Living Income Report

(with Living Wage Annex)

Rural Ilocos Sur Province, the Philippines

November 2022

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Anker Research Institute

GLOBAL LIVING WAGE COALITION

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EXECUTIVE SUMMARY

The Philippines' Ambisyon Natin 2040, a long-run development plan, envisions that by 2040, Filipinos enjoy a strongly rooted, comfortable, and secure life. To achieve a comfortable life, poverty and hunger will be eliminated, and families live in comfortable homes and be able to access desired amenities. In addition, transport is convenient and affordable, and leisure activities are feasibly undertaken. Children can also access quality education. Given these, establishing a measurement methodology to guide policymakers on which standards to impose remains important.

In line with efforts to measure and characterize welfare outcomes, this report applies the Anker Methodology (Anker and Anker (2017)) to quantify the living income (and living wage) of a typical rural household in the tobacco-growing areas of Nagbukel and Candon City in the Province of Ilocos Sur. Establishing the Anker Benchmark living income and living wage estimates is policy-relevant. More than 50 detailed living income and wage studies using the Anker Methodology have been conducted worldwide, revealing living standards and labor market realities. However, this report is the first to be undertaken in the Philippines.

This report provides an in-depth analysis to determine the income required by a family to afford a basic but decent living standard. To operationalize the Anker Methodology, normative standards were introduced to finalize the model diet and decent housing requirements. Primary data on demographic characteristics, diet, and housing characteristics were collected during focused group discussions and key informant interviews. This allowed us to appreciate the local context regarding food preferences, the state of housing and amenities, the role of market structures, prices, health systems, cost structures, and other cultural aspects that only residents in the target areas were familiar with. We also used secondary data such as the Family Income and Expenditures Survey, Labor Force Survey, and the National Health Demographic Survey.

The living standard used in this report is quite basic. It allows for households to afford a low-cost yet nutritious diet; live in a quite small wellbuilt house with access to amenities such as water, electricity, and sanitation, and other essential needs that pertain to healthcare, children's education, transportation, personal care, entertainment, etc. This study's model diet comprises locally available and relatively inexpensive foods. In terms of housing, the housing standard is small, with only 44 square meters of living space for a family. Amounts for other needs correspond to what people spend at the 40th percentile of the income distribution in the rural Ilocos region.

Based on our computations, a typical size family's living income is Php 24,742 ($450) per month using an exchange rate of 55. This is the net income a typical family in rural Ilocos Sur Province needs monthly to live a decent life. The living wage for rural Ilocos Sur Province is Php 16,643 ($320).

ABSTRACT

Living Income Report
Rural Ilocos Sur Province, the Philippines
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This report provides an in-depth analysis of the income required by a typical family to afford a basic but decent living standard in rural Ilocos Sur Province in the Philippines. The Anker Methodology was used to set normative standards for a model diet and decent housing. Primary data on local foods prices, housing costs, healthcare costs and school costs were collected to cost this living standard through visits to local markets, building constructors, healthcare facilities, and schools. Information on demographic characteristics, diet, housing conditions, healthcare, and education were also collected during focused group discussions and key informant interviews. Secondary data from the Family Income and Expenditures Survey, Labor Force Survey, and the National Health Demographic Survey were also used. The living standard used in this report allows for a typical size family in rural Ilocos Sur to afford a low-cost yet palatable and nutritious diet; live in a small wellbuilt house with access to amenities such as water, electricity, and sanitation, and other essential needs that pertain to adequate healthcare, children's education through secondary school, transportation, personal care, entertainment, etc. Based on our computations, living income in rural Ilocos Sur Province is Php 24,742 ($450) per month. The living wage for rural Ilocos Sur Province is Php 16,643 ($302).

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Table of Contents

SECTION I. INTRODUCTION

1. Background

With a land area of 300,000 square kilometers, the Philippines is located in the Southeast Asia region and bounded in the west by the Philippine Sea, in the east by the Pacific Ocean, in the south by the Sulu and Celebes Sea, and in the north by the Bashi Channel (see Figure 1). As it is still registering robust population growth, its total population reached 114 million in 2021.

Because of its geographic location, the Philippines is affected by two major weather systems, the northeast monsoons (from October to late March) and the southwest monsoons (from late June to October). Its tropical climate affects the seasonality of crops, particularly tobacco. Based on estimates by the World Bank, agricultural land comprises 42.5% in 2020 of the total land area,[1] and nearly 50% has been deemed arable.[2]

Classified as a lower-middle country by the World Bank, the Philippines' GDP per capita has grown steadily from 2000 to 2019. This has included higher real wages and productivity, a decrease in elementary occupations, and increased non-farm employment. As a result, poverty has declined. In 2021 the poverty rate was 18.1%, according to the World Bank.[3] Although the Philippines is classified by the World Bank as a lower-middle-income country, its GNI per capita in USD is close to the top of the range of lower-middle-income countries. Nonetheless, around half of its population is rural (52% in 2021, according to the World Bank), although this is steadily decreasing. During the Covid pandemic, the economy contracted, resulting in significant job losses and welfare downgrades, reversing recent economic gains.

The Philippines is among the world's top 20 tobacco-producing countries.[4] While tobacco and its derivative products are viewed negatively from a health policy standpoint, it is noteworthy that many farmers' livelihoods depend on tobacco cultivation. Even local government units are incentivized to increase tobacco output to benefit from the higher tobacco excise tax collection. Unlike other cash crops, tobacco is predominantly grown in the northern provinces of the Philippines due to its relatively favorable weather conditions.

This report presents estimates of the living income (or cost of a basic but decent standard of living for a household) and living wage in Ilocos Sur, the Philippines, one of the main tobacco-growing areas in the Philippines. The report uses the Anker Methodology, a comprehensive methodology that is widely recognized as the gold standard for measuring living wage and living income. The

[1] https://data.worldbank.org/indicator/AG.LND.AGRI.ZS?locations=PH
[2] https://data.worldbank.org/indicator/AG.LND.ARBL.ZS?locations=PH
[3] https://databankfiles.worldbank.org/public/ddpext_download/poverty/987B9C90-CB9F-4D93-AE8C-750588BF00QA/current/Global_POVEQ_PHL.pdf
[4] World Tobacco Production by Country - AtlasBig.com.

Anker Methodology systematically combines qualitative and quantitative approaches using primary and secondary data to estimate living income and a living wage.

Living income, as defined by the Living Income Community of Practice, is:

> *"The net annual income required for a household in a particular place to afford a decent standard of living for all household members. Elements of a decent standard of living include food, water, housing, education, healthcare, transport, clothing, and other essential needs, including provision for unexpected events."*

Establishing Anker Benchmark living income and living wage estimates is policy-relevant. More than 50 detailed living income and wage studies using the Anker Methodology have been conducted in different parts of the world, revealing realities in living standards and labor markets. For instance, Dawani et al. (2021) estimated the living income for families in Khyber Pakhtunkhwa (KPP), Pakistan, where tobacco farming is concentrated. More recently, studies estimating a living income for tobacco-growing areas in the Indian state of Andhra Pradesh and the Mexican state of Nayarit were also carried out by the Anker Research Institute. Other living wage and living income benchmark studies have been carried out by the Anker Research Institute in low and middle-income countries around the world, which have focused on various other sectors of production, countries, and regions. This study is the first to be undertaken in the Philippines.

Improving well-being has always been a worthwhile policy target. However, calibrating policy response depends on the quality of information. For example, a decent life is attributable to the ability of households to afford a nutritious diet; live in a house with access to amenities such as permanent walls and roof, water, electricity, sanitation, and a safe environment; and other essential needs that pertain to health care, children's education, transportation, personal care, entertainment, etc.

In line with efforts to measure and characterize welfare outcomes, this report applies the Anker Methodology to quantifying the living income (and living wage) of a typical rural household in the Nagbukel and Candon City areas where the cultivation and growing of Virginia-type tobacco are well-known. These study locations are considered representative of the main tobacco-growing areas of importance in the Philippines.

2. Living income estimate

Using the Anker Methodology, this report estimates the living income of typical families in rural areas of Ilocos Sur, the Philippines, where tobacco farming is important. The living income is **Php 24,742 ($450) per month** using an exchange rate of 55. This is the net income that a typical family in the study area needs to generate monthly to be able to live a basic, but decent life.

The rest of this report details the Anker Methodology and the process by which our estimate of the living income was arrived at. It is a transparent process designed to be understandable and accessible to stakeholders, governments, NGOs, researchers, and others.

2.1 The estimation process

Since the Anker Methodology requires qualitative and quantitative data, qualitative information was gathered through key informant interviews (KII) and focus group discussions (FGD). A first visit took place in April 2022 to determine appropriate study areas and to set up the study. A second visit took place in November 2022 when additional data on food prices, housing, education, and healthcare costs were collected after securing the necessary ethical clearance and being delayed by an earthquake that hit parts of Northern Luzon. Primary data on demographic characteristics, diet, and housing characteristics were collected during focused group discussions and key informant interviews. We also used secondary data sources such as the Family Income and Expenditures Survey (FIES) and the National Demographic and Health Survey (NDHS). This allowed us to appreciate and incorporate the local context regarding food preferences, the role of market structures and local governments, food prices and housing costs, the cost of healthcare and education, and cultural aspects that residents in the target areas are familiar with. Local enumerators were hired to collect food price data in stores and marketplaces frequented by farmers and other rural residents.

