economic development has been considerable with GNI per capita in constant RD$ increasing by 37.5% by 2021 and further than this by 2022 according to the World Bank. This means that a simple updating of the living wage by inflation does not capture the cost of a decent standard of living in 2022 as expectations of people would have increased. So, before this study was initiated, it was expected that the living wage for rural Cibao Norte would be higher than the inflation adjusted 2013 living wage for the study area. In addition, it

2 The Coalition is committed to using the Anker Methodology as a basis for producing objective, consistent and high-quality information on living wages and wage differentials to support wage improvement strategies and programs for stakeholders of all types to collaborate in a non-competitive environment with global wage increases. This means that the estimates made do not or should not replace collective bargaining rights but should serve as tools to support dialogue between employers and workers.

is important to note that the original 2013 study was a pilot study that used an earlier version of the Anker Methodology and therefore some aspects of the 2013 study differ from the Anker Methodology described in Anker and Anker (2017).

2. LIVING WAGE ESTIMATE

Our estimate of a gross living wage (aka living wage) for the rural Cibao Norte region, for March 2022, is Dominican Republic Pesos (RD$) 25,540 (US$ 461) per month (using an exchange rate of RD$ 55.39 to 1USD[3]). This gross living wage takes into consideration that workers have mandatory payroll deductions of RD$ 1,509 (US$ 27, or approximately 5.9%) for the country's social security system. This means that the take home pay net living wage required for workers paying these mandatory payroll deductions is RD$ 24,030 (US$ 434).

To collect information on the living costs of people in the region (housing, basic services, healthcare, education, etc.) in order to estimate a living wage, eleven communities[4] were visited by the research team in the Cibao Norte region. We believe that the living wage estimates calculated in this study for rural Cibao Norte can be generalized to both the rest of the northern region and the eastern region of the country, that we believe have similar rural dynamics. An analysis of the regional variation in the cost of the official basic family food basket in Dominican Republic (see Annex 1) suggests that this is the case. The cost of this food basket is slightly lower in the East region (about 3%) than in the Cibao Norte region. Also suggesting this generalization is that the ratio between non-food non-housing expenditures (NFNH) to food expenditures are also similar for Cibao Norte and Este regions. At the national level (average for the country), the food basket is only about 5% more expensive than in Cibao Norte.

3. CONTEXT

3.1 The Dominican Economy

The Dominican Republic is a Spanish speaking island country located in the Caribbean, in Central America. It has an area of 48,670 km^2, sharing a border with Haiti. Its population is 10,847,904, of which the vast majority live in urban areas (82.54%) with a much smaller rural population (17.46%) (World Bank, 2020). Because of its location, the country is exposed to risks of natural disasters such as hurricanes, floods, and other weather events. Climate change exacerbates these risks and can be critical for the development of agriculture, as well as for decent housing. Also, small island countries are known to be relatively expensive, since many products are imported.

The World Bank classifies the country as an upper middle-income country. Between 2015 and 2019, the Dominican Republic's annual Gross Domestic Product (GDP) growth rate was 6.1% on average. Growth driven by tourism, remittances, foreign direct investment, mining revenues, free trade zones and telecommunications (World Bank, 2020). In 2019, the country's GDP was USD 88,941,000,000, and GDP per capita was USD 8,314. However, in 2020, GDP and GDP per capita fell to USD 78,844,702,000 and USD 7,268 USD, respectively, caused by the COVID-19 crisis. The Dominican Republic ranks 89th on the Human Development Index (HDI) (World Bank, n.d.).

3 This exchange rate was calculated as a three-month average around the month of the study.

4 Information was collected in the districts of Montecristi, Villa Vásquez, Villa Elisa and Hatillo Palma in the MonteCristi province, and in the municipalities of Laguna Salada, Mao and Esperanza of the Valverde province, including the districts of Maizal, Ámina, Boca de Mao, and Guatapanal.

The sustained economic growth over the last decade translated into favorable results for the reduction of poverty, as well as increases in social and public spending, which reached US$ 17,500 million by 2020. However, poverty levels are still high at 21% nationally (PIP, 2021), and inequality is still a problem, although for the Central American and Caribbean region, a Gini of 41.9 is not extreme (World Bank, 2020). Currently, unemployment in the Dominican Republic is 5.8% nationally (3.9% for men, 8.6% for women) according to CEPAL (2020). Unlike in other Latin American countries, the pandemic appears to have had only a minor impact on unemployment rates in the Dominican Republic, with similar national unemployment rates in 2018 (5.7%) and 2019 (6.2%). There is, however, a general fear that the pandemic may exacerbate social inequality in other forms. The minimum wage for 2022 was RD$ 500 per day, which translates to RD$ 14,000 (USD 259) per month for 30 days and RD$ 12,500 per month for 25 working days. It is important to mention that the minimum wage has been recently raised because of high inflation.

Tourism is an important economic activity in the Dominican Republic, driven by a wide range of hotels in beach areas in the Cibao Norte region, especially in the Montecristi province which is a growing tourist destination. Agriculture also constitutes a key sector, with crops such as sugar cane, rice, coffee, cocoa, bananas, and plantains, as well as a large retail sector. Remittances are also key to the income of the population, especially from the United States. In 2021, there was a growth in remittances received, reaching a total of USD 8,675 million between January and October, 2 billion more than the amount received in 2020 in the same period (Central Bank, 2021).

3. 2 Location of the Study

This study was carried out in the northern region of Dominican Republic, called Cibao Norte, and focused on the provinces of Montecristi and Valverde, including several smaller communities in these provinces, such as Santa Cruz de Mao, Guatapanal, Hatillo Palma and others. The region is officially classified as rural, but there are several small cities and towns with urban dynamics, especially around the capitals of the region's main provinces. The latest census data available for the Dominican Republic show that in Cibao Norte approximately one million people live in such urban centers and about 500 thousand in rural areas (ONE, 2012). If the larger cities are excluded, this means that more than half of the population in Cibao Norte lives in rural settings.

The areas we visited host several banana plantations that employ many workers and have been identified as one of the main reasons for the economic growth experienced in recent decades (MICM, 2021; World Bank, 2017). While agriculture is an important activity in these regions, most people live in small cities (urban centers), many along the main transport arteries. This report, therefore, is for the forementioned provinces.[5]

First, Montecristi, a province of about 1,885 km^2 and a population around 150,000 people is in the northern region of Dominican Republic. The province is divided into six municipalities: Montecristi, Castañuelas, Guayabín, Matas de Santa Cruz, Pepillo Salcedo and Villa Vásquez, and five municipal districts. The main municipality of Montecristi, where much of our fieldwork was done, has an extension of about 517.4 km^2 and a population of about 109,000 people (Ayuntamiento Municipal Montecristi, n.d.). The municipality has a high level of agricultural activity, especially rice and banana plantations, as well as an exponential growth in tourism, which has become a major attraction in the area.

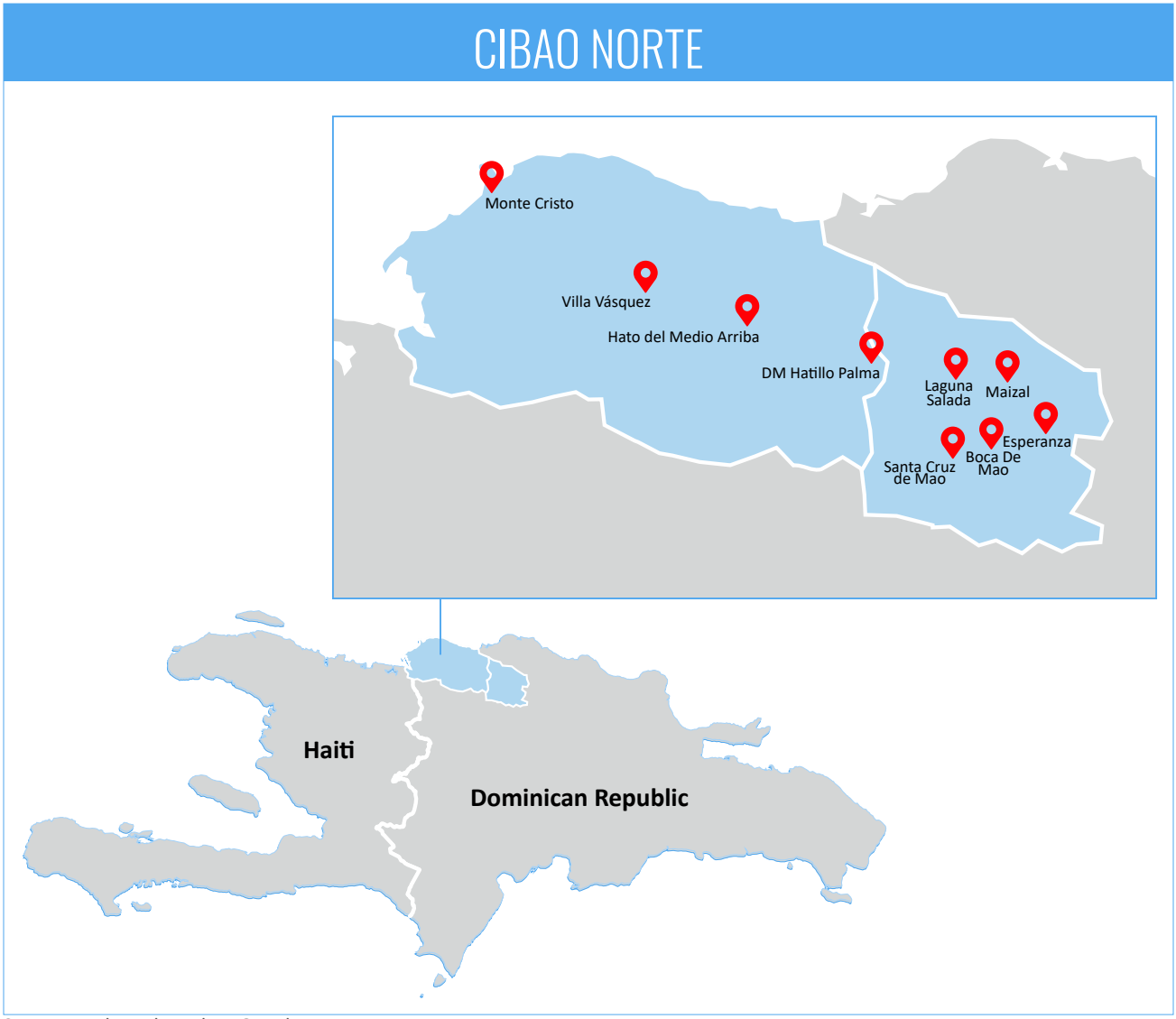
Second, Valverde, a province of about 823 km^2 has a far denser population of around 217,000 people, in the northern region of Dominican Republic, between Santiago and MonteCristi. The province is divided into three

5 Although the dynamics studied are rural (banana plantations), the study areas (Montecristi, Valverde) are actually a mix of rural and urban settings, especially around the urban centers. However, for the authorities of the Dominican Republic, the Cibao Norte region is classified as a rural area, so the secondary information used in the report is representative of these rural areas.

municipalities: Mao, Esperanza and Laguna Salada and 10 municipal districts. Its main municipality is Mao, with an area of about 415.2 km^2 and a population of about 76,800 people (Ayuntamiento Municipal Mao, n.d.). Mao, and its districts of Batey Amina, Guatapanal and Jaibón, host many agricultural farms, and is known for its organic banana cultivation and for being the second largest producer of rice in the country, although in recent years the region has started diversifying crops. It is also the headquarters of important institutions of the Dominican State in the northern region, such as the Regional Agriculture Office, the Dominican Agrarian Institute (IAD), the Agricultural Bank, the Northwest Development Institute (Indenor), and the Eleventh Company of the National Police (Ayuntamiento Municipal Mao, n.d.).

The other municipalities of Esperanza and Laguna Salada also are characterized by large agricultural and farming activity. Esperanza, and its districts of Maizal, Jicomé, Boca de Mao and Paradero, has an area of about 221.7 km^2 and a population of about 29,700 people (Ayuntamiento Municipal Esperanza, n.d.). While Laguna Salada, and its districts of Jaibón, La Caya and Cruce de Guacayanes, extends over an area of about 185.85 km^2 and have a population of about 18,800 people (Ayuntamiento Municipal Laguna Salada, n.d.). Both municipalities are recognized as two of the largest rice producers in the northwest region of the country, as well as growing production of organic bananas and plantains for international export.

Figure 1. Locations of the study



Source: Authors, based on Google Maps.

