WageIndicator

LIVING WAGES WORLDWIDE

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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 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.

WageIndicator Foundation was established in 2003. By 2022 the foundation 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 20 persons and some 100 associates - specialists in wages, labour law, industrial relations, data science, data collection, statistics - from all over the world. The IT team is independant. On a yearly basis, WageIndicator Foundation offers 100 internships to students from different universities. FLAME University in Pune, India, plays a key role in the intern program.

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Bibliographical information

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1. 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 such a person and his or her family an existence in dignity. 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, no year). In response to this societal pressure, 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 slightly over time and across countries, a common underlying concept does exist. Living Wage denotes the minimum income that is necessary for an employed person to meet his or her 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 decent wage.

Figure 1: Definitions of a decent wage

- The United Nations states that the Living Wage is a human right, as since 1919 defined by the ILO: the ultimate objective "is to ensure to workers a Minimum Wage that will provide a satisfactory standard of living to them and their families". In many countries the Minimum Wage is not a Living Wage, and workers who earn the Minimum Wage cannot afford a decent living standard.
- 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: "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".
- Asia Floor Wage proposes a wage for garment workers across Asia that would be enough for workers to live on.
- 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.
- The campaign in Vancouver defines Living Wage on the principle that full time work should provide families with a basic level of economic security, not keep them in poverty.

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. 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 paper aims to contribute to a solid foundation for such a global, unified methodological framework. In 2014 WageIndicator proposed to calculate country-level Living Wages for a large number of countries with these characteristics (Guzi and Kahanec, 2014):

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

WageIndicator is a Netherlands-based NGO that operates frequently visited websites with job-related content in the national language(s) in 196 countries (Figure 2). In 2001 WageIndicator launched its first website in the Netherlands, from 2004 onwards websites were launched in Europe and after 2006 outside Europe. All websites provide easily accessible and findable information related to the national labour laws, Collective Agreements, Minimum Wages, Living Wages, wages of celebrities. The websites have a salary check tool. Web visitors are invited to complete a cost-of-living or salary survey. In the month of January 2022 the website received 3.2 million unique visitors.

Since its start, 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 aim to be suitable for worldwide data collection, challenging the surveys and the web pages to serve a range of languages. However this doesn't mean all data was and is collected via the web. In at least a quarter of the countries data is collected face to face - but sent whenever there is wi-fi to the central database.

The present paper deals with the constituting elements in the Cost-of-Living data collection, the calculation of the Living Wages, and the adjacent benchmarks.

WageIndicator Foundation was established

Figure 2: Map of WageIndicator countries and their URLs

Source: WageIndicator Foundation

in 2003. By 2022 the foundation has offices in Amsterdam (HQ), Bratislava, Buenos Aires, Cairo, Cape Town, Jakarta, Islamabad, Maputo, Pune, and Venice. The foundation has a core team of 20 persons and some 100 associates - specialists in wages, labour law, industrial relations, data science, data collection, statistics, - from all over the world. The IT team is independant. On a yearly basis, WageIndicator Foundation offers approx. 100 internships to students from different universities. FLAME University in Pune, India, plays a key role in the intern program.

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). 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).

Since 2013, the data collection has advanced successfully, 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 could be welcomed

in 2018. Since then, WageIndicator has sold its regional Living Wages to a growing number of clients, both multinational enterprises and NGOs. WageIndicator applies the principle that the data collection in the Cost-of-Living survey and thus the Living Wage calculations take place independently of employers or their organisations, workers or trade unions, or any other stakeholder.

Since 2014 WageIndicator has taken part in the global discussion on Living Wages (see Annex 7). Two recent examples: On 9 November 2021, WageIndicator presented the Living Wage data collection methodology as part of the OECD Living Wage Workshop. On 24 June 2021, WageIndicator contributed to a discussion about implementation of Decent Wages in Tea Estates, Ready Made Garment, Leather, and Construction in Bangladesh.

1.5. Organisation of the Living Wage data collection

To finalise this introduction, we present an outline of the production process resulting in quarterly updated releases of Living Wage data on a global scale. Table 1 gives an idea 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 shouldaware that this regards work in progress.

Table 1: WageIndicator Living Wage data collection process

RECRUIT	Recruit & train interns and freelancers from all over the world for data-collection tasks (see Chapter 3)
COLLECT	Assign collection of data for countries & regions per quarter; manage feedback from data collectors to improve data (see Chapter 3)
MAINTAIN	IT unit to maintain & improve the surveys
CLEAN & CALCULATE	Clean the data, control for outliers, create scripts and calculate; enrich the data with input from other relevant sources (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 & SELL DATA	Present the data to clients, assist in initial implementation (see Chapter 5,6,7)
COORDINATE	Make sure there is each quarter in time, enough data for clients & WageIndicator websites; improve the data quality continuously; take part in the global discussion on Living Wages, keep the team happy.

2. ITEMS IN THE LIVING WAGE DATA COLLECTION

This chapter details the ten expenditure categories included in the Living Wage data collection, reflecting the requirements needed for an individual and her/his 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
6. Clothing
7. Health
8. Education
9. 5% provision for unexpected events
10. Mandatory contributions and taxes.

2.1. Food basket

A nutritional requirement for good health proposed by the World Bank equals 2,100 calories per person per day (Haughton and 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 63 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 is then 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. 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	Pigmeat
Bananas	Flatbread or pita	Pineapples
Barley	Freshwater fish - fresh, frozen or canned	Plantains
Beans - dry	Groundnuts (Shelled Eq)	Potato
Bell pepper or sweet pepper	Honey	Prawns, shrimp, crayfish, crabs, lobsters, krill and similar - fresh, frozen or canned
Berries	Kale	Regular cooking oil
Bottle of Wine (Mid-Range)	Lemons, Limes	Rice (of standard quality)
Bovine Meat (beef)	Lentils - dry	Salt
Breakfast cereals	Loaf of Fresh White Bread	Soybeans
Bulgur or couscous	Local Cheese	Spinach or other leafy green vegetables
Butter, Ghee	Maize (corn) flour	Starchy Roots
Cabbage	Mango	Sugar (Raw Equivalent)
Carrot or other non-green vegetables	Margarine	Sunflower Seed oil
Cassava	Melon	Sunflowerseed
Cereal flour	Milk (regular)	Sweet Potatoes
Chicken Breasts (Boneless, Skinless)	Mutton, lamb and goat meat	Tea
Chickpeas or other pulses - dry	Olives	Tofu
Coffee	Onions	Tomato
Cream - fresh	Oranges	Water
Domestic Beer	Other poultry meat (duck, goose, turkey)	Watermelon
Dried Fish	Pasta	Yam
Drinking water	Peach	Yoghourt
Eggs	Peas - dry	

Source: WageIndicator Cost-of-Living survey

Figure 3: Fish market San Salvador, El Salvador

Source: WageIndicator Foundation, © Paulien Osse

2.2. Housing Costs and Utilities

Housing costs are almost always and everywhere 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.

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.

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

If the housing in a region consists of predominantly rural dwellings, the housing costs reflect the average cost of these dwellings. If the region consists of predominantly urban high-rise apartments, the housing costs reflect the prices of these 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
Garbage collection	Routine maintenance and repairs
Water	

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 because households on the Living Wage cannot afford to own a motorbike or car and hence must rely on public transportation which is commonly available in most urban areas. Transportation expenses consist of the expenses for a monthly pass for the use of public passenger transportation in urban 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 in local transport is converted to a monthly amount.

2.4. Water

The monthly spending on drinking water 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

Owning 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 Cost-of-Living survey therefore includes the costs of a phone, and average price for 1 min. of Prepaid Mobile Tariff Local (No Discounts or Plans). WageIndicator plans to include the price of mobile broadband defined as the price for Internet (6 Mbps, Unlimited Data, Cable/ADSL). Currently the price of Internet is collected in the survey but is only used to calculate Living Wages/Tariffs 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.

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 a different section of the survey, data is collected more specifically on personal and health care costs. 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. Monthly expenses for period products, birth-control products, personal care products and household cleaning products are also collected.

2.8. Education Costs

Education in public schools is provided at relatively low cost, but additional costs are related to supplementary materials and fees. The Living Wage data collection therefore includes the minimal monthly expenses on children's education if children attend public schools. Based on this information, 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 follows the usual practice by adding a 5% margin to the final estimate of the cost of living. The lower margin of 5% is more appropriate when the calculation of the cost of living is more comprehensive, while it does not increase the resulting Living Wage unreasonably.

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.

3. DATA COLLECTION

This chapter details the methods how prices are collected for the ten categories in the Living Wage data collection, as outlined in the previous chapter. The development of the collection since 2014 is sketched, followed by an explanation of the geographical granularity of the Living Wage data. Then the data collection methods are discussed, followed by details about the data collectors. Finally, the quality controls during the data collection are discussed.

3.1. The development of the Living Wage data collection

In October 2013, WageIndicator started the collection of prices. It seemed easy to post a teaser on all web pages, asking web visitors for the actual price of a single item. Daily the items in the teaser were changed so that after some time all items had been posted, see Figure 4 with an example from Paycheck in India. Web visitors who had entered a price, were 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 and Kabina, 2016).

The Cost-of-Living survey was translated in the 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. By early 2022 the Cost-of-Living survey is offered in 182 and 58 languages (see Annex 2). When price data is not sufficient or reliable, WageIndicator does not calculate an estimate.

Since its start, the number of items in the Cost-of-Living survey has been rather stable. In 2016 water and clothes were added. In 2021 an extra section 'Occupational costs-related items' was added. These items are only used to calculate Living Wages/Tariffs for platform workers. WageIndicator is in the process of designing a special database for 'Living Tariffs' for self-employed workers, as is further detailed in Annex 8.

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 136 in 2022. In 2019 WageIndicator started quarterly releases. The table below shows the number of countries for the October releases of 2019, 2020 and 2021. For 2022 the January release was taken. As of this month half of the countries are low and lower-middle income countries in Africa, Asia and Latin America. For the January 2022 calculation over six million prices could be used, all countries and years combined. Figure 5 and Annex 6 show these countries.