3. The Context

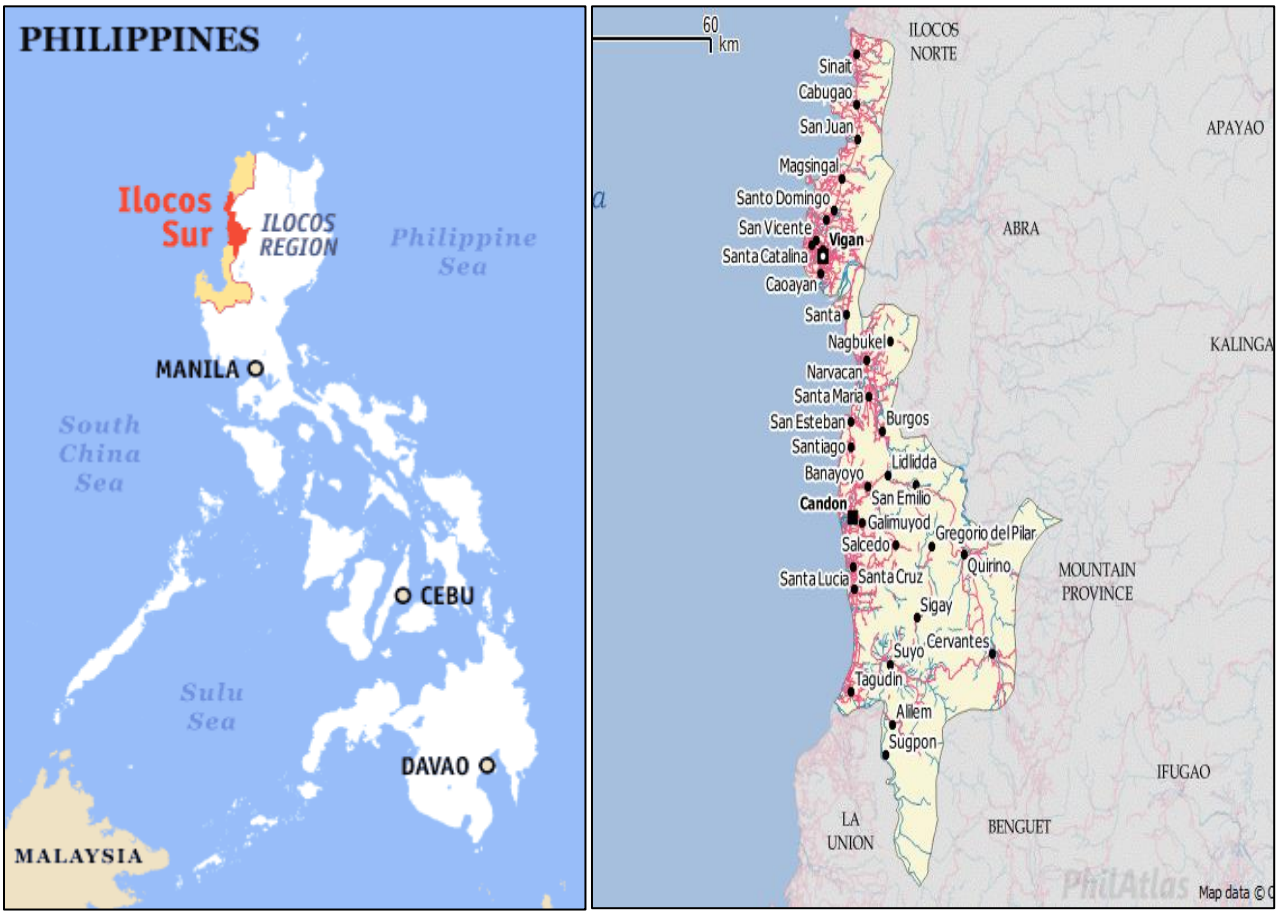
3.1 Overview

Due to its long history of tobacco cultivation, the Philippines is one of the world's top tobacco-producing countries. Based on data from the National Tobacco Administration (NTA), Virginia Leaf production accounted for 46% of total tobacco output in 2019 in the Philippines. Unmanufactured tobacco exports amounted to US$ 135 million in 2019, while manufactured tobacco in the same year was valued at US$ 414 million. In addition, tobacco duties and other fees collected amounted to Php 132 billion in 2019, contributing significantly to local government coffers through automatic revenue allocation mechanisms intended for local government units. The estimated contribution to employment of the tobacco industry was estimated as 2.177 million workers in 2019. This estimate includes those who are directly and indirectly employed.

3.2 Study area profiles

This study estimates a living income for farmers in Ilocos Sur, the Philippines, located on the northwest tip of the major island of Luzon. The Philippines is divided into 17 regions. Ilocos Sur is one of four provinces in the Ilocos Region – also known as Region 1. It is one of the main tobacco-growing areas in the Philippines. Ilocos Sur's economy is mainly agrarian, with Virginia Leaf tobacco being the premier cash crop. We selected two locations in Ilocos Sur that were considered representative: areas near Nagbukel and Candon City. Both study areas are rural and heavily involved in tobacco cultivation. See the maps in Figure 1 below.

Figure 1. Maps of the Philippines showing the location of the of Ilocos Region and Ilocos Sur Province



Located in District 2, Nagbukel is a 5th-class municipality bordered by San Isidro and Pilar, Abra in the Cordillera Administrative Region, and Narvacan in Ilocos Sur. Fifth Class Municipalities have an average annual income of Php 15,000,000 to Php 24,999,999. Nagbukel is a relatively small town with a population of 5,259, located about 36 kilometers from Candon City's town center. However, based on data from the cities and municipalities competitiveness index, Nagbukel ranks highly in terms of cost of living, local economic growth, and cost of doing business relative to 5th and 6th-class municipalities.

Candon City is a 2nd class city bordered by the towns of Santiago and Esteban. It is more than ten times as populated as Narvacan. It is also one of the top recipients of excise tax shares of all tobacco-growing areas. Regarding economic dynamism, Candon City ranked highly in cost of living, cost of doing business, and local economic growth. Out of 113 cities nationwide, Candon City ranked highly in terms of the capacity of health services and getting business permits but relatively low in social protection.

Regarding local governments, they are guided by national laws such as the Republic Act 7171 of 1991, Republic Act 8240, and Republic Act 11346. Republic Act 7171 refers to An Act to Promote the Development of The Farmer in the Virginia Tobacco Producing Provinces. Based on our interviews with agricultural officers in both areas, the mentioned national laws mandate extending assistance to tobacco farmers and specify mechanisms to determine allocations. Livelihood programs promote alternative farming systems like in Nagbukel, where farmers plant multiple crops at different times of the year. For instance, before growing tobacco, farmers produce onions. Corn is also a valuable crop in the province. In addition, the national government gives 15% of the excise taxes from tobacco to target provinces. The municipality of Nagbukel provides seeds, fertilizers, and pesticides to farmers.

Republic Act 8240 amended appropriate sections of the National Internal Revenue Code. As a result, approved levies and methods of assessments were approved for tobacco products like cigars and cigarettes (packed by hand or machine). In addition, this law provided that 15% of incremental revenues from excise taxes shall be divided among the provinces producing burley and native tobacco programs that promote quality enhancement and increase in income and productivity, livelihood projects that deal with alternative farming systems, and agro-industrial projects on post-harvest and secondary processing. Based on available data, Candon City received Php 476 million in 2016 from excise taxes involving Virginia tobacco. Nagbukel, on the other hand, received Php 68 million from Burley and native tobacco excise taxes as provided by Republic Act 8240.

Republic Act 11346 increased the excise tax on tobacco products. This law earmarked portions of total excise tax collection for the Universal Health Care Law and amended pertinent provisions of the revenue code of the Philippines. It also mandated allocations for provinces producing Burley and native and Virginia tobacco.

4. The Anker Methodology

To determine living income, the study relies on primary and secondary data to implement the Anker Methodology, the gold standard for measuring living incomes and wages. The living income concept is closely related to a decent life. Decent life should allow for an affordable diet that meets the minimum dietary prescriptions of the World Health Organization (WHO), adequate and healthy housing, and access to amenities such as electricity, water, and sanitary facilities. Decent life also implies easy access to adequate health care, children's education through high school, personal care needs, transportation, household goods, clothing, recreation, etc., as well as provision for unforeseen events. The Anker Methodology has been applied in around 50 countries of the world, quantifying living incomes and living wages and informing key stakeholders.

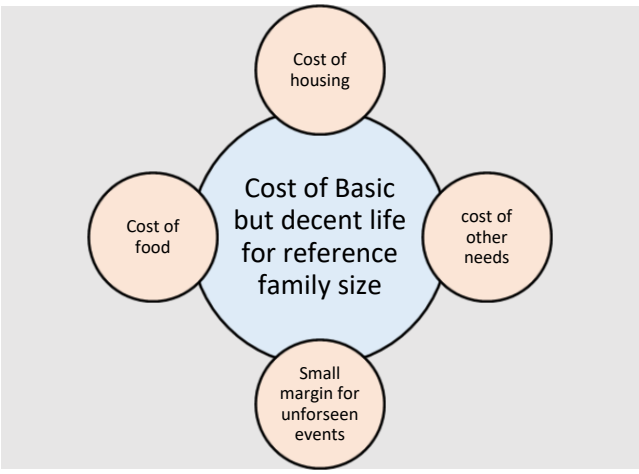
The Anker Methodology uses primary and secondary data. A local market survey was conducted to estimate the cost of a nutritious model diet, healthy housing, education of children through secondary school, and adequate healthcare. Primary sources included households and workers interviewed using focused group discussions. Through key informant interviews, other

stakeholders were also engaged to learn more about housing requirements, housing costs, regulations, and industry practices pertaining to house construction and zoning.

We interviewed public school authorities – principals, teachers, and parents to learn more about educational expenses. For health expenditures, we visited several health centers to learn about local illnesses, the propensity to visit doctors' clinics, and the benefits derived from municipalities and regional health centers. We also utilized the 2018 Family Income and Expenditure Survey (FIES) round and other officially published online information to understand expenditure patterns.

