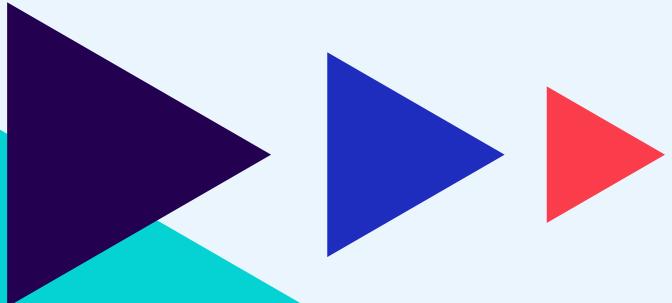




International  
Labour  
Organization



► **Estimating the needs  
of workers and their families  
in Indonesia**



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*Estimating the needs of workers and their families in Indonesia.* International Labour Office – Geneva: ILO, 2021.

ISBN 978-92-2-035578-7 (web PDF)  
ISBN 978-92-2-035963-1 (print PDF)

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## ► Acknowledgements

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This report is part of an ILO project on indicators and methodologies for wage-setting supported by the Ministry of Foreign Affairs of the Netherlands. The project seeks to develop indicators and methodologies that will strengthen the capacity of governments and social partners to negotiate and set adequate wage levels that take into account the needs of workers and their families along with economic factors.

The main authors of the report are Nicolas Maître and Erika Chaparro Perez, with contributions from Patrick Belser, Xavier Estupiñan, Daniel Kostzer and Khalid Maman Waziri. Michael Rose copy-edited the draft of the report. Special mention should also be made of Claire Piper for her excellent assistance in the publication process and the formatting of the document.



## ► Executive summary

---

Minimum wage setting and adjustment is a task that seeks to protect workers and their families while ensuring compliance and avoiding adverse effects on employment levels. The ILO Minimum Wage Fixing Convention, 1970 (No. 131) calls for a balanced and evidence-based approach to setting minimum wage levels that considers both the needs of workers and their families and economic factors. While the needs of workers and their families and economic factors are equally important in wage-setting, the present report focuses on a methodology for measuring the needs of workers and their families. As such, the report should be considered as complementary to the evaluation of economic factors for adjusting minimum wages in Indonesia.

In order to estimate a wage sufficient to cover the needs of workers and their families, we should take into account various factors such as family size, the number of wage-earners per household and the cost of living. Using an evidence-based approach, we formulate a methodological framework to establish how to estimate the needs of the workers and their families using data from Income and Expenditure Surveys. These needs are implicit in expenditures on food, housing, health and education, and other essential goods and services.

First, we divide expenditures into different categories. For the first expenditure category – *cost of food* – we use the World Bank methodology on poverty lines. We construct a reference basket and estimate its cost based on observed national consumption patterns. First, collected information on the caloric content of each food item consumed by a household is used to calculate the caloric consumption for that household. Next, the reference food basket is constructed so that it reflects, at the national level, the consumption patterns of households at quintile 3 of the distribution of monthly household expenditures per capita, for which caloric consumption is the closest to the sufficiency requirement of 2,150 kcal per day recommended by national health authorities. This informs us of the quantities consumed for each food item and thereby the caloric consumption per capita within those reference households. Because that caloric consumption is greater than the required calorie intake of 2,150 kcal per day, an adjustment coefficient is applied to the item food quantities consumed so that they provide the required calorie intake. Next, the adjusted quantities and the information on prices obtained from the survey are used to estimate the monthly cost of the reference food basket per capita. It should be noted that reference food basket differs by region because reference quintiles of total monthly expenditures per capita differ from one region to another. While at the national level the reference quintile is quintile 3, at the regional level it varies from quintile 2 in Jakarta to quintile 3 in Java, Kalimantan, the Lesser Sunda Islands, Sulawesi and Sumatra, quintile 4 in Western New Guinea and quintile 5 in the Maluku Islands. Consequently, the same methodology is applied separately to each of the eight regions in Indonesia. Finally, the food needs cost is estimated for a reference family size of 4. Accordingly, the reference food basket in 2018 costs 1,915,708 Indonesian rupiah (Rp) at the national level and ranges from Rp1,870,748 in the Sumatra region to Rp2,374,722 in the Jakarta region.

For the second category – *cost of housing* – the cost of monthly rent is estimated using a set of indicators on the quality of the dwelling. Based on those indicators, a system of scoring is designed to measure housing quality based on four dimensions of decent housing: durability, living space, access to water and access to facilities (including toilet and kitchen facilities). A score from 1 to 5 for each dimension is obtained, with 1 corresponding to the lowest and 5 to the highest levels of quality. Summing the scores of the four housing dimensions provides a total housing quality score ranging from 4 to 20. Next, we identify the total housing quality score that corresponds to a decent dwelling – a minimum score of 13 in the case of Indonesia – with its associated rent and utilities levels per capita, which are estimated from a fitted

regression. Finally, the monthly rent and utilities expenditures for a reference family size of 4 is calculated. Accordingly, the total cost of decent housing including rent and utilities for the reference family size of 4 at the national level amounts to Rp624,388 and at the regional level ranges from Rp462,592 in Java to Rp1,310,221 in Western New Guinea.

For the two remaining categories – cost of health and education and cost of other essential goods and services, including transportation – our methodological approach is to take the average monthly expenditures per adult equivalent (per capita for health and education) corresponding to the reference quintile and then to estimate the monthly needs for a household of 4. Accordingly, for the reference family size of 4:

- (a) monthly expenditures for health and education at the national level are estimated at Rp98,157 and at the regional level range from Rp89,874 for Sulawesi to Rp398,555 for Jakarta; and
- (b) monthly expenditures for other essential goods and services at the national level are estimated at Rp633,415 and at the regional level range from Rp472,848 for the Lesser Sunda Islands to Rp2,348,850 for the Maluku Islands.

Next, we proceed to estimate the total needs based on the outcomes calculated from the different expenditure categories. We estimate the total needs for a family of 4 at the national level at Rp3,371,668, while at the regional level they range from Rp3,128,567 for the Lesser Sunda Islands to Rp5,691,326 for the Maluku Islands.

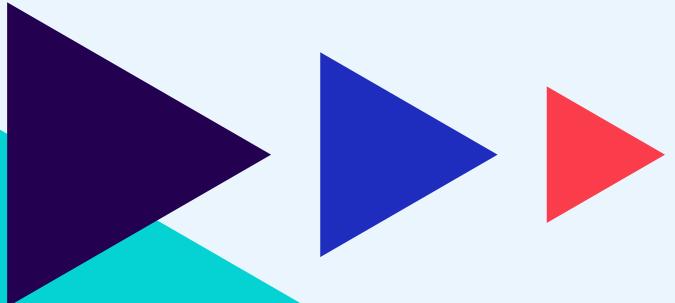
Having estimated the costs for the needs of a reference family, we are able to estimate what would be the level of a wage that would cover these needs on the hypothesis that there are 1.5 working adults in the family. Our estimates suggest that the needs-based wage level required to sustain a family of 4 with 1.5 working adults ranges from Rp2,085,712 to Rp3,794,217. For a family of 4 comprising two full-time wage employees, the estimated needs-based wage level ranges from Rp1,564,284 to Rp2,845,663.

Finally, we compare the level of the minimum wage with the estimated needs-based wage levels for a reference family of 4 with 1, 1.5 and 2 working adults, respectively. The analysis suggests that the regional average minimum wage rates are sufficient to cover the needs of 1 adult working full-time for all regions. In addition, except for the Maluku Islands and to a lesser extent Java, regional average minimum wage levels are sufficient to cover the needs of a family of 4 with 2 adults working full-time. Nevertheless, regional minimum wage averages are lower than the corresponding estimated needs-based wage levels for a family of 4 with only 1 adult working full-time in all eight regions. Considering an intermediary scenario of 1.5 working adults in a family of 4, it is also evident that for five of the eight regions (Java, the Lesser Sunda Islands, Kalimantan, the Maluku Islands and Western New Guinea), the regional average minimum wage levels are insufficient to cover the estimated needs of workers and their families. The gap between the regional average minimum wage levels and the estimated needs-based wage levels for a family of 4 with 1 working adult ranges from 13 per cent in Jakarta to 151 per cent in the Maluku Islands. For a family of 4 with 1.5 working adults, that gap ranges from less than 1 per cent in Kalimantan to 67 per cent in the Maluku Islands. These results suggest that in many regions of Indonesia the current minimum wage levels are relatively well in line with the needs of workers and their families assuming a family of 4 with 1.5 working adults. However, in some regions minimum wage levels may still be insufficient to cover the needs of large families with a limited number of working adults. Before drawing any conclusions on minimum wage levels, it is important to balance these results with a thorough analysis of economic factors.



▶ 1

## Introduction



## ► 1. Introduction

---

Setting and adjusting the level is perhaps one of the most challenging parts of minimum wage fixing. If set too low, minimum wages will have little effect in protecting workers and their families against unduly low pay or poverty. If set too high, minimum wages will be poorly complied with and/or have adverse employment effects.

The ILO Minimum Wage Fixing Convention, 1970 (No.131) (ILO, 2019) calls for a balanced and evidence-based approach for setting minimum wage which considers, on the one hand, the needs of workers and their families and, on the other, economic factors. An appropriate balance between these two sets of considerations is essential to ensure that minimum wages are adapted to the national context and that both the effective protection of workers and the development of sustainable enterprises are considered.

While needs of workers and their families and economic factors are equally important in wage-setting, the present report focuses on a methodology for measuring the needs of workers and their families in line with Convention No. 131. As such the present report should be taken as complementary to the evaluation of economic factors for adjusting minimum wages in Indonesia. Together, these analyses provide a set of information aimed at increasing the capacity of the governments and the social partners to negotiate and set appropriate wage levels.

The present report falls within the scope of a technical cooperation project that seeks to develop indicators and methodologies on the needs of workers and their families, which – along with the consideration of economic factors – will strengthen the capacity of governments and social partners to negotiate and set adequate wage levels. The methodologies and tools developed at the global level in this project are currently being tested in five pilot countries (Costa Rica, Ethiopia, India, Indonesia and Viet Nam) and will be integrated in an ILO global toolkit for future technical assistance on minimum wage policies.

Assessing whether existing rates are enough to meet the needs of workers and their families can be challenging. First, the definition of needs is a relative concept. There can be basic needs, higher needs, and so on. The definition of these different types of needs can also vary across and within countries. The difficulty of pinning down what constitutes each type of need explains why there is no universal definition that is widely accepted. Secondly, whether a minimum wage is enough to cover the needs of a family depends on the size of one's family, which varies among workers. It also depends on how many family members are minimum wage-earners, as well as on the local cost of living. Some averaging is therefore unavoidable.

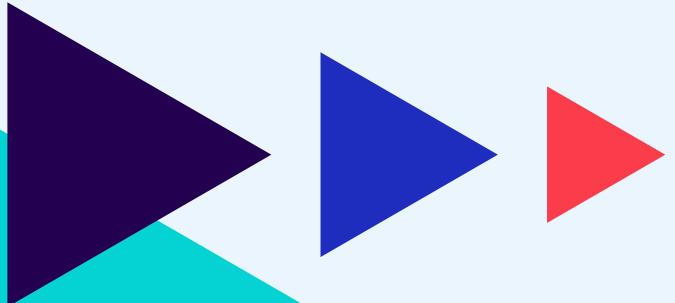
In this paper, we apply a methodological framework to estimate the cost of basic needs for workers and their families in Indonesia as a whole, as well as separately for each of the eight regions in the country in which minimum wage rates differ. To do so, we use the National Socioeconomic Survey of Indonesia (SUSENAS), which is implemented in Indonesia every two years. The SUSENAS is a nationally representative survey that collected data for 295,155 households and 1,131,825 individuals in rural and urban areas in 2018. It also provides information on different dimensions at the domestic and individual levels, such as demographic characteristics, education, health, housing, work and consumption, among others.

The paper is divided into six sections. While the first section summarizes the conceptual framework of the methodology and its underlying assumptions, the following three sections provide detailed analyses and estimate the cost of basic needs for each expenditure category – food; housing; health and education; and other essential goods and services – both at the national level and separately for each region of Indonesia to enable a basic but adequate living standard. By aggregating outcomes from the previous three sections, the fifth section

reveals the estimated needs-based wage at the national level and for each region. Finally, the sixth section compares the existing minimum wage levels in Indonesia with four measures of the estimated needs-based wage levels, using different assumptions for the number of working adults.



2 Brief overview  
of the methodology



## ► 2. Brief overview of the methodology

---

The “baseline” methodology – which is open to country-specific adaptation – sets out a general framework for assessing the needs of workers and their families through a multidimensional approach that separately estimates the cost of living for the following four dimensions.

- (a) *Cost of food* – A low-cost diet that provide sufficient amount of calorie, protein and fat and that is suitable for the target population in terms of composition. This is measured normatively based on the calorie and nutrient standards defined by the World Health Organization (WHO) and the Food and Agriculture Organization of the United Nations (FAO).
- (b) *Cost of housing* – A basic but decent dwelling with an acceptable standard. Following United Nations for Human Settlements Programme (UN-Habitat) recommendations, this is measured normatively based on national and international standards on adequate housing characteristics, such as living space, durability, facilities and access to water.
- (c) *Cost of health and education* – A basic level of health and education expenditure is considered as a separate group. Unlike food and housing needs, the cost of health and education needs are estimated using a relative approach that draws on the national distribution of expenditure for health and education.
- (d) *Cost of other essential goods and services* – We aggregate all other expenditure components (such as, clothing and transportation) into one group. As for health and education estimates, the cost of other essential goods and services is estimated using a relative approach that draws on the national distribution of such expenditure.

