The Global Multidimensional Poverty Index (MPI) 2024 Country Results and Methodological Note

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Attribution

The country (national) estimates are jointly produced by OPHI and HDRO using 112 survey datasets. The joint country results are published in Table 1 of the UNDP-OPHI Global Multidimensional Poverty Index 2024 report, *Poverty amid conflict*. Standard errors of the country estimates, which are produced by the authors, are made available in OPHI's Data Table 1.

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This note has been prepared within the OPHI theme on multidimensional poverty measurement.

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1. Overview

This Methodological Note presents the methodology and technical decisions behind the country (national) results of the global Multidimensional Poverty Index (MPI) 2024. The 2024 MPI country results are based on the most recent data from 112 countries, covering 6.3 billion people.

This document is structured as follows. Section 2 presents the global MPI structure and indicator definitions.[1] Section 3 provides an outline of the global MPI and its partial indices that we estimate and publish. Section 4 outlines the data management policies of the global MPI. Section 5 provides a summary of survey details. Section 6 summarises the country-specific technical decisions that were applied for each of the new or updated surveys. We conclude with summary points.

2. The global MPI structure

The global MPI is a measure of acute poverty covering over 100 countries in the developing regions of the world. This measure is based on the dual-cutoff counting approach to poverty developed by Alkire and Foster (2011). The global MPI was developed in 2010 by Alkire and Santos (2014, 2010) in collaboration with the UNDP's Human Development Report Office (HDRO). Since its inception, the global MPI has used information from 10 indicators, which are grouped into three equally weighted dimensions: health, education, and living standards (Figure 1). These dimensions are the same as those used in the UNDP's Human Development Index.

In 2018, the first major revision of the global MPI was undertaken, considering improvements in survey microdata and better align to the 2030 development agenda insofar as possible (Alkire and Jahan, 2018; OPHI, 2018). The revision consisted of adjustments in the definition of five out of the ten indicators, namely child mortality, nutrition, years of schooling, housing and assets. Alkire, Kanagaratnam, Nogales and Suppa (2022) provide a comprehensive analysis of the consequences of the 2018 revision. The normative and empirical decisions that underlie the revision of the global MPI, and adjustments related to the child mortality, nutrition, years of schooling and housing indicators are discussed in Alkire and Kanagaratnam (2021). The revision of assets indicator is detailed in Vollmer and Alkire (2022).

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[1] The text in this section draws on methodological notes published for each update of the global MPI (see past updates by the authors including 2023, 2022, 2021, 2020 and 2019; Alkire, Conconi, Robles and others, 2015) and the book by Alkire, Foster, Seth and others (2015). It is useful to include similar text in each methodological note, to provide an overview of the global MPI structure, as well as MPI and its partial indices to first-time users of the global MPI data.

Figure 1. Composition of the Global MPI – Dimensions and Indicators
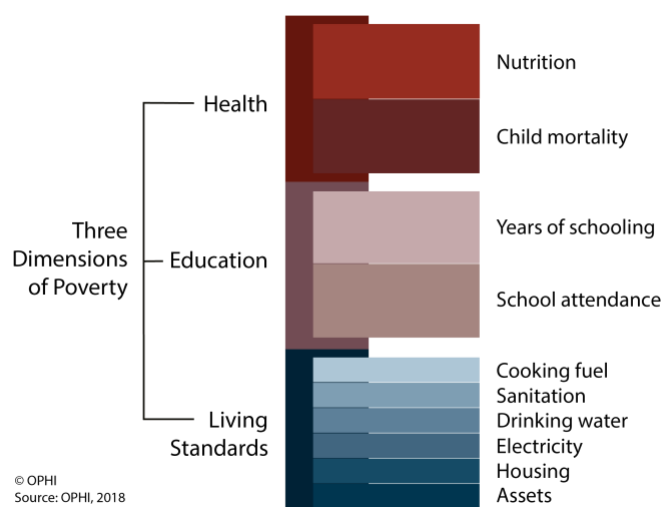
The global MPI begins by establishing a deprivation profile for each person, showing which of the 10 indicators they are deprived in. Each person is identified as deprived or non-deprived in each indicator based on a deprivation cutoff (Table 1). In the case of health and education, each household member may be identified as deprived or not deprived according to available information for other household members. For example, if any household member for whom data exist is undernourished, each person in that household is considered deprived in nutrition. Taking this approach – which was required by the data – does not reveal intrahousehold disparities[2], but is intuitive and assumes shared positive (or negative) effects of achieving (or not achieving) certain outcomes. Next, looking across indicators, each person's deprivation score is constructed by adding up the weights of the indicators in which they are deprived. The indicators use a nested weight structure: equal weights across dimensions and an equal weight for each indicator within a dimension. The normalised indicator weight structure of the global MPI means that the living standard indicators receive lower weight than health and education related indicators because from a policy perspective, each of the three dimensions is of roughly equal normative importance.

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[2] Though disparities within households can be explored in parallel. See Alkire and Ul Haq (2023).