The Anker Methodology focuses on measuring a level of income adequate to meet the basic but decent life needs of a typical household, not just the individual respondent. Therefore, living income is not equal to actual income from agricultural activities, subject to price fluctuations and weather conditions and expenses. Borrowing from Anker and Anker (2017), the components of living income are provided in Figure 2 below.

Figure 2. Components of living income



We now detail the vital components of the Anker Methodology.

- The reference family size

Because computations are anchored on a typical reference family or household size for the study area, we used secondary data sources of nationally representative household survey for this to ensure getting robust values for this. To determine a typical reference family size, we assumed that there are two parents and several children determined using total fertility rate and child mortality rate as well as average household size in the study area. See Section 5 for details of how the reference size family was determined. Then, after the appropriate reference family size was determined, we determined the number of calories required per person in the reference family using Schofield equations recommended by WHO.

- The model diet

The formulation of the model diet rests on several principles. First, the model diet must have adequate calories and be nutritious. Second, it must be relatively low-cost for a nutritious diet. Third, it must reflect the study locality's state of development and food preferences. We built the model diet using an Excel tool from the Anker Research Institute. We also adjusted and validated this model diet by conducting interviews and focused group discussions with farmers and others.

- The housing standard

The Anker Methodology considers healthy housing as a human right. Therefore, we developed a local normative standard for basic acceptable housing consistent with the international minimum standards and local housing conditions. The normative standard encompasses housing characteristics regarding walls, floor, roof, ventilation, and utilities such as water installations, fuel sources, electricity, and toilet facility. Since most farmers own their houses, we used the user-cost approach. In this approach, we computed the annual depreciation cost by dividing the construction cost by the house's expected lifespan. Then, we added routine maintenance and repair costs. Quantifying housing costs necessitated securing information from architects, local government planners, respondents, and contractors.

- Cost of other needs

As an essential part of living income, costs other than food and housing were also quantified. Using an Excel tool from the Anker Research Institute and secondary household expenditure survey data, we computed the ratio of expenditures classified as non–food non–housing (NFNH) to total food expenditures based on the model diet. This ratio is helpful because once the model diet has been priced appropriately, we can estimate the amount required for the non–food non–housing costs. Through focus group discussions and key informant interviews, we collected information on education and health care costs as part of the essential items.

- Post-checks of children's education and healthcare costs

Because health and education are considered human rights in the Anker Methodology, we conducted post–checks to determine if information extracted from nationally representative household expenditure surveys on health and education expenditures of households are adequate for a decent standard of living. When they were not adequate, we revised the estimates based on information derived from the post-checks with farmers and others.

4.1 Primary data collection

Information was gathered in two phases. The first was a scoping visit, and the second was undertaking fieldwork and primary data collection.

The scoping visit was conducted to assess the main provisions and accessibility of communities to services and to collate details about the lifestyles of farming communities in terms of their food

consumption, housing, healthcare-seeking behavior, education of children, and transportation needs.

In the scoping visit, firstly, we interviewed public servants directly involved in crafting local development plans and zoning regulations. Next, we visited public healthcare providers in both study areas and interacted with municipal health officers, health personnel, and staff. In addition, through key informant interviews, we learned more about the nature of local diseases, the health expenditures of farmers who usually visit, the frequency of visits, and the services they could avail of. We also visited schools to ascertain the cost structure of education in the study areas.

Secondly, we conducted FGDs involving several farmer groups. The number of areas visited by the researchers totaled 8. Through these focus group discussions, we validated the food consumption patterns of farming families to arrive at a model diet, the out-of-pocket expenses that families normally incur for the education of their children, transportation needs, and their health-seeking behavior. Thus, for example, we verified through these FGDs the validity of available information on these. For example, where healthcare was concerned, we ascertained that study area residents mainly use regular public sector facilities and only utilized hospitals when afflicted with more serious ailments that require specialized equipment and more trained doctors in specialty branches of medicine.

The fieldwork essentially involved collecting information on food prices in places where farming families usually shopped. To do so, we hired local enumerators with previous backgrounds in price data collection and familiarity with the shopping habits of farmers and their households and local shopping locations. A second aspect of the fieldwork was to establish housing costs for families who owned their homes for which we solicited information from contractors/builders, engineers, and other knowledgeable sources.

SECTION II. COST OF A BASIC BUT DECENT LIFE

5. Reference family size

The cost of living varies across households because of family size and composition, and location of residence. Therefore, family size is a major component in evaluating living income which is for a family. To determine our reference family size, we used nationally representative survey data such as the Family Income and Expenditure Survey (FIES) and the Census of Population and Housing (CPH).

While determining a household size based on the total fertility rate for a particular area is relatively straightforward, adjustments must account for the mortality rates of children under five. For the total fertility rate (TFR), we used data from the Philippine National Demographic and Health Survey, which provides both national and sub-national estimates for the total fertility rate. Unfortunately, urban and rural TFR estimates are only available at the national level. Therefore,

based on the total fertility rate (TFR) for Region 1, a reference family size of more than 4.6 is appropriate since TFR is 4.56 in Region 1 and rural TFR is higher than TFR in the Philippines.

Table 1. Reference family size based on number of surviving children per woman

	Total fertility rate	**Under-five mortality rate**	**The mortality-adjusted total fertility rate**	**Family size implied**
Philippines	2.6	26.9	2.52	4.52
Urban	2.36	24.1	2.29	4.29
Rural	2.8	28.8	2.72	4.72
Region 1 (Ilocos Region)	2.64	29.9	2.56	4.56

Source: National Health and Demographic Survey (NDHS, 2017).

Using the FIES data on the percentage distribution of households by number of members, we found that the average household size in rural Ilocos Sur is 4.2. It is 4.4 when single-person households (which definitely do not have children) and large households with more than 9 members (that are often extended family households) are excluded. During our field visits to local farmers, we found that the family size varied between 4 and 6.

Thus, these two ways of determining a reference family size point to 4.5 members.

Table 2. Average household size for the Ilocos Sur Region

Number of household members	**Percent distribution of households**		
	Rural	**Urban**	**Study Region**
1	6.9%	10.5%	7.3%
2	13.7%	9.5%	13.2%
3	18.1%	16.8%	18.0%
4	20.9%	20.5%	20.8%
5	17.0%	17.9%	17.1%
6	10.4%	10.0%	10.3%

Number of household members	Percent distribution of households		
	Rural	Urban	Study Region
7	6.9%	7.4%	6.9%
8	3.0%	5.8%	3.4%
9	1.7%	1.1%	1.6%
10+	1.5%	0.5%	1.4%
Average	4.23	4.25	4.23
Average excluding 1 person and 10+ member households	4.37	4.60	4.39

Source: Computations are based on the Family Income and Expenditures Survey, 2018.

6. Food costs

After determining the reference family size, the model diet was constructed. The model diet is representative of a household's consumption profile consistent with normative standards.

Characterizing household composition helps determine the number of calories the average person in the family requires. Younger members require fewer calories while working adult members require more. Quantifying the caloric requirements is done using Schofield equations.[5]

6.1 Establishing a low-cost model diet with adequate nutrition

Based on the Schofield equations recommended by the WHO, the daily amount of calories required per person for our reference family of 4.5 (two adults and 2.5 children) is 2,396 calories. This requirement considers the average adult height in the Philippines of 1.62 meters for men and 1.50 meters for women, provided by the National Nutrition Survey, 2013,[6] assuming a healthy Body Mass Index (BMI) of 21. In addition, the assumption is that one of the adults in the reference family has vigorous physical activity required by farming and that their spouse/partner has moderate physical activity. Children are assumed to be engaged in moderate physical activities as they are not allowed to work on farms because of strict adherence to international conventions prohibiting child labor.[7]

[5] Schofield equations estimate the basal metabolic rate in terms of calories. The BMR represents the body's energy needed to maintain basic metabolic processes in temperature maintenance, digestion, and respiratory functions. We relied on an excel tool provided by the Anker Research Institute for our computations.
[6] This is the latest information available as of writing.
[7] Adhering to international conventions on no child labor remains important.

To develop our model diet, we first considered the food basket used in the official Food Consumption Survey for the Philippines (FNRI – DOST, 2022). This indicated the general structure of the food habits of Filipinos. Then, we adjusted this food basket to achieve adequate nutritional levels. When doing this, we maintained consistency with local food preferences while keeping the cost of the diet relatively low.

The food intake of Filipino households remains dominated by rice. However, we also noted that rural households had a higher intake of rice products, eggs, and vegetables.[8] Therefore, we adjusted the amounts of various foods in the model diet. For example, we removed beef from the model diet, because it is an especially expensive protein source, so residents eat protein substitutes such as fish and chicken. In addition, since local farmers and others usually drink instant mixed coffee daily, we adjusted the amount for instant coffee.

Regarding fruits, we also slightly changed the composition of the official food basket (which includes bananas, oranges, and mango). The focus group discussions with the tobacco farmers mentioned that fruit intake is relatively low within their families and, generally, limited to cheap and local fruits produced. Therefore, we only included bananas because they are widely consumed throughout the year and are relatively cheaper than other fruits sold.

Our model diet, which meets WHO nutrition standards for calories, macronutrients, and micronutrients, has the following interesting features:

- Foods included in our model diet are consistent with local preferences and availability.
- The number of calories per person is 2,396 calories. This is this high in part because one adult family member is assumed to have vigorous physical activity associated with farm work.
- 11.4% of calories come from proteins, which is within the WHO recommended range of 10-15%. Proteins come from a variety of sources and in particular, beans and animal sources.
- 17.3% of calories come from fats. This is on the low end of the WHO recommended range of 15% and 30%, and it reflects the relatively low consumption of cooking oil in the Philippine diet because of the extensive use of stews.
- 71.3% of calories come from carbohydrates. This is within the WHO recommended range of 55% and 75% of calories that should come from carbohydrates. In the Philippines, rural households eat more cereals compared to urban households. This high percentage of calories from carbohydrates is in line with the general pattern of food intake of Filipino households. As a result, rice forms an important part of the model diet as it is responsible for around 60% of all of the calories in the model diet.
- One meat or fish meal per day, with a small portion of 85 edible grams portion per meal, is included in the model diet. This consists per week of 1 pork, 3 fish, and 3 chicken meals.