3.3 Migrant workers

Of special note is the role of migrant workers in Dominican Republic´s agricultural sector. Dominican Republic has an important percentage of migrants in its total population (about 4%), with 86.5% of migrants coming from Haiti (Morales and Rodríguez, 2022). Data from the last available National Emigration Survey (ENI) in 2018 indicate that around one-third of migrants from Haiti work in agriculture (33.8%) (ONE, 2018), while other important sectors are construction and commerce (Ciriaco and Gratereaux, 2020). The Haitian migrant population is largely composed of men, with the role of Haitian migrant women in agriculture very limited (Marcías, 2021).

Migrant workers to Dominican Republic do not typically bring families with them. About 50% of Haitian migrants travel unaccompanied to Dominican Republic, 29% come with one family member, 14% come with their spouse or couple, and only 7% come with their children (IOM, 2021). There are several reasons for this. First, they are typically young when they migrate, and have not usually formed a family. Second, the legal framework makes it difficult to migrate to Dominican Republic and formalize migratory status (UNDP, 2022). Third, because their migration is predominantly work related, migration forms part of a family strategy: often it is decided that one family member should migrate to Dominican Republic. In such cases, they typically send a substantial proportion of their wages to Haiti to support family members (UNDP, 2022). This means that most Haitian migrants are not only concerned with living costs and living conditions in Dominican Republic, but also those in Haiti.

Given this situation, it might seem logical to estimate a living wage for Haitian migrants based partly on costs and living standards in Haiti and partly on costs and living standards in rural Dominican Republic. The Anker Methodology has taken a stand on this issue as explained below.

First of all, there has to be one living wage for all workers in rural Dominican Republic. There cannot be one living wage for Dominican Republic workers (who support a family in Dominican Republic based on Dominican Republic standards and costs) and another living wage for Haitian workers (some of whom support a family in the Dominican Republic, while others support a family in Haiti based on Haitian costs and standards). Separate living wages for Dominicans and Haitians would lead to discrimination based on nationality - and in the end, might lead to a race to the bottom toward the lower living wage. Secondly, we feel that all workers in Dominican Republic (regardless of their nationality) should be able to afford a living standard considered decent for the Dominican Republic. Estimating a living wage based mainly on costs and living standards considered acceptable in Haiti - that are probably lower than in Dominican Republic because Haiti is much poorer - would mean that Haitian workers would not be able to earn what constitutes a living wage in the country where they work. Therefore, the decision was made to base our living wage for rural Dominican Republic exclusively on conditions and costs in the Dominican Republic.

Despite this decision, it is worth noting that a study by the Anker Research Institute of Nicaraguan migrant workers in Costa Rica (where living costs are twice as high as in Nicaragua) found that in fact, a living wage for Nicaraguan migrants with a family left behind in Nicaragua is actually similar to a living wage for Costa Rican national residents when all costs of migrant workers are taken into account. This empirical finding (see Voorend, Anker, and Anker, 2020) rejects the argument that the living wage is actually much lower for migrants.

3.4 The Methodological Strategy

This is an Anker Living Wage Benchmark study which uses information from secondary and primary data sources for the Dominican Republic. For much of the required information from secondary sources, we used data from the National Statistics Office such as *Oficina Nacional de Estadística* – ONE), specifically the Multipurpose

Household Survey (*Encuesta de Hogares de Propósitos Múltiples* – ENHOGAR) for 2019[6] , the National Labor Force Survey (*Encuesta Nacional de Fuerza de Trabajo -ENFT*) (2014), and the National Population Estimates and Projections (*Estimaciones y Proyecciones Nacionales de Población*). For the household expenditure data, we worked together with a team of statisticians to identify the exact composition of the household expenditure data provided by ONE. This allowed for a more detailed breakdown of the data, necessary for the specific calculations for rural Cibao Norte.

As it is common for Anker Benchmark living wage studies, secondary data was used to analyze the context and hypotheses for fieldwork, and to provide important input for the estimations of several elements required for the living wage estimate, such as the reference family size, the composition of household expenditure to determine the non-food non-housing costs, and the housing standard for decency. Another important source of information, for example for the preliminary model diet, was the previous Dominican Republic Anker Benchmark study.

This secondary data was complemented with data collection from fieldwork, conducted in Montecristi and Valverde provinces in March 2022. With a team of four people and support from the Latin American and Caribbean Network of Fairtrade Small Producers and Workers (CLAC) and Fairtrade International, our fieldwork focused on collecting food prices and rental costs, as well as information on the cost of health care and education in the study areas. That is, we visited several schools, clinics, and hospitals. Finally, the fieldwork helped to gain a general understanding of labor relations and prevailing wages.

Concerning the Anker Methodology on the ground, initially our fieldwork started with visits to banana plantations**.** These visits served several purposes. First, they allowed us to talk to the managers and workers. We carried out several interviews as well as focus group discussions with the workers alone. These were mainly focused on their diet, spending patterns, access to health care and education and the costs implied, as well as their work situation. We corroborated where they live, what products they consume and where they purchase them, which kind of services they use, how much they pay for them and their general impressions of living costs. Second, these contacts served to coordinate visits to workers' houses, which we would do either after or before their work shift. The hospitality of the workers who invited us into their homes was exquisite.

Subsequently, we proceeded to visit the homes of the workers and people who live in the surrounding region, as well as supermarkets, open markets and *colmados* (local mini markets) where workers shop, and stores where other basic products and services are sold. This constituted the main data collection strategy for food prices, rental costs and other expenditures related to health care, education, transport, etc. As such, the research team visited local markets, shops, and supermarkets, where 687 food prices were collected. On occasions when food items were not sold by weight but by unit, the food items were bought to determine their weight and then the price per kilo was calculated. This was not common in the *colmados* where people predominantly do their shopping, but it was more common for street vendors.

The cost of healthy housing was obtained through visits to rental homes. Specifically, rental prices for forty-six houses were obtained, with detailed documentation of the conditions of each house. A total of sixty houses were visited, but data from some houses were discarded because the rental price or rental estimate was not available, or rental cost was considered unreliable because they came from people who did not live there and were unsure about rental prices. Finally, for the non-food, non-housing cost post-checks, we conducted a series of visits to schools, health clinics and hospitals, and the team carried out short discussions with experts

6 While there is a 2021 version, it was not yet online at the time of this study.

in the field, such as health specialists, principals, and teachers, as well as people on the streets, with the objective to understand the dynamics regarding local access to health care, education, and transport.

As will be explained in each section below, the authors strived to make a conservative estimate of living costs. For example, the living wage model diet is basic, with food items that are consumed locally, are relatively inexpensive and readily available. Also, for our housing standard, we relied on international standards previously used in the Anker methodology and corroborated with local NGOs. It has an interior living space of 48 m^2 (517 ft^2), which is appropriate for an upper middle-income country like Dominican Republic (Anker and Anker, 2017).

4. LIVING WAGE: ITS DEFINITION AND CALCULATION

Living wage is normative. Workers and their families should not have to live in poverty but should live decently. The idea of a living wage even goes a bit further, by sustaining that the wage a worker receives should not only keep workers and their families out of poverty, but it should enable them to participate in social and cultural life. In other words, wages should be enough to ensure that workers and their families can lead a basic and decent lifestyle considered acceptable by society at its current level of economic development. The living wage considers that this wage must come from normal working hours, without having to work overtime, and cannot include forced labor or child labor.

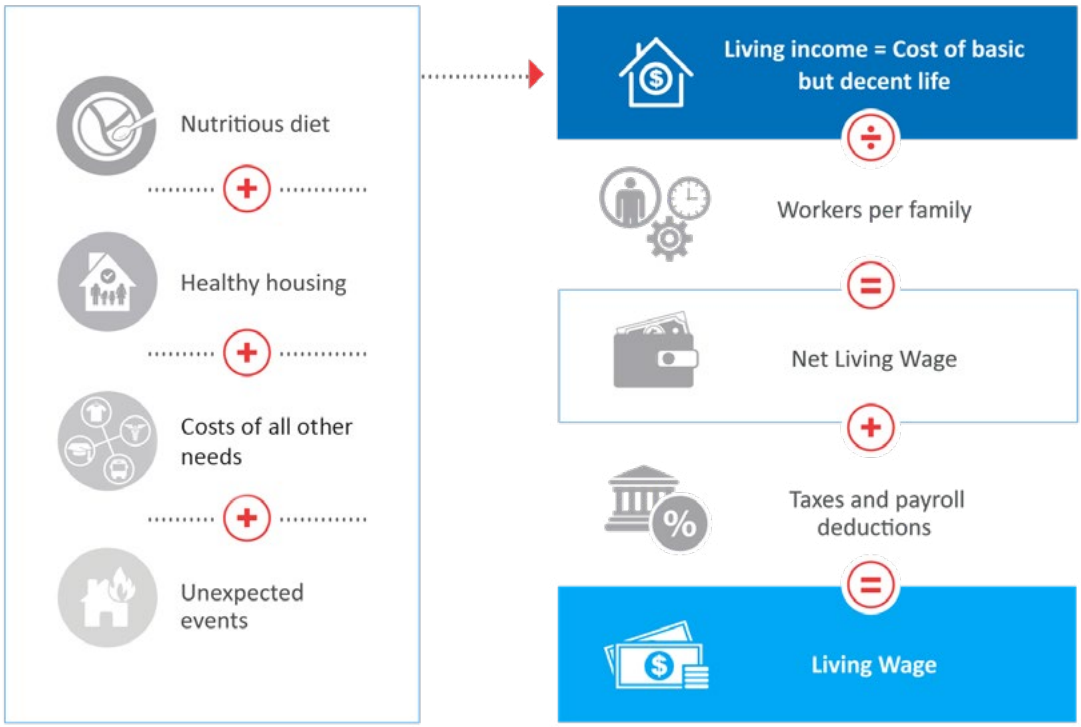
The Global Living Wage Coalition (GLWC) definition of living wage is:

> "Remuneration received for a standard workweek by a worker in a given location, sufficient to provide a decent standard of living for the worker and his or her family. Elements of a decent standard of living include food, water, housing, education, health care, transportation, clothing, and other essential needs, including provision for contingencies."

This section provides a brief introduction to how the living wage for the Cibao Norte region of Dominican Republic was estimated in this report based on the Anker Methodology (Anker and Anker, 2017). This process is depicted in figure 2, to estimate a living wage, and the cost of a basic but decent standard of living in Cibao Norte Region. The cost of a basic but decent life means that the worker and his or her family can afford a nutritious low-cost diet, healthy housing and utilities, adequate health care, education of children through secondary school, transport, communication, recreation and cultural activities and participation in social life, etc. and have a little extra money to provide a buffer for emergencies and unexpected events. This is estimated for a typical size family in Cibao Norte Region with a typical number of full-time equivalent workers per family.

To estimate the costs for each component such as food, housing and utilities, and education and health care at a basic decency level, secondary statistical data were combined with primary data collected in several locations within Cibao Norte Region in March of 2022. The estimates of costs for each of these components is discussed in detail in the following sections.

Figure 2. Components of a basic but decent life for a family



Source: Adapted from Anker and Anker (2017)

As will be explained in each section below, we strived in our fieldwork and calculations to make a conservative estimate for each component of living costs. As such, the living wage model diet is basic, with food items that are consumed locally, consistent with local food preferences, and relatively inexpensive. At the same time, it is nutritious in calories, macronutrients and micronutrients, and includes sufficient fruits and vegetables. For our local housing standard, we relied partly on the conservative social housing standard of the Habitat for Humanity mission, and partly on secondary data, as well as international minimum housing standards. This standard will be explained in detail below but includes an interior living space of 48 m^2 (519 ft^2), which is appropriate, but conservative for an upper middle-income country like the Dominican Republic (Anker and Anker, 2017).

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

5. FOOD COSTS

In this section, the cost of a simple, relatively inexpensive, but nutritious diet is presented. The total daily food cost for the model diet for the study area was estimated at RD$ 138.76 (US$ 2.51) per person per day. For a family of four, the daily food cost is then: RD$ 555.02 (US$ 10). A free school lunch lowers these costs by RD$ 38.06 (US$ 0.69) per day for a reference family of 4 people, 2 adults and 2 children. This lowers the daily food costs for the reference family to RD$ 516.97 (US$ 9.33). In total, this represents RD$ 15,724 (US$ 283.88) food costs for a reference family, per month. How the living wage model diet was set and how its cost was determined are explained in this section.

5.1 Model Diet

The general principles used to establish a model diet for rural Cibao Norte Region were the following. First, the diet had to be nutritious, that is, contain enough macronutrients (calories, proteins, fats, carbohydrates), micronutrients and minerals as well as sufficient fruits and vegetables. For this, World Health Organization (WHO) standards were used as a reference, in accordance with the Anker Methodology. This includes acceptable amounts of macronutrients (10-15% of calories from proteins, 15-30% of calories from fats, and 55-75% of calories from carbohydrates) and sufficient micronutrients. Second, the model diet needed to be consistent with local food preferences, to ensure that the food items therein are palatable and locally consumed and available, and amounts need to be expressed in number of portions easily understandable to any person. Finally, the model diet had to be as low in cost as possible given the above constraints and criteria.

