

# ESTIMATING LIVING WAGE GLOBALLY

MARTIN GUZI, MARTIN KAHANEC

Masaryk University, Central European University, University of Economics in Bratislava,  
CELSI, POP MERIT - UNU and IZA

[martin.guzi@econ.muni.cz](mailto:martin.guzi@econ.muni.cz)

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## **Abstract**

In the last decade the concept of living wage has received renewed international attention. This paper contributes to the living wage discussion and introduces a method to calculate living wage globally. The proposed approach is innovative in the way that it uses prices collected through web-surveys in order to provide timely, reasonably accurate and globally comparable estimates. The calculation is based on more than 1,730,000 prices collected since 2014 through the Cost of Living Survey initiated by WageIndicator. The survey is specifically designed to ask web visitors about consumer prices of about 100 goods and services. The estimated living wage represents the amount of money sufficient to cover food expenses, accommodation costs, transportation expenses and other expenses together with a provision for unexpected events. Finally living wage is corrected for income tax, and social contributions to be comparable to minimum wage and real wages which are gross earnings. The living wage is estimated for 54 countries (of which half are low and middle income countries in Africa, Asia and Latin America) and rates are contrasted with the indicators of national poverty line and national statutory minimum wages. Living wage is normatively based and offers an additional metric of economic adequacy that reflects the needs of workers and their cost of living.

Keywords: living wage, income adequacy, minimum income, decent work

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## **1. The concept of living wage**

The income level necessary to secure a decent standard of living is an important economic yardstick of income adequacy. Since 1919 living wage is recognized by the International Labor Organization (ILO) as a basic human right (ILO, 2008). ILO endorses minimum living wage within a wider concept of Decent work that aims for work in conditions of freedom, equity, security and human dignity. In 1948 the United Nations Universal Declaration of Human Rights officially recognized the need for workers to receive a living wage. The exact definition of living wage however has never been established and each campaign defines living wage differently (see Anker, 2011). The Global Living Wage Coalition that brings together certification companies defines living wage as the “remuneration received for a standard work week 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” (Anker and Anker, 2013). The Asia Floor Wage campaign launched in 2009 “proposes a wage for garment workers across Asia that would be enough for workers to live on. It accounts for the cost of a fair amount of food per day, plus other essential living costs such as healthcare, housing, clothing, childcare, transportation, fuel, education, etc”. (Merk, 2009). The living wage campaign in New Zealand launched in 2012 defines a living wage “as the income necessary to provide workers and their families with the basic necessities of life” (King and Waldegrave, 2012). In the US the living wage is calculated by Amy K. Glasmeier from MIT and distinguished by family size, composition and location. Glasmeier defines living wage as “an approximate income needed to meet a family’s basic needs [that] would enable the working poor to achieve financial independence while maintaining housing and food security”. The campaign organised locally since 2008 in Vancouver in Canada 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” (Richards et al., 2008). In this campaign the living wage is then calculated as “the amount needed for a family of four with two parents working full-time to pay for necessities, support the healthy development of their children, escape financial stress and participate in their communities”.

The very comprehensive calculation is developed in Ireland and the UK which define a Minimum Income Standard (MIS) based on public views about a minimum standard for different family types (Hirsch, 2013; Collins et al., 2012). Typically the group of respondents from a mixture of social and economic backgrounds arrives at a negotiated consensus about the cost of goods and services to enable a minimum essential standard of living. The MIS is then calculated as the gross income necessary to afford these expenditures, taking account of the tax liabilities and social welfare entitlements of each household type. The Living Wage Foundation in the UK uses MIS in the London Living Wage campaign. The advantage of MIS is that it reflects the real household needs in a very comprehensive way and figures are typically provided for a broad range of household types. An extension of the work

on MIS calculates the cost of a minimum acceptable standard for rural households (see MIS for Remote Rural Scotland in Hirsch et al. (2013)). The downside of MIS is the difficulty to understand what it represents and whether a negotiated consensus is understood as a mean, mode or median estimate of basic needs of workers. The other downside of MIS is the high initial cost of development and the monitoring of living standards in the society necessary for regular updating. Therefore the universal applicability of MIS method remains limited.