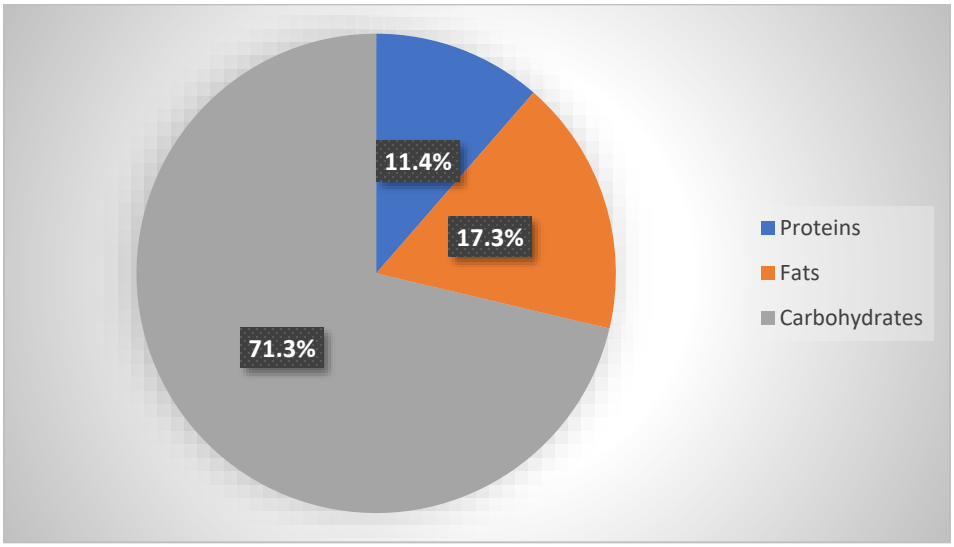
[8] This is from the 2018-2019 Facts and Figures – Food Consumption Survey.

Chicken is the least expensive per kilo, followed by fish and then pork. The 12% additional cost added for variety allows families sometimes to buy beef or more pork.

- Fish, which is commonly eaten in the study area, is costed using the average of the prices of tilapia and the next least expensive fish in each study location (often bangus). The 12% additional cost added for variety allows families to buy more expensive fish, such as galunggong, sometimes.
- 5 eggs per week, which is often eaten for breakfast, is included in the model diet.
- One bun of bread (pandesal) every other day is included in the model diet.
- One portion of dried instant noodles per week is included in the model diet.
- Sweet potato is included in the model diet rather than potato because sweet potato is much less expensive.
- 300 grams of fruits and vegetables are included in the model diet to ensure a sufficient variety of micronutrients and minerals. In addition, less expensive fruits and vegetables are included in the model diet, such as sweet potato leaves, pumpkin, eggplant, and tomato.
- One portion of beans per day is included in the model diet in keeping with local food habits and as an inexpensive source of protein.
- One cup of milk per day for children is included in the model diet.[9] This is costed using powdered milk because it is widely used in the study area.
- Inexpensive fruits and vegetables are included in the model diet.
- Two cups of coffee per day for adults are included in the model diet. It is costed using a so-called 3 in 1 packet, which contain instant coffee, instant creamer, and sugar, since this is how people in the study area prepare coffee.

[9] Adults do not usually drink milk. Thus, we included 1 cup of milk per day only for children. Adults drink coffee, which is included in the model diet, which is prepared using a 3 in 1 packet of instant coffee, instant creamer and sugar.

Figure 3. Percentage distribution of macronutrients in model diet



6.2 Determining local food prices

To estimate the cost of the model diet, we enlisted and trained local enumerators to collect prices of foods within the study areas during the mornings of the second week of November 2022 and the last week of February until the first week of March 2023. Prices of local foods corresponded to the types, qualities, and quantities/sizes of foods that families in the study areas usually buy. The set of establishments and markets visited was determined based on focus group discussions with farmers about the types of foods they eat regularly and the nearest groceries, retail stores, supermarkets, and open markets where workers typically shop. The enumerators also gathered data from ambulant farmers. Information was collected on the price, weight, and brand of products from 37 markets, stores, and sellers. Selected photos of venues visited to collect food prices are provided in Figure 4 below to give readers an idea of the types of venues where food is purchased in the study areas.

To determine the price of each food item (e.g., chicken, tomato, potato, rice, coffee, sugar, etc.) in the study area, we proceeded as follows. First, we gathered prices from two or more vendors in each location. Then, we found the most regular prices for many different food items. It is worth noting that some food prices, such as tomatoes and marunga (malunggay) leaves, were found to be especially low because it was common for ambulant farm vendors to be selling them. After entering all of the food prices we collected into Excel, we identified outlier prices for each food item (that were clearly unrepresentative of prices for the food) and deleted them from our dataset of food prices. We then calculated the median price per kilo for all food items. Finally, using these prices per kilo, we identified the least expensive foods and prices to represent each food group (e.g. rice for cereals; sweet potato for roots and tubers; chicken and pork for meats; sweet potato leaves, tomato, eggplant, and banana for fruits and vegetables; etc.).

Figure 4. Photos of some of the venues visited to collect food prices

Chicken eggs and dried fish inside public market in Candon City

Fresh vegetable stalls inside a public market in Candon City

Fish section of market in Narvacan City

Roadside market

Ambulant vendor in Nagbukel

6.3 Cost of the model diet

After determining the price per kilo for food items in the study areas, this information was incorporated into the model diet, and the cost of the model diet per person per day was computed. The resulting value is Php (Philippine Pesos) 79.20 per person per day (Table 3). We then added some additional expenses after considering that the food budget must be sufficient to cover the cost of nutrients and minimum calories and contribute to the goals of well-being assessed with food.

These additional expenses consist of the following:

- Salt, spices, sauces, and condiments that are necessary for palatability (1.3% was used as this is the percentage for these found in household consumption expenditure survey data)
- Food purchased but not consumed because of the following reasons: (a) part of food is lost during cooking or storage; (b) the condition has deteriorated; and (c) food is discarded (4%).
- An allowance for additional variety in the model diet to allow for more expensive foods or varieties sometimes, additional variety, taste, quality, and seasonal food availability (12%).

With these additional expenses, the final cost of the model diet per person per day is Php 92.90 (USD 1.67) (Table 3). To obtain the family's daily food budget, we multiplied the cost per person of the model diet by the number of members in our reference family size for the study area (4.5 persons, see above). To obtain the monthly value, we multiplied the family's daily budget by 365/12

Table 3. Composition and cost of the model diet per person per day, rural Ilocos Sur (in Php)

FOOD ITEM	EDIBLE GRAMS	PURCHASED GRAMS	COST PER KILO	COST
Rice, white	416	416	39.00	16.21
Bread, white	23	23	110.00	2.48
Rice noodles, dry	11	11	182.00	1.95
Sweet potato	30	42	50.00	2.08
Beans	28	28	115.00	3.22
Milk, powdered	18	18	310.00	5.68
Chicken egg	33	38	168.00	6.36
Pork	12	13	300.00	4.05
Chicken	36	54	145.00	7.77
Tilapia or another fish	36	52	180.00	9.37
Green leafy vegetable average	50	63	15.00	0.94
Sweet potato leaves	50	53	15.00	0.79
Pumpkin	50	71	40.00	2.83
Eggplant	50	61	60.00	3.67
Tomato	50	54	20.00	1.09
Banana	50	77	35.00	2.71
Oil	24	24	100.00	2.40
White sugar	18	18	110.00	1.97
Coffee	13.3	13.3	274.00	3.65
Subtotal excluding additional costs				79.20
Total, including additional costs [a]	0	0		92.9000

Note: [a] Additional expenses are for: Salt, spices, and condiments (1.3%); spoilage & waste (4%); and additional variety (12%).

7. Housing

7.1 Minimum healthy housing standard

Estimating the cost of basic housing in the study area necessitates setting a local housing standard. This basic local standard is defined after due consideration of international standards, which specify the adequacy and acceptability of housing. These abiding international standards are provided in table 4 below.

Table 4. International standards for acceptable healthy housing

Standard	International Convenant on Economic, Social and Cultural Rights	ILO Recommendation No. 115 Concerning Workers' Housing	WHO Healthy Housing
Safe Water[b]	✓	✓	✓
Sanitation/toilet & sewage disposal[b]	✓	✓	✓
Sufficient living space[b]	✓	**Persons per room and/or floor area**	**Persons per room**
Durable structure (protection against elements)[b]	✓	✓	✓
Good condition & state of repair[b]	✓[e]	✓[f]	✓
Physical safety	✓		✓
Adequate ventilation		✓	✓
Adequate lighting	✓	✓	✓
Safe food storage		✓	✓
Washing facilities	✓	✓	✓
Separation from animals		✓	✓
Electricity			
No site hazards[b, c]	**Drainage polluted**	**Earthquakes**	**Many**[d]
Refuse/solid waste disposal	✓	✓	✓
Emergency services	✓		✓
Protection from elements	✓[e]	✓[f]	✓

Notes:

[a] UN-Habitat urban slum housing definition is not included in this table, because it includes only five elements: 'inadequate access to safe water; inadequate access to sanitation and other infrastructure; poor structural quality of housing; overcrowding; insecure residential status' in addition to security of tenure.