The model diet for rural Cibao Norte Region contains 2,403 calories per person calculated as a per person average for the reference family of four persons (two adults and two children). This was determined using Schofield equations for estimating calorie needs as recommended by WHO. This uses average heights of adult males (1.73m) and females (1.59m) and assumes that one adult in the reference family (such as an agricultural worker) has a vigorous physical activity level, while the other family members have a moderate level of physical activity.

To determine our model diet for Cibao Norte Region, we started from the previous model diet set in the 2013 Anker Benchmark study. However, several changes were made. First, the number of required calories per person per day is higher in this model diet (2,403) than the 2,307 calories used in the 2013 report. One reason for the difference in calories required is because average height of adult Dominican people increased since 2013 and average adult height affects calorie needs in Schofield equations, and how the number of calories required is estimated in the Anker Methodology has slightly changed since the 2013 pilot study in the Dominican Republic. Second, there are other elements of the 2013 model diet that no longer align with the current Anker. For example, daily water consumption in the 2013 diet was 1.44 liters per person. We increased water consumption to 1.5 liters, more in line with the WHO recommendation of the daily minimum of 2 liters of liquid Methodology per person, assuming that some of that liquid can be consumed in other places, for example at work or school. Sugar consumption in the 2013 diet is higher (40 grams) than what WHO and the Anker Methodology now recommends as a maximum of 30 grams. Third, general economic and social development in the Dominican Republic over the last decade required us to adjust the model diet to fit the Dominican Republic's current development levels This means that we increased the number of food

items from 17 to 21 by adding pasta (widely consumed, even at breakfast), an extra vegetable, an extra fruit, and a small piece of white cheese. We also increased high quality animal protein consumption (more eggs and meat/sausage), and slightly more weekly grams of fruits and vegetables to ensure 350 edible grams of fruits, vegetables and beans in keeping with Anker Methodology now. As regards animal-based proteins, we increased the number of eggs per week from 4 to 7 (1 per day) and increased the number of meat meals per week from 7 to 8, while decreasing the amount of milk from 1.5 cups per day to 1 cup per day for children because of the high cost of milk and availability mainly as powdered milk. These changes were made using the more developed Anker Methodology model diet tools to meet WHO/FAO nutritional standards, contemplating the required percentage of calories from macronutrients (proteins, fats, and carbohydrates), and amounts of fruits and vegetables to help ensure sufficient micronutrients.[7] Finally, at the time of fieldwork, some food items that were in the 2013 model diet, were not that as readily available as others in 2022. Therefore, we replaced yuca by batata (sweet potato) and replace carrot with cucumber and onion. In Annex 2, the 2022 model diet is compared to the 2013 model diet.

During fieldwork, the model diet was discussed and validated with the workers. All the food items in our model diet are widely consumed in the study locations. Then, for these items, local food prices were collected.

5.2 Food Prices

Table 1 indicates the food prices we found in our local market survey. As previously explained, most food prices were collected in supermarkets and the popular *colmados* (local mini markets) in the visited areas of Cibao Norte Region, where most of the working people and their families usually shop. We also visited open markets and street vendors. In total, 687 prices were collected for different food items.

According to conversations with local workers and families, the most popular options for weekly shopping were the *colmados*, available on almost every street corner. Four supermarkets were also visited, as occasional purchases of products were bought there by the local population (typically for special occasions). However, it seemed colmados and street vendors were more common venues for food shopping. It is important to note that the *colmados* often sell their products “fiado” (i.e., on credit) due to the greater proximity and affinity of the managers of these mini markets with the shoppers. The common practice for these arrangements is to pay off the accumulated debt at the end of the month. Product availability, however, is often more limited at the *colmados*, especially for fruits, vegetables, and meats.

Numerous food price references were recorded for each product included in the model diet. In supermarkets, prices were collected by observing the price tags of the products, while at the fair and in grocery stores, vendors were asked directly about prices. When the food was sold by unit, not at a standard price per kilo or per pound, the products were bought and weighed to obtain a price per average weight.

Subsequently, price data considered as outliers with unusually high or low prices were discarded, as well as products in fairs and grocery stores that local people and their families said they do not usually buy there. Also, for some products with high variation in packaging, we excluded smaller packages, because they are usually more expensive. Then, we took the median food price for the food items we collected price data, after excluding the outliers, which is standard practice for such price data analysis. This median price was the price we used for our analysis.

7 The model diet used for this study is marginally more expensive than the urban diet estimated for Dominican Republic (see Benchmark Study for Urban Dominican Republic). While most food items are cheaper in the studied areas in Cibao Norte, vegetables and chicken are more expensive. The higher model diet cost in Cibao Norte is mainly explained by a higher number of calories necessary for the model diet in these areas where agricultural work is done, because lifestyles are physically more vigorous than in urban areas.

5.3 Free School Lunch

In Dominican Republic, free school lunches are provided by the public education system for children and adolescents for 14 grades (that is the highest number of years in which it can be provided). That means 14 years of school food program. This is done through the School Lunch Program (PAE), directed by the Food and Nutrition Directorate (DIAN). The program has been operating since 2013 in the country, because of the General Law of Education 66-97. In our visits and conversations with local people at the Cibao Norte Region, it became clear that most, if not all, schools provided at least one free meal. It appeared that every child had access to this benefit in public schools. Therefore, we assume that this universal food program should be considered for the reference family with two children. We assume that one free meal is provided per child, during primary and secondary education.

The Anker Methodology proposes the following equation to determine the value of the free school lunch:

$$\text{Replacement value of free lunch provided in school} = \left(\frac{\text{\# years of school during which free lunch is provided}}{\text{18 years as a child}}\right) \times \left(\frac{\text{number of school days in year}}{365}\right) \times (\text{average value of free lunch for relevant age groups})$$

When children eat free meals at school, the cost of food for the family should be reduced by the amount it would have cost to prepare the school meal at home. Applying the formula, the value for two children getting free lunch for 179 schooldays a year is RD$ 38.06 (US$ 0.69) per day. This means that the school lunch represents just under 7% of the model diet. It should be said that this is not the cost of a meal in schools, but the amount which is saved by the family on account of children not eating at home one meal during school days.

5.4 Cost of the diet

The cost of the final model diet shown in table 1 was increased slightly by small percentages typical for an upper middle-income country like Dominican Republic, to account for (i) salt, spices, condiments, and sauces, (ii) waste and spoilage, (iii) needed variety for nutrition in the diet. An extra 3% is added for salt, spices, sauces and condiments, required for food to be palatable. According to the latest Household Expenditure and Income Survey of the Central Bank of the Dominican Republic (2018)[8], the purchase of salt, natural and processed condiments correspond to approximately 2.8% of food consumption. Also, understanding that even under the best conditions, some food is wasted, and in accordance with the Anker Methodology and the level of development of the Dominican Republic, we added 4% for food waste and spoilage. Finally, also in line with the Anker methodology, 14% is added for variety, which is key for a nutritious diet. This is based on the Anker Methodology's recommendation to add between 10 and 15%, depending on the number of products in the model diet and the level of development of the country. Also, great care was taken to keep the cost of the model diet low, while respecting local food preferences and nutritional requirements. The cost of this model diet shown in table 1 is RD$ 138.76 per person (US$ 2.51).

8 See: https://cdn.bancentral.gov.do/documents/estadisticas/encuesta-de-gastos-e-ingresos/documents/ENGIH_2018.pdf?v=1663801807386

The daily cost per person of the model diet is estimated to be RD$ 138.76 (US$ 2.51). However, this does not represent the actual cost of food for a reference family, because it does not consider part of food costs that are avoided because of the Dominican Republic's free school food program. Therefore, these savings (RD$ 9.51 per person per day) need to be subtracted from total food costs of families per day from final calculations. With this adjustment the price of food per person goes down from RD$ 138.76 to RD$ 129.24 (US$ 2.33).

For comparison purposes, the daily cost per person of the 2013 study model diet was RD$81.27 (USD 1.47). At the current collected prices this 2013 diet would cost RD$ 104.40 (US$ 1.88). Therefore the difference between the 2013 model diet cost and the 2022 model diet cost is partly explained by normal inflation (RD$ 23.12, US$ 0.42) and partly by general improvement of the model diet that reflects Dominican Republic's improved development level (RD$ 34.37, US$ 0.62).

Table 1. Model diet and costs for rural Cibao Norte Region, in RD$

Food item	Portion	Edible grams[/1]	Cost per kilo	Cost
Cereals and grains				
Rice, white	Just under one cup of rice per day	250	66.1	16.55
Prepared cereals				
Bread, white	One small bun per day	55	90.9	5.00
Macaroni, spaghetti, dry	1 portion of pasta every two days (29 grams)	29	77.1	2.20
Roots and tubers (starchy)				
Sweet potato	1/2 pound per week (227 grams)	32	41.9	1.88
Starchy fruit or vegetable				
Plantains	Two medium-sized plantains (+/- 311 gr) per week	89	43.4	5.93
Pulses, legumes, beans				
Beans	2 servings	56	110.1	6.17
Milk and dairy				
Milk (cow)	1 cup per day for children	120	75.0	9.00
White cheese	75 grams per week	11	330.4	3.54
Eggs				
Chicken egg*	1 egg per day	49	116.7	6.53
Meats & Fish				
Chicken (whole)	5 portions per week	61	176.2	15.73
Salami, beef & pork	3 portions per week	36	255.3	9.30
Dark green leafy vegetables (GLV)				
Cabbage	1/3 of a medium-sized cabbage per week	89	48.1	5.34

Food item	Portion	Edible grams[/1]	Cost per kilo	Cost
Other vegetables				
Tomato	1/2 pound of tomato a week	32	77.1	2.75
Cucumber	1/2 pound of cucumber a week	32	77.1	2.75
Onion	1/2 pound of onions a week	32	76.2	3.33
Fruits				
Banana	4 medium-sized bananas (+/- 132 gr) per week	76	22.7	2.68
Papaya	1/2 pound of papaya per week	32	38.5	2.02
Oils & fats				
Oil	Maximum allowed by WHO	30	189.3	5.68
Sugar				
Brown sugar	Maximum allowed by WHO	30	66.1	1.98
Nonalcoholic beverages				
Coffee	2 cups a day for adults	7	472.5	3.31
Water	1.5 liters of water per day	1500	2.0	3.00
Total cost of model diet excluding additional costs indicated below				**114.67**
Total cost of model diet including additional costs indicated below				**138.76**
Percentage added for salt, spices, sauces, and condiments				**3%**
Percentage for spoilage & waste				**4%**
Percentage added for variety				**14%**
Daily savings per person in family of free school lunch				**9.51**
Total cost of model diet considering value of free school lunch				**129.24**

* Average weight of an egg (49 edible grams) is slightly higher than usual in the world (44 edible grams). During fieldwork, weight of eggs was measured on several occasions, which gave an average of 49 edible grams.

Source: Authors.

6. HOUSING COSTS

Housing costs are estimated by summing up the costs of rent for local acceptable healthy housing, utility costs, and costs for minor repairs and maintenance. In this, the Anker Methodology differs from other methodologies to measure living wages and poverty lines where all non-food costs (including housing costs) are estimated in one go. That is, in the Anker Methodology, housing costs are separated out from the non-food costs, and are based on the cost for a basic but acceptable housing standard, and not actual spending patterns. As such, it avoids reproducing poverty consumption patterns and provides better estimates of the cost of acceptable housing (Anker and Anker, 2017).

In the context of the Dominican Republic as an upper middle-income country and the fieldwork conducted in March 2022, housing in the visited areas of Cibao Norte Region is generally decent, although there are also many people who live in houses that do not meet the minimum acceptable standards defined by WHO, UN-HABITAT and other agencies.

Table 2 indicates housing conditions in urban and rural Dominican Republic as well as at the national level according to the National Multipurpose Household Survey (2018) from the National Statistics Office (ONE).

