**WageIndicator**

# LIVING WAGES AND LIVING INCOME WORLDWIDE

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WageIndicator Foundation
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## WageIndicator Foundation - www.wageindicator.org

WageIndicator started in 2000 to contribute to a more transparent labour market by publishing easily accessible information online. It collects, compares and shares labour market information through online and face-to-face surveys and desk research. It publishes the collected information on national websites, thereby serving as an online library for cost of living and wage information, labour law, and career advice, both for workers/employees and employers. The WageIndicator websites and related communication activities reach out to millions of people each month.

By 2023 WageIndicator has offices in Amsterdam (HQ), Bratislava, Buenos Aires, Cairo, Cape Town, Düsseldorf, Jakarta, Islamabad, Maputo, Pune, Sarajevo and Venice. The foundation has a core team of 50 people and some 100 associates - specialists in wages, labour law, industrial relations, data science, data collection, statistics - from all over the world. On a yearly basis, WageIndicator Foundation offers around 150 internships to students from different universities.

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## Acknowledgements

## Bibliographical information

**Picture cover page**: Evening fish market in Athens, Ⓒ Martijn Arets
**Pictures throughout the report:** Ⓒ Paulien Osse

## Updates to the report based on earlier editions

This reports and its updates build on the original report by Guzi and Kahanec (2019) on measuring Living Wages globally. Since 2019, this report has been updated often, sometimes multiple times a year. Below you find the specific changes that have been made at each update.

### 2022

In 2022, this report was updated in:

- February (Guzi et al., February 2022)

- May (Guzi et al., May 2022)

### 2023 - February

In February 2023 the following topics are included:

- Living Income and Living Wage Plus.

- Insight into the role of data collectors

- Latest quarterly data.

### 2023 - November

In November 2023 the following topics are included:

- Single income earner as an option in the Family types

- Next to Region - Urban/ Rural now also Peri Urban / Peri - Rural

- Ethical Principles Implementation Living Wages Guidance

- Latest quarterly data, yearly average data, Guidance data

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# INTRODUCTION

## 1.1    Introducing Living Wages

According to Article 23 of the United Nations Universal Declaration of Human Rights, every individual who works has the right to just and favourable remuneration to ensure them and their families a dignified existence. The 17 United Nations Sustainable Development Goals (SDGs) set for 2030 and adopted by all UN member states in 2015 add urgency to Living Wage implementation, since paying a Living Wage furthers at least eight out of the 17 SDGs (Kingo, n.d.; van Tulder en van Mil, 2022). Moreover, emerging regulations and the requirements for increased transparency such as the 2020 Adequate Minimum Wages Directive and the 2022 Corporate Sustainability Reporting Directive (CSRD) of the European Commission are prompting businesses to increase their focus on social issues and to identify that they are an integral component  of their overall sustainability strategy. Not only this, there  is increasing pressure externally from investors, ESG agencies and external bodies, including the UN Global Compact that has launched its *Forward Faster* initiative in which Living Wage plays a prominent role. In response to this global agenda, an increasing number of companies have made strides by committing to pay their employees a Living Wage; some have even been cooperating with their suppliers to achieve Living Wages in their supply chains (Mapp, 2020).

Though definitions of a Living Wage vary, a common underlying concept does exist. Living Wage denotes the minimum income that an employed person needs to meet their basic needs without government intervention in the form of subsidies (Gerber, 2017). Such needs include food, clothing, shelter, childcare, transportation, medical expenses, recreation and modest vacation time. According to Mankiw (2020) the concept of a Living Wage typically does not cover the ownership of property, the repayment of debt, savings for retirement, savings for children's education, and savings for anything that has to do with emergencies, aside from a small emergency fund. Figure 1 shows a selection of definitions of a living wage.

Figure 1. Definitions of a living wage (selected)

- The preamble of the ILO Constitution adopted in 1919 called for an urgent improvement in conditions of labour including *"the provision of an adequate living wage".* A bit later in 1944, ILO members adopted and incorporated the *Declaration of Philadelphia* which affirms that the ILO should promotes "*policies in regard to wages and earnings, hours and other conditions of work calculated to ensure '...'a minimum living wage to all employed and in need of such protection'.* Although both statements do not mention how a living wage should be defined, they do refer to *'the payment to the employed of a wage adequate to maintain a reasonable standard of life as this is understood in their time and country'.*  In October 2022 the ILO stated: *"the ILO looks to strengthen its contribution to a better understanding of living wages, notably by carrying out research and developing methodological guidance on the subject matter, and by providing assistance to its Member states upon their requests".* By the time of writing of this report, an ILO Tripartite Expert meeting on Wages, including Living Wages is planned for early 2024.

- The Mexican Constitution (1917) states that "*the general Minimum Wage must be sufficient to satisfy the normal necessities of a head of family in the material, social and cultural order and to provide for the mandatory education of his children".*

- The Brazilian Constitution (1988) stipulates that the national Minimum Wage must be capable of satisfying their basic living needs and those of their families with housing, food, education, health, leisure, clothing, hygiene, transportation and social security, with periodical adjustments to maintain its purchasing power.

- Global Living Wage Coalition: defines the Living Wages as "*a remuneration received for a standard workweek by a worker in a particular place sufficient to afford a decent standard of living for the worker and her or his family. Elements of a decent standard of living include food, water, housing, education, health care, transport, clothing, and other essential needs, including provision for unexpected events*".

- The Asia Floor Wage Alliance proposes a wage for garment workers across Asia that would be enough for workers to "*be able to provide for themselves and their families' basic needs – including housing, food, education and healthcare*".

- Living Wage Aotearoa New Zealand defines a Living Wage as "*the income necessary to provide workers and their families with the basic necessities of life*".

This report deals with the constituting elements in WageIndicator's Cost-of-Living data collection, the calculation of WageIndicator's Living Wages, and the adjacent benchmarks. For the updates in this report, see Chapter 1.4.

## 1.2 Why promote the concept of a Living Wage?

The term Living Wage differs from the terms Minimum Wage and subsistence wage. A Minimum Wage is mandatory, determined through legislation. It should meet an individual's basic requirements but may imply that a worker relies on government subsidies for additional income. A subsistence wage is a minimum income that only provides for the bare necessities of life. In contrast, a Living Wage is not mandatory, but paid voluntarily. Whatever the differences, all these concepts attempt to establish a price floor for labour (Mateer et al., 2020).

The importance of a Living Wage lies, among other things, in the fact that it assumes a 'normal' working week (as defined per ILO Convention 1 of 1919). This concept implies avoiding excessive overtime hours, taking on more than one job, avoiding the risk of becoming a bonded labourer, or to put one's children to work

while forsaking education, for not to be denied basic human rights such as food, clothing, shelter, suffer social depravities, or be able to withstand crises. That being said, paying workers a Living Wage might motivate them to stay with the company, thus reducing recruitment and training costs, and resulting in healthier employees, thus reducing the loss of working hours due to sickness (Gerber, 2017). Generally speaking, the concept of a Living Wage must take the needs of both businesses and workers into consideration.

Regarding the needs of workers, most Living Wage models include the costs of food, rent, transportation, childcare, healthcare, and taxes. Despite the general understanding that a Living Wage makes for ethical and economic contributions, a worldwide standard for calculating Living Wages has still to be set. The present report of November 2023, and the versions of February 2023, May 2022 and February 2022, aim to contribute to a solid foundation for such a global methodological framework. These reports followed a design, already outlined in 2014 to calculate country-level Living Wages for a large number of countries based on these characteristics (Guzi & Kahanec, 2014; Guzi & Kahanec, 2019):

1. Normatively based;

2. Estimates sensitive to national conditions;

3. Based on transparent principles and assumptions;

4. Easy to update regularly;

5. Estimates to be published online.

## 1.3 Introducing WageIndicator Foundation

WageIndicator Foundation is a global, independent, non-profit organisation operating in 206 countries across the world that collects, analyses and shares information on Minimum Wages, Salaries, Living Wages, Living Income and Living Tariff, Labour Laws, Collective Agre-

ements and Gig and Platform Work. It aims to improve labour market transparency for workers, employers and policy makers worldwide by providing accessible labour market information worldwide through 220 websites in 70+ national languages (Figure 2). In partnership with leading universities and academic institutes across the world, WageIndicator undertakes research on wages, working conditions, labour law compliance, the gig economy, and collective bargaining.

In 2001, WageIndicator launched its first website in the Netherlands, its first European websites in 2004, and from 2006 onwards grew to websites in 206 countries, including non-recognised and overseas territories. In 2023 the WageIndicator websites received 40 million unique visitors across the globe.

Since its inception, WageIndicator has developed database-driven tools to collect data and to generate web pages from this data. For this purpose WageIndicator operates a Living Wage database, a Salary database, a Minimum Wage database, a Labour Law database, and a Collective Agreements database. These databases are suitable for worldwide data collection, and comparable and interlinked, and all result back into the web pages. However this doesn't mean all data was and is collected online. In most of the 165 countries Cost of Living data is collected face-to-face, in some countries data collection also happens online or the data collection is hybrid.

WageIndicator has offices in Amsterdam (HQ), Bratislava, Buenos Aires, Cairo, Cape Town, Düsseldorf, Jakarta, Islamabad, Maputo, Pune, Sarajevo and Venice. The foundation has a core team of 50 people and 100 plus associates - specialists in wages, labour law, industrial relations, data science, data collection, statistics - from all over the world. On a yearly basis, WageIndicator Foundation offers more than 150 internships to students from different universities. FLAME University in Pune, India, plays a key role in the intern program.

Figure 2. Map of WageIndicator countries



*Source: WageIndicator Foundation 2023*

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## 1.4 History of WageIndicator's Living Wage data collection

In October 2013, WageIndicator developed a plan to collect data about the prices of food items. Given the huge numbers of web visitors, it seemed "easy" to post a teaser on all web pages asking web visitors for the actual price of a single food item. Once they had entered a price, they were asked to key in the prices of other items in the Cost-of-Living survey. Items asked about the prices of food, housing, drinking water, transport, and clothing and footwear. The methodology of the Living Wage data collection and calculation has been described in Guzi and Kahanec (2014, 2017, 2019) and Guzi et al. (2016, 2022, 2023). The available estimates allow users and stakeholders to share and compare Living Wages across countries and regions based on a harmonised methodology. This methodology facilitates quarterly updating of the database (see chapter 3.1 for further details of the history of the data collection). In the end this methodology comprises three elements, notably the methodology to identify the basket of items, the methodology to collect the prices of the items in the basket, and the methodology of calculating living wage estimates.

Good to know: Less than 5% of overall data in October 2023 was collected from web users. Almost all was collected by professionals and trained interns, improving its quality.

Since 2013, the data collection has advanced significantly, evoking the interest of stakeholders in the field of Living Wages. Demands for detailed information about Living Wages beyond country-level arose, challenging the business model underlying the Living Wage data collection. The data collection started with funding from development aid projects and did not include delivery of data to multinational enterprises. Hence, the cost of collecting data was estimated and prices had to be set.

The first multinational client was welcomed in 2018. Since then, WageIndicator has sold its regional Living Wages to a growing number of global clients and multinational enterprises like Unilever or Maersk, many smaller companies with just a few locations, and NGOs like FairWear Foundation, MSF (Médecins Sans Frontières) or SOS Children's Villages International.

Since 2014, WageIndicator has taken part in the global discussion on Living Wages (see Annex 7). A few recent examples:

- 26 January 2023, WageIndicator presented during a side-session of the World Economic Forum.

- In spring and summer 2023 WageIndicator presented during UN Global Compact meetings in The Netherlands, Switzerland, Brazil, New York and Stockholm.

### 1.4.1. Changes and additions until November 2023

Compared to the 2022 WageIndicator Living Wages update (Guzi et al., 2022), there are minor changes in the methodology of the data collection (for more details see 3.5):

- Added to the food basket

  a. Barley, milk powder, coconut, cocoa/chocolate and margarine

  b. Extra fish items

  c. Extra fruit items

- Items deleted from the survey

  a. Wine and/or beer

- Additional questions in the existing items

  a. Means of transportation used by the respondent

  b. Expenses for social participation (entertainment, eating out, reading, time with friends, religious events, etc)

- Changes

    a. Phone costs now includes calls and mobile data

    b. Education cost from a general budget to detailed questions related to prices

    c. Personal healthcare from general budget to detailed questions related to crucial products

    d. Clothes from a general budget to detailed questions related to crucial products

In relation to how the dataset is built up and what we include, we now provide:

- Next to Standard and Typical Family clients can opt for the so-called Single Income earner, more in Chapter 4.6.

- Next to regional data, the dataset gets more granularity in terms of within regions extra benchmarks for rural and peri-rural and urban and peri-urban data are available, more in Chapter 6.5.

- The data set with quarterly updates and yearly averages get an extra feature Living Wage Guidance. On the basis of a set of Ethical Principles some countries and some regions are capped to avoid too high spikes. The Guidance data can be used for implementation and WageIndicator will publish only the Guidance data. More about this in Chapter 6.4.

In addition to Living Wage estimates for wage-workers and Living Income estimates for self-employed workers, WageIndicator has released a Living Tariff Tool for gig workers. By November 2023 it will be visible in Kenya, Pakistan and Indonesia. The concept of the Living Tariff Tool focuses in the first place on platform workers who are not on payrolls but can also be used by self-employed. The idea behind this is to make clear which items are required to arrive at a decent tariff per hour. The Living Tariff includes items like: food, housing, transport, clothes, water, similar to the components from the Living Wage and Living Income. On top of these items cost related items are included for specific occupations.

Like a car and petrol for the taxi driver, a bike and helmet for the rider, a laptop and extra internet cost for the online gig worker. Moreover, the Living Tariff includes components like: social security, insurance, pension, and time for administration and training. For some jobs, average general waiting time will be included. More about this can be found in Chapter 4 and 6.1.5.

## 1.5 Organisation of the Living Wage data collection

Below, we present an outline of the production process resulting in quarterly updated releases of Living Wage data on a global scale. Table 1 gives a summary of this recurring operation and the organisation behind it. The ensuing chapters elaborate each of the steps, with the choices behind their design and performance. The reader should be aware that this regards work in progress.

💡 **Good to know:** WageIndicator applies the principle that the data collection in the Cost-of-Living survey and thus the Living Wage calculations takes place independently of employers or their organisations, workers or trade unions, or any other stakeholder.

💡 **Good to know:** All data collectors are trained on ethics and adhere to WageIndicator's Code of Conduct and Safeguarding policies (WageIndicator, 2023).

Table 1. WageIndicator Living Wage data collection process

| RECRUIT | Recruit & train data collectors from all over the world for data-collection tasks (see Chapter 3) |
|---|---|
| COLLECT | Assign collection of prices for countries & regions per quarter; manage feedback from data collectors to improve data (see Chapter 3) |
| MAINTAIN | Wagendicator's IT team maintains and improves the survey |
| CLEAN & CALCULATE | Clean the data, control for outliers, create scripts and calculate; enrich the data with input from other relevant sources. Create by October yearly averages and a Guidance dataset (see Chapter 4) |
| CHECK & PRESENT | Quality check and presentation unit; enrich the data with input from other relevant sources (see Chapter 5); create visuals and sheets for WageIndicator clients (see Chapter 4, 5) |
| PRESENT & PROVIDE DATA | Present the data to clients, calculate salary gaps, do projections, assist in implementation. Run a back office with Question & Answer within 48 hours for the users about the data, and what and how to implement. (see Chapter 5,6,7) |
| COORDINATE | Ensure that each quarter, there is enough and timely data. Make sure that the data quality is improved continuously and engage in the global discussion on Living Wages. |

# 2 ITEMS IN THE LIVING WAGE DATA COLLECTION

This chapter details the ten expenditure categories included in the Living Wage and Living Income data collection, reflecting the requirements needed for an individual and their family to meet their basic needs. Chapter 3 explains how data about the prices of the items in these categories are collected in the WageIndicator Cost-of-Living survey.

The ten expenditure categories are:

1. Food

2. Housing and utilities: water, electricity, heating, garbage collection, routine maintenance, cooking fuel

3. Transport

4. Drinking water

5. Phone plus

6. Clothing

7. Health (health insurance, personal health, some essential cleaning items)

8. Education

9. Five percent provision for unexpected events

10. Mandatory contributions and taxes on employee's side (Living Wage), or employees and employers side (Living Income and Living Tariff)

Food, housing, transport, health, and education are considered essential expenses and are included in all living wage campaigns. Within WageIndicator's basket of goods, drinking water is treated as a separate category and not included in the food basket, because in some countries it constitutes a significant household expense. Expenses related to clothing and phones are relatively smaller but equally important for maintaining a decent standard of living.

The selection of expenditure categories can be influenced by other living wage campaigns and data availability.

In recent years, we have established a regular process for calculating changes within these expenditure categories. However, there are many expenses that are difficult to calculate but enable family members to participate in social and cultural activities. These expenditures are accounted in the provision for unexpected events. WageIndicator, just as many Living Wage methodologies do, also adds a 5 percent margin to the final estimate of the cost of living. Finally, taxes and contributions to social security are considered part of the basic essential needs. The final estimate of the living wage is expressed in gross terms, making it comparable to the actual wages paid to employees.

💡 **Good to know:** When we calculate the Living Wage, we account for mandatory contributions and taxes on the employee's side only. When we calculate a Living Income, we account for mandatory contributions and taxes on the employee's and on the employer's side.

💡 **Good to know:** Living Wage and Living Income are based on the categories 1 till 9. Category 10 shows the difference between Living Wage and Living Income.

For more on Living Income, see Chapter 2.11, 2.12 and 4.

## 2.1 Food basket

A nutritional requirement for good health as proposed by the World Bank equals 2,100 calories per person per day (Haughton & Khandker, 2009). The food consumption patterns largely

vary across countries, and hence it is important that these differences are addressed in the food basket. The food balance sheets published by the UN Food and Agriculture Organisation (FAO) include the supply of food commodities available in every country and reflect the potential food consumption basket of an average individual. WageIndicator takes care that an average food basket in a country meets the demand of 2,100 calories and that the food items are sufficiently balanced between the basic food groups, namely vegetables, grains, fruits, dairy, meat, beans, oils, and sweets.

Table 2 shows the 71 items in the food category, for which prices are collected in the

Cost-of-Living survey. These items constitute a nutritious food base. As explained in detail in paragraph 4.3.1, a model diet for each country has been developed on the basis of the FAO food balance sheets and reflecting the varying food consumption patterns and habits of each country. The food items listed in the survey are designed to include all food items from the FAO database. We group food items into food groups depending on the major food nutrient category they fall under. Even though the prices vary we are interested in the cheapest price in the group. The survey does not require a respondent to complete prices for all the items (although this option is available to respondents).

Table 2. List of food items in the Living Wage Food basket

| Apples | Other fish (marine) - fresh, frozen or canned | Pig meat |
|---|---|---|
| Bananas | Flatbread or pita | Pineapples |
| Barley | Freshwater fish - fresh, frozen or canned | Plantains |
| Beans - dry | Groundnuts (Shelled Equivalent) | Potato |
| Bell pepper or sweet pepper | Honey | Prawns, shrimp, crayfish, crabs, lobsters, krill and similar - fresh, frozen or canned * |
| Berries | Kale | Regular cooking oil |
| Bovine Meat (beef) | Lemons, Limes | Rice (of standard quality) |
| Breakfast cereals | Lentils - dry | Salt |
| Bulgur or couscous | Loaf of Fresh White Bread | Soybeans |
| Butter, Ghee | Local Cheese | Spinach or other leafy green vegetables |
| Cabbage | Maize (corn) flour | Squid, octopus, cuttlefish |
| Carrot or other non-green vegetables | Mango | Starchy Roots |
| Cassava | Margarine | Sugar (Raw Equivalent) |
| Cereal flour | Melon | Sunflower Seed oil |
| Chicken Breasts (Boneless, Skinless) | Milk (regular) | Sunflower Seed |
| Chickpeas or other pulses - dry | Milk powder | Sweet Potatoes |
| Clams, mussels and other molluscs | Mutton, lamb and goat meat | Tea |
| Cocoa beans or chocolate | Olives | Tofu |
| Coconuts - Including copra | Onions | Tomato |
| Coffee | Oranges | Water |
| Cream - fresh | Other poultry meat (duck, goose, turkey) | Watermelon |
| Dried Fish | Pasta | Yam |
| Drinking water | Peach | Yogurt |
| Eggs | Peas - dry | |

*Source: WageIndicator Foundation 2023*

Figure 3. Fish market San Salvador, El Salvador



*Source: WageIndicator Foundation, © Paulien Osse*

## 2.2 Housing Costs and Utilities

Housing costs are very often the largest regular family expenditure. The standards of adequate housing depend on local conditions and therefore WageIndicator takes the cost of privately rented housing as the most realistic available option that is also acceptable in terms of decency. Data collectors are asked to record prices of housing that is not located in a slum or in an unsafe area. The housing needs to have permanent walls, solid roofs and adequate ventilation. Also, it has electricity, water, heating - if needed in that area - and sanitary toilet facilities. Individuals (without children) are assumed to rent a studio/ one-bedroom home and households with children are assumed to live in a rented two-bedroom home. Since most of our data collectors are natives or locals, they are aware of what areas might be classified under this category. Typically, slums refer to areas without permanent housing and unsafe areas are characterised as neighbourhoods with poor housing and high crime rates.