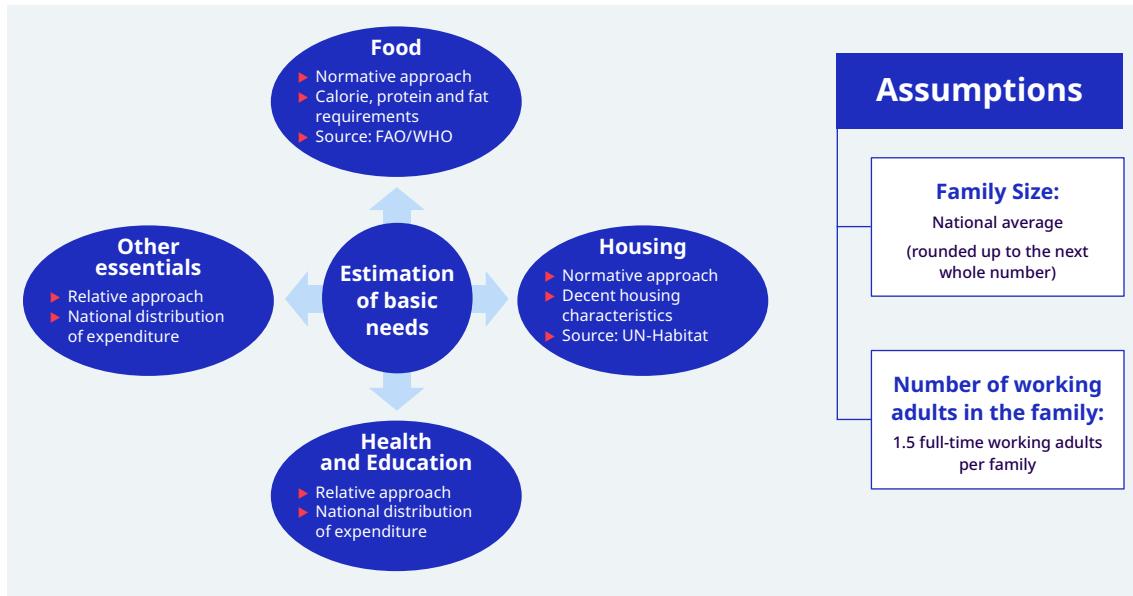
This methodology combines absolute measures for food and housing with relative measures for the cost of health and education and other essential goods and services – a combination that is well in line with the philosophy of Convention No.131. By combining relative and normative approaches, the method has the advantage of taking into consideration both the socio-economic realities of the country and the living standards of other social groups.

Figures 1a and 1b illustrate the conceptual framework of the methodology. Figure 1a shows that the methodology is built around the four above-mentioned dimensions of the needs of workers and their families described above. The first step consists of estimating separately the costs of adequate food, decent housing, health and education, and other essential goods and services for 1 person (or 1 adult equivalent). Next, these separate estimated costs are summed up in order to estimate the total needs of 1 person (or 1 adult equivalent). In order to convert these individual needs into the needs of a worker and his family, an assumption with respect to the choice of a reference family size (and its corresponding number of adult equivalents) is needed. In this baseline methodology we propose to use the rounded average family size in the country or region considered. However, as discussed in the following section, the decision on what family size to adopt may ultimately be left to the discretion of the entity interested in applying a needs-based wage in their particular setting. Accordingly, estimates based on multiple family size scenarios may also be presented and the assumption with respect to family size may constitute one of the adaptable elements of the methodology.

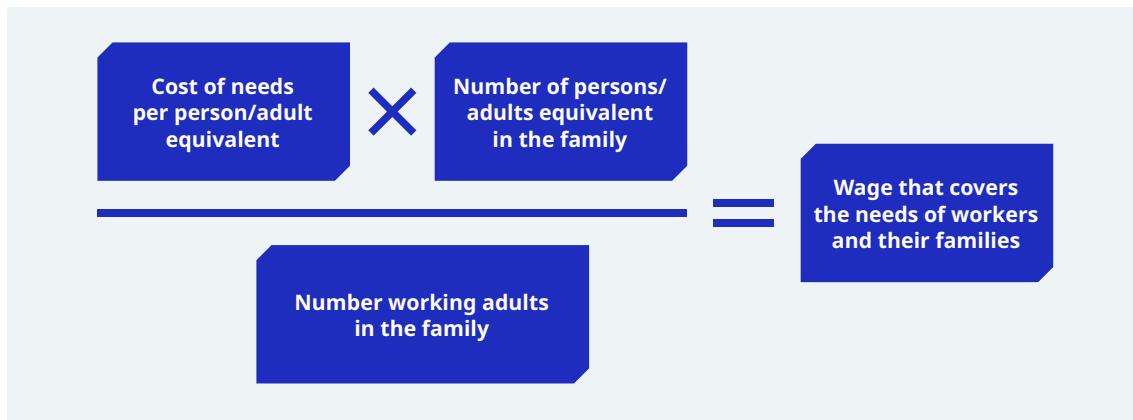
When estimating the needs of workers and their families in order to strengthen the capacity of governments and social partners to negotiate and set adequate wage levels, it is essential to convert the total needs of a family into a wage level that is sufficient to cover them – the so-called needs-based wage. However, this step requires making another assumption with respect to the number of full-time working adults in the family. If two wages should be sufficient to cover the total needs of a family, these wages should be half the amount of the total needs. However, if one wage should be sufficient to cover the total needs of a family,

this wage should be equal to the total needs. Therefore, as figure 1b shows, in order to convert the total needs of workers and their families into a needs-based wage, it is essential to divide the needs by the number of working adults considered in the family. In this baseline methodology, we propose to use a number of full-time working adults that is set normatively at 1.5 full-time working adults for any family of more than 1 person. This assumption is discussed further in the third section of the present Chapter.

► Figure 1a: Conceptual framework of the methodology



► Figure 1b: Estimating a wage sufficient to cover the needs of workers and their families



### Reference family size and adult equivalence

As figure 1b shows, the estimated cost of living for 1 member of the family is multiplied by a reference family size. Family size and composition is a crucial consideration when estimating a needs-based wage. Should we use average household size according to national statistics? Or should we use the size of households that are in lower tiers of the labour market? Or is there another referential household? This is obviously very important since a wage set to support a family of 5 is evidently going to be higher than a wage set to support a family of 3.

In the present baseline methodology, we use the national average family size rounded up to the next whole number, which is equal to 4 in the case of Indonesia. However, it is worthwhile to note that poorer households tend to have larger families, which may translate into greater needs. Ultimately, while it is essential to provide a reference family size in estimating the needs of workers and their families, the decision on what family size to adopt should be left to the discretion of the entity interested in applying a needs-based wage in its particular setting. This is why, in this study, we provide estimation based on multiple family size scenarios in addition to the selected reference family size. Using a range of household sizes provides useful information for minimum wage fixing and there may be a need for debate on the most appropriate reference family size in a particular setting. It is also worth noting that in more traditional societies, in which the bulk of production is for self-consumption, the prevailing structures are those of extended households, rather than the nuclear households which tend to be the standard in urban economies.

Another question concerns the use of adult equivalence scales. Such scales are used to take into account the economies of scale that arise from people living together (for example one fridge is sufficient even for a family of 4), as well as the fact that children may have fewer needs than adults. Two types of equivalence scales are used here.

A further question concerns the use of conversion coefficients to convert estimates for 1 member of the family to those for the whole family and vice versa. Whenever possible, adult equivalence scales are used for that purpose. Such scales are used to take into account the economies of scale that arise from people living together (for example one fridge is sufficient even for a family of 4), as well as the fact that children may have fewer needs than adults. For the other pilot countries in this project, we use adult equivalence scales for food needs. For Indonesia, however, since the calorie requirements are set per capita, the methodology differs slightly and a per capita analysis is used for the food dimension. Therefore, two types of conversion factors are used for Indonesia, as follows.

► **Per capita values for food (calorie needs) and for health and education.** As discussed in more detail in the section on estimating food costs, the recommendations of the Ministry of Health of Indonesia on calorie consumption use per capita requirements and consequently per capita estimates are produced for food needs, which can be converted into needs for the whole family when multiplied by the number of household members. For health and education needs, per capita estimates are also produced because there is no evidence of the existence of economies of scales in the access to health and education for a family. Therefore, each member of the family should be entitled to individual access to health and education.

► **Equivalence scales for total household consumption.**<sup>1</sup> We use such scales for example when we partition and rank a country's households into quintiles based on their total monthly expenditure per adult equivalent, which is calculated for each household in the survey. In this case, we can either use an adult equivalence scale at the country level formulated by national statistical offices (if available) or the Organisation for Economic Cooperation and Development (OECD) adult equivalence scale (also known as the "Oxford scale"),<sup>2</sup> which typically assigns the value of 1 to the household head, 0.7 to each additional adult member and 0.5 to each child. The OECD "adult equivalence" scale is also used when converting per adult equivalent needs into those of the whole family for the estimated costs of housing and other essential goods and services.

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1 It is important to differentiate such scales from the "adult equivalent energy intake" (AEEI) mentioned earlier. While the AEEI scale is used strictly for calorie analyses, the OECD "adult equivalence" scale is used for adjusting all expenditure values.

2 OECD, "[What are Equivalence Scales?](#)".

## Number of full-time working adults:

To estimate the wage that meets the basic needs of workers and their families, it is essential to define how many wage and/or income recipients are assumed to live in the family considered. In contrast to family size, the assumption of the number of full-time workers has a reducing effect on the needs-based wage level. In order to obtain the so-called needs-based wage, the total cost of the needs of workers and their families is divided by the number of full-time working adults assumed to be employed in the family. As for family size, however, the number of full-time working adults assumed in the family of reference is subject to a methodological choice. Broadly, this choice concerns what constitutes the most suitable measure of the number of full-time working adults to use as the denominator in the calculation. Should we assume that there is only 1 full-time working adult in the family? Or perhaps 2 full-time working adults? Should we use the observed number of full-time working adults in the households Or instead a fixed number of full-time working adults set normatively between 1 and 2? For the present baseline methodology, we select the last option and propose to use a fixed number of full-time working adults set normatively at 1.5 full-time working adults for any family of more than 1 person. There are three reasons for this decision.

First, following Anker and Anker (2017), we believe that using either 1 or 2 workers per family, as is done for most living-wage methodologies, is not realistic and that therefore the number of full-time working adults should always be set between 1 and 2. Anker and Anker (2017) note:

- ▶ Many women are in the labor force all over the world, so the assumption of one (usually male) breadwinner per family is not realistic. Second, not all adult family members work full-time – some are unable to find work, some need or want to stay home for various reasons, and some work part-time. This means that an assumption of two full-time workers per family is not realistic. Therefore, the number of workers per family in our methodology is always between one and two.

Secondly, from a normative point of view it seems reasonable to assume that 1.5 full-time working adults should be sufficient to cover the needs of workers and their families. Assuming a family with children, this approach allows one of the parents (father or mother) to allocate a certain amount of working hours to essential unpaid family work. It also avoids shifting the full burden of low job opportunities and high unemployment rate to employers by requiring them to pay higher wages to compensate for these labour market failures. In such a situation, it would probably be necessary to implement additional policies such as a comprehensive social security system and other employment policies to protect workers and their families.

Thirdly, an empirical analysis based on the pilot countries in this project reveals that it appears reasonable to use 1.5 full-time working adults per family. In order to assess the validity of using 1.5 working adults per family the average number of full-time working adults in the reference family sizes were computed in each of the pilot countries. In order to reflect the reality of families that may be potentially affected by wage policies we decided to limit our analysis to those households comprising at least 1 wage-earner. Chart 1 shows that the number of full-time working adults varies significantly by country, from 1.34 in Ethiopia to 1.95 in Viet Nam. However, the average of the four countries is equal to 1.57, a number relatively close to our assumption of 1.5 full-time working adults per family.

In some cases, these estimates reflect differences in the composition of households. For instance, in Viet Nam the relatively high number of working adults reflect the fact that in numerous households composed of 4 members we observed more than 2 adults working. However, in Viet Nam, estimating the same number with only those households composed of 2 adults and 2 children the average number of full-time working adult is equal to 1.69, while still higher this number appear to be closer to our assumption of 1.5 full time working adults.

► **Chart 1: Average number of full-time working adults in the households of reference family size that include at least 1 wage-earner**

	National average of number of full-time working adults per household of reference that includes at least 1 wage-earner (including OAW + wage-earners)	Family size of reference
Ethiopia 2018/2019	1.34	5
Viet Nam 2018	1.95	4
Indonesia 2018	1.62	4
Costa Rica 2018	1.36	3
Average	1.57	

To summarize, while the decision to use 1.5 working adults per family may to some extent appear subjective, it also carries a number of advantages. First, it allows the use of a number that is always between 1 and 2 working adults, which is a desirable result. Secondly, it is an attractive assumption from a normative point of view as it allows for workers to carry out essential unpaid family work and avoids shifting all the burden of low employment opportunities to employers. Thirdly, it appears relatively coherent with the empirical realities of the family of references observed in the pilot countries. Finally, it simplifies the calculation and avoids dependence on estimating the number of full-time working adults which in some cases may be challenging to assess through income and expenditure surveys. Unlike labour force surveys that are designed to capture information about the labour market, household income and expenditure surveys are not designed solely for that purpose and as a result it can be challenging to identify labour market indicators with a strong degree of certainty. However, in the national studies, in addition to the results based on the hypothesis of 1.5 working adults per family we also include the extreme values – 1 working adult and 2 working adults – in order to provide the full range of needs-based wages relevant to minimum wage setting.

## The sample

Another essential question to address in order to estimate the needs of workers and their families concerns the sample that should be used for the analysis. Should the analysis consider all households in a given country? Or should it instead consider a subsection of the labour force, such as households with at least 1 wage-earner? Or should it consider a regional subsample, such as households in a given geographical area? These are important and relevant questions when considering a needs-based wage and the choices can considerably influence the resulting minimum wage level.

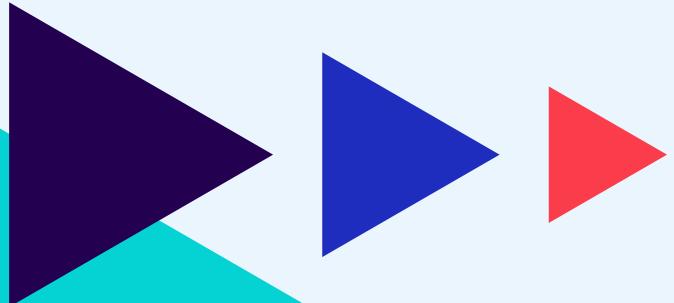
In the context of estimating the needs of workers and their families to inform minimum wage-setting mechanisms, it appears legitimate to consider whether the sample population should be limited to those households with at least 1 wage-earner given that they constitute the potential beneficiaries of minimum wage policy. However, in the present baseline methodology, we recommend using all households, irrespective of whether they include a wage-earner or not. This decision draws on a number of conceptual and practical consideration. First, we believe that the concept of the needs of workers and their families should not be dependent on the labour market status of the members composing the family and that, as mentioned in Convention No. 131, it should reflect the living standards of other social groups. Secondly, in some developing countries wage-earners represent a very low proportion of the employed population. Thus, limiting the sample to the households with at least 1 wage-earner might therefore result in the exclusion of an overwhelmingly large share of the population and give rise to small-sample bias. For example, in the pilot country

Ethiopia, according to the 2013 *National Labour Force Survey*, wage employees represent only 10 per cent of total employment and the remaining 90 per cent of the employed population are own-account workers, employers or unpaid family workers. In such a context, limiting the sample to only those households with at least 1 wage-earner would create bias and the results would not be representative of the needs of workers and their families for the large majority of the population. Thirdly, another practical consideration is that the methodology rely on the use of household income and expenditure surveys in which, as mentioned above, it may be challenging to identify wage-earners with a strong degree of certainty.