Table 2. Housing conditions in Dominican Republic, according to the National Multipurpose Household Survey (2018)

Characteristics	Rural (%)	Urban (%)	National (%)
Walls			
Cement/brick/prefab	62.5%	87.8%	83.1%
Wood planks	25.2%	8.7%	11.8%
Palm board	8.2%	1.3%	2.6%
Zinc	3.3%	1.9%	2.2%
Other	0.8%	0.4%	0.4%
Roof			
Zinc	77.6%	40.4%	51.6%
Cement	21.2%	58.6%	47.4%
Other	1.3%	0.9%	1.0%
Floor			
Cement	47.5%	52.7%	50.4%
Ceramic	41.4%	36.8%	38.9%
Moisacs	7.1%	6.0%	6.5%
Granite	2.6%	2.2%	2.4%
Earth/dung	0.7%	1.5%	1.2%
Other	0.7%	0.7%	0.7%
Number of bedrooms			
0	8.1%	6.8%	7.1%
1	15.8%	17.5%	17.2%
2	43.4%	38.3%	39.3%
3	28.8%	32.0%	31.4%
4+	3.9%	5.5%	5.2%

Characteristics	Rural (%)	Urban (%)	National (%)
Cooking fuel			
Gas	72.2%	91.8%	88.1%
Wood or Charcoal	18.1%	1.2%	4.4%
Carbon	3.5%	1.7%	2.1%
Electricity	0.0%	0.1%	0.0%
Do not cook	6.2%	5.2%	5.4%
Other	0.0%	0.0%	0.0%
Type of housing			
Detached house	89.4%	73.4%	76.4%
Piece in a room or in the back of the house	4.4%	6.1%	5.8%
Apartment	2.5%	16.3%	13.7%
Shared housing with business	1.7%	2.2%	2.1%
Dwelling under construction	0.7%	0.4%	0.4%
Shack	0.6%	0.1%	0.2%
Duplex dwelling	0.4%	1.3%	1.1%
Row house	0.2%	0.3%	0.3%
Premises not intended for habitation	0.1%	0.0%	0.0%
Other	0.0%	0.0%	0.0%

Source: Authors based on ONE (2018).

During fieldwork in the Cibao Norte region, we found that in concordance with the data from ONE, housing conditions in terms of materials were generally good, with cement floors and concrete or wooden walls and zinc roofs, although we came across several houses made of unsuitable materials (wood or zinc walls in bad repair, as well as dirt floors). However, many issues regarding housing relate to serious drawbacks regarding their size. Many houses we visited were quite small for the Dominican Republic's development level (interior space dimensions of less than $48m^2$).

Gas and electricity services are generally available to everyone as paid services. In the case of gas, it must be brought to the house, implying additional transport costs. Finally, water service (sewage) is sometimes also purchased, although in some areas it is not charged because the aqueduct was in the improvement or construction phases as of March 2022 when the fieldwork was done. People told us that the service will be charged once the works are completed. Drinking water must always be purchased and delivered to homes, usually in large storage bottles called *botellones*.

The most typical house encountered in the fieldwork had an interior space of approximately 35-45 square meters with cement or wooden walls, a zinc roof, and a cement floor. It usually had between 4 and 5 rooms, consisting of two bedrooms, a kitchen, a bathroom, and a small living room. However, it is important to note that there were also houses with wooden walls, with much smaller dimensions than those indicated and in deplorable conditions. In addition, most of the houses visited were contiguous to other houses.

6.1 Standard for basic acceptable local housing

The standard of acceptable basic healthy housing for rural Cibao Norte Region was based on a combination of different sources of information. First, the minimum standards defined by the WHO, UN-HABITAT and other international organizations and international conventions and agreements were taken as a reference. These are international minimum standards. They consider characteristics such as adequate living space, adequate ventilation, adequate light, safe water, sanitary toilet, solid walls, roof and floor, and safe outside environment. They do not allow certain conditions such as earth floor, mud or stick walls, thatched or leaky roof, slum surroundings, or environmental hazards nearby (Anker and Anker, 2017).

See Table 3 for these minimum international standards. To double check this, a brief consultation was made to UN-Habitat in Dominican Republic, where these parameters were discussed and how they are applied in the Dominican Republic, which served as an additional reference.[9]

Next, data from the National Statistics Office (ONE) for the northern region of the Dominican Republic were collected to help determine how to apply these international standards to Dominican Republic. This provides a broader overview of the actual housing conditions throughout the country and in the specific areas where the study was done. Finally, these survey data were contrasted with the field work carried out, where the observation technique was used to determine if the standard of acceptable basic housing was representative for the regions of the study.

The standard determined for acceptable and decent housing for a reference family of four persons includes the series of elements indicated in Table 3 below. These are consistent with international principles for healthy housing and local conditions that satisfy these principles.

Table 3. Minimum healthy housing standard for Cibao Norte Region, the Dominican Republic

Element	International standard	Minimum Local Standard
Structure, Roof and Floor	Durable materials.	Structure and walls of permanent material: cement, prefabricated material.
Walls	Durable material providing protection from elements.	No zinc/iron sheet or wood walls that are not very well joined.
Roof	Durable material without leaks.	Steel sheet or concrete roof without leaks.
Floor	Durable material	Cement or ceramic floor.
Electricity	Required depending on the location.	Continuous, either by pre or post payment.
Cooking Fuel	Required depending on the location.	Gas or electricity.

9 UN-Habitat operates almost exclusively in rural areas in the Dominican Republic, where it usually builds prefabricated houses, with a minimum size of 45 square meters, with 2 bedrooms, a bathroom with toilet, living room and an integrated kitchen.

Element	International standard	Minimum Local Standard
Water source	Safe water not far from home.	Water is piped to the house or yard. Often stored in large tanks. Drinking water is bought separately and stored in large tanks.
Toilet	At least pit latrine with slab.	The sanitary facilities have a flush toilet, either linked to the sewage system or to a septic tank.
Number of rooms	No more than 2 persons per room excluding kitchen and toilet or bath.	Two bedrooms One living room One bathroom One separate kitchen
Minimum Number of square meters	Over 30 m^2	48 m^2, consistent with the Dominican Republic's development level. This considers the fact that room is needed for water storage.
Other	Good ventilation – especially important when cook indoors. Adequate lightning Sufficient windows for adequate lightning and ventilation. Not a slum and no site hazards such as: surface water drainage, industrial pollution, danger of landslides, flood zone.	A minimum of one window per room. Ceiling at least six feet high. Safe food storage in a separate area. Minimal indoor contamination for cooking, with good ventilation. Low outside contamination. And acceptable public safety.

Source: Authors.

Figure 3 shows some photos of acceptable and not acceptable housing founded in the fieldwork. Annex 3 presents a complete table with the information of the registered houses, their rental cost, size, and number of rooms.

Figure 3. Photos of local houses

Notes: Houses to the left meet the decent housing standard. Houses to the right are not considered acceptable. Top-right: no decent protection, poorly fit walls, and very small size. Center-right: small and in bad conditions house, of wood and no separated rooms. Bottom-right: Poorly fit walls, not enough space, and too few windows.

Source: Authors´ own photos.

6.2 Rent for basic acceptable housing

To determine the rental cost of decent housing, we used the following strategy. We relied on information from the field visits. A total of sixty houses were visited during the field work in the Cibao Norte Region. We primarily tried to select houses that, from our initial observation from the outside, seemed to meet our standard. However, wherever we stopped to visit these houses, there were other houses around that we were invited to visit, which means we also visited houses that cannot be considered healthy housing. In the visited neighborhoods, most of which were in small towns or in the outskirts of the larger towns, and some were in more rural setting, healthy housing was not difficult to find. Specifically, we visited houses in and around eleven communities: Boca de Mao, Esperanza, Guatapanal, Batey Aminá, Laguneta, Hatillo Palma, Hato Nuevo, Mao, Hato Medio, La Canela and Laguna Salada.

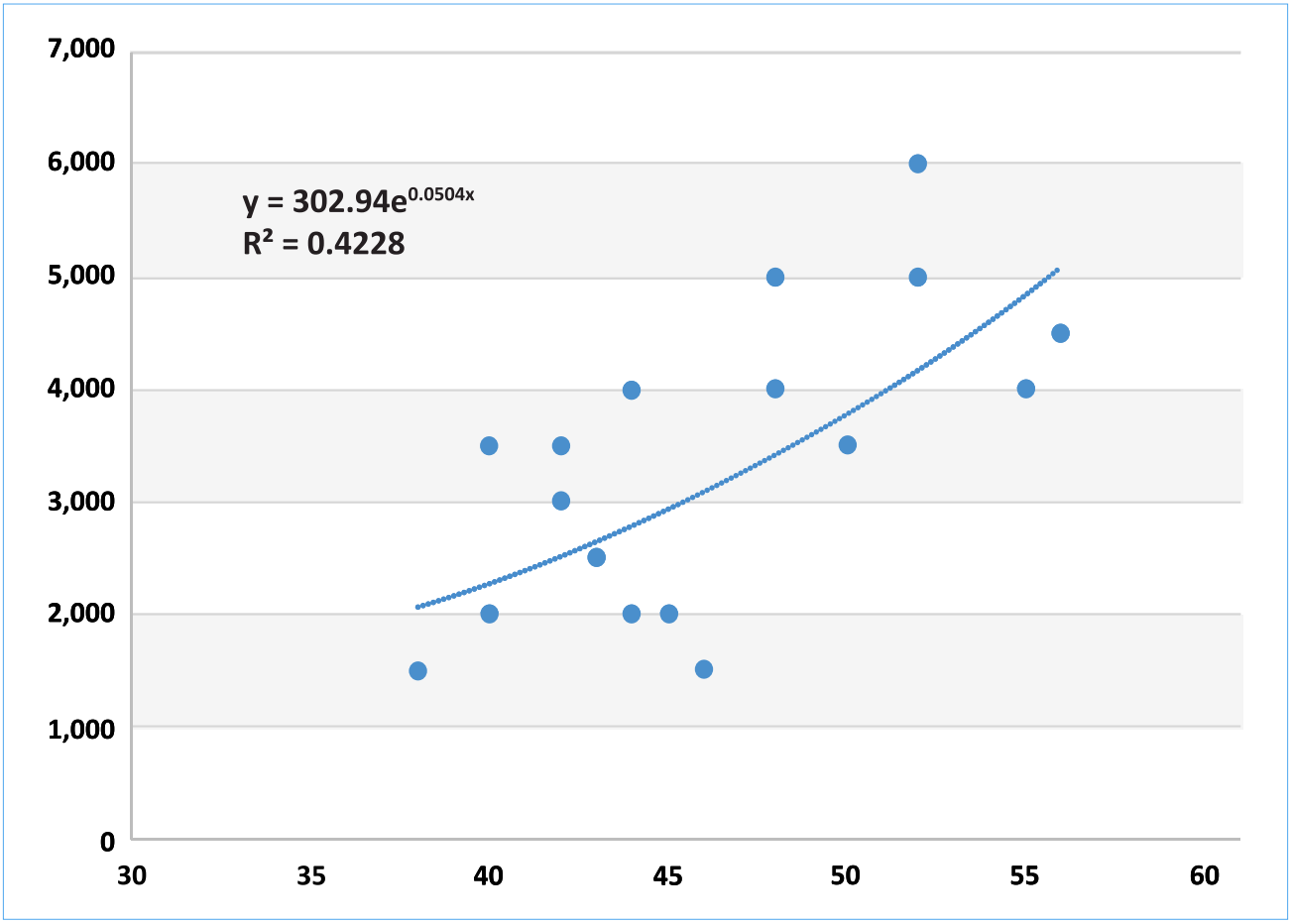
The data about several of these houses was eventually discarded because we could not obtain all the information, especially regarding rental prices.[10] We ended up with forty-six houses with actual or estimated rental prices. We talked to the people who lived in these houses to obtain information on the basic costs associated with housing. Without exception, everybody was open and generous, allowing the research team to enter the houses and to share information required for the study. Rental markets were generally well developed, so it was not difficult to obtain information on rental prices. Both the rental prices and rental estimates were plotted against the size of the housing in a scatterplot. After discarding two outliers with unusual rent, and excluding the seemingly more expensive houses in one particular community (Esperanza), we then regressed rental prices against house size for those houses that meet our standard, which is shown as the exponential tendency line in Figure 4. The regression equation was then used to calculate the predicted rental price for a 48 m^2 house.[11]

For this exercise, we included only houses that meet the standard, save for the minimum size-requirement of 48 m^2. In layman's terms, we considered houses that were in good shape and complied with all the elements of the housing standards but did not discard any houses that were smaller than 48 m^2. In other words, smaller houses that were in good shape, were also included. This was necessary to ensure a sufficient sample size for these calculations. The scatterplot is shown below in Figure 4.

10 Several of the inspected houses were discarded from the analysis due to lack of information or because the information collected was considered unreliable (e.g., estimates too far from the average or estimates given by neighbors).

11 We did this exercise twice, once including all the houses we visited and thus also including houses that do not meet the standard. The full information of the houses visited are in Annex 3.

Figure 4. Scatterplot of rental price versus house size in square meters, considering only housing that meets standard (save for size)



Source: Authors based on fieldwork.