The methodology to calculate living wages introduced in this paper is broadly consistent with the previous living wage campaigns reviewed in Anker (2011). The calculation is country and region specific and assumes national food consumption patterns, variation in prices, characteristics of a typical family and labour market conditions. All information about living wages is published on Wage Indicator websites, and is available to stakeholders to comment through its interactive web platform as well as by means of workshops in covered countries. The concept of the living wage is dynamically evolving and there are several approaches present in the public discourse. WageIndicator living wage introduces a concept that allows users and stakeholders through web interface to share and compare living wages across countries and regions using a methodology that accounts for local conditions but also is harmonized to provide for international comparison. The methodology also provides for cost-efficient application in countries across the globe as well as regular updating (e.g. quarterly). Under the approach of wages in context, living wages are reported together with minimum wages and actual wages, as well as national poverty lines.

## **2. Data collection of prices**

The calculation of living wages internationally requires considerable information from various national data sources or international databases. Furthermore it is necessary that obtained information is updated to guarantee the validity of estimates. The estimation of living wage for the large number of countries is therefore at least challenging. The first attempt to provide globally comparable estimates of living wage for 100 countries is presented in Guzi (2014). This approach illustrates the possibility of using prices collected through web-surveys in the living wage calculation.

We have developed expertise in data collection through means of online web surveys. The WageIndicator Cost of Living survey (COL) web survey was specifically designed to collect the actual prices of items necessary to calculate the cost of living. Since January 2014, the Cost of Living Survey is posted on the national WageIndicator websites in 90 countries, which together received about 40 million web visitors in 2016. The survey asks web visitors to indicate consumer prices for about 100 goods and services. Each day the national websites post a teaser asking web visitors to indicate the price for one item and the cycle of questions repeats. Similar items are put into groups (e.g. prices of

vegetables) and visitors are asked to fill prices on all items in the group. In this way WageIndicator COL is not a standard survey that does not require a respondent to complete prices for all the items (although this option is available to respondents). The collection of prices has been very successful and during 2014-2016, respondents provided more than 1,730,000 prices combined on all items in all countries.

### **3. The calculation of living wage**

While the definition of living standards can vary between countries, all living wage campaigns aim to ensure that wages are sufficient to meet the basic needs of workers and their families. For the purpose of calculation we define the living wage as the amount of money sufficient to cover food expenses, accommodation costs, transportation expenses and other expenses together with a provision for unexpected events. Three different approaches are applied to calculate the living wage for different household types and to respond to different demands for living wage information.

- a) A one-person household living wage estimates the amount of money for a single adult individual without children. This approach provides a baseline estimate and permits a direct comparison with minimum wages and real wages, which are defined at the individual level, too.
- b) A representative household living wage estimates the amount of money to support a typical family with children in a given country. The number of children is approximated from the national fertility rate (see Table A1 in the Appendix). This approach accounts for variation in household structure across the globe. The living wage is estimated for an equivalent of a full-time worker. The calculation adjusts for the gender differences in the employment rates, so that the total household income earned by two parents receiving living wage should always be sufficient to cover the family expenses.
- c) A two-adults and two-children household living wage estimates the amount of money to support a family of two adults and two children. This approach has several advantages. First it provides a global comparison of living wages, focusing on price variation and keeping the family composition constant. Second the approach is adopted by several living wage campaigns (e.g. Asia Floor Wage, New Zealand, Vancouver) to which it is directly comparable. Third, the family with two children is the minimum average sized family required to ensure population replacement. Living wage should at least be sufficient to support such household. The living wage is estimated for an equivalent of a full-time worker. The calculation adjusts for the gender differences in the employment rates, so that the total household income earned by two parents receiving living wage should always be sufficient to cover the family expenses.

### **3.1 The calculation of food costs**

The food costs are calculated using the specified amounts of the food categories needed for one month. The information comes on two data sources. The first is the WageIndicator COL survey which collects the actual prices of all items necessary to calculate the living wage. The second is the FAO database , which includes the national food consumption patterns in per capita units, distinguished for about 50 food groups.