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

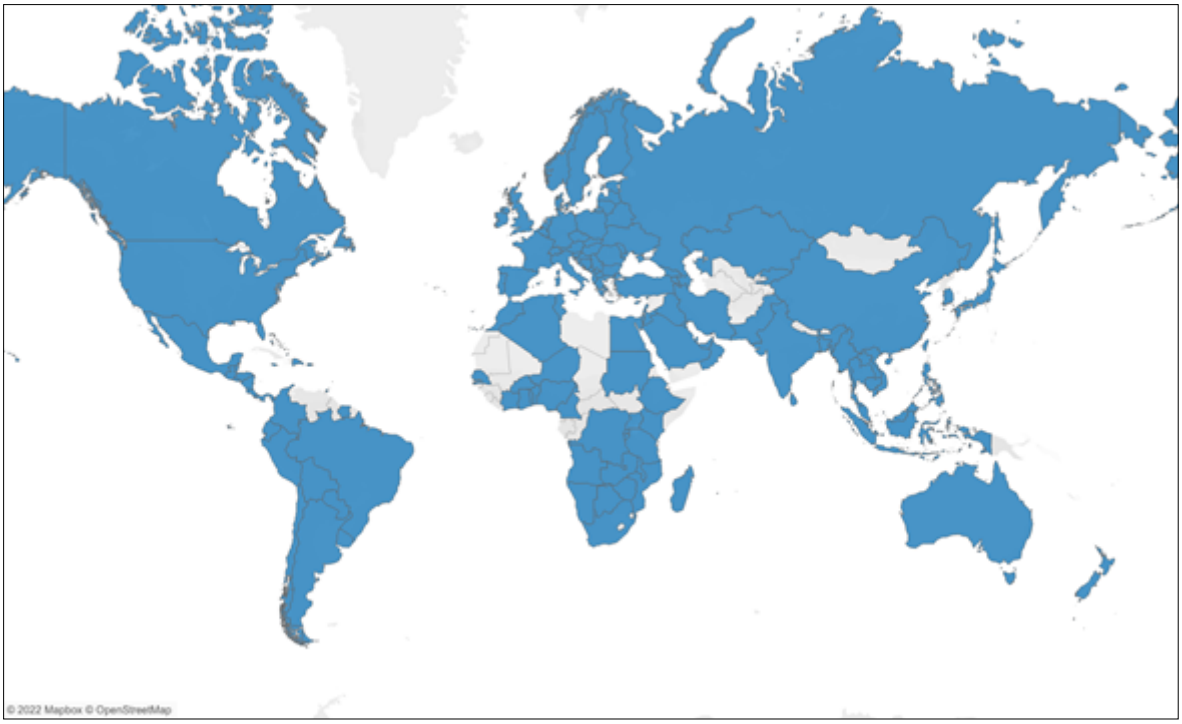
See an example of the Indian WageIndicator website Paycheck.in. The green banner is dedicated to the price of sunflowerseed oil in "your area".
Source: WageIndicator Living Wages data collection.

Table 5 Number of countries with a Living Wages data collection since 2014 (More detail, see Annex 6)

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022 (release Jan. 1)
Countries	45	48	57	64	48	75	114	130	133

Source: WageIndicator Living Wages data collection.

Figure 5: Countries with a Living Wage data collection by January 2022

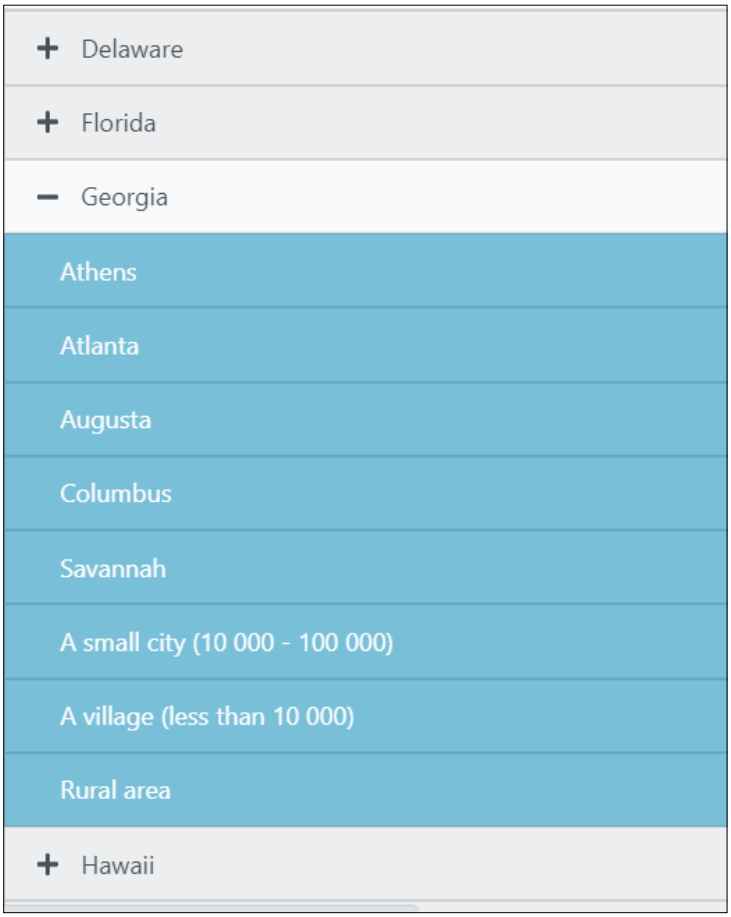


Source: WageIndicator Living Wages data collection.

3.2. Geographical granularity of the data

Prices of consumer goods vary largely across as well as within countries. This challenges the question to the extent of the geographical granulation of the Living Wage data collection. Already in the 2000s WageIndicator had developed a database with geographical entries for its Salary Survey and then for other 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 in the question "How much does this cost in your area: Butter/Ghee", as is shown in Figure 6. API is an abbreviation for Application Programming Interface and is a piece of software that makes a database online 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

The Region API allows web visitors, data collectors and other users to easily identify where they live or where they collect data. By early 2022, the Region API covers 232 countries, 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 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, as the list would become too long. 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 labelset 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 could be mapped to their names used in common data visualisation programs like Google Data Studio and Tableau.

The Region API allows to specify prices to 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.

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. By early 2022 WageIndicator could provide national and regional Living wages for 134 countries and 1,851 regions. City-level data is provided only on demand.

3.3. Decentralised data collection, centralised data storage

The Cost-of-Living data collection is a 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
3. the Cost-of-Living survey webshop app, used for data entry from prices collected from webshops
4. the Cost-of-Living survey print, used when the survey app cannot be used
5. data from external sources

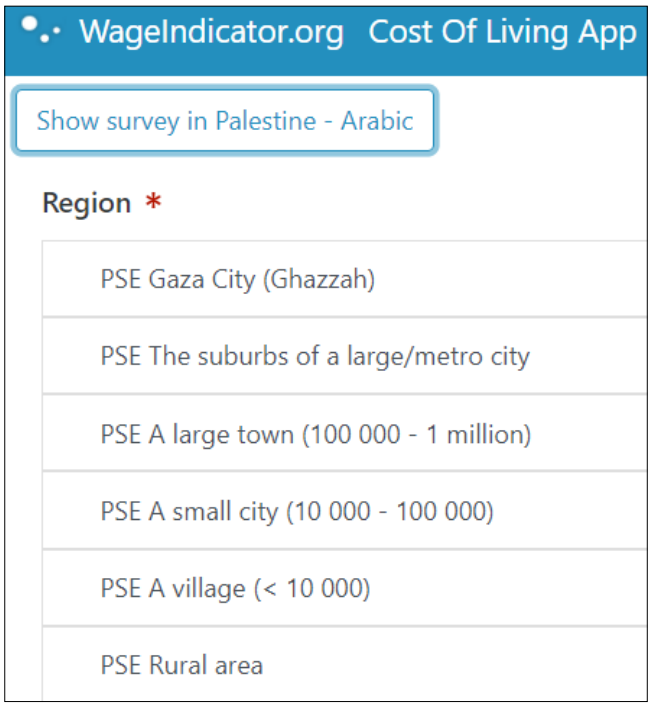
3.3.1 The Cost-of-Living web survey

The Cost-of-Living web survey is posted on all national WageIndicator websites, as shown in section 3.1. WageIndicator websites draw millions of visitors annually, attracted by valuable information about wages in context, labour law, and careers, which is generally not easily available elsewhere. This is supported by profound search engine optimization. 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 telephone, 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 where the survey is available. Hence, the Cost-of-Living survey app can be answered in English and Arabic in Palestine, for example, as Figure 7 shows. The app has options for more than 182 countries and 58 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 (see Annex 2 for the URL).

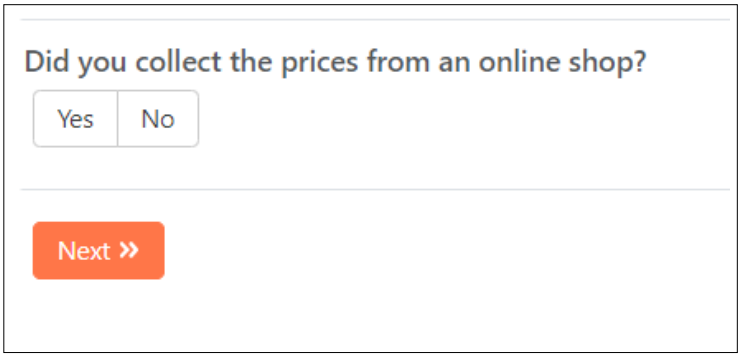
Figure 7: Selection of country and region



3.3.3 Cost-of-Living survey for webshops

Webshops - simple and complex - have largely entered into the lives of many inhabitants worldwide, thereby offering a new outlet to collect price data. Based on the Cost-of-Living survey app, a special feature was developed for collecting data from webshops. 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 8: Extra question for digital collectors at the https://costofliving.wageindicator.org/



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 not 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.

3.3.4 The Cost-of-Living survey in print

From the start of the Cost-of-Living survey, projects have facilitated the data collection. 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).

Also in recent years data collectors find it 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 is extra work and it increases the risk of data entry errors. Some data collectors find it helpful to collect data by means of pictures of food prices, taken at markets or shops, and key in the prices afterwards.

3.3.5 Data collection from external sources

The Living Wage data collection is complemented with data from external sources. This concerns the following data:

- World Food Programme for data on food prices
- Numbeo data for prices regarding housing as well as some food data
- Data from national statistical agencies for data regarding health cost, phone cost, and education cost.

3.3.6 Prices from (super)markets and (open) markets 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

Figure 9: Data collection in Richard Toll, Senegal

Source: WageIndicator Foundation, © Paulien Osse

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 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). Some food items in the Cost-of-Living survey explicitly refer to a basic quality, thereby excluding luxurious items.