With respect to regional considerations, keeping in mind that the present methodology seeks to strengthen the capacity of governments and social partners to negotiate and set adequate minimum wage levels, if minimum wage rates are set by geographical region in a country, we recommend that the methodology be applied separately for each relevant geographic division of the country. While some countries have only one minimum wage that applies to all employees in the country, other countries have different minimum wage rates based on sector of activity, occupation, age of employee or geographical region. In Indonesia, there is no national minimum wage floor and the setting of minimum wages is decentralized, allowing for the establishment of minimum wages by province and district (ILO 2020). Similarly, estimates of the needs of workers and their families were carried out separately for each province. However, in Indonesia, where there are too many rates due to regional and local divisions and subdivisions, only broad regional groups were considered for our estimates, which gives relevant information at the province level for comparison with minimum wage levels.



## 3 Estimation of food needs



## ► 3. Estimation of food needs

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Food is frequently a relatively large component of expenditure for households. In fact, the food category is typically the largest expense that households will face in the developing world. As such, it is crucial to ensure an appropriate model diet that provides sufficient calorie, protein and fat while taking into account the consumption patterns and food preferences of the target population. Building on the “cost of basic needs” methodology used by the World Bank to estimate national poverty lines, we estimate the cost of a food basket that fulfils a calorie requirement and also takes into account national preferences and consumption patterns.

To do this, we go through the following steps.

1. We identify the calorie requirement to be fulfilled, based on the recommendations of the national health authorities.
2. Since there is no information on the nutrient value of each food item in household income and expenditure surveys, we retrieve data on the calories, protein and fat content of each food item externally and merge them into the household Income and Expenditure survey.
3. We construct a reference basket (quantity consumed of each food item) that provide sufficient calories based on the observed consumption patterns of households that are the closest to the required calorie consumption.
4. If necessary, we then adjust the reference food basket to ensure that it covers the requirements for other nutrients, including protein and fat.
5. We estimate the cost of the reference food basket by applying the implicit prices of each food item.

### 3.1 Setting the calorie requirement

What are the needs of workers and their families in terms of food? In this section and as a starting point, we seek to identify what is the adequate amount of calories that an individual should be able to consume. The calorie requirement is a good starting point since insufficient calorie intake is almost always associated with a deficient intake of most nutrients (FAO 2001). In order to identify the adequate amount of calorie intake, the methodology builds on established recommendations on minimum energetic requirements. In particular, this baseline methodology proposes to use the recommendations published by the FAO in 2001,<sup>3</sup> which satisfy requirements for the attainment and maintenance of optimal health, physiological function and well-being, assuming a moderate physical activity level for male and female individuals of 70 kg and 65 kg, respectively.

However, in the case of Indonesia an important adjustment to the baseline methodology was made with regard to the calorie requirement. The validation process at national level led us to use the recommendations of the national health authorities instead of those issued by FAO/WHO. Following the baseline methodology described above, we initially used the FAO/WHO recommendations of 2,950 kcal per day and per adult equivalent. However, in practice, only the calorie consumption of the highest quintile (quintile 5) of the expenditure distribution is close to these requirements. Therefore, for Indonesia only the wealthiest households in the population would manage to access an adequate diet in terms of caloric and nutrient intakes based on the FAO/WHO recommendations.

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<sup>3</sup> FAO, *Human Energy Requirements, Report of a Joint FAO/WHO/UNU Expert Consultation, Rome, 17–24 October 2001*.

Using such a quintile as a reference for constructing a food basket that covers the needs of workers and their families would be inconsistent with one of the objectives of the methodology, which is to estimate basic but decent needs. The disparity between the calorie consumption by household and the recommendations used in our baseline methodology may to some extent be explained by the assumptions with respect to the weights of male and female individuals not being representative of the Indonesian context. In light of these findings and after discussions and validations involving various experts, it was decided to use the recommendations of the national health authorities, which are lower and in this case more realistic. The Ministry of Health recommended a level of calorie sufficiency at 2,150 kcal, along with 57 g of protein per day and per capita. It should be noted that contrary to the FAO/WHO recommendation of 2,950 kcal per day and per adult equivalent, the recommendations of the Indonesian health authorities do not use an equivalency scale to determine food and calorie requirements for workers and their families. This would imply that for the case of Indonesia, the analysis of food expenditure will be conducted using per capita values.

## 3.2 Retrieving information on calorie consumption

Having identified the minimum requirements in terms of calorie intake, the second step is to identify the caloric consumption for each household. This information is usually not included in household income and expenditure surveys. Therefore, to calculate the calorie intake of each household, we must retrieve information on the caloric value of each food items present in the database using secondary data. The FAO provides food composition tables and databases for various countries and regions. For Indonesia, we used the food composition table provided by the Indonesian national office of statistics.<sup>4</sup> Appendix I shows the calories of each food item included in the income and expenditure survey of Indonesia. We included this information in the database in order to calculate the calorie intake for each household.

## 3.3 Constructing and adjusting the reference food basket

Next, we construct a reference food basket that satisfies the calorie requirement defined in section 3.1, while simultaneously reflecting national tastes and preferences. That is, the basket should be pertinent and reflect the consumption habits of households in the country. Food constitutes one of the oldest cultural practices of the human being. Conditioned by many environmental, seasonal and cultural factors, the way in which the food basket is composed can be arranged in a broad variety of different ways. Large countries such as Indonesia have great diversity in the composition of food baskets in the country. This imposes another limitation to the normative approach based on a predetermined diet.

Thus, when we simulate a reference food basket that satisfies the calorie requirements at minimized cost, we use the following procedure.

First, we partition households into quintiles based on their total monthly expenditure per capita, which is calculated for each household in the survey. For each quintile, the average calorie intake per capita is also calculated. Those households with a daily calorie intake per capita lower than 2,150 kcal do not fulfil the level of sufficiency recommended by the Ministry of Health of Indonesia as defined in section 3.1.

The methodology is based on the quintile distribution constructed using the monthly household's expenditures per capita. Although this methodology could also have been applied using income distribution, we used expenditure distribution because: (a) most countries prefer to use data on expenditures to measure poverty (according to a survey by the

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<sup>4</sup> See Indonesia, Statistics Indonesia, *Consumption of Calorie and Protein of Indonesia and Province, 2016*, table A4.

United Nations Statistics Division of 84 countries, almost half base their poverty calculations on expenditure data, while about 30 per cent base the calculations on income data only and 12 per cent use both); and (b) statistical issues reinforce the advantages of using expenditure rather than income data due to the ease and reliability of data collection<sup>5</sup> since incomes are often underestimated when compared to expenditures. For example, in some of the surveys (mostly in African countries) the income section is not available or is difficult to aggregate.

As table 1 shows, even though on average households in quintile 1 do not satisfy the calorie requirement, the quintile 3 average calorie intake is the closest to the 2,150 kcal recommendation. As a result, we use these households to construct a reference food basket that yields the required 2150 kcal per capita and per day. This is presumably an inexpensive way of attaining 2,150 kcal since this basket reflects the consumption behaviour of relatively poor households in quintile 3 of the distribution of household expenditure per capita in Indonesia. In other words, it is likely that richer households will have more expensive ways of consuming 2,150 kcal (with higher quality or greater variety of food items, for example).

► **Table 1: Average monthly household expenditure per capita (in Indonesian rupiah), by category and quintiles, 2018**

Quintile <sup>a</sup>	Total expenses <sup>b</sup>	Food expenses <sup>b</sup>	Household size	Calories per capita (kcal)	Calories per adult equivalent (kcal)
1	1,813,462 (55,859)	1,203,575	4.87	1,736	2,179
2	2,761,366 (56,547)	1,743,363	4.74	1,990	2,466
3	3,693,764 (60,435)	2,201,267	4.51	2,157	2,645
4	5,049,354 (62,766)	2,782,071	4.27	2,333	2,835
5	9,801,709 (59,548)	3,916,804	4.07	2,517	3,034
Total	4,623,920 (295,155)	2,369,412	4.49	2,147	2,631

**Source:** ILO estimates based on *National Socioeconomic Survey of Indonesia*, 2018.

**Note:** The number of observations is indicated in parentheses. <sup>a</sup> Quintiles are constructed using monthly total household expenditures per adult equivalent (using OECD adult equivalency scale). <sup>b</sup> Nominal values.

Since the calorie consumption of quintile 3 averaged 2,156.89 kcal rather than the targeted 2,150 kcal, an adjustment is required. The quantities consumed were “artificially” reduced by a small amount to provide exactly 2,150 kcal. This is done by multiplying the average quantities of each food item consumed by households in quintile 3 by the adjustment coefficient (2,150/2,156.89) which is equal to 0.996806187. This adjustment is described in table 2.

5 United Nations Statistics Division, *Handbook on Poverty Statistics: Concepts, Methods and Policy Use*, 2005.

► Table 2: Adjusted food basket that generates 2,150 kcal per day

	Quantities consumed per day (unadjusted) (kg)	Calories consumed per day (unadjusted) (kcal)	Adjustment Coefficient	Quantities consumed per day (adjusted) (kg)	Calories consumed per day (adjusted) (kcal)	Protein consumed per day (g)	Fat consumed per day (g)
Cereals	0.24	869.19	0.997	0.24	866.42	20.39	3.51
Tubers	0.03	37.86	0.997	0.03	37.74	0.35	0.08
Fish /shrimp /squid / clams	0.05	50.10	0.997	0.05	49.94	8.34	1.36
Meat	0.02	53.57	0.997	0.02	53.40	3.27	4.38
Eggs and milk	0.03	57.62	0.997	0.03	57.43	3.20	3.08
Vegetables	0.12	38.55	0.997	0.12	38.43	2.33	0.65
Beans and nuts	0.05	53.98	0.997	0.05	53.81	5.34	2.63
Fruits	0.09	48.23	0.997	0.09	48.07	0.52	0.25
Oils and coconut	0.04	264.51	0.997	0.04	263.67	0.22	15.82
Beverages	0.03	101.34	0.997	0.03	101.01	0.83	2.00
Spices	0.01	11.35	0.997	0.01	11.32	0.50	0.58
Other food	0.01	60.13	0.997	0.01	59.94	1.18	2.29
Prepared food and beverages	0.37	510.45	0.997	0.37	508.82	14.49	18.03
<b>Total (consumption)</b>	<b>1.09</b>	<b>2,157</b>		<b>1.08</b>	<b>2,150</b>	<b>60.95</b>	<b>54.67</b>

**Source:** ILO estimates based on *National Socioeconomic Survey of Indonesia*, 2018.

In order to ensure that the adjusted food basket allows the fulfilment of not only the calorie requirements but also other nutritional requirements such as the requirements for protein and fat intake, we estimate the nutritional values of the adjusted food basket. Table 2 shows that the adjusted food basket of 2,150 kcal per day provides 60.95 g of protein and 54.67 g of fat per day. Next, those values are compared with the thresholds of nutritional values provided by the Ministry of Health of Indonesia for protein requirements and by WHO/FAO for fat requirements. Table 3 shows that the amount of protein provided by the adjusted food basket exceeds the minimum requirements for protein, while the amount of fat falls into the recommended range.

► Table 3: Threshold value of nutritional requirements

	Calories	Protein	Fat (20-35%)	
			Min_Fat	Max_Fat
<b>Threshold</b>	2150	57	47.78	83.61

**Source:** Indonesia, Statistics Indonesia, *Consumption of Calorie and Protein of Indonesia and Province*, 2018.

**Note:** Requirements for fat range from 20 to 35 per cent of calorie consumption. Therefore, of a total calorie consumption of 2,150 kcal per day, between 430 calories and 752.5 calories should come from fat. As there are 9 calories in 1 gram of fat, we divide these numbers to convert these requirements into grams and end up with requirements for fat ranging from 47.78 g to 83.61 g per day.<sup>6</sup>

6 FAO, *Fats and Fatty Acids in Human Nutrition, Report of an Expert Consultation, Geneva, 10-14 November 2008*, 2010.

### 3.4 Estimating the cost of the reference food basket for a reference family size

Implicitly, our reference food basket is a slightly adjusted average basket for a household in quintile 3 of the monthly food expenditure per capita. In order to convert these quantities into monetary terms, we now need to calculate the price of each food item.

To do this, we divide expenditures for each food item by the quantity consumed. Then, for each household, an implicit price is assigned to each food item so that we can estimate the monetary value of monthly food consumption. Once these food prices have been computed at the household level, the national median price of each food item is used to calculate the cost of the constructed reference food basket. Using the national median price allows us to take into account the fact that the poorest households likely buy their food items from the markets with the lowest prices.

The estimation results are shown in table 4. We found that the monthly cost in 2018 of a food basket that satisfies the calorie as well as the protein and fat daily requirements per capita is approximately equal to 478,927 Indonesian rupiah (Rp).

► Table 4: Basket of food items that yields 2,150 kcal per day, 2018

	Monthly quantity (kg)	Calories per month (kcal)	Monetary value per month (Rp) <sup>a</sup>	% total calories	% expenses
Cereals	7,31	25,992.58	71,999.64	22%	15%
Tubers	0,91	1,132.15	5,281.66	3%	1%
Fish /shrimp /squid / clams	1,57	1,498.33	41,951.76	5%	9%
Meat	0,55	1,601.94	18,734.00	2%	4%
Eggs and milk	0,93	1,723.03	28,146.08	3%	6%
Vegetables	3,53	1,152.76	42,596.61	11%	9%
Beans and nuts	1,36	1,614.17	12,846.00	4%	3%
Fruits	2,62	1,442.21	23,874.37	8%	5%
Oils and coconut	1,19	7,909.98	13,959.23	4%	3%
Beverages	0,83	3,030.41	17,767.92	3%	4%
Spices	0,36	339.45	12,200.98	1%	3%
Other food	0,41	1,798.27	11,243.00	1%	2%
Prepared food and beverages	10,98	15,264.71	178,325.76	34%	37%
Total (monthly)	32,54	64,500.00	47,8927	-	-

**Source:** ILO estimates based on *National Socioeconomic Survey of Indonesia, 2018*.

<sup>a</sup> Rp = Indonesian rupiah

At this stage, we have the cost of a basic but adequate food basket that is capable of covering the daily needs of 1 member of a given household. However, this does not provide any insight into the estimated food costs for households or family structures. Family size and composition are an important consideration in the calculation. Should we use average household size

according to the censuses? Or what should be the typical household size? Or is there a referential household?