Table 3 shows how participants in the Cost-of-Living survey report the monthly rent, the number of bedrooms and location of their apartments. The collected housing prices are checked for outliers. A typical rent in the lower part of the price distribution (at 25th percentile) and in the middle of the price distribution (median price) is included in the calculation. The rental price for a family (and/or individual household) refers to a typical rent for a two-bedroom apartment (one-bedroom apartment) in an average urban area, outside the city centre and not centrally located or up-market.

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Table 3. List of housing items in the Living Wage data collection

| |
|---|
| How much is the monthly housing cost of a standard studio apartment in your city/region? |
| How much is the monthly housing cost of a standard 2-bedroom apartment in your city/region? |
| How much is the monthly housing cost for a single room in the shared apartment in your city/region? |
| Rent (applies to tenants only) |
| Mortgage payments (applies to owners only) |
| Taxes on dwelling |

*Source: WageIndicator Cost-of-Living survey 2023*

If the housing in a region consists of predominantly rural dwellings, the housing costs reflect the average cost of such dwellings. If the region is predominantly characterised by urban apartments, the housing costs reflect the prices of such apartments. This allows comparing the rent for many countries and for regions within countries as well.

Utilities are an essential part of the items in the Living Wage data collection. For each housing type, it is defined what is included and what is not included in the cost (Table 4). Prices are also collected for what is not included in the cost. Utilities include electricity, heating, drinking water, garbage collection, cooking fuel, internet connection, routine maintenance and repairs.

Table 4 . List of utilities in the Living Wage data collection

| |
|---|
| Energy - for heating/cooling, cooking, lights, etc. |
| Internet connection |
| Routine maintenance and repairs |
| Garbage collection |

*Source: WageIndicator Cost-of-Living survey 2023*

## 2.3   Transport Costs

Transportation is an important cost for households as most people commute for work and daily activities. The Living Wage assumes the use of public passenger transportation which is commonly available in most areas. Transportation expenses thus consist of the expenses for a monthly pass for the use of public passenger transportation in most places, thereby assuming that each household member must be able to buy such a card. In other areas the price of a one-way ticket to the nearest town in local transport is converted to a monthly amount. WageIndicator doesn't include transport cost for children in the Living Wage. If transportation is relevant, it is included in the education cost.

Since 2014, we have assumed that families use public transport. However, we realised that in some areas of the world there is no public transport and people need a car or a motorbike to move around. Therefore, we included in the Cost-of-Living survey a question to understand the situation in each region.

The new question is: *"When you go to work, you primarily use:*

*a. public transport, b. taxi (car), c. mototaxi/ rickshaw, d. own car, e. own motorbike/moped/ scooter, f. own bicycle, g. I go by foot".*

Transport costs related to the job – for example for a taxi driver or rider - are collected

within a special section of the Cost-of-Living survey, called "Occupational related items". These prices are used to calculate Living Tariffs for platform workers.

💡 **Good to know:** By April 2024, we might have enough information to apply the cost of the car or the motorbike or the bike in the areas where these are really needed.

## 2.4 Drinking water

The monthly spending on drinking water (in bottles) for a family is collected in the Cost-of-Living survey. This cost is then proportional to family size and it is added as a separate component to the Living Wage.

## 2.5 Phone, internet

Possessing a phone is the norm and phone expenses are paid regularly hence it is important to include phone expenses in the calculation. Similarly, access to the Internet is part of the essential basic needs of families. The WageIndicator Living Wage includes the cost of a monthly mobile data plan providing at least 120 minutes calls and 10GB internet. Although the price of a phone is collected in the survey, it is for now only used to calculate occupational cost related items for platform workers.

## 2.6 Clothing

Clothing is part of the essential basic needs. The Living Wage data collection therefore collects information about clothing monthly expenditure for a family of four. These expenses are proportionally adjusted for family size. Thus, clothing expenses for an individual are assumed to be one quarter of the expenses reported for a standard family with two adults and two children. In this case, we realise that baby clothes might be a bit cheaper, but clothes for teenagers are the same price as for adults (or sometimes even more expensive).

## 2.7 Personal and Healthcare Costs

The Living Wage data collection includes the basic personal and health care expenses (personal care products and small pharmacy) for a family of four. These expenses are proportionally adjusted for family size. Thus, health expenses for an individual are assumed to be one quarter of the expenses reported for a standard family with two adults and two children.

In the survey, data is collected more specifically on personal and healthcare costs. If the country doesn't have a free healthcare system, then the cost of the basic health insurance, covering one person and/or one person and the family is collected. Monthly expenses for period products, birth-control products, personal care products and household cleaning products are also collected. Free or universal healthcare refers to a healthcare system in which all eligible residents of a country or region are entitled to receive medical services without having to pay out-of-pocket at the point of care. This means that healthcare services are funded through various mechanisms, such as taxation, social health insurance, or a combination of these approaches and are available to everyone, regardless of their income, employment status, or pre-existing medical conditions. Free or Universal healthcare systems vary across countries and regions, and the specific design and implementation can differ, but the overarching goal is to ensure that healthcare services are accessible and affordable for all, promoting the well-being of the entire population (World Health Organisation, 2023).

💡 **Good to know:** At the 2023 release of Living Wages, the following countries have some form of Free or Universal Healthcare system; Armenia, Bangladesh, Belgium, Benin, Botswana, Burundi, Cameroon, Central African Republic, Chad, China, Colombia, Congo, Dem. Rep., Congo, Rep., Costa Rica, Côte d'Ivoire, Eswatini, Ethiopia, Fiji, France, Gambia, Georgia, Germany, Ghana, Guinea, Honduras, India,

Japan, Kenya, Lebanon, Liberia, Mali, Nepal, Netherlands, Niger, Nigeria, Panama, Paraguay, Romania, Rwanda, Senegal, Sierra Leone, Singapore, Somalia, South Africa, South Sudan, Sudan, Suriname, Switzerland, Tanzania, Togo, United States of America, Vietnam, Yemen and Zimbabwe.

*Source: WageIndicator Foundation  2023*

## 2.8 Education Costs

Education in public schools is provided at relatively low cost, but additional costs are related to supplementary materials like books, pens, a bag, and the fees. The Living Wage data collection therefore includes the minimal monthly expenses on children's education, assuming children attend public schools. Based on the reported minimal expenses on education, the monthly expenditure on education is included in the Living Wage calculation, controlled for family size. The cost of education for adults is not included.

## 2.9 Unexpected expenditure

WageIndicator adds a 5 percent margin to the final estimate of the cost of living. The lower margin of 5 percent is more appropriate when the calculation of the cost of living is more comprehensive, while it does not increase the resulting Living Wage. This 5 percent margin is also used for the calculation of the Living Income, see Chapter 2.11.

## 2.10 Mandatory contributions and taxes

The Living Wage data collection assumes that taxes and contributions to social security are part of the essential basic needs. Therefore, one question includes the monthly taxes on dwelling. Additional information about monthly income taxes and contributions to social security are derived from country-level tables

of taxes by income brackets and social security brackets (PWC Tax Summaries, last accessed 2023).

# 3 DATA COLLECTION OF PRICES

This chapter details how prices are collected for the ten categories in the Living Wage data collection, as outlined in the previous chapter. It outlines the development of the collection since 2014 as well as an explanation of the geographical granularity of the Living Wage data. It also discusses the data collection methods, details about the data collectors and the quality controls during the data collection.

## 3.1 The development of the Living Wage data collection

In October 2013, WageIndicator started collecting prices of goods and services. It seemed easy to post a teaser on all web pages, asking web visitors for the actual price of a single item. Every day the items in the teaser were changed so that after some time all items had been posted, see Figure 4 with an example from the Paycheck website in India (Paycheck. in). Web visitors who had entered a price were then asked if they were willing to key in the prices of other food items. This was the start of the Cost-of-Living survey. Items asking about the prices of housing, drinking water, transport, and clothing were added (Guzi, Kahanec, & Kabina, 2016).

The Cost-of-Living survey was translated into national languages of the national WageIndicator websites, and then posted on these websites. By 2015, the Cost-of-Living survey was offered in 84 countries. This has increased to 186 countries and 61 languages in 2023 (see Annex 2). When price data is not sufficient, WageIndicator does not calculate an estimate.

Since its start, the number of items in the Cost-of-Living survey has been rather stable. See Chapter 1.4 for items added. In 2021 an extra section 'Occupational costs-related items' was added. These items are used to calculate Living Tariffs for workers / companies in the platform industry and for self-employed.

Over the years the dataset grew. Table 5 shows that the number of countries with a Living Wages data collection increased from 45 in 2014 to 164 in 2023. In 2019, WageIndicator started quarterly releases. The table below shows the number of countries for the October releases. Figure 5 and Annex 6 show these countries.

💡 **Good to know:** WageIndicator's Living Wage Data collection increased from 45 countries in 2014 to 165 countries in 2023.

Figure 4. Daily changing question in the online Cost-of-Living survey
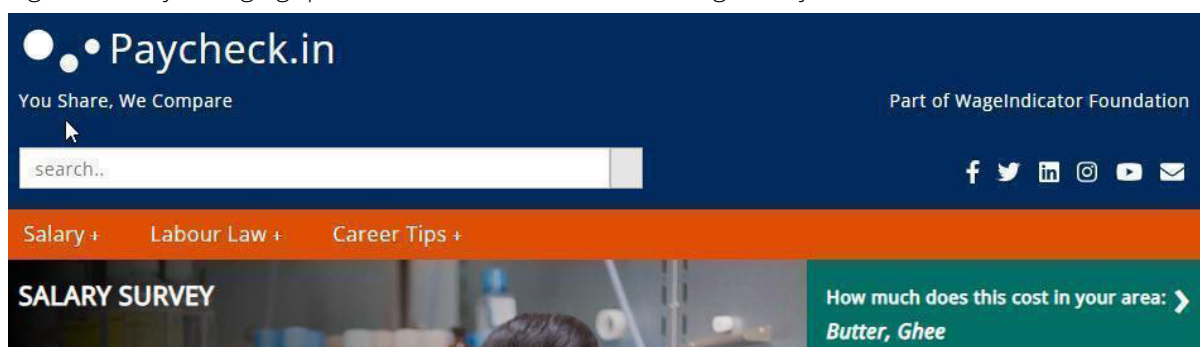


An example of the Indian WageIndicator website Paycheck.in. The green banner is dedicated to the price of butter/ghee in "your area", followed by a question in which area the web visitor resides.

*Source: WageIndicator website PayCheck.in in India 2023*

Table 5. Number of countries with a Living Wages data collection since 2014 for at least one quarter

| Year | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|---|---|
| Countries | 48 | 57 | 64 | 48 | 75 | 114 | 130 | 142 | 164 |

*Source: WageIndicator Living Wages data collection 2023*

Figure 5. Countries with a Living Wage data collection by October 2022
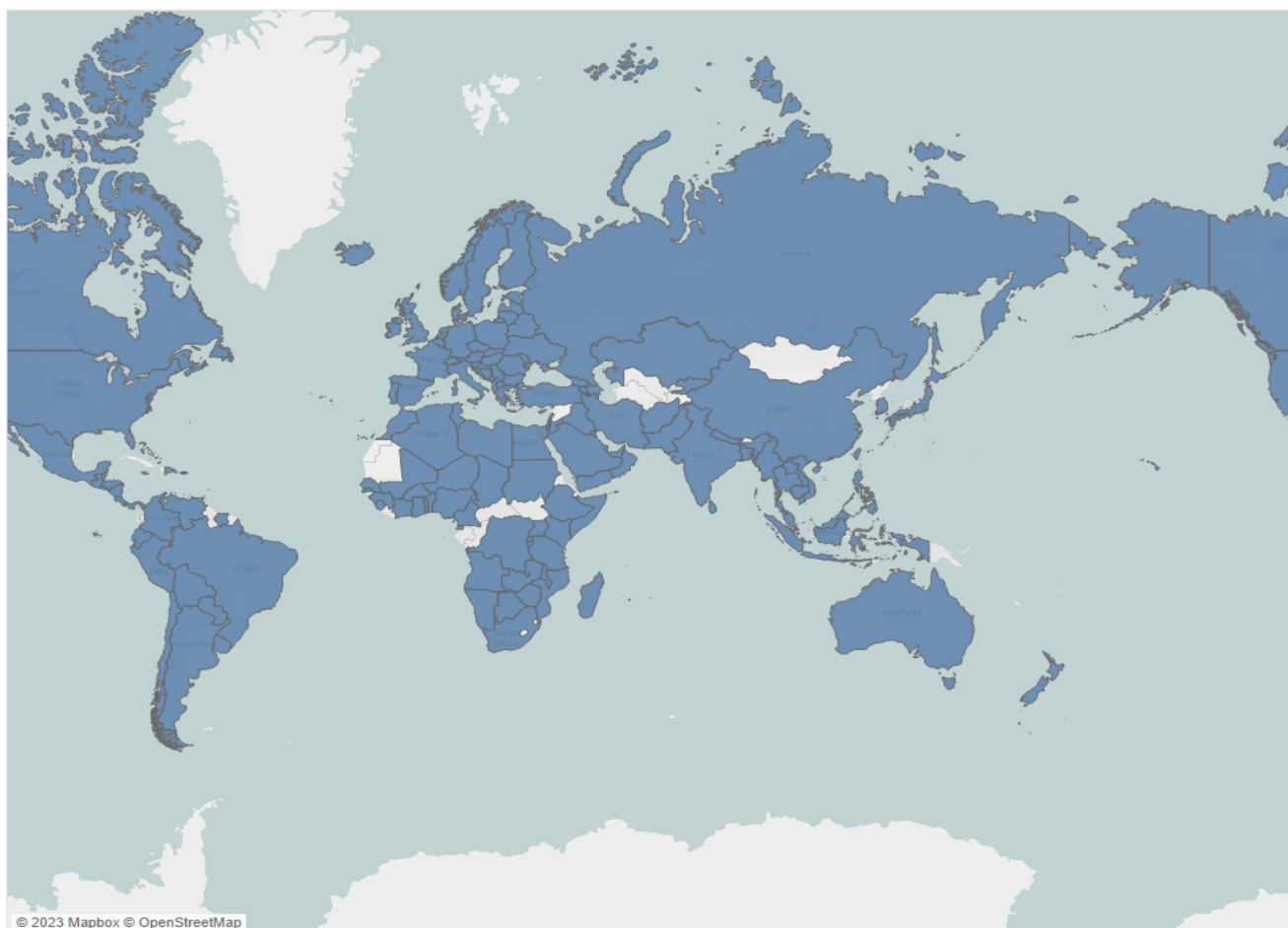


*Source: WageIndicator Living Wages data collection 2023*

## 3.2 Geographical granularity of the data

It is observed that the prices of consumer goods vary not only across the countries but within the countries as well. This necessitated greater geographical granulation of Living Wage data collection. Already in the 2000s WageIndicator had developed a database with geographical entries for its Salary Survey and then for other apps and web-tools as well, such as the Cost-of-Living survey. This so-called 'Region API' serves the Cost-of-Living survey

respondents to identify their region before reporting prices of goods and services as shown in Figure 6.

 **Good to know:** API is an abbreviation for Application Programming Interface and is a piece of software that makes a database accessible, in this case a database with the names of regions and cities for countries worldwide.

Figure 6. Screenshot of the region question in the Cost-of-Living survey, showing for the USA the list of states, and after selecting Georgia, showing the choice of cities in this state



*Source: WageIndicator Cost-of-Living survey 2023*

The Region API allows data collectors and other users to easily identify where they live or where they collect data. As of 2023, the Region API covers 234 countries and territories, and specifies provinces/states/counties within these countries, the so-called level 1 regional entities, shown in grey in Figure 6. Once a province/state/county is selected, a second level option allows for selecting cities, villages, or rural areas, shown in blue in Figure 6. In some provinces/states/counties the second level does not include all cities for logistical reasons. In these cases, only the large cities are listed and for the small cities or villages the choice is offered for selecting 'A small city (10,000 - 100,000)' or 'A village (less than 10,000)', as Figure 6 shows. The label set of the Region API is downloadable (see Annex 12).

In 2021, WageIndicator started a process to make sure that all names of all provinces/ states/counties in the Region API reflect the most recent administrative divisions and can be mapped in common data visualisation programs like Google Data Studio and Tableau. In November 2023 this process is at about 60% complete.

The Region API allows for a high degree of geographical granularity. Computing Living Wages assumes enough price observations in an area. Therefore, the most applied granularity is at the first level of the Region API, hence for provinces/states/counties. If the number of price observations at this level are not sufficient, the provinces/states/counties are clustered into four groups, the so-called "Region" cluster groups 1 to 4. A cluster is a group of provinces which are aggregated according to the size of the population of the largest city in the province.

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The geographical granularity of the Living Wage data of course depends on the resources to collect price data. Over the years, WageIndicator succeeded in collecting more price data and therefore could provide Living Wages for more provinces/states/counties. In case of small countries or in case of insufficient data points, the Living Wages are presented for the entire country only.

💡 **Good to know:** As of 2023 WageIndicator provides national and regional Living wages for 164 countries and 2093 regions. Within some regions, WageIndicator can present urban and rural data: 1166 regions come also with urban data, 1236 regions present rural data.

Since October 2023, WageIndicator has also experimented in calculating the urban and rural Living Wages in a more granular way, by identifying four levels: urban, peri-urban, rural and super rural. The presentation of urban / rural data and of city level data, however, is not yet meant for implementation, since this type of granularity cannot be guaranteed each quarter and each year for all regions (for financial reasons), but it helps to understand the benchmark better. For example, city level and super rural estimates are provided on demand. WageIndicator approach allows to calculate the Living Wage estimate at city level or super rural level, but to guarantee quarter on quarter, year on year updating is still costly.

## 3.3 Decentralised data collection, centralised data storage

The Cost-of-Living data collection is an app and web-based operation, whereby price data can be entered from any place in the world while the data storage is centralised. This approach is similar to all other WageIndicator data collections. The Cost-of-Living data collection falls apart in five modes, which will be discussed in this section:

1. The Cost-of-Living web survey, posted on national WageIndicator websites

2. the Cost-of-Living survey app, used for face-to-face data collection, both by interviews and by price observation in markets and shops (to be used online/offline)

3. the Cost-of-Living paper-pencil survey, used when the survey app cannot be used data from external sources

### 3.3.1 The Cost-of-Living web survey

The Cost-of-Living web survey is posted on all national WageIndicator websites, as shown in section 3.1. On a daily basis the survey pushes a banner to each web page of a national WageIndicator website, eliciting web visitors to enter the price of one food item in the Cost-of-Living survey, as shown in Figure 10.

### 3.3.2 The Cost-of-Living app

The Cost-of-Living web survey was made available in the Cost-of-Living survey app, used for face-to-face interviews about prices and for data collectors registering relevant food prices in shops and markets. Of course, the survey questions are identical to the web survey. The app can be used on a mobile phone, a tablet as well as a desktop computer. The main advantage of the app is that data collectors can key in the data while being offline, which is important in areas where mobile internet or wi-fi isn't always available or is very expensive. A second advantage of the app is that it gives access to all countries/languages in one tool where the Cost-of-Living survey is available in one website. To check a Cost-of-Living survey from another country you need to go to the respective WageIndicator national website.

💡 **Good to know:** The Cost-of-Living survey app can be answered in English and Spanish in Costa Rica, for example, as Figure 7 shows. The app has options for more than 186 countries and 61 languages. The app requires data collectors to identify the country for which the

data is collected. By doing so, the currency and the region questions are aligned for this country.

💡 **Good to know:** To make sure that only trained data collectors hired for a specific quarter can enter prices, the app requires a **15-digit code.** In each quarter, all data collectors get a new code.

The code and the data collectors are linked as such that it becomes visible in the dataset which data collector entered which data. This is good both for the data collector who sends an invoice on a quarterly basis, and for quality checks.

For some countries data collectors can opt for more currencies. In Zimbabwe, US Dollar, South African Rand and the Zimbabwean Dollar are the options. In Lebanon, Lebanese Pound and US Dollar are the options.

### 3.3.3 Cost-of-Living survey and webshops

Webshops - simple and complex - have largely entered into the lives of many inhabitants worldwide, thereby offering a new outlet to collect price data. The Cost-of-Living survey app was extended with an extra question whether the data collector had accessed a webshop to collect price data, as Figure 8 shows.

Figure 7. Selection of country and region
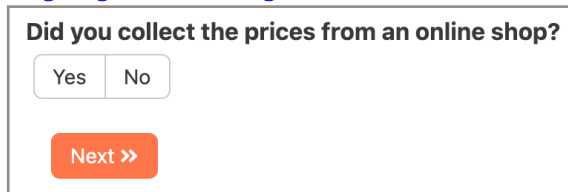


This screenshot from the WageIndicator Cost-of-Living app shows how a country and language can be selected. In the case of Costa Rica the survey can be done in Spanish and English. Data is always collected country / region specific.

*Source: WageIndicator Cost-of-Living survey 2023*

**Did you collect the prices from an online shop?**

| Yes | No |

Next »

*Source: WageIndicator Cost-of-Living survey 2023*

Due to the Covid 19 pandemic, face-to-face methods of surveying proved to be challenging and WageIndicator decided to update food prices partly based on data collected from the cheapest webshops (Table 9 and 10). If a country had no webshops, also after double-checking with a national WageIndicator contact, data collection for the country would move to face-to-face data collection (Korde et al., 2021).

Whereas shops and markets have prices for just one locality, webshops can sometimes set prices for larger areas, ranging from a city to a province or even an entire country. Webshops are therefore classified according to the number of provinces/states/counties they serve, and the prices collected from the webshop apply to these regions.