Regarding housing prices, it is obvious that prices given by Aibnb, Booking 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.

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 data 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. Since 2019 WageIndicator has a permanent relationship with FLAME University in Pune, India. WageIndicator offers internships to max. 100 students per semester for students from FLAME. In addition, WageIndicator hosts interns from Kassel and Berlin University, Germany, University of Amsterdam and two intern platforms, The Intern Group and the Virtual Internship. All interns do price data collection next to a topic of their expertise like Business Analysis, Data Analyses, Labour Law, Management, News, and Social Media.

In addition, WageIndicator hires in many countries qualified individuals as data collectors. The data collectors collect price data from local citizens, open markets, supermarkets, or from webshops.

The teams in English language countries consist mostly of managers and their interns. The data collectors in the Spanish, Portuguese and Russian language countries are managed by WageIndicator team members. The North Africa/Middle East team is managed by the WageIndicator team from Cairo. China is done by a dedicated Chinese team, while data collection for India consists of Indian managers and interns. Table 6 provides an overview of the persons involved in the Cost-of-Living data collection, totaling to over 275 individuals engaged in the data collection. 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 they are familiar with, regarding the language and culture, or where they have relatives living.

Table 6 Persons involved in the Cost-of-Living data collection in 2021

	Continent	WageIndicator Team	Trained interns	Face-to-face data collectors
Africa	Africa - English	2	40	5
	Africa - French	3	2	3
	Africa - Portuguese	2		1
	Africa - North / Middle East	6		1
Americas	USA & Canada		50	
	Central- and Latin America	5		
Asia	China (only local data collectors)	35		35
	India (only local data collectors)		50	mixed face-to-face / online
	Asia other * (interns from all Asian countries)	1	12	mixed face-to-face / online
	Russia /Kazakhstan /Belarus / Ukraine	3		mixed face-to-face / online
Europe	North	3	10	mixed face-to-face / online
	South	4		mixed face-to-face / online
	East / Balkan	10		mixed face-to-face / online
Oceania	Australia		6	
	New Zealand		6	
Total		74	176	45

3.4.2 Characteristics of the data collectors

All data collectors recruited by WageIndicator have at least a bachelor degree. All are trained. All interns are screened and checked for a minimum internship of at least two months full-time, but usually it is 6 months. 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. For an overview of the interns click here.

Table 7: Characteristics of the data collectors

		Persons*	Regions	Training	Experience
1	Interns during one year	approx. 200 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	70 team members	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	In depth data collection by foot in one country and region	15 specialised data collectors, together with field assistance	Rural areas, no internet, and areas for extra data collection	Written instructions, video's, and guidance on a daily basis	From 1 till 6 years
4	Web users WageIndicator national websites	9,726 users in 2021	Medium/high income countries	No training, if the website isn't good, users will not leave price data behind	na

*per quarter 150 -180 individuals collect data, and WageIndicator releases updates each quarter.

3.4.3 Instructions for the data collectors and quality controls

In several ways, WageIndicator provides training to the data collectors, per zoom meeting, in written instructions, instruction videos, and quarterly feedback quality updates by the team managers. Most data collectors get the different types of training and are in touch on daily basis with the global team. Table 7 provides an overview of the training provided.

All data collectors get the same instructions, 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 collectors are trained by the following rules[1]:

- Understand the survey
- Understand the uploading process
- Select areas where to collect with low, lower-medium income, not posh, up-market
- Avoid the poorest area, where possible
- Go to areas where workers live, so not the coolest city centre, tourist or expat area
- Collect food and housing prices by interviewing people, selected by random walk
- Take time to talk your respondents through the survey
- Collect food prices at the market/shops, to be selected by random walk
- Collect housing prices regarding decent housing (safe, solid roof, water, electricity, heating, sanitary toilet facilities)
- Collect housing prices from real estate agents, to be selected by random walk

Here are some experiences from the data collection process:

- Sometimes it is better not to use a smartphone, but a printed survey
- Interview in pairs - more efficient and faster 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.
- Gender-mixed teams seem to be the best
- Data collectors usually know that the price is collected to calculate Living Wages. Collectors are not to tell that the prices are collected to calculate Living Wages
- If extra data is needed for a client of WageIndicator, the name of the client is not shared with neither the data collector nor the respondent.

On a daily basis the team managers check the data collected. Specifically, the housing prices are cross checked across the different surveyor groups operating simultaneously (Rupa Korde ***et al.***, 2021).

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% 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. Table 8 shows the levels and frequency of quality checks.

1 In the months to come, WageIndicator has scheduled a specification of its sampling process beyond the description here.

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.

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.

In relation to clients (MNEs and NGOs) who use the Living Wage database, improvement activities are ongoing. Some clients check each quarterly release with HR or Compensation and Benefits departments worldwide and report back. In other cases data collectors report back.

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
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 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 (from 2022 twice a year)	x		
Double check			
Calculations of family-types		x	
Year averages	x	x	
Comparison quarters / stability over quarters		x	
Minimum Wages		x	
Check requests from clients (MNE / NGO / Trade Union / web users)		x	x

3.6. Sampling bias in the data collection?

This section details WageIndicator's data collection strategies:

- For the data collection of prices from shops/markets, the sampling frame consists of shops/markets located in low-income areas, because the LW 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 these shops/markets and register the prices, similar to what mystery shoppers in retail establishments do. Hence, the data collection of food prices is not based on shop-owners' reporting of prices. 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-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-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.

Are these data collection methods prone to sample bias? In an ideal world, it would always be possible to use statistically sound sampling techniques to produce price indices with a high degree of accuracy and within given resource constraints. However, price data collection does not take place in an ideal world. When prices would be collected solely by means of household expenditure surveys, a high-quality sampling design could be applied, in most countries including the identification of low-income strata. However, measurement errors are likely as respondents may not adequately remember the prices of the selected food items or may not know the prices of some items. When prices are sampled from establishments (shops/markets), in many countries enterprise sampling frames are incomplete or missing. However, 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 10 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 data collectors.

4. CALCULATION OF LIVING WAGES

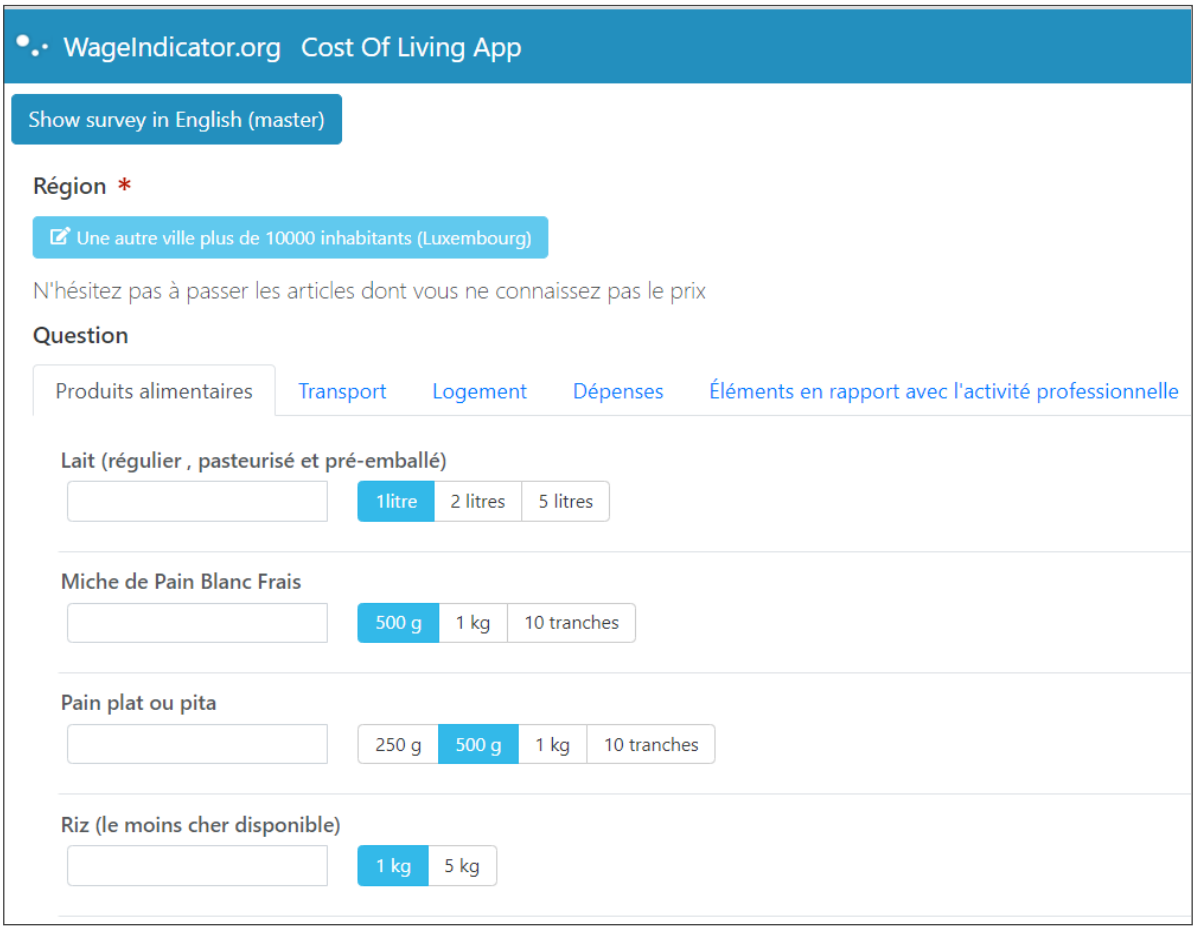
The two preceding chapters are dedicated to the Living Wage items and the data collection. This chapter focuses on the calculation of the Living Wage. It details the data streams in the Living Wage data, the assumptions underlying the Living Wage calculations, the six components of the Living Wage calculations, and the features of the Living Wage dataset. The last section shows the Living Wage estimates for a selection of five countries.

4.1. The Cost-of-Living data collection

4.1.1 The Cost-of-Living survey and the codebook of the data collection

The price data in the Living Wage database are collected by means of the 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 of 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 col-

Figure 10: Cost-of-Living survey structure



lected. For each item, a price can be keyed in and its pre-set unit appears automatically. 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 result in a huge dataset. 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 ids 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.
- WageIndicator data streams and data generating devices/sources.