The food expenditure is the main component of living wage and it is determined by the price of food basket. The composition of food basket for each country is taken from the national food balance sheet published by FAO. The sheet includes the supply of commodities available in the country, and hence reflects the potential food consumption basket of an average individual. To avoid the negative bias in the quality of the consumption basket in the low income countries, the food basket is checked whether the percentage of calorie from proteins is consistent with WHO balance diet. The baskets which do not pass this test are replaced in calculations by the average of appropriate food baskets of neighboring countries. FAO (2013) informs that in the world as a whole per capita food supply rose from about 2,200 kcal/day in the early 1960s to more than 2,800 kcal/day by 2009. Food supply show a considerable variability across regions, Europe has the greatest average supply at 3,370 kcal/day, closely followed by Americas, and average supply in Africa is the lowest below 2,600 kcal/day. FAO explains that these figures represent the average supply available for the population as a whole but it is important to note that the amount of food actually consumed may be lower. This is due to losses of edible food and nutrients in the household, e.g. during storage, in preparation or cooking. A nutritional requirement for good health proposed by World Bank equals to 2,100 calories per person per day (Haughton and Khandker, 2009). The amount of calories per person assumed in the calculation of living wage is similar in the literature.

The food costs calculation assumes that all foods will be prepared at home and purchased at the lower prices from supermarkets. The prices from the WageIndicator COL survey are used to calculate the cost of the food basket following the current food supply in a country, scaled to 2,100 calories (the Cost of Living Survey questionnaire was deliberately designed to include all food items from the FAO database). Food costs may differ between regions within a given country and this variation is captured in the WageIndicator COL survey.

### **3.2 The calculation of housing costs**

The cost of housing for a one-member household is approximated by the monthly rental rate for a 1-bedroom apartment outside urban centres. The housing cost for a family with children is derived from the rental rate for a 3-bedroom apartment outside urban centres. Prices are collected in the Cost of

Living Survey. The housing cost includes utility and other housing costs (e.g. cost of electricity, water, garbage collection, etc.).

### **3.3 The calculation of transport costs**

Transportation is an important cost for households because most people commute for work or travel for their daily activities (e.g. shopping). It is assumed that families cannot afford to own a motorbike or car on the living wage and they rely on other means of transportation. Public transport service is commonly available in most urban places, so the price of a regular monthly pass is taken as the transport cost for an adult. It is assumed that children may travel for free with their parents. In rural places where no public transportation is available the expenses are determined by the cost of transportation (return ticket) to the nearest town once a week for adult household members. This assumption about rural transport is consistent with Anker and Anker (2013) and shall be implemented in the calculations of living wages in the medium term.

### **3.4 Other expenses and provision for unexpected expenditures**

The calculation of living wage cannot rely solely on food prices, as it would not sufficiently capture the price development of other important items such as housing. It is therefore desirable to include the most relevant expenditure directly in the calculation of living wage. WageIndicator follows this approach and includes household expenses on accommodation as well as personal transport in the calculation of living wages.

National living wage campaigns sometimes rely on data from national household income and expenditure surveys to estimate the amount of expenditures beyond the three basic categories: food, accommodation and transport. These surveys are however not readily available for a large set of countries. Because the bundle of non-food commodities varies between countries according to the habits and culture but also over time, it is difficult to come up with a universal basket of non-food goods and services to cover the needs in all countries.

One approach is to approximate the other costs from food costs by a multiplier according to the Engel Law. For instance Asia Floor Wage campaign assumes that garment workers in South Asia spend around half of their income just on food items. The amount of non-food costs is then approximated with the food costs without the need for price surveys.

As concerns health expenditures, most countries provide at least basic public health care services. Yet additional expenses on medication not available from public facilities or on the cost of private health care in emergency situations are often required. In addition, households need to be able to cover their basic living expenses even if they temporarily lose income due to health related temporary absence from work.

Education at public schools is provided at relatively low cost comprising school fees and supplementary materials. Anker and Anker (2013) estimate the cost of children's education in the rural South Africa at 1 percent of household expenditure. The living wage campaign in Vancouver adds the cost of child care (the cost of full-time child care for the first child and the cost of before and after school care and summer care for the second child) and in addition accounts for a cost of adult education. While the cost of parent's education in Vancouver comprises only 1.5 percent of total household expenses, the cost of child care is substantial and amounts to 22 percent of total expenses. It is important to note that the concept of living wage is based on basic needs and does not provide for family members to participate in advanced education or for entertainment or recreational activities.