Scraping of webshops is currently done on a small scale. Despite being a labour intensive process, the data quality is not always to the standard desired.

### 3.3.4  The Cost-of-Living Survey face to face via an app or in print

By October 2023, in 60 out of 160 countries Cost-of-Living data was collected face-to-face (online price data collection in 30 countries and hybrid collection in others). Part of the face-to-face data collection works via print, part is directly keyed in the app on the cell phone or tablet.

Also in recent years data collectors find it sometimes easier and safer to use a print version, as Figure 9 shows. Obviously print has the disadvantage that data must be keyed into the Cost-of-Living web survey or in the app afterwards. This approach not only means extra work for the data collectors, but also it increases the risk of data entry errors. Some data collectors also find it helpful to collect data by means of pictures of food prices, taken at markets or shops, and key in the prices afterwards.

In 2023 the data collection is for more than 90 percent financed out of sales of data. However, the rest of the costs were covered from other projects. The first was the Living Wage Eastern Africa project, which ran from 2012 till 2016. WageIndicator trained 70 shop stewards in price data collection and in a meeting in Ethiopia participants were asked about the costs of living, using a print version of the Cost-of-Living survey (Van Norel, Veldkamp, & Shayo, 2016). For the project Wages in Context in the Garment Industry in Asia (2015-2016) price data was collected using the print survey for nine Asian countries (van Klaveren, 2016). In a project studying the global cut flower industry in the floriculture and agricultural sectors of Kenya, Ethiopia, Uganda, Colombia, and Ecuador, the gaps existing between statutory minimum wages and/or average wages and living wages turn out to be wide.

♀ **Good to know:** Overall and based on recent data calculated for 2020-2022, gaps between statutory minimum wages and living wages vary between 43 and 493 per cent (van Klaveren & Tijdens, 2022).

Figure 9. Data collection in Richard Toll, Senegal



*Source: WageIndicator Foundation, © Paulien Osse 2023*

### 3.3.5 Data collection from external sources

The Living Wage data collection is complemented with data from external sources as well. The other data sources are:

- World Food Programme's Global Food Prices Database (WFP Vulnerability Analysis and Mapping (VAM), 2023) for data on food prices

- Number of data for prices regarding housing (50 countries), as well as some food data.

- Data from national statistical agencies for information regarding health cost, phone cost, and education cost.

All data from various sources are properly checked and outliers are removed. Prices are then incorporated into a comprehensive price database, comprising millions of price points, that is used for living wage calculation.

### 3.3.6 Prices from (super)markets, (open) markets and houses in low to lower-middle income areas

As detailed in Chapter 1, a Living Wage must be an income necessary to provide workers and their families with the basic necessities of life. For the Cost-of-Living survey this implies that prices are collected from shops and markets in low to lower-middle income areas, including housing prices and utilities of these areas. Data collectors are trained in how to collect prices at the cheapest supermarkets or open day markets.

When collecting prices from webshops they are told to avoid webshops where prices are in US Dollars (unless it is in countries where the USD is the national currency). Webshops in US Dollars are targeting expats, who usually can spend more. Some food items in the Cost-of-Living survey explicitly refer to a basic quality, thereby excluding luxurious items.

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Regarding housing prices, prices given by Airbnb, Booking.com or any other hotel site are not acceptable. Data collectors are trained to research and understand to what extent the housing market is online or offline in the country and adapt the data collection accordingly. They are trained to avoid expensive rental websites in regions where houses are rented through local house brokers or available through housing subsidy schemes (for poorer regions). If the rent is given on a weekly basis, data collectors will convert it for a month as required in the survey. In case of face-to-face surveys (half of the countries) they work in low- and low-middle class areas where workers live.

## 3.4 The data collection process for the Cost-of-Living survey

### 3.4.1 The data collectors for the Cost-of-Living survey

Data collectors are critical for the success of the collection of prices. As the number of countries with a Living Wage calculation has increased over time, so have the number of data collectors. Data collectors are organised in teams covering regions, language groups, parts of continents, with one or more team managers. Managers call in local experts where needed. They oversee the data collection processes, train the data collectors, and provide feedback. Training is done in webinars, and after that one-on-one on the basis of questions and check-questions from the trainers. WageIndicator hires for over 130 countries qualified individuals - in half of the cases related to specialised data collection bureaus - as data collectors. The data collectors collect price data from local citizens, open markets, supermarkets. Their efforts are supplemented by interns from FLAME University, University of Kassel, Berlin University, University of Amsterdam, Bucharest University, and University of Ahmedabad, India.

Table 6 provides an overview of the persons involved in the Cost-of-Living data collection, totalling to over 300 individuals engaged in the data collection each quarter. Each quarter of the year these data collectors collect data in the Cost-of-Living app for the same countries and regions. Of course, they collect data for countries whose language and culture they are familiar with.

💡 **Good to know:** According to experience WageIndicator finds that the richer the country, the more the data collection can be done via webshops, especially food. In Central and Latin America there is hybrid data collection in Argentina and Mexico, however in all other countries the work is done face-to-face. In African countries the price data collection is done face-to-face. In Europe the work is done mainly online. Asia is a mix of face-to-face and online.

Table 6. Persons involved in the Cost-of-Living data collection in October 2023 - in one quarter

| Continent | Data collectors WageIndicator | Trained interns | Interview mode |
|---|---|---|---|
| Africa | 70 | | face to face |
| Africa - North / Middle East | 10 | | hybrid |
| USA & Canada | | 26 | online |
| Central- and Latin America | 27 | | hybrid |
| China (only local data collectors) | 35 | | face to face |
| India (only local data collectors) | 6 | 15 | hybrid |
| Asia other * (interns from all Asian countries) | 15 | 6 | hybrid |
| Bangladesh | 2 | | face to face |
| Pakistan | 3 | | hybrid |
| Russia /Kazakhstan /Belarus /Ukraine | 3 | | hybrid |
| North - north-west | 6 | 8 | online |
| South - south-east | 4 | 6 | online |
| East / Balkan | 14 | | hybrid |
| Australia | | 6 | online |
| New Zealand | | 4 | online |
| Total in one quarter | 195 | 71 | 266 |

*Source: WageIndicator Living Wage Data collection 2023*

### 3.4.2 Characteristics of the data collectors

All professional data collectors recruited by WageIndicator are trained by WageIndicator team members and most have a background in survey research, data collection and/or statistics and economics. They work on a year contract and are provided the necessary expertise for data collection. All interns are screened before selection. The interns work for a minimum of two months full-time, but usually it is 6 to 9 months part time. Team members of WageIndicator, who are involved in the data collection, are always involved for more than a year, and many of them are with WageIndicator for 6 years or more, as Table 7 shows. They are educated as economists, sociologists, or journalists. An overview of team members and interns can be found here.

Table 7. Characteristics of the data collectors in 2023 per quarter

| | | Persons* | Regions | Training | Experience |
|---|---|---|---|---|---|
| 1 | Interns during one year | approx. 150 interns | Usually countries where English is the main language | 2 hours training, and weekly update of 20 minutes | Minimum 2 months |
| 2 | WageIndicator team members during one year | approx 150 team members; of which most of them are specialised data collectors, work on year contracts | Mainly countries where the internet is not widely used. Mainly countries where English is not a language frequently used, | Written instructions, instruction videos, and quarterly feedback quality updates | From 2 till 6 years |
| 3 | Web users WageIndicator national websites | 9,726 users in 2021, 4,752 users in 2022 and 2,665 users in 2023 | Medium/high income countries | No training, if the website isn't good, users will not leave price data behind | Unknown |

*Source: WageIndicator Foundation 2023*

### 3.4.3 Instructions and training for the data collectors and quality controls

WageIndicator provides online training to the data collectors, via Zoom, WhatsApp or their preferred (and safest means of communication), in written instructions, instruction videos, and quarterly feedback quality updates by the team managers.

The data collectors correspond regularly with their supervisors, confirming that the information they are collecting is valid. Table 7 provides an overview of the training provided.

💡 **Good to know:** All data collectors get the same instructions and training, whether it is for collecting data from webshops, or face-to-face and then keying in the data in the Cost-of-Living survey app. The training usually takes 90-120 minutes.

The collectors are trained by the following rules:

- Understanding the survey
- [Understanding the uploading process](#)
- Select areas where to collect data in relation to low, lower-medium income, not posh, up-market areas
- Avoid the poorest area, where possible
- Go to areas where workers live, not the tourist or expat area
- Collect food and housing prices by interviewing people, selected via random walks
- Select your respondents randomly
- Take time to talk to your respondents while following the survey
- Collect food prices at the market/shops randomly
- Collect housing prices regarding decent housing (safe, solid roof, water, electricity, heating, sanitary toilet facilities)
- Collect housing prices from real estate agents.

Data collectors skills are:

- Accuracy and precision
- Good with numbers
- Able to communicate with people on equal level
- Multilingual
- Can use a smartphone or digital device

There are some experiences and rules from the data collection process that data collectors and WageIndicator has learned throughout the years which we apply throughout countries:

- Sometimes it is better not to use a smartphone, but a printed survey
- Interview in pairs is more efficient, faster and safer than doing it all as an individual.
- Some countries report that women are better trained to talk about prices with women, men are better at talking about prices with men, but it is felt that the latter report higher prices
- Mixed-gender teams seem to be the best
- Data collectors usually know that the price is collected to calculate Living Wages, yet data collectors are trained not to tell their respondents that the prices are collected to calculate Living Wages
- Data collectors never know which companies might use the Living Wage estimates
- If extra data is needed for a client of WageIndicator, the name of the client is not shared with neither the trainer, the data collector nor the respondent.
- If needed for authorities or safety purposes, data collectors are provided with a WageIndicator introduction letter.

On a daily basis the WageIndicator team managers check the data collected. Specifically, the housing prices are cross checked across the different surveyor groups operating simul-

taneously (Korde et al., 2021).

All data collectors have - each quarter - a unique code related to their name and email address. Without the code they can't upload the collected data. Each price in the database can be traced back to an individual data collector.

However, the code is not required for web users who key in data on the basis of a request as described in Figure 4. In general, web users key in one price only.

Global data managers, regional data managers and data collectors in the countries are in touch with each other on a daily basis. Whatsapp / Signal / Telegram are the communication channels. Where Zoom is used for training purposes.

Lastly, all data collectors have undergone safeguarding training and adhere to WageIndicator's Code of Conduct.

## 3.5 Quality controls

The Cost-of-Living application collects prices continuously. WageIndicator updates Living Wages each quarter to keep up with changing price levels. The quality of national and regional Living Wages is rated internally by assigning a Stability and Data Quality Code to each country and region, based on a comparison with the data for the same country/region from the previous quarter. Data fluctuations are tracked since January 2019.

When a >10 percent change is observed, a thorough check on that country's data to see if there is an issue in any of the components. If an issue is found, it is corrected in the script and the Living Wage is recalculated. If an issue is not found WageIndicator goes back to the data collector to look for an explanation, if that doesn't help, we retract the number and send in the next quarter two teams to do data

collection in the same region, independently from each other. Table 8 shows the levels and frequency of quality checks.

In addition, Living Wages are checked for consistency over time. In case structural discrepancies are detected, WageIndicator consults national experts to analyse and correct the source(s) of bias. These experts are mainly academics from the WageIndicator network. Next to that we gain expertise from clients by talking to their local HR teams. In case of issues, we bring HR experts from different clients together and discuss the topic. Thanks to these efforts, our data has been more accurate.

Feedback on methodological questions and the quality of Living Wages is also obtained through discussions in webinars (see Annex 6) involving academics, employers, trade unions and data collectors. All relevant feedback can be integrated in the survey within a quarter. One example of this is a change of wording because of a wrong translation, but also the integration of extra questions in the Cost-of-Living survey related to social participation. This specific component of social participation has not been finalised yet. Decisions on this will be made in the coming year as to whether it will be a part of the Living Wage, or presented as an add-on to the basic Living Wage.

Table 8. Levels and frequency of quality checks

| Quality checks | Yearly | Quarterly | Daily |
|---|---|---|---|
| **Survey** | | | |
| Survey correct - does it produce the correct data from the correct country / region | | x | |
| Survey correct - new countries / item language / translation checks | x | x | |
| Survey - region / city - correct | x | x | |
| Survey items still relevant | x | | |
| **Data collection** | | | |
| Data collectors - recruiting / screening | | x | |
| Interns - recruiting / screening | | x | |
| Data collectors training | | x | |
| Interns training | | x | x |
| Offer option to data collectors to report in case they included mistakes | | x | |
| Assign extra data collectors - they don't know each other - in one country. (f.e. face to face and online) | x | x | |
| **Feedback** | | | |
| Feedback during data collections process | | | x |
| Feedback on the basis of estimates for all data collectors | | x | |
| Feedback from all clients on the basis of estimates | | x | |
| **Data process** | | | |
| Check for outliers (not above or below a defined number) | | x | |
| Check for currency mistakes | | x | |
| Check for currency mistakes in case of more currency options (Lebanon, Venezuela, Zimbabwe) | | x | |
| Check for relation between quarters | | x | |
| Check for relation with World Food Programme database | | x | |
| Check for relation with Numbeo data | | x | |
| Check for the relation between the components | | x | |
| Check the relation between housing and Minimum Wages (if MW is adjusted for that country) | | x | |
| Check for tax and social security updates | x | x | |
| Update inflation twice a year | x | | |
| **Double check** | | | |
| Calculations of family-types | | x | |
| Year averages | x | x | |
| Comparison quarters / stability over quarters | | x | |
| Include Living Wage Guidance data set | x | | |
| Minimum Wages | | x | |
| Check requests from clients (MNE / NGO / Trade Union / web users) | | x | x |

*Source: WageIndicator Living Wage Data Collection 2023*

## 3.6 Sampling bias in the data collection

This section details WageIndicator's data collection strategies to avoid bias in the samples:

- For the data collection of prices from shops/markets, the sampling frame consists of shops/markets located in low-income areas, because the Living Wage data collection aims at the lowest prices for the defined food basket. The shops/markets are sampled by random walks in these areas. WageIndicator data collectors go to the-

se shops/markets and register the prices, similar to what mystery shoppers in retail establishments do. This data is collected by WageIndicator data collectors using the Cost-of-Living app.

- For the data collection of prices from webshops, the sampling frame consists of all webshops that can be found online in the selected region/city, and the sample consists of the webshops with the lowest prices for the selected food basket; this data is collected by WageIndicator data collectors using the Cost-of-Living app.

- For the data collection of housing prices

from the respondents responding on behalf of their households, respondents' locations are selected in low, low-middle income areas and in a next step based on randomly asking people in streets; this data is collected by WageIndicator data collectors using the Cost-of-Living app.

- For the data collection of housing prices from real estate agents, again the low, low-middle-income areas are selected and as many estate agents as possible are visited; this data is collected by WageIndicator data collectors using the Cost-of-Living app.

- For the data collection of prices from web visitors of the more than 200 national WageIndicator websites on work and wages, the Cost-of-Living web survey in their national languages is used. Here no sampling frame exists as the data collection is based on a non-probability web survey.

- For the data collection of food and housing prices, data from external sources are added, when available and when assessed to be reliable.

An alternative strategy of collecting price data is by means of household expenditure surveys. These surveys primarily aim to measure expenditures, but they are also used to generate data on prices. However, the price data from expenditure surveys are often less granular compared to the price data collected from shops, markets and other outlets, and they most likely rely on respondents' memory, hence less reliable. Whereas the Living Wage data collection targets low-income strata of cities and villages, expenditure surveys mostly aim to sample the full population of households. To meet the demands of data collection of prices in low-income areas, usually a subsection of the sample, large sample sizes are needed. Instead, WageIndicator prefers to focus on data collection in shops and other outlets.

But measurement errors are likely to be small as the prices are directly observed by the data collectors. When prices are collected from volunteer web visitors, they are not urged to report the lowest prices but to report the prices they paid today or yesterday. The latter

price data collection can be prone to selection bias. As will be shown in Table 9 in Chapter 4, some 5 percent of the total data set originates from web visitors. WageIndicator assesses the possible bias of this data in the total sample as small, because the large majority of data is collected by trained data collectors.

♀ **Good to know:** And what if data collectors key in wrong numbers? WageIndicator applies a strict regime to control for data-entry errors, as these can happen when numbers have to be entered. Statistical methods are applied to identify data-collector related outliers, as well as outliers when comparing to previously collected data.

## 3.7 When there is not enough data, or when it's not reliable

There are clear thresholds on the minimum number of prices collected per region/country per component.

- For **food** there should be between 2000 and 6000 prices per region; if less data is available, there will not be a Living Wage benchmark for that quarter.

- For **housing** between 50 and 200 observations are needed to calculate housing for a country-level and 20 and 200 observations for a region-level Living Wage.

- For **transport** minimal 20 observations for a country-level Living Wage and minimal 20 observations for a region-level Living Wage.

- 20 observations are needed to calculate on national and regional level for **health, education, clothing/footwear, phone and drinking water expenses.**

♀ **Good to know:** If there are not enough observations at the regional level, then the national data is used also for the region-level Living Wages, as these are smaller expenses and usually don't vary too much per region. If there are not enough observations at the national level (for health, education, clothing/

footwear, phone and drinking water expenses), data from countries within the same income group (as per the World Bank country income grouping) are used by comparing the ratio of the components to a set of minimum wage levels set by the ILO and from WageIndicator's Minimum Wage database.

# 4 CALCULATION OF LIVING WAGES, LIVING INCOME AND LIVING TARIFF

Chapters 2 and 3 are dedicated to the Living Wage, Living Income items and the data collection. This chapter focuses on the calculation of the Living Wage and Living Income. It details the data streams in the Living Wage data, the assumptions underlying the Living Wage calculations, the components of the Living Wage calculations, and the features of the Living Wage dataset. The last section shows the Living Wage estimates for five countries.

The Living Wage is applicable to employees (workers that perform specific tasks for a business in exchange for regular pay and typically receive benefits, including overtime pay and vacation). The Living Income applies to farmers, smallholders and family businesses. The difference between the Living Wage and the Living Income resides in taxes and social security percentages: while the Living Wage includes the taxes and the social security contributions that have to be paid by the employee, the Living Income includes both the employee's and the employer's parts. Also, while the Living Wage assumes that there is another family member who is contributing to the family budget, the Living Income is one income for the business and covers all the family costs (assuming that both parents are working for the same business).

Next to these two, WageIndicator also calculates a Living Tariff, which applies to platform workers and in general to self-employed professionals, who usually set their tariff and are paid by the hour or per task. The Living Tariff includes taxes and social security in the same way as the Living Income, but also occupational items (laptop, motorbike, car, depending on the job) and extra time for training, administration and other activities, also job-specific.

## 4.1 The Cost-of-Living database

### 4.1.1 The Cost-of-Living database

The price data in the Living Wage database are collected by means of the app / web-based Cost-of-Living survey. The screenshot of the survey in Figure 10 shows that the data collectors can select a category for which they want to enter prices, be it food, transport, housing, expenses, or occupational cost-related items. The survey is always presented in a national language and a language switch to English is facilitated. The region is selected based on the locality of the interviewer, but can be changed depending on the region where the data is collected. For each item, a price can be keyed in and its pre-set unit appears automatically e.g. kilo, litre or other units of measurement. Data collectors can opt for keying in just one or few items if they have not (yet) collected the prices for other items.

The data collected in the Cost-of-Living survey include millions of prices that are all checked. A codebook is available regarding the variables in the dataset. The codebook consists of:

- value labels of the item ids in the Cost-of-Living survey, see Annex 8;

- value label of the unit ids in the Cost-of-Living dataset. The unit id's have been stable over the years; the units are presented both in the app and in the online Cost-of-Living survey, see Annex 9;

- variable labels in the Cost-of-Living dataset, see Annex 10.

Figure 10. Cost-of-Living survey structure



*Source: WageIndicator Cost-of-Living survey 2023*

### 4.1.2 WageIndicator data streams and data generating devices/sources.

The number of price observations in the Living Wage database are huge. Currently, the database includes information from different sources for over six million prices, gathered since 2014.

💡 **Good to know:** In 2023, 813,644 prices (primary data) were collected using the WageIndicator Cost-of-Living web survey and app with 98.41 percent of that being collected by trained data collectors.

As described in Chapter 3.3, the prices in the Living Wage database stem from four sources, namely, from the Cost-of-Living web survey, the Cost-of-Living survey app, the Cost-of-Living survey print, and external sources. Table 9 and 10 depict how the data is distributed over the first three categories used in the October 2023 release of living wages.

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Table 9. Tracking data streams from different WageIndicator platforms - October 2023

| | Platform used | Data collector | % of total collected prices used for latest calculation | Source traceable in dataset |
|---|---|---|---|---|
| 1 | Data via WageIndicator website - online Cost-of-Living survey | Mainly generated by web users, rarely by trained data collectors | 4.54% | yes |
| 2 | Data via Cost-of-Living survey app | Collected by trained data collectors who use a mix of face-to-face, interviews and data generated from webshops | 95.46% | yes |
| | | | | |

*Source: WageIndicator Foundation 2023*

Table 10. Tracking data streams from different sources

| | Source | Data collector | % of total collected prices | Source traceable in dataset |
|---|---|---|---|---|
| 1 | Data from webshops* | Collected by trained data collectors only | 58% | yes |
| 2 | Data from regular shops /face to face surveys | Generated by trained data collectors and web users (less than 5 %) | 42% | yes |

*those who selected the "internet shop" question as shown in Figure 8
*Source: WageIndicator Foundation 2023*

The external sources are predominantly data from the World Food Program, Numbeo housing prices as well as the Numbeo food prices and data from National Statistical Offices.