Table 1. Global MPI – Dimensions, Indicators, Deprivation Cutoffs, and Weights

Dimensions	Indicator	Deprived if...	SDG area	Weight
Health	Nutrition	Any person under 70 years of age for whom there is nutritional information is **undernourished**.[1]	SDG 2	1/6
	Child mortality	A child **under 18** has **died** in the household in the five-year period preceding the survey.[2]	SDG 3	1/6
Education	Years of schooling	**No** eligible household member has completed **six years** of **schooling**.[3]	SDG 4	1/6
	School attendance	Any school-aged child is **not attending** school **up to** the age at which he/she would complete **class 8**.[4]	SDG 4	1/6
Living Standards	Cooking fuel	A household cooks using **solid fuel**, such as dung, agricultural crop, shrubs, wood, charcoal, or coal.[5]	SDG 7	1/18
	Sanitation	The household has **unimproved** or **no** sanitation **facility** or it is improved but **shared** with other households.[6]	SDG 6	1/18
	Drinking water	The household's source of **drinking water** is **not safe** or safe drinking water is a **30-minute** or **longer walk** from home, roundtrip.[7]	SDG 6	1/18
	Electricity	The household has **no electricity**.[8]	SDG 7	1/18
	Housing	The household has **inadequate** housing materials in **any** of the three components: **floor**, **roof**, or **walls**.[9]	SDG 11	1/18
	Assets	The household does **not own more than one** of these **assets**: radio, TV, telephone, computer, animal cart, bicycle, motorbike, or refrigerator, and does not own a car or truck.	SDG 1	1/18

Notes: The global MPI is related to the following SDGs: No Poverty (SDG 1), Zero Hunger (SDG 2), Health and Well-being (SDG 3), Quality Education (SDG 4), Clean Water and Sanitation (SDG 6), Affordable and Clean Energy (SDG 7), and Sustainable Cities and Communities (SDG 11).

[1] Children under 5 years (60 months and younger) are considered undernourished if their z-score of either height-for-age (stunting) or weight-for-age (underweight) is below minus two standard deviations from the median of the reference population. Children 5–19 years (61–228 months) are identified as deprived if their age-specific BMI cutoff is below minus two standard deviations. Adults aged 20 to 70 years (229–840 months) are considered undernourished if their Body Mass Index (BMI) is below 18.5 m/kg².

[2] The child mortality indicator of the global MPI is based on birth history data provided by mothers aged 15 to 49. In most surveys, men have provided information on child mortality as well, but this lacks the date of birth and death of the child. Hence, the indicator is constructed solely from mothers. However, if the data from the mother are missing, and if the male in the household reported no child mortality, then we identify no child mortality in the household.

[3] If all individuals in the household are in an age group where they should have formally completed 6 or more years of schooling, but none have this achievement, then the household is deprived. However, if any individuals aged 10 years and older reported 6 years or more of schooling, the household is not deprived.

[4] Data source for the age children start compulsory primary school: DHS or MICS survey reports; and http://data.uis.unesco.org/.

[5] If the survey report uses other definitions of solid fuel, we follow the survey report.

[6] A household is considered non-deprived in sanitation if it has some type of flush toilet or latrine, or ventilated improved pit or composting toilet, provided that they are not shared. If the survey report uses other definitions of improved sanitation, we follow the survey report

[7] A household is considered non-deprived in drinking water if the water source is any of the following types: piped water, public tap, borehole or pump, protected well, protected spring, or rainwater. It must also be within a 30-minute walk, round trip. If the survey report uses other definitions of improved drinking water, we follow the survey report.

[8] A small number of countries do not collect data on electricity because of 100% coverage. In such cases, we identify all households in the country as non-deprived in electricity.

[9] Deprived if floor is made of natural materials (mud/clay/earth, sand or dung) or if dwelling has no roof or walls or if either the roof or walls are constructed using natural or rudimentary materials such as such as carton, plastic/ polythene sheeting, bamboo with mud/stone with mud, loosely packed stones, uncovered adobe, raw/reused wood, plywood, cardboard, unburnt brick or canvas/tent. The definition of natural and rudimentary materials follows the classification used in country-specific DHS or MICS questionnaires.

3. The global MPI and its partial indices

In the global MPI, a person is identified as multidimensionally poor or MPI poor if they are deprived in at least one-third of the weighted MPI indicators. In other words, a person is MPI poor if the person's deprivation score is equal to or higher than the poverty cutoff of 33.33 percent. After the poverty identification step, we aggregate across individuals to obtain the **incidence** of poverty or headcount ratio (H) which represents the percentage of poor people in the population. We then compute the **intensity** of poverty (A), representing the average percentage of weighted deprivations experienced by the *poor*. We then compute the adjusted poverty headcount ratio (M_0) or **MPI** by combining H and A in a multiplicative form (MPI = H x A).