To estimate the total cost of food for a representative family size in our population of interest, we first calculate the average size of households in each quintile, as provided in section 3.3. Table 1 shows that the poorest families tend to be larger than richer families and therefore the basic needs of families in the lowest quintiles may be greater.

To remain pragmatic and ensure that needs-based wage level sufficiently reflect the needs of workers and their families for a realistic household size, needs are estimated for the national average family size rounded up to the nearest whole number. In the case of Indonesia, needs-based wage levels are assumed to cover the needs of a family of 4, which is the closest family size to the average in the country (4.49).

Finally, table 5 shows that the estimated monthly cost of a food basket that covers the calorie requirement as well as the protein and fat requirements for a family of 4 in Indonesia is equal to 1,915,708 at the national level in 2018. In addition, because the minimum wage in Indonesia varies by provinces and districts, table 5 also shows the results of a regional analysis focusing on eight regional divisions. The same methodology as that applied at the national level has been followed to obtain the regional estimates. Therefore, the monthly cost of a reference food basket that satisfies the levels of sufficiency for calories, proteins and fat has been separately identified for each region. It should be noted that reference food baskets differ by region because reference quintiles of total monthly expenditures per capita differ from one region to another. While the reference quintile at the national level is quintile 3, it ranges from quintile 2 in Jakarta to quintile 3 for Java, Kalimantan, the Lesser Sunda Islands, Sulawesi and Sumatra, quintile 4 for Western New Guinea and quintile 5 for the Maluku Islands (see Appendix II, table 21).

As we can observe, the estimated cost of the food basket that covers the calorie and protein and fat requirements for a family of 4 ranges from Rp1,870,748 in Sumatra to Rp2,374,722 in Jakarta.

**► Table 5: Monthly cost of food needs for a family of 4 (in Indonesian rupiah), by region, 2018**

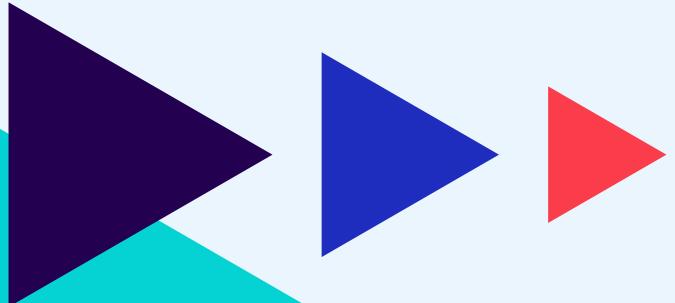
	Monthly cost of food basket that produces 2,150 kcal per day	Average household size <sup>a</sup>	Monetary value per month
National	478,927	4	1,915,708
Sumatra	467,687	4	1,870,748
Jakarta	593,680	4	2,374,722
Java	500,078	4	2,000,311
Lesser Sunda Islands	493,526	4	1,974,105
Kalimantan	477,386	4	1,909,544
Sulawesi	479,871	4	1,919,482
Maluku Islands	539,923	4	2,159,693
Western New Guinea	520,754	4	2,083,018

**Source:** ILO estimates based on *National Socioeconomic Survey of Indonesia*, 2018.

<sup>a</sup> To compare all regions, the same household size is assumed for all regions.



## 4 Cost of housing



## ► 4. Cost of housing

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After food, housing is the largest expenditure group for workers in developing countries (Anker and Anker 2017) and for good reason since the lifestyle and well-being of family members are significantly influenced by the quality of their dwelling. At the same time, housing has an environmental impact owing not only to the use of natural resources and land when constructing properties, but also to the associated energy requirements to enable the use of household utilities (water and electricity, for instance) (UN-Habitat 2018).

Adequate and decent housing is a universal human right, recognized at the international level and in more than 100 national constitutions throughout the world. A secure place to live is also intrinsic to human dignity, as well as physical and mental health. According to Habitat for Humanity (2019), decent housing has the capacity to remove barriers to opportunity, success and health and more generally to improve individuals' quality of life. As a result, access to adequate, safe and affordable housing that ensures the provision of basic housing services is a key priority of the 2030 Agenda for Sustainable Development. This objective is perhaps most explicitly reflected in Sustainable Development Goal 11, "Make cities and human settlements inclusive, safe, resilient and sustainable".

Yet globally, inadequate housing remains widespread. It is estimated, for instance, that 3 billion people (40 per cent of the world's population) are in need of access to decent housing. What is more, this figure continues to grow as an estimated 96,000 new dwellings are needed every day.<sup>7</sup> Moreover, millions of people worldwide live in extremely poor living conditions, such as overcrowded and informal settlements. It is therefore necessary to ensure that workers earn a wage sufficient to cover the cost of decent housing.

In this section, we apply our methodology for estimating the housing expenditure category of a minimum wage that adequately covers the needs of workers and their families. Using a scoring system based on international housing criteria, we calculate separately:

- (a) *Monthly cost of a dwelling* – estimated using available information on rent. In fact, actual rent paid has been used for households that rent their dwelling and an imputed value of the rent has been used for households that own their dwelling; and
- (b) *Monthly cost of household utilities* – including water, electricity, waste and phone utilization.

Once the two housing cost components have been computed, we sum up these elements and arrive at an estimated total cost for decent housing.

After estimating the cost of basic housing, we explore the distribution of rent paid across regions and sub-groups to have a better picture of the actual expenditure on housing and how these results compare with average and median housing expenditures.

### 4.1 Rent

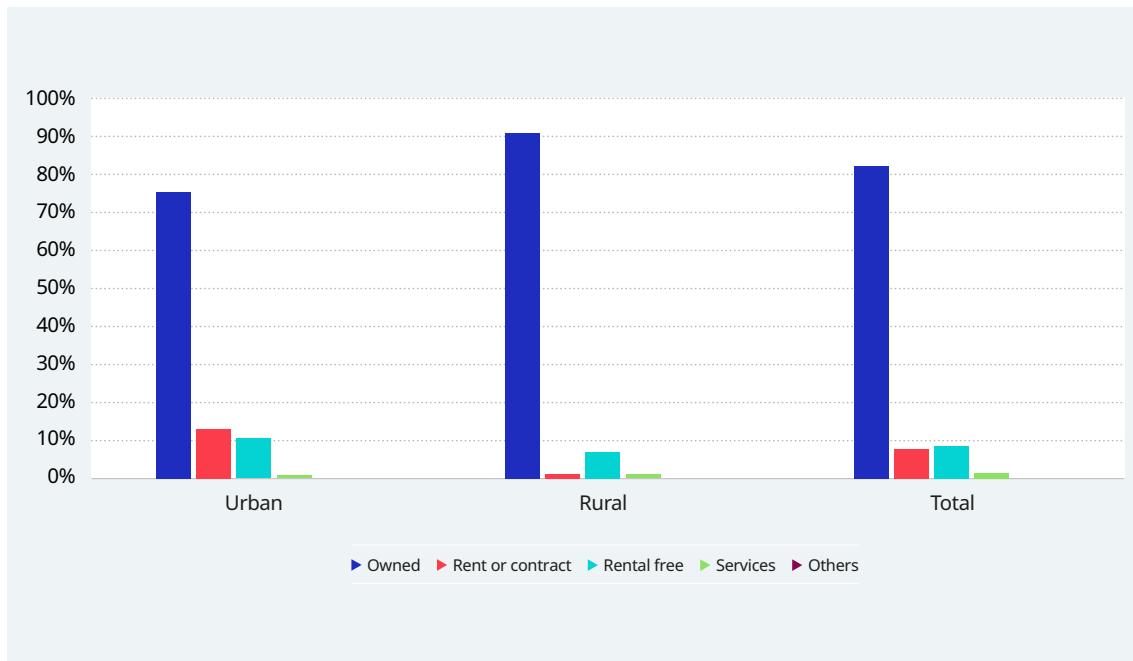
In the case of Indonesia, the section on housing of the National Socioeconomic Survey of Indonesia includes a significant set of indicators on the quality of the dwelling. This section includes information on the type of occupancy of the dwelling; the rent (if any); the number of rooms; the materials of the walls, roof and floors; the type of toilet facilities; and the access to water.

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<sup>7</sup> See UN-Habitat website, <https://unhabitat.org/>.

The majority of the Indonesian population own their dwellings and only a small proportion appear to rent (or have a housing contract).<sup>8</sup> As shown in figure 2, for instance, this proportion stands at about 8 per cent of the population, with those residing in urban areas (13 per cent) more likely to rent (or have a housing contract) than those in rural areas (2 per cent) do. As a result, we had to approximate the cost of rent for homeowners and all families that do not pay a rent.

► Figure 2: Percentage of households renting their houses, rural and urban areas, 2018



**Source:** ILO estimates based on *National Socioeconomic Survey of Indonesia*, 2018.

Since rent is a key variable for this analysis, we made use of the National Socioeconomic Survey of Indonesia questionnaire to retrieve such an information. Questions on housing ask for an estimation of the monthly rent from respondents who own their homes, those who live in rent-free dwellings or those who live in official dwellings (provided by the Government). For those respondents who pay rent (or have a housing contract), the monthly rent value is also directly retrieved from the survey. As a result, we are able to retrieve rent values for the vast majority of surveyed households.

Table 6 shows that there is considerable geographical heterogeneity in terms of average cost of the estimated monthly rent in Indonesia. Average monthly rent is estimated to be greater in urban areas (Rp656,600) than in rural areas (Rp477,369). At the regional level (see table 7), average monthly rent is most expensive in the Jakarta region (Rp1,383,004) and cheapest in Sumatra (Rp358,867).

<sup>8</sup> Note that the dataset distinguishes between "rent" and "housing contract" which are similar but applies to different rental periods. While "rent" is used for some limited time period, "housing contract" is used for a longer period.

► **Table 6: Average and median values of monthly rent by households and per adult equivalent (in Indonesian rupiah), urban and rural areas, 2018**

	Average monthly rent	Median monthly rent	Average monthly rent per adult equivalent	Median monthly rent per adult equivalent	Number of observations
<b>Urban</b>	656,600	384,104	227,160	130,000	126,566
<b>Rural</b>	260,989	186,000	92,823	61,875	168,589
<b>National</b>	477,369	271,000	166,299	90,909	295,155

**Source:** ILO estimates based on *National Socioeconomic Survey of Indonesia, 2018*.

► **Table 7: Average and median values of monthly rent by household and per adult equivalent (in Indonesian rupiah), by region, 2018**

Region	Average monthly rent	Median monthly rent	Average monthly rent per adult equivalent	Median monthly rent per adult equivalent	Number of observations
<b>Sumatra</b>	358,867	247,000	144,817	91,481	84,863
<b>Jakarta</b>	1,383,004	730,000	579,250	313,793	4,923
<b>Java</b>	406,760	238,000	173,781	94,444	90,962
<b>Lesser Sunda Islands</b>	459,125	259,000	187,308	103,448	22,817
<b>Kalimantan</b>	558,748	413,000	231,314	157,941	29,217
<b>Sulawesi</b>	497,395	300,000	198,454	115,556	39,290
<b>Maluku Islands</b>	682,879	500,000	249,313	171,463	8,897
<b>Western New Guinea</b>	715,859	500,000	302,307	203,636	14,186

**Source:** ILO estimates based on *National Socioeconomic Survey of Indonesia, 2018*.

To estimate the cost of decent housing in Indonesia, an important first step involves assessing the quality of each houses in the sample. One way to do this requires devising and implementing a scoring system that is based on the quality of housing characteristics. This information is available in the *National Socioeconomic Survey of Indonesia, 2018*. We then use the relationship between the quality of housing and the cost of rent to estimate the cost of decent housing, which is identified based on national and international standards for decent housing characteristics.

## Assessing the level of decency of a dwelling

The first step consists of selecting the indicators needed to identify a decent dwelling. In this regard, the methodology builds around four key dimensions used by UN-Habitat in the definition of what constitutes a slum, which is the most widely used definition worldwide. According to this definition, a slum consists of a household or a group of people living under the same roof and lacking one or more of the five characteristics listed in table 8 below. As most countries do not include information on tenure in their Income and Expenditure survey our methodology exclude this dimension from the analysis. Therefore, we focus on four of the five categories – durability, living space, access to water and access to sanitation facilities.

► **Table 8: Five key dimensions for identifying slums**

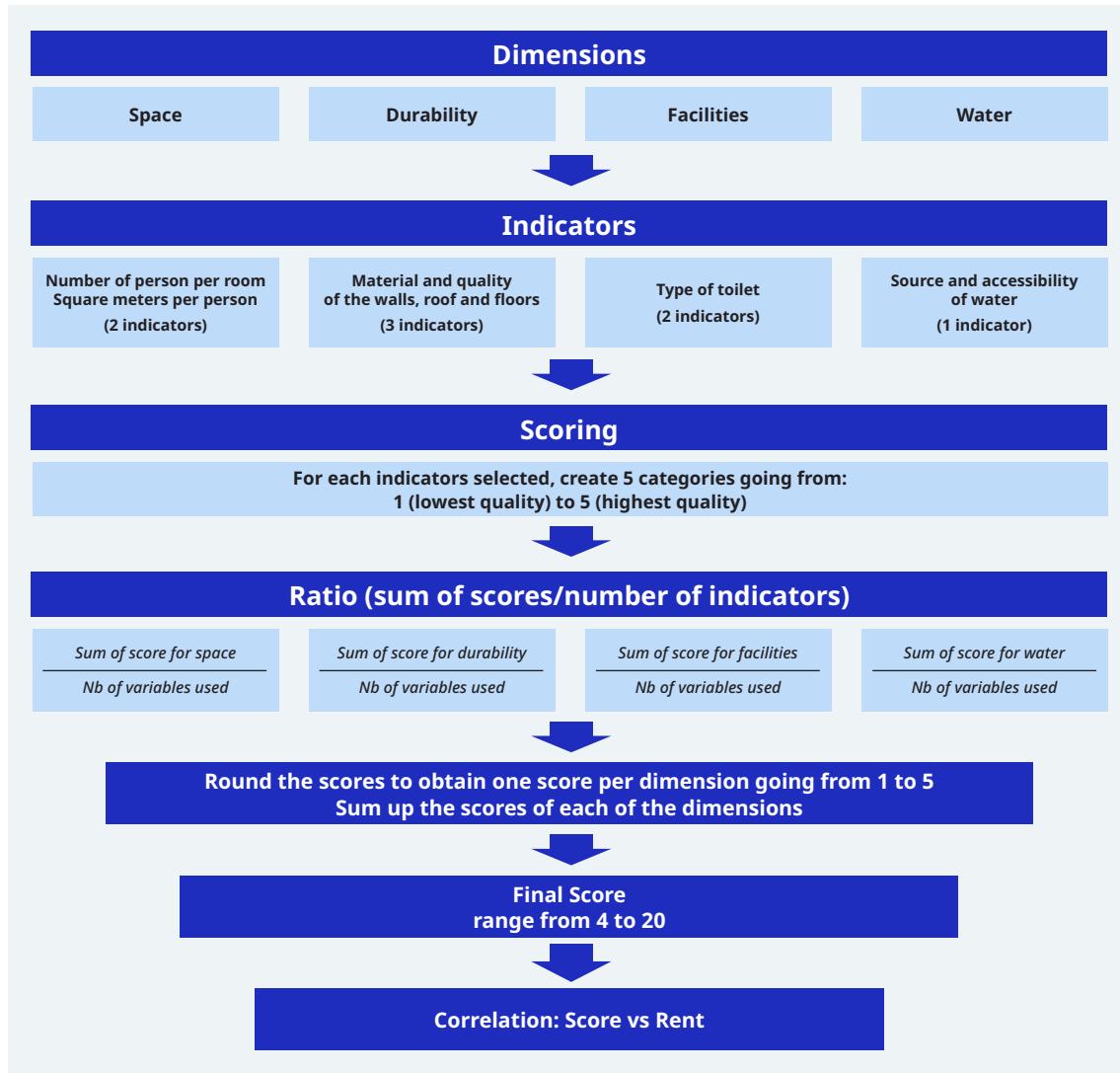
<b>Sufficient living area</b>	A dwelling is considered to provide a sufficient living area for the family members if not more than three people share the same room.
<b>Durability of dwellings</b>	A dwelling is considered durable if it is built on a non-hazardous location and has a structure that is permanent and adequate enough to protect its inhabitants from the extremes of climatic conditions such as rain, heat, cold and humidity.
<b>Access to safe water</b>	A household is considered to have access to improved water supply if it has sufficient amounts of water for family use, at an affordable price, available to household members without being subject to extreme effort, especially for women and children.
<b>Access to sanitation</b>	A household is considered to have adequate access to sanitation if an excreta disposal system, in the form of either a private toilet or a public toilet shared with a reasonable number of people, is available to household members.
<b>Tenure security</b>	De facto or de jure secure tenure status and protection against forced eviction