[b] Element included in UN-Habitat definition of urban slum housing.

[c] According to UN-Habitat the following locations should be considered as hazardous 'housing in geologically hazardous zones (landslide/earthquake and flood areas); housing on or under garbage mountains; housing around

high-industrial pollution areas; housing around other unprotected high-risk zones (e.g. railroads, airports, energy transmission lines)' (UN-Habitat, 2003, p. 12).

[d] WHO indicates the following site hazards: earthquakes, hurricanes, wind, noise, pollution, floods, and landslides.

[e] Implied by 'protection from cold, damp, heat, rain, wind or other threats to health, structural hazards, and disease vectors' (International Covenant on Economic, Social, and Cultural Rights, 1966).

[f] Implied by 'protection against heat, cold, damp' (ILO Recommendation No. 155).

Sources: From Anker and Anker (2017) based on International Covenant on Economic, Social and Cultural Rights (1966), ILO Recommendation No. 115 Concerning Workers' Housing (1961), WHO (1989), UN-Habitat (2003).

Our local housing standard was defined after also considering local standards and local housing conditions (table 5). The 2018 FIES household survey data indicate that housing conditions in the study areas are generally agreeable with the availability of necessary amenities. Most houses are single houses with an iron or aluminum roof and proper concrete or brick walls, which testifies to their sturdiness. Furthermore, a clear majority of houses have a flush toilet, electricity, and protected well or tube well and so are norms in the area.

Table 5. Housing characteristics and conditions, Ilocos Sur (%)

Housing characteristics	Region of Ilocos Sur	Urban Ilocos Sur	Rural Ilocos Sur
Type of house			
Single house	97.3	92.1	98.0
Type of roof			
Galvanized iron/aluminum	95.0	91.6	95.5
Type of wall			
Concrete/brick/stone	75.3	74.2	75.4
Type of toilet			
Flush to septic tank	79.9	84.7	79.2
Electricity			
Has electricity	97.4	96.3	97.6
Water supply			
Protected well/tube well/borehole	66.7	44.2	69.9

Source: Authors' calculations based on 2018 FIES.

Based on international standards and local housing conditions, our minimum local housing standard is indicated below.

a. Living space of 44 square meters (equivalent to around 50 square meters including walls).
b. Permanent walls of concrete.
c. Roof of iron or aluminum or reinforced cement concrete.
d. Floor of cement or brick.
e. Toilet facility can be flush toilet although a well-drained pit toilet with a concrete slab would be acceptable.
f. Potable water.
g. House has electricity.
h. LPG gas is used for cooking, but the use of firewood is acceptable.
i. Adequate ventilation.
j. Separate bedrooms.
k. Kitchen must be separate and have adequate ventilation.
l. No site hazard.
m. Building must be in reasonable condition.

In November 2022, we also conducted focused group discussions in our two study areas to confirm if local conditions were consistent with housing statistics from the 2018 FIES and the local housing standards we set (see above). In addition, we also interviewed government officials involved in planning and development in both study areas. We found discrepancies between what the locals have relative to our standard indicated above for the average floor area of houses in Ilocos Sur. It turns out that locals in Nagbukel indicated to us that their actual floor area is relatively small, 30 to 36 sq. mt., while their counterparts in agricultural areas of Candon City estimated that, on average, it is between 40 to 50 sq. mt. Based on our discussions, we found that the current housing size largely reflects cost-saving behavior on the part of farmers.

Photos of typical houses are shown in Figure 5 below.

Figure 5. Photos of typical houses

Bungalow house located in Nagbukel

Bungalow house located in Nagbukel

7.2 User cost of basic acceptable owned housing

To find out the cost of housing, we estimated the user cost of acceptable owned housing. This is because farmers own their houses. We have yet to hear about farming families living in rented dwellings, which indicates that the rental market in the study area is small or insignificant. This is supported by the almost universal single-house ownership according to the national household survey data. Farmers are also aware of the need to build stronger houses to withstand the impact of weather disturbances. When built using reinforced concrete, their houses were estimated to last for more than 50 years.

We interviewed government architects in both study areas regarding their perspectives on farmers' housing preferences, local regulations, and housing construction in rural and urban areas. Regardless of the type of urbanity, we learned that housing costs are determined using a rule-of-thumb approach that specifies cost per square area. There are also local ordinances and regulations which prescribe necessary fees related to housing construction, such as zoning fees, building permits, and fire insurance. Ancillary fees include workings, drawings, and professional fees. These additional cost amount to around Php 20,000.

Those whom we spoke to also noted that materials prices during the COVID-19 pandemic were increasing. The environment was more inflationary than it was several years ago. Based on our interviews, we found that labor cost remains a significant component of total housing costs. We asked contractors to prepare estimates for a house with a living room, a separate kitchen, two bedrooms, and a toilet to anchor their cost estimates. We also assumed that (i) land was available and did not need to be purchased and (ii) a bank loan/mortgage was not needed and so there were no interest payment costs.

In our discussions with key informants, such as city planners and engineers who are knowledgeable about local housing construction, the consensus of respondents in the Nagbukel area ranged between Php 10,000 and Php 12,500 per square meter, excluding administrative charges. In Candon City, the consensus of respondents was higher. Taken together, Php 13,000 per square meter seems reasonable. To this construction cost, contractors typically add a 15% contingency to

allow for inflation and unexpected events. Using this Php 14,950 (i.e., Php 13,000 x 1.15) cost per square meter rule of thumb, which reflects local demand and supply conditions and is consistent with the price estimates of local city planners and engineers, the total building cost is Php 747,500 (i.e. 14,950 x 50 sq. mt.) for a house with our healthy housing standard of 44 square meters of living space (or around 50 square meters of the building size used by builders which include outside and inside walls) that is typical for a lower-middle income country such as the Philippines (Anker and Anker 2017).

We also inquired about the typical service lifespan of local houses. Farmers and builders both felt that they last for around 50 years with routine maintenance since they are built using concrete and iron. This estimate of service life is consistent with international data on this (Anker and Anker 2017).

Therefore, to compute the user cost equivalent rental value, we assumed that the house will last 50 years and routine maintenance and repair costs amount to 1.5% of the construction costs per year. The 1-2% norm was also corroborated by local government planners who thought such maintenance costs were reasonable. International evidence also supports this norm (Anker and Anker 2017).

The formula used to estimate user costs per year is given below (Anker and Anker 2017). It assumes straight-line depreciation.[10]

$$User\ cost_{House} = \text{(Cost of construction/50 service life expectancy in years) + (Cost of construction x 1.5\% for maintenance and repairs)}$$

Thus, we estimated a user cost of housing of around Php 26,560 per year (Php 747,500/50 + 747,500 x .015) considering our standard of 50 square meters of plinth area[11] to arrive at a monthly user cost of approximately Php 2,200 (i.e., approximately Php 25,560/12).

7.3 Utility costs

Based on information collected from focus group discussions, we concluded that water is usually free, as farmers and other rural residents use bore wells to draw water from the ground. However, our respondents reported higher electricity expenses since drawing water relies on electricity-powered pumps. Based on interviews, farmers agree that the average cost of electricity for households in the study area is around Php 1,000 per month. When electricity is used for electric pumps to water crops, the cost increases to perhaps Php 2,000. We stick to Php 1,000 per month

[10] The value of land is assumed to not deteriorate or depreciate but rather to appreciate over time.

[11] There are two ways to measure house size. There is plith area, which is measured using the perimeter of the outside walls, that is, the footprint of the house. Builders typically estimate building cost using this measurement. There is also the living space of a house, often called carpeted area, which measures living space inside the house and so excludes external and internal walls and storage areas. This is the concept used in the Anker Methodology. "Carpeted" living space is typically between 10-20% less than plith area (around 12% typically), see Anker and Anker (2017). For this reason, we used 50 square meters of plith area to estimate the user cost of housing in order to correspond to our living wage standard of 44 square meters standard of "carpeted" living space.

for electricity, which is directly related to non-business expenses. Cooking fuel costs per month were estimated to be around Php 400, with 11 kilo LPG canisters costing around Php 900 and lasting a little more than 2 months. Given these, the total housing cost amounted to around Php 3,600 per month.

Table 6. Estimated monthly housing costs

User cost value of housing	Php 2,200
Electricity and water expenses	Php 1,000
Cooking fuel	Php 400
Total housing costs	Php 3,600

8. Non-food non-housing costs

The first two components of living income estimated above deal with the cost of nutrition and decent housing consistent with normative standards. The third component of living income consists of non-food and non-housing (NFNH) expenditures, which include alcohol, education, health, transportation, clothing and footwear, recreation, household contents and appliances, communication, eating away from home, and personal care and other miscellaneous expenditures.

NFNH expenditures were estimated using the NFNH/Food ratio indicated by government household expenditure survey data for the study region and the cost of our model diet indicated above. To derive an appropriate NFNH/Food ratio, we used data for the 40th percentile (approximately equivalent to the average of the fourth and fifth deciles) of the household expenditure distribution for rural areas of Region 1.[12] Household expenditures refer to expenses or disbursements for personal consumption in 2018 (PSA, 2018). Food expenditures come in two forms: food prepared at home and consumed at home or away from home in the place of work or school, and food purchased and consumed outside of the home.[13]

Before computing the NFNH/Food ratio, we made some adjustments. We eliminated what the Anker Methodology considers expenditures that are unnecessary for a healthy life. Thus, expenditure on tobacco, which accounts for 1.3% of total expenditures for those in the 40th percentile in rural areas of Region 1, was removed. The cost of food consumed outside of the home

[12] The official poverty threshold estimated by the Philippine Statistics Authority in 2018 was Php 10,727 for a family of five per month. In the same year, the poverty incidence among the population in Region 1 reached 11.7 percent.