Both the incidence and the intensity of these deprivations are highly relevant pieces of information for poverty measurement. The incidence of poverty is intuitive and understandable by anyone. People always want to know how many poor people there are in a society as a proportion of the whole population. Media tend to pick up on the incidence of poverty easily. Yet, the proportion of poor people as the headline figure is not enough (Alkire, Oldiges and Kanagaratnam, 2021).

For example, we compare two countries with similar incidence of poverty. In Sierra Leone (DHS 2019) and Mauritania (2019-2021), some 59 percent of people are poor (incidence). Judged by this piece of information, these two countries are equally poor. However, in Sierra Leone, poor people are deprived – on average – in 49 percent of the weighted deprivations, whereas in Mauritania, the poor are deprived – on average – in 56 percent of the weighted deprivations. By combining the two pieces of information – the intensity of deprivations and the proportion of poor people – we know that these two countries are not equally poor, but rather that Mauritania (MPI=0.327) is poorer than Sierra Leone (MPI=0.293) because the intensity of poverty is higher among the poor. The MPI shows this difference.

A headcount ratio is also estimated using two other poverty cutoffs. The global MPI identifies individuals as **vulnerable** to poverty if they are close to the one-third threshold, that is, if they are deprived in 20 to 33.32 percent of weighted indicators. The tables also apply a higher poverty cutoff to identify those in **severe poverty**, meaning those deprived in 50 percent or more of the dimensions.

The AF methodology has a property that makes the global MPI even more useful—dimensional breakdown. This property makes it possible to consistently compute the percentage of the population who are multidimensionally poor and simultaneously deprived in each indicator. This

is known as the **censored headcount ratio** of an indicator. The weighted sum of censored headcount ratios of all MPI indicators is equal to the MPI value.

The censored headcount ratio shows the extent of deprivations among the poor but does not reflect the weights or relative values of the indicators. Two indicators may have the same censored headcount ratios but different contributions to overall poverty, because the contribution depends both on the censored headcount ratio and on the weight assigned to each indicator. As such, a complementary analysis to the censored headcount ratio is the **percentage contribution** of each indicator to overall multidimensional poverty.

In addition, we compute the **variance** measure. The multidimensionally poor people are deprived in anything from a third to 100 percent of MPI indicators. In other words, even though they are identified as multidimensionally poor, the intensity of poverty that they experience varies. The variance measure allows us to identify inequality among the poor. The computation and publication of the variance measure follows the methodology discussed in Seth and Alkire (2017) and Alkire and Foster (2019). The variance value is not reported in our data table if the value is based on a small number of multidimensionally poor people; specifically, if the headcount ratio (H) multiplied by the total sample size used to compute the MPI yields less than 400 observations.

Since 2020, as part of the global MPI output, we publish the proportion of **MPI poor who are destitute**. The destitution measure has precisely the same structure as the global MPI but applies extreme deprivation cutoffs for most indicators. The destitute are all already MPI poor but also experience a more extreme level of deprivation. This measure builds on the framework in Alkire, Conconi, and Seth (2014). The destitution cutoffs were revised in 2019 (see details in Alkire, Kanagaratnam and Suppa, 2020, p.9).

The results presented in our tables are based on sample surveys that use information from a fraction of the population to represent the whole population. Thus, it is important to compute a measure of confidence for each estimate from a sample survey. The computation of the **standard errors** is based on the linearized variance estimator (or first-order Taylor series approximation), correcting for single sampling unit stratum using the centered method in the 'svy' Stata command. We have also considered the two-stage clustering and stratification of the sample.

4. Tool to estimate MPI

The global MPI estimates are produced using the Stata package `mpitb` which is documented in Suppa (2023). 'mpitb' facilitates the estimation of measures such as the MPI (adjusted headcount ratio), the H (headcount ratio), the A (intensity), the censored and uncensored headcount ratios, and percentage contribution of each indicator. `mpitb` supports estimations at national level relevant to this methodological note. The package produces estimations by population subgroups that are defined in Alkire, Kanagaratnam and Suppa (2024a), namely age groups, rural and urban areas, subnational regions and gender of household head; as well as to include any other subgroup disaggregations that are possible with the survey sample. `mpitb` supports the estimation of levels and change between time periods for each of the measure specified in Alkire, Kanagaratnam and Suppa (2024b) and across the different levels, namely national, and subgroups. `mpitb` also simplifies estimations and analyses in cross-country settings.

The package is available at the Statistical Software Components (SSC) Archive and on gitlab. The MPI toolbox is distributed free of charge under an MIT license. The package may be installed by issuing `ssc install mpitb` in Stata. To access its comprehensive help files issue `help mpitb` after the installation. `mpitb` requires Stata 16 or higher.

5. Policies for the global MPI

In this section, we highlight seven key policies – the use of new survey, the use of new information to improve existing indicators, the computation of the global poor population, the exclusion of non-usual household members, the treatment of household members about whom information in certain indicators is lacking, the treatment of datasets that lack any one of the 10 global MPI indicators, and the treatment of households with missing indicators.