**Source:** UN-Habitat (2006; 2011; 2014).

We then use a scoring system to assess the quality of the houses based on the information provided in income and expenditure surveys. The variables available include: m<sup>2</sup> per person; the materials used for walls and roof; types of toilet facilities; and the water access source. It is important to acknowledge that although most Income and Expenditure Surveys provide information on housing characteristics, questionnaires can differ by country which may result in discrepancies across countries in the number and type of variables employed to estimate decent housing. Our scoring system method is summarized in figure 3 and shows that the relevant indicators/variables are identified for each dimension. For example, to assess the durability of a house, one may use information on the material of the walls and roof, while estimating m<sup>2</sup> per person is a viable way to assess the living space. It is important to note that even though multiple variables are often available for capturing the quality of some dimensions (for example durability), for other dimensions there may be only one (for example living space, facilities, water).

For each selected variable, we assign a score from 1 to 5 (lowest to highest levels of quality). Table 9 summarizes the system used to assign the score for each selected variable. For example, in the case of Indonesia, "Natural sources" are the lowest ranked material for floors, roofs and walls, while "Squat toilet/pit latrine without lid" and "Surface water/rainwater" are the lowest ranked toilet types and water sources. In contrast, "Concrete" is the best roof and/or wall material and the "Swan neck" toilet type or "Branded bottled water/Refill water/Plumbing meter", respectively, are the highest ranked types of toilet and water source.

► Figure 3: Scoring system method to assess the quality of housing



In order to evaluate each dimension equally, irrespective of the number of indicators available in the database, we divide the sum of scores by the number of indicators used. After rounding-up the sum, a score ranging from 1 to 5 is obtained for each dimension.

To arrive at a final housing quality score, the values of each dimension are summed. The final scores rank the quality of dwellings from 4 (minimum score in each dimension) to 20 (maximum score in all dimensions). For a given score, various combinations of housing characteristics are possible. Indeed, a caveat of this approach is that it allows for compensation. This means that even though a dwelling may not have access to sanitation – which would technically classify it as a slum – it can still achieve an adequate score by performing very well in other dimensions. However, we assume that there are trade-offs between dimensions and households can, in principle, choose to reduce the quality of one dimension in exchange for improvements in another without increasing their housing budget.

The remainder of this methodology rests on the assumption that dwelling quality is the main determinant of household rent costs and, consequently, both variables should exhibit

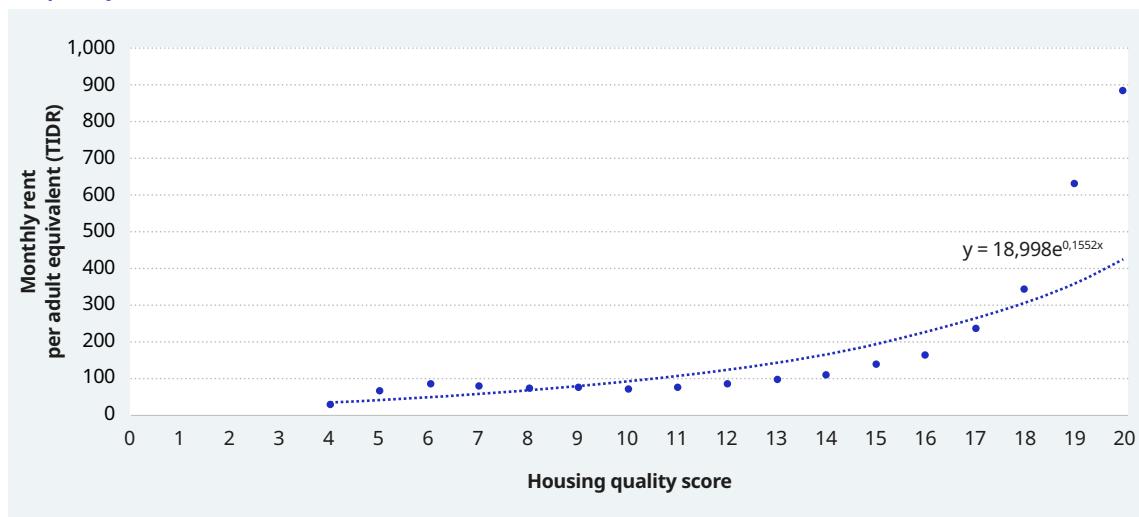
► Table 9: Scoring system across decent-housing dimensions and examples

Coding system (score)	Space		Durability			Facilities		Water Access
	m <sup>2</sup> per capita	No. of persons per room	Material of walls	Material of roof	Material of floor	Toilet type	Disposal	(Pipes/ source)
1	Less than or equal to 6	Greater than 3	Natural sources	Natural sources	Natural sources	Squat toilet/ pit latrine without lid	Ponds/ paddy fields /river/ lake/ hole in the ground/ beach/ field/ garden/ other	Surface water/ rainwater/ other
2	]6 ; 10.1]	N/A	N/A	Bamboo/ asbestos	Red cement/ brick	N/A	N/A	Well and springs unprotected
3	]10.1 ; 20]	3	Plaster of woven bamboo/ wire/ wood/ plank	Zinc/ roof tiles	Wood / Plank	Pit latrine with lid	N/A	Well and springs protected
4	]20 ; 39]	N/A	N/A	Shingles	Tiles/ terrazzo/ parquet/ vinyl/ carpet	N/A	N/A	Borehole/ pump
5	Higher than 39	Less than or equal to 2	Concrete	Concrete	Marble/ ceramic/ granite	Swan neck	Septic tank/ waste water treatment plant	Branded bottled water/refill water/plumbing meter

**Source:** ILO estimates based on *National Socioeconomic Survey of Indonesia*, 2018.

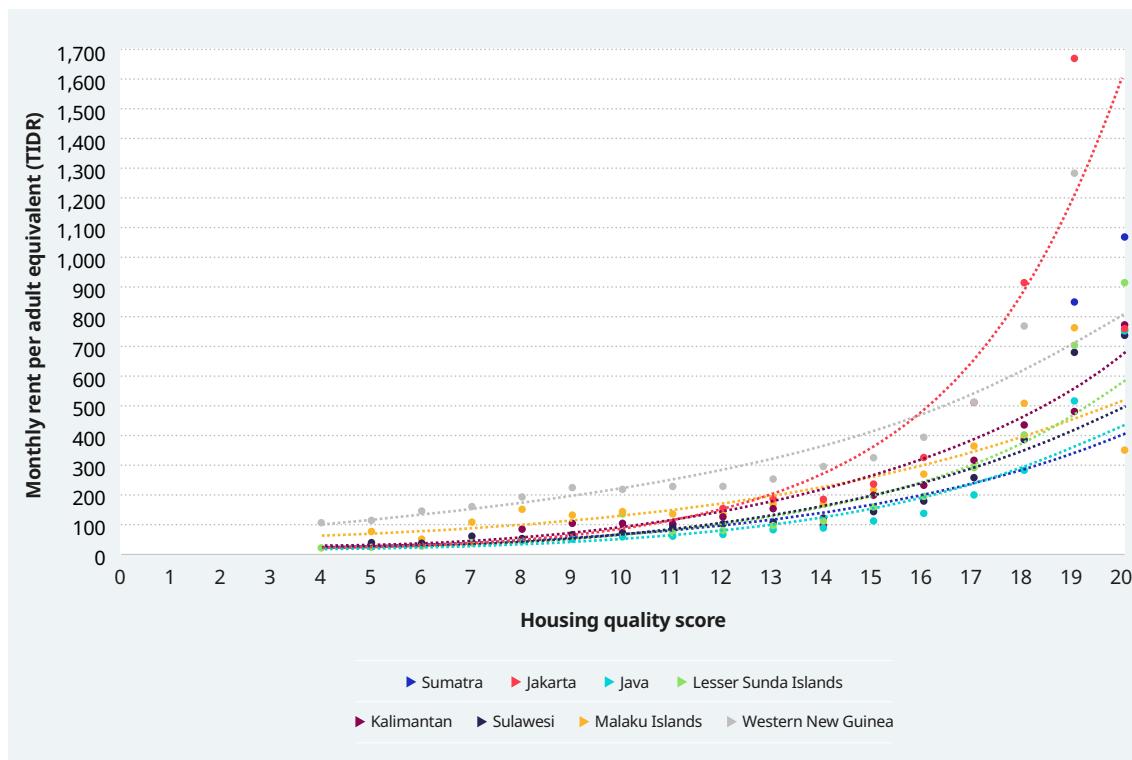
a strong positive correlation. We can test this assumption by estimating and charting the average cost of rent at each score level. As we can see in figure 4, in Indonesia rent is positively correlated to the housing quality score of the dwelling, and it follows a non-linear relationship. Using this relationship, we can estimate the monthly rent per adult equivalent for each level of scores. The final step is therefore to identify the minimum housing quality score that corresponds to a decent house and identify the corresponding rent level.

► Figure 4: Monthly rent per adult equivalent (in thousands of Indonesian rupiah) by housing quality score, national level, 2018



**Source:** ILO estimates based on *National Socioeconomic Survey of Indonesia*, 2018.

► Figure 5: Monthly rent per adult equivalent (in thousands of Indonesian rupiah) by housing quality score and by region, 2018



Source: ILO estimates based on *National Socioeconomic Survey of Indonesia*, 2018.

In the case of Indonesia, we considered the minimum requirements for decent housing to be the scores of 3 for living space, durability and access to water and 4 for sanitation facilities. The scores add up to a total of 13. The following explanation justifies our selection.

- In terms of living space, we follow the Anker and Anker (2017) methodology, which, for Asian and Oceanian countries (excluding Australia, New Zealand and Japan), identifies the minimum living space for a decent dwelling as at least 10.2 m<sup>2</sup> per person. Therefore, the score of 3 is identified for the minimum level of space in terms of m<sup>2</sup> per capita, which corresponds to dwellings with a living space ranging from 10.1 m<sup>2</sup> to 20 m<sup>2</sup> per person.
- In terms of durability of the dwelling, the decent housing level for Indonesia is identified in terms of the type of material. The material score was based on its durability and country context. The minimum-quality decent housing material for walls and floors is considered to be wood/plank, while for roofs it is considered to be zinc/roof tiles. All those materials correspond to the score of 3.
- For sanitation facilities, the minimum decent housing toilet was identified as "Pit latrine with lid" toilet type (score of 3), which is in line with the threshold defined by UN-Habitat (2006), requiring a household to have access to basic sanitation indoors that hygienically separates human waste from human contact. Disposal using a tank is identified as the minimum-quality decent-housing requirement (score of 5).
- In terms of access to safe water, the minimum quality of decent housing access is determined to be households that have access to water from protected sources (well and springs) (score of 3). This is in line with the minimum threshold defined by Anker and Anker (2017) and the Research Center for Employment Relations (2016), for which access to clean safe water must be within or close to the household.

Having identified the total score of 13 as the minimum decent-housing standard for a dwelling, the next step consists in identifying the associated cost of rent for a dwelling at this score level from the fitted regression line. Rather than using the observed data points, the fitted regression line is preferable since it captures the estimated relationship between housing quality and cost of rent. Figure 6 shows that the monthly rent for a house with a score of 13 would cost about Rp142,870 per adult equivalent at the national level in 2018.

► **Figure 6: Monthly rent associated with the decent housing score (in thousands of Indonesian rupiah), 2018**



**Source:** ILO estimates based on *National Socioeconomic Survey of Indonesia*, 2018.

What does a decent dwelling look like? Table 10 summarizes examples of dwelling characteristics for a range of housing quality scores in Indonesia. Different combinations of housing characteristics correspond to a particular score and monthly rent cost. Our minimum decent-housing score of 13 is highlighted in red, where the monthly rental value for a family of 4 is Rp399,837 at the national level in 2018.

The same approach is replicated separately for each region. Accordingly, table 10 summarizes the results for each of the regions in Indonesia, as well as the national level. It shows that the monthly cost for a family of 4 of renting a decent dwelling, excluding the cost of utilities, ranges from about Rp88,849 in Java region to Rp905,996 in Western New Guinea.