[13] Based on the Philippine Statistics Authority's Family Income and Expenditure Survey: National and Regional Estimates, food consumed outside of home "includes food regularly bought and eaten by the family members outside the home like snacks, lunch and others and those cooked food bought outside the home but eaten at home. The daily allowance for snacks and meals at school of members of the household who are attending school is also covered in this category. No value given to food consumed by a family member at parties s/he attended or food items occasionally offered by friends. Allowances for schoolchildren are included here."

constituted a hefty 11.6% of total expenditures. We assumed that 50% of the cost of meals away from home is for the food in these meals, and 50% is for services, profits and overheads. It is interesting to note that actual rental expenditures are minimal, at less than 0.1% of total expenditures, because home ownership is the overwhelming norm in the study areas.

Table 6. Household expenditures by expenditure group as a share of total expenditure for the 40th percentile of distribution in Region 1 (%)

Major and sub-major expenditure groups international classification	Expenditure group for a living income	% Share		
		Rural	Urban	Region 1
Food				
Food and non-alcoholic beverages at home	Food	43.4	38.9	42.7
Food taken away from home	½ of food away in Food & ½ in NFNH	5.8	6.2	5.9
Alcohol	NFNH	0.7	0.7	0.7
Tobacco	Excluded	1.3	1.2	1.3
Housing				
Rental	Housing	0.1	0.5	0.1
Imputed rentals	Housing	9.9	11.6	10.4
Maintenance and repair	Housing	0.4	0.6	0.3
Services – Electricity and other utilities	Housing	7.8	8.0	7.9
Household contents and appliances	NFNH	3.2	3.5	3.2
Clothing and footwear	NFNH	1.5	1.7	1.6
Healthcare	NFNH	1.8	2.7	1.8
Education	NFNH	0.9	1.1	0.9
Transportation	NFNH	6.1	5.5	5.9
Telecommunications	NFNH	1.4	2.0	1.4
Recreation and Culture	NFNH	0.5	0.7	0.6

Major and sub-major expenditure groups international classification	Expenditure group for a living income	% Share		
		Rural	**Urban**	**Region 1**
Restaurants and hotels	½ of food away in NFNH & ½ in Food	6.0	6.2	5.9
Miscellaneous goods and services	NFNH	6.0	6.6	6.1
Total NFNH		28.1	30.7	28.3
Preliminary NFNH/Food ratio		**0.57**	**0.69**	**0.58**

Notes: Percentages do not sum to 100.0%, because expenditures for ceremonies, and taxes, and transfers to other households are not included.
Source: Authors' computations based on 2018 FIES.

Thus, we estimated the NFNH/Food ratio for rural areas of Region 1 to be 0.57. Therefore, a family with 4.5 members needs Php 7,248 per month (i.e., 0.57 x Php 12,716) to defray the cost of NFNH needs.

Next, we conducted post-checks for education and healthcare, because the Anker Methodology considers education through secondary school and adequate healthcare to be human rights. The intent of these post-checks was to determine if it was necessary to increase funds for education and healthcare over the amounts already included for these in our preliminary NFNH estimate,

9. Post checks on non–food and non–housing costs

As indicated above, adequate healthcare and education of children through secondary school are considered human rights in the Anker Methodology. For this reason, this section investigates whether the amounts determined for these in the preliminary NFNH estimate are sufficient. If they are insufficient, a post-check amount is added to the preliminary NFNH amount for these.

We start by calculating how much is already included in the preliminary NFNH. This is indicated in the following table.

Table 7. Amounts included in the preliminary NFNH for education and healthcare

Expenditure	% of HH expenditures	NFNH as % of HH expenditure	% of NFNH expenditure	Preliminary NFNH value per month (in Php)	Amount in preliminary NFNH for healthcare and education (in Php)
Healthcare	**1.76%**	**28.26%**	**6.22%**	**7,248**	**451**
Education	**0.92%**	**28.26%**	**3.27%**	**7,248**	**237**

9.1 Healthcare post-check

The provision of healthcare by local government units in tobacco-producing areas is heavily shaped by national laws that explicitly provide for automatic allocations from excise taxes and other funding priorities. For instance, RA 7171 mandates that fifty percent (50%) of total excise tax collection should be allocated to local government units whose farmers in the area produce Virginia, Burley, and native tobacco.

Cognizant of how the health system worked in Ilocos Sur after our initial visits, we went to the municipal health offices of both Nagbukel and Candon City and conducted key informant interviews.[14] The municipal health offices are run by health staff and are headed by licensed medical doctors.[15] In the town of Nagbukel, we asked questions about the nature of services the health unit provides; the functions of staff and medical doctors; the source of funding; the number of times patients, particularly farmers, visit public health centers; and the types of diseases contracted. In response, our key respondents provided detailed information on local illnesses prevalent among farmers and their families. For example, the head nurse revealed that farmers often suffer from upper respiratory tract and urinary tract infections. Hypertension is also one of the rising non-communicable diseases observed by the Municipal Health Unit (MHU). In addition, children were also brought to health offices for medical checkups, and a number usually suffer from flu, water-borne diseases, and related conditions.

The MHU of Nagbukel offers free medicines to farmers and other constituents. Farmers and others and their families can freely avail themselves of consultations and other primary health care services. Our key informants also mentioned that their MHU has a memorandum of agreement

[14] Our key respondent represented the MHU. When we conducted FGD interviews with farmers or their households, we also asked them about health-related issues or concerns. Their responses matched the information that we gathered in the key informant interviews. For example, basic medical supplies and consultation at the municipal level are free of charge, but then serious diseases entail referral to district or city hospitals, and even with PHILHEALTH, farmers have to pay out-of-pocket expenses.

[15] The management of health services has been devolved to local governments as mandated by the Local Government Code of 1991.

with the municipal government of Narvacan for free X-ray services. Only when farmers or their families visit fully departmentalized tertiary hospitals do they have out out-of-pocket expenses, which largely depend on the type of disease they contracted or suffered from. The estimated private consultation rate ranges between Php 200 and Php 300 for common diseases and Php 500 for specialists. Our key respondent estimated that farmers and their households averaged four visits yearly. This is similar to the 3 to 4 visits a year assumed in the Anker Methodology. The results from these key informant interviews match the farmers' responses during our focused group discussions that they rely mainly on the municipal health offices' health services.[16]

In Candon City, the city health officer we spoke to detailed farmers' health, habits, and lifestyle. According to our informant, farmers, especially the older ones, suffer from chronic diseases such as diabetes and upper respiratory tract infections, although we were told that the policy of tobacco buyers is for farmers to wear protective gear when applying pesticides.

Based on the respondents' responses, farmers only choose to go to tertiary hospitals when their situation is either critical or they are afflicted with a chronic disease. Therefore, our view is that given the allocation of resources devoted to healthcare in the study areas because of tobacco production, out-of-pocket healthcare costs are not high.[17] Doctor visits to public facilities are free, and the respondents we spoke to prefer to go to government MHU. For this reason, we believe that the Php 451 per month included for health care in our preliminary NFNH estimate is sufficient; for this reason, we did not make any post-check adjustment for healthcare.[18]

9.2 Education post-check

Under RA 11480, the Elementary and Secondary School Calendar shall consist of at most two hundred twenty class days. The calendar usually starts in the last week of August or the first week of September and ends in the last week of June or the first week of July.

In Ilocos Sur, most public schools are implementing five days of in-person classes. However, some schools use the blended learning modality, which has three days of in-person classes and two days of distance learning (modular, online instruction; after that, four days of in-person classes and one day of distance learning). Full distance learning was implemented until October 31, 2022. Starting November 2, 2022, all public and private schools have transitioned to 5 days of in-person classes. Schools strictly devote ten weeks of every academic quarter to actual classroom teaching; however, this may be used for co-curricular activities on the eleventh week of each quarter. The typical time allocation for various subjects for learners from grades 1 to 12 is shown in Table 8.

[16] Most of the participants in Nagbukel are women. However, in the other study area, all participants were men.
[17] Recently, the Ilocos Sur Medical Center in Candon City, Ilocos Sur opened. Based on official accounts, the said hospital offers multi-specialty consultation for free. Please refer to PIA - Ilocos Sur Medical Center, now open
[18] Note that the monthly family expenditure for healthcare needed is very similar to the amount for healthcare included in the preliminary NFNH estimate (Php 451) assuming the following: (i) 3.5 healthcare visits per person per year (i.e., visit every 3-4 months) consisitg of 1 visit to private doctor or clinic, 0.5 visit to pharmacy, and 2 visits to public facility; (ii) 1 visit to a specialist such as dentist or optimologist; (iii) cost of a visit to a private doctor is Php 250 and a visit to a specialist is Php 500; (iv) lab test is needed every third visit to a private doctor and costs Php 500; (v) cost of medicine per visit to private provider is Php 200; and (vi) cost of visit to a public facility is free.

Table 8. Time allotment for each learning area, Grade 1 to Grade 12

Learning Area	Time Allotment							
	Grades 1 to 6 (No. of Minutes Daily)							Grades 7 to 12 (Weekly)
	G1		G2	G3	G4	G5	G6	
	1st Sem.	2nd Sem.						
Language Arts								-
Mother Tongue	50	50	50	50	-	-	-	4 hrs
Filipino	30	30	50	50	50	50	50	4 hrs
English	-	30	50	50	50	50	50	4 hrs
Science	-	-	-	50	50	50	50	4 hrs
Mathematics	50	50	50	50	50	50	50	4 hrs
Araling Panlipunan	40	40	40	40	40	40	40	3 hrs
EPP/TLE	-	-	-	-	50	50	50	4 hrs
MAPEH	40	40	40	40	40	40	40	4 hrs
EsP	30	30	30	30	30	30	30	2 hrs
Total	240	270	310	360	360	360	360	29 hrs

While some farmers we spoke to strongly prefer sending their children to private schools, most send them to public schools. It seems that while private school is an aspiration of many parents, public schools are considered acceptable by most. Indeed, only around 9% of students attend a private school, according to the National Center for Education Statistics (NCES, 2023). In addition, schools for grade school pupils are usually near their places of residence, but junior high school students must commute to a nearby town. Following these responses, we calculated typical public school expenses.