The Living Wage data collection is based on a sound IT system for centralised data collection that ensures stable data collection over time and across countries. Well-developed scripts are used to call for the data from external sources. These scripts are invaluable tools for efficiently accessing and managing data from external sources, such as the International Labor Organization (ILO) and International Monetary Fund (IMF). These scripts are designed to automate the process of retrieving, checking for updates, and downloading the latest available data from these organisations, ensuring that the information is always current and readily accessible.

## 4.2 Assumptions underlying the calculation of a Living Wage

The Living Wage calculation includes a set of assumptions, namely:

- a Living Wage is calculated for adults who are of economically active age (18 - 65) and competent to manage their family budget efficiently;

- individuals without children rent a one-bedroom home and households with children rent a two-bedroom home;

- individuals and families for whom the Living Wage estimates are most relevant are assumed not to own a motorbike or car and therefore need to rely on other means of transportation (although we check with an extra question in the Cost-of-Living survey whether this is still accurate in all countries), usually public transport; children of such families commuting to schools can travel for free or with a substantial discount;

- all family members are in a condition which does allow to work at full potential;

- meals are prepared at home and ingredients are purchased from supermarkets or at markets in the lower price range;

- expenses on clothes and footwear are accounted for;

- a phone tariff of a monthly mobile plan (at least 120 minutes calls and 10GB internet) is included

- housing expenses refer to houses or apartments that are not centrally or up-market located and not located in a slum or an unsafe area;

- adequate housing is assumed to have permanent walls, solid roofs, adequate ventilation, and has electricity, water, heating - if needed in that area - and sanitary toilet facilities. Where possible, costs related to heating, electricity, and water consumption are calculated apart from housing costs;

- a standard or 'normal' working week is assumed. This 'normal' working week, which differs per country, should not be more than 48 hours maximum (ILO Convention 1 of 1919);

- a Living Wage is the monetary equivalent of the regular income, including any regular in-kind provisions;

- a Living Wage is the regular monthly income from labour; irregular or incidental income is assumed to be used for extraordinary expenses;

- a Living Wage is estimated for employers who (should) pay the local Living Wage voluntarily, unless contracts are made with workers groups, trade unions and/or buyers;

- the calculation of WageIndicator Living Wages only includes basic expenses and is therefore applicable to all countries;

- a Living Wage reflects the local living standards and needs of workers and their families;

- a Living Wage is calculated as a reference income of a full-time worker in gross terms.

💡 **Good to know:** WageIndicator collects and calculates Living Wages following the same principles adopted by other Living Wages campaigns. The methodology to calculate Living Wages is consistent with some previous Living Wage campaigns reviewed in Anker (2011). The methodology is versatile and can be applied in all national and regional settings. The resulting comparability of the data collected forms the basic condition for the calculation of Living Wages that are consistent globally and over time.

## 4.3. Living Income

The Living Income benchmark is relevant for (small) farmers/farming households. Yet, it may be applied just as well to all households where income earners are self-employed in their own business - which is usually a small-scale family enterprise, similar to smallholders.

The assumptions for a Living Income are the same as for those Living Wage earners at a payroll, but there are some differences. The Living Income benchmark accounts for the cost of essential necessities in a household, varying with the region and country where they live and work. Thus the Living Income benchmarks offered by WageIndicator reflect the needs of a typical national/regional household. A typical household is assumed to consist of two adults, plus the number of children as derived from the national fertility rate of a country given in the World Bank database (2016-2020). In this respect, WageIndicator extends the practice of basing calculations on the standard family of 2 (adults) plus 2 (children), by allowing for variation in family sizes and estimating Living Incomes which more accurately depict varying living requirements.

To resume the definition, a Living Income is the amount of money a household must earn to achieve a decent standard of living. This income must be earned by the two adults in the family only (the income earned by minors, i.e. children under 16, is excluded from the calculation of the Living Income benchmark). The Living Income is therefore made up of all the diverse sources of income that a household may receive through the labour of two working adult members. It is assumed that in this household both adults work the full working week. Their combined income should be sufficient to cover the costs of the indispensable necessities that their household needs for a decent living.

The indispensable items are similar to the elements making up the cost of living used to arrive at a Living Wage, i.e.: Food; Drinking Water; Housing; Transport; Phone and internet; Clothing; Healthcare; Education and Unexpected expenses. See for a detailed overview of these necessities Chapters 2.1 - 2.9 above.

The other main difference with the Living Wage is that the Living Income includes taxes and social security contributions that are normally due by the employer (thus excluded in the Living Wage calculation). Since the two working adults are not employed (have no permanent employers) the part of social security premiums and taxes normally paid by employers on behalf of their employees must be borne by these working adults themselves, so the Living Income calculation must include the equivalent of these extra costs the self-employed household/family business has to pay. Therefore, WageIndicator's calculations also include the taxes and mandatory contributions that the typical household must make as part of their business venture (the part that would otherwise be borne by an employer). This information is updated twice a year by the WageIndicator team through desk research. For a better understanding and examples of the Living Income calculations, check Table 12.

## 4.4 The six components in the Living Wage data

The calculation of the Living Wage is composed of the following components, notably food, housing, transportation, health, education, and other expenses (e.g. clothing, personal care). Costs for caregivers or housekeepers are not included at this moment. This section provides an explanation of how each component of the Living Wage is calculated.

### 4.4.1 The calculation of food costs

Food expenditure is crucial in estimating the Living Wage. WageIndicator calculates the food costs using two data sources. The first is the WageIndicator Cost of Living Survey, which is explained in detail in Chapter 2 and which collects the actual prices of 68 food items. The second is the UN Food and Agriculture Organisation (FAO) food balance sheet, which presents the consumption of 81 food items measured in kilocalories and in grams per person per day and reflects the food preferences in a country. Two examples of this for Vietnam and Ghana are presented in Annex 11.

To ensure that the differences between food consumption patterns amongst countries are incorporated in the calculation, WageIndicator calculates the food basket for a model diet for each country based on the data from the FAO Food balance sheet. To avoid the negative bias in the quality of the food basket in low income countries and to make sure the country-specific food consumption is balanced with the provisions for a healthy diet, the basket is checked against the balanced diet defined by the World Health Organisation (WHO). WHO defines a balanced diet to comprise less than 30 percent of calories from fats, less than 10 percent of calories from free sugars, less than 5g of salt per day and at least 400 grams of vegetables and fruits per day (WHO, 2020). To make the FAO Food balance sheet comply with the WHO provisions, the following adjustments are made when creating the WageIndicator food baskets:

- Fats, Animals, Raw - adjusted to 0%

- Pig meat - adjusted to 60%

- Milk - Excluding Butter - adjusted to 50%

- Oils - adjusted to 50%

- Sugar - adjusted to 60%

- Fruits and Vegetables - increased to 400 grams for countries with intake less than 400 grams/person/day.

WageIndicator counts for 5 percent for the total percentages of fats and sugar.

The following Table 11 shows the WageIndicator food baskets for model diets for Ghana and Vietnam, 2022.

Table 11. Example: food basket calculation in Ghana and Vietnam, 2023

| Item | Ghana | | | |
| --- | --- | --- | --- | --- |
| | Food supply (kcal/capita/day) | Percentage Protein supply quantity (kcal/capita/day) | Percentage Fat supply quantity (kcal/capita/day) | Price per kilo (USD) |
| Wheat and products | 169.39 | 2.48% | 1.24% | 3.45 - 5.75 |
| Maize and products | 140.79 | 1.94% | 1.78% | 2.75 - 2.86 |
| Potatoes and products | 0.32 | 0.00% | 0.00% | 0.01 - 0.01 |
| Cassava and products | 458.87 | 1.95% | 0.52% | 6.92 - 17.3 |
| Sweet potatoes | 5.73 | 0.01% | 0.02% | 0.2 - 0.3 |
| Roots, Other | 40.44 | 0.09% | 0.05% | 2.23 - 2.31 |
| Yams | 268.73 | 0.56% | 0.64% | 7.33 - 7.99 |
| Sugar (Raw Equivalent) | 83.93 | 0.00% | 0.00% | 3.86 - 4.63 |
| Beans | 35.47 | 0.30% | 0.20% | 0.92 - 1.36 |
| Peas | - | 0.00% | 0.00% | 0 - 0 |
| Pulses, Other and products | 4.10 | 0.03% | 0.03% | 0.06 - 0.08 |
| Groundnuts | 47.25 | 0.25% | 4.12% | 1.35 - 1.35 |
| Soybeans | 0.04 | 0.00% | 0.00% | 0.01 - 0.01 |
| Sunflower seed | 0.03 | 0.00% | 0.00% | 0 - 0 |
| Olives (including preserved) | 7.72 | 0.01% | 0.80% | 0.13 - 0.17 |
| Sunflower Seed Oil | 6.66 | 0.00% | 0.93% | 0.04 - 0.04 |
| Olive Oil | 96.78 | 0.00% | 12.90% | 0.85 - 0.85 |
| Tomatoes and products | 9.98 | 0.06% | 0.12% | 1.31 - 2.31 |
| Onions | 7.56 | 0.03% | 0.03% | 0.95 - 1.9 |
| Vegetables, other | 7.74 | 0.05% | 0.09% | 0.64 - 1.35 |
| Oranges, Mandarines | 17.11 | 0.03% | 0.20% | 1.86 - 2.8 |
| Lemons, Limes and products | 0.41 | 0.00% | 0.00% | 0.08 - 0.12 |
| Bananas | 0.04 | 0.00% | 0.00% | 0 - 0 |
| Plantains | 343.80 | 0.40% | 0.91% | 4.79 - 14.36 |
| Apples and products | 0.74 | 0.00% | 0.00% | 0.07 - 0.12 |

| Item | Food supply (kcal/capita/day) | Percentage Protein supply quantity (kcal/capita/day) | Percentage Fat supply quantity (kcal/capita/day) | Price per kilo (USD) |
|---|---|---|---|---|
| Pineapples and products | 15.58 | 0.02% | 0.06% | 1.13 - 1.17 |
| Fruits, other | 5.01 | 0.01% | 0.06% | 0.64 - 0.96 |
| Coffee and products | 0.03 | 0.00% | 0.00% | 0.04 - 0.05 |
| Tea (including mate) | 0.04 | 0.00% | 0.00% | 0.04 - 0.05 |
| Bovine Meat | 4.97 | 0.06% | 0.41% | 0.33 - 0.38 |
| Mutton & Goat Meat | 4.26 | 0.05% | 0.29% | 0.4 - 0.45 |
| Pigmeat | 5.74 | 0.04% | 0.63% | 0.26 - 0.33 |
| Poultry Meat | 16.06 | 0.29% | 0.85% | 2.58 - 3.26 |
| Butter, Ghee | 3.81 | 0.00% | 0.52% | 0.02 - 0.02 |
| Cream | 0.01 | 0.00% | 0.00% | 0 - 0 |
| Eggs | 2.28 | 0.02% | 0.16% | 0.13 - 0.15 |
| Honey | 0.01 | 0.00% | 0.00% | 0 - 0 |
| Freshwater Fish | 5.56 | 0.12% | 0.26% | 1.31 - 1.58 |
| Pelagic Fish | 28.41 | 0.54% | 1.35% | 3.51 - 6.84 |
| Crustaceans | 0.01 | 0.00% | 0.00% | 0 - 0 |
| Rice and products | 246.45 | 0.61% | 0.46% | 5.18 - 5.92 |
| Milk - Excluding Butter | 8.16 | 0.06% | 0.22% | 0.13 - 0.21 |
| **Total** | **2,100.00** | **10.01%** | **29.83%** | |

- Total calories from free sugars = 4.00% of total calories
- Total vegetables and fruits per day = 598 grams
- Salt is excluded from the diet

| | Vietnam | | | |
|---|---|---|---|---|
| Item | Food supply (kcal/capita/day) | Percentage Protein supply quantity (kcal/capita/day) | Percentage Fat supply quantity (kcal/capita/day) | Price per kilo (USD) |
| Wheat and products | 86.66 | 0.32% | 0.32% | 1.21 - 2.41 |
| Maize and products | 109.07 | 0.35% | 1.15% | 1.49 - 2.24 |
| Potatoes and products | 4.87 | 0.02% | 0.01% | 0.2 - 0.27 |
| Cassava and products | 18.48 | 0.02% | 0.06% | 0.37 - 0.47 |
| Sweet potatoes | 9.54 | 0.01% | 0.04% | 0.24 - 0.32 |
| Roots, Other | - | 0.00% | 0.00% | 0 - 0 |
| Sugar (Raw Equivalent) | 127.95 | 0.00% | 0.03% | 1.24 - 1.41 |
| Beans | 13.05 | 0.11% | 0.06% | 0.18 - 0.3 |
| Peas | 0.05 | 0.00% | 0.00% | 0 - 0 |
| Pulses, Other and products | 8.66 | 0.07% | 0.06% | 0.13 - 0.15 |

| | | | | |
|---|---|---|---|---|
| Groundnuts | 27.17 | 0.14% | 2.64% | 0.4 - 0.69 |
| Soybeans | 31.32 | 0.35% | 1.40% | 0.22 - 0.35 |
| Sunflower seed | 0.16 | 0.00% | 0.00% | 0 - 0.01 |
| Olives (including preserved) | 0.01 | 0.00% | 0.00% | 0 - 0 |
| Sunflower Seed Oil | 2.00 | 0.00% | 0.27% | 0.02 - 0.02 |
| Olive Oil | 93.84 | 0.00% | 12.50% | 0.51 - 0.61 |
| Tomatoes and products | 0.20 | 0.00% | 0.00% | 0.02 - 0.03 |
| Onions | 3.87 | 0.02% | 0.02% | 0.27 - 0.34 |
| Vegetables, other | 102.76 | 0.84% | 1.13% | 10.7 - 15.25 |
| Oranges, Mandarines | 7.73 | 0.02% | 0.04% | 0.88 - 1.17 |
| Lemons, Limes and products | - | 0.00% | 0.00% | 0 - 0 |
| Bananas | 35.39 | 0.06% | 0.13% | 1.09 - 1.45 |
| Apples and products | 1.31 | 0.00% | 0.01% | 0.12 - 0.18 |
| Pineapples and products | 4.36 | 0.01% | 0.03% | 0.34 - 0.44 |
| Fruits, other | 41.18 | 0.06% | 0.42% | 1.82 - 3.28 |
| Coffee and products | 2.37 | 0.04% | 0.00% | 0.59 - 0.81 |
| Tea (including mate) | 1.09 | 0.03% | 0.00% | 0.4 - 0.73 |
| Bovine Meat | 20.53 | 0.21% | 1.84% | 2.76 - 3.48 |
| Mutton & Goat Meat | 0.68 | 0.01% | 0.07% | 0.08 - 0.13 |
| Pigmeat | 260.16 | 1.07% | 29.27% | 8.9 - 9.89 |
| Poultry Meat | 43.42 | 0.47% | 3.59% | 2.78 - 3.49 |
| Butter, Ghee | 32.27 | 0.02% | 4.07% | 0.89 - 1.45 |
| Cream | 0.18 | 0.00% | 0.00% | 0.01 - 0.01 |
| Eggs | 11.55 | 0.12% | 0.99% | 0.57 - 0.64 |
| Honey | 0.01 | 0.00% | 0.00% | 0 - 0 |
| Freshwater Fish | 22.62 | 0.48% | 0.98% | 1.85 - 2.77 |
| Pelagic Fish | 13.23 | 0.27% | 0.52% | 1.64 - 2.74 |
| Crustaceans | 6.35 | 0.16% | 0.07% | 1.63 - 2.24 |
| Rice and products | 930.89 | 2.48% | 3.62% | 7.4 - 8.71 |
| Milk - Excluding Butter | 25.02 | 0.20% | 1.03% | 0.72 - 0.84 |
| **Total** | **2,100.00** | **7.95%** | **66.33%** | |

- Total calories from free sugars = 6.09% of total calories
- Total vegetables and fruits per day = 681 grams
- Salt is excluded from the diet

*Source: WageIndicator Foundation 2023*

All WageIndicator model diets assume a daily consumption of 2,100 calories per person, which is the nutritional requirement for good health proposed by the World Bank (Haughton & Khandker, 2009). The model makes no distinction between adults, children, or pregnant or lactating mothers' food requirements. The principle that WageIndicator adheres to is that adults and children have 2,100 calories a day. In some cases children will eat more, sometimes less. Pregnant women might eat a bit more during the last months of pregnancy and the lactation period. The food costs calculation assumes that the food is prepared at home and purchased at the lower prices from supermarkets.

The data collectors are provided with detailed instructions on how to report the prices for the food items. These include instructions such as to exclude wrapping when reporting the costs and indicate the quantities precisely. More instructions can be found in chapter 3.4.3.

### 4.4.2  The calculation of housing costs

Housing costs are the most peculiar kind of costs because dwellings differ and local prices show substantial variation. The calculation of housing costs should therefore take into account quality criteria and depart from a minimum acceptable housing quality (e.g. appropriate number of rooms, location). In the WageIndicator Cost-of-Living survey respondents are asked about their house rents, electricity, water, garbage collection, internet, and taxes on housing. Respondents also indicate the size and location (inside or outside the city centre) of their apartments or houses. External data from Numbeo (for 50 countries in October 2023) is supplemented by the Living Wage data collection.

A typical rent in the lower part of the price distribution (at 25th percentile) and in the middle of the price distribution (median price) is included in the calculation. The housing cost

for a family or an individual refers to a typical rent for a two-bedroom apartment respectively an one-bedroom apartment in an average urban area, outside the city centre, not centrally located, nor up-market, but also not located in slums. The housing cost always controls utilities and other costs. The high degree of geographical granularity of the prices collected allows the estimation of the reference housing costs for a large number of regions.

### 4.4.3  The calculation of transport costs

Transportation is an important cost for households because many people commute for work or travel for daily activities (e.g. shopping). The assumption is that for families the Living Wage does not include the ownership of a motorbike or car and that they have to rely on other means of transportation. As public transport service is commonly available in most places, the price of a regular monthly transport pass is regarded as the transport cost for an adult. The average price of such a monthly pass is used as a meaningful approximation of transport costs, also for families in areas without local public transport. The price of a monthly pass is asked in the WageIndicator Cost-of-Living survey. The cost of transport for a family household is calculated as twice the price of a monthly adult pass. In many places, children commuting to schools can travel for free or with a substantial discount. Therefore, in the Living Wage calculation it is assumed that children travel for free.

♀ **Good to know:** Transport costs related to the job - e.g. the car or the motorbike costs for a taxi driver or a rider - are only used to calculate the Living Tariff for platform workers.

### 4.4.4  The calculation of personal and health costs

Many countries provide at least basic public health care services. Yet, additional expenses

are often required for medication not available from public facilities or for private healthcare in emergency situations. In addition, if households temporarily lose income due to health-related absence from work they still need to be able to cover their basic living expenses.

The WageIndicator Cost-of-Living survey asks respondents about the minimal monthly expenses on health care for a family of two adults and two children. Based on this information, the monthly expenditure on health is included in the Living Wage calculation. If the country doesn't have a free healthcare system, then the cost of the cheapest basic health insurance, covering one person and/or one person and the family is collected and added to the calculation. Given that the healthcare insurance for working adults sometimes includes the partner and/or children, the health expenses for an individual and a family are calculated separately.

More data is collected specifically on personal and health care costs: the monthly expenses for period products, birth-control products, personal care products and household cleaning products. These are also added to the calculation of the personal and health component.

### 4.4.5  Education expenses

Education in public schools is provided at relatively low cost, but additional costs are related to supplementary materials and fees. Education expenses are typically included in the Living Wage. The WageIndicator Cost-of-Living survey asks respondents about the minimum monthly expenses on education (assuming that children attend public schools) for a family of two adults and two children. Based on this information the monthly expenditure on education is included in the Living Wage calculation.

Expenses on education for adults are not considered in the Living Wage calculation. Because the concept of a Living Wage defines the basic needs for a family, it does not provide for families to participate in advanced education, or in entertainment or recreational activities.

### 4.4.6  Other expenses and provision for unexpected expenditures

The calculation of Living Wage accounts for the most relevant expenditures on food, housing, transport, health and education. In order to estimate the amount of expenditures beyond these basic categories, national Living Wage campaigns typically rely on data from national household income and expenditure surveys. However, for a large set of countries, household surveys are not readily available on the regular basis that would allow for frequent updating. Because the bundle of non-food and non-housing commodities varies across countries according to habits and culture as well as over time, it is difficult to arrive at a universal basket of goods and services covering personal needs in all countries.

One solution to this problem is to provide for spending on non-specified discretionary purchases such as clothing and cosmetics. In addition, it has to be ensured that the Living Wage is sustainable in allowing for unforeseen events such as illness, accidents or unemployment. Provision for unexpected events is also common in Living Wage calculations. The Living Wage Foundation in the UK includes a 15 percent margin for unforeseen events. Earlier works by Anker and Anker (2013) used a 10 percent margin.

The Living Wage for Families Campaign in Canada assumes a two-weeks income from labour as the provision for unexpected events on a yearly basis (that is, approximately 4 percent of the monthly household expenditure).