When the resulting equation is used for a 48m^2 size house, the cost is RD$ 3,403 (US$ 62). We compared this amount with an average rental price for all houses that complied with the standard, which resulted in RD$ 3,913 (US$ 70). However, this method is affected by distant values (very expensive or very cheap houses), as well as the variation in house costs by location. Based on these two inputs, the cost of renting basic but decent housing is determined at RD$ 3,500 (US$ 63). It is important to note that this amount does not include utility costs and maintenance and repair costs, which are estimated below.

6.3 Utilities and other housing costs

Utilities are unusually expensive in the Dominican Republic, and typically not included in the rental price, as most utilities must be bought separately. Secondary data show that utilities represent 7.6% of total spending for the 30th percentile in the Cibao Norte region. These high utilities costs were confirmed during fieldwork. This section includes expenses related to basic services such as electricity, water, and other costs that may be associated with housing. For its estimation, the research team gathered first-hand information from workers and households of the locations of the study. In addition, direct visits were made to places where electricity and water services were paid for and purchased to obtain more information on the subject. Usually, in

response to inquiries, people were able to provide us with an exact amount, or a good estimate of the cost of these services was provided. Also in addition, we analyzed household expenditures on utilities from the ONE household expenditure survey.

Drinking water must be purchased in shops or delivered and was included in the cost of the model diet. Water for other purposes is typically stored at home in large water tanks once it arrives, irregularly, through the waterpipes. The availability of this water varies from neighborhood to neighborhood: some get water every day at a certain hour, others only once a week. Ideally, we would regress the number of family members on water costs, to see what a family of four would spend on the water bill. However, the number of observations with complete information on the number of family members was too low for this analysis. Therefore, we used house size as a proxy, by focusing only on houses that were over 30m^2, and therefore are more likely to be inhabited by 3 or 4 members. Thus, after excluding smaller houses, we regressed reported monthly non-drinking water expenditures on house size (similar to the strategy applied for the housing price) and found that a house 48 m^2 spends RD$ 516 on water. We also looked at the amount households spend on water according to 2018 ONE household expenditure data. Updated for inflation to 2022, the average amount households spend on water is RD$ 473. An average household at the 30th percentile of income distribution in rural Cibao Norte is reported to spend RD$ 241 (ONE 2019, updated by inflation to 2022). However, based on the previous two inputs and our conversations with people during fieldwork, we feel this is too low for decency. Therefore, we decided to include an amount of RD$ 400 (US$ 7) for water.

To determine the cost of electricity, electricity companies in the Cibao Norte region were visited. We were repeatedly informed that a four-person family spends around RD$ 1,000 on electricity.[12] As complementary reference, we asked families what they spent on electricity. We then regressed electricity reported expenditures on house size, excluding houses smaller than 30 m^2 as a proxy for family size, and calculated the monthly electricity cost for a 48 m^2 house to be RD$ 941. We also looked at how much a household spends on electricity at the 30th percentile of income distribution in rural Cibao Norte (ONE, 2019). Updated by inflation to 2022, household spends around RD$ 840 on average, according to these secondary data. Based on these inputs, we decided to include a rounded amount of RD$ 900 (US$ 16) for electricity for our cost of utilities estimate.

Finally, fieldwork visits made it clear that LPG gas is commonly used to cook food, which is another basic service that implies a cost. We consulted several sources to determine the amount for gas. First, most people told us they used between 3 and 4 gallons of gas per “quincena” (15 days). At around RD$ 147 per gallon, a household that uses 7 gallons per month, would spend RD$ 1,029. Second, at three gas-selling stations, it was reported that people spent an average of RD$ 1,200 per month in a typical size household. Third, information collected from our house visits, reported slightly lower costs. Again, we regressed reported LP gas expenditures against house size, with house size over 30 m^2 -as a proxy for families of 3 and 4 members- and found a price of RD$ 845 corresponding a house of 48 m^2. Fourth, an average household at the 30th percentile of income distribution in rural Cibao Norte region spends RD$ 1,126 (ONE 2019, updated for inflation to 2022). Based on these references, we decided to include a rounded amount of RD$ 1,000 (US$ 18).

Finally, a small cost is added for routine maintenance and repairs associated with the house. Since we are concerned with decent houses, it was decided to add a small amount of RD$ 100 (US$ 2) per month for these expenses, which represents just under 3% of total utilities cost, and around 1.5% of total rent. These are not fixed expenses for each month but conditioned to unforeseen events that do not imply expenses every month, such as repairs required as a result of weather events.

12 Estimates varied between RD$ 800 and 1,200, depending on the neighborhood.

Table 4. Overview of housing costs

Item	Average cost per month for reference family (rounded amounts in local currency)	in US$
Water	400	7
Electricity	900	16
Gas	1,000	18
Total services	2,300	42
Maintenance and repair	100	2
Total Utilities and Repair	**2,400**	**43**
Average monthly rental price	**3,500**	**63**
Total monthly cost of Housing	**5,900**	**107**

Source: Authors.

As shown in Table 4, the total housing cost estimate is RD$ 5,900 (US$ 107) per month for a basic but decent standard of housing in the communities visited. These estimates represent 14.5% of total household costs per month for basic but decent living standard for reference family.

7. NON-FOOD AND NON-HOUSING COSTS

Another key element involved in estimating a living wage has to do with non-food and non-housing costs (NFNH). While food and housing costs were estimated based on normative standards – such as a nutritious diet and an adequate housing standard – NFNH costs are mainly based on secondary data, drawn from major household surveys available for rural and urban areas in the Dominican Republic. This decision is made because it is much more complicated and time-consuming to collect data and estimate adequate and representative NFNH standards and costs due to the diversity of items that are involved (e.g., clothing, footwear, furniture, household furniture and equipment, recreation, transportation, education, health care, communications, personal care, etc.) and the differentiation of needs that one family has with respect to another in this regard. However, two of these expenses are exceptionally considered separately: healthcare and education since they are key items for a dignified life and are considered human rights around the world and in the Anker Methodology. For that reason, inquiries and subsequent reviews are made separately below to adjust these amounts, if necessary, to ensure that sufficient funds are included in NFNH for their satisfaction.

Non-food and non-housing costs were estimated based on household expenditure data from ONE (2019). The raw micro data was processed by a team of expert statisticians, which allowed for a 2-digit breakdown of the data, by areas and by expenditure decile. We focused on the data for the northern region of the country, known as the Cibao Norte region. We used the data for the 30th percentile of income distribution in rural areas in this region, to ensure that the data represents spending patterns of people who do not live in poverty but are not far above the poverty line.

From the household expenditure data, several small adjustments were made. Specifically, tobacco and drug expenditures were excluded because these are unhealthy and are not considered in the Anker Methodology.

Also, in contrast with the previous 2013 Anker Benchmark report for the rural Dominican Republic, we consider the ownership of a private vehicle (motorcycle) necessary for decency in the rural areas of the Cibao Norte Region. Secondary data show that 57.5% of households own a private motorcycle in Cibao Norte and 51.5% of households in rural areas of Dominican Republic own a motorcycle. Therefore, private transport costs were considered. Indeed, transport expenditure is high, in line with what we encountered on the ground. People complained that every errand implies spending on transport. In short, transport is expensive, and people must spend a lot on it, something the secondary data shows: almost 10.5% of household expenditure is spent on transport by households at the 30th percentile in rural Cibao Norte.

Also, half of the food costs from the "restaurants" (food away from home) expenditure group were included in the food-group. For this, 50% of the eating-out expenditure was included in the food expenditure group, while the other 50% was included in the NFNH expenditure group, since it relates to profits, service costs, taxes, etc. These percentages are based on fieldwork, during which the food contents of typical simple restaurant meals were weighed and the cost of the food in these meals was calculated. On average, between 35-50% of the price paid in a restaurant was found to be the food costs in these meals. After these exclusions and adjustments, the expenditure distribution is given in Table 5. This analysis gives a NFNH/Food ratio of 1.08.

Table 5. Household expenditure distribution by expenditure group in rural Cibao Norte Region, for the 30th percentile of expenditure distribution

Expenditure group	% of household expenditure distribution	Category in Anker Methodology	Adjusted % of expenditure distribution
FOOD	**37.33**	**Food**	**44.36**
HOUSING (rent and utilities)	**7.20**	**Housing**	**7.20**
NFNH	**55.47**		**47.96**
Health care	5.75	NFNH	5.75
Education	2.68	NFNH	2.68
Transport	10.43	NFNH	10.43
Clothing and footwear	3.06	NFNH	3.06
Communication	3.18	NFNH	3.18
Culture and recreation	2.64	NFNH	2.64
Furnishing/Domestic	3.00	NFNH	3.00
Miscellaneous	7.73	NFNH	7.73
Restaurants	14.06	½ in NFNH & ½ in Food	7.03
Alcohol	2.46	NFNH	2.46
Tobacco	0.48	Excluded	0
NFNH/FOOD RATIO	**1.49**		**1.08**

Source: Authors based on ONE (2019).

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

In the Anker Living Wage Methodology, post-checks of the secondary data are made for health care and education costs using data from fieldwork. 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 considered important to make sure that there are sufficient funds available for healthcare and education, as these are considered as human rights in the Anker Methodology and throughout most of the world.

To estimate how much is implicitly included in the preliminary NFNH estimate for health care and children's education, we used the percentages of NFNH that are for these human rights according to household expenditure data. This is done in table 6 for the 30th percentile of household expenditure distribution in the rural Cibao Norte Region. This table indicates that health care expenditure represents 5.75% of total household expenditure while education expenditure represents 2.68% in total household expenditure. [13]

These percentages are then compared to the cost of the model diet, which gives us the estimated amounts included in the preliminary NFNH estimate, shown in Table 6.

Table 6. Monthly spending estimates on health care and education included in preliminary NFNH estimate before possible post check adjustments

NFNH Sub-Major Expenditure Group	% of rural Cibao Norte household expenditure, 30th percentile (ONE, 2019)	Percent of NFNH	Monthly amount in RD$ in preliminary NFNH
Adjusted NFNH	47.96	100.0	17,000
Health care	5.75	11.99	2,038
Education	2.68	5.59	950

Source: Authors.

During fieldwork, data was collected on local health care and education costs so that we could compare these fieldwork estimates with the amounts for health care and education included in the preliminary NFNH estimate indicated in table 6. The objective was to evaluate whether the latter estimates are enough to ensure access to decent health care and education through secondary school. For this exercise we assume all workers, including both nationals and migrant workers, will have the same levels of access to public health care and education. This follows the Anker Methodology assumption that hiring follows formal procedures and therefore implies a formal contract with social security contributions. This assumption means that migrant workers have the same access to health care and other services that Dominican Republic workers have. It is important to note however, that in practice, worker relations are often informal and this is especially an issue for migrant workers.

13 The secondary data reports an absolute number of RD$ 540 per person per month for health care, or RD$ 2,159 for a family of four per month. For education, the monthly per capita amount is RD$ 311, or RD$ 1,245 per family of four per month.

8.1 Health care post-check

In the Dominican Republic, there is both a public and a private health care system. Both are overseen by the Ministry of Health, which is not only the responsible governing body but also the largest provider of public health services in the country. The public health system provides affordable care for free or at low costs. In principle, health services are not charged for if patients have access to National Health Insurance (health insurance) from the Dominican Social Security System. For patients without health insurance, services are available but are charged for, although fees are low.

The organization of health care is through a multi-layered system, with hospitals (both public and private), and for coverage of especially rural areas, through regional clinics. Some of the most important hospitals are the Clínica Unión Médica del Norte (private), the Child´s Hospital Dr. Robert Redi Cabral (public) or the Hospital Dr. Salvador B. Gautier Hospital (public). Access to public health care is directly linked to social security affiliation and labor market status. Affiliation percentages hover around 65.6% for the national population (67.2% in urban areas, 60.8% in rural areas) and vary by sex from 64.1% for men to 70.3% for women (OPSD, 2019).

The quality of services has been positively assessed by over 85% of the population (Santos, 2019) as recent years have seen substantial improvements to the country's health system, based on recent legislative reforms (General Health Law 42-01), and increases in health insurance coverage by the Health Risk Administrators. During fieldwork, it became clear that public services were generally accessible, although people mentioned the need to buy medicines regularly, because of shortages in the public system, and specific health services needed to be bought in the private sector. Also, services like ultrasounds or blood tests are generally not covered by the public sector or health insurance and therefore imply a fee, even in the public system.

In this context, it is reasonable to assume that the public health system covers most, but not all health needs. In our estimation of local health care costs, based on the extensive fieldwork we did which included our team member, Noelia Jaén, who is a pharmacist, we assume for decency that some of the reference family's routine health care visits are to private clinics, and that they often buy medicine in a private clinic or pharmacy. Fieldwork included visits to eleven health care centers in the provinces of Valverde and Montecristi, including both pharmacies and hospitals (and what is called "policlinicas", local primary health care centers). We also visited three private hospitals, to compare costs in case people used this service.