We collected information on educational expenditures from focused group discussions with farmers and some of their spouses. We also spoke to principals and teachers. Based on principal

and teachers' accounts, pupils do not have to pay any matriculation fee. We collected cost data on uniforms, allowances, school supplies, and fee contributions. Parents typically provide allowances for grade school pupils in the amount of Php 20, while Php 50 is usually given to junior and high school students. Table 9 indicates the school costs that farmers and others we spoke to indicated.

Table 9. Cost per year for parents of education[19]

Education costs	Elementary	Secondary
Tuition fee	0	0
Parent-teacher association	100	200
Other fees[20]	400	400
Books	0	0
School supplies	350[21]	500[22]
Other instructional materials	0	0
Uniforms[23]	500	600
Socks and shoes	500	500
Total costs	1,850	2,200
Number of years at each level	6	6
Total cost over childhood per child	11,100	13,200
Total cost per year of childhood per child (18)	617	733
Cost per month per child	52	61
Cost per month for 2.5 children	130	153
Total cost per month for family		283

Note: We assume that allowances provided to children are spent on food or snacks which would reduce food costs at home. Given this, we do not consider here these education-related expenditures.

[19] Focus Group Discussions and SRP of school supplies from DTI.
[20] Miscellaneous fees include utility, paper, and/or projects, as well as PTA.
[21] School supplies: School bag, Notebooks, Pencils, Ballpens, Paper, Crayons, Eraser, and Sharpener.
[22] School supplies: School bag, Notebooks, Pencils, Ballpens, Paper, Crayons, Eraser, Sharpener, and Ruler.
[23] Top and bottom uniforms, excluding shoes.

Schools provide learning materials such as handouts and books and school supplies like notebooks, pens, pencils, and crayons. Thus, parents do not have all of these expenses.

There is a School-Based Feeding Program (SBFP) which is implemented per the Basic Education Learning Continuity Plan. The SBFP is unique for every region, as the regional office needs to prepare a regional food supply map of nutritious food products available in the region. Schools that implement the SBFP effectively receive a cash prize of about Php 60,000.[24] The SBFP's primary beneficiaries are all incoming kindergarten learners and the Grade 1 to Grade 6 learners who are wasted or severely wasted based on the previous school year's SBFP report, except those who have moved to Grade 7. Though there might be cases of excess funds wherein pupils are at risk of dropping out, indigenous people learners and those coming from indigent families are considered secondary beneficiaries. The program provides beneficiaries with nutritious food products through rationing for at least 60 feeding days and fresh or sterilized milk for 50 days. The SBFP covers only public schools, and the foods are blends of partially precooked and milled cereals, soya, and beans fortified with micronutrients. In addition, additional snacks may or may not be contained normally in the food. Nutritious food products are prepared formulas containing carbohydrates, vitamins, and minerals in a packet or a sachet; examples are a champorado or arroz caldo pack.

We do not consider the effect of this program on the family's food costs because it is so strongly means-tested. The average cost per child is Php 113 per month, and the cost per family with 2.5 children is Php 283 per month as indicated above in table 9. Since this post-check educational expense per month estimate is only slightly higher (by Php 46, or less than $1) than the Php 237 included in our preliminary NFNH estimate for education, we did not adjust the amount for education in this post-check.

10. Provision for unexpected events to ensure sustainability

The final component of living costs accounts for emergencies and unforeseen circumstances. We included a 5% margin on all expenses to account for this, as recommended in the Anker Methodology. This is important since farming families and relatively low-resource communities in Ilocos Sur are prone to economic, political, or natural contingencies that can leave them in the lurch from which they may find it relatively harder to recover than their relatively richer counterparts. To a certain extent, the supplemental amount included here would allay some of the challenging problems they often encounter.

The monthly figure thus obtained for a buffer against unforeseen incidents and contingencies is Php. 1,178 ($21).

[24] Department of Education Memorandum.

SECTION III. LIVING INCOME IN CONTEXT

11. Comparison with other measures of income and poverty

Our monthly living income estimate is compared in this section with various poverty lines, wages, and income outcome measures, such as minimum wages, household consumption expenditure, average wages, and even government and NGO estimates. These comparisons are summarized in Figure 4 below. Note that when the comparator measure is for an individual, we convert it to a family-level estimate. When doing this, we use the number of members in our reference family of 4.5, and the number of full-time workers in our reference family of 1.61 (see Annex A).

11.1 Poverty line income

While the Philippines' status will hopefully be upgraded by 2025 to an upper-middle-income country, it is currently classified as a lower-middle-income country by the World Bank. Thus, the international poverty line corresponding to the country's current status is 3.65 internationally comparable dollars (i.e., in PPP, purchasing power parity dollars) per person per day. Therefore, the Philippines family income per month implied by the World Bank's poverty line for a lower-middle-income country is Php 10,057 (i.e., 3.65 PPP x 20.13 PPP for the Philippines in 2021 x 4.5-person family size x 365/12 days per month).[25]

We also use the official national poverty line, which was last determined in 2021 using FIES data. It was Php 12,030 for a household of 5 members in 2021. Updated by inflation to 2022, this is Php 12,756. Our living income is around 2.5 times higher than the World Bank poverty line and around 2 times higher than the national poverty line. These poverty lines are clearly much too low for decency.

11.2 Average household consumption expenditure

According to the 2018 FIES, the average annual income of a family of 5 in the Philippines was Php 331,000, and the average annual household consumption expenditure was Php 254,000. However, in the Ilocos region, the average annual household income was Php 317,000, and the average annual household consumption expenditure was Php 230,000. Updating by inflation to 2022, these are Php 30,535 and Php 22,841, respectively, per month. Our living income is, thus, around 18% higher than current average consumption expenditures.

11.3 Minimum wage

The country's National Wage and Productivity Commission (NWPC) agricultural workers' minimum wage rate is Php 372.00 per day, whether plantation or non-plantation based. This wage order was implemented effectively on June 6, 2022. Therefore, the family income if its members

[25] This would be Php 18,874 (i.e., 6.85 PPP x 20.13 PPP for Philippines x 4.5-person family size x 365/12 days per month) if the Philippines was an upper-middel income country.

earned the minimum wage for a farm worker in Ilocos Sur in 2022 is Php 13,775 (i.e., Php 372 average daily wage x 23[26] working days per month x 1.61 number of full-time workers in our reference family). Our living income is 80% higher than the agricultural minimum wage, thereby indicating that the agricultural minimum wage is not nearly sufficient for decency.

11.4 Average wages

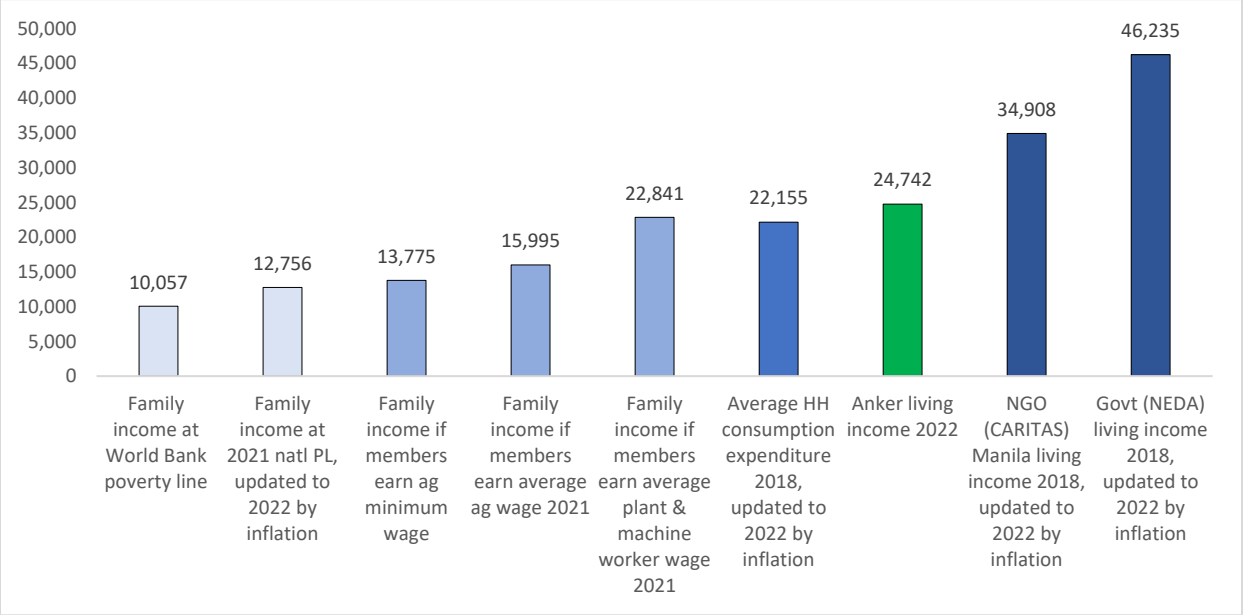
The average monthly wages in the Philippines in 2021 for agricultural workers and plant and machine operators were Php 9,935 and Php 14,187, respectively, according to data from ILOSTAT based on data from the Philippines' Labor Force Survey. These wages imply a family income of Php 15,995 and Php 22,841 per month, respectively. Our living income is, thus, around 55% higher than the average agricultural wage – but only around 8% higher than the average wage for plant and machine operators.