5.1 New survey data

The global MPI is updated when new data become available from the following sources: Demographic and Health Surveys (DHS), Multiple Indicator Cluster Surveys (MICS), and national surveys. We also explore whether there are new national surveys in the public domain that have indicators comparable to those included in the global MPI. National surveys are considered in the absence of surveys produced by DHS and MICS, or if DHS and MICS data sets are more than three years older than the national surveys. The latter is a criterion introduced in 2019, to maximise the possibility of using internationally comparable surveys such as DHS and MICS.

5.2 Indicator availability

Survey instruments such as DHS and MICS improve over time. Our policy while producing the national estimates using most recent survey of a country, is to use as much of the information that is available for the 10 global MPI indicators and to incorporate improvements in the new surveys. For example, in selected countries of MICS round 6 surveys, the electricity variable in the data included additional categories that goes beyond the usual question on 'Does your household have electricity' that is limited to the 'yes' or 'no' categories. Households with access to electricity were further probed on whether they were 'interconnected to the grid' or 'off-grid with generator or isolated system. For the global MPI, we identified households on the electricity grid and households that were powered by alternative sources of energy as non-deprived. Another example is when data on ownership of a computer or any hitherto missing asset in the past becomes available in recent surveys, these will be incorporated into the assets indicator.

In summary, MPI estimation for a given year will be the most accurate possible figure using the available data but may not be comparable across time. Indicator definitions must be harmonised for comparability over time. This we cover in detail in Methodological Note 60 (Alkire, Kanagaratnam and Suppa, 2024b).

5.3 Population-weighted global aggregates

Since 2010 we have used a fixed population year to produce the global aggregations. We have also provided the population data for the related survey year in our Data Tables for those who prefer this information. The headcount ratio for each country in the global MPI 2024 is multiplied by the total population for 2022, regardless of the year of the survey, to identify the number of MPI poor in any given country or across countries:

Number of MPI poor = H * Total Population

This approach has the important advantage of comparison: it is possible to aggregate across countries to develop regional rankings, analyse country groupings such as low-income countries, and aggregate across regions. For example, using this approach we can generate the figure that 18.3 percent of the inhabitants in the 112 countries are MPI poor. Suppose the year of the population count (2022) is after the year of the survey. In that case, this approach provides an incentive for governments to update their poverty data, because after updating the 'number of poor' will decline if poverty rates have gone down and if these are not overturned by strong population growth. The approach has limitations. We assume the level of poverty in the year of the survey and the year of population count are identical. We acknowledge that this is a strong

assumption, but changes in the global MPI over time do not justify alternative assumptions such as linear extrapolation.

The population count years used for aggregate estimates of the global MPI are updated by one year, annually. As in past years, the current data tables also include the population during the year of the survey, as well as population figures for both the reference year (2022) and the year before (2021). The source of population data is the World Population Prospects medium-fertility variant, which is published by UNDESA (2024).

5.4 Excluding non-usual residents

The DHS datasets define *de jure* residence as **usual** or legal residence. The 'hv102' variable in DHS datasets distinguishes *de jure* (usual) from non-*de jure* (non-usual) household members. In the global MPI, we only use information from usual residents and exclude information from non-usual household members. We exclude the information from the non-usual members because this makes it comparable to MICS, which collect information only from usual household members. In addition, the achievement of an occasional visitor (for example, in years of schooling) could cause the household to be non-deprived (in education), which would be misleading. The same principle is applied for national surveys that have variables that allows us to identify the non-usual members from the usual householders.

5.5 Applicable and non-applicable populations

Three of the 10 global MPI indicators are not applicable to all **households** – nutrition, child mortality and school attendance. Households that do not have the relevant population are classed as non-deprived in that indicator.

5.5.1   Nutrition

Nutrition has three sub-populations of interest (children under five, children aged five to 19 years and adults aged 20 to 70 years). Nutrition status (underweight, stunting, low BMI-for-age and low BMI) of each person is generated according to their sub-group. The nutrition status of children under five for the global MPI is based on underweight and stunting. For almost all MICS surveys, nutrition data was collected only from children under five. In such surveys, we consider households that did not have any eligible children under five as non-deprived in nutrition. In the global MPI, information that allows for the construction of BMI-for age (for those five to 19 years) and BMI (for those 20 to 70 years) is possible for most DHS surveys and national surveys. In DHS surveys, data that allows for the computation of BMI-for-age and BMI as nutrition status is usually collected from eligible women aged 15 to 49 years. Women eligible for anthropometric

measurement are identified using the *eligibility* variable provided by DHS data providers. In some countries, such as Egypt, eligibility criteria exclude women who have never been married. In a few DHS surveys, nutrition data is also collected from a subsample of adult men. Households with no eligible females or males to be measured anthropometrically are considered non-deprived in BMI-for-age and BMI. In some other national surveys, nutrition data is collected from all age groups in the household (e.g. China, and Ecuador). The global MPI uses all available data on nutrition, up to the age of 70 years (<=840 months in age) to construct the final nutrition indicator. A cut-off of 70 years is applied because bone density changes in higher age cohorts making BMI measure more complex to interpret. A household is deprived in nutrition if a household has at least one under five child who is underweight or stunted, or at least one child aged five to 19 years with low BMI-for-age, or at least one adult aged 20-70 years with low BMI. We consider households as non-deprived if *all* eligible members are not underweight, not stunted, have normal BMI-for-age or BMI. In addition, households are identified as non-deprived if those households have no eligible members to assess nutrition.