WageIndicator follows the manual for Living Wages by Anker and Anker (2017) and adds a 5 percent margin to the final estimate of the cost of living. When the calculation of the costs of living is more comprehensive in covering the goods and services, a lower margin is more appropriate as that does not increase the resulting Living Wage unreasonably.

## 4.5 The Living Wage / Living Income dataset

### 4.5.1 Data cleaning

As explained in Chapter 3.5, during the data collection process substantial efforts are undertaken to ensure high quality data. As a next step, scripts used for the Living Wage dataset ensure the removal of outliers.

Minimum number of observations per category

On behalf of the calculation of a reliable Living Wage for a country or for a region within a country, a minimum number of observations - collected over a period of time of maximum 60 months - is required. For the calculation of a Living Wage per region or per country, WageIndicator requires a minimum number of observations, namely:

- for food between 2000 and 6000 prices per region are needed; if less data is available, WageIndicator will not publish a Living Wage;

- for housing between 50 and 200 observations are needed to calculate housing for a country-level and 20 and 200 observations for a region-level Living Wage;

- for transport minimal 20 observations for a country-level Living Wage and minimal 20 observations for a region-level Living Wage;

- for health, education and other components, 20 observations are needed to calculate health and education, clothing/footwear, phone & data and drinking water expenses

at the national and regional level. If there are not enough observations at the regional level, then the national data is used also for the region-level Living Wages, as these are smaller expenses and usually don't vary too much per region. If there are not enough observations at the national level, data from countries within the same income group (as per the World Bank country income grouping) are used, using data published by the International Labour Organisation.

In WageIndicator calculations, prices collected by WageIndicator in the last twelve months are weighted with a higher weighting factor, to ensure that recently collected prices are more influential in the living wage calculation.

Table 9 and 10 show whether data comes via face-to-face, webshops, or website. Any source is seen as valid to reach the minimum number of prices needed for the calculation.

### 4.5.3 Actual data

💡 **Good to know:** The Living Wage calculation is based on prices collected during the last 36 months (in some cases 60 months) in order to avoid uncharacteristic or short-lived extraordinary fluctuations.

The new data replace the old data and the quarterly data for this reference period are of course adjusted for inflation. The data presented for the last quarter is always seen as the most accurate, so when available the most recent data is used.

### 4.5.4 Inflation correction

For most national figures, WageIndicator applies the CPI (Consumer Price Index) published by the International Monetary Fund (IMF) to update older prices. However, such CPI data is not available for countries like Syria or Lebanon. For countries where CPI data is unavailable, data collected only in the last 18 months is used.

### 4.5.5 Gross and net Living Wages, taxes and social contributions

The Living Wage is presented as the gross monthly wage of a full-time worker. The gross Living Wage figure is obtained by adding the mandatory payroll deductions obtained from the latest national tax summaries available publicly, based on several sources, like the [Worldwide Tax Summaries](#) published by PWC, to the net Living Wage. The income tax is required by law and therefore has to be included in the Living Wage calculation.

In many countries low income levels are exempt from tax up to a minimum income threshold and tax brackets are set based on income levels Since taxes are applied to gross pay, the net Living Wage needs to be 'grossed up' to account for income tax. However, given that in some countries income tax rates are low but social contributions high, and given that social services may be financed by taxes, the amount of taxes includes social contributions (pension contributions, medical insurance contributions, social insurance contributions). The taxes included in WageIndicator Living Wage are the taxes due by the employee (and not by the employer). In summary, the 'gross Living Wage' includes the taxes and social security contributions due by the employee.

In the case of the Living Income, taxes and social contributions from both the employee and the employer's side are incorporated.

### 4.5.6 Lower and upper bound data

Living Wages and Living Income are calculated as a range with the lower bound of the 25th percentile and an upper bound of the 50th percentile of the calculated Living Wage. This interval reflects the variation of prices within a country. The 50th percentile (median) is the value for which half of the respondents report higher and the other half lower prices. The 25th percentile is the value for which 75 percent of respondents report higher prices.

## 4.6 Living Wage / Living Income data for five countries

### 4.6.1 Family types

Living standards within and between countries vary, but all Living Wage campaigns aim to ensure a decent remuneration for work in support of workers and their families. The WageIndicator Living Wage concept is a systematic attempt to reflect the diversity in family types found worldwide. Therefore, three types of families have been defined: a standard family, a typical family and - more recently - a single-earner (one person earns enough for the whole family). These types apply to all countries included. For the first two types Figure 11 shows the characteristics and Figure 12 shows how the Living Wage is calculated. For the single-earner, the family composition considered is the same as the typical family, but the total amount is not divided by the number of earners per family, as it is assumed that one of the adults earns the whole amount.

Although WageIndicator still calculates and shows the one-person or individual household, this is done to make the calculation more understandable, and not to be used as a benchmark. It has been noticed that in some cases the hourly Living Wage for an individual was used to check whether an employee had children or not (and therefore needed a lower Living Wage). Living Wages for individuals or families are not meant to discriminate against having children or not, regardless whether the children are born in the family or not. In Table 12 we show three family types and the individual, just for context.

Figure 11. Family types
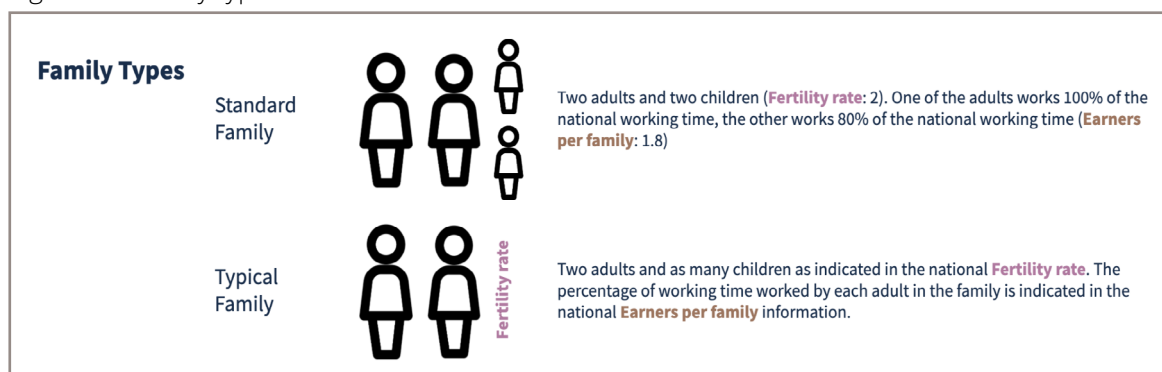


Screenshot Data visual about how families are defined. WageIndicator.org 2023
*Source: WageIndicator Foundation  2023*

Figure 12. Summary of the calculation of the Living Wage for the two family types
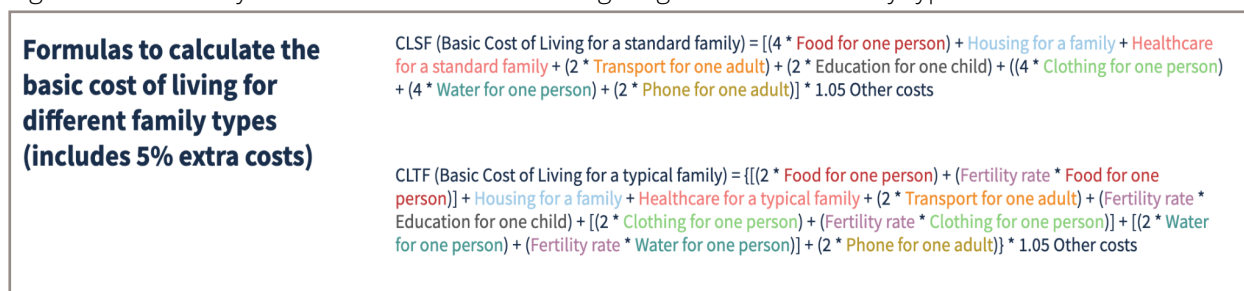


Note: The calculation of Living Wages for the family types takes into account the most recent employment rates (World Bank) and family characteristics (fertility rate) (World Bank) available, in the local context.
*Source: WageIndicator Foundation  2023*

## 4.6.2  Living Wage / Living Income data for five countries

The data collected is used to calculate monthly Living Wage / Living Income estimates. As an example, Table 12 shows the data for five countries selected from each continent, covering the year average, plus the October 2023 Guidance release. The table shows the lowest and highest boundaries for the Living Wages and details the monthly costs for the item categories.

Table 12. Monthly amounts in national currency for specified Living Wages, release October 2023, and Year Average 2023

| Country | Chile CLP | Côte d'Ivoire XOF | Czechia CZK | Italy EUR | South Africa ZAR | Vietnam VND |
|---|---|---|---|---|---|---|
| Living Wage Guidance - individual - lowest - per month | 501,215.42 | 86,330.00 | 14,404.50 | 913.09 | 5,932.50 | 4,029,501.50 |
| Living Wage Guidance - individual - highest - per month | 623,266.92 | 111,428.75 | 19,254.50 | 1,062.49 | 8,083.50 | 5,223,684.00 |
| Living Wage Guidance - standard family - 2+2 - 1.8 working - lowest - per month | 647,649.00 | 153,138.75 | 23,675.75 | 1,067.14 | 7,831.75 | 7,714,738.62 |
| Living Wage Guidance - standard family - 2+2 - 1.8 working - highest - per month | 810,196.20 | 196,934.25 | 29,271.00 | 1,335.29 | 10,616.75 | 10,044,461.14 |

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| Country | Chile CLP | Côte d'Ivoire XOF | Czechia CZK | Italy EUR | South Africa ZAR | Vietnam VND |
|---|---|---|---|---|---|---|
| Living Wage Guidance - typical family - 2+national fertility rate - national employment rate - lowest - per month | 703,073.08 | 241,942.25 | 26,212.00 | 1,187.53 | 9,199.00 | 7,358,222.50 |
| Living Wage Guidance - typical family - 2+national fertility rate - national employment rate - highest - per month | 875,920.58 | 312,825.00 | 32,209.75 | 1,469.37 | 12,454.50 | 9,655,340.19 |
| Average Living wage individual - lowest - per month | 524,157.75 | 75,298.25 | 13,458.75 | 982.50 | 5,932.50 | 4,029,501.50 |
| Average Living wage individual - highest - per month | 652,197.75 | 101,899.50 | 19,084.50 | 1,133.25 | 8,083.50 | 5,223,684.00 |
| Average Living wage standard family - 2+2 - 1.8 working - lowest - per month | 680,941.75 | 134,158.00 | 23,675.75 | 1,100.00 | 7,831.75 | 7,774,566.25 |
| Average Living wage standard family - 2+2 - 1.8 working - highest - per month | 851,753.25 | 177,306.25 | 29,271.00 | 1,391.75 | 10,616.75 | 10,268,555.75 |
| Average Living wage typical family - 2+national fertility rate - national employment rate - lowest - per month | 725,355.75 | 201,367.25 | 26,212.00 | 1,220.50 | 9,199.00 | 7,358,222.50 |
| Average Living wage typical family - 2+national fertility rate - national employment rate - highest - per month | 902,989.25 | 268,833.25 | 32,209.75 | 1,533.00 | 12,454.50 | 9,713,696.00 |
| Living wage single-earner typical family - 2+national fertility rate - 1 working - lowest - per month | 1,128,211.00 | 334,152.00 | 42,624.00 | 1,877.00 | 15,746.00 | 13,915,569.00 |
| Living wage single-earner typical family - 2+national fertility rate - 1 working - highest - per month | 1,413,872.00 | 479,972.00 | 52,680.00 | 2,304.00 | 20,818.00 | 18,818,434.00 |
| Living wage individual - lowest - per month | 479,775.00 | 79,235.00 | 13,344.00 | 981.00 | 6,148.00 | 3,996,662.00 |
| Living wage individual - highest - per month | 628,673.00 | 111,996.00 | 19,170.00 | 1,101.00 | 8,221.00 | 5,227,353.00 |
| Living wage standard family - 2+2 - 1.8 working - lowest - per month | 659,368.00 | 133,199.00 | 22,908.00 | 1,115.00 | 8,281.00 | 7,653,354.00 |
| Living wage standard family - 2+2 - 1.8 working - highest - per month | 828,202.00 | 189,371.00 | 28,684.00 | 1,377.00 | 10,933.00 | 10,291,236.00 |
| Living wage typical family - 2+national fertility rate - national employment rate - lowest - per month | 696,913.00 | 190,189.00 | 25,519.00 | 1,239.00 | 9,601.00 | 7,205,537.00 |
| Living wage typical family - 2+national fertility rate - national employment rate - highest - per month | 871,168.00 | 275,013.00 | 31,804.00 | 1,517.00 | 12,694.00 | 9,681,734.00 |
| Food cost standard family for a full time earner - lowest - per month | 173,844.44 | 54,320.00 | 4,936.11 | 238.33 | 1,962.78 | 2,711,231.67 |
| Food cost standard family for a full time earner - highest - per month | 233,306.11 | 75,112.78 | 6,492.78 | 312.78 | 2,716.11 | 3,635,121.67 |
| Food cost typical family for a full time earner - lowest - per month | 171,128.13 | 86,272.35 | 5,275.63 | 250.67 | 2,369.51 | 2,544,498.40 |
| Food cost typical family for a full time earner - highest - per month | 229,660.63 | 119,297.06 | 6,939.38 | 328.00 | 3,279.27 | 3,411,571.66 |
| Housing cost standard family for a full time earner - lowest - per month | 230,722.22 | 30,888.89 | 9,000.00 | 277.78 | 2,272.22 | 1,592,722.22 |
| Housing cost standard family for a full time earner - highest - per month | 267,500.00 | 38,277.78 | 10,222.22 | 305.56 | 2,816.67 | 1,916,388.89 |
| Housing cost typical family for a full time earner - lowest - per month | 259,562.50 | 32,705.88 | 10,125.00 | 333.33 | 2,493.90 | 1,533,101.60 |

| Country | Chile CLP | Côte d'Ivoire XOF | Czechia CZK | Italy EUR | South Africa ZAR | Vietnam VND |
|---|---|---|---|---|---|---|
| Housing cost typical family for a full time earner - highest - per month | 300,937.50 | 40,529.41 | 11,500.00 | 366.67 | 3,091.46 | 1,844,652.41 |
| Transport standard family for a full time earner - lowest - per month | 42,327.22 | 3,092.78 | 565.00 | 37.78 | 531.67 | 108,306.67 |
| Transport standard family for a full time earner - highest - per month | 44,932.78 | 3,750.56 | 611.67 | 40.56 | 681.67 | 128,162.22 |
| Transport typical family for a full time earner - lowest - per month | 47,618.13 | 3,274.71 | 635.63 | 45.33 | 583.54 | 104,252.41 |
| Transport typical family for a full time earner - highest - per month | 50,549.38 | 3,971.18 | 688.13 | 48.67 | 748.17 | 123,364.71 |

# LIVING WAGE AND ADJACENT BENCHMARKS

WageIndicator presents its Living Wage information in the context of political, civil, and labour rights. Per country, WageIndicator contextualises for seven adjacent benchmarks, namely:

- Poverty lines

- Statutory minimum wage

- Actual wages

- Working hours per week

- Taxes

- Labour rights

- Political rights

WageIndicator has its own data collection on Minimum Wages, Actual wages, Labour Laws, weekly working hours, and taxes, stemming from desk research on government sources, international- and multilateral institutions and research institutes. The poverty line and Freedom House data are based on external sources. This chapter discusses these five context benchmarks.

## 5.1   The Poverty Line

The World Bank defines a poor individual as a person who lives on less than US$2.15 (PPP) per day. PPP stands for Purchasing Power Parity, a specific form of price indexation that is widely used for international comparison of real incomes. PPP rates are calculated based on the price surveys undertaken by the International Comparison Program (ICP) organised by the World Bank. Using these PPP rates, the World Bank Poverty Line is calculated as the monthly (i.e. 30 days) income assuming the spending of PPP-adjusted US$2.15 per person per day.

Some countries define their own poverty lines. The national poverty line is the minimum income level on which an individual is supposed to be able to survive. These national poverty lines are set by governments. National definitions of poverty and their practical implementation vary widely across countries. In some countries the national poverty line is calculated based on actual prices and revised regularly. In other countries the figure attached to the poverty line is only irregularly updated.

The poverty line is usually set for an individual. Only a few countries define a poverty level for a family. Richer countries deploy more generous living standards to define poverty than poorer countries. Some countries do not define a national poverty line at all. Therefore, national indications of poverty lines are not directly comparable across countries. To assess whether a national poverty line indicates an adequate income, WageIndicator compares it with a Living Wage based on real prices of goods collected through the WageIndicator Cost-of-Living survey: https://costofliving.wageindicator.org

## 5.2   The Minimum Wages

Minimum Wages are an important contextualisation of WageIndicator's Living Wage because many countries take the standpoint that the minimum wage should be sufficient for a decent income. However, for many countries the Minimum Wage and WageIndicator's Living Wage reveal large disparities as shown in Figure 13. These disparities are related to the country's GDP.

💡 **Good to know:** In 2023, in only 19 countries did the Minimum Wage equal or exceed the Living Wage, and in 129 countries Minimum Wages were lower. Among high income coun-

tries, the Minimum Wage is on average 117% of the Living Wage in OECD countries and 69% in non-OECD countries, while in low income countries the Minimum Wage covers on average only 13% of the Living Wage.

guage only. For this reason, many workers did not know their Minimum Wage and asked WageIndicator to provide this information online. Soon other national WageIndicator web sites followed with Minimum Wage pages.

Figure 13. Percentage of the Living Wage covered by the Minimum Wage by country income group



*Source: WageIndicator Living Wage data collection and Minimum Wage database. Release: Living Wage Guidance 2023*

WageIndicator has its own Minimum Wages data collection. The [Minimum Wages database](#) was introduced in 2006 as a response to the questions by workers and their trade unions in Paraguay and by web visitors of the WageIndicator website in The Netherlands and India. Minimum Wages in The Netherlands were at that time more complex. Special rates for youth, and extra holiday allowances, and differences for those who work 36 or 40 hours a week. Minimum wage rates in India are defined per state, are very complex, are not easily findable online, and in some states the official Notifications are published in the regional lan-

The technical performance of the database was gradually improved and included information for an increasing number of countries. The database is updated (as soon as new rates come in) but at least on a monthly basis. In December 2023, the database contained information for 206 countries with jointly more than 20,000 different rates.

The statutory or legal Minimum Wages are set and published by governments, sometimes after consultation with social partners. Many countries have one Minimum Wage and in most cases it applies to the entire workforce.

Other countries apply multiple Minimum Wages for categories of workers defined by industry, firm size, occupational group, skill level, educational level, geographical characteristics, age, or years of service. Approximately half of the countries in the Minimum Wage database have multiple rates. For the contextualisation of WageIndicator's Living Wage, one reference point per country or per region is needed. For countries and regions with multiple rates, the lowest rate is defined as follows:

- if a country defines one rate as the general Minimum Wage rate or defines a rate for general workers, this rate is selected, except for South Africa, where several rates are lower than the 'general' one. In this country the lowest rate is shown;

- in case a country has specific rates for youth, apprentices, workers with no experience, handicapped workers, piece rate workers, or tipped workers: these rates are excluded from the lowest rate reference;

- in case a country defines different Minimum Wages between rural and urban areas or between unskilled and skilled workers, the lowest rate is shown;

However, where possible, - as in all WageIndicator national websites - WageIndicator shows the most detailed Minimum Wages per country, region, and sector. Government's convocations about Minimum Wages are traced and supplemented by a global WageIndicator network, contacts with governments and a vast network of professional users guarantee an up to date database.

💡 **Good to know:** As of Oct 2023, 19 countries have a monthly Nationally Applicable Minimum Wage higher than the monthly 2023 Living Wage Guidance Typical Family lower bound. These countries are: Andorra, Australia, Austria, Belgium, Canada, France, Germany, Japan, Luxembourg, Netherlands, New Zealand, Poland, Saudi Arabia, Slovenia, South Korea, Spain, Switzerland, Taiwan. Province Of China and United Kingdom. Note: for some regions within these countries the Minimum Wages may be lower than the Living Wage.

## 5.3   Occupational Wages

Since its start in 2000, WageIndicator has collected data about occupational wages. First for the Netherlands only, then for a growing number of countries. This data collection continues today and is based on data collected through the WageIndicator Salary Survey and Salary Check posted on its websites and recruitment through social media, Decent Work Surveys, face-to-face surveys in selected countries, and external sources from national statistical offices. This salary data collection allows us to identify wages by occupation. Using ILO's International Standard Classifications of Occupations (ISCO-08), the occupations can be classified as high-skilled, medium-skilled and low-skilled, for each country the Living Wage thresholds can be compared to the occupational wages by skill level.

## 5.4   Regular working hours per week

💡 **Good to know:** For 206 countries and territories WageIndicator maintains a database with information about the legal and the standard or normal working hours per week.

For most countries the legal working hours refer to the maximum hours per week. The WageIndicator *normal* working hours refer to the working hours which are normal, standard or regular in the country, as is agreed in Collective Bargaining Agreements or Minimum Wage regulations. These regulations can mention normal working hours versus overtime hours. For most of the 206 countries and territories, WageIndicator also registers the number of regulatory leave days per year. The database is based on desk research, in cooperation with the WageIndicator office Centre for Labour Research in Islamabad and WageIndicator teams worldwide. The WageIndicator working hours

database and its Labour Law database are updated yearly (Tijdens, 2023).