The number of price observations in the Living Wage database is huge. Currently, the database includes information from different sources for over six million prices, gathered since 2014. In 2021 half a million prices (primary data) were collected using the WageIndicator Cost-of-Living web survey and app. As described in Chapter 3.3, the prices in the Living Wage database stem from five sources, namely, from the Cost-of-Living web survey, the Cost-of-Living survey app, the Cost-of-Living survey webshop 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.

Table 9: Tracking data streams from different WageIndicator platforms

	Platform used	Data collector	% of total collected prices	Source traceable in dataset
1	Data via WageIndicator website - online Cost-of-Living survey	Mainly generated by web users, rarely by trained data collectors	10%	yes
2	Data via Cost-of-Living survey app	Collected by trained data collectors who use a mix of face-face/ whatsapp/ Facebook interview techniques and webshops	90%	yes

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	61%	yes
2	Data from regular shops / face to face surveys	Generated by web users and by trained data collectors	39%	yes

*those who selected the "internet shop" question as shown in Figure 8

The external sources are predominantly data from the World Food Program, Numbeo housing prices and increasingly also 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.

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 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, usually public transport; children of such families commuting to schools can travel for free or with a substantial discount;
- all family members are in good health;
- 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 60 minutes per month per adult 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 '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.

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. The six components in the Living Wage data

The calculation of the Living Wage is compo-

sed of six components, notably food, housing, transportation, health, education, and other expenses (e.g. clothing, personal care). The following is an explanation of how each component of the Living Wage is calculated.

4.3.1 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[2], 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 avoid the negative bias in the quality of the food basket in low income countries, 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%

· Pigmeat - adjusted to 60%

· Milk - Excluding Butter - adjusted to 50%

· Oils - adjusted to 50%

· Sugar - adjusted to 60%

Table 11: Example: food basket calculation in Ghana and Vietnam, 2021

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, barley and cereals	207.10	1.11%	0.48%	2.18 - 3.97
Maize and products	145.10	0.73%	0.67%	0.21 - 0.24
Potatoes and products	0.66	0.00%	0.00%	0.01 - 0.02
Cassava and products	453.77	0.70%	0.19%	2.44 - 4.88
Sweet potatoes	7.26	0.01%	0.01%	0.05 - 0.08
Roots, Other	43.53	0.14%	0.02%	3.23 - 3.65
Yams	280.31	0.85%	0.24%	0.98 - 0.98
Sugar (Raw Equivalent)	77.83	-	-	0.49 - 0.59
Beans	36.28	0.45%	0.08%	0.22 - 0.25
Peas	-	0.00%	0.00%	0 - 0

2 UN Food and Agriculture Organisation (FAO) food balance sheet: https://www.fao.org/faostat/en/#data/FBS/report

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)
Pulses, Other and products	4.62	0.06%	0.01%	0.13 - 0.16
Soyabeans	-	0.00%	0.00%	0 - 0
Groundnuts (Shelled Eq)	66.61	0.41%	2.34%	1.04 - 1.15
Seeds and kernels	-	0.00%	0.00%	0 - 0
Olives (including preserved)	4.62	0.01%	0.17%	0.35 - 0.46
Sunflowerseed Oil	22.42	0.00%	1.09%	0.13 - 0.15
Oils (soyabean, olive, palm)	96.95	0.00%	4.66%	0.46 - 0.52
Tomatoes and products	7.26	0.07%	0.03%	1.32 - 2.33
Onions	4.62	0.02%	0.01%	0.32 - 0.55
Vegetables, Other	4.62	0.04%	0.02%	0.18 - 0.55
Oranges, Mandarines	11.87	0.03%	0.05%	2.27 - 2.89
Lemons, Limes and products	-	0.00%	0.00%	0.08 - 0.13
Bananas	-	0.00%	0.00%	0 - 0
Plantains	201.16	0.34%	0.20%	3.96 - 5.28
Apples and products	0.66	0.00%	0.00%	0.05 - 0.07
Coffee and products	-	0.00%	0.00%	0.01 - 0.02
Tea (including mate)	-	0.00%	0.00%	0 - 0
Bovine Meat	25.06	0.43%	0.74%	1.33 - 2.37
Mutton & Goat Meat	6.60	0.09%	0.23%	0.2 - 0.24
Pigmeat	80.46	0.57%	3.20%	1.65 - 1.99
Poultry Meat	38.91	0.66%	1.16%	2.24 - 3.84
Butter, Ghee	3.96	0.00%	0.18%	0.02 - 0.02
Cream	-	0.00%	0.00%	0 - 0
Eggs	2.64	0.04%	0.08%	0.11 - 0.17
Honey	-	0.00%	0.00%	0 - 0

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)
Fish products	36.93	1.05%	0.63%	3.46 - 5.76
Pelagic Fish	5.28	0.14%	0.10%	0.23 - 0.26
Rice	203.14	0.73%	0.15%	2.59 - 3.14
Milk - Excluding Butter	9.23	0.09%	0.10%	0.52 - 0.6
Total	**2,100.00**	**8.82%**	**16.86%**	

* Total calories from sugars = 3.71% of total calories
* Total vegetables and fruits per day = 541.07grams
*Salt is excluded from the diet

Item	Vietnam			
	Food supply (kcal/ capita/day)	Percentage Protein supply quantity (kcal/ capita/day)	Percentage Fat sup- ply quantity (kcal/ capita/day)	Price per kilo (USD)
Wheat, barley and cereals	72.98	0.39%	0.12%	1.35 - 2.12
Maize and products	77.08	0.36%	0.30%	1.12 - 1.14
Potatoes and products	9.84	0.03%	0.00%	0.23 - 0.31
Cassava and products	13.94	0.02%	0.02%	0.28 - 0.37
Sweet pota- toes	10.66	0.02%	0.01%	0.35 - 0.47
Roots, Other	-	0.00%	0.00%	0 - 0
Yams	-	0.00%	0.00%	0 - 0
Sugar (Raw Equivalent)	79.54	0.00%	0.00%	0.61 - 0.7
Beans	13.94	0.17%	0.02%	0.19 - 0.19
Peas	-	0.00%	0.00%	0 - 0
Pulses, Other and products	8.20	0.10%	0.02%	0.16 - 0.21
Soyabeans	46.74	0.77%	0.78%	0.66 - 0.78
Groundnuts (Shelled Eq)	60.68	0.39%	2.23%	2.01 - 2.39

Item	Vietnam			
	Food supply (kcal/ capita/day)	Percentage Protein supply quantity (kcal/ capita/day)	Percentage Fat supply quantity (kcal/ capita/day)	Price per kilo (USD)
Seeds and kernels	-	0.00%	0.00%	0 - 0
Olives (including preserved)	-	0.00%	0.00%	0 - 0
Sunflower-seed Oil	27.88	0.00%	1.36%	0.19 - 0.2
Oils (soybean, olive, palm)	63.96	0.00%	3.10%	0.3 - 0.37
Tomatoes and products	-	0.00%	0.00%	0.05 - 0.07
Onions	4.92	0.04%	0.01%	0.31 - 0.46
Vegetables, Other	89.38	1.01%	0.34%	9.97 - 13.24
Oranges, Mandarines	5.74	0.02%	0.01%	0.83 - 1.14
Lemons, Limes and products	-	0.00%	0.00%	0 - 0
Bananas	26.24	0.06%	0.04%	1.16 - 1.42
Plantains	-	0.00%	0.00%	0 - 0
Apples and products	1.64	0.00%	0.00%	0.21 - 0.26
Pineapples and products	3.28	0.01%	0.01%	0.33 - 0.38
Coffee and products	2.46	0.06%	0.00%	0.65 - 1.05
Tea (including mate)	1.64	0.09%	0.00%	0.72 - 0.8
Bovine Meat	31.16	0.54%	0.92%	5.64 - 7.15
Mutton & Goat Meat	8.20	0.11%	0.29%	1.32 - 1.62
Pigmeat	100.04	0.71%	3.98%	4.63 - 6.58
Poultry Meat	48.38	0.82%	1.44%	3.14 - 4.03
Butter, Ghee	45.10	0.04%	2.10%	1.6 - 1.64
Cream	-	0.00%	0.00%	0.01 - 0.01

Item	Vietnam			
	Food supply (kcal/ capita/day)	Percentage Protein supply quantity (kcal/ capita/day)	Percentage Fat supply quantity (kcal/ capita/day)	Price per kilo (USD)
Eggs	13.94	0.22%	0.43%	0.65 - 0.69
Honey	-	0.00%	0.00%	0 - 0
Pelagic Fish	6.56	0.18%	0.13%	0.5 - 0.57
Rice	1,148.81	4.46%	1.63%	10.7 - 13.31
Milk - Excluding Butter	27.06	0.31%	0.41%	0.69 - 0.79
Total	**2100**	**12.52%**	**20.33%**	

* Total calories from sugars = 3.71% of total calories
* Total vegetables and fruits per day = 541.07grams
*Salt is excluded from the diet

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

WageIndicator has a tolerance of 5% for the total percentages of fats and sugar.

Table 11 shows the WageIndicator food baskets for model diets for Ghana and Vietnam, 2021.

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 and Khandker, 2009). The model makes no distinction between adults, children, or pregnant or lactating mothers' food requirements. The WageIndicator principle 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.

4.3.2 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; they self-identify whether electricity, water, garbage collection, Internet, and taxes on housing are included in the rents reported. Respondents also indicate the size and location (inside or outside the city centre) of their apartments or

houses. External data from Numbeo and other data collectors 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.

4.3.3 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 urban 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.

4.3.4 Health expenses

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 health care 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. Health expenses for an individual are assumed to be one quarter of the expenses reported for a family with two adults and two children.

More data is collected specifically on personal and health care costs. 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. Monthly expenses for period products, birth-control products, personal care products and household cleaning products are also collected.

4.3.5 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. Anker and Anker (2013) add one percent of household expenditure for the cost of children's education in the Living Wage they calculated for rural South Africa. 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 parti-

cipate in advanced education, or in entertainment or recreational activities.

4.3.6 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% margin for unforeseen events. Earlier works by Anker and Anker (Anker, 2013) used a 10% 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% of the monthly household expenditure). WageIndicator follows the manual for Living Wages by Anker and Anker (2017) and adds a 5% 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.

4.4. The Living Wage dataset

4.4.1 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.

4.4.2 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 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 weighting factor of five, to ensure that recent WageIndicator data is more representative.

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..

4.4.3 Actual data

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.