► Table 10: Examples of dwellings across a range of housing quality scores, with respective monthly rents (in thousands of Indonesian rupiah, 2018)

Final score	Monthly rent per adult equivalent	Monthly rent for a family of 4 (2.80 adult equivalents)	Example of house						
			m <sup>2</sup>	Material of walls	Material of roof	Material of floor	Toilet	Disposal	Water access
5	41	115.52	]6 ; 10.1]	Natural sources	Natural sources	Natural sources	None/ <i>plengsengan</i>	Ponds/ rice fields/ river/ lake/ sea/ ground hole/ beach/ field/ garden /	River water/ rainwater/ other
10	90	251.00	]6 ; 10.1]	Wood	Asbestos	Cement	<i>Cemplung cubluk</i>	Tank/ SPAL	Well and springs unprotected
11	105	293.14	]10.1 ; 20]	Wood	Asbestos	Cement	<i>Cemplung cubluk</i>	Tank/ SPAL	Well and springs unprotected
12	122	342.36	]10.1 ; 20]	Wood	Asbestos	Cement	<i>Cemplung cubluk</i>	Tank/ SPAL	Well and springs protected
13	143	399.84	]10.1 ; 20]	Wood	Zinc/roof tiles	Wood	<i>Cemplung cubluk</i>	Tank/ SPAL	Well and Springs protected
14	167	466.97	]10.1 ; 20]	Wood	Shingles	Tiles/terrazzo	<i>Cemplung cubluk</i>	Tank/ SPAL	Well and springs protected
15	195	545.37	]20 ; 39]	Wood	Shingles	Tiles/terrazzo	<i>Cemplung cubluk</i>	Tank/ SPAL	Well and springs protected
20	423	1184.95	Higher than 39	Concrete	Concrete	Marble/ ceramic/ granite	Goose neck	Tank/ SPAL	Branded bottled water/ refill water/ plumbing meter

Source: ILO estimates based on *National Socioeconomic Survey of Indonesia*, 2018.

► Table 11: Estimated monthly cost of renting a decent dwelling (in Indonesian rupiah), national and by region, 2018

	Decent level score	Monthly cost of rent per adult equivalent	OECD adult equivalent scale <sup>a</sup>	Monetary value per month for a family of 4
National		142,870	2.80	399,837
Sumatra		115,887	2.80	324,323
Jakarta		201,096	2.80	562,790
Java		103,212	2.80	288,849
Lesser Sunda Islands	13	130,599	2.80	365,496
Kalimantan		174,582	2.80	488,589
Sulawesi		133,843	2.80	374,574
Maluku Islands		199,304	2.80	557,775
Western New Guinea		323,730	2.80	905,996

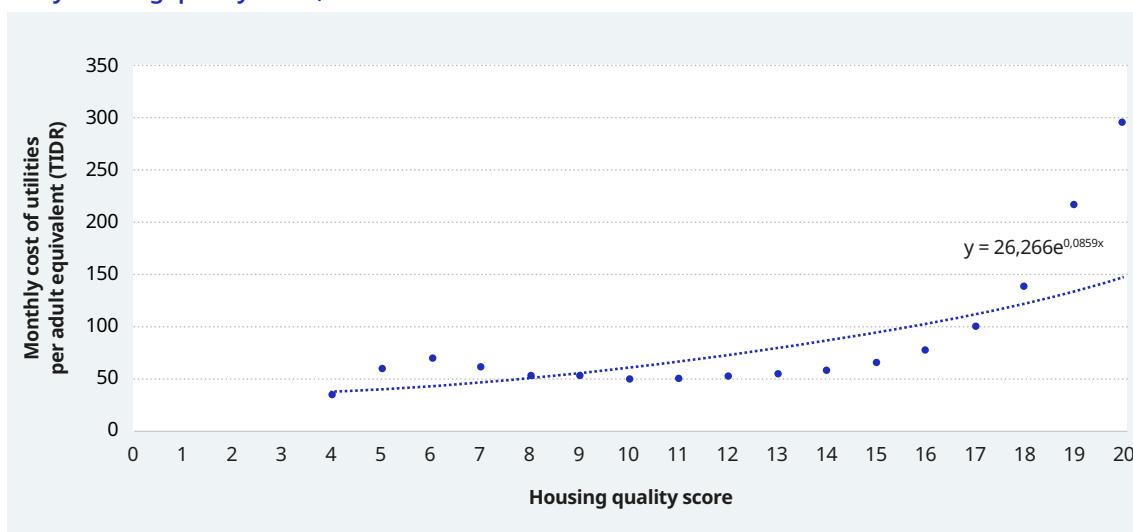
Source: ILO estimates based on *National Socioeconomic Survey of Indonesia*, 2018.

<sup>a</sup> For the purposes of comparison, the same household size is assumed for all regions.

## 4.2 Utilities

Once we have constructed our scoring system for estimating the cost of renting a decent dwelling, obtaining the expected cost of utilities is relatively straightforward. We use the total expenditure on utilities for all households in the survey, which is the sum of the expenditures on water, electricity, other sources of energy and other services at the household level.<sup>9</sup> As a second step, we calculate expected household utility costs by computing average utility costs for each housing quality score and retrieve the value that corresponds to the minimum decent-housing score identified above, which is 13 (see figure 7).

► **Figure 7: Monthly utilities expenditure per adult equivalent (in thousands of Indonesian rupiah) by housing quality score, 2018**



**Source:** ILO estimates based on *National Socioeconomic Survey of Indonesia*, 2018.

**Note:** Based on a minimum decent-housing score of 13, we calculate the mean utilities expenditure per adult equivalent for these households, with an exponential approximation.

After applying this methodology at the national level and in each region, we obtain the estimated cost of utilities for a decent dwelling for each region and at the national level. The results of this exercise are summarized in table 12 and show that the monthly cost of utilities for a decent dwelling for a family of 4 range from about Rp173,743 in Java to Rp404,224 in Western New Guinea, with a national average of Rp224,550.

<sup>9</sup> Phone and internet utilization were included in the communications group in other essential goods and services expenditures.

► **Table 12: Estimated cost of utilities for a decent dwelling for a family of 4 (in Indonesian rupiah), national and by region, 2018**

	Decent-housing score	Monthly cost of utilities per adult equivalent	OECD adult equivalent scale <sup>a</sup>	Monetary value per month for a family of 4
<b>National</b>		<b>80,236</b>	<b>2.80</b>	<b>224,550</b>
Sumatra		80,719	2.80	225,901
Jakarta		108,739	2.80	304,320
Java		62,082	2.80	173,743
Lesser Sunda Islands	13	62,146	2.80	173,923
Kalimantan		93,224	2.80	260,897
Sulawesi		64,733	2.80	181,161
Maluku Islands		80,916	2.80	226,454
Western New Guinea		144,437	2.80	404,224

**Source:** ILO estimates based on the *National Socioeconomic Survey of Indonesia* (2018).

<sup>a</sup> For the purposes of comparison, the same household size is assumed for all regions.

### 4.3 Estimation of the total cost of housing

Finally, as shown in table 13, the total monthly cost of decent housing, including rent plus utilities, for a family of 4 ranges from Rp462,592 in Java to Rp1,310,221 in Western New Guinea, while it is estimated at Rp624,388 at the national level.

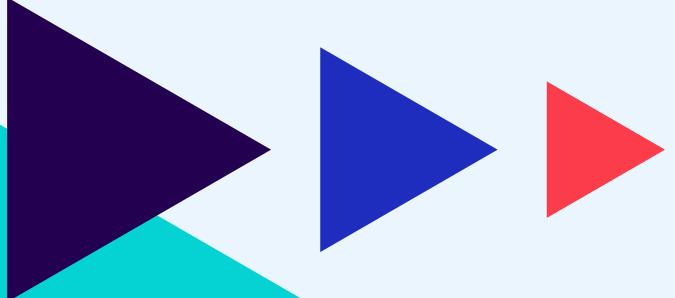
► **Table 13: Estimated monthly cost of decent housing for a family of 4 (in Indonesian rupiah), national and by region, 2018**

	Monthly rental cost	Monthly cost of utilities	Monthly cost of housing
<b>National</b>	399,837	224,550	624,388
<b>Sumatra</b>	324,323	225,901	550,224
<b>Jakarta</b>	562,790	304,320	867,110
<b>Java</b>	288,849	173,743	462,592
<b>Lesser Sunda Islands</b>	365,496	173,923	539,419
<b>Kalimantan</b>	488,589	260,897	749,485
<b>Sulawesi</b>	374,574	181,161	555,735
<b>Maluku Islands</b>	557,775	226,454	784,229
<b>Western New Guinea</b>	905,996	404,224	1,310,221

**Source:** ILO estimates based on *National Socioeconomic Survey of Indonesia*, 2018.



## 5 Other expenditures



## ► 5. Other expenditures

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We have explicitly defined our methodology for estimating the amount of required remuneration to ensure that workers and their families can adequately cover basic needs in the two largest expenditure categories. There are, however, other types of household expenses that are important in everyday life and therefore cannot be omitted from the analysis. These include *health and education* and *other essential goods and services*; in this section, we estimate their respective costs for a basic living standard.

In contrast to the food and housing expenditure categories and as mentioned in the overview of the methodology, the remaining expenses are computed using a *relative measure*.<sup>10</sup>

### 5.1 Health and education

Good health is fundamental to human happiness and well-being, and it also makes invaluable contributions to economic progress, as healthy populations live longer, are more productive and accumulate more savings. At the same time, education is central to sustainable development, it is a potent driver of development and one of the powerful instruments for alleviating poverty and regenerating health; it empowers people to be more productive, to make a better living and have a better quality of life, while also adding to a country's overall economic growth.

To estimate the cost of health and education, we first calculate the average monthly household expenditure per capita by quintile for 2018 (see table 14). Next, the estimated costs of needs in terms of health and education corresponds to the average monthly expenditures per capita of the reference quintile. That reference quintile is the one selected earlier because its calorie consumption is closest to the 2,150 kcal benchmark (quintile 3; see section 3.3).

► Table 14: Average monthly spending per capita on health and education by quintile (Indonesian rupiah), national estimates, 2018

Quintiles	Education (per capita)	Health (per capita)	Total (per capita)
1	12,322	6,673	18,995
2	19,758	11,482	31,240
<b>3</b>	<b>30,525</b>	<b>19,014</b>	<b>49,539</b>
4	47,107	31,771	78,878
5	140,234	87,824	228,057
Total	49,395	31,121	80,516

**Source:** ILO estimates based on *National Socioeconomic Survey of Indonesia*, 2018.

To ensure that the estimated cost of health and education in Indonesia is for a representative family size and takes into account household size, we multiply the estimated total cost of health and education per capita, which is equal to Rp49,539, by the number of persons in a family of reference size as shown in table 15. The same methodology is also applied separately to each of the regions in Indonesia, which have different reference quintiles (see Appendix II,

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<sup>10</sup> See section 2 for a discussion of absolute and relative measures.

table 21). Those regional estimates are also given in table 15. As can be seen, the costs of basic needs in terms of health and education for a reference family size of 4 ranges from Rp89,874 in Sulawesi to Rp209,353 in Java , with a national average of Rp198,157 . Unlike the estimation of housing and other essentials goods and services needs, the estimation of health and education needs uses per capita estimates rather than per adult equivalents because of the absence of economies of scale for such expenditures. Indeed, it doesn't seem appropriate to assume that an additional member in the family will spend less in term of health or education or that a child would spend less than an adult in these two categories. In fact, with respect to education, it is actually the opposite. However, for the sake of simplicity and so that the baseline methodology may be easily adaptable and applied, the same estimation method is used for health and education expenditures. This is why, all individuals in the family are considered equally for both expenditures through the use of per capita estimates.

**► Table 15: Estimated monthly cost of health and education per capita and for a family of 4 (in Indonesian rupiah), national and by region, 2018**

	Monthly cost of health and education per capita <sup>a</sup>	Monetary value per month for a family of 4
National	49,539	198,157
Sumatra	46,887	187,550
Jakarta	51,222	204,888
Java	52,338	209,353
Lesser Sunda Islands	35,549	142,195
Kalimantan	50,969	203,878
Sulawesi	22,468	89,874
Maluku Islands	99,639	398,555
Western New Guinea	48,475	193,902

**Source:** ILO estimates based on *National Socioeconomic Survey of Indonesia, 2018*.

<sup>a</sup> Costs are based on national and regional reference quintiles (see Appendix II, table 21).

## 5.2 Other essential goods and services

As was done for health and education, this section estimates the monthly cost of other essential goods and services such as clothing, shoes, telecommunications, durables and other services and expenses. Table 16 illustrates the distribution of average expenditure by quintile for 2018.

► **Table 16: Average monthly expenditure per adult equivalent on other essential goods and services per quintile (in Indonesian rupiah), national estimates, 2018**

Quintile	Monthly expenditure on clothing and footwear (per adult equivalent)	Monthly expenditure on transport (per adult equivalent)	Monthly expenditure on communications (per adult equivalent)	Monthly expenditure on other goods and services (per adult equivalent)	Monthly expenditure on durables (per adult equivalent)	Total monthly expenditure on other essentials (per adult equivalent)
1	12,175	33,576	10,561	20,670	6,409	83,392
2	22,258	54,783	19,675	37,175	14,248	148,138
3	<b>34,844</b>	<b>75,656</b>	<b>29,352</b>	<b>58,649</b>	<b>27,831</b>	<b>226,332</b>
4	52,392	111,471	47,658	94,006	62,105	367,632
5	107,866	267,721	113,003	239,203	322,437	1,050,230
Total	45,944	110,488	45,313	89,936	89,121	380,802

**Source:** ILO estimates based on *National Socioeconomic Survey of Indonesia*, 2018.

**Note:** Expenses such as those on alcohol, tobacco, salary for domestic workers or expensive jewellery made of precious metals and stones are excluded.

As for the methodology used for health and education expenses, the average monthly expenditure of quintile 3 is used here as a reference point to calculate the basic needs of other essential goods and services at the national level, which sums up to Rp633,415 in 2018 for a family of 4, as shown in table 17. Applying the same methodology to each of the eight regions and using the respective regional reference quintiles, the basic needs for other essentials are estimated for each region, as can be seen in table 17.