11.5 Government and non-governmental organization estimates of living income

Two living income estimates were offered in 2018 by others. Ernesto Pernia, the socio-economic planning secretary of NEDA (National Economic Development Authority), expressed that a budget of Php 42,000 per month was needed for a family of 5 to live decently. Father Anton Pascual, the executive director of CARITAS Manila, a church organization, remarked that a monthly living wage of Php 20,000 was needed in 2018 for Manila, implying a living income of Php 32,200 for Manila, assuming 1.61 full-time workers per family. Updated by inflation, these two living incomes are approximately Php 46,235 and Php 34,908, respectively for 2022. The NEDA living income is nearly 90% higher than our living income estimate. Perhaps, NEDA was thinking of high cost areas of the Philippines such as Manila. The CARITAS Manila estimate for 2022 is higher than our living income by around 40%, which makes sense since the CARITAS estimate is for high-cost Manila whereas our estimate is for rural Ilocos Sur.

[26] Number of working days per month was estimated based on the following assumptions: 6 working days per week, 10 sick days per year, 10 leave days per year, and 18 public holidays per year.

Figure 4. Living income ladder comparing our living income to other measures of household income



12. Summary and conclusions

Table 10 provides the major components of Living Income. Table 11 provides some key assumptions used in this report.

We found that the living income needed by families to achieve a basic but decent living standard in rural Ilocos Sur is higher – and often much higher - than a number of other economic indicators such as poverty lines, agricultural minimum wage, and prevailing average agricultural wage. And this is without considering the additional problems of farmers who have to contend with frequent shocks to their actual income from local and international sources, such as fluctuations in the price of their agricultural products, weather, pests, climate change, etc. On the other hand, our living wage is well below how much income is required according to NEDA (government National Economic Development Authority) and CARITAS (church organization).

Our living income is more than twice the World Bank poverty line and the national poverty line, around 80% higher than the agricultural minimum wage and around 50% higher than the prevailing average wage for agricultural workers. There is clearly a need to raise the agricultural minimum wage and agricultural prevailing wages, as well as to rethink and re-estimate the poverty line for the Philippines.

In contrast, our living income is only around 18% higher than average household consumption expenditures in the Ilocos Region and only 8% higher than the average wage of plant and machine

workers. Another indication that our living income is not extravagant is that our living income is around half of the living income needed for decency according to NEDA (government National Economic Development Authority), and is around 30% lower than the income needed for decency according to CARITAS Manila (a Catholic organization) although partly because Manila is more costly than rural areas.

This study used the Anker Methodology to establish a decency living income benchmark for rural areas in the Ilocos Region and, in particular tobacco-growing areas within this Region. It provided in-depth analysis to determine the income required by a family to be able to afford a basic but decent living standard. The living standard used in this report is quite basic. It allows for households to afford a low-cost yet nutritious diet; live in a quite small well, built house with access to amenities such as water, electricity, and sanitation; and other essential needs that pertain to healthcare, children's education, transportation, personal care, entertainment, etc. The model diet used in this study is composed of locally available and relatively inexpensive foods. For example, the fruits and vegetables included in this model diet are the least expensive found in local markets where workers shop; sweet potato is included rather than potato because sweet potato is less expensive; milk is included for children only; beef is not included in the model diet and only one pork meal per week is included, with fish and chicken being the main animal sources of protein because they are less expensive. In terms of housing, the housing standard is small, with only 44 square meters of living space for a family. Amounts for other essential needs correspond to what is actually spent by people at the 40th percentile of the income distribution in the Region. All in all, the standard of living described in this report is decent but basic and not extravagant.

Table 10. Components of Living Income

Components of Living Income	**Amount (Php)**	**Amount (USD)**
Food cost per month for reference family	12,716	231
Food cost per person per day	92.90	1.69
Housing costs per month	3,600	65
User cost for acceptable housing	2,200	40
Utilities	1,400	25
Non-food non-housing costs per month, taking into consideration post checks	7,248	132
Preliminary nonfood non-housing costs	7,248	132
Healthcare post-check adjustment	0	0

Components of Living Income	Amount (Php)	Amount (USD)
Education post-check adjustment	0	0
Additional 5% for sustainability and emergencies	1,178	21
Total costs per month for basic but decent living standard for a reference family	24,742	450

Table 11. Key assumptions and values

Study month and year	November 2022
Exchange rate of local currency to USD	**55.0**
Number of full-time equivalent workers per couple	**1.61**
Reference family size	**4.5**
Number of children in reference family	**2.5**
NFNH to Food ratio	**0.57**

Source: Values derived in previous sections of this report.

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ANNEX A. LIVING WAGE

This annex estimates our living wage for the study rural areas. This is done by first estimating the typical number of full-time equivalent workers in a family in section A1, and then dividing the living income required for our reference family estimated above in the main body of this report by the number of full-time equivalent workers per family providing financial support estimated in section A1 to determine our net living wage in section A2. Section A3 determines the amount of taxes which a worker earning our living wage would need to pay and therefore the gross living wage (aka living wage required).

A1. Number of workers per family

This section describes how we estimated the number of workers per family in rural Ilocos Sur. Using several rounds of the Labor Force Survey (LFS), we computed labor force participation rates, part-time employment rates, and unemployment rates at the provincial level for prime-aged workers (ages 25–59 years). This was possible, because the survey is representative at the provincial level. According to the Philippine Statistics Authority (PSA), a person is considered a part-time employee if s/he works less than 40 hours during the reference week. A person is deemed employed if s/he worked or held a job during the reference week. Finally, the unemployed consist of individuals who indicated that they had no job or work and were looking for work during the one week reference period. We did all of the following computations for persons in the prime working age group of ages 25–59.

The following formula was used to determine the probability that a person in the prime working age is a full-time worker where FT indicates full-time, LFPR indicates labor force participation rate, and PT indicates part-time.

$$\begin{aligned} &Probability\ (FT\ Employment\ Rate_{25-59}) \\ &= LFPR_{25-59} \times (1 - Unemployment\ rate_{\ 25-59}) \\ &\times (1 - PT\ Employment\ Rate_{\ 25-59}/2) \end{aligned}$$

The above formula is based on the idea that the probability of being employed full-time is affected by the LFPR and so extent to which adults are in the labor force as well the extent to which those in the labor force are not employed (i.e., are unemployed) and/or are not working full-time (i.e., are working part-time). When 1.0 is added to the estimate of $Prob(FT\ Employment_{25-59})$ on the assumption that one person in the family is a full-time workers, we get the number of full-time equivalent workers in the reference family.

Table A1 shows that the estimated number of full-time equivalent workers in the reference family is 1.606.

Table A1. Number of full-time equivalent workers in reference family

	Male	Female	Overall
Labor force participation rate ages 25-59	0.900[a]	0.547[a]	0.723[a]
Unemployment rate ages 25-59	0.060	0.049	0.056
Part-time employment rate ages 25-59	0.222	0.230	0.225
Probability person is full-time time worker	0.752	0.460	0.606
Number of full-time equivalent workers in reference family	1.752	1.460	1.606

Note: Estimates in this table are based on data from the 2018 October round of the Labor Force Survey. [a] Reported LFPR values for ages 25-59 were increased by 4.1% (e.g., male LFPR from 86.5% to 90.0%) to take into consideration the existence of subsistence workers and some unpaid family workers who are not included in the government's definition of labor force participation (assuming that prime age males ages 25-59 have at least a 90% LFPR).

A2. Net living wage

This section estimates the net living wage (take home pay) required. Given our living income estimate of how much a typical family needs per month of Php 24,742 indicated in the main body of this report and the number of full-time equivalent workers in the reference family estimated above on section A1, this implies a net living wage of Php 15,406 ($280) monthly. Table A2 shows the computations of this.

Table A2. Net living wage estimate, 2022

	Phps	US Dollar equivalent
Cost of basic but decent living standard for typical size family	24,742	450
Number of full-time workers in typical family	1.606	
Net Living Wage	15,406	280

A3. Gross living wage (aka living wage)

This section estimates the gross living wage by taking into consideration the amount of payroll taxes and income tax a worker earning a living wage would need to pay. This is done by adding required taxes to our net living wage. Note that although workers in the Philippines would not have to pay income tax on our living wage, they would have to pay the following payroll taxes:

- Social security system
- PhilHealth premium contribution
- Pag-IBIG Fund

To determine the applicable rates or fees, we used documents pertaining to the schedule of contributions from the Social Security System (SSS) and the premium contribution table from PhilHealth. The contribution rate for PhilHealth is 3% of the net living wage given our living wage. For social security, we found that the applicable monthly basic salary range to get the monthly contribution. Pag-IBIG has a monthly contribution of Php 100.

Table A3 shows that our gross living wage (aka living wage) is Php 16,643 ($302) when mandatory payroll taxes (Php 2,835) are added to our net living wage.

Table A3. Gross living wage estimate, 2022

	Php	US Dollar
Net living wage	15,406	280
Payroll taxes	1,237	22
Social security	675	12
PhilHealth	462	8
Pag-IBIG	100	2
Gross living wage	16,643	302

Source: Author's calculations.

A4. 13th month payment

Many workers in the Philippines are entitled to receive a 13th-month payment. According to Labor Advisory No. 23 Series of 2022, rank and file employees in the private sector, regardless of their position, designation, or employment status and irrespective of the method by which their wages are paid, are entitled to receive a 13th month payment. This means that workers who receive a 13th month payment at the end of the year do not need to earn as much every month during the year to

earn our gross living over the year. This would reduce the needed wage each month by 12/13^{ths} to around Php 15,363 (USD 279) assuming that the 13th month payment is taxable.