In Table 7, our calculation of the health care costs for our reference family of four based on our field visits is explained. We conservatively assume that a person needs outpatient health services 3 times per year, meaning 12 health visits per family of four, consisting of: 8 visits to public health centers, and 4 visits to private health centers. Each family member would need more specialized health services (blood tests, ultrasound, etc.) twice a year: once in the public system, and once in the private system. Finally, each person is assumed to buy medicine five times a year, for some of the most common medicine treatments (high blood pressure, diabetes, diarrhea, etc.).

Table 7. Estimate of yearly health care costs for reference family in rural Cibao Norte, Dominican Republic

Health services per reference family	Yearly Costs in RD$	In US$
Visits to a health centers, public and private		
8 visits to public health center/clinic with insurance at RD$ 120 per visit	960	17
4 visits to a specialized private health center at RD$ 1,500 per visit	4,500	81
Specialized services		
4 times (one per person) additional cost for blood tests/ultrasound in public system at RD$ 110	440	8
4 times (one per person) additional cost for blood tests/ultrasound in private system at RD$ 2,000	8,000	144
Private medicine purchase		
20 times purchase medicine per family per year at RD$ 300	6,000	108
Total: Minimum health care costs for reference family per year	**19,900**	**359**
Estimate of health care costs for reference family per month	**1,658**	**30**

Source: Authors.

Based on this rapid assessment, we estimate that a reference family has a minimum monthly cost for health care services of RD$ 1,658 (US$ 30) per month. This amount is slightly smaller than the amount for health care included in our preliminary NFNH estimate of RD$ 2,038 (US$ 37). Therefore, this amount is enough for decency and no NFNH post check adjustment was made.

8.2 Education post check

Similarly, we did a post-check for children's education. Dominican Republic has a public education system that provides pre-primary, primary, secondary, and tertiary education. Pre-primary education covers two educational cycles from 0 to 5 years of age (including nursery, kindergarten, prekindergarten). Primary education is for boys and girls from 6 to 11 years of age and the secondary level is from 12 to 17 years of age (with two cycles: intermediate and specialized, which includes an extra year for technical education) (SITEAL, 2019). Enrolment in primary education exceeds 95%, while for secondary education was also very high, showing relatively high access to educational services. According to UNESCO, the lower secondary school completion rate was 85 % in 2020. In terms of quality, significant progress has been made in recent years, leading to improvements in performance, which has traditionally been below the average for the region (EFE, 2021). During the fieldwork, conversations with the local population corroborated this positive outlook with respect to education.

The Economic Commission for Latin America and the Caribbean (www.cepal.org) considers completion of secondary school as minimum requirement for breaking the poverty cycle, and the Anker living wage Methodology considers completion of secondary school as a human right and necessary for decency. For our rapid assessment of education costs, we assume that education must extend through all primary and secondary levels.

The information used in this post-check comes from fieldwork whereby researchers visited primary and secondary schools (both public and private) and asked staff and parents about the costs of education. Shops were also visited where school uniforms, utensils, bags, and other school materials were sold, to document their prices. In Table 8, our calculation of the education costs for our reference family of four is explained. For this, we take into account education information from the age of 4.

Almost all schools in the northern region are public schools and, in principle, charge no registration or monthly fees. We therefore assumed that there are no yearly fees for public schools and that private school is not necessary for decency. We also included two years of pre-primary school which are provided by government. Public schools in Dominican Republic do not charge a fee, but we do assume there are costs for materials, which increase with school level.

Table 8. Education post-check: Estimate of average monthly education costs for a reference family with two children in the Dominican Republic

Type of expense	Kinder (2 yrs)	Primary (6 yrs)	Lower (2 yrs) and Upper (4 yrs) Secondary (6 yrs total)
Registration fee per child (annual) (1A)	0	0	0
Yearly fees per child (1B)	0	0	0
Yearly materials per child (pens, pencils, notebooks, uniforms, shoes, schoolbag) (1C)	3,750	5,000	7,000
Yearly education cost per child (1) = (1A) +(1B) + (1C)	3,750	5,000	7,000
Number of years in each level (2)	2	6	6
Total education cost per child per level (3) = (1) x (2)	**7,500**	**30,000**	**42,000**
Total costs (4)			
Total cost of education per child (4) = sum of (3)			**79,500**
Average yearly cost of education per child (18 yrs) (5) = (4)/18			**4,417**
Average yearly cost of education for reference family (6) = (5) x 2 children			**8,833**
Estimate of monthly cost of education for reference family (7) = (6) / 12 months			**736**

Source: Authors.

The estimate indicated in table 8 based on this very rapid assessment, with data collected during fieldwork, suggests that monthly education costs are around RD$ 736 (US$ 13) per month for two children. This amount is similar to what is included in the preliminary NFNH estimate of RD$ 950 (US$ 17). Therefore, no adjustment was made in this education post-check.

9. PROVISION FOR UNEXPECTED EVENTS TO ENSURE SUSTAINABILITY

Since large unforeseen expenses and events can quickly throw workers with a basic lifestyle 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. For example, Dominican Republic is particularly vulnerable to the effects of climate change and therefore this additional amount may also help families face events of this type if necessary. Margins of 5% and 10% percent have been the most common in other living wage methodologies (Anker, 2011). For rural Cibao Norte Region, it was decided to use a 5% margin for sustainability to allow for unforeseen events and emergencies. This percentage is recommended in the Anker and Anker (2017) Methodology and has been used in all Anker living wage Benchmark studies. 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.

10. COST FOR BASIC BUT DECENT LIVING STANDARD.

The distribution of the costs of a basic but decent life for rural Cibao Norte Region is summarized in Table 9. This estimate is based on a combination of Dominican Republic-specific data consisting of new primary fieldwork data (on food prices, housing costs, education costs, and health care costs) and secondary data (on number of calories required, family size, and number of workers per family, and NFNH costs).

Table 9. Monthly cost structure of basic, decent life in rural Cibao Norte Region, Dominican Republic for reference size family

Item	RD$	US$
Food cost per month for reference family (1)	15,724	283.88
Food cost per person per day for model diet	138.76	2.51
Daily food cost for reference family	555.02	10.02
Daily value of free school lunch program	38.06	0.69
Housing costs per month (2)	5,900	107
Rent per month for acceptable healthy housing	3,500	63
Utilities and minor repairs per month	2,400	43
Non-Food Non-Housing costs per month after post check adjustments (3)	17,000	307
Preliminary Non-Food Non-Housing	17,000	307
Healthcare post check adjustment	0	0
Education post check adjustment	0	0
Additional 5% for sustainability and emergencies (4)	1,931	35
Total household costs per month for basic but decent living standard for reference family (5) [5=1+2+3+4]	**40,556**	**732**

Source: 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 GLWC. It is, therefore, necessary to determine an appropriate reference family size for the Cibao Norte Region to estimate a living wage.

As in the previous Anker Benchmark study for the Dominican Republic, a family size of 4 persons (two adults and two children) is used for this study (and for Dominican Republic in general). This family size is based on information on: (i) total fertility rate and child mortality rate and therefore number of surviving child's women in Dominican Republic are typically having, and (ii) average household size in Dominican Republic.

The total fertility rate (TFR) for Dominican Republic was 2.30 in 2020 according to the World Bank and was on a downward trend being 2.5 in 2013. TFR is slightly higher in rural areas compared to urban areas (2.6 compared to 2.4 in 2013 according to the Demographic and Health Survey). Considering this rural-urban difference and the downward trend, we decided to use a total fertility rate of 2.35 for rural areas. We adjusted this for the child mortality rate of 34 per thousand births for Dominican Republic according to World Bank to estimate 2.3 as the average number of surviving children per woman for rural areas. This implies a nuclear family size of around 4.3 persons for rural areas.

Household survey data suggests that average household size varies somewhat according to the specific source. However, all data suggest that there is almost no difference in average household size between rural and urban areas. For rural areas in general, DHS (2013) data indicate an average household size of 3.4 members. When one-person households (that do not have children) and very large households with 9+ persons (that may have more than two potential workers) are excluded, following the Anker Methodology, adjusted average household size is 3.8 for rural (and urban) areas. It is important to note that 36% of rural households are female-headed according to DHS (2013) and this reduces observed average household size.

Based on the above two considerations, we chose a reference family size of 4 persons for this study (2 adults and 2 children). This family size is consistent with the child mortality adjusted total fertility rate for our study area which implies a family size of slightly more than 4, and the adjusted average household size of slightly less than 4.

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 work.[14] 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 1.687 full-time equivalent workers

14 In the Anker living wage Methodology, it is considered unacceptable for children to work and be expected to provide support for the family. Therefore, in our living wage calculations, it is assumed they do not work, which is consistent with the decency concept of a living wage.

per family to estimate the living wage for rural Cibao Norte Region. This is slightly higher than what was used in the 2013 report (1.67).

To determine the number of full-time equivalent workers per household, ILOSTAT (2022) data which are based on Dominican Republic labor force survey data was used for males and females ages 25+ on: (i) labor force participation rates (LFPR), (ii) unemployment rates, and (iii) number of hours worked to determine the extent of part-time employment.[15] From this data, the likelihood of full-time employment was calculated as follows (see table 10):

$$\text{Likelihood of full-time employment} = \text{LFPR} \times (1 - \text{unemployment rate}) \times \left(\frac{1 - \text{part-time employment rate}}{2}\right)$$

Table 10. Estimate of percentage of adults who are full-time equivalent workers for rural Cibao Norte, Dominican Republic

Variable	Age group	Rural		
		Men	Women	Average
Labor force participation rate	25+	90.0	57.9	73.9
Unemployment rate	25+	2.0	7.3	4.6
Part-time employment rate *	25+	5.8	6.7	6.3
Estimated percentage of persons working full-time **	25+	85.7	51.9	68.8

* Part-time employment is defined as less than 35 hours work per week. This data was only available at the national level.
** Calculated as: LFPR × (1-Unemployment rate/100) × (1- (Part-time employment rate/100/2)).
Source: Authors based on ILOSTAT (2022).

This means that the monthly cost of a decent but basic living standard for a family of 4 persons of RD$ 40,556 (US$ 732) was divided by 1.69 to determine the take home pay required to pay for the cost of a basic but decent lifestyle in Cibao Norte Region, Dominican Republic, without considering any possible income taxes and payroll deductions. That is, the net monthly living wage for rural Cibao Norte areas is RD$ 24,030 (US$ 434).

This amount is considerably higher than the 2013 living wage Benchmark study updated by inflation to 2022 which is RD$ 18,664 (US$ 330). This substantial difference underscores the need for redo studies after a period of time, especially for a country such as Dominican Republic that has experienced considerable economic development, something the Anker Methodology already envisioned after periods of about 10 years.

15 This was done in the following way. Labor force participation rate, and unemployment rate were calculated separately for men and women ages 25+ based on data for rural Dominican Republic. The part-time employment rate was only available as a national average, by sex and for the ages 25+.

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

To estimate a living wage, it is necessary to consider income tax and mandatory deductions from pay that a worker would pay on a living wage to ensure that workers have sufficient take home pay to be able to afford a decent standard of living for their family. In Dominican Republic, the first annual RD$ 416,220 are exempt from paying income tax, which means that people earning our living wage would not pay income tax (see: https://dgii.gov.do/cicloContribuyente/obligacionesTributarias/principalesImpuestos/Paginas/impuestoSobreRenta.aspx).

There are, however, contributions to the social security system that are mandatory. Specifically, there is an old age and disability pension fund (*Seguro Vejez, Discapacidad y Sobreviviencia*). 7.10% is paid by the employer and 2.87% by the worker. Then there is family health insurance tax of 10.13%, of which the worker pays 3.04%. The work risk insurance tax is 1.20%, but that is charged fully to the employer. In all, workers pay 5.91% of their wage to these funds (see: http://www.dida.gob.do/index.php/preguntas-frecuentes).

Thus, workers with a formal labor contract would pay RD$ 1,509 (US$ 27) per month on the living wage for the social security system, and no income tax. Therefore, the gross monthly living wage for Cibao Norte Region is RD$ 25,540 (US$ 461).

SECTION IV. ESTIMATING GAPS BETWEEN LIVING WAGE AND PREVAILING WAGES

14. PREVAILING WAGES

14.1 Cash allowances and bonuses

Net living wage (take home pay required) for the rural Cibao Norte Region of Dominican Republic is RD$ 24,030 (US$ 434) per month. Mandatory payroll deductions are RD$ 1,509 (US$ 27), and so the gross monthly living wage is RD$ 25,540 (US$ 461) per month. However, note that if the 13th month bonus (Aguinaldo) is paid (as it should for formal workers), the monthly wage needing to be paid to achieve payment of a living wage would be lower by about 7.7% (which is the prorated monthly value of Aguinaldo).