On the other hand, the concept of living wage does provide for spending on non-specified discretionary purchases. In particular, it needs to be ensured that the living wage is sustainable in that it allows for unforeseen events such as illness, accidents or unemployment. Provision for unexpected events is also common in the living wage calculation in the literature. Anker and Anker (2013) include 10 percent margin and the living wage proposed in the Vancouver initiative assumes the two weeks income from labour as the provision for unexpected events on a yearly basis (i.e. approximately 4% of monthly household expenditure). We follow the literature and we add a margin of 10 percent to the final estimate of the living wage on top of the food, housing, and transportation expenditures to account for household expenditures on such unexpected expenditures, as well as the expenditure categories listed above.

WageIndicator Cost of Living Survey inquires about the expenditures on health and education, and shortly will cover specific expenditures on clothing as well. In the medium-term the provision for such expenditures will be detailed-out in the living wage calculations to more precisely estimate household expenditures on basic clothing, education and health items.

### **3.5 The living wage as a full-time worker equivalent**

The living wage is always estimated for an equivalent of a full-time worker which makes it comparable to a legal minimum wage or real wages. The family income is supported by two adults and the calculation adjusts for the gender differences in the employment rates. Total supply of labour within a family is equal to the one plus the participation rate adjusted for unemployment rate in the given country (see Table A1 in the Appendix). In this way the total household income earned by two parents receiving living wage should always be sufficient to cover the family expenses. In other words, in a country with high unemployment jobs are more difficult to find and hence living wage needs to be higher to compensate for the risk of unemployment. We adopt the principle that the living wage should be earned within a standard working hours and therefore calculations of household labour supply do not account for overtime work.

It is also possible that households generate in-kind income. We interpret living wage as the earnings (in monetary equivalent) from employment needed to provide for basic needs. As long as people who work and obtain in-kind benefits participate and are employed according to our statistics (which is typically the case in survey-based statistics), our measures are correctly reported, i.e. unaffected by the possibility that some wages may be (partly) paid in kind. The same holds for self-employed, as long as they report to be in employment (participating in the labour market and not unemployed) in our statistics.

Table 1 concisely summarizes the assumptions involved in the living wage calculations for three different types of household. In the Appendix the parameter of three living wage campaigns are provided for a comparison in Tables A2-A4.

Table 1 Summary of assumptions

a.	One-person household
Household composition	One adult
Interpretation of living wage	Living wage defines a net income of full-time worker that is sufficient to cover food, accommodation and transportation on a monthly basis.
Employment status	Full-time worker
Food expenses	The composition of food basket with 50 food items reflects the actual food consumption in the country. A nutritional requirement is set at 2,100 calories per person per day.
Accommodation	The monthly rental rate of apartment (1 bedroom) outside of city centre.
Transportation	The price of a regular monthly public transportation pass.
Provision for unexpected events	10% of living wage

b.	Typical family
Household composition	Two adults with children; the number of children is determined by the current fertility rate in the country.
Interpretation of living wage	Living wage defines a net income of full-time worker that is sufficient to cover food, accommodation and transportation on a monthly basis for a typical family adjusting for two-parent employment rate.
Employment status	One spouse is a full-time workers and the involvement of second spouse is approximated by the participation rate adjusted for unemployment rate in the country.



Food expenses	The composition of food basket with 50 food items reflects the actual food consumption in the country. A nutritional requirement is set at 2,100 calories per person per day.
Accommodation	The monthly rental rate of apartment (3 bedroom) outside of centre.
Transportation	The price of two regular monthly public transportation passes. Children are assumed to travel for free with their parents.
Provision for unexpected events	10% of living wage

c.	Standardized 2+2 household
Household composition	Two adults with two children.
Interpretation of living wage	Living wage defines a net income of full-time worker that is sufficient to cover food, accommodation and transportation on a monthly basis for a family with two adults and two children adjusting for two-parent employment rate.
Employment status	Same as for a typical family
Food expenses	Same as for a typical family
Accommodation	Same as for a typical family
Transportation	Same as for a typical family
Provision for unexpected events	Same as for a typical family

#### 4. The publication of living wage estimates

Table 2 shows the living wage estimates for 58 countries which are calculated based on prices collected during 2014-2016. For each country we construct estimates of living wage for three family types. For a comparison we include the official national statutory minimum wage in Column 1. All figures are presented in monthly terms and in national currency. The estimates of living wages are also presented in an online application that is visually attractive to users (see [www.livingwageindicator.org](http://www.livingwageindicator.org)). The policy of full transparency with respect to calculations and methodology is adopted with the objective of providing for accountability and stakeholder involvement.