5.5.2 Child mortality

Child mortality is based on birth history data provided by mothers aged 15 to 49. The birth history data ordinarily has the date of birth and death of each child. This tells us how old the child was when they died and how long before the survey year the death occurred. We consider households having no eligible women available to be interviewed as non-deprived in child mortality. In most DHS and MICS surveys, a sub-sample of eligible men have provided information on child mortality as well, but this lacks the date of birth and death of the child. Hence, the child mortality indicator is constructed solely from females. However, if the data from females are missing, and if the male in the household reported no child mortality, then we identify no child mortality in the household. In a few country surveys (e.g.: Argentina, Thailand, to name a few), birth history data was not collected, such as the date of birth and date of death of the child. In such cases, we have constructed the child mortality indicator using any child death reported by eligible women and men, as we cannot distinguish deaths that occurred in the past five years nor the age of the child who died. In these countries, households that did not have eligible women and men for individual interviews are identified as non-deprived.

5.5.3   School attendance

School attendance is not applicable to households without children of school-age. We identify households that did not have children of school-age as non-deprived (we consider an eight-year span starting at the age at which a child should begin school in each country). The data sources for the age at which children start compulsory primary school are the MICS and DHS country survey reports, followed by confirmation using the UIS Global Database.

5.6   Treatment of data set with missing indicators

If a survey dataset is missing any of the 10 indicators that make up the global MPI, then that indicator cannot be used in the computation of the poverty measure and is omitted. Indicator weights of other indicators in that dimension are re-adjusted accordingly, such that each dimension continues to be given a weight of one-third. For example, suppose one living standards indicator is missing such as the case of China's CFPS 2014 data set that lacks the housing indicator. In that case, while originally each of the living standards indicators received a relative weight of 1/18 (5.56 percent), the remaining indicators in the case of China will receive a relative weight of 1/15 (6.66 percent). If one health or education indicator is missing, the other indicator will receive the full indicator weight of one-third. If all indicators in any dimension are missing, the dataset does not qualify to be included in the global MPI.

5.7   Dropping households with missing indicator from survey sample

Once each indicator has been constructed, we only use households that have complete information in all the constructed indicators for the poverty estimates. Households that lack data on any indicator are dropped from the final analytical sample. The percentage of the sample that is dropped is reported in our Data Table 1 (see sheet 1.7 'Sample Size & Non-Response'). The sample size after the treatment of missing data must be reasonably high. This is because a lower sample size may affect accurate comparability across subnational estimations. The policies for MPI estimation by subnational regions are discussed in Methodological Note 59 (Alkire, Kanagaratnam and Suppa, 2024a).

6. Survey details of global MPI 2024

The 2024 global MPI estimations are based on survey data from 112 countries. By contrast, the global MPI 2023 covered 110 countries, while the global MPI 2022, 2021, 2020, 2019 and 2018 covered 111, 109, 107, 101, and 105 countries respectively. The number of countries covered in each round varies for two reasons: (1) whether new/updated surveys are available; and (2) whether countries from previous rounds are dropped from the recent round because the surveys for these countries are considered outdated.

6.1 New and updated country surveys

This 2024 round re-introduced two countries (Bhutan and Burkina Faso)[3] and 18 more recent survey datasets (Table 2). Collectively, the twenty new and updated surveys represent some 700 million people, close to 12 percent of the population living in the developing regions of the world.

Table 2. List of new and updated surveys used in the global MPI 2024

Country	Survey	Year
Afghanistan	MICS	2022-2023
Benin	MICS	2021-2022
Bhutan	BLSS	2022
Burkina Faso	DHS	2021
Comoros	MICS	2022
Cote d'Ivoire	DHS	2021
Eswatini	MICS	2021-2022
Gabon	DHS	2019-2021
Ghana	DHS	2022
Kenya	DHS	2022
Mexico	ENSANUT	2022
Mozambique	DHS	2022-2023
Nepal	DHS	2022
Peru	ENDES	2022
Philippines	DHS	2022
Tanzania	DHS	2022
Thailand	MICS	2022
Trinidad and Tobago	MICS	2022
Tunisia	MICS	2023
Yemen	MICS	2022-2023

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[3] In the 2023 round, we excluded Bhutan and Burkina Faso dataset which was fielded in 2010, so is considered out of date.