4.4.4 Inflation correction

For most national figures, WageIndicator applies the CPI (Consumption Prices Index) published by the International Monetary Fund (IMF). However, such CPI data is not available for countries with extremely high inflation (e.g. Venezuela) or with unreliable statistical data (e.g. Argentine, Belarus). For these countries only one way out exists: use only data collected in the last quarter and publish (or not) with the qualification that this data can be less accurate.

4.4.5 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 correcting the net Living Wage for the mandatory payroll deductions obtained from the latest national tax summaries available publicly (based on Worldwide Tax Summaries published by PWC). The income tax is required by law and therefore has to be included in the Living Wage calculation.

In many countries the low income is 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). In summary, the 'gross Living Wage' includes the taxes and social security contributions due by the employee.

4.4.6 Lower and upper bound data

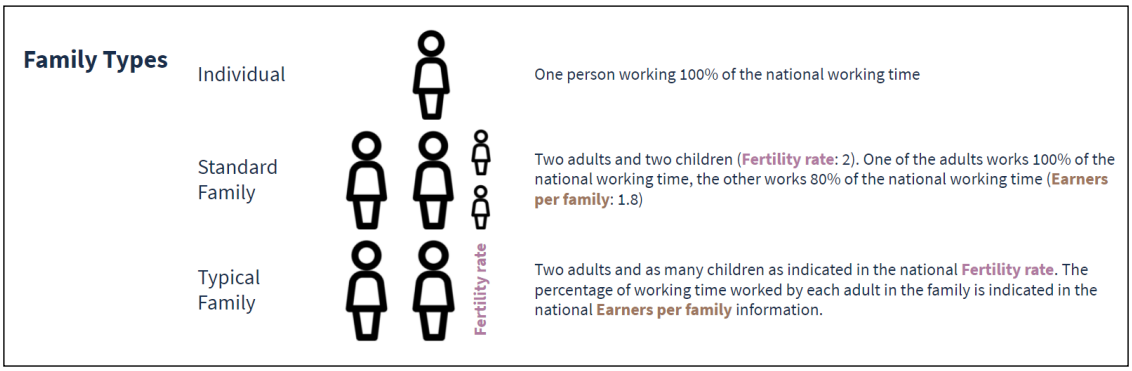
Living Wages are calculated as a range with the lower bound of the 25th percentile and an upper bound of the 50th percentile of the calculated Living Wage. This interval reflects the variation of prices within a country. The 50th percentile (median) is the value for which half of the respondents report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

4.5. Living Wage data for five countries

4.5.1 Family types

In many countries the low income is 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

Figure 11: Family types



Screenshot Data visual about how families are defined. WageIndicator.org https://wageindicator.org/salary/living-wage/living-wages-explanation-visual

Figure 12: Summary of the calculation of the Living Wage for the three family types

CLI (Basic Cost of Living for one individual) = (Food for one person + Housing for one person + Healthcare for one person + Transport for one adult + Clothing for one person + Water for one person + Phone for one adult) * 1.05 Other costs

CLSF (Basic Cost of Living for a standard family) = [(4 * Food for one person) + Housing for a family + (4 * Healthcare for one person) + (2 * Transport for one adult) + (2 * Education for one child) + ((4 * Clothing for one person) + (4 * Water for one person) + (2 * Phone for one adult)] * 1.05 Other costs

CLTF (Basic Cost of Living for a typical family) = {[(2 * Food for one person) + (Fertility rate * Food for one person)] + Housing for a family + [(2 * Healthcare for one person) + (Fertility rate * Healthcare for one person)] + (2 * Transport for one adult) + (Fertility rate * Education for one child) + [(2 * Clothing for one person) + (Fertility rate * Clothing for one person)] + [(2 * Water for one person) + (Fertility rate * Water for one person)] + (2 * Phone for one adult)} * 1.05 Other costs

Note: The calculation of Living Wages for the family types takes into account the most recent employment rates (World Bank 2016-2020) and family characteristics (fertility rate) (World Bank 2015-2019) available, in the local context.

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 paid by the employee.

4.5.2 Living Wage data for five countries

The WageIndicator Living Wage results in Living Wage estimates per month. As an example, Table 12 shows the data for six countries selected from each continent, covering the January 2022 release. As explained in the previous section, Living Wage data is detailed for a single individual and for family types. 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 January 2022

Country	Chile CLP	Côte d'Ivoire XOF	Czech Republic CZK	Italy EUR	South Africa ZAR	Vietnam VND
Living wage individual - lowest	420200	104800	12700	860	6220	4046500
Living wage individual - highest	519200	132800	17600	989	8050	5303400
Living wage standard family - 2+2 1.8 working- lowest	592800	159700	22400	1080	8350	7901000
Living wage standard family - 2+2 - 1.8 working - highest	724700	207200	26000	1290	11500	9912000
Living wage typical family - 2+national fertility/employment rate - lowest	639800	247600	24500	1190	9970	7593700
Living wage typical family - 2+national fertility/employment rate -highest	781000	327000	28400	1410	13600	9529400
Food cost individual - lowest	63897	30944	1871	116	902	1522996
Food cost individual - highest	82700	40211	2274	157	1213	1845554
Housing cost individual - lowest	207800	31900	6870	360	3840	1204100
Housing cost individual - highest	255200	41800	9340	394	4830	1705900
Housing cost for a family - lowest	365800	63800	16000	429	5680	2307400
Housing cost for a family - highest	429500	83800	17400	475	7520	3163300
Transport for one adult - lowest	32459	24879	413	35	522	119677
Transport for one adult - highest	36911	28949	480	36	637	183215
Education for one child - lowest	23095	1200	665	52	644	587525
Education for one child - highest	28566	2700	795	52	769	587525
Healthcare for one person - lowest	11360	600	426	24	197	185621
Healthcare for one person - highest	14492	900	526	26	268	282860
Clothing for one person - lowest	12800	600	339	24	209	137351
Clothing for one person - highest	15842	975	434	28	287	147590
Water for one person - lowest	4850	300	250	5	117	33838
Water for one person - highest	4850	300	250	5	117	33838
Phone for one person - lowest	4847	4003	157	9	77	109652
Phone for one person - highest	6669	4631	188	10	91	124820
Other costs individual - lowest	16901	4661	516	29	293	165662
Other costs individual - highest	20883	5896	675	33	374	217118
Taxes for one individual - lowest	65304	6942	1882	258	62	567610
Taxes for one individual - highest	80693	8995	3382	297	206	743916
Taxes for a standard family - 2+2 - lowest	92116	11675	4876	324	261	1215795
Taxes for a standard family - 2+2 - highest	112628	16724	6005	386	844	1588868
Taxes for a typical family - 2+national fertility/employment rate - lowest	99429	22919	5546	356	567	1158793
Taxes for a typical family - 2+national fertility/employment rate - highest	121365	35084	6750	422	1243	1517902

Source: WageIndicator Living Wage data collection

5. LIVING WAGE AND ADJACENT BENCHMARKS

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 paid by the employee.

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 rights, weekly working hours, and taxes. 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 (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 per person per day.

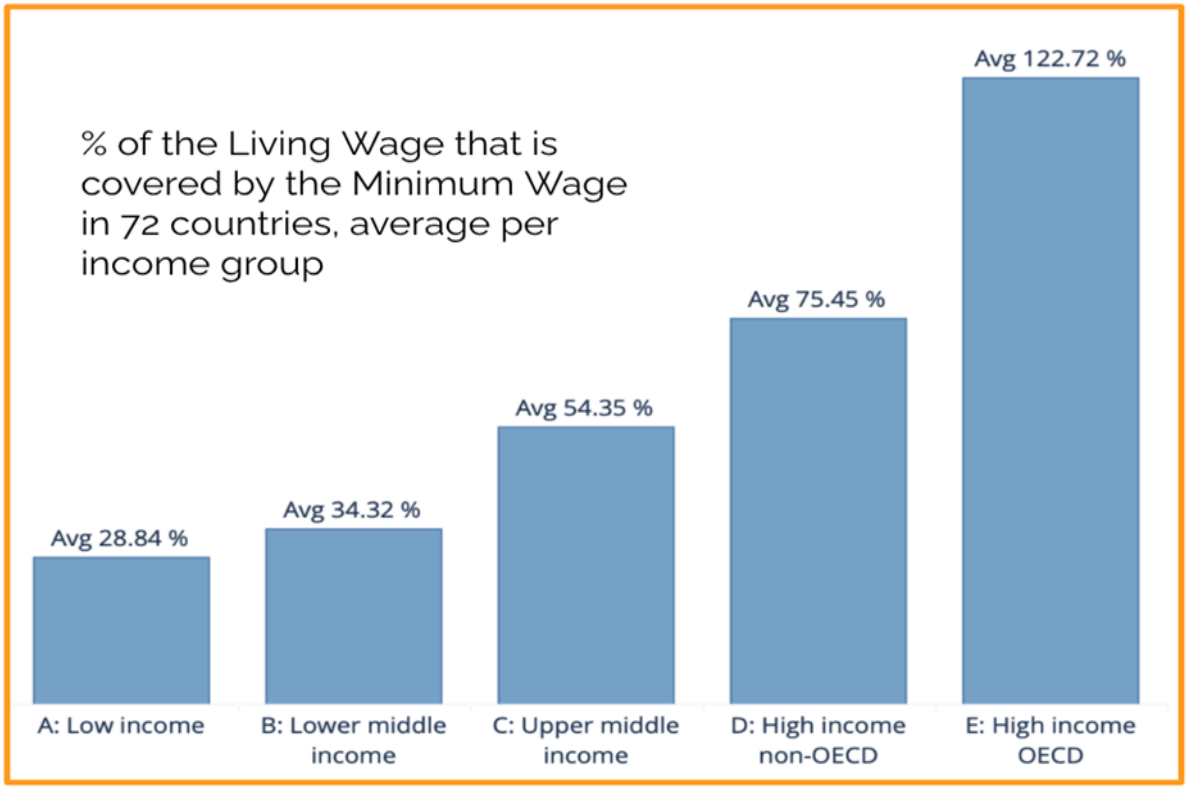
Some countries define their own poverty lines. The national poverty line is the minimum income level on which an individual is supposed to be able to survive. These national poverty lines are set by governments. National definitions of poverty and their practical implementation vary widely across countries. 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

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 January 2022

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. For 2021, across high income countries Minimum Wages are on average 122% of the Living Wage, whereas across low income countries the Minimum Wages are 28% of Living Wage.

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 language 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. The technical performance of the database was gradually improved and included information for an increasing number of countries. In December 2021, the database contained information for more than 200 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 the 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, WageIndicator shows the most detailed Minimum Wages per country, region, sector when clients (MNE's, NGO's) ask for it.