Living wages are published as a range with the lower bound of 25th percentile and upper bound of the 50th percentile of calculated living wages based on the data from the WageIndicator Cost of Living survey, to reflect the variation of prices within a country. 50th percentile (median) is the value for which half of the respondents report higher and the other half lower values of costs of living. 25th percentile

is the value for which 75% of respondents report higher costs of living, implying a cost-optimizing household seeking cheaper-than-average housing and food compared to the national average (median).

The living wage is calculated for different household types as described above. All figures are always presented in the national currency and are also converted to EUR (not presented here) to enable a global overview. In the online application we present the components of the living wage, such as food and housing expenses are shown separately. Living wage estimates are quarterly updated to keep up with changing price levels.

Transparent, timely, and broad publication of living wages and the underlying methodological notes on interactive websites serve as a powerful feedback channel involving stakeholders around the globe: including employee and employer representatives, civil society organisations, academics, policy makers, and our internet visitors. Finally, respondents in the survey report a measure of what they consider to be an adequate living wage in their country. As another consistency check the subjective living wages are compared to those obtained from the cost of living survey. In case of discrepancies we consult national experts to identify and correct any possible sources of bias.

Table 2 Minimum wage and living wage estimates (national currency)

Country	Minimum wage	Living wage Individual		Living wage typical family		Living wage 2+2 family	
		low	high	low	high	low	high
Angola	15003	39500	63600	57000	83300	93400	134800
Argentina	8060	5680	7060	7280	9020	7500	9310
Australia	2915	1850	2260	2060	2600	2050	2580
Austria	1387	886	1040	1140	1390	1090	1320
Azerbaijan	105	340	444	384	541	382	538
Bangladesh	1500	6120	8930	11900	17700	12200	18000
Belarus	265	194	269	311	435	284	397
Belgium	1051	946	1120	1100	1370	1080	1340
Brazil	880	1240	1610	1720	2260	1700	2230
Bulgaria	460	578	767	811	1060	767	1000
Cambodia	120000	668300	1091000	864000	1253300	926500	1341900
Canada	2184	1290	1520	1550	1840	1490	1780
Colombia	737717	847300	1167800	1010700	1391800	1008200	1388400
Costa Rica	286467	590400	787200	592800	828400	589600	824400
Czech Republic	11000	12900	15800	14600	18500	14000	17700
Egypt	1200	1470	2180	2250	3280	2460	3570
El Salvador	200	189	273	305	440	306	441
Finland		957	1220	1130	1490	1110	1460
France	1458	855	1060	1100	1370	1100	1370
Germany	1839	892	1150	1070	1500	1030	1430
Ghana	238	472	748	764	1070	1040	1410
Greece	511	399	475	561	672	522	623
Guatemala	2418	1340	2090	1920	2920	2110	3170
Honduras	5870	4110	5250	5480	7540	5770	7930
Hungary	127650	138100	180000	181300	244800	170400	230100
Chile	264000	316200	407800	395200	531200	388100	521800
India	4160	8350	12100	14700	20100	15300	21000
Indonesia	1337645	1672000	2843300	1961700	3025300	2081400	3181200
Italy		709	940	933	1260	881	1190
Kazakhstan	24459	76600	100100	84800	116000	90300	123500
Kenya	5437	21800	29400	30900	43800	37300	52000
Madagascar	144003	249100	354200	327800	464900	410800	571400