Eight of these new or updated surveys were released by MICS, while nine were released by DHS in a period of 15 months, that is, from 16 April 2023 to 15 July 2024. In addition, we updated Peru and Mexico, as well as re-introduced Bhutan using national surveys that are available in the public domain. The cleaning and standardisation of the new and updated surveys follows the 2019 global MPI indicator specifications, in addition to the minor innovations introduced in 2020 for the years of schooling, drinking water, and sanitation indicators (see Alkire, Kanagaratnam and Suppa 2019, 2020 for details on the specifications).

6.2 Survey coverage

The survey coverage for the 112 countries included in the global MPI 2024 is between 2011-2012 and 2023. A total of seventy-two countries—home to 72 percent of multidimensionally poor people—have data fielded in the last five years, that is, in 2016-2017 or later.

The primary data sources for the global MPI are the DHS (44 countries) and MICS (55 countries) surveys that are open access. For two countries, the source of the data is the Pan Arab Project for Family Health (PAPFAM) surveys. In the countries for which none of these internationally comparable surveys were available, national surveys that contained information on the MPI indicators were used if high-quality surveys with the same indicators were available, and if they were in the public domain or if countries requested to be included in the global MPI. For example, in the global MPI 2024, we have used national data for 11 countries, namely Bhutan, Bolivia, Botswana, Brazil, China, Ecuador, Jamaica, Mexico, Peru, Seychelles, and Sri Lanka.

6.3 Countries excluded

In this round, we would have excluded any survey that was fielded in 2011. In the last round, we used Trinidad and Tobago MICS 2011, but since a MICS 2022 survey was available, we instead updated the numbers for this country using the recent survey. In the 2023 round, we excluded Bhutan, Burkina Faso and South Sudan – all fielded in 2010 – but the former two were re-introduced in this round with recent data availability. In the 2022 round, we excluded Syria, a 2009 dataset. In the 2021 round, we would have excluded any country whose most recent survey was fielded in 2008, but there was no such country. In the 2020 round, we excluded Vanuatu as the survey was fielded in 2007. Four countries were excluded in the 2019 round, namely, Azerbaijan, Djibouti, Somalia, and Uzbekistan, as their surveys were fielded in 2006. But Uzbekistan was re-introduced into the 2023 round of global MPI since an updated survey was made available by MICS. All the surveys that have been included in each of the fourteen rounds of the global MPI (2010-2011; 2013-2024) and its estimates are published in OPHI's Data Table 8.

7. Country-specific considerations for new/updated surveys

This section details the country-specific standardised decisions concerning indicator availability and data treatment for each of the 20 new or updated countries included in the global MPI 2024.

7.1 Afghanistan MICS 2022-2023

The Afghanistan data set has anthropometric data from all children aged under five years, which was used in constructing the nutrition indicator. This survey data lacks information on cooking fuel. This is because a decision was made at the country level to drop the energy use module altogether from the household survey questionnaire. As such, we have treated this indicator as missing and hence the remaining five indicators (sanitation, drinking water, electricity, housing and assets) of the living standards are re-weighted to receive one-fifteenth of the indicator weight each, which sums to one-third of the dimension weight. The survey data and report are produced by UNICEF (2023).

7.2 Benin MICS 2021-2022

The Benin data set has anthropometric data from all children aged under five years, which was used to construct the nutrition indicator. No other country specific decisions were applied for this survey. The country survey report is produced by INStaD (2023).

7.3 Bhutan BLSS 2022

The Bhutan Living Standard Survey (BLSS) micro data set is not available on an open access platform. The microdata was provided by the National Statistics Bureau (NSB) of Bhutan through an agreement between OPHI and NSB Bhutan for computing and publishing the global MPI aggregates. This data set lacks information on anthropometric data. In addition, there is no data on birth history in the last five years, so the child mortality indicator considers individuals to be deprived if any child died in the household. We re-weight the child mortality indicator to one-third, to obtain equal weights among the three dimensions. Compulsory age of entry to primary education was revised from the age of 6 to 5 years in 2022 following a reform. However, NSB Bhutan has retained 6 years as the entry age for primary school for Bhutan's national MPI despite five years being the official minimum age for entering primary school. Following this, we keep the starting age for formal school entry as 6 since we are using BLSS 2022, the same survey used for Bhutan's national MPI. In addition, the data also indicate that the large majority of the five-year olds are still attending pre-primary rather than primary grade. Drinking water delivered via tanker truck is classified as unimproved following the survey report (p.54).

The materials used to construct floor, walls, and roof was categorised as improved or non-improved following the survey report of Bhutan MICS 2010. The survey lacks information on ownership of radio and animal cart, hence, the assets indicator does not include these items. The BLSS 2022 survey covered 44 sampling strata (20 dzongkhags with urban and rural areas; and 4 thromdes with only urban areas) (NSB Bhutan, 2022, p.3). Accordingly, we generated the strata variable that was required to compute a measure of confidence for each estimate from a sample survey.