14.2 In-kind benefits as partial payment of living wage

In-kind benefits are allowed as partial payment of a living wage based on guidelines set forth in the Anker methodology (Anker and Anker, 2017). Typical in-kind benefits include things such as housing, meals, transport, food rations, and health clinic. There is, however, a 30% maximum limit on the portion of the total wage that can be paid in in-kind benefits according to the Anker Methodology. In addition, for in-kind benefits to be counted as partial payment of a living wage, they should be provided at a basic standard of decency.

In Dominican Republic, some in-kind benefits are offered by farms in the banana sector. Some farms provide housing to some workers. However, this is not the norm for all workers. Also, during our fieldwork, we found that in some cases when workers lived in housing provided by the farm that they were charged rent. Similarly, some farms provide transport service to and from the farm, while other farms do not. Some farms offer school supplies for their fixed workers, but not for all workers.

When a particular in-kind benefit is provided throughout an industry, its fair and reasonable value is estimated in an Anker Methodology living wage report, and the cash living wage required is reduced accordingly on the assumption that most workers in the industry receive this in-kind benefit. However, when there is a great deal of variation among establishments in the in-kind benefits provided in an industry, it is not considered appropriate to reduce the cash living wage for the industry, since there would be too much variation in the value of in-kind benefits. Instead, fair and reasonable values of in-kind benefits (and therefore cash living wage) and gap to a living wage would need to be calculated on a farm-by-farm basis. For example, when farm A provides free housing, farm A should be given “credit” for this and the gap to a living wage for farm A would be reduced.

Given the variation of in-kind benefits in the banana industry in Dominican Republic, we did not feel that it was appropriate to consider the value of in-kind benefits as partial payment of a living wage for the banana industry as a whole.

15. LIVING WAGE IN CONTEXT AND COMPARED TO OTHER WAGES

To provide context for our living wage estimate, in this section we compare our living wage to prevailing wages that we were able to access from secondary sources. Figure 7 provides a wage ladder that compares our living wage to the national minimum wage and prevailing wages as well as national and international poverty line wages. Wages were, when required, adjusted for inflation to 2022.

First, we used the national minimum wages for generic agricultural workers and for operators of heavy machinery. According to the National Salary Council (*Consejo Nacional de Salarios*) of the Dominican Republic for the year 2022, the agricultural minimum wage is set at RSD 500 per day. We estimated the minimum wage per month using 24 working days per month, considering that workers are entitled to 1.5 rest days per month according to Dominican law in addition to Sundays. This gives a monthly minimum wage of approximately RSD 12,000 (24 days x RSD 500). We do not include the prorated amount for the 13th month bonus (*Aguinaldo*) in this.

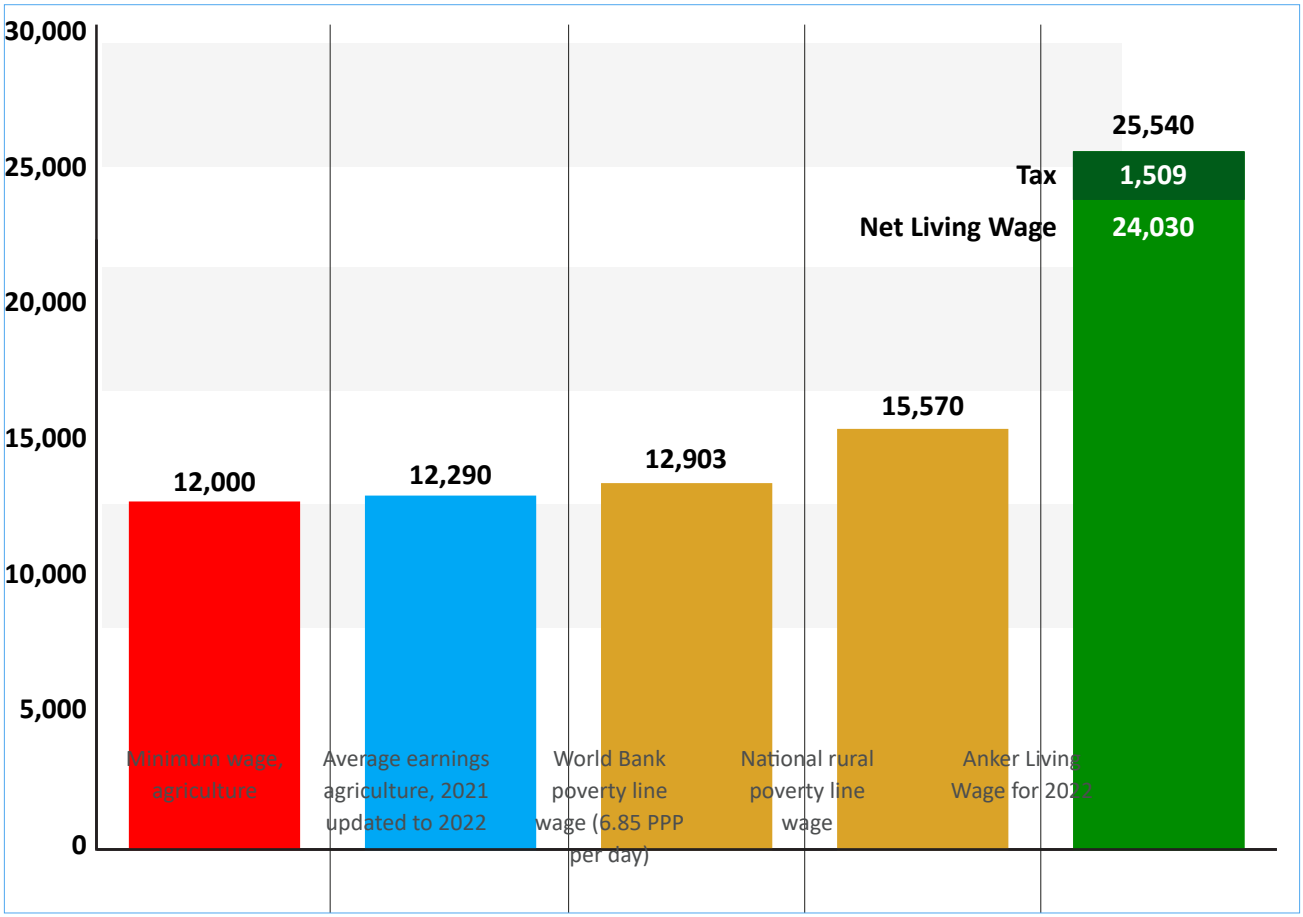
Second, we used national and international poverty line wages. These poverty lines were converted to poverty line wages by multiplying these by our reference family size of four and dividing by the number of full-time equivalent workers in our reference family of 1.69. We then updated these for inflation when needed. Third, we used the average monthly earnings of agricultural workers (reported by ILOSTAT based on data from the Continuous National Labor Force Survey (ENCFT) of the National Statistics Office (ONE).

15.1 Wage Ladder

Figure 5 provides a wage ladder that compares our living wage to poverty line wages, minimum wages, and prevailing wages. For comparison when appropriate, wage comparators were increased by inflation to 2022. Figure 5 paints a picture of a situation in which current prevailing wages, minimum wages and poverty line wages are well below a living wage.

As can be seen from Figure 5, our living wage is around twice the: (i) average prevailing wage for agricultural workers; (ii) minimum wage for generic agricultural workers, and (ii) World Bank international poverty line wage for Dominican Republic. Our living wage is around 1.6 times the Dominican Republic rural poverty line wage. This shows how inappropriately low these are for decency for rural Dominican Republic. Finally, our living wage is around 40% higher than the new minimum wage for agricultural heavy machine operators.

Figure 5. Wage Ladder for rural Cibao Norte Region, Dominican Republic



Source: Authors.

It should be clear from this report that the large current gaps to living wage shown in figure 5 reflect low wages in Dominican Republic, especially in the agricultural sector, rather than extravagant standards used to estimate our living wage, as throughout this report rather conservative assumptions of a basic but decent living standard were used to estimate our living wage for rural Cibao Norte region. This presents a big challenge for the agricultural sector and it is clear that meeting this challenge will require the involvement of all the stakeholders in the international value chain.

SECTION V. CONCLUSIONS

16. CONCLUSIONS

This report estimated a living wage for rural areas of Cibao Norte region, at the north of Dominican Republic, with a specific although not exclusive focus on the banana industry. Table 11 provides a summary of the details of our living wage estimate and Table 12 provides some of the key assumptions used to make our living wage estimate. The fieldwork, which collected information on food prices and housing costs, education, healthcare, and other costs, focused on 2 provinces and 11 communities in the Cibao Norte region of Dominican Republic.

Our net living wage for the rural Cibao Norte Region of Dominican Republic is RD$ 24,030 (US$ 434), per month and our gross living wage is RD$ 25,540 (US$ 461) per month that takes into consideration that workers have mandatory payroll deductions for the public social security system and workers' protection insurance. However, note that if the 13th month bonus (Aguinaldo) is paid (as it should for formal workers), the monthly wage needing to be paid to achieve payment of a living wage would be lower by about 7.7% (which is the prorated monthly value of Aguinaldo).

There are large gaps to our living wage. Our living wage is around twice the minimum wage for agricultural workers, the prevailing average agricultural wage, and the international poverty line wages. Our living wage is around 60% higher than the national rural poverty line wage, and around 40% higher than the new minimum wage for agricultural heavy machine operators.

It is important to keep in mind that despite these large gaps to our living wage, our living wage estimate is conservative, as we used very basic assumptions throughout this report to estimate living costs. For example, we used prices of inexpensive foods available in the local markets to cost our model diet, thus excluding for example red meats and fish which are more expensive. The healthy housing standard we used to determine housing costs included only 48 square meters of living space for a family with four persons, which is small for an upper-middle income country like Dominican Republic.

Appropriate mechanisms need to be worked out to narrow the gap between our living wage estimate and prevailing wages of agricultural workers in Dominican Republic so that workers can eventually afford a decent living standard. To achieve this objective, it is important to involve the entire supply chain/value chain, since agricultural employers in Dominican Republic alone cannot be expected to cover the costs that paying a living wage without involving other actors in the value chain. That is, while producers hold part of the responsibility to pay a living wage, so do buyers, retailers and supermarkets who should be actively engaged in ensuring that the cost of paying a living wage to workers is spread out through the entire value chain.

Table 11. Living wage and monthly cost structure of basic, decent life in rural Cibao Norte, Dominican Republic

Conecpt	RD$	US$
PART I. FAMILY EXPENSES		
Food cost per month for reference family (1)	**15,724**	**283.88**
Food cost per person per day for model diet	138.76	2.51
Daily food cost for reference family	555.02	10.02
Daily value to reference family of free school lunch program	38.06	0.69
Housing costs per month (2)	**5,900**	**107**
Rent per month for acceptable healthy housing	3,500	63
Utilities and minor repairs	2,400	43
Non-Food Non-Housing per month after post check adjustments (3)	**17,000**	**307**
Preliminary Non-Food Non-Housing estimate	17,000	307
Health care post check adjustment	0	0
Education post check adjustment	0	0
Additional 5% for sustainability and emergencies (4)	**1,931**	**35**
Total household costs per month for basic but decent living standard for reference family (5) [5=1+2+3+4]	**40,556**	**732**
PART II. LIVING WAGE PER MONTH		
Net Living Wage per month (6) [6 = 5/# full-time workers]	24,030	434
Statutory deductions from pay (7A)	1,509	27
Income tax (7B)	0	0
Total mandatory deductions (7) [7 = 7A+7B]	**1,509**	**27**
Gross Living Wage per month (8) [8 = 6+7]	**25,540**	**461**

Source: Authors.

Table 12. Key parameters used in the living wage estimation

Parameter	Value
Study Date	March 2022
Location and industry of focus	Dominican Republic, Rural Cibao Norte Region (with focus on banana producing areas)
Exchange rate to US$	55.39
Number of full-time workdays per month	25
Number of hours in normal workweek	48
Number of workers per couple	1.69
Reference family size	4
Number of children in reference family	2
Preliminary ratio of non-food non-housing costs to food costs	1.08

Source: Authors.

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ANNEXES

ANNEX 1. COST OF OFFICIAL BASIC FAMILY FOOD BASKET (CANASTA BÁSICA) BY REGION

Month of 2022	RD$					Cost relative to Cibao Norte's food basket			
	Ozama Region	Cibao Norte Region	East Region	South Region	National	Ozama Region	East Region	South Region	National
January	47,178.83	38,503.26	37,279.59	32,403.93	40,547.92	1.23	0.97	0.84	1.05
February	47,561.30	38,900.31	37,643.14	32,724.63	40,921.55	1.22	1.03	1.19	0.95
March	47,846.91	39,180.48	37,904.73	32,970.83	41,195.04	1.22	1.03	1.19	0.95
April	48,243.93	39,595.90	38,305.75	33,313.96	41,588.84	1.22	1.03	1.19	0.95
May	48,417.29	39,829.66	38,522.06	33,528.87	41,793.70	1.22	1.03	1.19	0.95
June	48,669.64	40,134.54	38,763.12	33,779.50	42,060.48	1.21	1.04	1.19	0.95

Source: Encuesta Nacional de Gastos e Ingresos de los Hogares (ENGIH 2018), Banco Central de la República Dominicana (BCRD). 2019.