Mexico	2433	3370	4960	5410	7660	5600	7910
Netherlands	1125	844	1100	922	1230	900	1200
Nicaragua	3481	3240	5110	4680	6860	4860	7120
Niger	30047	64600	97100	108000	137600	184600	246200
Nigeria	18000	29600	43400	54900	79800	93400	132300
Pakistan	14000	12300	17000	19100	25800	23200	30500
Paraguay	1964507	958200	1326000	1371200	1884000	1464900	2009300
Peru	850	578	849	814	1150	859	1210
Poland	1344	2000	2470	2390	2930	2280	2800
Portugal	530	496	626	639	826	596	765
Romania	1400	1490	2000	1950	2530	1860	2410
Russian Fed.	7500	22200	35500	23400	35000	22700	34000
Senegal	38054	66500	97600	105500	135400	141600	181200
Slovakia	435	507	644	611	767	581	727
South Africa	2603	5230	7220	7260	9740	7460	10000
Spain	655	616	871	797	1120	747	1050
Sri Lanka	10000	21800	30900	37900	54800	38500	55600
Sweden		8590	11100	10400	12800	10300	12700
Tanzania	40000	171700	262400	291200	446400	437200	648200
Turkey	1778	1080	1660	1540	2390	1550	2410
Ukraine	3200	5170	7550	5560	8120	5310	7770
United Kingdom	598	804	1040	870	1160	863	1150
USA		991	1410	1080	1510	1070	1500
Vietnam	2580000	2982600	4011400	3965700	5827800	3939000	5790500
Zambia		2040	2420	2380	3560	3150	4450
Zimbabwe		259	411	261	431	306	490

Source: Own calculation based on Wage Indicator Cost of Living survey, 2014-2016.

Note: All figures are expressed monthly terms. Minimum wages are collected by Wage Indicator.

## 5. Current strongholds and long-term research agenda for the methodology

The strongholds of the proposed living wage methodology include:

- It is rooted in state-of-the art approaches and concepts outlined in the literature
- The richness of the data and the set of covered living expenses provides also for regionally differentiated living wages within countries
- It is harmonized across countries and hence provides for reliable international comparison
- The calculation for three types of households accounts for the diversity of households within and across countries, providing for reliable and highly informative comparison within and across countries
- Data collection techniques provide for regular and frequent updating across all countries
- Reporting of the median as well as 25th percentile of living wage calculations provides for explicit comparison of well-defined concepts within and across countries, and over time. It also provides for a more transparent measure of living wage, reflecting the variation of prices and consumer preferences. A single figure, in contrast, could lead to a misperception of invariant prices and consumer choices, and singular number may not reflect all consumption and expenditure patterns.
- The living wage is corrected for income tax, and social contributions and therefore the living wage is most comparable to minimum wage and real wages which are gross earnings.

The living wage, as outlined in this report, is based on a set of assumptions. The long-run research objective is to provide for an ever more accurate calculation of living wages across regions, countries and over time:

- A general long-term objective is to improve our web-based data collection, account for the variation of prices and consumption patterns, and ensure that we correct for any data issues that could potentially bias our results. Such biases are further limited by the fact that we collect data about prices and not individual characteristics and our price level calculations are represented as a range, with the median as the upper bound and 25th percentile as the lower bound.
- Respondents in the WageIndicator Cost of Living Survey additionally report a total monthly expenditure necessary for living in their country. This information can be considered as subjective living wage. As a consistency check the subjective living wage is compared to the calculated living wage. In case of discrepancies national experts are asked to identify and correct any possible sources of bias.

- When workers receive in-kind bonuses such as food, housing or travel allowances, these could be deducted from the living wage; we however take the living wage as the monetary equivalent of all income, including any in-kind provisions. We aim to obtain more precise information about the family composition and household production. This allows us to improve the living wage calculation in the countries with high share of informal employment. Inasmuch as living wages are determined by expenditures on a basket of basic needs and people report employment status even if it is informal, our calculations are not directly affected by in-kind benefits from work.
  
- Pay bonuses such as a 13th salary or Christmas bonus may effectively decrease the living wage; however, as they are irregular and their amount is uncertain, they are not included in our calculations. Living wage is based on the assumption that monthly expenses should be possible to finance from regular monthly labour income; and irregular income can be used for irregular expenses.
  
- Overtime pay bonus is not accounted for, because the living wage should be earned during normal hours (ILO Convention 1 (1919) states a maximum number of 48 hours of work per week in all countries).