7.4 Burkina Faso DHS 2021

The Burkina Faso data set has anthropometric data for children aged under five years and women aged 15 to 49 years living in the 50 percent of households sampled for the male interview. The country survey report by INSD and ICF (2023) presents the nutritional status of children (p.290-1) and the nutritional status of women (p.305-6) by the 13 subnational regions in Burkina Faso. This suggests that anthropometric estimates based on the 50 percent sub-sample of households are representative at the subnational level. As such, the global MPI estimation for Burkina Faso is based on this 50 percent sub-sample. No other country specific decisions were applied for this survey.

7.5 Comoros MICS 2022

The nutrition indicator for the Comoros data set is constructed using anthropometric data from all children aged under five years. No other country specific decisions were applied for this survey. The country survey report is produced by INSEED (2023).

7.6 Cote d'Ivoire DHS 2021

The nutrition indicator for the Cote d'Ivoire data set is constructed using anthropometric data from children aged under five years and women aged 15 to 49 years living in the 50 percent of households sampled for the male interview. The country survey report by INS and ICF (2023) presents the nutritional status of children (p.256-7) and the nutritional status of women (p.270-1) by the 14 subnational regions in Cote d'Ivoire. This suggests that anthropometric estimates based on the 50 percent sub-sample of households are representative at the subnational level. As such, the global MPI estimation for Cote d'Ivoire is based on this 50 percent sub-sample. In this survey, we identified ownership of tricycle, besides bicycle, as part of the assets indicator.

7.7 Eswatini MICS 2021-2022

The Eswatini data set has anthropometric data from all children under the age of five years, which was used to construct the nutrition indicator. The questions related to 'household energy use' was administered in half of the households sampled (CSO Eswatini, 2024). As such, the core questions – EU4 and EU1 – used to construct the cooking fuel indicator in the global MPI was not answered by 46.5 percent of the 4,675 households interviewed in this survey. The questions were not administered universally to reduce the overall burden of the survey on interviewers and households given that several non-standard country-specific modules was incorporated into the questionnaires, and this resulted in longer than usual questionnaires. Due to the limited coverage of the cooking fuel data, we have treated this indicator as missing. Hence the remaining five indicators (sanitation, drinking water, electricity, housing and assets) of the living standards are re-weighted to receive one-fifteenth of the indicator weight each, which sums to one-third as the dimension weight.

7.8 Gabon DHS 2019-2021

Height and weight measurements were collected from all children aged under five years (DGS and ICF, 2023). As such, the nutrition indicator was constructed using the full survey sample. Additionally, height and weight data were also collected from women and men (15–64) living in two-thirds of the sampled households, which was considered in the construction of the nutrition indicator. The survey lacks information on ownership of animal cart, hence, the assets indicator does not include this item.

7.9 Ghana DHS 2022

The Ghana data set has anthropometric data for children aged under five years, women aged 15 to 49 years, and men aged 15 to 59 years living in the 50 percent of households sampled for the male interview. The survey report by GSS and ICF (2024) presents the nutritional status of children (p.226-7) and the nutritional status of women (p.242-3) and men (p.244-5) by the 16 subnational regions in Ghana. This suggests that anthropometric estimates based on the 50 percent sub-sample of households are representative at the subnational level. As such, the global MPI estimation for Ghana is based on this 50 percent sub-sample. No other country specific decisions were applied for this survey.

7.10 Kenya DHS 2022

Height and weight measurements were collected from all children aged under five years (KNBS and ICF, 2023). As such, the nutrition indicator was constructed using the full survey sample. Additionally, height and weight data were also collected from women and men (15–64) living in 50 percent of the sampled households, which was considered in the construction of the nutrition indicator. No other country specific decisions were applied for this survey.

7.11 Mexico ENSANUT 2022

The National Health and Nutrition Survey (Ensanut) 2022 is a national survey that is open access and is part of the Continuous 2020-2024 series of surveys that make up the National Health Survey System (SNES), created by the Ministry of Health of Mexico. All children under 5 years are eligible for anthropometric measurement. We have used information from children under 5 to construct the final nutrition indicator. In addition, anthropometric data was also collected from selected individuals 5 years and older. However, we did not use this data because of high non-response rate and potential bias. This data set collected information on child mortality from selected women aged 15-49 years. However, we did not use the child mortality data as the sample selection is not representative of the female population in the 15-49 age group. As such, we re-weight the nutrition indicator nutrition to one-third, to obtain equal weights among the three dimensions. This data set lacks information on the time it takes to collect drinking water. The survey does not include information on whether the household owns a bicycle or an animal cart, so the assets indicator does not include these items.

7.12 Mozambique DHS 2022-2023

The Mozambique data set has anthropometric data from children aged under five years and women aged 15 to 49 years living in the 50 percent of households sampled for hemoglobin test. The country survey report by INE Mozambique and ICF (2024) presents the nutritional status of children (p.262-3) and the nutritional status of women (p.275-6) by the 11 subnational regions in Mozambique. This suggests that anthropometric estimates based on the 50 percent sub-sample of households are representative at the subnational level. As such, the global MPI estimation for Mozambique is based on this 50 percent sub-sample. No other country specific decisions were applied for this survey.