ANNEX 2. COMPARISON OF MODEL DIETS FROM 2013 AND 2022 ANKER METHODOLOGY BENCHMARK STUDIES FOR CIBAO NORTE, DOMINICAN REPUBLIC.

	Purchased Grams			Comments
Food Item	2013	2022	Difference	
RICE, WHITE AVERAGE (3)	233	250	17	
Bread, white	50	55	5	
Macaroni, spaghetti, dry	0	29	29	Added pasta for more variety

	Purchased Grams			Comments
Food Item	2013	2022	Difference	
Sweet potato	0	45	45	Replaced yuca (see below) by batata (sweet potato), which is more available
Plantains	118	89	19	Slightly less plantain
Beans	56	56	0	
Milk (cow)	181	120	-61	Reduced to one cup for children because of high cost per liter
Queso blanco	0	11	11	Added a small portion of cheese
Chicken egg	32	56	24	Increased from 4 eggs a week to 7 eggs a week
Chicken broiler or fryer meat & skin raw (no giblets or neck)	61	61	28	5 meals pw
Salami, beef & pork	24	36	12	Increased from 2 meals pw to 3 meals pw
Cabbage	52	111	37	Increased amount of cabbage because inexpensive
Tomato	52	36	-16	Less tomato, more variety of other veggies
Cucumber	0	36	36	Replaced carrot by cucumber, less expensive
Onion	0	32	36	Added fourth vegetable for more variety
Banana	118	118	0	
Papaya	0	52	52	Added papaya for more variety
Oil (soybean, peanut, palm, canola, etc.)	30	30	0	
Brown sugar	40	30	-10	Less sugar, 40 grams not healthy
Coffee	1.0	7	6	More realistic amount for 2 cups for adults
Water	1,440	1,500	60	
Yuca	50	0	-50	Replaced by batata (sweet potato), see above
Carrot	52	0	-52	Replaced by Cucumber (cheaper)
Total Veggies	**206**	**219**		**Similar amount of veggies**
Total Fruits	**118**	**171**		**More fruits as widely consumed and inexpensive**
Total meats	**85**	**126**		

	Purchased Grams			Comments
Food Item	2013	2022	Difference	
Meat meals per week	**7**	**8**		**Increased from 7 to 8 meat meals a week to increase proteins in the diet.**

Source: Authors.

ANNEX 3. FULL INFORMATION ON HOUSING UNITS VISITED

*R = Rooms, LR = Living Room, K = Kitchen, WR = Washing Room, BR = Bathroom.				
Acceptable standard?	Rent in local currency	Size in m^2 & rooms	Comments	Price per m^2
LOCATION 1: Boca de Mao				
No	1,500	56m^2, 3R, 1K, 1LE, 1BR	House of good size and distribution, but with materials (especially the wooden walls) in bad conditions. They do not pay rent as they own the house, price is an estimate.	26.79
No	600	15m^2, 1 R, 1 K	The house consists of only one room, with an improvised separation, of small dimensions and with materials in poor condition (especially the wooden walls and the zinc roof). It does not have its own bathroom. Poor ventilation as well.	40.00
LOCATION 2: Esperanza				
Yes	9,500	73m^2, 3R, 1K, 1LR, 1WR, 1BR	New house under construction, large and in good material conditions. Nobody lives there yet. It will be rented at the indicated price.	130.14
Yes	5,000	48m^2, 2R, 1K, 1LR, BR	Good house in good conditions. The materials are in good condition and it is a good size.	104.17
Yes	4,500	57m^2, 3R, 1K, 1LR, 1WR, 1BR	Large house with good conditions. It has a spacious yard and the materials are of good quality. The rent price is exceptional because they are charged less than usual by familiars.	78.95
Yes	4,000	42m^2, 2R, 1K, 1LR, 1WR, 1LR	Decent house in good conditions. The walls are made of wood but are in good condition.	95.24
No	2,000	20m^2, 2R, 1LR	Small house, with materials in not very good condition (especially the wooden walls). It does not have its own bathroom and has poor ventilation.	100.00

*R = Rooms, LR = Living Room, K = Kitchen, WR = Washing Room, BR = Bathroom.				
Acceptable standard?	Rent in local currency	Size in m^2 & rooms	Comments	Price per m^2
No	1,000	$10m^2$, 1R	The house consists of only one room of small dimensions and with materials in poor condition (especially the wooden walls). It does not have its own bathroom. Poor ventilation as well.	100.00
LOCATION 3: Guatapanal				
Yes	6,000	$45m^2$, 3R, 1LR, 1K, 1WR, 1BR	Good house in good conditions. The materials are in good condition. They do not pay rent as they own the house, price is an estimate.	133.33
Yes	6,000	$52m^2$, 2R, 1LR, 1K, 1WR, 2BR	Good house in good conditions. The materials are in good condition and it is a good size. They do not pay rent as they own the house, price is an estimate.	115.38
Yes	4,000	$48m^2$, 2R, 1LR, 1K, 1WR, 1BR	House in decent conditions. The materials are in good condition and it is a good size.	83.33
Yes	3,500	$42m^2$, 2R, 1LR, K, 1WR, 1BR	House in decent conditions. The materials are in good condition and it is a good size.	83.33
Yes	3,000	$42m^2$, 2R, 1LR, 1K, 1WR, 1BR	House in decent conditions. The materials are in good condition. They do not pay rent as they own the house, price is an estimate. The property has a parallel business of the owners (colmado).	71.43
No	2,000	$40m^2$, 2R, 1LR, 1K, 1WR, 1BR	Barely decent house. The walls are made of wood, but in decent conditions. Not very good separation of the rooms.	50.00
No	1,500	$28m^2$, 2R, 1 LR, 1K, 1BR	Small house, the walls are made of wood in poor condition. Also, the roof materials (zinc) are not in good condition. Poor ventilation.	53.57
No	1,200	$32m^2$, 3R, 1LR, 1BR	It was a house shared by several people, with room rates. The materials were not decent, especially the wooden walls. Poor ventilation quality. Only one bathroom to share. The price per room was 400 RS$.	37.50

*R = Rooms, LR = Living Room, K = Kitchen, WR = Washing Room, BR = Bathroom.				
Acceptable standard?	Rent in local currency	Size in m^2 & rooms	Comments	Price per m^2
No	700	12 m^2, 1R	Room (house) in bad condition. The walls are made of wood, they share a bathroom with other houses and have poor ventilation quality. Kitchen is not separated.	58.33
LOCATION 4: Batey Aminá				
No	2,000	34m^2, 3R, 1LR, 1BR	House in bad conditions. The walls are made of non-decent wood and have poor ventilation quality. Kitchen is not separated from the living room.	58.82
No	1,200	36m^2, 2R, 1LR, 1K, 1BR	Barely not decent house, not very big. The walls are made of wood, but in decent conditions. Not very good separation of the rooms.	33.33
No	1,000	15m^2, 1R. 1K	The house consists of only two rooms, a bedroom and a small space for kitchen. Materials are in poor condition and does not have its own bathroom. Poor ventilation as well.	66.67
No	650	22m^2, 1R, 1LR, 1K, 1BR	Small house in not very good conditions. The walls are made of wood and have poor ventilation quality.	29.55
No	600	10m^2, 1R	The house consists of only one room of small dimensions and with materials in poor condition (especially the wooden walls). It does not have its own bathroom. Poor ventilation as well.	60.00
No	600	10m^2, 1R	The house consists of only one room of small dimensions and with materials in poor condition (especially the wooden walls). It does not have its own bathroom. Poor ventilation as well.	60.00
LOCATION 5: Laguneta				
Yes	8,000	62m^2, 2R, 1WR, 1BR, 1LR, 1K	Large house in good conditions, with two floors. The price is estimated because it is own house.	129.03

*R = Rooms, LR = Living Room, K = Kitchen, WR = Washing Room, BR = Bathroom.				
Acceptable standard?	Rent in local currency	Size in m^2 & rooms	Comments	Price per m^2
Yes	3,500	$40m^2$, 2R, 1LR, 1K, 1WR, 1BR	Good house in good conditions. The materials are in good condition.	87.50
Yes	2,000	$40m^2$, 2R, 1LR, 1K, 1WR, 1BR	Decent house, of good size. The walls are made of wood, but in decent conditions. Not very good separation of the rooms.	50.00
LOCATION 6: Hatillo Palma				
Yes	4,000	$55m^2$, 3R, 1LR, 1K, 1BR	Good house in good conditions. Good materials and decent ventilation, not great.	72.73
Yes	3,500	$50m^2$, 2R, 1LR, 1K, 1BR	Good house in good conditions. They do not pay rent as they own the house, price is an estimate.	70.00
Yes	3,500	$50m^2$, 3R, 1LR, 1K, 1WR, 1BR	Good house in good conditions. The dwelling was not accessed.	70.00
Yes	2,500	$42m^2$, 3R, 1LR, 1K, 1WR, 1BR	Decent house in good conditions. The materials are in good condition.	59.52
Yes	2,000	$45m^2$, 2R, 1LR, 1K, 1WR, 2BR	Decent house. The walls are made of wood, but in decent conditions. Not very good separation of the rooms.	44.44
Yes	2,000	$44m^2$, 3R, 1LR, 1K, 1BR	Good house with decent conditions. The walls are made of wood combined with cement. They do not pay rent as they own the house, price is an estimate.	45.45
Yes	1,500	$46m^2$, 3R, 1LR, 1K, 1BR	Good house with decent conditions. The walls are made of wood but in decent condition. They do not pay rent as they own the house, price is an estimate.	32.61
No	700	$12m^2$, 1R	The house consists of only one room of small dimensions and with materials in poor condition (especially the wooden walls). It does not have its own bathroom. Poor ventilation as well.	58.33

*R = Rooms, LR = Living Room, K = Kitchen, WR = Washing Room, BR = Bathroom.				
Acceptable standard?	Rent in local currency	Size in m^2 & rooms	Comments	Price per m^2
No	500	$10m^2$, 1R	The house consists of only one room of small dimensions and with materials in poor condition (especially the wooden walls). It does not have its own bathroom. Poor ventilation as well.	50.00
LOCATION 7: Hato Nuevo				
No	1,500	32 m^2, 2R, 1LR, 1BR	House in bad conditions. The walls are made of wood and have poor ventilation quality. Kitchen is not separated from the living room.	46.88
No	1,200	$12m^2$, 1R	The house consists of only one room of small dimensions and with materials in poor condition (especially the wooden walls). It does not have its own bathroom. Poor ventilation as well.	100.00
LOCATION 8: Mao				
Yes	5,000	$52m^2$, 3R, 1LR, 1K, 1BR	Good house in good conditions. It was built through organizations that provide housing support to banana workers. They do not pay rent as they own the house, price is an estimate.	96.15
LOCATION 9: Hato Medio				
No	1,000	$15m^2$, 1R, 1K	The house consists of only one room of small dimensions and with materials in poor condition (especially the wooden walls). The kitchen is outside and it's shared with other persons. It does not have its own bathroom. Poor ventilation as well.	66.67
LOCATION 10: La Canela				
Yes	5,000	$48m^2$, 3R, 1LR, 1K, 1WR, 1BR	Good house of good materials. It was described on the basis of another very similar house, the dwelling was not accessed.	104.17

*R = Rooms, LR = Living Room, K = Kitchen, WR = Washing Room, BR = Bathroom.				
Acceptable standard?	Rent in local currency	Size in m^2 & rooms	Comments	Price per m^2
Yes	4,000	$44m^2$, 2R, 1LR, 1K, 1WR, 1BR	Good house in good conditions. Good materials and decent ventilation, not great. Price is special. Actually, the cost should be 4,000 RS$.	90.91
No	2,500	$40m^2$, 3R, 1LR, 1K, 1WR, 1BR	Barely not decent house. The walls are made of wood, but in decent conditions. Not very good separation of the rooms.	62.50
LOCATION 11: Laguna Salada				
Yes	4,500	$56m^2$, 3R, 1LR, 1K, 1WR, 1BR	Large house in good condition, with a large yard. The price is special, because they have been renting the place for a long time.	80.36

*R = Rooms, LR = Living Room, K = Kitchen, WR = Washing Room, BR = Bathroom.

Source: Authors.