WageIndicator uses the normal working hours to calculate a monthly Living wage / Income.

## 5.5   Taxes

💡 **Good to know:** WageIndicator collects information about the levels of income tax and social security contributions.

The personal income tax rate is obtained from the latest national tax summaries available publicly. In many countries low-income earners are exempted from income tax up to a threshold as tax brackets are set based on income levels. In some countries income taxes are low but social contributions high, whereas in other countries social security is financed from taxes. For the contextualisation of WageIndicator's Living Wage, the lowest and highest tax amount is presented for the three family types (standard, typical, single-income-earner) in the Living Wage data (see Chapter 4 for the family types). The tax amounts include income tax and social contributions (pension contributions, medical insurance contributions, social insurance contributions). In the Living Wages calculation only social contributions due by the employee are included, while the Living Income and Living Tariff also accounts for social contributions due by the employer.

## 5.6   Labour Rights

The Labour Rights Index is based on more than a decade of legal research by WageIndicator and the Centre for Labour Research, which is the WageIndicator global labour law office in Islamabad.

💡 **Good to know:** The Labour Rights Index measures major aspects of labour law covering 10 indicators and 46 evaluation criteria, based on substantive elements of the UN Decent

Work Agenda. The criteria are all grounded in UDHR, five UN Conventions, five ILO Declarations, 35 ILO Conventions, and four ILO Recommendations.

The Labour Rights Index emphasises the importance of a well-functioning legal and regulatory system in creating enabling conditions for the achievement of Decent Work. Its most recent edition of 2022 covers 135 countries.

For the country-level Living Wages contextualisation, WageIndicator uses the overall composite score and a Labour Rights Index ranking of the country. The Labour Rights Index is presented in visuals. Figure 14 shows the composite score for 2022, showing how countries range from a total lack of decent work in their regulatory system to decent work regulations on all indicators. See for more information about the Labour Rights Index.

Figure 14. Labour Rights Index 2022
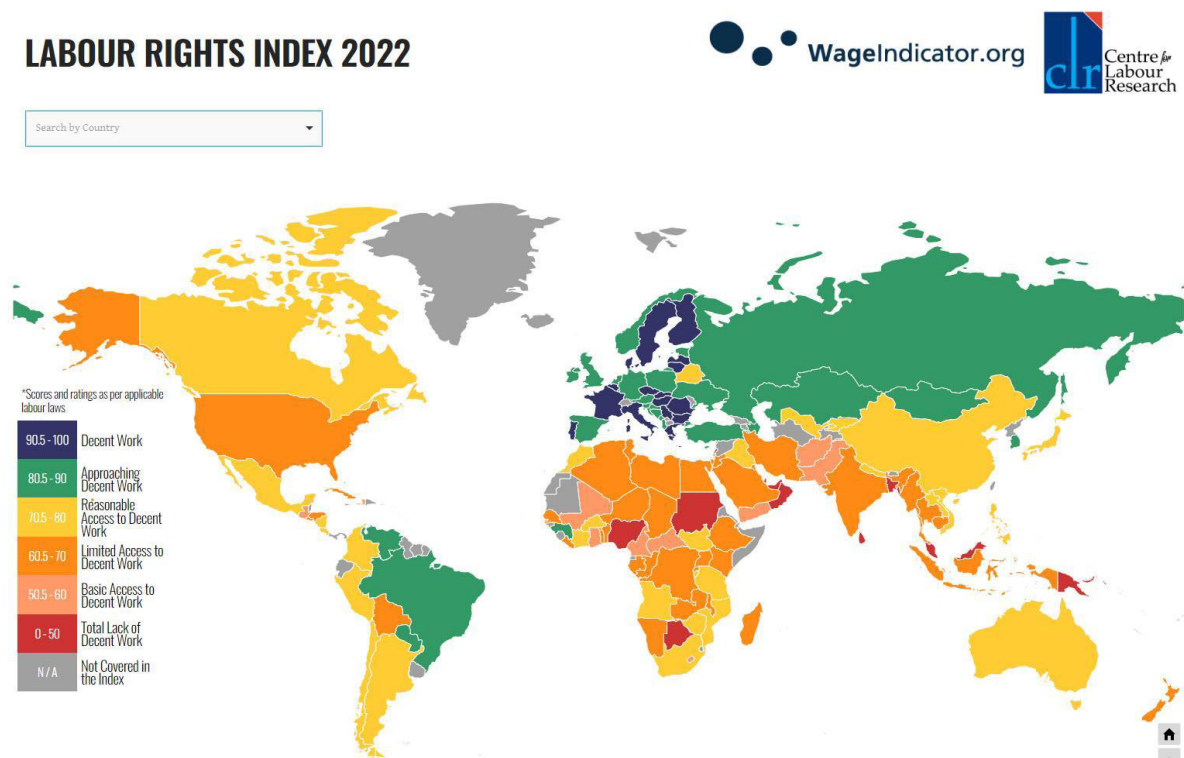


*Source: WageIndicator Foundation 2023*

Legal regulations do not reveal compliance to the regulations. WageIndicator uses the detailed criteria in the Labour Rights Index in its Decent Work Check Survey. This survey allows employees to check whether their wages and working conditions are compliant to the national Labour Law and the Minimum Wage rates in their countries. WageIndicator runs projects in Ethiopia, Indonesia, and Uganda in selected Ready Made Garments (RMG), textile and leather factories and in (cut)-flower farms and palm oil plantations to explore the decent work compliance of the workers.

## 5.7   Freedom House Scores

For contextualization of country level Living Wages, WageIndicator uses two indicators drawn from Freedom House, a non-profit, majority U.S. government funded organisation in Washington, D.C., that conducts research and advocacy on democracy, political freedom, and human rights. WageIndicator uses the Freedom House Total Score and the Freedom House Remark. Freedom House Total Score is a numerical score out of 100, which is a summation of the Political Rights Score and Civil Liberties Score.

Freedom House also awards a status of Free, Party Free or Not Free in the form of Freedom House Remark, a qualitative category based on a combination of Political Rights Score (out of 40) and Civil Liberties Score (out of 60). The table below in Figure 15 shows the combination for the pairs of scores.

Figure 15. Pairs of scores of Freedom House

| Status | | Political Rights score | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 0-5* | 6-11 | 12-17 | 18-23 | 24-29 | 30-35 | 36-40 |
| Civil Liberties score | 53-60 | PF | PF | PF | F | F | F | F |
| | 44-52 | PF | PF | PF | PF | F | F | F |
| | 35-43 | PF | PF | PF | PF | PF | F | F |
| | 26-34 | NF | PF | PF | PF | PF | PF | F |
| | 17-25 | NF | NF | PF | PF | PF | PF | PF |
| | 8-16 | NF | NF | NF | PF | PF | PF | PF |
| | 0-7 | NF | NF | NF | NF | PF | PF | PF |

F = Free, PF = Partly Free, and NF = Not Free

*Source: Freedom House, 2023*

# 6 BENCHMARKING COMPANIES' REMUNERATION AGAINST LIVING WAGE THRESHOLD

The Living Wage data is collected so that companies can derive from here a threshold for their remuneration policies. Section 6.1 in this chapter details the concept of actual wages. Which wage elements should and should not be included in the comparison of the paid wages against the Living Wage threshold provided by WageIndicator? This section defines the measurement of the hours in a normal working week and to what extent in-kind benefits, bonuses and expenses for equipment or training at the workplace are included. Take-home wages are defined. Sections 6.2 to 6.6 present notions about Living Wage monitoring and the details of the data provided for the WageIndicator Living Wages.

## 6.1 The Living Wage compared to the workers' wages

### 6.1.1 The length of the working week

For a comparison of paid wages to the Living Wage the concept of working hours needs clarification. The Living Wage is presented as monthly and hourly amounts paid to a full-time worker. The length of a full-time working week should be equal to the normal working hours per week in the country at stake, that is, the standard working hours as agreed in collective bargaining agreements or laid down in minimum wage regulations.

If a company's wage system is based on an average month, with the wage in February equal to the wage in January, the company's wages should be compared against the monthly Living Wage. An average month equals 4.33 weeks in one month. If a company's wage system is based on the days or hours worked,

thus with wages differing from January to February, the company's wages should be compared against the hourly Living Wage.

In the 'average monthly wages' company, the wages of part-time employees should not be compared to the monthly Living Wage. They should be compared to so-called Full-Time Equivalent (FTE) wages, whereby the number of hours worked are divided by the standard working week in the company. If the employee works 10 hours per week and the standard working week is 44 hours (FTE = 0.227), the part-timer's wage should be compared to 0.227 times the monthly Living Wage. In the 'wage for days or hours worked' company, part-time employees should also not be compared to the monthly Living Wage, but to the hourly Living Wage times the number of hours worked.

In the 'average monthly wages' company, the monthly wage includes paid vacation and leave days. An 'average month' consists of the number of hours worked, times FTE times 4.33 plus the number of paid vacation and leave days divided by 12. In the 'wage for days or hours worked' company, the hourly wage does not include any payment for paid vacation and leave days. If the company pays for vacation and leave days per year, the hourly wages should be adapted: the Living Wage should be compared to the hourly wage plus the number of vacation and leave days divided by hours in the standard working week times 52.3.

Wages earned by working overtime should be excluded from the comparison of the worker's wage to the Living Wage threshold. A Living Wage should be earned by working normal /

standard hours. Overtime hours are defined as all working hours per week above the standard working week in the company. For part-timers overtime hours are defined as all working hours per week above the hours in the standard working week in the company. In case the company does not define a standard working week, the hours in a standard working week in the country should be taken into account (Tijdens, 2023).

### 6.1.2  Allowances and In-kind benefits

The comparison of the paid wages to the Living Wage needs clearly defined wages. A Living Wage should be calculated in monetary terms and paid in cash or be transferred to the worker's bank account without pay arrears.

The ILO Minimum Wage Policy Guide provides useful guidance on options for dealing with in-kind benefits, such as ILO Convention 95 on Protection of Wages which calls for measures to ensure that the value attributed to in-kind benefits is fair and reasonable, bearing in mind that these limit the financial income of workers. All in-kind components like food or housing should be expressed in monetary terms too. For comparing paid wages to the Living Wage the cash-equivalents of these in-kind benefits can be deducted (ILO, Convention 95). WageIndicator derives the cash-equivalent of in-kind benefits from its Cost-of-Living survey. If a worker receives a meal, provided for free by the employer, then WageIndicator calculates the price of this meal based on its Cost-of-Living data in the region.

WageIndicator suggests that these in-kind benefits should not exceed 25 percent of monthly earnings, and should not exceed the amount of the relevant component as calculated by WageIndicator, as shown in the two examples below:

*Example 1:* The worker gets a wage of 800 + in-kind housing (he/she is offered a house to live

in with his/her family) + in-kind car (a car that can be used 24/7 also for family needs).

The WageIndicator Typical Family Living Wage calculated is 1000, of which 300 is housing and 100 is transportation.

The housing and the transportation together make 400, but only 25% of the total Living Wage can be paid in kind, so the in-kind part can be a maximum of 250. The wage of the worker should then be compared to 750, so the worker is being paid a Living Wage.

*Example 2:* The worker gets 800 + in-kind meals when he/she is at work + in-kind car (a car that can be used 24/7 also for family needs).

The cost of meal can be deducted from the Living Wage, assuming that the worker is provided one meal per working day to the amount of 50 for 24 meals in a normal month, given 5 working days per week. The public transport pass can be deducted but only to the amount of 100, because that is how much the transportation component accounts for in the Living Wage. The wage of the worker should then be compared to 950, so the worker is being paid a Living Wage.

If needed, WageIndicator can assist in calculating the cash value of the in-kind benefits, based on the data collected in the WageIndicator Cost-of-Living survey for the region at stake.

WageIndicator takes five categories of in-kind benefits into account when calculating the living wage:

- free housing and utilities, such as water or electricity

- free meals / food rations given for free at work assuming one meal per working day

- free transport / free fuel / free car to and from the place of work

- free school for workers' children provided by employer

- private medical insurance / free medical services, paid by the employer and covering the worker and his/her family

WageIndicator calculates the monetary value of these goods, based on the prices from its cost-of-living survey in the region. The maximum amount of these in-kind benefits cannot be more than 25% of the living wage.

### 6.1.3  Gross wages

The Living Wage should be compared to the gross wages paid by the company. Employer's contributions to workers' social security and workers' income taxes should be deducted from the wages before being compared to the Living Wage threshold. Although the taxes and social security the employee should pay, will stay part of the gross wage.

All wages should be paid in the national currency or in a currency common for international use. Payments in bitcoins, neither partly nor fully, are too volatile to meet the basic demand of a stable income and should be excluded when comparing wages to a Living Wage.

### 6.1.4  Monthly and yearly bonuses

A company's remuneration policy may include payment of bonuses. However, not all bonuses should not be included in the comparison of the worker's wage to the Living Wage.

Monthly payments for inconvenient hours or night work should not be included, because they are not guaranteed and are likely to vary over time. Performance pay should not be included for the same reasons. Payment in shares is not included either, because it is not guaranteed and will vary over time.

WageIndicator does not include monthly bonu-

ses in a worker's wage for the comparison to the Living Wage, such as:

- Shifts, unsocial hours weekend work allowance

- Hardship allowance

- Production bonus

- Seniority or skill bonus

- Cost-of-living adjustment

- Housing allowance

- Transport allowance

- Any other allowance

WageIndicator does include some yearly bonuses in a worker's wage for the comparison to the Living Wage, because these are an agreed part of the wage. This applies to bonuses such as:

- 13th month salary / 14th month salary

- End of year / Christmas / Eid-bonus

- Holiday / visit 'home' bonus

- Other yearly bonuses / shares

In these cases a monthly wage should be supplemented with 1/12 of the yearly bonus.

### 6.1.5  Expenses for equipment or training

Any expenses for equipment, tools or clothes needed to perform the job are to be paid by the employer and should not be deducted from the workers' wages. Similarly, expenses for training paid by the employer and directly needed for the job should not be deducted from the worker's wage.

The Living Tariff for platform workers and other self-employed workers, expenses related to the different jobs, such as a car, a motorbike, a helmet, a laptop, a phone are paid by the workers themselves, and therefore should

be added to the Living Tariff. This also applies to the costs of the time needed for acquisition, training, etc.. In the Tariff, employee and employer taxes and social security costs are included too.

## 6.1.6 What to include or exclude in the paid wage?

WageIndicator suggests the below principles when looking at what to include or what to exclude in the implementation of Living Wage payments.
*Note: the total of the cash-equivalents cannot be more than 25% of the Living Wage*

Table 13. Inclusion and exclusion in the paid wage

| Item | Include in paid wage |
|---|---|
| Basic wage for full-time worker | Yes |
| Shifts, unsocial hours, or weekend work allowance | No |
| Hardship allowance | No |
| Production bonus | No |
| Seniority or skill bonus | No |
| Cost-of-living adjustment | No |
| Housing allowance | No |
| Transport allowance | No |
| Any other allowance | No |
| 13th month / 14th month salary | Yes, if divided by 12 |
| End of year / Christmas / Eid – bonus | Yes, if divided by 12 |
| Holiday / visit 'home' bonus | Yes, if divided by 12 |
| Other yearly bonuses / shares | Yes, if divided by 12 |
| Allowance Free housing and utilities, such as water or electricity | Yes, cash equivalent |
| Free meals / food rations given for free at work | Yes, cash equivalent |
| Free transport / free fuel / free car to and from the place of work | Yes, cash equivalent |
| Free school for workers' children provided by employer | Yes, cash equivalent |
| Private medical insurance / free medical services, paid by the employer | Yes, cash equivalent |
| Savings fund | No |

*Source: WageIndicator Foundation 2023*

## 6.2 Reporting about the workforce below the Living Wage

For auditing purposes metrics regarding the share of the workforce below the Living Wage are increasingly requested, for example in the SA8000 Standard and in other auditing processes. The reporting may be requested from companies, their subsidiaries or even from their subcontractors. These organisations vary regarding the advancement of their payroll systems or wage administrations. Depending on the available information from an organisation's administration, they will report in different ways about the share of workers above and below the Living Wage thresholds.

Most companies will use payroll systems that allow for reporting whether an employee is paid above or below the Living Wage threshold, according to the rules outlined in Chapter 6.1. Hence, the percentage of the workforce below the threshold can be reported and progress over time be monitored. If no information is available about the individual wages, the wages paid to the low-skilled job titles or pay scales should be compared. If no information is available about the wages linked with job titles or pay scales, the average wage in the organisation should be compared to the Living Wage. This is an imprecise estimate, particularly when organisations have both high and low paid staff. WageIndicator suggests not to use it.

Shift, one of the leading centres of expertise on the UN Guiding Principles on Business and Human Rights, shares some highly valuable tips for reporting (Shift, 2023).

PWC and WageIndicator have started work together to better understand how companies are working on Living Wages, if they are starting to work on it already, and itlimately to work with companies on how to implement Living Wages as well as report on them within annual reports. The first research between

PWC and WageIndicator on *Living Wage as an emerging standard* has recently been published (PWC and WageIndicator, 2023).

In relation to the European Directive on Corporate Sustainability Reporting (CSRD), WageIndicator, from 2024, WageIndicator will also be able to support on understanding the difference between Minimum Wages, Living Wages and Adequate Wages.

## 6.3 Living Wage ranges

WageIndicator presents its Living Wages as a range to reflect the variation of prices within the country or region at stake. One single figure instead of a range might suggest that Living Wages are cast in stone, but they are not and cannot be. Living Wages reflect the actual price levels of goods and services consumed by households. These price levels may change over time and may develop differently between regions in a country. However, the lower bound Living Wage is usually used to compare whether the company pays at least a Living Wage.

## 6.4 Living Wage per quarter, year average and Living Wage Guidance

As detailed in Chapter 3, WageIndicator provides new Living Wage figures each quarter. Annually, in October, an average of the last quarters is calculated, when at least three available. Since October 2023, on the basis of the Yearly Average, a Living Wage Guidance is calculated. The calculation is performed as follows:

1. the Yearly Average dataset (at country and regional level) is compared with the Yearly Average dataset of the year before, which serves as a basis for the adjustments for the Living Wage Guidance dataset.

2. In case the Yearly Average Living Wage is less than 3% lower than the Yearly Average Living Wage of the year before, the Living Wage presented is the current Yearly Average Living Wage.

3. In case the Yearly Average Living Wage is more than 3% lower than the Yearly Average Living Wage of the year before, a 3% lower Living Wage Guidance is presented.

4. In case the Yearly Average Living Wage is higher than the IMF inflation rate of the previous year plus 5% than the Yearly Average in the previous year, the Living Wage Guidance presented will be capped at IMF inflation plus 5%.

In case of countries with big economic issues or economical changes, these will be reflected by the inflation rate, so the Living Wage Guidance reflects them as well.

If no IMF inflation rate is available, publicly available estimates for inflation are being used. Also, when there is a lack of data for regional calculations, ratios are used to adjust the current year averages in line with other regional ratios for the country or the country level adjustment, in that order.

💡 **Good to know:** The Living Wage Guidance estimate should be considered the WageIndicator Living Wage for the year. Its use is recommended, especially when a company needs one figure per year, as this figure is less affected by the fluctuations which may have occurred during previous months.

💡 **Good to know:** WageIndicator can state that - until October 2023 - most of the clients (MNEs and NGOs) focused on Typical Family Lower bound, Year Average. Since clients can count on an average year-on-year they can calculate cost for implementation of the Living Wage timely. From October 2023 onwards, WageIndicator expects its client to use the Living Wage Guidance.

## 6.5 National and regional Living Wages

WageIndicator provides Living Wage thresholds for countries and regions within countries. As detailed in Chapter 3, prices of consumer goods vary largely across and within countries. Prices vary particularly due to housing costs. Therefore, the Living Wage is available for geographically granulated areas.

WageIndicator estimates Living Wages for countries. If the number of observations allows, the estimates are specified for different regions within countries, classified according to the population of the largest settlement in that region. Four types of regions / clusters have been distinguished:

1. Metropolitan areas;

2. Large city areas;

3. Small city areas;

4. Rural areas.

One quarter of the data is primary data, three quarters is so-called cluster data. This means partly primary, partly from regions which look the same. If Living Wages are needed for more granular areas, WageIndicator can deliver such wages or can start collecting data for these areas.

Next to the cluster system - which is used as an alternative to cover regions where there is not enough primary data - WageIndicator also delivers urban and rural Living Wages at regional level. For the urban Living Wage, only data collected in towns or cities within the administrative division with more than 100,000 inhabitants are used, while the rural Living Wage is calculated for a region by using only data collected in locations where there are less than 100,000 inhabitants.

Since October 2023, WageIndicator has also experimented in calculating the urban and rural Living Wages in a more granular way, by identifying four levels: urban, peri-urban, rural and super-rural. The urban Living Wage is in this case calculated using only the data collected in cities with more than one million inhabitants and their suburbs, the peri-urban includes prices from towns with more than

100.000 and less than one million inhabitants, the rural uses data from small cities with a number of inhabitants going from 10.000 to 100.000, and the super-rural is calculated with prices collected in villages with less than 10.000 inhabitants and in more rural locations.

In conclusion, the larger the number of observations in a country, the greater the granularity possible. WageIndicator aims to include ever more national and regional benchmarks to its range. However, gathering Living Wage data for very small areas or villages is not recommended, specifically not when such data is not collected for neighbouring villages and therefore cannot be benchmarked across villages. Meanwhile, compliance with Living Wages over years is easier when the regions are more clear cut for many companies in the region.