5.3. Actual 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. As these occupations are classified as high-skilled, medium-skilled and low-skilled, for each country the Living Wage thresholds can be compared to the actual wages by skill level.

5.4. Regular working hours per week

For more than 200 countries WageIndicator maintains a database with information about the legal and the standard Working hours per week. For most countries the legal working hours refer to the maximum hours per week. The standard hours refer to the working hours which are normal or regular in the country, as is laid down in Collective Bargaining Agreements or in labour regulations. For most of the 200 countries, 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 Labour Law database is updated yearly.

5.5. Taxes

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 income tax is presented for the family types in the Living Wage data collection (see Chapter 4 for the family types). The tax amounts include social contributions (pension contributions, medical insurance contributions, social insurance contributions).

5.6. Labour Rights

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

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 2020, 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.

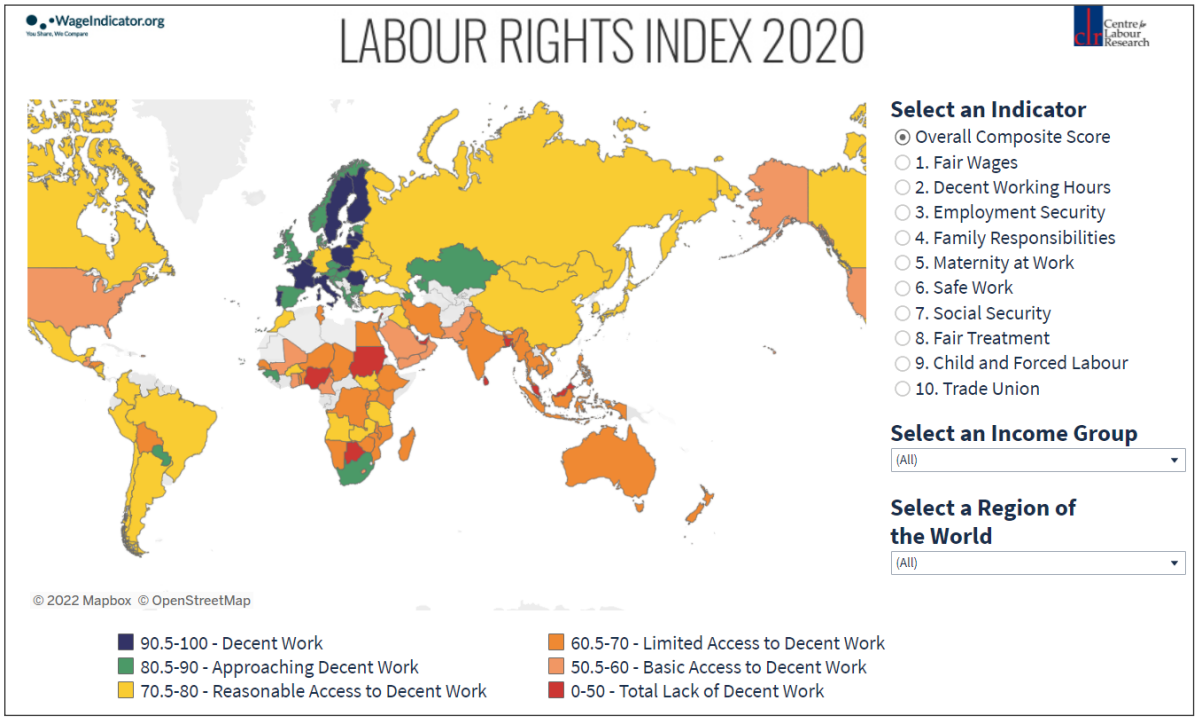
Legal regulations do not reveal compliance to the regulations. WageIndicator uses the detailed criteria in the Labour Rights Index in its Decent Work Check Survey. This survey allows employees to check whether their wages and working conditions are compliant to the national Labour Law and the Minimum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

5.7. Freedom House Scores

For contextualisation of the country-level Living Wages, WageIndicator uses two scores 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 Freedom House's Political Rights Score and Civil Liberties Rights Score.

Freedom House offers a few political and civil liberty indicators by means of its Political

Figure 14: Labour Rights Index



and 4 the greatest degree of freedom, grouped based on Freedom of Expression and Belief, Associated and Organisation Rights, Rule of Law and General Autonomy and Individual Rights. It covers 195 countries and 15 territories from January 1, 2021 through December 31, 2020. For country specific information, see link: https://freedomhouse.org/countries/freedom-world/scores

6. BENCHMARKING COMPANIES' REMUNERATION AGAINST LIVING

Rights Score with a maximum score of 40. A Country or territory is awarded 0 to 4 points for each of 10 political rights indicators grouped based on Electoral Process, Political Pluralism and Participation and Functioning of Government. The 2021 edition covers 195 countries and 15 territories from January 1, 2020 through December 31, 2020.

Freedom House also provides data for its Civil Liberties Rights Score, with a maximum score of 60. A country or territory is awarded 0 to 4, where 0 means smallest degree of freedom

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 regular 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 labour 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 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.

6.1.2 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.

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. WageIndicator suggests that these in-kind benefits should not exceed 30 percent of monthly earnings. 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.

The cost of transportation to and from the workplace may not be considered as an in-kind benefit. If the company provides transportation, this is at the cost of the company.

6.1.3 Take-home wages

The Living Wage should be compared to the take-home wages paid by the company, hence the net wages. 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.

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 Bonuses

A company's remuneration policy may include payment of bonuses. However, bonuses should not be included in the comparison of the worker's wage to the Living Wage as these bonuses are by definition irregular and are mostly not paid to the entire workforce.

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. Only bonuses that are paid to the entire workforce and that hardly or not vary over time, such as End-of-Year bonuses or a 13th month can be included pro rato for the comparison of the paid wages to the Living Wage.

6.1.5 Expenses for equipment or training

Any expenses for equipment or tools 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 WageIndicator Living Wage/ Tariff for platform workers, in particular, includes specific expenses which are related to the different jobs, such as the bicycle and the protective gear for riders.

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.

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 concrete, 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.

6.4. Living Wage per quarter

As detailed in Chapter 3, WageIndicator provides new Living Wage figures each quarter. Annually, in October, an average of all quarters is provided. This should be considered the WageIndicator Living Wage for that 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.

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 have been distinguished: 1) metropolitan areas; 2) large city areas; 3) small city areas; 4) rural areas. More than half of the regional data is primary data. Each quarter more regions have primary data.

If Living Wages are needed for more granular areas, WageIndicator can deliver such wages or can start collecting data for these areas.

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. Note that the regional Living Wages are not available for the public for free - apart from a few countries per quarter - but must be applied for separately.

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.

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.

[1] The ILO Minimum Wage Policy Guide provides useful guidance on options for dealing with in-kind benefits. ILO Convention 95 on Protection of Wages 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, see https://www.ilo.org/global/docs/WCMS_508566/lang--en/index.html

7. RECOGNITION

The WageIndicator Living Wage is not certified. However, IDH recognises the WageIndicator Living Wage Typical Family as a benchmark. Also, a system assurance is presently being checked by external parties. Nevertheless, a recurring question needs to be answered: are WageIndicator Living Wages collected and calculated in line with the Anker method?

7.1. IDH's 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. In 2020 a debate took place between IDH-experts and WageIndicator, and the WageIndicator methodology to arrive at Living Wages passed the test. On its website IDH features a so-called Living Wage Identifier. This tool, under the heading Living Wage Benchmark Series, prominently features the WageIndicator 'Typical Family Methodology', recommended for use as an IDH Recognized Benchmark.

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 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;
- the latest inflation figures are published quarterly, so there is no need for additional benchmarks to be updated.

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 ran-

ge, which can be seen as a stepping stone to the higher range. WageIndicator also offers a variety of other global data sets.'

IDH recognizes two other Living Wage Methods. First, the Anker reference Value Methodology (Anker and Anker, 2017), which is embedded in the Global Living Wage Coalition. Second, the method of Fair Wage Network (Vaughan-Whitehead, 2010). In Section 7.2 the Anker method for estimating Living Wages will be elaborated.

7.2. The Anker method for estimating Living Wages

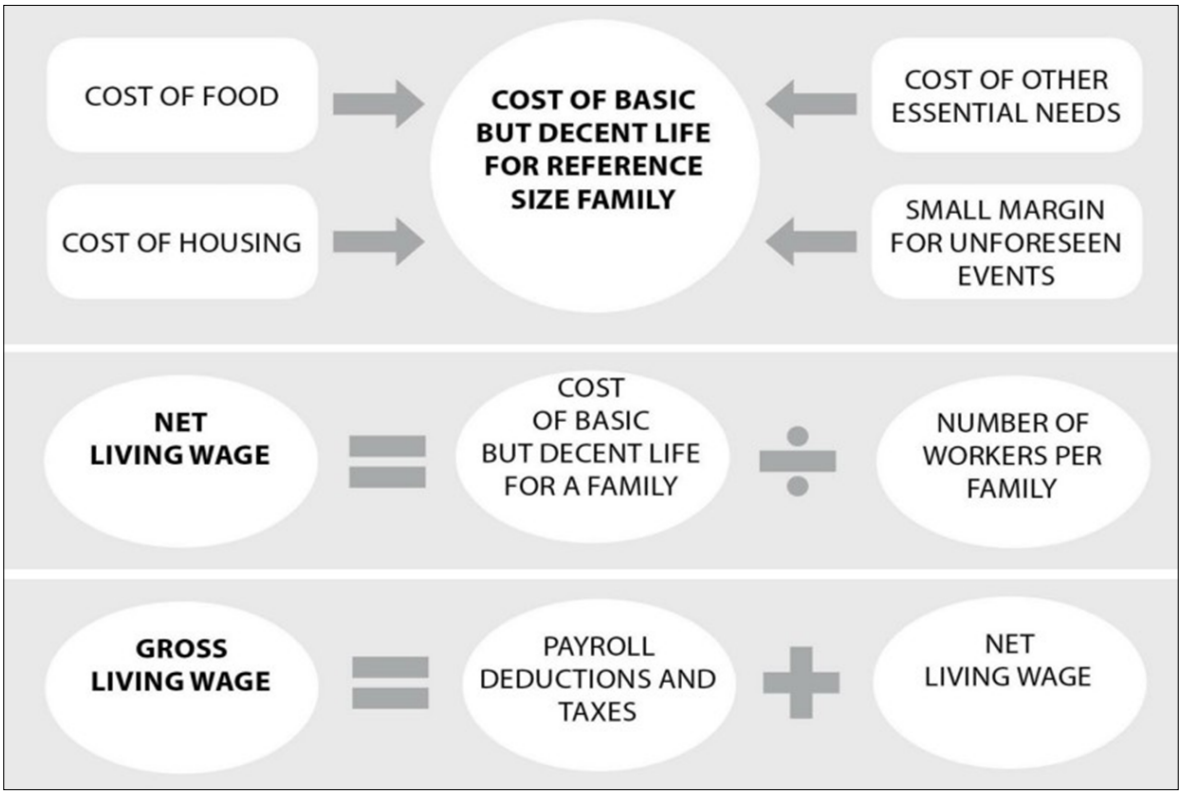
Estimating a Living Wage begins by estimating the cost of a basic but decent lifestyle for a worker and his/her family (Anker and Anker, 2017). This involves adding up the cost of three expenditure groups: food for a low-cost nutritious diet, basic housing, and other essential expenses for a family, and then adding a small margin for sustainability and emergencies.