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## 7. Appendix

Table A2

	New Zealand Living Wage
Household composition	Family of two adults with two children
Interpretation of living wage	Living wage is the income necessary to provide workers and their families with the basic necessities of life. A living wage will enable workers to live with dignity and to participate as active citizens in society.
Employment status	Two income earners, one working full time and the other half time. (total 60 hours of work per week)
Food expenses	The Food Cost Survey carried out by the University of Otago is used to determine the food expenses of family of two adults and two children. The food basket meets the nutritional needs and includes the most commonly consumed fruits and vegetables.
Accommodation	Average lower quartile national rent is obtained from the Ministry of Business, Innovation and Employment. Two calculations are produced one with average national rent and other with Auckland (the capital) rent.
Transportation	Based on average expenditure determined from the Household Economic Survey.
Other expenses	Statistics from New Zealand's Household Economic Survey are used to estimate average expenditure on other items. The cost of 10 hours childcare per week is estimated at market prices.
Provision for unexpected events	Two percent of gross income is assumed for savings
Income from government transfers	Yes, income support entitlements
Government Deductions and Taxes	Yes, mandatory payroll deductions are assumed.

Notes: The parameters of living wage estimates produced in New Zealand, Vancouver, and rural South Africa. New Zealand: The living wage campaign in New Zealand was launched in 2012 and the calculation of living wage is based on King and Waldegrave (2012).



Table A3

	Rural South Africa Living Wage
Household composition	Two adults with children and the number of children is determined by the current fertility rate in the country.
Interpretation of LW	Fairtrade definition of living wage.
Employment status	The typical number of full-time equivalent workers per couple is calculated when one worker in a family has a full-time employment and the probability of employment of second spouse is estimated using the participation rate adjusted for unemployment rate.
Food expenses	Food basket has 2261 calories, calories from proteins (12.5%), fats (24.5%) and carbohydrates (63.0%). 10 percent is added to the cost of diet to allow for some variety. The cost of the 2 bottles of beer per adult per week is added. Food prices are determined in the local market. Children have the same diet as parents.
Accommodation	The cost of rent for a basic acceptable dwelling and utility costs and other housing costs. At least 2 potential sleeping rooms are required for a family of 4 or 5 persons.
Transportation	Transport costs are calculated to allow workers at least one trip to the nearest town once per week.
Other expenses	Using data on household income and expenditure data the cost of non-food and non-housing expenditures is estimated to equal approximately to the food expenses.
Provision for unexpected events	10% of final living wage
Income from government transfers	Yes
Government Deductions and Taxes	Yes, mandatory payroll deductions are assumed.

Notes: South Africa: The living wage for rural South Africa with focus on wine grape growing in Western Cape province was developed by Anker and Anker (2013) for Fairtrade International.

Table A4

	Vancouver Living Wage
Household composition	Two adults with two children.
Interpretation of LW	The living wage is the hourly rate of pay at which a household can meet its expenses once government transfers have been added and government deductions have been subtracted.
Employment	35 hours of paid work for each parent assuming equal hourly wage (total 70 hours of work per week)
Food expenses	The average cost of food basket for a family is based on the definition of National Nutritious Food Basket and is adjusted with the current prices in the district.
Accommodation	Expenses include rent, utilities, telephone and insurance. Rent equals to the median rent for three-plus bedroom apartments. Utility (water, fuel and electricity) is determined from Census data and telephone expenses equal to present phone rates. The cost of insurance is obtained from an insurance agent.
Transport	Family is assumed to have a car and one bus pass. The expense of vehicle is determined from Canada's Market Basket Measure.
Other expenses	Other expenses include personal care items, household supplies and furniture, school supplies, and modest levels of reading materials, recreation and entertainment. The calculation of other expenses builds upon the Canada's Market Basket Measure and includes: clothing and footwear, the cost of full-time child care, the cost of before and after school care and summer care, the cost of premium health care plan and the cost of parent education.
Provision for unexpected events	Two weeks income from labour on a yearly basis (i.e. approximately 4% of monthly household expenditure).
Income from government transfers	Yes
Government Deductions and Taxes	Yes

Vancouver: The living wage campaign in Vancouver was launched in 2008 and the calculation of living wage is developed by Richards et al. (2008) and is regularly updated since.