## 6.6   Living Wages for Family types

As discussed in Chapter 4, WageIndicator calculates the Living Wage for several family types. Companies decide which Living Wage threshold they want to use. Up to now, most WageIndicator users use the Typical Family thresholds.

Since July 2023, WageIndicator also delivers the Single-Income-earner Living Wage, which assumes that only one person is working in the family. This is an option which is being used more often by companies in high-income countries.

In conclusion, reporting the share of the workforce paid below the Living Wage can be done with the WageIndicator Living Wage data collection. It allows companies, subsidiaries, and subcontractors to set standards and to monitor changes over time.

# 7 RECOGNITION

WageIndicator's Typical Family Living Wage estimate is recognised by IDH (the Sustainable Trade Initiative), and WageIndicator's Living Wage database is recommended B-Lab in their B-Corp Certification process to its members. The European Sustainability Reporting Standards also recommend using WageIndicator Living Wage estimates, among others.

## 7.1 Recognition of the WageIndicator Living Wage

IDH - The Sustainable Trade Initiative - operates in multiple sectors and environments in Africa, Asia and Latin America with over 600 companies, CSOs, financial institutions, producer organisations and governments towards sustainable production and trade. IDH acknowledges that many methodologies are available to calculate Living Wage benchmarks. In order to recognize robust Living Wage benchmark methodologies that are available in the market, IDH has developed a Benchmark Recognition Process.

IDH's recognition process is based on nine criteria. These criteria do not represent a new Living Wage estimate methodology but provide objective criteria for the minimum elements needed by a Living Wage benchmark methodology in order to be recognized by IDH. The WageIndicator Typical Family Methodology met all criteria, as follows:

- data on cost of living is collected through country/region-based surveys (online and face-to-face);

- typical national family sizes are derived from national birth-rate data;

- the cost of living includes the cost of a suitable diet, typical rent, children's education, healthcare, transport, clothes, water, phone, and other expenses;

- the number of wage earners in a family is derived from national employment data;

- the difference between net and gross pay is calculated using the latest national tax summaries available publicly;

- all data is disaggregated per country-defined regions as well as sorted into 4 regions of similar rural or urban density;

- funding is derived from grants and selling data, not leading to conflicts of interest;

- the process and criteria for collecting data are fully available online on the WageIndicator website;

- new benchmarks based on new data are published quarterly so there is no need for benchmarks to be updated regularly for inflation.

IDH substantiates its recommendation of WageIndicator as follows: '*Established in 2000, the WageIndicator Foundation aims for transparency. This means publishing free info about wages, Minimum Wages and Labour Law in national languages on national (popular) WageIndicator websites worldwide - now with operations in 196 countries. Data on prices is collected continuously through online surveys and face-to-face surveys. Data collections are overseen by a group of universities. The foundation should be contacted directly for access to benchmarks and can be contracted to create benchmarks where not currently available. Benchmarks are offered in a range; ultimately wages should always be above the lower range, which can be seen as a stepping stone to the higher range. WageIndicator also offers a variety of other global data sets.'*

IDH recognises next to WageIndicator other Living Wage Methods, such as:

- the Anker Reference Value Methodology

- the Full Fledged Anker Methodology both embedded in the Global Living Wage Coali-

tion.

- [Fair Wage NetWork Typical Family Methodology](#)

- [Living Wage for US Monthly Methodology](#)

- [New Foresight Living Wage Benchmark Methodology](#)

[B-Lab](#) recommends WageIndicator Living Wage Typical Family estimates as part of its B-Corp Certification process. B-Lab works with over 6.000 companies in 89 countries. Accordiong to B-Lab: "***Certified B Corporations are leaders in the global movement for an inclusive, equitable, and regenerative economy. Unlike other certifications for businesses, B Lab is unique in its ability to measure a company's entire social and environmental impact***" (Gouw, 2022).

## 7.2 Quality assurance

In 2022 and 2023 one of the larger consultancies in the field of logistics, quality, certifications and risk management, Peterson Control Union has undertaken an in-depth quality control check of the WageIndicator Living Wage data collection and Living Wage estimations. The outcome is positive. You can access [the report online.](#)

## 7.3 Assessments by users

A growing number of multinational enterprises and other international clients use the WageIndicator Living Wage data to explore if the remuneration in their own companies or in their supply chains meets the Living Wage threshold.

The WageIndicator data set is widely used. It has been sold to a growing number of global clients multinational enterprises, with locations in many countries like Unilever or Maersk, and hundreds of companies with just one or two locations and NGOs like FairWear Foundation, MSF (Médecins Sans Frontières) or SOS Children's Villages International.

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# ANNEXES

## 1.     Overview of Countries with a Living Wage Survey

https://wageindicator.org/salary/living-wage/wageindicator-cost-of-living-survey

## 2.     Cost of living app

https://costofliving.wageindicator.org/ (web application to be installed on phone / tablet)

## 3.     Cost-of- Living app - Instructions

https://wageindicator.org/Wageindicatorfoundation/publications/2016/dragstra-f-2016-handout-cost-of-living-application-user-guide-wageindicator-foundation-amsterdam

## 4.     Overview of availability of data for countries and regions (update each quarter)

https://wageindicator.org/salary/living-wage/list-of-country-region-living-wages-data-availability

## 5.     Playlist - YouTube of Living Wage data collection instructions

https://www.youtube.com/playlist?list=PLYHZaVWkSj5mWu_SZjfL6PIJ3H9Hc0tp

# 6.    Overview of countries with Living Wage estimates per year since 2014

| Country | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|---|---|---|
| Afghanistan | orange | orange | orange | orange | orange | orange | green | green | orange | orange |
| Albania | orange | orange | orange | orange | orange | orange | green | green | green | green |
| Algeria | orange | orange | orange | orange | orange | orange | orange | green | green | green |
| Andorra | orange | orange | orange | orange | orange | orange | orange | green | green | green |
| Angola | green | green | green | green | green | green | orange | green | green | green |
| Argentina | green | green | green | green | green | green | green | green | green | green |
| Armenia | orange | orange | orange | orange | orange | orange | green | green | green | green |
| Aruba | orange | orange | orange | orange | orange | orange | green | orange | orange | orange |
| Australia | green | green | green | green | green | green | green | green | green | green |
| Austria | orange | green | green | green | orange | green | green | green | green | green |
| Azerbaijan | green | green | green | green | green | green | green | green | green | green |
| Bahamas | orange | orange | orange | orange | orange | orange | orange | orange | green | green |
| Bahrain | orange | orange | orange | orange | orange | green | green | green | orange | green |
| Bangladesh | orange | orange | green | green | green | green | green | green | green | green |
| Barbados | orange | orange | orange | orange | orange | orange | orange | orange | green | green |
| Belarus | green | green | green | green | green | green | green | green | green | green |
| Belgium | green | green | green | green | orange | green | green | green | green | green |
| Belize | orange | orange | orange | orange | orange | orange | orange | green | orange | orange |
| Benin | orange | green | orange | orange | orange | orange | orange | orange | green | green |
| Bermuda | orange | orange | orange | orange | orange | orange | green | orange | orange | orange |
| Bolivia | orange | orange | orange | orange | orange | orange | orange | green | green | green |
| Bosnia and Herzegovina | orange | orange | orange | orange | orange | orange | orange | green | green | green |
| Botswana | orange | orange | green | orange | orange | green | green | green | orange | green |
| Brazil | green | green | green | green | green | green | green | green | green | green |
| Bulgaria | green | green | green | green | green | green | green | green | green | green |
| Burkina Faso | orange | orange | orange | orange | orange | green | green | green | green | green |
| Burundi | orange | orange | orange | green | orange | orange | green | green | green | green |
| Cambodia | orange | orange | green | green | green | green | orange | green | green | green |
| Cameroon | orange | orange | orange | orange | orange | orange | orange | orange | orange | orange |
| Canada | orange | green | green | orange | green | green | green | green | green | green |
| Chad | orange | orange | orange | orange | orange | orange | green | orange | orange | green |
| Chile | green | green | green | green | green | green | green | green | green | green |
| China | orange | orange | orange | orange | orange | green | green | green | green | green |
| Colombia | green | green | green | green | green | green | green | green | green | green |
| Congo, Dem. Rep. | orange | orange | orange | orange | orange | orange | orange | orange | green | green |
| Costa Rica | green | green | green | green | green | green | green | green | green | green |
| Côte d'Ivoire | orange | orange | orange | orange | orange | orange | green | green | green | green |
| Croatia | orange | orange | orange | orange | orange | green | green | green | green | green |
| Curaçao | orange | orange | orange | orange | orange | orange | green | orange | orange | orange |
| Cyprus | orange | orange | orange | orange | orange | green | green | green | green | green |
| Czech Republic | green | green | green | green | green | green | green | green | green | green |
| Denmark | orange | orange | orange | orange | orange | green | green | green | green | green |

| Country | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|---|---|---|
| Dominican Republic | Orange | Orange | Orange | Orange | Orange | Orange | Green | Green | Green | Green |
| Ecuador | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Green | Green | Green |
| Egypt | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| El Salvador | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| Equatorial Guinea | Orange | Orange | Orange | Orange | Orange | Orange | Green | Orange | Orange | Orange |
| Estonia | Orange | Orange | Orange | Orange | Orange | Green | Green | Green | Green | Green |
| Ethiopia | Green | Green | Orange | Green | Green | Green | Green | Green | Green | Green |
| Finland | Green | Green | Green | Green | Orange | Green | Green | Green | Green | Green |
| France | Orange | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| Georgia | Orange | Orange | Orange | Orange | Orange | Orange | Green | Green | Green | Green |
| Germany | Orange | Orange | Green | Green | Green | Green | Green | Green | Green | Green |
| Ghana | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| Greece | Orange | Orange | Green | Green | Green | Green | Green | Green | Green | Green |
| Guatemala | Green | Green | Green | Green | Green | Green | Orange | Green | Green | Green |
| Guinea | Orange | Orange | Orange | Orange | Orange | Orange | Green | Orange | Orange | Green |
| Honduras | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| Hong Kong | Orange | Orange | Orange | Orange | Orange | Orange | Green | Green | Green | Green |
| Hungary | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| Iceland | Orange | Orange | Orange | Orange | Orange | Orange | Green | Orange | Orange | Orange |
| India | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| Indonesia | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| Iran | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Green | Green | Green |
| Iraq | Orange | Orange | Orange | Orange | Orange | Orange | Green | Green | Green | Green |
| Ireland | Orange | Orange | Orange | Orange | Orange | Green | Green | Green | Green | Green |
| Israel | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Green | Green | Green |
| Italy | Green | Green | Green | Green | Orange | Green | Green | Green | Green | Green |
| Jamaica | Orange | Orange | Orange | Orange | Orange | Orange | Green | Green | Green | Green |
| Japan | Orange | Orange | Orange | Orange | Orange | Orange | Green | Green | Green | Green |
| Jordan | Orange | Orange | Orange | Orange | Orange | Orange | Green | Green | Green | Green |
| Kazakhstan | Green | Green | Green | Green | Orange | Green | Green | Green | Green | Green |
| Kenya | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| Kosovo | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Green | Orange | Green |
| Kuwait | Orange | Orange | Orange | Orange | Orange | Orange | Green | Green | Green | Green |
| Kyrgyzstan | Orange | Orange | Orange | Orange | Orange | Orange | Green | Green | Green | Green |
| Laos | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Green | Green |
| Latvia | Orange | Orange | Orange | Orange | Orange | Green | Green | Green | Green | Green |
| Lebanon | Orange | Orange | Orange | Orange | Orange | Orange | Green | Green | Green | Green |
| Libya | Orange | Orange | Orange | Orange | Orange | Orange | Green | Green | Orange | Orange |
| Lithuania | Orange | Orange | Orange | Orange | Orange | Green | Green | Green | Green | Green |
| Luxembourg | Orange | Orange | Orange | Orange | Orange | Green | Green | Green | Green | Green |
| Macao | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Green | Orange | Orange |
| Madagascar | Green | Green | Green | Green | Green | Green | Orange | Green | Green | Green |
| Malawi | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Green | Green |
| Malaysia | Orange | Orange | Orange | Orange | Orange | Green | Green | Green | Green | Green |

| Country | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|---|---|---|
| Mali | Orange | Orange | Orange | Orange | Orange | Orange | Green | Orange | Orange | Green |
| Malta | Orange | Orange | Orange | Orange | Orange | Green | Green | Green | Orange | Orange |
| Mauritius | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Green | Green | Green |
| Mexico | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| Moldova | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Green | Green | Green |
| Montenegro | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Green | Green | Green |
| Morocco | Orange | Orange | Orange | Orange | Orange | Orange | Green | Green | Green | Green |
| Mozambique | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| Myanmar | Orange | Orange | Orange | Orange | Orange | Green | Green | Green | Green | Green |
| Namibia | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Green | Green | Green |
| Nepal | Orange | Orange | Orange | Orange | Orange | Orange | Green | Green | Orange | Green |
| Netherlands | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| New Zealand | Orange | Orange | Orange | Orange | Orange | Orange | Green | Green | Green | Green |
| Nicaragua | Green | Green | Green | Green | Green | Green | Green | Orange | Orange | Green |
| Niger | Orange | Green | Green | Green | Green | Green | Orange | Green | Green | Green |
| Nigeria | Orange | Orange | Green | Green | Orange | Green | Green | Green | Green | Green |
| North Macedonia | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Green | Green | Green |
| Norway | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Green | Green | Green |
| Oman | Orange | Orange | Orange | Orange | Orange | Orange | Green | Green | Green | Green |
| Pakistan | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| Palestinian Territories | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Green | Orange | Orange |
| Panama | Orange | Orange | Orange | Orange | Orange | Orange | Green | Green | Green | Green |
| Paraguay | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| Peru | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| Philippines | Orange | Orange | Orange | Orange | Orange | Orange | Green | Green | Green | Green |
| Poland | Orange | Orange | Green | Orange | Orange | Green | Green | Green | Green | Green |
| Portugal | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| Puerto Rico | Orange | Orange | Orange | Orange | Orange | Orange | Green | Green | Green | Green |
| Qatar | Orange | Orange | Orange | Orange | Orange | Orange | Green | Green | Green | Green |
| Romania | Orange | Orange | Green | Green | Green | Green | Green | Green | Green | Green |
| Russian Federation | Green | Orange | Green | Green | Green | Green | Green | Green | Green | Green |
| Rwanda | Green | Green | Orange | Green | Orange | Green | Orange | Orange | Green | Green |
| Saudi Arabia | Orange | Orange | Orange | Orange | Orange | Orange | Green | Green | Green | Green |
| Senegal | Green | Green | Green | Green | Green | Green | Orange | Orange | Green | Green |
| Serbia | Orange | Orange | Orange | Orange | Orange | Orange | Green | Green | Green | Green |
| Sierra Leone | Orange | Orange | Orange | Orange | Orange | Orange | Green | Orange | Orange | Green |
| Singapore | Orange | Orange | Orange | Orange | Orange | Orange | Green | Green | Green | Green |
| Slovakia | Green | Orange | Green | Green | Green | Green | Green | Green | Green | Green |
| Slovenia | Orange | Orange | Orange | Orange | Orange | Green | Green | Green | Green | Green |
| Somalia | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Green | Orange | Orange |
| South Africa | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| South Korea | Orange | Orange | Orange | Orange | Orange | Orange | Orange | Green | Green | Green |
| Spain | Green | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| Sri Lanka | Orange | Green | Green | Green | Green | Green | Green | Green | Green | Green |
| Sudan | Orange | Orange | Orange | Orange | Orange | Green | Orange | Orange | Orange | |

Legend: O = orange, G = green

| Country | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|---|---|---|
| Suriname | O | O | O | O | O | O | O | G | O | O |
| Sweden | O | O | G | G | O | G | G | G | G | G |
| Switzerland | O | O | O | O | O | O | G | G | G | G |
| Taiwan | O | O | O | O | O | O | O | G | G | G |
| Tanzania | O | O | O | G | O | G | O | G | G | G |
| Thailand | O | O | O | O | O | O | G | G | G | G |
| Togo | O | G | O | O | O | O | O | O | O | G |
| Trinidad and Tobago | O | O | O | O | O | O | G | O | O | G |
| Tunisia | O | O | O | O | O | O | G | G | G | G |
| Turkey | O | O | O | G | G | G | G | G | G | G |
| Uganda | O | O | G | G | O | G | G | G | G | G |
| Ukraine | G | G | G | G | G | G | G | G | G | G |
| United Arab Emirates | O | O | O | O | O | O | G | G | G | G |
| United Kingdom | G | G | G | G | G | G | G | G | G | G |
| United States of America | G | G | G | G | G | G | G | G | G | G |
| Uruguay | O | O | O | O | O | O | G | G | G | G |
| Venezuela | O | O | O | O | O | O | G | O | O | G |
| Vietnam | G | G | G | G | G | G | G | G | G | G |
| Yemen | O | O | O | O | O | O | G | G | O | O |
| Zambia | G | G | G | G | O | G | O | G | G | G |
| Zimbabwe | O | G | G | G | O | G | O | G | O | G |
| | | | | | | | | | | |
| Total countries with an estimate per year | 45 | 48 | 57 | 64 | 48 | 75 | 114 | 130 | 124 | 137 |
| Year | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |

## 7. WageIndicator events related to Living Wages 2021-2023

| Date | Name of Meeting | Location | Relation to Project(s), organisations |
|---|---|---|---|
| 2023 - 09 - 28 | Networking Session UN Global Compact | Stockholm, Sweden | United Nations Global Compact |
| 2023 - 09 - 19 | Making Living Wage a Reality | New York, USA | United Nations Global Compact |
| 2023 - 09 - 19 | UNGA Celebration the global living wage movement | New York, USA | Linklaters, WageMap and the Global Living Wage Affiliate Network |
| 2023 - 09 - 14 | SDGS in Brazil - Living Wage and mind in focus | New York, USA | United Nations Global Compact in Brazil |
| 2023 - 04 - 05 | Roundtable: Living Wages and Dutch Business | The Hague, The Netherlands | UN Global Compact Netherlands |
| 2023 – 02 – 15 | OECD Side Session – OECD Forum on Due Diligence in the Garment and Footwear Sector | Online | How Decent is My Factory? Phase Two and Living Wages in Flowers & Garment |

| | | | |
|---|---|---|---|
| 2023 – 02 – 09 | [Living Wages: From the Lab to Global Impact](#) | Online | CELSI & WageIndicator team |
| 2023 – 02 – 03 | [Cost of Living – Data Collectors](#) | Online | Internal WageIndicator team |
| 2023 – 01 – 31 | [WageIndicator's Living Wage Database at the World Economic Forum](#) | Online | World Economic Forum |
| 2022 - 07 – 4-14 | [FLAME Summer School, Cost of Living and wages](#) | Pune, India / Online | [All Interns WageIndicator Foundation](#) |
| 2022 - 04 - 29 | [WageIndicator Conference Part 1 Our Work](#) | Online | [WageIndicator Foundation - Living Wage team](#) |
| 2022 - 01 - 28 | [The Life Behind the Cost of Living Data Collection of WageIndicator](#) | Online | [All Interns WageIndicator Foundation](#) |
| 2021 - 11 - 09 | [OECD Living Wage Workshop](#) | Online | [WageIndicator Foundation - Living Wage team](#) |
| 2021 - 07 - 12 | [Global Cost of Living Data Collection: Insights and Challenges from WageIndicator's Living Wage Team](#) | Online | [Interns FLAME University](#) |
| 2021 - 06 - 24 | [Decent Wage Bangladesh - Improving Industries: Construction, Garment, Leather, Tea](#) | Online | [Decent Wage Bangladesh, Phase 1](#) |
| 2021 - 05 - 27 | [WageIndicator Break-Out Room: Living Wage is the Linking Pin of at least 5 SGDs.](#) | Rotterdam School of Management, Erasmus University | [WageIndicator Foundation - Living Wage team](#) |
| [2021 - 01 - 15](#) | [The Technique Behind the World of Indexes and Databases: About the WageIndicator Labour Rights Index and Minimum Wage Database](#) | Online | To 196 countries, related to INGRID 2. Organised by CELSI, WageIndicator, Centre for Labour Research |