► **Table 17: Total cost estimate of other essential goods and services per adult equivalent and for a family of 4 (in Indonesian rupiah), national and by region, 2018**

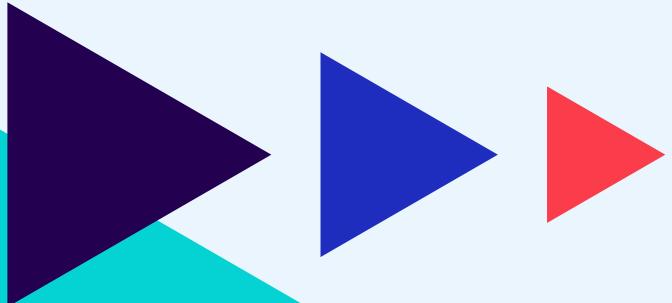
	Monthly cost of other essential goods and services (per adult equivalent)	Adult equivalent scales for a family of 4	Monthly cost of other essential goods and services for a family of 4
National	226,332	2.80	633,415
Sumatra	234,833	2.79	655,117
Jakarta	238,195	2.84	675,550
Java	212,774	2.81	598,868
Lesser Sunda Islands	169,345	2.79	472,848
Kalimantan	269,590	2.79	751,011
Sulawesi	210,556	2.80	589,537
Maluku Islands	841,401	2.79	2,348,850
Western New Guinea	368,712	2.77	1,020,210

**Source:** ILO estimates based on *National Socioeconomic Survey of Indonesia*, 2018.



► **6**

**A wage that meets  
the needs of workers  
and their families**



## ► 6. A wage that meets the needs of workers and their families

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Using the estimation of the costs of basic needs in terms of food, housing, health and education, and other essential goods and services as calculated above, we can estimate the cost of basic needs for a family of 4 in Indonesia as a whole as well as for each region in 2018. Table 18 shows that according to our estimates, an estimated Rp3,371,668 per month are needed at the national level to cover the monthly needs of a family of 4 at the national level. However, those monthly needs vary significantly across the different regions, ranging from Rp3,128,568 in the Lesser Sunda Islands to Rp5,691,326 in the Maluku Islands.

► **Table 18: Estimated needs for a family of 4 (in Indonesian rupiah), national and by region, 2018**

	<b>Food</b>	<b>Housing</b>	<b>Education and health</b>	<b>Other essentials</b>	<b>Total</b>
<b>National</b>	<b>1,915,708</b>	<b>624,388</b>	<b>198,157</b>	<b>633,415</b>	<b>3,371,668</b>
Sumatra	1,870,748	550,224	187,550	655,117	3,263,639
Jakarta	2,374,722	867,110	204,888	675,550	4,122,269
Java	2,000,311	462,592	209,353	598,868	3,271,124
Lesser Sunda Islands	1,974,105	539,419	142,195	472,848	3,128,568
Kalimantan	1,909,544	749,485	203,878	751,011	3,613,918
Sulawesi	1,919,482	555,735	89,874	589,537	3,154,628
Maluku Islands	2,159,693	784,229	398,555	2,348,850	5,691,326
Western New Guinea	2,083,018	1,310,221	193,902	1,020,210	4,607,350

**Source:** ILO estimates based on *National Socioeconomic Survey of Indonesia, 2018*.

In sum, table 19 shows the estimated monthly needs disaggregated by the main expenditure groups analysed above. These needs are presented as the monthly costs for a family of 4 in 2018.

► **Table 19: Monthly costs of each expenditure category for a family of 4  
(in Indonesian rupiah), national and by region, 2018**

	Cost of the needs for a family of 4								
	National	Sumatra	Jakarta	Java	Lesser Sunda Islands	Kalimantan	Sulawesi	Maluku Islands	Western New Guinea
<b>Total</b>	<b>3,371,668</b>	<b>3,263,639</b>	<b>4,122,269</b>	<b>3,271,124</b>	<b>3,128,568</b>	<b>3,613,918</b>	<b>3,154,628</b>	<b>5,691,326</b>	<b>4,607,350</b>
<b>Food</b>	<b>1,915,708</b>	<b>1,870,748</b>	<b>2,374,722</b>	<b>2,000,311</b>	<b>1,974,105</b>	<b>1,909,544</b>	<b>1,919,482</b>	<b>2,159,693</b>	<b>2,083,018</b>
<b>Housing</b>	<b>624,388</b>	<b>550,224</b>	<b>867,110</b>	<b>462,592</b>	<b>539,419</b>	<b>749,485</b>	<b>555,735</b>	<b>784,229</b>	<b>1,310,221</b>
<b>Rent</b>	<b>399,837</b>	<b>324,323</b>	<b>562,790</b>	<b>288,849</b>	<b>365,496</b>	<b>488,589</b>	<b>374,574</b>	<b>557,775</b>	<b>905,996</b>
<b>Utilities</b>	<b>224,550</b>	<b>225,901</b>	<b>304,320</b>	<b>173,743</b>	<b>173,923</b>	<b>260,897</b>	<b>181,161</b>	<b>226,454</b>	<b>404,224</b>
<b>Other expenditures</b>	<b>831,572</b>	<b>842,667</b>	<b>880,437</b>	<b>808,220</b>	<b>615,043</b>	<b>954,889</b>	<b>679,411</b>	<b>2,747,404</b>	<b>1,214,112</b>
<b>Education and health</b>	<b>198,157</b>	<b>187,550</b>	<b>204,888</b>	<b>209,353</b>	<b>142,195</b>	<b>203,878</b>	<b>89,874</b>	<b>398,555</b>	<b>193,902</b>
<b>Other essential goods and services</b>	<b>633,415</b>	<b>655,117</b>	<b>675,550</b>	<b>598,868</b>	<b>472,848</b>	<b>751,011</b>	<b>589,537</b>	<b>2,348,850</b>	<b>1,020,210</b>
<b>Transport</b>	<b>211,732</b>	<b>222,625</b>	<b>269,122</b>	<b>205,808</b>	<b>157,840</b>	<b>251,106</b>	<b>174,212</b>	<b>636,031</b>	<b>266,097</b>
<b>Other goods and services</b>	<b>164,135</b>	<b>161,805</b>	<b>174,105</b>	<b>154,041</b>	<b>136,613</b>	<b>199,135</b>	<b>159,412</b>	<b>589,083</b>	<b>293,886</b>
<b>Clothing and footwear</b>	<b>97,514</b>	<b>120,849</b>	<b>81,468</b>	<b>87,921</b>	<b>59,387</b>	<b>104,647</b>	<b>99,575</b>	<b>249,326</b>	<b>126,863</b>
<b>Durables</b>	<b>77,889</b>	<b>65,295</b>	<b>53,218</b>	<b>78,308</b>	<b>58,603</b>	<b>84,519</b>	<b>81,376</b>	<b>522,037</b>	<b>118,270</b>
<b>Communications</b>	<b>82,145</b>	<b>84,543</b>	<b>97,636</b>	<b>72,790</b>	<b>60,406</b>	<b>111,604</b>	<b>74,962</b>	<b>352,373</b>	<b>215,095</b>

**Source:** ILO estimates based on *National Socioeconomic Survey of Indonesia*, 2018.

Finally, when estimating a needs-based wage, the total cost for a household is defrayed over the number of full-time equivalent workers assumed to work in a household. To obtain an estimate of wage levels that meet the basic needs of workers and their families, the total cost for a household is divided by the expected number of household full-time working adults. In contrast to family size, the assumption surrounding the number of full-time workers has a reducing effect on needs-based wages. Household total costs are divided by the number of full-time workers assumed to be employed in the family. As for family size, determining the most realistic measure of working adults to be used as the denominator in the calculations is an important methodological choice that impacts the overall needs-based wage level.

Broadly, this choice relates to what constitutes the most suitable measure of the number of full-time working adults to use as the denominator in the calculation. In the baseline methodology applied in this report, the number of full-time working adults is set normatively at 1.5 full-time working adults per family of more than 1 person. This decision is made for various reasons. First, it allows the use of a number for working adults that is always between 1 and 2 working adults, which is a desirable result as argued by Anker and Anker (2017). Secondly, it appears to be an attractive assumption from a normative point of view

as it allows for workers to carry out necessary unpaid family work and avoids shifting all the burden of low employment opportunities to employers. Thirdly, it appears relatively coherent with the empirical realities of the family of references observed based on the expenditure survey. Finally, it simplifies calculations and avoids having to estimate the number of full-time working adults which in some cases may be difficult to reliably assess through income and expenditure surveys, which are not designed to assess the status of labour markets. Also, in addition to the results based on the hypothesis of 1.5 working adults per family, we also include the extreme values of 1 working adult and 2 working adults in order to provide a full range of needs-based wage levels that may be relevant to minimum wage setting.

Accordingly, table 20 explores three scenarios for the number of working adults in the household: (a) 1 full-time wage-earner; (b) 1.5 full-time wage-earners; and (c) 2 full-time wage-earners. Under scenario (a), the monthly salary required to cover the needs of workers and their families would range from Rp3,128,568 and Rp5,691,326 in 2018, depending on the region considered. However, under scenario (b) with 1.5 full-time waged employees in the family, the monthly salary required to cover the needs of workers and their families would range from Rp2,085,712 to Rp3,794,217. Finally, scenario (c) suggests that the monthly salary that covers the needs of workers and their families if there are 2 full-time wage employees ranges from Rp1,564,284 to Rp2,845,663.

► **Table 20: Needs-based wage-level estimates to cover the basic needs of a family of 4 (in Indonesian rupiah), national and by region, 2018**

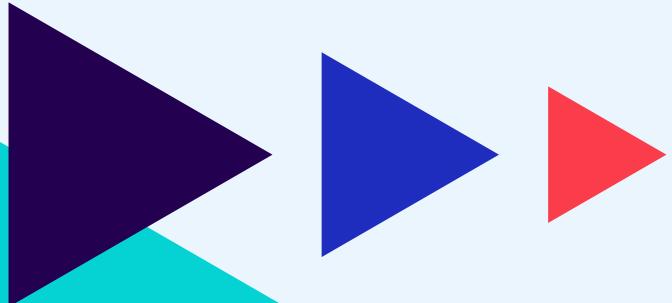
	<b>Monthly cost of basic necessities for a family of 4</b>	<b>Monthly salary necessary to cover the needs of workers and their families</b>			<b>Minimum wage (average by provinces)</b>
		<b>1.0</b>	<b>1.5</b>	<b>2.0</b>	
<b>National</b>	3,371,668	3,371,668	2,247,779	1,685,834	-
<b>Sumatra</b>	3,263,639	3,263,639	2,175,759	1,631,820	2,355,560
<b>Jakarta</b>	4,122,269	4,122,269	2,748,179	2,061,134	3,648,035
<b>Java</b>	3,271,124	3,271,124	2,180,749	1,635,562	1,618,572
<b>Lesser Sunda Islands</b>	3,128,568	3,128,568	2,085,712	1,564,284	1,870,719
<b>Kalimantan</b>	3,613,918	3,613,918	2,409,279	1,806,959	2,405,222
<b>Sulawesi</b>	3,154,628	3,154,628	2,103,085	1,577,314	2,335,780
<b>Maluku Islands</b>	5,691,326	5,691,326	3,794,217	2,845,663	2,271,512
<b>Western New Guinea</b>	4,607,350	4,607,350	3,071,567	2,303,675	2,781,325

**Source:** ILO estimates based on *National Socioeconomic Survey of Indonesia, 2018*.



7

## Levels of minimum wages versus needs-based wage-level estimates



## ► 7. Levels of minimum wages versus needs-based estimates

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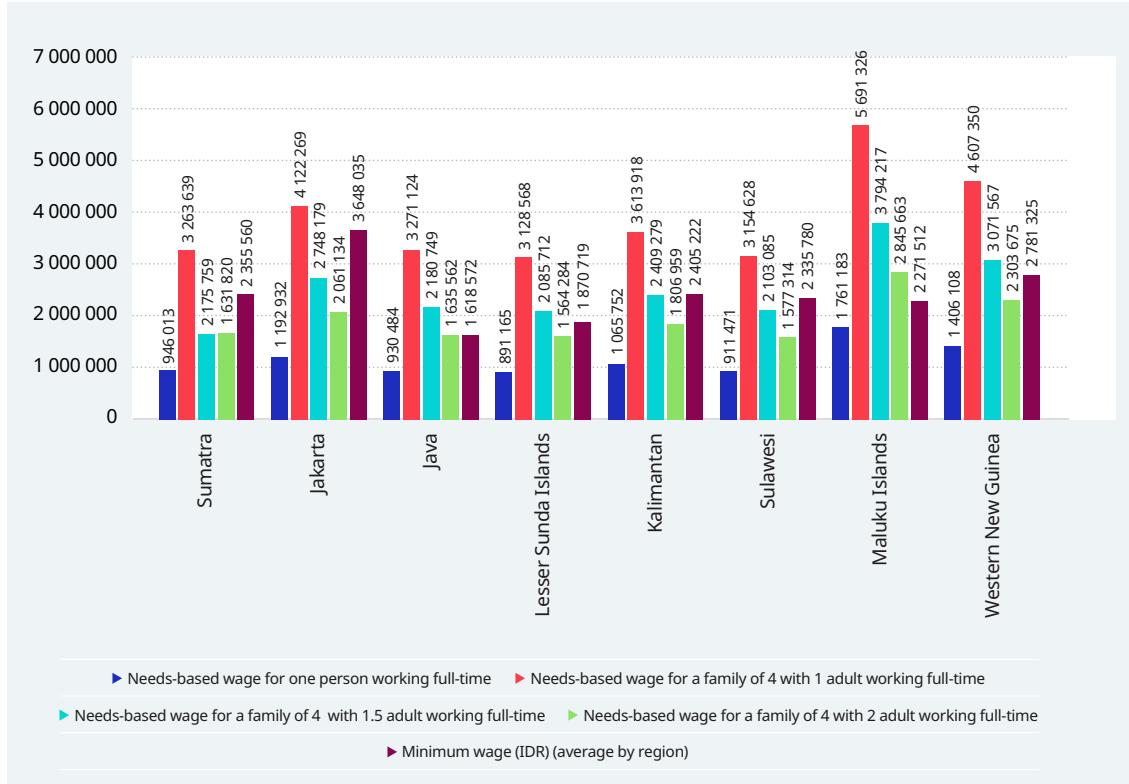
This paper has provided estimates of the needs of workers and their families in Indonesia that can be compared with the level of minimum wage rates in each region in the country. Before doing so, it is important to remember that these results contribute only to one part of the criteria that need to be taken into account when setting minimum wage levels. This information needs to be balanced by the consideration of economic factors, including the requirements of economic development, levels of productivity and the desirability of attaining and maintaining a high level of employment. An appropriate balance between these two sets of considerations is essential to ensure that minimum wages are adapted to the national context and that both the effective protection of workers and the development of sustainable enterprises are considered. In this regard, the present report should be considered as complementary to the evaluation of a wide set of economic factors. This is particularly relevant given the current context of the global economic crisis that emerged due to the COVID-19 pandemic.

In this section we provide a comparison of minimum wage levels with four measures of a needs-based wage: (a) the needs-based wage for 1 adult working full-time; (b) the needs-based wage for a family of 4 under the scenario of 1 working adult; (c) the needs-based wage for a family of 4 under the scenario of 1.5 working adults; and (d) the needs-based wage for a family of 4 under the scenario of 2 working adults. Because minimum wage rates in Indonesia are set for districts and provinces, we take the average minimum wage level for each of the eight regions in the country division and compare it to the needs-based wage level estimated for the corresponding region.