The next step defrays the cost of a basic but decent life for the reference size family over the number of workers per reference size family, which is always between one and two full-time workers per couple and depends on national conditions as regards labour force participation rates for men and for women as well as unemployment rates.

The gross pay required for workers to have sufficient take-home pay is calculated by adding statutory payroll deductions and income tax that would be assessed on a Living Wage. Workers need to end up with sufficient take-home pay to afford a basic but decent standard of living.

Figure 15 depicts the elements in the Anker method for estimating Living Wages. Section 7.3 elaborates on the similarities and differences between the Anker and the WageIndicator methods.

Figure 15: The Anker method for estimating Living Wages



Source: Anker and Anker, 2017, p 17

7.3. Differences between Anker and WageIndicator Living Wages

The WageIndicator estimation of Living Wages is consistent with the Anker method, which is embedded in the Global Living Wage Coalition. WageIndicator includes the same expenses and adds 5% in its Living Wage formula. WageIndicator aims to stay in tune with Anker's manual for calculation of Living Wages (Anker and Anker, 2017).

IDH's recognition process of WageIndicator Living Wage resulted in a comparison of the two methods. Table 13 lists the criteria used by IDH, how these are met in the Anker Reference Value Methodology, in full-fledged Anker, and in WageIndicator Living Wage. The last column describes the differences.

In addition to the similarities and differences as published by IDH, a few other differences between Anker and WageIndicator stand out:

- WageIndicator compares the Living Wages to the statutory Minimum Wages relevant for the country or region at stake;
- WageIndicator presents its Labour Rights Index;
- WageIndicator collects data on wages from its own Salary Survey and from external sources and can therefore present data - if available – about the average wages for low- skilled, medium skilled, and high skilled workers in the country.

7.4. 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. Apparently, this fits in their emerging benchmarking practises as part of their sustainability and compensation policies, as is shown by a recent technical paper (Vionnet, 2020).

Table 13: Criteria for Living Wage benchmarks

Criteria for living wage benchmarks in IDH- recognition process		**The Anker Reference Value Methodology**	**Full-fledged Anker**	**WageIndicator Living Wage**	**Differences**
Collecting data	The benchmark estimates Living Wage based on data collected and representative of the location of the Living Wage benchmark.	Estimates are from modelled data using Anker Methodology Benchmark study results and data from institutions such as World Bank, FAO, ILO, and IMF.	Data for local food prices, healthy housing costs, adequate health care, and education through secondary school are collected through detailed field research.	Data on cost of living is collected through country/ region-based surveys (online and face-to-face). Primary data are combined with data from World Bank, FAO, national Bureaus of Statistics, Numbeo data and official Minimum Wages.	WageIndicator is collecting data online and offline in many countries and regions. Effect: more data points.
Cost of living of a Typical Family	The benchmark measures the cost of living of a Typical Family in a region (family size is estimated based on regional/national family size data or birth-rate data).	Family size based on average household size (excluding one person households and especially large or joint households), fertility rates and child mortality rates in rural and urban areas.	Family size based on average household size (excluding one person households and especially large or joint households), fertility rates and child mortality rates in location.	National family sizes are derived from national fertility rate data.	WageIndicator presents 3 family types, the Typical Family type is in line with the Anker method. However WageIndicator gives a maximum for the family size 2 adults/4 kids
Items of cost of living	The benchmark assesses the cost of living based on requirements that include good nutrition, housing, education, healthcare, household goods, transportation, and personal care.	Food and housing align with minimum international quality standards and local norms and conditions and adequate healthcare and children's education through secondary school estimated using primary and secondary data. Other expenses estimated using secondary data. Small margin added for unforeseen events and sustainability.	Food and housing align with international minimum quality standards and local norms and conditions. Cost of adequate healthcare and children's education through secondary school estimated using primary and secondary data. Other expenses estimated using secondary data. Small margin added for unforeseen events and sustainability.	Family costs include the cost of a suitable diet, typical rent, children's education, healthcare, transport, clothes, water, phone and other expenses.	1. Food - WageIndicator uses the same principles as Anker. 2. WageIndicator has a studio / 1 bedroom apartment for individuals and a 2 bedrooms apartment for family. Principles for housing are the same as Anker.
Working Adults	Number of full-time equivalent workers in a typical family is determined by labour force participation rates, unemployment, and part-time employment rates for men and women in prime working ages.	Number of full-time equivalent workers in a Typical Family is determined by labour force participation rates, unemployment, and part-time employment rates for men and women in prime working ages.	Number of full-time equivalent workers in a Typical Family is determined by labour force participation rates, unemployment rates, and part-time employment rates for men and women in prime working ages in location.	The typical wage earners in a family is derived from national employment data.	Essentially no difference.

Criteria for living wage benchmarks in IDH- recognition process		The Anker Reference Value Methodology	Full-fledged Anker	WageIndicator Living Wage	Differences
Sufficient net income / net wage	The benchmark accounts for statutory deductions from gross income, such as taxes, union fees, etc.	Mandatory payroll deductions, union dues, and income tax added to the net Living Wage to get the (gross) Living Wage.	Mandatory payroll deductions, union dues, and income tax added to the net Living Wage to get the (gross) Living Wage.	The difference between net and gross pay is calculated using the latest national tax / social security summaries available publicly.	Gross - net might differ between the methods
Differences in context	The benchmark is city- or region-specific or at least accounts for urban and rural differences.	Reference values are available for urban areas, rural areas separately for each country.	Benchmarks are specific to a general location.	All data is disaggregated per country-defined regions as well as sorted into 4 regions of similar rural or urban density.	WageIndicator presents primary data for more than half of the regions (936 out of 1851).
Transparency	The benchmark publishes a clear and consistent methodology for data collection and calculation elements.	Description of methodology, estimates, and country reports are shared publicly on the Global Living Wage Coalition website.	The Anker methodology and all Benchmark studies are freely available on the Global Living Wage Coalition website.	The process and criteria for collecting data is fully available online at the WageIndicator Foundation website.	The WageIndicator method is published online. Regional data is for sale, to cover the cost for ongoing data collection around the globe.
Inflation estimation	The benchmark updates the estimates yearly for inflation. Estimates can be updated for up to 5 years (considering local circumstances) before a new benchmark is needed.	Values updated annually for inflation and economic development and accounting for taxes.	GWLC updates and publishes Benchmark estimates annually by adjusting for inflation and accounting for taxes.	New benchmarks based on new data are published quarterly so there is no need for benchmarks to be updated regularly for inflation. If needed it is done.	Wageindicator updates inflation where needed for older data

Source: https://www.idhsustainabletrade.com/idh-living-wage-identifier/

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ANNEXES

1. Overview of Countries with a Living Wage Survey, online

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

2. Cost of living app

https://costofliving.wageindicator.org/

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 since 2014

country	2014	2015	2016	2017	2018	2019	2020	2021	2022
Afghanistan									
Albania									
Algeria									
Andorra									
Angola									
Anguilla									
Antigua and Barbuda									
Argentina									
Armenia									
Aruba									
Australia									
Austria									
Azerbaijan									
Bahamas									
Bahrain									
Bangladesh									
Barbados									
Belarus									
Belgium									
Belize									

country	2014	2015	2016	2017	2018	2019	2020	2021	2022
Benin									
Bermuda									
Bhutan									
Bolivia									
Bonaire, Sint Eustatius and Saba									
Bosnia and Herzegovina									
Botswana									
Brazil									
Brunei									
Bulgaria									
Burkina Faso									
Burundi									
Cabo Verde									
Cambodia									
Cameroon									
Canada									
Cayman Islands									
Central African Republic									
Chad									
Chile									
China									
Christmas Island									
Cocos (Keeling) Islands									
Colombia									
Comoros									
Congo, Dem. Rep.									
Congo, Rep.									
Cook Islands									
Costa Rica									
Côte d'Ivoire									
Croatia									
Cuba									
Curaçao									
Cyprus									
Czech Republic									
Denmark									
Djibouti									
Dominica									
Dominican Republic									
Ecuador									
Egypt									
El Salvador									
Equatorial Guinea									
Eritrea									
Estonia									
Eswatini									
Ethiopia									
Faeroe Islands									

country	2014	2015	2016	2017	2018	2019	2020	2021	2022
Fiji									
Finland									
France									
French Guiana									
Gabon									
Gambia									
Georgia									
Germany									
Ghana									
Gibraltar									
Greece									
Greenland									
Grenada									
Guadeloupe									
Guam									
Guatemala									
Guernsey									
Guinea									
Guinea-Bis-sau									
Guyana									
Haiti									
Honduras									
Hong Kong									
Hungary									
Iceland									
India									
Indonesia									
Iran									
Iraq									
Ireland									
Isle of Man									
Israel									
Italy									
Jamaica									
Japan									
Jersey									
Jordan									
Kazakhstan									
Kenya									
Kiribati									
Korea, Dem. Rep.									
Kosovo									
Kuwait									
Kyrgyzstan									
Laos									
Latvia									
Lebanon									
Lesotho									
Liberia									
Libya									
Liechten-stein									
Lithuania									