## 8. Value labels of the item id in the Cost-of-Living survey

| item_id | item_name |
|---|---|
| 8 | Milk - regular, pasteurized and prepackaged |
| 9 | Loaf of fresh bread - white / brown |
| 203 | Flat bread or pita |
| 222 | Rice |
| 301 | Bulgur, Couscous |
| 119 | Barley |
| 12 | Local Cheese |
| 258 | Cream |
| 19 | Chicken |
| 208 | Bovine Meat (Beef) |
| 209 | Mutton, lamb and goat meat |

| item_id | item_name |
|---|---|
| 210 | Pork Meat |
| 211 | Other poultry meat (duck, goose, turkey) |
| 302 | Dried Fish |
| 223 | Marine fish - fresh, frozen, canned |
| 224 | Freshwater fish - fresh, frozen or canned |
| 118 | Prawns, shrimps, crayfish, crabs - fresh, frozen or canned |
| 215 | Bananas |
| 110 | Apples |
| 212 | Lemons |
| 111 | Orange or other citrus |
| 303 | Pineapples |
| 304 | Mango |
| 317 | Berries |
| 318 | Melon |
| 319 | Watermelon |
| 117 | Peach |
| 116 | Tomato |
| 305 | Bell pepper or sweet pepper |
| 306 | Carrots |
| 307 | Kale |
| 308 | Spinach or other leafy green vegetables |
| 309 | Cabbage |
| 226 | Onions |
| 112 | Potato |
| 216 | Plantains |
| 219 | Sweet Potatoes |
| 218 | Yams |
| 242 | Starchy roots (beet, celeriac, radish) |
| 243 | Cassava / Manioc / Yuca |
| 13 | Bottle of water |
| 11 | Eggs |
| 202 | Tofu |
| 217 | Soyabeans |
| 201 | Yogurt |
| 204 | Beans - dry |
| 205 | Peas - dry |
| 310 | Lentils - dry |
| 257 | Chickpeas or other pulses - dry |
| 206 | Pasta |
| 311 | Cereal flour |
| 120 | Barley flour |
| 254 | Coffee |
| 227 | Tea |
| 228 | Groundnuts or shelled equivalent |

| item_id | item_name |
|---|---|
| 312 | Sunflowerseed |
| 231 | Olives |
| 313 | Salt |
| 233 | Sugar or raw equivalent |
| 241 | Breakfast cereals |
| 236 | Maize (corn) flour |
| 234 | Butter |
| 199 | Margarine |
| 314 | Honey |
| 315 | Sunflowerseed oil |
| 316 | Regular cooking oil |
| 10 | Coconuts - Including copra |
| 21 | Cocoa beans or chocolate |
| 22 | Squid, octopus, cuttlefish |
| 23 | Clams, mussels and other molluscs |
| 34 | Milk powder |
| 501 | Did you collect the prices from an online shop? |
| 18 | Trip to the nearest city - one way |
| 20 | Monthly pass (for the use of public passenger transportation in urban places) |
| 24 | Gasoline |
| 503 | Did you collect the prices from the Internet? |
| housing_intro | Please make sure you report costs of adequate housing. Adequate housing is NOT located in a slum or in an unsafe area. It has permanent walls |
| 320 | How much is the monthly housing cost of an apartment for one person (one room |
| housing_intro_ one_person | Housing cost includes the payment for the following services (indicate all that applies) |
| 321 | Rent (applies to tenants only) |
| 322 | Mortgage payments (applies to owners only) |
| 323 | Energy - for heating/cooling, cooking, lights, etc. |
| 384 | Energy cost per month |
| 325 | Water |
| 386 | Water cost per month |
| 326 | Garbage collection |
| 387 | Garbage collection cost per month |
| 327 | Routine maintenance and repairs |
| 329 | Taxes on dwelling |
| 330 | Internet connection |
| 340 | How much is the monthly housing cost for an apartment for a family (two bedrooms |
| housing_intro_ family | Housing cost includes the payment for the following services (indicate all that applies) |
| 341 | Rent (applies to tenants only) |
| 342 | Mortgage payments (applies to owners only) |
| 343 | Energy - for heating/cooling, cooking, lights, etc. |
| 388 | Energy cost per month |
| 345 | Water |
| 390 | Water cost per month |

| item_id | item_name |
|---------|-----------|
| 346 | Garbage collection |
| 391 | Garbage collection cost per month |
| 347 | Routine maintenance and repairs |
| 349 | Taxes on dwelling |
| 350 | Internet connection |
| 360 | How much is the monthly housing cost for a single room (in an apartment sharing kitchen/bathroom with others) in your city/region? |
| housing_intro_shared_room | Housing cost includes the payment for the following services (indicate all that applies) |
| 361 | Rent (applies to tenants only) |
| 362 | Mortgage payments (applies to owners only) |
| 363 | Energy - for heating/cooling, cooking, lights, etc. |
| 392 | Energy cost per month |
| 365 | Water |
| 394 | Water cost per month |
| 366 | Garbage collection |
| 395 | Garbage collection cost per month |
| 367 | Routine maintenance and repairs |
| 369 | Taxes on dwelling |
| 370 | Internet connection |
| 502 | Did you collect the prices from the Internet? |
| expenses_intro | Estimate what are the minimal monthly expenses of a family of 2 adults and 2 chidren on following items (please be as accurate as possible) |
| 249 | Food |
| 381 | Drinking water |
| 250 | Acceptable housing |
| 382 | Transportation (assuming the use of public transportation) |
| 252 | Basic personal and health care (personal care products and small pharmacy expenses) |
| 251 | Education (assuming that children attend public school) |

# 9. Value label of the unit id in the Cost-of-Living data set

| item_id | item_name |
|---------|-----------|
| 383 | Clothing and footwear |
| 253 | Other essential expenses |
| 406 | Car - petrol/gas/hybrid - economy |
| 407 | Car - electric - economy |
| 409 | Car insurance - all risks covered |
| 408 | Car insurance - basic |
| 414 | Motorbike / scooter |
| 411 | Motorbike / scooter insurance - all risks covered |
| 410 | Motorbike / scooter insurance - basic |
| 412 | Bicycle - normal |
| 413 | Bicycle - electric |
| 404 | Smartphone |

| item_id | item_name |
|---------|-----------|
| 405 | Laptop |
| 401 | Monthly mobile data plan |
| 402 | Monthly wifi plan |
| 415 | Bike helmet |
| 416 | Motorbike helmet |
| 417 | Winter waterproof jacket |
| 418 | Shirt |
| 419 | T-shirt |
| 420 | Pants |
| 421 | Jacket |
| 422 | Power bank for mobile phone |
| 504 | Did you collect the prices from the Internet? |
| 601 | Is there a free healthcare system in the country? |
| 602 | Monthly cost of the cheapest basic health insurance |
| 603 | Monthly cost of the cheapest basic health insurance |
| 604 | Period products (pads |
| 605 | Birth-control products (condom |
| 606 | Personal care products (hand soap |
| 607 | Household cleaning products (laundry detergent |
| 608 | Toothpaste |
| 609 | Toothbrush |
| 610 | Soap |
| 611 | Shampoo |
| 612 | Moisturizer |
| 613 | Toilet paper |
| 614 | Hand wash |
| 615 | Body wash |
| 616 | Cotton swabs |
| 617 | Shaving cream/foam |
| 618 | Razor |
| 619 | Laundry detergent |
| 620 | Household cleaning product |
| 621 | Dishwashing detergent |
| 622 | Sweeper |
| 623 | Sponge |
| 505 | Did you collect the prices from an online shop? |
| 41 | Cinema, theatre, music |
| 43 | Bar, restaurant |
| 45 | Netflix (or equivalent) subscription |
| 46 | Books, newspapers, magazines |
| 47 | Spending time with friends, family |
| 48 | Festivals, religious celebrations |
| 49 | Weddings, funerals, baptisms |
| 70 | When you go to work, you primarily use: |
| 248 | School fees (for public schools) - per child, per school year |

| item_id | item_name |
|---------|-----------|
| 259 | Books - per child, per school year |
| 260 | Uniform - per child, per school year |

*Note: Item ids 501, 502, 503, 504 and 505 relate to a question for data collectors who find prices online / webshops. Item ids 406-422 relate to data collection for occupational groups in the platform industry. Calculations for Living Wages plus occupational related costs are done for a few platform clients only.*

*Source: WageIndicator Foundation 2023*


# 9.    Value label of the unit id in the Cost-of-Living data set

| ID | Master |
|----|--------|
| 1 | 1 litre |
| 2 | 1.5 litres |
| 3 | 2 litres |
| 4 | 5 litres |
| 5 | 75 cl |
| 6 | 0.5 litre |
| 7 | 5 dl |
| 8 | 50 cl |
| 9 | 500 ml |
| 10 | 0.33 litre |
| 11 | 33 cl |
| 12 | 3 dl |
| 13 | 30 cl |
| 14 | 250 ml |
| 15 | 25 cl |
| 16 | 200 ml |
| 17 | 20 cl |
| 18 | 2 dl |
| 19 | 100 ml |
| 20 | 10 cl |
| 21 | 1 dl |
| 22 | 1 UK gallon |
| 23 | 1 US gallon |
| 24 | 1 oz |
| 25 | 12 oz |
| 26 | 16 oz |
| 27 | 20 oz |
| 28 | 1 UK pint |
| 29 | 0.5 UK pint |
| 30 | 1 US pint |
| 31 | 0.5 US pint |
| 32 | 1 kg |
| 33 | 2 kg |
| 34 | 5 kg |
| 35 | 500 g |
| 36 | 250 g |
| 37 | 125 g |
| 38 | 100 g |
| 39 | 1 pound |
| 40 | 1 piece |
| 41 | 1 piece (125 ml) |
| 42 | 1 head (ca 500g) |

| ID | Master |
|---|---|
| 43 | 10 slices |
| 44 | 6 |
| 45 | 10 |
| 46 | 12 |
| 47 | 30 |
| 48 | 1 package (100 bags) |
| 49 | 1 viss |
| 50 | 1 pyi |
| 51 | 1 cluster |
| 52 | 1 bunch tied in a strip |
| 53 | small pack for 1 cup |
| 54 | 10 ticals |
| 55 | 1 bottle (1 litre) |
| 56 | 1 bottle (1.5 litre) |
| 57 | 1 bottle (2 litres) |
| 58 | new |
| 59 | 2 years old |
| 60 | 5 years old or more |
| 61 | per month |
| 62 | per year |
| 63 | per week |
| 64 | 0.5 pounds |
| 65 | 1 mazo |
| 66 | 1 riastra |
| 67 | 1 pata |
| 68 | 800 g |
| 70 | I don't spend money on this activity |
| 71 | public transport |
| 72 | taxi (car) |
| 73 | mototaxi/rickshaw |
| 74 | own car |
| 75 | own motorbike/moped/scooter |
| 76 | own bicycle |
| 77 | I go by foot |
| 80 | ah-5000 |
| 81 | ah-10000 |
| 82 | ah-20000 |
| 83 | 75 ml |
| 84 | 125 ml |
| 85 | 1 |
| 86 | 2 |
| 87 | 5 |
| 88 | 90 g |
| 89 | 300 ml |
| 90 | 150 ml |
| 91 | 400 ml |
| 92 | 4 |
| 93 | 20 |
| 94 | 750 ml |
| 95 | 160 |
| 96 | 200 |
| 97 | 300 |
| 98 | 900 ml |
| 99 | 600 ml |
| 101 | Yes |
| 102 | No |
| -99 | -- |

## 10. Variables in the Cost-of-Living dataset

| Variable | Variable label | level |
|---|---|---|
| date | Date of survey (yyyymmdd) | Scale |
| colapp | Is colapp (F2F) survey - Y/N | Nominal |
| key | Server generated key | Nominal |
| locale | Language and country | Nominal |
| currency | Local currency | Nominal |
| city | Region home address - detailed geo info (REGIHOM2) | Scale |
| item_id | Item ID, labelled with item name | Scale |
| unit_id | ID of the unit to which the item price relates | Scale |
| unit_size | Size of the unit (in basic metric units) to which the item price relates | Scale |
| value | Item value/price in local currency | Scale |

*Source: WageIndicator Foundation 2023*

## 11. Examples of UN Food and Agriculture Organisation (FAO) food balance sheets for Ghana and Vietnam, 2019

| Item | Ghana | | | Vietnam | | |
|---|---|---|---|---|---|---|
| | Food supply (kcal/capital/day) | Protein supply quantity (g/capita/day) | Fat supply quantity (g/capita/day) | Food supply (kcal/capita/day) | Protein supply quantity (g/capita/day) | Fat supply quantity (g/capita/day) |
| Wheat and products | 124 | 3.45 | 0.49 | 112 | 3.28 | 0.34 |
| Maize and products | 226 | 5.95 | 2.43 | 145 | 3.55 | 1.3 |
| Oats | 2 | 0.06 | 0.03 | 1 | 0.05 | 0.02 |
| Millet and products | 38 | 0.98 | 0.41 | 0 | 0 | 0 |
| Sorghum and products | 61 | 1.9 | 0.57 | 0 | 0 | 0 |
| Cereals, Other | 1 | 0.04 | 0 | 0 | 0 | 0 |
| Potatoes and products | 1 | 0.01 | 0 | 7 | 0.17 | 0.01 |
| Cassava and products | 799 | 6.49 | 0.78 | 23 | 0.16 | 0.07 |
| Sweet potatoes | 10 | 0.08 | 0.02 | 12 | 0.12 | 0.04 |
| Roots, Other | 79 | 1.38 | 0.09 | 0 | 0 | 0 |
| Yams | 418 | 6.69 | 0.84 | 0 | 0 | 0 |
| Sugar cane | 4 | 0.04 | 0 | 7 | 0.02 | 0.05 |
| Sugar (Raw Equivalent) | 108 | 0 | 0 | 94 | 0 | 0 |
| Sweeteners, Other | 5 | 0 | 0 | 10 | 0 | 0 |
| Beans | 57 | 3.72 | 0.29 | 20 | 1.29 | 0.08 |
| Pulses, Other and products | 7 | 0.48 | 0.04 | 14 | 0.89 | 0.08 |
| Nuts and products | 7 | 0.19 | 0.07 | 30 | 0.81 | 2.47 |
| Groundnuts | 80 | 3.39 | 6.54 | 35 | 1.48 | 2.89 |

| Item | Ghana | | | Vietnam | | |
|---|---|---|---|---|---|---|
| | Food supply (kcal/capital/day) | Protein supply quantity (g/capita/day) | Fat supply quantity (g/capita/day) | Food supply (kcal/capita/day) | Protein supply quantity (g/capita/day) | Fat supply quantity (g/capita/day) |
| Soyabeans | 0 | 0.01 | 0 | 61 | 5.27 | 2.35 |
| Coconuts - incl. copra | 25 | 0.24 | 2.47 | 15 | 0.15 | 1.33 |
| Oil crops, Other | 4 | 0.04 | 0.3 | 0 | 0 | 0 |
| Soy bean Oil | 3 | 0 | 0.33 | 66 | 0 | 7.52 |
| Groundnut Oil | 57 | 0 | 6.4 | 6 | 0 | 0.73 |
| Sunflower seed Oil | 2 | 0 | 0.19 | 1 | 0 | 0.15 |
| Rape and Mustard Oil | 0 | 0 | 0.04 | 1 | 0 | 0.09 |
| Palm kernel Oil | 18 | 0 | 2.05 | 0 | 0 | 0.01 |
| Palm Oil | 50 | 0 | 5.69 | 0 | 0 | 0 |
| Coconut Oil | 6 | 0 | 0.66 | 24 | 0 | 2.72 |
| Sesame seed Oil | 0 | 0 | 0 | 1 | 0 | 0.08 |
| Olive Oil | 1 | 0 | 0.06 | 0 | 0 | 0.03 |
| Rice bran Oil | 0 | 0 | 0 | 3 | 0 | 0.32 |
| Maize Germ Oil | 0 | 0 | 0 | 1 | 0 | 0.07 |
| Oil crops Oil, Other | 20 | 0.01 | 2.3 | 5 | 0 | 0.56 |
| Tomatoes and products | 11 | 0.53 | 0.11 | 0 | 0.01 | 0 |
| Onions | 8 | 0.22 | 0.02 | 5 | 0.18 | 0.02 |
| Vegetables, other | 7 | 0.33 | 0.06 | 101 | 6.29 | 0.94 |
| Oranges, Mandarines | 19 | 0.25 | 0.19 | 7 | 0.13 | 0.03 |
| Grapefruit and products | 0 | 0 | 0 | 4 | 0.07 | 0.02 |
| Bananas | 0 | 0 | 0 | 31 | 0.39 | 0.1 |
| Plantains | 358 | 3.22 | 0.8 | 0 | 0 | 0 |
| Apples and products | 1 | 0 | 0 | 1 | 0.01 | 0.01 |
| Pineapples and products | 17 | 0.16 | 0.05 | 5 | 0.07 | 0.03 |
| Grapes and products (excl. wine) | 0 | 0 | 0 | 1 | 0.01 | 0 |
| Fruits, other | 6 | 0.06 | 0.06 | 38 | 0.41 | 0.32 |
| Cocoa Beans and products | 0 | 0 | 0 | 1 | 0.02 | 0.06 |
| Tea (including mate) | 0 | 0.02 | 0 | 1 | 0.31 | 0 |
| Pepper | 1 | 0.04 | 0.01 | 0 | 0.01 | 0 |
| Pimento | 30 | 1.32 | 0.89 | 8 | 0.33 | 0.35 |
| Spices, Other | 0 | 0 | 0.01 | 1 | 0.01 | 0.01 |

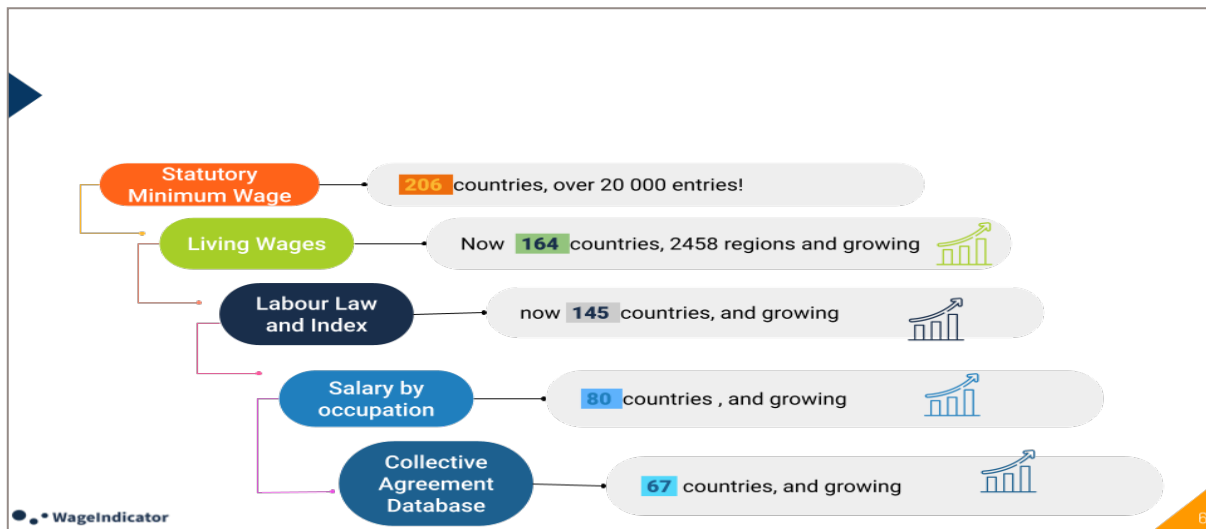| Item | Ghana | | | Vietnam | | |
|------|-------------------------------|-----------------------------------------|-------------------------------------|------------------------------|-----------------------------------------|-------------------------------------|
| | Food supply (kcal/capital/day) | Protein supply quantity (g/capita/day) | Fat supply quantity (g/capita/day) | Food supply (kcal/capita/day) | Protein supply quantity (g/capita/day) | Fat supply quantity (g/capita/day) |
| Wine | 1 | 0 | 0 | 0 | 0 | 0 |
| Beer | 11 | 0.13 | 0 | 35 | 0.36 | 0 |
| Beverages, Fermented | 9 | 0.13 | 0 | 0 | 0 | 0 |
| Beverages, Alcoholic | 7 | 0 | 0 | 19 | 0.04 | 0 |
| Infant food | 0 | 0 | 0 | 2 | 0.09 | 0.02 |
| Bovine Meat | 6 | 0.49 | 0.39 | 27 | 2.04 | 2.02 |
| Mutton & Goat Meat | 6 | 0.63 | 0.38 | 1 | 0.06 | 0.04 |
| Pig meat | 7 | 0.31 | 0.67 | 374 | 11.61 | 35.96 |
| Poultry Meat | 16 | 2.25 | 0.72 | 48 | 4.3 | 3.34 |
| Meat, Other | 9 | 1.56 | 0.22 | 0 | 0.01 | 0 |
| Offal's, Edible | 3 | 0.5 | 0.11 | 16 | 2.58 | 0.47 |
| Fats, Animals, Raw | 7 | 0.02 | 0.8 | 41 | 0.26 | 4.42 |
| Butter, Ghee | 1 | 0 | 0.17 | 3 | 0 | 0.29 |
| Eggs | 4 | 0.36 | 0.29 | 14 | 1.14 | 1.01 |
| Freshwater Fish | 9 | 1.48 | 0.34 | 25 | 4.03 | 0.92 |
| Demersal Fish | 2 | 0.41 | 0.03 | 0 | 0.05 | 0 |
| Pelagic Fish | 40 | 5.81 | 1.73 | 5 | 0.73 | 0.21 |
| Marine Fish, Other | 1 | 0.13 | 0.02 | 15 | 2.56 | 0.44 |
| Crustaceans | 0 | 0 | 0 | 8 | 1.58 | 0.08 |
| Cephalopods | 0 | 0.02 | 0 | 5 | 1.02 | 0.06 |
| Molluscs, Other | 0 | 0 | 0 | 1 | 0.17 | 0.02 |
| Rice and products | 288 | 5.45 | 0.48 | 1366 | 27.84 | 4.52 |
| Milk - Excluding Butter | 11 | 0.64 | 0.28 | 34 | 2.23 | 1.08 |

*Source: WageIndicator Foundation 2023*

## 12.    The list of regions in the region API

Please find the list of regions in WageIndicator's Region API here: https://wageindicator.org/Wageindicatorfoundation/researchlab/wageindicator-region-api

## 13.  Interconnected databases designed, owned, maintained and updated by WageIndicator Foundation



*Source: WageIndicator Foundation 2023*