Figure 8 shows this comparison. It may be observed that regional average minimum wage rates are sufficient to cover the needs of 1 adult working full-time for all regions. In addition, except for the Maluku Islands and to a lesser extent Java, regional average minimum wage levels are sufficient to cover the needs of a family of 4 with 2 adults working full-time. Nevertheless, regional average minimum wages are lower than the corresponding needs-based wage levels for a family of 4 with only 1 adult working full-time in all eight regions. When considering an intermediary scenario of 1.5 working adults in a family of 4, it is also evident that for five of the eight regions (Java, Lesser Sunda Islands, Kalimantan, Maluku Islands and Western New Guinea), regional average minimum wage levels are insufficient to cover the estimated needs of workers and their families. Consequently, this analysis highlights the importance of the underlying assumptions to be considered when defining the reference family size and the number of working adults expected to support the family. The gap between regional average minimum wage levels and estimated needs-based wage levels for a family of 4 with 1 working adult ranges from 13 per cent in Jakarta to 151 per cent in the Maluku Islands. For a family of 4 with 1.5 working adults, that gap ranges from less than 1 per cent in Kalimantan to 67 per cent in the Maluku Islands.

These results suggest that in many regions of Indonesia the current minimum wage levels are relatively well in line with the needs of workers and their families assuming a family of 4 with 1.5 working adults. However, in some regions minimum wage levels may still be insufficient to cover the needs of large families with a limited number of working adults. Before drawing any conclusions on minimum wage levels, it is important to balance these results with a thorough analysis of economic factors. This is particularly relevant in the context of the current COVID-19 crisis. Therefore, adjustments to minimum wages should be carefully balanced and calibrated through full participation of the social partners and evidence-based social dialogue. Criteria for adjusting minimum wages should take due account not only of

► **Figure 8: Needs-based wage estimates for a family of 4 versus minimum wage levels in Indonesia (Indonesian rupiah), by region, 2018**

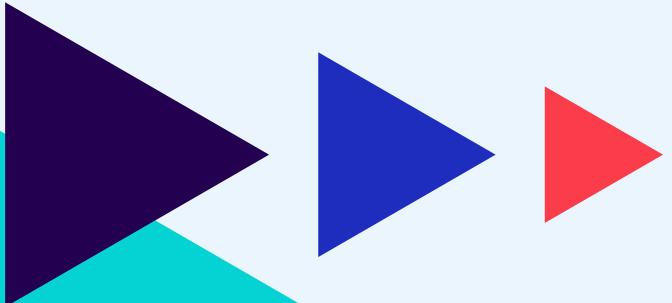


**Source:** ILO estimates based on *National Socioeconomic Survey of Indonesia*, 2018.

the needs of workers and their families but also of economic factors. While it may be essential to ensure that low-paid workers and their families are able to maintain their living standards by adjusting rates to compensate for price inflation, in the particular circumstances of some countries it may be difficult or risky to implement larger increases. This is particularly the case where minimum wages are already relatively high with respect to median wages and where employment and labour productivity have been severely affected by the economic crisis triggered by the COVID-19 pandemic.



## Appendices



## ► Appendix I: Food composition of food items in Indonesia

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Food item	Unit	Calories (per 100 g)	Protein
<b>Cereals</b>			
Rice (local, premium, imported rice)	kg	362	85
Sticky rice	kg	361	77
Fresh corn with husk	kg	36	11
Dry shelled corn/cornmeal/ <i>jagung titi</i>	kg	320	83
Wheat flour	kg	333	90
Others	kg	357	73
<b>Tubers</b>			
Cassava	kg	131	9
Sweet potatoes	kg	125	12
Sago flour	kg	338	6
Taro	kg	114	16
Potatoes	kg	52	18
Dried cassava	kg	338	15
Others	kg	301	10
<b>Fish/shrimp/squid/clams</b>			
Yellow tail fish	kg	87	136
Skipjack, tuna, dencis, bonito	kg	90	136
Mackerel	kg	90	136
Trevally	kg	48	90
Indian mackerel, lema/tatare, banyar/banyara	kg	82	176
Anchovies	kg	74	103
Milkfish	kg	103	160
Sneakhead	kg	48	77
Tilapia	kg	71	150
Goldfish, Tilapia	kg	69	128
Catfish	kg	48	77
Snapper	kg	74	160
Rabbitfish	kg	120	165
Catfish	kg	48	77
Promfetfish	kg	96	190

<b>Food item</b>	<b>Unit</b>	<b>Calories (per 100 g)</b>	<b>Protein</b>
Carp	kg	71	150
Others	kg	90	136
Shrimp, lobster	kg	62	143
Squid, cuttlefish, octopus	kg	75	161
Mud crab-swim crab	kg	68	62
Clams, snail, mussels	kg	101	144
Others	kg	55	109
Preserved Indian mackerel	oz	140	25
Preserved mackerel	oz	135	29
Preserved skipjack/tuna/dencis	oz	139	26
Preserved anchovies	oz	231	49
Preserved trevally	oz	146	29
Preserved sneakskin gourame	oz	217	29
Preserved milkfish	oz	296	17
Preserved snakehead	oz	234	46
Canned fish (canned sardines, tuna, etc.)	oz	338	21
Others	oz	305	44
Preserved shrimp (ebi, rebon)	oz	266	56
Preserved squid, cuttlefish, octopus	oz	266	56
Others	oz	357	41
<b>Meat</b>			
Beef	kg	207	188
Goat/lamb meat	kg	154	166
Pork	kg	417	130
Broiler meat	kg	302	182
Local chicken meat	kg	302	182
Other meat	kg	205	154
Preserved meat	kg	339	239
Fat, brisket	kg	128	155
Others (liver, innards, rib, feet, tail, head, etc)	kg	119	170
<b>Eggs and milk</b>			
Broiler egg	Unit	137	6.62
Local chicken egg	Unit	155	5
Duck egg	Unit	185	8
Others	Unit	64	5

Food item	Unit	Calories (per 100 g)	Protein
Liquid milk (factory produced)	250 ml	49	6
Sweetened condensed milk	397 g	336	33
Milk powder	kg	509	246
Baby milk powder	kg	167	76
Other milk and milk products	-	488	26
<b>Vegetables</b>			
Spinach	kg	11	6
Kale	kg	17	20
Cabbage	kg	18	11
Petsai cabbage	kg	7	6
Mustard greens	kg	19	20
Green beans	kg	31	22
Long beans	kg	28	28
Tomato, cherry tomato	oz	190	10
Carrots	kg	29	8
Cucumber	kg	7	3
Cassava leaves	kg	64	59
Eggplant	kg	37	15
Bean sprouts	kg	34	37
Pumpkin, squash	kg	19	6
Vegetable/cap cay soup ingredients (package)	Unit	67	3
Tamarind/coconut curry vegetable soup ingredients (package)	Unit	68	3
Young jackfruit	kg	41	16
Green papaya	kg	20	16
<i>Jengkol</i>	kg	126	57
Red onion	oz	35	1
Garlic	oz	84	4
Red chilies	kg	26	9
Green chilies	kg	19	6
Cayenne pepper	kg	88	40
Others	kg	11	10
<b>Beans and nuts</b>			
Peanuts without shell	kg	452	253
Soybeans	kg	381	404

Food item	Unit	Calories (per 100 g)	Protein
Others	kg	299	176
Tofu	kg	80	109
Tempeh	kg	143	120
Tempeh	oz	187	13
Others	oz	228	13
<b>Fruits</b>			
Orange, pomelo orange	kg	31	5
Mango	kg	37	4
Apple	kg	48	4
Rambutan	kg	28	4
Duku, langsat	kg	40	6
Durian	kg	29	6
Snake fruit	kg	135	5
Ambon banana	kg	64	7
Other banana	kg	113	10
Papaya	kg	35	4
Watermelon	kg	13	2
Tomato	kg	24	13
Others	kg	38	5
<b>Oils and coconut</b>			
Coconut oil	l	696	8
Frying oil (palm oil, sunflower oil)	l	722	0
Coconut (not including instant coconut milk)	Unit	354	13
Other oils and coconut	l	660	13
<b>Beverages</b>			
Cane sugar	oz	364	0
Brown sugar, syrup (from palm, coconut, palmyra)	oz	377	3
Tea powder	oz	132	20
Tea bags (sachet)	2 g	132	0
Coffee (powder, beans)	oz	352	17
Instant coffee (sachet)	20 g	450	1
Other beverages	-	667	8
<b>Spices</b>			
Salt	g	0	0
Candlenut	g	636	0

Food item	Unit	Calories (per 100 g)	Protein
Coriander/caraway	g	404	0
Pepper	g	359	0
Tamarind	g	132	0
Shrimp paste	g	250	0
Soya sauce	100 ml	37	5
Monosodium glutamate	g	0	0
Chili sauce	100 ml	78	2
Ketchup	100 ml	78	2
Packed spices, mixed spices	g	0	0
Other spices (nutmeg, ginger, turmeric, etc)	g	49	0
<b>Other food</b>			
Instant noodles	80 g	445	8
Crackers	oz	453	4
Packaged baby porridge	150 g	185	10
Others	-	396	6
<b>Prepared food and beverages</b>			
Bread	piece	265	8
Sweet bread, other bread	piece	270	2
Cookies, biscuit, wafer	oz	426	6
Cake (layered cake, honeycomb cake, lemper, etc)	Unit	379	2
Fried food	piece	362	5
Mung bean porridge	portion	108	9
Salad with peanut sauce ( <i>gadogado, ketoprak, pecel</i> )	portion	132	14
Rice with various kind of dishes	portion	238	19
Fried rice	portion	168	6
Rice	portion	129	5
Rice cake with vegetable	portion	144	6
<i>Soto</i> , curry, soup, <i>rawon</i> , minced meat	portion	119	9
Cooked vegetables (stir fried, coconut milk soup, etc)	portion	125	10
Satay, skewers, stew	portion (5 skewers)	169	11
Noodle with meatballs, noodle soup, fried noodle	portion	137	7
Instant noodle	portion	340	8
Children's snacks, crackers/chips	oz	509	6
Cooked fish	piece	200	70
Cooked chicken/meat (fried chicken, rendang, etc)	piece	167	66

Food item	Unit	Calories (per 100 g)	Protein
Cooked processed meat (sausage, nugget, smoked meat, etc)	piece	205	11
Chicken porridge	portion	155	7
Dumplings, fried fish dumplings	5 sticks	138	7
Other prepared food	-	246	9
Mineral water (bottle)	l	0	0
Mineral water (gallon)	gallon	0	0
Bottled tea, soft drink/contained CO2 drinks	250 ml	27	0
Packed juice, health drinks, energy drinks	200 ml	36	0
Prepared drinks (coffee, latte, tea, milk chocolate, etc.)	glass	31	0
Ice cream	small bowl	201	3
Other ice products	piece	216	4

**Source:** Indonesia, Statistics Indonesia, [\*Consumption of Calorie and Protein of Indonesia and Province, 2016\*](#), table A4."

## ► Appendix II: Supplementary tables

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► **Table 21: Average monthly expenditure per household for the reference quintile (in Indonesian rupiah), by region, 2018**

	Total expenses	Food expenses	Household size	Calories per capita	Obs.	Reference quintile <sup>a</sup>
<b>National</b>	3,693,764	2,201,267	5	2,157	60,435	3
<b>Sumatra</b>	3,844,166	2,340,385	4.65	2,137	16,874	3
<b>Jakarta</b>	4,589,175	2,698,502	4.49	2,076	886	2
<b>Java</b>	3,389,061	2,033,635	4.30	2,201	18,060	3
<b>Lesser Sunda Islands</b>	3,201,590	1,959,149	4.62	2,217	4,779	3
<b>Kalimantan</b>	4,320,609	2,454,976	4.52	2,053	5,898	3
<b>Sulawesi</b>	3,582,577	2,061,332	4.90	2,148	8,001	3
<b>Maluku Islands</b>	9,213,024	4,003,498	4.74	2,255	1,749	5
<b>Western New Guinea</b>	5,816,543	3,253,620	4.28	2,069	2,879	4

**Source:** ILO estimates based on National Socioeconomic Survey of Indonesia, 2018.

<sup>a</sup> Quintile with values nearest to the threshold value (2,150 kcal/per capita).

► **Table 22: Threshold of decent housing based on UN-Habitat definition for slums**

<b>Space</b>	Overcrowding can be expressed in terms of the available m <sup>2</sup> per capita or by the number of people per dwelling, per room or bedroom. UN-HABITAT defines overcrowding as those households with more than 3 persons per room.
<b>Durability</b>	"Durable housing" is generally defined as a "unit that is built on a non-hazardous location and has a structure permanent and adequate to protect its inhabitants from the extreme of climate conditions such as rain, heat, cold, and humidity". This is usually based on the material used for the construction of walls, roofs and floors. Permanent materials are considered (for example burnt brick, stones, concrete, tiles and so on); and non-permanent (temporary) materials that are replaced frequently (for example grass, bamboo, leaves, mud and so on).
<b>Facilities - Sanitation</b>	A household that has access to basic sanitation is defined as having sustainable access to safe, hygienic and convenient facilities for human excreta disposal. In urban areas, this is characterized by direct connection to a public, piped sewer; direct connection to a septic system; or access to pour-flush latrines or ventilated improved pit latrines.
<b>Water accessibility</b>	The water should be affordable and of sufficient quantity that it is available without excessive expenditure of effort and time. The household should have access to an improved water supply through household connection, a public standpipe shared by a maximum of two households, a borehole well, a protected spring or rainwater collection.

**Source:** UN-Habitat (2006).

## ► Bibliography

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- Anker, Richard, and Martha Anker. 2017. *Living Wages Around the World: Manual for Measurement*. Edward Elgar Publishing .
- FAO. 2001. *Human Energy Requirements, Report of a Joint FAO/WHO/UNU Expert Consultation*, Rome, 17–24 October 2001.
- Habitat for Humanity. 2019. "The Need for Decent Housing: Asia-Pacific".
- ILO. 2020. *Global Wage Report: Wages and Minimum Wages in the Time of COVID-19*.
- Research Center for Employment Relations. 2016. "Living Wage Report: Urban Viet Nam: Ho Chi Minh City with Focus on the Garment Industry". Global Living Wage Coalition.
- UN-Habitat. 2006. *State of the World's Cities 2006/7*.
- . 2011. *Affordable Land and Housing in Africa*.
- . 2014. *A Practical Guide to Designing, Planning, and Executing Citywide Slum Upgrading Programmes*.
- . 2018 . "SDG Indicator 11.1.1 Training Module: Adequate Housing and Slum Upgrading".
- United Nations Statistics Division. (2005). *Handbook on Poverty Statistics: Concepts, Methods and Policy Use*. New York.



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