country	2014	2015	2016	2017	2018	2019	2020	2021	2022
Luxembourg									
Macao									
Madagascar									
Malawi									
Malaysia									
Maldives									
Mali									
Malta									
Marshall Islands									
Martinique									
Mauritania									
Mauritius									
Mayotte									
Mexico									
Micronesia, Fed. States of									
Moldova									
Monaco									
Mongolia									
Montenegro									
Morocco									
Mozam-bique									
Myanmar									
Namibia									
Nauru									
Nepal									
Netherlands									
New Cale-donia									
New Zea-land									
Nicaragua									
Niger									
Nigeria									
Niue									
Norfolk Island									
North Mace-donia									
Northern Mariana Islands									
Norway									
Oman									
Pakistan									
Palau									
Palestinian Territories									
Panama									
Papua New Guinea									
Paraguay									
Peru									
Philippines									
Pitcairn									
Poland									

country	2014	2015	2016	2017	2018	2019	2020	2021	2022
Polynesia (Fr)									
Portugal									
Puerto Rico									
Qatar									
Réunion									
Romania									
Russian Federation									
Rwanda									
Saint Barthé-lemy									
Samoa									
Samoa, U.S.									
San Marino									
Sao Tome and Principe									
Saudi Arabia									
Senegal									
Serbia									
Seychelles									
Sierra Leone									
Singapore									
Slovakia									
Slovenia									
Solomon Islands									
Somalia									
South Africa									
South Korea									
South Sudan									
Spain									
Sri Lanka									
St. Kitts and Nevis									
St. Lucia									
St. Pierre and Mique-lon									
St. Vincent and the Grenadines									
Sudan									
Suriname									
Sweden									
Switzerland									
Syrian Arab Republic									
Taiwan									
Tajikistan									
Tanzania									
Thailand									
Timor-Leste									
Togo									
Tokelau									
Tonga									
Trinidad and Tobago									
Tunisia									

country	2014	2015	2016	2017	2018	2019	2020	2021	2022
Turkey									
Turkmenistan									
Turks and Caicos Islands									
Tuvalu									
Uganda									
Ukraine									
United Arab Emirates									
United Kingdom									
United States of America									
Uruguay									
Uzbekistan									
Vanuatu									
Venezuela									
Vietnam									
Virgin Islands (U.S.)									
Virgin Islands, British									
Wallis and Futuna Islands									
Western Sahara									
Yemen									
Zambia									
Zimbabwe									
Total countries with an estimate per year	45	48	57	64	48	75	114	130	133
Year	2014	2015	2016	2017	2018	2019	2020	2021	2022

7. WageIndicator events related to Living Wages 2021/2022

Date	Name of Meeting	Location	Relation to Project(s)
2022 - 01 - 28	THE LIFE BEHIND THE COST OF LIVING DATA COLLECTION OF WAGE-INDICATOR	Zoom	All Interns WageIndicator Foundation
2021 - 11 - 09	OECD LIVING WAGE WORKSHOP	Zoom	WageIndicator Foundation - Living Wage team
2021 - 07 - 12	GLOBAL COST OF LIVING DATA COLLECTION: INSIGHTS AND CHALLENGES FROM WAGEINDICATOR'S LIVING WAGE TEAM	Zoom	Interns FLAME University
2021 - 06 - 24	DECENT WAGE BANGLADESH - IMPROVING INDUSTRIES: CONSTRUCTION, GARMENT, LEATHER, TEA	Zoom	Decent Wage Bangladesh, Phase 1

Date	Name of Meeting	Location	Relation to Project(s)
2021 - 05 - 27	WAGEINDICATOR BREAKOUT ROOM: LIVING WAGE IS THE LINKING PIN OF AT LEAST 5 SDGS THIS BREAKOUT ROOM IS PART OF THE SYMPOSIUM: DRIVING SYSTEMS CHANGE - CORPORATE LEADERSHIP FOR THE SDGS - ROTTERDAM SCHOOL OF MANAGEMENT, ERASMUS UNIVERSITY	Online	WageIndicator Foundation - Living Wage team
2021 - 01 - 15	WEBINAR: THE TECHNIQUE BEHIND THE WORLD OF INDEXES AND DATABASES; ABOUT THE WAGEINDICATOR LABOUR RIGHTS INDEX AND MINIMUM WAGE DATABASE	Zoom	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
110	Apples (1kg)
215	Bananas (1kg)
119	Barley
204	Beans_1kg
305	Bell pepper or sweet pepper
317	Berries
14	Bottle of Wine (Mid-Range)
208	Bovine Meat 1kg (beef)
301	Bulgur, Couscous
234	Butter, Ghee (1kg)
309	Cabbage
306	Carrot or other non-green vegetables
243	Cassava (1kg)
311	Cereal flour
241	Cereals, Other (1kg)
19	Chicken Breasts (Boneless, Skinless), (1kg)
383	Clothing and footwear
254	Coffee (1kg)
258	Cream (1kg)
15	Domestic Beer (0.5 litre bottle)
302	Dried Fish
381	Drinking water
11	Eggs (12)
223	Fish, Seafood (1kg)
203	Flat bread or pita (500g)
224	Freshwater Fish (1kg)
228	Groundnuts (Shelled Eq) (1kg)
314	Honey
307	Kale
212	Lemons, Limes (1kg)
310	Lentils

item_id	item_name
9	Loaf of Fresh White Bread (500g)
12	Local Cheese (1kg)
236	Maize (1kg)
304	Mango
199	Margarine
318	Melon
8	Milk (regular), 1 litre
209	Mutton and Goat Meat 1kg
231	Olives (1kg)
226	Onions (1kg)
111	Oranges (1kg)
206	Pasta 1kg
117	Peach
205	Peas 1kg
210	Pigmeat 1kg
303	Pineapples
216	Plantains (1kg)
112	Potato (1kg)
211	Poultry Meat (1kg)
118	Prawns, shrimp, crayfish, crabs, lobsters, krill and similar - fresh, frozen or canned
257	Pulses, other (1kg)
316	Regular cooking oil
222	Rice (1kg) (of standard quality)
313	Salt
217	Soybeans (1kg)
308	Spinach or other leafy green vegetables
242	Starchy Roots (1kg)
233	Sugar (Raw Equivalent) (1kg)
315	Sunflower Seed oil
312	Sunflower Seed or palm kernels
219	Sweet Potatoes (1kg)
227	Tea (1kg)
202	Tofu (1kg)
116	Tomato (1kg)
13	Water (1.5 litre bottle)
319	Watermelon
218	Yam (1kg)
201	Yogurt (1Liter)
501	food_collect_onlineshop
360	How much is the monthly housing cost for a single room (in an apartment sharing a kitchen/
363	Single room yes/no: Electricity
366	Single room yes/no: Garbage collection
370	Single room yes/no: Internet connection
362	Single room yes/no: Mortgage payments (applies to owners only)
361	Single room yes/no: Rent (applies to tenants only)
367	Single room yes/no: Routine maintenance and repairs
369	Single room yes/no: Taxes on dwelling
365	Single room yes/no: Water
340	How much is the monthly housing cost for an apartment for a family (two bedrooms, one living
343	Apartment family yes/no: Electricity
346	Apartment family yes/no: Garbage collection
350	Apartment family yes/no: Internet connection
342	Apartment family yes/no: Mortgage payments (applies to owners only)
341	Apartment family yes/no: Rent (applies to tenants only)
347	Apartment family yes/no: Routine maintenance and repairs
349	Apartment family yes/no: Taxes on dwelling
345	Apartment family yes/no: Water

item_id	item_name
320	How much is the monthly housing cost of an apartment for one person (one room, kitchen and bathroom) in your city/region?
323	Apartment one person yes/no: Electricity
326	Apartment one person yes/no: Garbage collection
330	Apartment one person yes/no: Internet connection
322	Apartment one person yes/no: Mortgage payments (applies to owners only)
321	Apartment one person yes/no: Rent (applies to tenants only)
327	Apartment one person yes/no: Routine maintenance and repairs
329	Apartment one person yes/no: Taxes on dwelling
325	Apartment one person yes/no: Water
384	Apartment one person cost: Energy
386	Apartment one person cost: Water
387	Apartment one person cost: Garbage collection
388	Apartment family cost: Energy
390	Apartment family cost: Water
391	Apartment family cost: Garbage collection
392	Single room cost: Energy
394	Single room cost: Water
395	Single room cost: Garbage collection
502	housing_collect_internet
18	One-way Ticket (Local Transport)
20	Monthly Pass (Regular Price)
24	Gasoline (1 litre)
503	transport_collect_internet
999	Estimate what are the minimal monthly expenses of a family of 2 adults and 2 children on the following items (please be as accurate as possible):
249	Monthly minimum food expenditure for a family of 2 adults and 2 children
250	Monthly minimum housing expenditure for a family of 2 adults and 2 children
251	Monthly minimum education expenditure for a family of 2 adults and 2 children
252	Monthly minimum medical expenditure for a family of 2 adults and 2 children
253	Monthly minimum costs of other necessities for a family of 2 adults and 2 children
382	Transportation (assuming the use of public transportation)
401	occupational_dataplan
402	occupational_wifi
404	occupational_phone
405	occupational_laptop
406	occupational_car_normal
407	occupational_car_electric
408	occupational_car_insurance_basic
409	occupational_car_insurance_all
410	occupational_motorbike_insurance_basic
411	occupational_motorbike_insurance_all
412	occupational_bike_normal
413	occupational_bike_electric
414	occupational_motorbike_normal
504	occupational_collect_internet
601	personal_health
602	personal_health_individual
603	personal_health_family
604	personal_period
605	personal_birthcontrol
606	personal_care
607	personal_cleaning
505	personal_collect_onlineshop

Note: Item ids 501, 502, 503, 504 and 505 relate to a question for data collectors who find prices online / webshops. Item ids 401-414 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.

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 (cca 500g)
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)
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

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

Item	Ghana			Vietnam		
	Food supply (kcal/capita/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

Item	Ghana			Vietnam		
	Food supply (kcal/capita/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)
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
Soyabeans	0	0.01	0	61	5.27	2.35
Coconuts - Incl Copra	25	0.24	2.47	15	0.15	1.33
Oilcrops, Other	4	0.04	0.3	0	0	0
Soyabean 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
Palmkernel 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
Sesa-meseed Oil	0	0	0	1	0	0.08
Olive Oil	1	0	0.06	0	0	0.03
Ricebran Oil	0	0	0	3	0	0.32
Maize Germ Oil	0	0	0	1	0	0.07
Oilcrops 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

Item	Ghana			Vietnam		
	Food supply (kcal/capita/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)
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
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
Pigmeat	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
Offals, 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

12. The list of regions in the region API

Please find the download here: https://wageindicator.org/Wageindicatorfoundation/researchlab/wageindicator-region-api

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