7.13 Nepal DHS 2022

The Nepal data set has anthropometric data for children aged under five years and women aged 15 to 49 years living in a sub-sample of households, that is in 50 percent of sampled households that are not selected for male survey. In addition, weight and height data was collected from women aged 50 years and older; and from men 15 years and older living in 25 percent of the households within the same sub-sample. As such, the nutrition indicator of this data set is constructed using nutrition data from eligible individuals up to the age of 70 years (840 months in age) within the sub-sample. The survey report by MOHP, New ERA, and ICF (2023) presents the nutritional status of children (p.296-7), the nutritional status of women (p.318-9) and men (p.320-1) by the seven subnational regions in Nepal. This suggests that anthropometric estimates based on the 50 percent sub-sample of households are representative at the subnational level. As such, the global MPI estimation for Nepal is based on this 50 percent subsample. In this survey, ownership of bicycle includes *rickshaw* (tricycle).

7.14 Peru ENDES 2022

This is a national annual survey that is open access. The nutrition indicator is constructed using height and weight measurements that were collected from all children under five years and for all women aged 12 to 49 years in the sample. Information on child mortality was collected for all women aged 15 to 49 who slept the night before in the household.

7.15 Philippines DHS 2022

This survey did not gather information on nutrition. This means the child mortality indicator is the only indicator within the health dimension, and as such it receives one-third of the dimensional weight. No other country specific decisions were applied for this survey. The survey report is produced by PSA and ICF (2023).

7.16 Tanzania DHS 2022

The Tanzania data set has anthropometric data for children aged under five years, women aged 15 to 49 years, and men aged 15 to 59 years living in 50 percent of households sampled for the male interview. The country survey report by MOH Tanzania Mainland, MOH Zanzibar, NBS, OCGS, and ICF (2022) presents the nutritional status of children (p.339-40) and the nutritional status of women (p.363-4) and men (p.365-6) by the nine regional zones in Tanzania.

This suggests that anthropometric estimates based on the 50 percent sub-sample of households are representative at the subnational level. As such, the global MPI estimation for Tanzania is based on this 50 percent sub-sample. No other country specific decisions were applied for this survey.

7.17 Thailand MICS 2022

The nutrition indicator for the Thailand data set is constructed using anthropometric data from all children aged under five years. There is no data on birth history in the last five years, so the child mortality indicator considers individuals deprived if there is any child who died in the household. The survey does not include information on whether the household owns a radio or an animal cart, so the assets indicator does not include these items. The survey report is produced by the NSO Thailand (2023).

7.18 Trinidad and Tobago MICS 2022

This survey did not gather information on nutrition. This means the child mortality indicator is the only indicator within the health dimension, and as such it receives one-third of the dimensional weight. No other country specific decisions were applied for this survey. The country survey report is produced by the CSO Trinidad and Tobago (2023).

7.19 Tunisia MICS 2023

The Tunisia data set has anthropometric data from all children aged under five years, which was applied in constructing the nutrition indicator. The child mortality indicator was constructed using information from ever-married women. This is because birth history was collected only for women aged 15 to 49 years who are currently married or were married in the past, rather than all women in the age group. At time of publication, the survey report was not available on MICS website and as such, the necessary quality checks between our work and the survey report were not implemented.

7.20 Yemen MICS 2022-2023

The nutrition indicator for the Yemen data set is constructed using anthropometric data from all children aged under five years. We observed that the questions related to housing, namely materials used to construct floor (hc4), roof (hc6) and walls (hc5) were not included in the household questionnaire. However, the variables are available in the dataset, and these come with notable missing values. For example, some 75 percent of the households has missing in the hc4 (main material of floor) variable namely among households in the northern region.

As indicated by the survey provider, the survey was implemented as two separate operations – one in non-conflict zones and another in the conflict northern zones. Housing data was not collected from households in Yemen's northern highlands - where the conflict is active. Due to the limited coverage of the housing data, we have treated this indicator as missing. Hence the remaining five indicators (sanitation, drinking water, electricity, cooking fuel and assets) of the living standards are re-weighted to receive one-fifteenth of the indicator weight each, which sums to one-third as the dimension weight. The country survey report is produced by CSO Yemen and UNICEF (2023).

8. Concluding remarks

In sum, the global MPI 2024 covers 112 countries, of which 18 countries have updated surveys compared to the 2023 round. In addition, two countries that were dropped in the last round due to outdated surveys were re-introduced in this round – Bhutan and Burkina Faso. Collectively these 20 new or updated countries represent close to 12 percent of the population living in the developing regions of the world. The computation of global MPI is only possible with individual level data from multitopic household surveys such as DHS and MICS. These surveys collectively remain the major microdata source used to produce the global MPI results (99 countries). The remaining surveys used in our work are national surveys (11 countries) and PAPFAM (2 countries).

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